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National Institute of Justice

# **Firearms and Violence Topical Working Group Meeting Summary 2011**

November 30 and December 1, 2011

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# Firearms and Violence Topical Working Group Meeting Summary 2011

November 30 and December 1, 2011

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## Meeting Results: A Summary of Issues, Questions and Gaps

On November 30 and December 1, 2011, the National Institute of Justice (NIJ) convened a group of experts to form the Firearms and Violence Research Working Group. After considering the reviews presented and discussed at the meeting and presented below, the working group identified seven topical areas and subareas that if addressed would advance our understanding of firearms violence and identify effective strategies that could reduce gun-related violent crime.<sup>[1]</sup>

**Maintain a focus on firearms and violence.** In the 2010 review and assessment of NIJ, research on firearms and violence was identified as one of the few topics that had received sustained, directed and cumulative support.<sup>[2]</sup> The result, according to that report, was significant advances in our understanding of the aspect of crime in United States that accounts for the seriousness (i.e., lethality and degree of injury) of violent crime in our society. The Group noted that NIJ had not in recent years maintained this focus on firearms and violent crime, that no other federal research agency had addressed this topic, that few foundations supported basic research on this topic, and that the absence of support had resulted in a significant reduction in the amount of research and the numbers of researchers focusing on this topic. The absence of long-term support and concentrations of research excellence has resulted in a decline in the creation of new knowledge — basic and applied.

The Group concluded that the continuing lethality and seriousness of crime in the United States require continued investment in gun-related crime issues that should include a long-term commitment to topics and centers of excellence and require an ongoing mechanism for research agencies to expand and coordinate their efforts. The maintenance of a technical working group on this topic would assist NIJ in providing leadership in this research area.

**Advancing basic knowledge on the acquisition of firearms used in crimes and defensive gun use.** Largely due to the work supported by NIJ, we have accumulated a comprehensive

description of the role of firearms in crime. Unfortunately, these "facts" are dispersed across many disciplines, are not widely known, and are sometimes distorted for partisan reasons. Although the National Research Council (NRC) report [3] documented many of these "facts" the Group recommends that the research working group on firearms and violence be tasked with assembling a document that summarizes these findings and providing a review of the document that would assure widespread acceptance and recognition of what we currently know about the relationship between firearms and violent crime.

In the 1990s NIJ supported research to determine how individuals acquired the firearms that were used in the commission of crimes. These studies, although important additions to our understanding about the acquisition of firearms by criminals, are now almost 20 years old, and the methods used in these studies need significant improvement. The Group suggests that new efforts be undertaken to use improved methodologies to study and better understand the ways in which all criminals who use guns in the commission of their crimes acquire those guns. The first step in this effort would be the development of methodologies that would provide better estimates of gun acquisition than those used in the 1990 studies.

Studies of defensive gun use to date have focused primarily on estimating the number of times guns are used to prevent crimes. The NRC report identified the limitations of these approaches and established what appears to be today a reasonable estimate of the range of the number of times guns are used to prevent crimes. The next step in this research area should focus on the process of defensive gun use. This would be an effort to move beyond an estimation of extent to an understanding of the decision process that occurs during a potential crime in which a potential victim uses a gun to deter the criminal. The same kinds of studies should be undertaken in the topical area of right-to-carry. While the debate continues on the impact of right-to-carry laws on crime, almost no information is available on when and where individuals who have been granted the right to carry a weapon actually use the weapon to deter crime. Nor have there been detailed cost/benefit analyses of the actual use of guns for defensive purposes. Getting into the "black box" of defensive gun use will allow us to move beyond debates about the extent of defensive gun use to an understanding of when and how it happens. This has become even more important with the expansion of "stand your ground laws" which are intended to further establish the legal foundation for defensive gun use.

In recent years, police have developed numerous violence reduction programs that target gun violence. NRC has determined that these programs are highly effective in achieving gun violence reductions.[4] In some instances, the communities that are the target of these violence reduction efforts have resisted or not been properly prepared to cooperate with the police. Although we understand that the community needs to play an important role in violence reduction, little research has been conducted to identify the sources of community resistance. The Group believes that a focus on understanding these sources of resistance and how to develop violence-reduction programs that are supported by the community is critical. Related to these issues is the question of why concentrations of gun violence persist and return after successful interventions. Understanding how to reduce gun violence for the long term will be an important part of the effort to improve our knowledge of how to effectively mobilize the community in gun crime reductions.

**Criminal justice topical areas.** Hot spots policing is established as an effective evidence-based intervention for gun violence. What is not known is why and how these interventions work. Is it increases in guardianship; deterrence; social space uses — why do the variety of interventions labeled hot spots work, why do they vary in their effectiveness, and why do some persist longer than others? If we could answer these questions, we could further develop this already effective intervention.

Many critics of new efforts to reduce gun violence suggest that what we need to do is more fully enforce the prohibitions in place, especially for high risk offenders. Included in this suggestion is the issue of the optimum length of some prohibitions. The Group agreed that there has been no research to date to address the issue of full enforcement of existing federal and state prohibitions and little recent work on the issue of their length. This effort would best be done experimentally in jurisdictions that have available to them a wide range of options including enhanced sentences, restrictions on gun possession for high risk categories, and alternatives to traditional processing of gun offenders.

As with other aspects of criminal justice processing, little is known about the role prosecutors play in the efforts to reduce gun violence, especially with regard to prosecutions to disrupt drug markets. In addition, more research is needed on how bail amounts are set for gun offenses, the impact of the various forms of gun courts, and the impact of differences in how judges hand down sentences for similar gun offenses/offenders. The group suggests that a concentrated research effort on how gun crimes and gun market crimes are developed and prosecuted would materially increase our understanding of how to improve the use of the criminal justice system to deter gun crimes and disrupt gun markets.

**Prevention topical areas.** The group concluded that prevention continues to be an underdeveloped research area. As the NRC report concluded, no prevention programs have been rigorously demonstrated to be effective. In part, this is because so little research support has been provided to this type of research. The group urges the development and testing of gun violence prevention programs based on general prevention theory. A particular focus should be on collaboration with health systems and providers in terms of the use and study of individual and environmental level data and interventions, to better target high risk persons and places.

**Gun markets topical areas.** There was widespread consensus in the group that research on how guns are acquired for criminal use and how those acquisition lines can be disrupted is vital. This has been mentioned above. In addition to the topics discussed above, this research area should include studies of the "life cycle" of crime guns (tracing guns from the gun crime to the manufacturer, identifying all intermediate owners and possessors and their means of acquisition). This research would assist in identifying possible new ways to disrupt acquisition of guns for use in crimes.

**Improving data on guns in the United States.** The conclusions of the NRC report on this topic are still true. Improved data on gun possession, gun acquisition, and gun use are needed. While there are legitimate concerns about the accuracy of current measures and while there are legitimate concerns about the ability of survey methods to measure such a sensitive topic, the group believes a program of research on ways to improve measures of these topics is necessary to provide us with measures that have greater acceptability and known estimates of measurement error. This work could lay the foundation for addressing many of the questions surrounding guns and violent crime that to date have proven to be difficult to resolve.

**Comparative research topics.** The group noted that there are efforts ongoing in other countries that touch on all of the topical areas noted above. The group suggests that it would be useful to monitor these efforts, participate in them where appropriate, and establish multinational research efforts when necessary.

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## Day One — November 30, 2011

### Welcome and Introductions

Dr. Charles Wellford opened the meeting as facilitator and asked participants to introduce themselves and also provide some information about their connection to research on firearms and violence (see [agenda](#) and [list of participants](#)).

### Opening Remarks

Dr. John Laub, Director of NIJ, welcomed everyone to the meeting. He said that NIJ is striving to lead research on crime and justice including firearms and violence. To do that, NIJ is developing a cutting-edge research agenda and building a cumulative knowledge base. He said that NIJ is giving increasing attention to how scientific knowledge is diffused. NIJ is using translational medicine as a model and exploring ways that NIJ can develop a translational criminology.

Dr. Laub told the group that NIJ has formed topical working groups in the Office of Research and Evaluation to assist the field in the identification of key research questions, issues and gaps in knowledge. He also said that NIJ is promoting research on issues such as firearms and violence by coordinating and creating partnerships with other organizations, agencies and constituencies. He suggested that challenges and obstacles make it difficult to work with a topic such as firearms and violence as it is full of ideology, but with little research or established methodology. In this regard, Dr. Laub expressed appreciation to participants for volunteering to help NIJ and the field.

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### The NRC Report — Charles Wellford

[View Charles Wellford's Slides](#)

Dr. Charles Wellford from the University of Maryland reviewed findings and recommendations from the National Research Council (NRC) 2005 panel study and resulting report, [Firearms and Violence: A Critical Review Exit Notice](#). He chaired the NRC panel, sharing editing responsibilities with John Pepper and Carol Petrie.

By 2005, research indicated that higher rates of household gun ownership appear to be associated with higher rates of gun suicides, illegal diversion from legitimate commerce is an important source of guns used to commit crimes and suicides, firearms are used defensively many times per day, and some types of targeted law enforcement interventions may lower gun-related crimes. Dr. Wellford reported that the panel found no credible evidence to suggest that right-to-carry laws decrease or increase crime. Also at the time of the report, there was no research to show that the more than 80 gun violence prevention programs the committee examined had any effect on children's behavior, knowledge, attitudes or beliefs about firearms.

The NRC panel found that many questions surrounding firearms and violence cannot be addressed with existing data and research. Existing research and data remain too weak to support policy development. For instance, research concerning defensive gun use is so disparate in data and methods that huge differences in results cannot be explained. The methodology necessary for unraveling causal relationships between firearms policy and violence was seldom employed or

adequately developed in the research reviewed by the panel. Many policy dilemmas remained problematic at the time of the report, including the need for public authorities to carefully consider conflicting constitutional issues, facts and opinions regarding firearms and violence, and where the balance lies in the costs and benefits of private gun ownership.

Dr. Wellford reviewed report recommendations including federal government support for a systematic program of data collection and research specifically addressing firearms and violence. Current ownership data are limited and little scientific data exist on firearms markets. He suggested that the National Violent Death Reporting System (NVDRS) begins to address this problem, but only 22 states have adopted it to date, and funding support for the states continues to be an issue.

In addition to much-needed development of data and methods, further research is needed on markets, defensive gun use, right-to-carry laws, suicide and criminal justice interventions. He suggested this meeting of the working group would contribute up-to-date information to the discussion and identify important research issues, questions and gaps for consideration by the field of research on firearms and violence.

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## Criminal Justice Interventions — Ed McGarrell

[View Ed McGarrell's Slides](#)

Dr. Ed McGarrell from Michigan State University presented information on evaluation research involving criminal justice interventions since the 2005 NRC report on firearms and violence, including gun courts, enhanced sentencing, mandatory sentencing, place-based and problem-oriented policing, policing gun hot spots, policing violent gun offenders and Project Safe Neighborhoods.

**Gun courts.** Dr. McGarrell said that specialized courts appear to be emerging as another way to divert gun offenders from the system. He reported a recent study in Alabama that demonstrated lower recidivism rates among participants, although the research design was not very strong. Other jurisdictions have begun using gun courts including Brooklyn, N.Y., Cambridge, Mass., Philadelphia, Pa., Providence, R.I., and Queens, N.Y. He said more research is needed using better methodology.

**Enhanced and mandatory sentences for using a gun when committing a crime.** The NRC panel reviewed 10 studies involving sentencing for gun crimes, and suggested that there is some evidence of some impact on some crimes in some locations. Dr. McGarrell said that to date findings are mixed and implementation issues notable in existing research. It is not unusual for prosecutors, for example, to drop offenses carrying mandatory sentences in plea bargaining to secure convictions in other charged crimes. Results from one study evaluating Project Exile, which included gun prosecutions as a main component, suggest that homicide was reduced. However, mandatory sentencing studies have provided mixed and contradictory results with limited evidence of impact.

**Domestic violence prohibitions.** Dr. McGarrell summarized three studies that have been conducted since the NRC report assessing reductions in violence as a result of prohibiting firearms possession by domestic violence offenders. Although results are promising, he suggested more study is needed in this and other areas of prohibiting firearms from specific groups such as mentally ill persons, noncitizens and domestic violence offenders.

**Place-based problem-oriented policing.** More research has been accomplished in the area of place-based and problem-oriented policing since the NRC report. He summarized a few examples of

interventions that have been implemented effectively. Recent evaluations have demonstrated the effectiveness of Philadelphia's foot patrol and Jacksonville's problem-oriented policing in violent crime hot spots. He suggested that more research be directed toward the sustainability of intervention effects associated with this type of action research.

**Policing gun hotspots.** Dr. McGarrell reviewed three recent studies providing further support for reducing gun violence hot spots, but all have some methodological limitations. Remaining hot spots research issues include the need to demonstrate long-term effects, substitution, adaptation and deterrence. He reiterated the NRC committee recommendation for sustained and systematic research on the impacts of different problem-oriented place-based interventions such as gun suppression patrols, targeted policing approaches and removal of high-risk guns.

**Policing violent gun offenders.** Dr. McGarrell then talked about interventions with known gun offenders. He highlighted a St. Louis program targeting juvenile offenders that sent officers to residences to request permission from parents to search the home for guns. They surprisingly received much cooperation from parents and appeared to have some effect on gun violence. Evaluation research on the popular Boston Operation Ceasefire program has showed an association between the program and a decline in violence, but the research design left some efficacy questions unanswered. The NRC committee recommended a sustained and systematic program of research on focused deterrence and prosecution. A series of other program evaluations have been published in peer-reviewed journals since then. They found similar results in Indianapolis, Ind., Lowell, Mass., Chicago, Ill., Stockton, Calif., and Cincinnati, Ohio, with most employing quasi-experimental methods similar to those used in evaluating Boston's Ceasefire.

**Project Safe Neighborhoods.** As a major Department of Justice initiative launched in 2001, Project Safe Neighborhoods (PSN) funded task forces with all U.S. Attorneys' Offices in the United States. Dr. McGarrell and Michigan State University provided training for the program sites and evaluated the overall PSN initiative. Training curriculum for task forces was based on Project Exile (Richmond) and Boston CeaseFire. He reported that a third to half of the PSN sites used program components such as call-in notification meetings for known gun crime offenders, probation/parole offender home visits, gun incident reviews, and cooperation with federal and local law enforcement such as joint gun case screening. The evaluation assessed implementation by looking at the local level of federal gun prosecution, the quality of local partnerships, and integration of research findings into program components. Findings suggest that target cities in higher implementation districts saw greater reductions in reported violent crime. Major limitations involved possible preexisting differences in target treatment and comparison cities. He added that a recent meta-analysis indicates that focused deterrence strategies may be generally associated with medium-sized crime reduction effects.

Dr. McGarrell briefly reviewed some ongoing research including reentry programs that are targeting violent ex-prisoners with focused deterrence strategies in Boston and Chicago. Early results suggest that this approach has some impact at the community level, but the cause of these effects is still unclear. Also, Hawaii Opportunity Probation with Enforcement (HOPE) was evaluated with a randomized control design, which showed significant reductions in arrests, positive drug tests, probation revocations and subsequent days in prison. The Comprehensive Anti-Gang Initiative (CAGI), another NIJ-funded evaluation using this approach, has shown no overall effect. But, it again appears that level of implementation is associated with effects, with high-implementation sites experiencing greater declines in reported crime than low-implementation and non-CAGI sites.

## **Criminal Justice Interventions – Discussion**

Discussion around criminal justice interventions was far ranging and included place-based, hot spots, and focused deterrence programs and other strategies targeting firearms violence. Sentencing policy and options and alternative sanctions like specialty courts were also discussed. The group also spent some time talking about non-criminal justice interventions such as community prevention, background checks, protection orders and exclusionary policies.

Some working group participants described a public health intervention developed in Cardiff, Wales. The intervention involves identification of the locations of violent incidents associated with victims coming to emergency rooms and trauma centers. Violent hot spots are then targeted with interventions involving multidisciplinary teams delivering component prevention services. The model is apparently becoming popular in the U.S., with about 20 hospital-based centers currently implementing this strategy in an effort to reduce violence in communities.

Participants also talked about the nature of change in communities and how it seems that communities must express, in some way, a readiness to change to reduce problems like firearms violence. Evaluations like PSN show that dynamic relationships in communities are related to program implementation and to intervention outcomes. There was much discussion around community readiness for change and implementation of interventions to reduce problems like gun violence. There was general agreement about the need for further research on dynamics and conditions for change in communities, including community organizing and preparing communities for change.

There was also discussion regarding the "black-box" methodology typically used in trying to evaluate these interventions and the need for greater use of qualitative and mixed methods to identify adequately the reasons for results coming from multiple component programs and complex interventions. Each aspect of programs or strategies should be described and measured as implemented throughout the process of instigating these interventions to completion of programs and longitudinal follow-up. It was suggested that research in criminal justice needs to borrow methods from other disciplines in measuring implementation processes and other dynamics associated with community interventions.

The Chicago Cease Fire program and the Pittsburgh One Vision program were discussed as non-criminal justice interventions with mixed results. Both programs deployed non-criminal justice staff to intervene in situations that appear likely to result in violence. Where the Chicago program was able to demonstrate effects in multiple locations, the Pittsburgh program suffered implementation and research design problems that may have contributed to null findings.

Participants discussed how non-criminal justice interventions in other areas such as health, nutrition and recreation also appear to have an impact on violence in communities. Many of these efforts are being combined to target multiple outcomes. There seem to be general consensus that non-criminal justice, community and preventive interventions are worthy of further study in relationship to firearms violence (as further discussed later in the meeting).

There was also general agreement that criminal justice research on hot spots and place-based interventions should continue, but research designs and methods should be improved to include measurement of program components, implementation processes and mechanisms related to explaining outcomes, and discounting alternative explanations for program effects. There also is a need to assess the sustainability of these interventions once a demonstration is over and project funding has come to an end. Suggestions for further intervention and policy research ranged from gun courts and other sentencing options to focusing scarce resources on high-risk individuals and

distinct types of firearms violence, and demonstrating outcomes related to community violence prevention and reduction. There also were suggestions for better research to understand community dynamics and climates, and optimal ways of approaching communities in the process of preparing for and sustaining change.

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## Public Health Interventions — David Hemenway

[View David Hemenway's Slides](#)

Dr. Hemenway from the Injury Control Research Center and the Youth Violence Prevention Center at Harvard University noted that no one on the 2005 NRC Firearms and Violence panel was an injury-control professional and few worked directly in public health. He suggested that the inclusion of a public health representative may have served to broaden the scope of the report and recommendations resulting from the study.

Dr. Hemenway suggested that a public health perspective is important because it focuses on assets as well as liabilities in communities. He said that a public health perspective includes intervention through prevention (what can you do before crime), through a proactive (versus reactive) approach involving the community, with no assessment of fault or blame, and a systems perspective to preventing problems like firearms violence in the first place.

He provided an example in the decline of auto fatalities. Traffic deaths are often the result of deliberate unlawful behavior by drivers (speeding, reckless driving, drunk driving). He said that over time policy responses to the problem were implemented through law enforcement and public health attention to cars, roads and drivers. He suggested that a combination of these types of factors has resulted in a 90-percent reduction in traffic fatalities over time. Dr. Hemenway stressed that public health brings together a wide array of interests in targeting social problems and norms related to problems like auto fatalities and firearms violence.

He then provided examples of how public health data systems have helped us understand problems like firearms violence. Using data from data collections like the National Violent Death Reporting System and other local surveys, we now know that most victims of firearms violence are younger than 15 years and are often unintentionally shot by a sibling or other acquaintance. As it relates to violence, a local survey in Boston has shown a relationship between hours of sleep and aggression among youth. and that schools with earlier start times appear to have more aggression as well. These kinds of facts help us to understand problems like firearms violence and develop preventive solutions. He then talked about his book, *While We Were Sleeping*, which provides further examples of public health success stories.

Dr. Hemenway then discussed research concerning firearms-related suicides and defensive use of firearms with implications for prevention. He said research suggests a positive relationship between gun ownership and suicide, and a number of facts indicate preventive interventions may be needed. For instance, although suicide attempts with firearms are most lethal compared to other means, risk of substitution in suicide is very small. Evidence shows that suicide is often impulsive and risks are often transitory. Of near-lethal suicide attempts, 70 percent of individuals contemplated doing it for less than an hour, and fewer than 10 percent attempted it again. Facts like these suggest possible prevention strategies such as means restriction.

He provided examples of a primary prevention program called the Harvard [Means Matter Campaign](#), which is an Internet-based program targeting state health departments. Information for prevention is provided. For instance, if young people are depressed, removing guns from the home is encouraged. ED-SAFE is another prevention model that involves some means-restriction interventions including emergency and trauma departments in addition to schools. Another initiative involves meeting with gunshop owners to find ways they can reduce risk for suicide.

Dr. Hemenway talked about the need for more research and data regarding self-defensive gun use. There is little recent research in this area beyond what we already know about guns reducing both physical harm and monetary loss in self-defense situations, and that running away or hiding are better strategies than calling the police. In terms of property loss, having a gun seems to be effective. Some survey results suggest, however, most uses are viewed as socially undesirable, especially hostile gun displays, and many are illegal.

### **Public Health – Discussion**

Working group participants discussed issues, questions and gaps related to public health and prevention, firearms and violence research. Most discussion reflected a general consensus regarding the need for more basic information to better describe gun violence incidents of all kinds. Basic descriptive information is generally lacking from which interventions could be effectively developed and tested within and outside the criminal justice system. There was an expressed need for further research on right-to-carry laws and their progeny, the effect on acquisition of permits and who is carrying weapons. Also needed is more research on self-defense policies (stand-your-ground and castle laws), what constitutes a threat and how it relates to firearms violence. It was suggested that the current variety of related policies and statutes being enacted and implemented across the United States may provide an ongoing policy experiment that should be studied.

Working group participants also identified the need for more research regarding perceptions the general public has about the relationship between firearms and violence and the reality of the relationship between firearms use and violence. For instance, it may be useful to closely examine or review a group of incidents such as nonintentional gun accidents, defensive uses and aggravated assaults to learn more about the dynamics of these situations. It would be useful to examine further highest risk demography (such as children under the age of 15) within public health approaches to prevention of firearms homicide. It may be helpful to disaggregate gun crimes and study individual crimes such as domestic assault, armed robbery and aggravated assault/homicide with a gun.

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### **Day Two – December 1, 2011**

Dr. Wellford noted that day two was to include a discussion of gun markets research by Dr. Anthony Braga; Dr. Braga, however, was unfortunately taken ill at the last minute and could not attend. He said that Dr. Jonathon Caulkins volunteered to provide some thoughts for discussion based upon his research with drug markets, and Agent Charles Houser agreed to talk briefly about firearms tracing at the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF).

Dr. Caulkins said that some generalization is possible between research in the areas of drugs and firearms markets. Many aspects of current firearms markets research are parallel, including such things as categories of access, trafficking and other sources of illegal guns such as theft. He said that it is interesting to note, for instance, that a third of all guns used in homicide are acquired illegally. Dr. Caulkins believes that the market perspective is valuable in the field of firearms and

violence research. His own work in drug markets illustrates the value of monitoring aspects like price, for example, when studying any illicit market. He warned that firearms are durable goods and looking at simple and isolated variables such as quantity probably biases what can be learned from such research. Dr. Caulkins suggests firearms research needs to provide a more complete picture or description of transactions including chain of supply and life cycle. He suggests it may be more productive to study the issue prospectively rather than retrospectively. More research is needed to describe the life cycle of firearm ownership as well as life cycle of the firearm. More aspects such as inventory, turnover and history also need to be measured to better describe markets. Dr. Caulkins suggested that greater differentiation is needed regarding types of crimes committed with guns as well as the many types of situations in which firearms are used.

Special Agent Charles Houser briefly discussed gun tracing by ATF. As chief of the division, Special Agent Houser oversees a program implemented in 1988, which has grown from 48,000 tracing requests in the first year to more than 300,000 last year. Tracing data are added value to an investigation providing links between suspects and crimes. Tracing increasingly contributes to investigations concerning trafficking and illicit distribution of firearms worldwide. Computerization has contributed greatly to the program, and the process recently has become more efficient in converting to an Internet-based information system.

Special Agent Houser said ATF receives about 1,400 tracing requests every day, although there are still problems presented in current tracing technology. For instance, misidentification of weapons still remains a basic problem. A serial number alone is not a unique identifier of a firearm. Other identifiers are necessary, and most failed submissions are because the firearm has not been adequately identified. He said that an Internet-based system has increased data availability and further sharing of information among law enforcement agencies engaged in criminal investigations. Research on markets, supply and demand is very useful in practice, and further research is needed as firearms are related to violence in many ways all over the world.

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## Emerging Issues in Methods and Data Collection — John Pepper

Dr. John Pepper from the University of Virginia provided brief comments regarding the working group discussion related to emerging issues concerning methods and data collection. Lack of good data continues to be the biggest problem in research on firearms violence, as it is in much of criminal justice research. Separate issues involve whether needed research can be productive given current methodologies, and what methodological issues need to be addressed. But, the biggest problem area seems to be the lack of valid and reliable data. He suggested we address how to feasibly acquire and provide the necessary resources to collect better data. He suggested that more research on perceptions of the relationship between firearms use and violence may be useful, as would data on implementation, how different regulations are enforced, and how the criminal justice system implements laws and regulations related to firearms. Mixed-methods research on perceptions about firearms and implementation may go a long way to help us better describe processes and dynamic systems involved in firearms violence.

Dr. Pepper said that further use of ecological studies may be of limited utility and suggested that it may be more useful to promote case-control studies that particularly attend to issues of validity. Lastly, he said much more is needed in the development of theory about firearms use and violence. In a world of bad data, one option may be to plow forward and come up with answers, but it may be more productive to spend more time developing more theory as we develop better measurements and methodologies.

Discussion ensued regarding firearms markets and tracing systems research, including issues concerning valid and reliable ways of measuring market-based variables such as price, supply and demand, differences and similarities, overlaps between legal and illegal markets, and firearms as currency in drugs and other organized crime. There was general agreement regarding the need for research to look at separate and distinct areas or "silos" of firearms violence like suicide, crime types, crimes of passion versus planned crimes and self-defensive use.

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## Firearms & Violence Research Working Group Meeting Agenda

### **Day One: Wednesday, November 30, 2011**

9:00-9:15 a.m.: Welcome and Introductions — Charles Wellford

9:15-9:30 a.m.: Opening Remarks — John Laub

9:30-10:00 a.m.: Firearms and Violence: A Critical Review — Charles Wellford

10:00-10:30 a.m.: Break

10:30-11:30 a.m.: Criminal Justice Interventions: Research and Discussion — Ed McGarrell

11:30 a.m.–1:00 p.m.: Lunch

1:00-2:00 p.m.: Criminal Justice Interventions: Identification of Research Issues, Questions and Gaps

2:00-3:00 p.m.: Public Health and Prevention Theory in Firearms: Research and Discussion — David Hemenway

3:00-3:30 p.m.: Break

3:30-4:30 p.m.: Prevention Theory: Identification of Research Issues, Questions and Gaps

### **Day Two: Thursday, December 1, 2011**

9:00-9:30 a.m.: Recap Day One — Charles Wellford

9:30-10:30 a.m.: Emerging Issues in Research Methods and Data Collection — John Pepper

10:30 a.m.-12:00 p.m.: Discussion, Summary, Next Steps and Farewells

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## Working Group Participants

**Roseanna Ander**

University of Chicago

**Jonathan Caulkins**

Carnegie Mellon University

**Rose Cheney**

University of Pennsylvania

**David Hemenway**

Harvard University

**Charles Houser**

Bureau of Alcohol, Tobacco, Firearms & Explosives

**John H. Laub**

National Institute of Justice

**Lois Mock**

Consultant

**John Pepper**

University of Virginia

**John Spencer**

Bureau of Alcohol, Tobacco, Firearms & Explosives

**Howard Spivak**

Centers for Disease Control and Prevention

**Charles Wellford**

University of Maryland

**Garen Wintemute**

University of California – Davis

### Notes

[1] Consistent with the theme of the National Research Council's report on firearms and violence (Wellford, Petrie and Pepper, 2005), the working group's analysis of research needs recognized the limits articulated in the Supreme Court's Heller decision (554 U.S. 570, 2008). Nothing in the working group's discussion or in its analysis of research needs requires or anticipates any changes in the current interpretation of the meaning of the Second Amendment for reducing gun-related crime. Each of the topics discussed below is consistent with the individual right to possess firearms that has been articulated by the Court.

[2] National Research Council, *Strengthening the National Institute of Justice*, Committee on Assessing the Research Program of the National Institute of Justice, C.F. Wellford, B.M. Chemers,

and J.A. Schuck, Editors, Division of Behavioral and Social Sciences and Education. Washington, D.C.: The National Academies Press, 2010.

[3] National Research Council, *Firearms and Violence: A Critical Review*, Committee to Improve Research Information and Data on Firearms, Charles F. Wellford, John V. Pepper, and Carol V. Petrie, editors, Committee on Law and Justice, Division of Behavioral and Social Sciences and Education. Washington, D.C.: The National Academies Press, 2005.

[4] National Research Council, *Firearms and Violence: A Critical Review*, Committee to Improve Research Information and Data on Firearms, Charles F. Wellford, John V. Pepper, and Carol V. Petrie, editors, Committee on Law and Justice, Division of Behavioral and Social Sciences and Education. Washington, D.C.: The National Academies Press, 2005.

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# Firearms and Violence

- **What Do We Know?**
- **Charles Wellford, John V. Pepper, and Carol Petrie, eds.**  
2005. *Firearms and Violence: A Critical Review*. Washington, D.C.: The National Academies Press.

# Committee Members

- Charles Wellford,  
Department of Criminology  
and Criminal Justice,  
University of Maryland
- Robert Boruch, Graduate  
School of Education,  
University of Pennsylvania
- Linda B. Cottler,  
Department of Psychiatry,  
Washington University
- Robert D. Crutchfield,  
Department of Sociology,  
University of Washington
- Joel L. Horowitz,  
Department of Economics,  
Northwestern
- Robert L. Johnson,  
Adolescent and Young Adult  
Medicine, Medical School of  
New Jersey
- Steven D. Levitt,  
Department of Economics,  
University of Chicago
- Terrie E. Moffitt,  
Department of Psychology,  
University of Wisconsin

# Committee Members

- Susan A. Murphy, Department of Statistics, University of Michigan
- Karen E. Norberg, Department of Psychiatry, Boston University
- Peter Reuter, School of Public Affairs, University of Maryland
- Richard Rosenfeld, Department of Criminology and Criminal Justice, University of Missouri, St. Louis
- Joel Waldfogel, Public Policy and Management Department, the Wharton School, University of Pennsylvania
- James Q. Wilson, Department of Management and Public Policy, emeritus, University of California, Los Angeles
- Christopher Winship, Department of Sociology, Harvard University

# Executive Summary

- Firearms and violence raise many contentious issues:
  - Tens of thousands are injured and killed annually
  - Firearms are used to deter criminal acts
  - Firearms are used for recreation

# Policy Dilemmas

- Public authorities must consider:
  - Conflicting constitutional claims
  - Facts and opinions regarding firearms and violence
  - Where the balance lies between the costs and benefits of private gun ownership

# Committee Charge

- Assess the strengths and limitations of existing research and data on gun violence and identify important gaps in knowledge
- Describe new methods to put data and research together to support improved prevention, intervention and control strategies for gun-related violence
- Use existing data and research to develop models of existing firearms markets

# Committee Charge

- Examine the complex ways in which firearm violence may become embedded in community life
- Consider whether firearm-related homicide and suicide have become accepted as ways of resolving problems, especially for youth

# "GUN CONTROL"

- "Many people reading this report will ask whether the committee favors or opposes gun control ... Resolving this issue is not our task."
- Political officials responding not only to data and research but also strongly held views will make this kind of decision
- The committee has not addressed this

# Major Conclusions

- Many existing findings can support policy decisions:
  - The prevalence of firearm-related injuries and deaths
  - Descriptive information on firearms markets
  - The relationship between rates of gun ownership and violence

## Examples: What We Know

- Higher rates of household gun ownership are associated with higher rates of gun suicides
- Illegal diversion from legitimate commerce are important sources of crime guns and those used in suicide
- Firearms are used defensively many times per day
- Some types of targeted police interventions may lower gun crime and violence

# Much Remains Unknown

- Many questions cannot be addressed with existing data and research:
  - Methodological problems inherent in unraveling causal relationships between firearms policy and violence are often not considered or adequately addressed
  - Data are too weak to support strong policy statements

## **Examples: What We Don't Know**

- No credible evidence that right-to-carry laws decrease or increase crime
- No empirical evidence that the more than 80 gun violence prevention programs the committee examined have any effect on children's behavior, knowledge, attitudes or beliefs about firearms

# Data Recommendations

## Data Problems

- The federal government should support a systematic program of data collection and research that specifically addresses firearms and violence
  - Ownership data are too limited (GSS)
  - No scientific data exist on firearms markets
  - Limited data on injury and crime

# Data Recommendations

## New Data Collections

- The committee supports the development and maintenance of the National Violent Death Reporting System and the National Incident-Based Reporting System — both of these systems provide comprehensive data on violent deaths and crime, a small part of which is data on firearms use
- The committee recommends a research effort to determine whether or not ownership data (ownership includes access and possession) can be accurately collected with minimal risk to legitimate privacy concerns

# Data Recommendations

## Data Access

- The committee recommends that appropriate access be given to data maintained by regulatory and law enforcement agencies including the trace data maintained by ATF, registration data maintained by the FBI and state agencies, and manufacturing and sales data for research purposes

# Research Findings Markets

- It is not known whether it is possible to shut down illegal pipelines of guns to criminals nor the costs of doing so, but answers to these questions are essential to knowing whether access restrictions are a possible public policy. The committee recommends that work be started to think carefully about possible research and data designs to address these issues.

## Research Recommendations Defensive Gun Use

- The committee recommends that a research program be established to 1) clearly define and understand what is being measured; 2) understand inaccurate response in the national gun use surveys; 3) apply known methods or develop new methods to reduce reporting errors to the extent possible

# Research Findings Right-to-Carry Laws

- Because of a) the sensitivity of the empirical results to minor changes in model specification; b) a lack of robustness of the results to the inclusion of more years of data; c) the statistical imprecision of the results, the evidence does not adequately indicate either the sign or magnitude of a causal link between crime rates and these laws

# Summary of Results of RTC Laws

	Years	Violent Crime	Murder	Violent Crime	Murder
1. Lott (2000)	1992	-4.9%	-7.7%	-0.9%	-3.0%
COMMITTEE REPLICATION, 2000 DATA					
All Covariates, All Years <sup>a</sup>	1992	-1.76	-9.01**	-2.15**	-3.41**
All Covariates, All Years <sup>a</sup>	2000	4.12**	-8.33**	-0.95**	-2.03**
All Covariates, 4 Year Restriction	2000			-0.27	0.48
State and Year Effects Only, All Years	2000	12.92**	-1.95	-0.62**	0.12

# Suicide

- States, regions and countries with higher rates of gun ownership have higher rates of gun suicide
- The risk of suicide is highest immediately after the purchase of a gun
- Some gun policies reduce gun suicides but not total risk of suicide

## **Research Recommendations Individual-Level Studies**

- Although some knowledge may be gained from further ecological studies, the committee recommends support of further individual-level studies of the link between firearms and both lethal and non-lethal suicidal behavior

# Research Recommendations Prevention

- In light of the lack of evidence, the committee recommends that firearm violence prevention programs should be based on general prevention theory, that research should incorporate evaluation into implementation efforts, and that a sustained body of empirical research be developed to study the effects of different safety technologies on violence and crime

# Research Recommendations Criminal Justice Interventions

- The committee recommends that a sustained, systematic research program be conducted to assess the effects of targeted policing and sentencing aimed at firearms offenders. Additional insights may be gained from using observational data from different applications, especially if combined with more thoughtful models of policing and crime

# DISSENT FROM JAMES Q. WILSON

- Applies to one part of Chapter 6 on the Effects of Right-to-Carry Laws
- A scientific difference; not a political one
- If we knew:
  - Who legally carries concealed firearms
  - Counties where these people lived
  - Homicides that occurred in every county
  - Things that affect the crime rate
- Then we could estimate rather exactly the effect on the homicide rate of people being able to defend themselves.

## Dissent Cont.

- We do not know any of these things. Therefore, we must estimate these effects.
- One test the committee applied to the Lott estimates was to see if his economic model still held true if newer data, not available when he first published his results, would change his findings.

## Dissent Cont.

- Lott's statement that counties that allow people to carry concealed weapons had a lower homicide rate, other things being equal, than did counties in which it was difficult to carry a concealed firearm was confirmed by the committee in Tables 6-5, 6-6, and 6-7. To me that suggests that, at least with respect to murder, Lott's original estimate remains true.

## Dissent Cont.

The Committee has responded to my view in two ways:

- Right-to-carry laws do not change the murder rate when one ignores other factors that affect crime.
- Second, the Committee argues that the effect of right-to-carry laws is delayed and not immediate. There are at least two reasons to doubt this view. One is that it takes time for any law to have an effect; people do not respond to new laws instantaneously. The other is that the Lott finding may prove to be especially true when crime rates are rising and less true when they are falling.

## **Dissent Cont.**

The Committee and I disagree on these matters. Though many people have strong feelings on this matter, the dispute between the Committee and myself is based on statistical inferences and not on political arguments.

# Committee Response to Wilson

The committee's review found:

- Published studies on the effects of right to carry laws on murder are sensitive to small variations in data and specification. The results are inconsistent in these studies and it is impossible to tell which is correct.

## Response Cont.

The committee's control variable analysis shows:

- Estimates are relatively small and nonsignificant when covariates are not included
- Detecting the effect, if any, requires controlling for the appropriate confounding variables

## Response Cont:

The committee trend model analysis shows:

- Using Lott's trend model and restricting post-adoption years to 5 years or fewer switches the homicide estimates from negative to positive
- All of the models attempt to control for crime trends. If the effects vary by time, then all of the existing models are misspecified

## Conclusion

- Evidence on homicide is not noticeably different from that on other crimes and cannot be easily separated
- The scientific evidence does not support Professor Wilson's position

*Firearms & Violence  
Research Working Group*

Criminal Justice Interventions

MICHIGAN STATE  
UNIVERSITY

Edmund F. McGarrell  
Director and Professor  
School of Criminal Justice

# Firearms & Violence (2005) — Criminal Justice Interventions

1. Gun courts
2. Enhanced sentences
3. Problem-oriented policing
4. Policing violent gun offenders

# Criminal Justice Interventions

1. Gun courts
2. Enhanced sentences
  - Enhancements for using gun in crime
  - Mandatory penalties for unlawful carrying
3. Problem-oriented policing
  - Place-based problem-oriented policing
  - Policing gun hotspots
4. Policing violent gun offenders
  - St. Louis Firearms Suppression Program
  - Boston Gun Project & Operation Ceasefire

# Criminal Justice Interventions

- Review evidence at time of National Research Council (NRC) report
- Review questions raised in NRC report
- Findings since NRC
- Criminal justice interventions that have emerged since NRC
- Begin discussion of lingering research questions

# 1. Gun Courts — NRC

- Jefferson County Juvenile Gun Court
- One study, significantly lower recidivism but nonexperimental and no control for pre-existing difference

# 1. Gun Courts — Post-NRC

- Several gun courts have emerged (e.g., Brooklyn, Cambridge, Philadelphia, Providence, Queens)
- New studies?

## 2. a. Enhancements for using gun in crime — NRC

- NRC cites 10 studies
- Some evidence of impact on some crimes but findings mixed
- Implementation issues noted (prosecutors do not impose; little change in sentencing)

## 2. a. Enhancements for using gun in crime

- NRC — Project Exile – Decline likely reflects pre-existing trend (Raphael and Ludwig, 2003)
- Post-NRC — Longer-term analysis suggests Exile may have reduced homicide levels (Rosenfeld, Fornango and Baumer, 2005)
- Project Safe Neighborhoods research (later)

## 2.b. Mandatory Penalties for Unlawful Carrying — NRC

- NRC cites eight studies
- Mixed and contradictory results but some evidence may have impact

## 2. Enhanced Sentences for Criminal Use of Firearms — NRC

- “Committee recommends more rigorous study of firearms sentencing enhancements laws at the city level” (p. 229)

## 2. Enhanced Sentences for Criminal Use of Firearms — Post-NRC

### Domestic Violence Prohibitions

- Vigdor and Mercy, 2006 — laws restricting access to firearms by individuals who are subject to a restraining order; female intimate partner homicide (IPH) 7% reduction in states following passage (state level)
- Zeoli and Webster, 2010 — State statutes restricting those under Domestic Violence Restraining Order (DVROs) from accessing firearms and laws allowing the warrantless arrest of DVRO violators are associated with reductions in total and firearm IPH (city level)
- Bridges, Tatum and Kunselman, 2008 — IPH negatively related to state laws prohibiting firearm possession during period of restraining order (state level)

## 2. Enhanced Sentences for Criminal Use of Firearms — Post-NRC

- Any other studies?

## 3.a. Place-Based Problem-Oriented Policing — NRC

- Noted increased importance of place and evidence that place-based, problem-oriented policing shows promise generally (as opposed to gun crime specifically)
- (series studies, e.g., Minneapolis, Baltimore, Seattle)

## 3.a. Place-Based Problem-Oriented Policing — Post-NRC

- “Longitudinal work examining the developmental trajectories at micro levels (Weisburd et al., 2004; Weisburd, Morris and Groff, 2009) has consistently identified tremendous crime concentration at specific places.” (Groff, Weisburd and Ling, 2010)
- “Roughly 1 percent and 8 percent of street segments and intersections in Boston are responsible for nearly 50 percent of all commercial robberies and 66 percent of all street robberies, respectively, between 1980 and 2008.” (Braga, Hureau and Papachristos, 2010)
- “... 5% of street segments and intersections in Boston generated 74% of shootings over this time period and the same hot spot micro places experienced nearly all of the upswings and downturns in Boston gun violence over the 29-year study time period.” (Braga, Papachristos and Hureau, 2010)

## 3.a. Place-Based Problem-Oriented Policing — Post-NRC

- Philadelphia foot patrol in violent crime hot spots experiment (Ratcliffe et al., 2011)

*“targeted foot patrols in violent crime hotspots can significantly reduce violent crime levels as long as a threshold level of violence exists initially” (p. 796)*

- Jacksonville problem-oriented policing vs. saturation patrol in violent crime hot spots experiment (Taylor, Koper and Woods, 2011)
- POP = 33% reduction in violent crime hot spots; saturation patrol no effect

## 3.a. Place-Based Problem-Oriented Policing — Post-NRC

### Philadelphia and Jacksonville

- Strength = experimental design
- Limitation = not focused specifically on gun crime

### Campbell Systematic Review (Braga, 2007)

- Seven of nine experimental or quasi-experimental studies of hot spots policing demonstrate impact on some types crime/disorder

Additional studies evaluating place-based on firearms crime reduction?

## 3.b. Policing Gun Hotspots — NRC

- Kansas City (Sherman and Rogan, 1995)
- Indianapolis (McGarrell et al., 2001)
- Pittsburgh (Cohen and Ludwig, 2003)

## 3.b. Policing Gun Hot Spots — NRC

- “The evidence from the three target place-based firearm and crime suppression patrols is compelling.” (p. 234)
- But quasi-experimental design means subject to assumption that comparison areas are equivalent
- Remaining issues:
  - Long-term impact?
  - Substitution, adaptation and deterrence?

## 3.b. Policing Gun Hotspots — NRC

- “The committee recommends that a sustained and systematic research program be developed to studying the impact of different place-based gun suppression patrol and targeted policing approaches in general.” (p. 235)
- Any new studies?

(Koper and Mayo-Wilson, 2006 — add studies from Cali and Bogota to Kansas City, Indianapolis and Pittsburgh in a Campbell Systematic Review [Koper, 2003]; similar conclusions to NRC)

## 4.a. Policing Violent Gun Offenders — People-Based Strategies — NRC

- St. Louis Youth Firearm Suppression Program (Rosenfeld and Decker, 1996)
- Community and parental support for consent to search for firearms
- No outcome assessment
- Any new studies?

## 4.b. Policing Violent Gun Offenders — Boston Operation Ceasefire — NRC

- Series studies by Braga, Kennedy and colleagues
- “Strong association between implementation and drop in youth violence.” (p. 239)
- Decline greater than other comparable cities but
- “It is very difficult to specify the exact role it (Ceasefire) played in the reduction of youth homicide in Boston.” (p. 239)

## 4.b. Policing Violent Gun Offenders — Boston Operation Ceasefire — NRC

- Some evidence emerging from Minneapolis, Baltimore, Los Angeles, Stockton and Indianapolis but mostly descriptive at time of report
- “The committee recommends that a sustained and systematic research program should be conducted to assess the effect of targeted policing aimed at high-risk offenders.” (p. 241)

## 4.b. Policing Violent Gun Offenders — Boston Operation Ceasefire — Post-NRC

Series peer-reviewed studies find similar findings to Boston

- Indianapolis (McGarrell et al., 2006; Corsaro and McGarrell, 2009, 2010)
- Lowell (Braga, McDevitt and Pierce, 2006)
- Chicago (Papachristos, Meares and Fagan, 2007)
- Stockton (Braga, 2008)
- Cincinnati (Engel, Corsaro and Tillyer, 2010)
- Most studies follow similar evaluation strategy to Boston Ceasefire
- Newark (Boyle et al., 2010) — no significant reduction

## 4.b. Policing Violent Gun Offenders — Boston Operation Ceasefire — Post-NRC

- Meta-analysis

“Meta-analysis suggests that focused deterrence strategies are associated with an overall statistically significant, medium-sized crime reduction effect.” Braga, A.A., and D. Weisburd (forthcoming)

- Other studies?

## Post-NRC — Project Safe Neighborhoods

- Major DOJ initiative launched 2001
- Funding through task forces in every U.S. Attorney's Office
- Goal — reduce gun crime

# Post-NRC — Project Safe Neighborhoods

## **Exile**

- Increased federal prosecution of gun crime
- Joint gun case screening
- Heavy media campaign

## **Boston Ceasefire**

- Multiagency team
- Inclusion research partner
- Problem-solving model
- About one-third to one-half of sites used multiple Ceasefire components of call-in meetings, probation and parole home visits, incident reviews, joint gun case screening

Large number of sites also used directed police patrol in firearms crime hot spots

Large # sites also utilized directed police patrol in firearms crime hot spots

# Post-NRC — Project Safe Neighborhoods

- Implementation measured by level of federal gun prosecution, range of partnerships, integration of research
- For all U.S. cities with populations greater than 100,000, being a Project Safe Neighborhoods target city in higher implementation districts was associated with reductions in violent crime (2000 to 2006); (hierarchical generalized linear models with controls for population density, concentrated disadvantage, police and correctional resources)

McGarrell et al., 2010

# Post-NRC — Project Safe Neighborhoods

## Major limitations

- Design subject to pre-existing differences in treatment and comparison cities
- Mixed model — if there is impact, what is the cause?

# Post-NRC — Additional Studies

- Boston and Chicago re-entry focused on violent offenders
  - Braga, Piehl and Hureau, 2009
  - Papachristos and colleagues (in field)
- Drug market intervention
  - Corsaro, Brunson and McGarrell, 2010; forthcoming; Corsaro et al., forthcoming
  - Some crime reduction impact but mixed findings on violence
  - RAND evaluation (in field)

## Post-NRC — Additional Studies

- Hawaii Opportunity with Probation Enhancement (HOPE)
  - Randomized controlled trial – statistically significant reductions (arrests, drug tests, revocations, prison days) (Hawken and Kleiman, 2009)

## Post-NRC — Additional Studies

- Comprehensive Anti-Gang Initiative (CAGI)
  - McGarrell et al., 2011
  - No overall effect
  - Controlling for level of implementation, high implementation sites experienced declines compared to low implementation and non-CAGI cities (propensity matching)
  - Similar limits as Project Safe Neighborhoods evaluation

## Post-NRC — Additional Studies

- Additional studies of criminal justice interventions?

# Theoretical and Design Issues

- Strengthening designs
- Distinguishing impact on communities, social networks, individuals
- Capturing implementation variation (e.g., sentencing enhancements)
- Sustainability
  - Design (regression to mean; long-term impact)
  - Theoretical (e.g., deterrence decay)
  - Programmatic (organizational sustainability)

# Theoretical and Design Issues

- What is producing impact?
  - Deterrence/incapacitation
  - Perceived deterrence and relationship to changes in sanction certainty/severity; communication strategies
  - Social support
- Data issues
  - Gun crime
  - Gang crime

## Additional Research Questions

- “paucity of data on gun prevalence, gun carrying, and gun use at the individual level of analysis” (Piquero, 2005)

# Prevention Theory in Firearms

David Hemenway, PhD  
Harvard Injury Control Research Center

NIJ Firearms Research Working Group  
December 1, 2011

1. Public Health

2. Suicide

3. Self-Defense Gun Use

# What Public Health Adds to the Criminal Justice/Criminology Approach

# National Research Council (NRC)

No one on the committee was an injury-control professional.

Few worked directly in public health (e.g., no one worked at a public health school).

Gratuitous, superfluous comments @ injury-prevention field:

“Some of the problems in the suicide literature may also be attributable to the intellectual traditions of the injury prevention field. An unintentional injury prevention model can lead to misunderstandings when it is applied to the study of intentional injury; the investigation of intentional injury needs to take account of the complexities of preference, motivation, constraint, and social interaction among the individuals involved.” (194)

# Public Health Approach

- Broad approach
- Assets as well as liabilities
- Upstream prevention  
vs. proximate cause,  
don't focus just on criminal

# Public Health Approach

1. Prevention (proactive vs. reactive)
2. Community (vs. one at a time)
3. No-fault/blame
4. Systems approach

# Motor Vehicles

Most motor vehicle *deaths* are associated with clear and deliberate unlawful behavior by motorists

(e.g., speeding,  
drunk driving,  
running red lights)



Emphasis also on  
agent of injury – car  
physical environment – roads  
social environment – e.g., designated  
driver

Are drivers today better and more law-abiding?

Fatalities per vehicle mile fall 90%

# Medical Lens

Criminology

Public Health

Sociology  
(factor analysis)

Epidemiology  
(case control)

# Medical Lens

Criminology

Public Health

Data

Arrests

ED visits



- a) Child abuse
- b) Intimate partner violence
- c) Bullying (verbal abuse, intimidation)

# Public Health Approach

- I. Upstream Prevention
- II. Medical Lens
- III. Advocacy + Action

Bring together a wide array of organizations / interests under the banner of public health

Change social norms (as well as formal policies)



HARVARD  
School of Public Health

What has the Harvard  
School of Public Health  
been doing in violence  
prevention?

# Surveillance Systems

National Violent Death Reporting System



# HOMICIDE | suicide

<i>Victim Category</i>	<i># of incidents</i>	<i># of suspects committing suicide</i>	<i>%</i>
All homicides	<b>534</b>	<b>31</b>	<b>6%</b>

# HOMICIDE | suicide

<i>Victim Category</i>	<i># of incidents</i>	<i># of suspects committing suicide</i>	<i>%</i>
All homicides	<b>534</b>	<b>31</b>	<b>6%</b>
Intimate partner	<b>76</b>	<b>28</b>	<b>37%</b>
Female by male	<b>58</b>	<b>27</b>	<b>47%</b>
Female by male with firearm	<b>32</b>	<b>22</b>	<b>69%</b>

# The NVDRS Advantage

## Unintentional Firearm Death

### Victims

<b>Age</b>	<b>N</b>	<b>% Other Inflicted</b>
0-14	72	78%
15-24	121	60%
25-54	127	33%
55+	43	19%
<b>Gender</b>		
Male	330	47%
Female	33	73%

# Shooters in Other-Inflicted

<b>Age</b>	<b>% of Total</b>
0-14	35%
15-24	46%
25-54	14%
55+	4%
<b>Gender</b>	
Male	92%
Female	8%

# Boston Data Project

- High school surveys
- Adult surveys
- Assemble existing data

# Boston Youth Survey: Violence

- Fear
- Witnessing
- Victimization
- Perpetration
- Peer
- Sibling
- Dating

# Sleep and Aggression



## Hours of Sleep

	8+ (14%)	6-7 (58%)	≤5 (30%)
Aggressive behavior in past month	30%	38%	40%

Amount of sleep associated with what time school starts.

# Peer Perceptions of Gun Carrying

## Gun Carrying Overestimates

Self-reported Carrying	5.5%
Mean estimate of classmates carrying	15.9%
Mean estimate of neighborhood carrying	32.6%

# Gun Carrying Overestimates

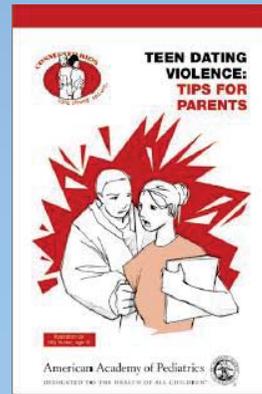
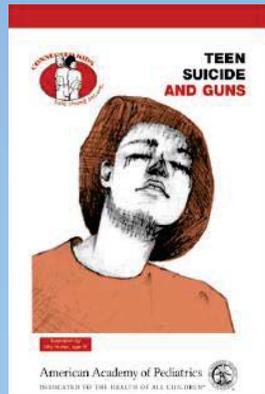
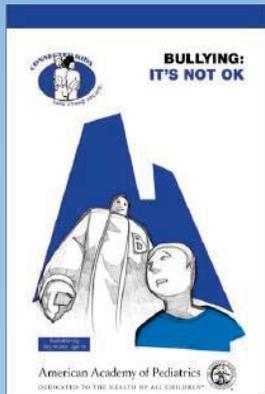
	Overestimates of Peer Carrying (>15%)	Overestimates of Peer Carrying (<15%)
Self-reported Carrying	7.8%	2.2%

# Difficulty for Teenagers to Get a Gun

	EASY	DIFFICULT	IMPOSSIBLE
Estimated Difficulty for OTHER KIDS to get gun	68%	24%	8%
Estimated difficulty of SELF to get gun	39%	24%	36%
Ideal world- How easy for teens to get a gun	18%	14%	68%

# Collaborations

1. Helping pediatricians help parents prevent violence (e.g., corporal punishment, bullying)



# Collaborations (cont.)

- Working with nonprofits to change media role (Hollywood, reporters) (e.g., “Where did the gun come from?”)



<http://www.wheredidtheguncomefrom.com/>

## Collaborations (cont.)

### 3. Helping students “speak up”



Real Solutions to Gun Violence



<http://www.paxusa.org>

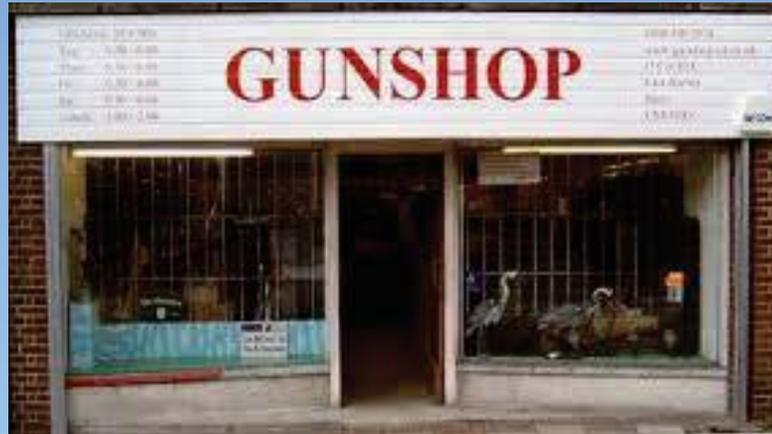
## Collaborations (cont.)

4. Working with survivors  
(e.g., toolkit for first responders)



# Collaborations (cont.)

5. Working with gun stores to reduce gun suicide



# Collaborations (cont.)

6. Working with a dozen grassroots community organizations → helping them work together



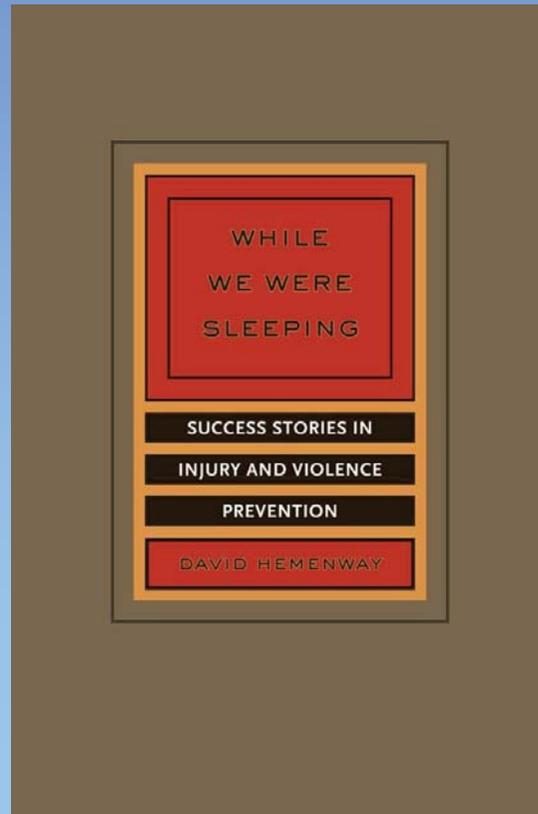
SOUTH BOSTON COMMUNITY HEALTH CENTER



# What does public health add?

- Government institutions: CDC, NIH, state and local health departments
- New research professionals:
  - Doctors and public health professionals
  - New data sources
  - New analytic tools
- Energize and coordinate nonprofits

# Many Public Health Successes



Having a household gun:

Good for society?

Good for the individual household?

Costs:

Accidents

Suicide

Assault

Intimidation

Benefits:

Deterrence

Thwart crime

Self-defense gun use

and who actually gets shot

# Suicide

Limitation of NRC: reach the same conclusion in all areas:

Really don't know anything

When actually know a lot more in some areas more than others...

# Suicide

“All of the (case control) studies that the committee reviewed have found a positive association between household gun ownership and suicide risk.” (173)

“There appears to be a cross-sectional association between rates of household gun ownership and overall rates of suicide, reported on both sides of the gun policy debate.” (193)

Main conclusion: “the committee cannot determine whether these associations demonstrate causal relationships.” (6)

“The issue of substitution has been almost entirely ignored in the literature of guns and suicide.” (194)

Lots of studies since NRC report  
actually completed:

A) Gun owners are NOT more depressed or suicidal

Multivariate odds ratios:

Living in household with firearm versus not living in household with firearm from National Co-morbidity Survey

Anxiety disorder	1.0
Mood disorder	0.9
Substance Use	0.9
Suicide Ideation	0.8
Suicidal Plan	0.5

Miller *et al.* (2009) "Recent psychopathology, suicidal thoughts and suicide attempts in households with and without firearms." *Injury Prevention*.

# Mental Health of Gun Owners

(additional confirming studies)

- a) Oslin et al. (2004). “Managing suicide risk in late life: Access to firearms as a public health risk.” *American Journal of Geriatric Psychiatry*.
- b) Ilgen et al. (2008). “Mental illness, previous suicidality and access to guns in the United States. *Psychiatric Services*.
- c) Sorenson and Vittes. (2008). “Mental health and firearms in community-based surveys: Implications for suicide prevention.” *Evaluation Review*.
- d) Kolla, O’Connor and Lineberry. (2011). “The base rates and factors associated with reported access to firearms in psychiatric inpatients. *General Hospital Psychiatry*.

## B) Cross-Sectional Ecological Studies of Gun Ownership and Suicide

“Potentially valuable state-level information could be made available through the regular inclusion of gun-ownership questions in the Behavioral Risk Factor Surveillance System.” (NRC, 1995)

# Cross-Sectional Ecological Studies of Gun Ownership and Suicide

“Potentially valuable state-level information could be made available through the regular inclusion of gun-ownership questions in the Behavioral Risk Factor Surveillance System.” (NRC, 1995)

Such questions were included in 2001, 2002, 2004 Behavioral Risk Factor Surveillance System (BRFSS), the world’s largest telephone survey (>200,000 respondents)

# Cross-Sectional State Studies

(results identical if using BRFSS or percentage of firearms suicides [FS/S])

Controlling for:

- Poverty
- Urbanization
- Unemployment
- Alcohol/substance abuse
- Serious mental illness

Results: more guns  $\longrightarrow$  more gun suicide  
 $\longrightarrow$  same non-gun suicide  
 $\longrightarrow$  more overall suicide

Miller et al. (2007) "Household firearm ownership and rates of suicide across the 50 U.S. states." *Journal of Trauma*.

GUNS AND SUICIDE IN THE UNITED STATES

**Data on Suicides in States with the Highest and Lowest Rates of Gun Ownership, 2001–2005.\***

<b>Variable</b>	<b>States with the Highest Rates of Gun Ownership</b>	<b>States with the Lowest Rates of Gun Ownership</b>	<b>Ratio of Mortality Rates</b>
Person-years	195 million	200 million	
Percent of households with guns	47	15	
<b>Male</b>			
No. of firearm suicides	14,365	3,971	3.7
No. of nonfirearm suicides	6,573	6,781	1.0
Total no.	20,938	10,752	2.0
<b>Female</b>			
No. of firearm suicides	2,212	286	7.9
No. of nonfirearm suicides	2,599	2,478	1.1
Total no.	4,811	2,764	1.8

\* The states with the highest rates of gun ownership included here are Wyoming, South Dakota, Alaska, West Virginia, Montana, Arkansas, Mississippi, Idaho, North Dakota, Alabama, Kentucky, Wisconsin, Louisiana, Tennessee, and Utah. The states with the lowest rates of gun ownership included here are Hawaii, Massachusetts, Rhode Island, New Jersey, Connecticut, and New York. Data on gun ownership are from the 2001 Behavioral Risk Factor Surveillance System. Data on suicides are from the Centers for Disease Control and Prevention Web-Based Injury Statistics Query and Reporting System (WISQARS; [www.cdc.gov/ncipc/wisqars](http://www.cdc.gov/ncipc/wisqars)).

# Suicide Rate 1994 – 1998 per 100,000

State	Households with Firearms (%)	Overall	Firearm	Non-Firearm
ME	45%	13.5	7.9	5.6
VT	48%	12.3	7.9	4.4
NH	33%	12.1	6.8	5.3
CT	21%	8.9	3.7	5.2
RI	16%	8.3	3.0	5.3
MA	14%	8.2	2.4	5.8
NJ	12%	7.3	2.4	4.9

Source: Miller et al., 2004. Firearms and suicide in the Northeast. *J Trauma*.

# Cross-Sectional Ecological Studies

## Gun Ownership and Suicide

(additional confirming results)

Kim et al. (2011). “Altitude, gun ownership, rural areas and suicide.” *Am Journal of Psychiatry*. (county-level analysis).

Kubrin and Wadsworth. (2009). “Explaining suicide among blacks and whites: how socioeconomic factors and gun availability affect race-specific suicide rates.” *Social Science Quarterly*. (city-level analysis).

# C) Ecological Time-Series Analysis (regional analysis)

(1981-2002)

Control for age

poverty

alcohol

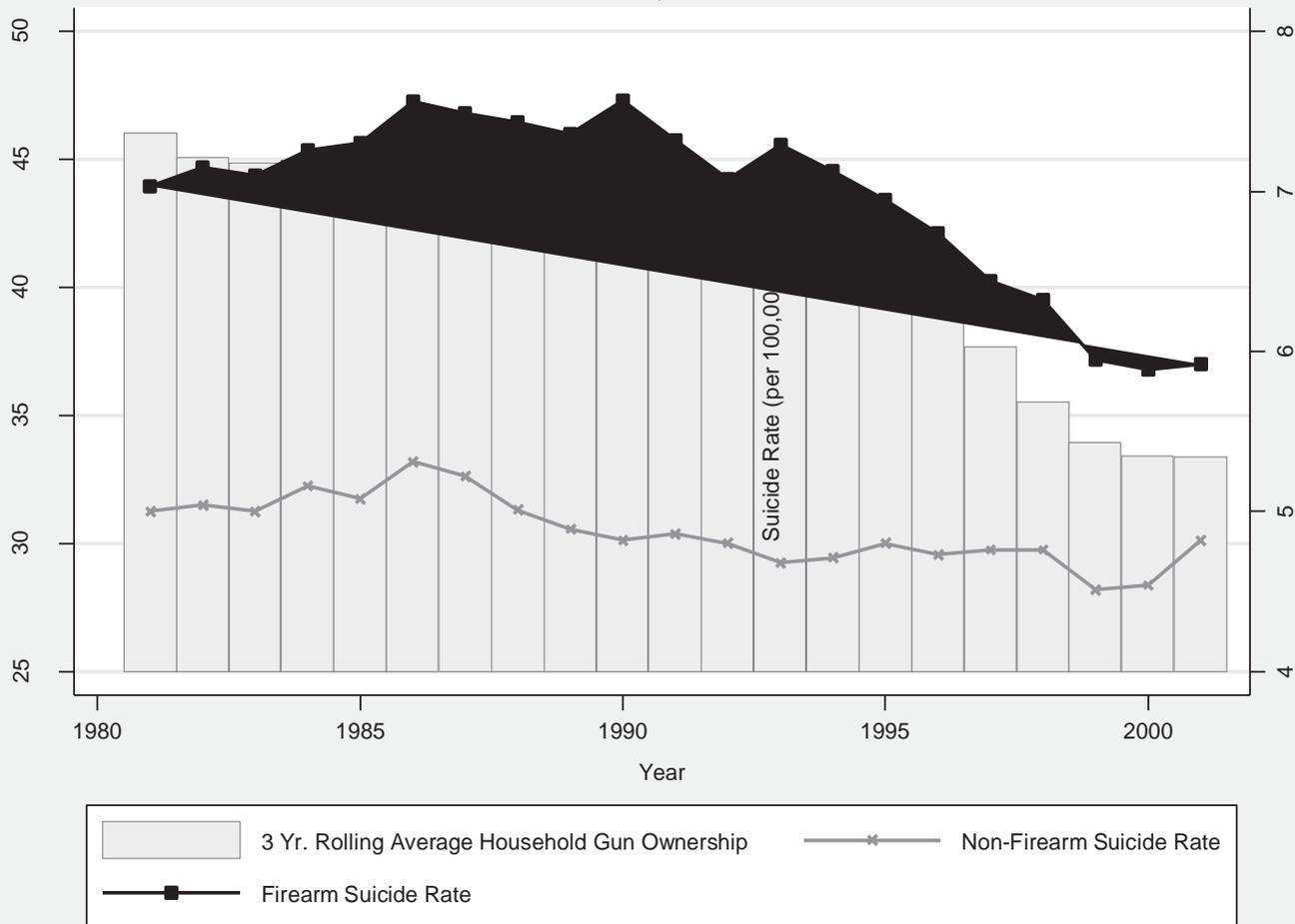
unemployment

region

Changes in household gun ownership associated with significant changes in rates of gun suicide and overall suicide; not nongun suicide (for men, women, children).

Miller et al. (2006). "The association between changes in household firearm ownership and rates of suicide in the United States, 1981-2002." *Injury Prevention*.

Figure 2. Household gun ownership levels and rates of firearm and non-firearm suicide mortality: United States, 1981-2002



Miller M, Azrael D, Hepburn L, Hemenway D, Lippmann SJ. The association between changes in household firearm ownership and rates of suicide in the United States, 1981-2002. *Inj Prev.* 2006; 12(30):178-82

## D) Gun control laws may reduce suicide

Webster et al. (2004). “Association between youth-focused firearm laws and youth suicide.” *Journal of American Medical Association*.

Lubin et al. (2010). “Decrease in suicide rates after a change of policy reducing access to firearms in adolescents: A naturalistic epidemiological study.” *Suicide and Life-threatening behavior*.

Andres and Hempstead. (2011). “Gun control and suicide: The impact of state firearm regulations in the United States.” *Health Policy*.

Slater. (2011). “The missing piece: A sociological autopsy of firearm suicide in the United States.” *Suicide and Life-threatening Behavior*.

E)

## Case Control Studies

All continue to find a gun in the home a risk for completed suicide

Grassel et al. (2003). "Association between handgun purchase and mortality from firearm injury." *Injury Prevention*.

Wiebe. (2003). "Homicide and suicide risks associated with firearms in the home: A national case-control study," *Annals of Emergency Medicine*.

Kung, Pearson and Liu. (2003). "Risk factors for male and female suicide decedents ages 15-64 in the United States: Results from the 1993 National Mortality Followback Survey." *Social Psychiatry and Psychiatric Epidemiology*.

Dahlberg, Ikeda and Kresnow. (2004). "Guns in the home and risk of a violent death in the home: Findings from a national study." *American Journal of Epidemiology*.

Grossman et al. (2005). "Gun storage practices and risk of youth suicide and unintentional firearm injuries." *Journal of American Medical Association*.

F)

## Substitution

Daigle. (2005). “Suicide prevention through means restriction: Assessing the rule of substitution — a critical review and synthesis.” *Accident Analysis and Prevention*.

(reviews 45 articles)

“Generally speaking, the risk of substitution or displacement towards other means seems small.”

“Many suicidal persons have a preference for a specific method.”

“Suicidal crises are often very short-lived.”

G)

Findings have theoretical/psychological support:

Suicides often impulsive —  
risks transitory

# Nearly Lethal Suicide Attempts (Houston)

*N*=153 (ages 13-34)

Time between thinking about suicide and taking action:

<5 minutes      24%

<20 minutes    48%

<1 hour          70%

<8 hours        86%

Simon et al. 2001. *Suicide and Life-Threatening Behavior*. (data from author)

# What Percent of Survivors of Near-Lethal Suicide Attempts Eventually Complete Suicide?

- 10%
- 25%
- 50%
- 75%
- 90%

< 10 %

*of survivors of near-lethal suicide attempts  
commit suicide*

*e.g. Owens et al. 2002. Fatal and non-fatal repetition of self harm: a systematic review. British J Psychiatry.*

H)

## Means Restriction Internationally

Gunnell et al. (2007). “The impact of pesticide regulations on suicide in Sri Lanka.” *International J of Epidemiology*.

Lubin. (2010). “Decrease in suicide rates after a change in policy reducing access to firearms in adolescents: A naturalistic epidemiological study (Israel).” *Suicide and Life-threatening Behavior*.

I)

## Means Restriction Policies Overall

23 suicide experts from 15 countries review the evidence on suicide prevention

Conclusion: “Physician education in depression recognition and treatment, and restricting access to lethal means reduce suicide rates. Other interventions need more evidence of efficacy.”

Mann et al. (2005). “Suicide prevention strategies: A systematic review.”  
*Journal of American Medical Association.*

## Action:

# Means Matter Campaign (website)

1. State health departments
2. Counseling on Access to Lethal Means (CALM) online
3. Emergency Department Safety Assessment and Follow-up Evaluation (ED-SAFE)
4. Gun shops

# Self-Defense Gun Use

# Evidentiary Standards

Tonry. (2011). *Oxford Handbook of Crime and Criminal Justice*.

Charles F. Wellford

Guns and Crime

Do guns reduce the harm associated with the crime being perpetrated?

“The answer is yes, harm is reduced — both physical harm and monetary loss.”

“We do know that when a potential crime is imminent, the use of a gun to defend oneself reduces harm and loss to the victim.”

Only four citations, most recent 2001

Limitations: Data only from National Crime  
Victimization Survey (NCVS)  
Don't know causation  
Don't know about fatalities  
Don't know if injury occurred  
before or after self-defense  
gun use

Evidence from NCVS that self-defense  
gun use not superior to other forms of  
self-defense

# Effectiveness

Percent of Victims Physically Injured After Self-Defense (1992-2001)  
NCVS (1992-2001)

Type of Victim Action	
Call Police	0.9
Run Away	1.8
Threaten/Attack w/ Gun	2.5
Struggled	4.1
<i>All</i>	2.4

Kleck & Kates. Armed, 2001.

In multivariate analysis, only “run away, hide” is significantly better than “call police” in terms of not receiving an injury.

In terms of serious injury, nothing is significantly better than calling the police.

Tark and Kleck. (2004). “Resisting crime: the effects of victim action on the outcomes of crime.” *Criminology*.

# “2.5 million” Self-Defense Gun Uses?

Large False Positive Problem of Private Surveys

- a) Telescoping
- b) Rare events PLUS self-presentation bias

All surveys have problems with accuracy

Age

Employed

Driver's license

Library card

Own home

Wear seat belt

Voted in last presidential election

# False positive problem for rare events

If actual incidence is 1%:

99/100 respondents can be false positive

1/100 respondents can be true positive or  
false negative

# Results of Screening Test

TRUTH

SCREEN

	Yes	No	Total
Positive	a	b	a+b
Negative	c	d	c+d
Total	a+c	b+d	a+b+c+d

Sensitivity  $a/(a+c)$

Specificity  $d/(b+d)$

# Results of a Screening Test

- Assumptions: 66/5000 screens report a positive finding
  - Test Sensitivity 99%
  - Test Specificity 99%

## TRUTH

	Yes	No	
Positive		False positive	66
Negative	False negative		4934
Total			5000

SCREEN  
RESPONSE

# TRUTH

	Yes	No	
Positive	16	50	66
Negative	0.16	4934	4934
Total	16	4984	5000

SCREEN  
RESPONSE

# Extrapolation of Responses From Rare Events

National Rifle Association membership

*Sports Illustrated* subscriber

Gave blood

Donate to gun control organization

Hospitalized for a fracture

Stunted growth (height)

At risk for airbag injury (distance)

Medical tests for AIDS, breast cancer

Contact with aliens

# NRC counterexample (p. 110) — Underreporting

- a) Not a rare event
- b) Negative social desirability

Self-reports of illicit drug use among  
arrestees

Validity (vs. replicability) of 2.5  
million estimate

2/3 claim report to police

Almost all defending against NCVS crimes  
(burglary/robbery/rape/assault)

## Estimate

850,000 self-defense gun uses vs. burglars

## NCVS

1,300,000 attempted burglaries when someone was at home

## Atlanta Police Department Record Review

198 home invasions

6 cases criminal retrieves homeowner's firearm

3 cases self-defense gun use

# of Bad Guys wounded:

207,000

# of nonfatal (emergency dept.) and fatal  
gunshot wounds:

130,000

# Do criminals go to the hospital after being shot?

Site	Number	Percent
Santa Rita, CA	141/153	92%
Summit County, OH	17/19	89%
Las Vegas, NV	55/68	81%
Lawrenceville, GA	8/9	89%
Baltimore, MD	56/58	97%
Total	277/307	91%

# Newspaper Reports of Shooting Incidents

## -Arizona-

Estimate      236 guns fired in self-defense  
98 killings or wounds

Actual        2 cases, both irresponsible gun use

### 3. Without Self-Defense Gun Use

392,000 – Someone almost certainly would have been killed

355,000 – Someone probably would have been killed

405,000 – Someone might have been killed

27,000 homicides

4) Are respondents afraid to report self-defense gun use to NCVS interviewers due to illegal gun carrying (but unafraid to report these events to the police)?

### **Hypothesis:**

Relative to private surveys, on NCVS, weapons used in self-defense should disproportionately be nonguns.

### **Hypothesis:**

Relative to private surveys, on NCVS, self-defense with gun should occur disproportionately at home (where there is no problem of illegal carrying.)

# Conclusion

Two possibilities:

If private survey respondents are completely accurate, other data sources are **COMPLETELY** wrong.

If other data sources are reasonably correct, private surveys results off by 1%  
(e.g., if actual rate was not 1.3%, but 0.3%, or 2 million fewer incidents).

# More self-defense gun uses than criminal gun uses?

“Guns are used for defensive purposes about five times as often as they are used for crimes.”

John Lott  
(Gary Kleck)

May 2000, Gallup

“Not including military combat, have you ever used a gun to defend yourself either by firing it or threatening to fire it?”

7%

May 2000, *Washington Post*

“Not counting military service, have you ever been threatened with a gun or shot at?”

23%

(9% shot at)

# Harvard Injury Control Research Center Self-Defense Studies

Three national random telephone surveys

1994 800 gun owners

1996 1,900 adults

1999 2,500 adults

One study of California adolescents

2001 6,000 adolescents

# Number of respondents reporting hostile gun displays and self-defense gun uses

	Hostile gun displays	Self-defense gun uses
1996	58+	14
1999	94+	29

California adolescents, 2001  
(12-17 years old)  
 $n = 5,800$

Gun threats

200

Self-defense gun uses

15

Majority of self-defense gun users:

Smoke

Binge drink

Threaten others

Have gun(s) in home

# Ever used gun in self-defense (*N*=5,801)

Overall

15 Instances

0.3%

Of these 15 adolescents

86% Smoke

71% Binge drink

73% Parents don't know whereabouts

# 1990s

	Criminal Gun Use	Self-Defense Gun Use
NCVS	800,000	100,000
Private Surveys	10 million	2.5 million

# Private Surveys Self-Defense Gun Use

## **Assume**

- a) Gun ownership legal
- b) Gun carrying legal
- c) Descriptions accurate

## **Criminology students**

1. All hostile gun displays socially undesirable
2. Most self-defense gun uses socially undesirable

# Private Surveys: Self-Defense Gun Use

Criminal Court Judges

Most self-defense gun uses **ILLEGAL**  
even given self-presentation bias

E.G.'s

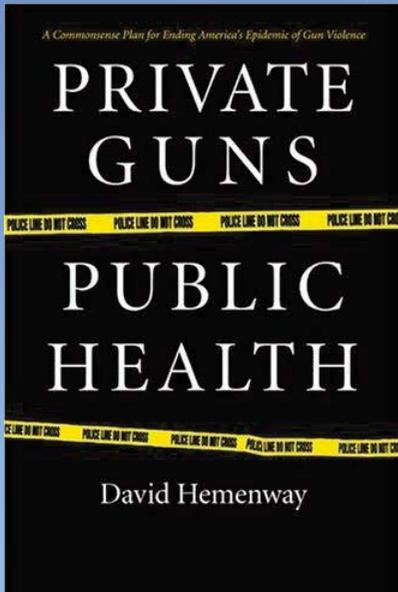
# Opportunity

Over lifetime:

0-2 times could use gun appropriately in self-defense

Hundreds of times could use gun inappropriately

(Well-trained) police often use guns inappropriately



# Private Guns Public Health

David Hemenway  
Harvard Injury Control Research Center

University of Michigan Press, 2006