POLICIES TO PREVENT FIREARM INJURIES

by Stephen P. Teret and Garen J. Wintemute

Prologue: As 1993 drew to a close, President Bill Clinton signed into law the Brady bill, which imposes a five-day waiting period on the purchase of handguns. The bill, named for former White House Press Secretary James Brady, who was wounded by a handgun-wielding assailant in the attempt on President Reagan’s life in 1981, had been debated in nearly every congressional session since 1987. “A five-day waiting period for a handgun purchase... is a protection for everyone against the obvious terrible dangers of curbside sales of handguns to criminals,” stated a Washington Post editorial the day of the bill’s House approval. The Brady bill is an example of how to control firearm injuries by regulating the product. This redirection of policy away from attempting to regulate the use and possession of guns toward regulating their manufacture, sale, and marketing is “in keeping with the tenets of successful injury prevention strategies” applied for other public health problems such as motor vehicle safety, the authors explain. The centerpiece of this paper is a nosology of gun control, which “encompasses the major options for legislative and regulatory policy at the federal, state, and local levels,” the authors write. Stephen Teret is head of the Division of Public Health, Department of Health Policy and Management, The Johns Hopkins School of Hygiene and Public Health, and director of the Johns Hopkins Injury Prevention Center. He received his law degree from Brooklyn Law School and holds a master of public health degree from Johns Hopkins. Garen Wintemute, an emergency room physician, is an associate professor in the Department of Community and International Health at the University of California (UC), Davis, School of Medicine. He received his medical degree from UC Davis and holds a master of public health degree from Johns Hopkins.
Abstract: Firearm-related injuries are a substantial public health problem. A wide array of policies designed to prevent these injuries have been discussed, but few are enacted into legislation. Even fewer have undergone scientific evaluation for their effectiveness. We offer a nosology for categorizing existing and future gun policies. A brief review of the effectiveness of existing gun policies is presented, and an argument is made for redirecting gun policy.

Firearms are involved in the deaths of approximately 34,000 people per year in the United States.\(^1\) Given current trends, in the near future the population-based rate of firearm deaths in this country will exceed the rate of motor vehicle-related deaths.\(^2\) Elsewhere in this volume, Wendy Max and Dorothy Rice estimate that the cost of firearm injuries in 1990 exceeded $20 billion.\(^3\) Firearm violence traditionally had been viewed as a criminal justice problem, but the importance of firearms as a public health issue has become increasingly well documented in the past two decades. A Medline database search of the medical and health literature from 1966 through 1992 for articles dealing with firearms, excluding literature on the clinical aspects of treating gunshot wounds, shows a surge in published material beginning in 1986; in 1992 the search revealed nearly eighty articles published, compared with an average of ten or fewer each year from 1966 to 1986.

Much has been written about potential policies to prevent firearm violence, but relatively few of these policies have been enacted into legislation, and even fewer have undergone scientific evaluation for effectiveness. To begin to formulate an appropriate policy approach, we believe it is important to understand and organize the issues involved. In this paper we offer a systematized method for categorizing gun policy, briefly comment on some of the published literature on what is known about the effectiveness of such policies, and argue that policy making should be redirected from an emphasis on use and possession of guns to an emphasis on the manufacturing, marketing, and sale of guns. Such a policy redirection, we argue, could maximize our ability to reduce the toll of firearm violence.

A Nosology Of Gun Policy

Several methods of categorizing gun policy have been suggested in the literature. In 1980 Susan Baker, Stephen Teret, and Park Dietz suggested that we think of a gun as having a lifespan, with critical markers for policy intervention (the manufacture, sale, possession, and use of the gun) existing in that lifespan.\(^4\) Franklin Zimring and Gordon Hawkins have offered a different method of categorizing gun policy, which focuses on place restrictions; severity of penalties; and licensing, registration and ban considerations.\(^5\) Arthur Kellermann and colleagues have applied the classic techniques of injury prevention to the problem of firearm violence, and
Katherine Christoffel has discussed a variety of methods for preventing gun injuries to children.\(^6\)

The nosology of gun policy in Exhibit 1 is an expansion of the categorization scheme first mentioned in the paper by Baker and colleagues. It encompasses the major options for legislative and regulatory policy at the federal, state, and local levels that are under discussion today and is expandable to include policy options offered in the future. The nosology focuses on policy addressing firearms per se, as expressed by legislation, regulation, and litigation, and does not encompass programmatic activities such as educational programs or gun buy-back programs. Nor does it address indirect contributors to gun violence such as the content of television programs or exposure to violence in childhood. Regulation of the manufacture, sale, and possession of ammunition is merely mentioned, but it deserves careful thought as a possible policy intervention in its own right.

### Exhibit 1

**Nosology Of Gun Policy**

1. Policy related to the manufacture of guns
   1.1 Ban the manufacture of guns
      1.1.1 All guns
      1.1.2 Certain guns
         1.1.2.1 All handguns
         1.1.2.2 Saturday night specials
         1.1.2.3 Assault weapons
         1.1.2.4 Automatic weapons
         1.1.2.5 Long guns
         1.1.2.6 Others
   1.2 Regulate the manufacture of guns
      1.2.1 Product design, safety regulations
         1.2.1.1 Personalization—require guns to be designed so that only authorized persons can operate them
         1.2.1.2 Childproofing—require guns to be designed so that they are inoperable by children
         1.2.1.3 Safety devices—require guns to incorporate such features as magazine interlocks or loaded chamber indicators
         1.2.1.4 Other safety criteria—require domestically manufactured guns to incorporate the same safety features required for imported guns
      1.2.2 Regulate the quantity of all or certain guns manufactured
   1.3 Impose strict liability on manufacturers—permit the transfer of the costs of gun injuries back to the manufacturer through litigation
   1.4 Tax manufacturers for each gun produced
2 Policy related to the sale of guns
   2.1 Ban the sale of guns
      2.1.1 All guns
      2.1.2 Certain guns (see 1.1.2)
   2.2 Ban the sale of guns to certain people
      2.2.1 By age
      2.2.2 By mental health status
      2.2.3 By criminal history
         2.2.3.1 By felony conviction
         2.2.3.2 By selected misdemeanor convictions
         2.2.3.3 By arrest record
      2.2.4 By citizenship
      2.2.5 By high-risk behavior, such as substance addiction
      2.2.6 By other means (for example, dishonorable discharge from the military)
   2.3 Limit the number of guns that can be sold to a person within a given time period
   2.4 Impose waiting periods
      2.4.1 Purpose for waiting period
         2.4.1.1 Background check
            2.4.1.1.1 Approval required before sale
         2.4.1.2 Cooling-off period
      2.4.2 Duration of waiting period (several days to several months)
      2.4.3 Guns to which waiting period applies
         2.4.3.1 All guns
         2.4.3.2 Certain guns (see 1.1.2)
      2.4.4 Sales to which waiting period applies
         2.4.4.1 All sales (including private sales)
         2.4.4.2 Only sales involving dealers
   2.5 Strengthen requirements for licensed sellers
      2.5.1 Stricter enforcement of federal firearm license provisions
         2.5.1.1 “Doing business” provisions (that is, dealer must actually be in the business of selling guns)
         2.5.1.2 Inspection and compliance monitoring
         2.5.1.3 Prosecution for “straw-man” sales
         2.5.1.4 Prosecution for direct sales to prohibited persons
      2.5.2 Higher license fee
   2.6 Impose strict liability on sellers
      2.6.1 On all sellers (including private sales)
      2.6.2 On dealer sales only
   2.7 Tax sales
   2.8 Require sales to include after-market safety devices
Exhibit 1
Nosolow Of Gun Policy (cont.)

3 Regulate the marketing and advertising of guns by manufacturers and sellers
   3.1 Prohibit some venues of advertising (for example, television)
   3.2 Regulate content of advertising
      3.2.1 Prohibit false claims
      3.2.2 Prohibit advertising that appeals to children

4 Policy related to the possession of guns
   4.1 Ban possession
      4.1.1 Ban possession of all guns
      4.1.2 Ban possession of certain guns (see 1.1.2)
      4.1.3 Ban possession by certain people (see 2.2)
   4.2 Register possession
      4.2.1 Register all guns
      4.2.2 Register certain guns (see 1.1.2)
      4.2.3 Increase registration fees
   4.3 Restrict possession
      4.3.1 By location
         4.3.1.1 In public places
         4.3.1.2 In high-risk places
         4.3.1.3 In schools
      4.3.2 By requiring storage mode
         4.3.2.1 Childproof storage laws (including parental liability statutes)
      4.3.3 By requiring safety course to possess
   4.4 License the carrying of guns
      4.4.1 By type of gun
         4.4.1.1 All guns
         4.4.1.2 Handguns
         4.4.1.3 Other selected guns
      4.4.2 By location
         4.4.2.1 All locations
         4.4.2.2 Restricted areas
         4.4.2.3 Vehicles
      4.4.3 By carrying mode
         4.4.3.1 Concealed weapons
         4.4.3.2 Exposed weapons
   4.5 Enhance the detection of illegal possession
      4.5.1 Metal detector installation
         4.5.1.1 In public places
         4.5.1.2 In high-risk places
         4.5.1.3 In schools
### Exhibit 1
Nosology Of Gun Policy (cont.)

5 Policy related to the use of guns
   5.1 Ban the discharge of guns
   5.2 Mandatory jail for crimes using guns
   5.3 Mandatory jail for illegal possession of guns
   5.4 Enhanced sentences for crimes using guns

6 Policy related to the regulation of importation of guns

7 Policy related to the regulation of ammunition (manufacture, sale, and possession)

### Effect Of Gun-Control Laws On Violence

In 1978 a Comptroller General’s Report to Congress reviewed what was then known about the effect of gun-control laws on violent crime. The report stated:

> Though much has been written on the subject of controlling firearms, only a few good empirical studies evaluate the impact of gun control laws on violent crime. . . . Of these studies, some attempted to show that gun control reduces homicide and some attempted to quantify the effect of different types of gun control laws. Several of these studies conclude that gun control laws, through limiting firearm availability, result in decreased murder. None of the studies demonstrate a decrease in the overall level of violence attributable to gun control.

More than a decade later the American Medical Association (AMA) Council on Scientific Affairs issued a report of its review of the scientific literature. The AMA was unable to find adequate answers to questions regarding guns and the public’s health, which it characterized as “one of the most complex and controversial issues facing the public health profession in recent years.”

Still too little is known regarding the effectiveness of gun-control measures. There are large gaps in the evaluation of gun laws, and many of the earlier evaluations are less rigorous than one would desire. Very few laws regulate the manufacture of guns, and therefore evaluation of policy in that area is almost nonexistent. The best of the evaluative literature deals with laws regulating the sale and possession of guns. There also are some important studies that have examined the effects of sentence enhancements for conviction of crimes involving guns. The following comments deal with some, but certainly not all, of the evaluative literature that is cited most frequently.
Sale of guns. The federal Gun Control Act of 1968 banned the sale of guns by dealers to certain categories of people (for example, convicted felons, illegal aliens, fugitives from justice, and those with a history of substance abuse). Some states have expanded the categories of disqualification from purchase and require a background check to identify prohibited purchasers. Thousands of convicted felons are identified each year as they attempt to purchase firearms from licensed dealers. It has been proposed that a national computerized registry of convicted felons be established to facilitate such background checks. However, Philip Cook and James Blose have reviewed the state programs and have concluded that

> [t]here has been no convincing empirical demonstration that a police check on handgun buyers reduces violent crime rates, though neither is there any convincing evidence to the contrary. It is known that such screening systems are widely circumvented and, furthermore, that state criminal record files are sufficiently incomplete in that a felon who did choose to submit to the required police check before buying a handgun would have a sporting chance of having his application approved. Finally, a considerable fraction of people who commit violent crimes are legally entitled to own guns, at least under the federal [Gun Control Act] restrictions. Permissive screening systems are not very costly, but if they are not effective, then they are not worthwhile.  

The variable quality of criminal records has improved, but it remains a flaw in this approach. Of more importance is the probability that most high-risk purchasers do not carry felony convictions. At present, a national registry of persons in other high-risk categories is not feasible.

Broader restrictions on the sale of guns may prove to be more effective. John Henry Sloan and colleagues examined the effects of regulating the sale of handguns on homicide and suicide in King County, Washington (the Seattle area), and Vancouver, British Columbia, Canada. The legal sale of handguns is far more restricted in Vancouver than it is in King County. The studies found large differences in the rates of homicide between the two areas, which were due to a nearly fivefold higher risk of handgun homicide in King County. While overall suicide rates in the two areas were comparable, a 38 percent increase in the youth suicide rate in King County was due almost entirely to a tenfold higher rate of suicide by handgun in that area.

Possession of guns. Numerous laws at the state and local levels throughout the United States limit the possession or carrying of a firearm. For example, in 1976 the District of Columbia passed the Firearms Control Regulations Act, which “prohibited the purchase, sale, transfer, and possession of handguns by civilians in Washington, D.C., unless a citizen already owned the handgun and had registered it under an existing system.” Colin Loftin and colleagues evaluated the effect of that law on the frequency of homicides and suicides through 1987. They found that the passage of the law coincided with an abrupt decline of about 25 percent in the rates of...
homicide and suicide by firearm. There were no similar reductions in adjacent metropolitan areas or in the rates of homicide and suicide by other means. The authors concluded that “restrictions on access to guns in the District of Columbia prevented an average of 47 deaths each year after the law was implemented.” This effect persisted unchanged through 1987, resulting in an estimated total of more than 500 lives saved in that one locality. Since 1987 the number of firearm homicides in Washington, D.C., has risen substantially, particularly in relation to increased drug trafficking. In our view, this does not constitute grounds for branding the earlier legislation a failure.

In 1974 Massachusetts adopted the Bartley-Fox Amendment to its firearm law, strengthening handgun-licensing procedures and establishing a one-year mandatory incarceration for carrying an unlicensed gun. The law provided that the sentence could not be suspended, nor could those convicted be eligible for probation, parole, or sentence reduction until one year had been served. When the law was passed, there was an extensive publicity campaign that stressed the severity of the law and the message that “nobody can get you out.” The effects of the law have been evaluated carefully.

James Beha’s early review of the law’s effects found that “a definite shift away from the use of firearms in assaults [had] occurred; this seems primarily due to increased attention to permit requirements and reduced casual availability of firearms.” Beha concluded that the research supports, in a limited fashion, “the argument that a publicized threat of a mandatory sentence for carrying a firearm can reduce the illegal carrying of firearms and thereby decrease the availability of firearms for casual unpremeditated crime.” Glenn Pierce and William Bowers, in their analysis of the same law, found that the law reduced the incidence of gun assaults but that there was a more than offsetting increase in armed assaults not involving guns. Also, the law was found to have reduced gun robberies and gun homicides, with little or no substitution effect.

Sentence enhancements. Mandatory sentencing laws for the use of guns in crime also have been evaluated. David McDowall, Colin Loftin, and Brian Wiersema pooled the results of their studies of individual cities and found very strong support that mandatory sentencing has had a preventive effect on homicide. Assaults and robbery, however, were not affected in the same way. The researchers suggest that a possible explanation for this inconsistency is that the more complete and accurate reporting of homicides makes the effect of laws more detectable for homicides than for assaults or robberies.

Other factors. It is difficult to evaluate the effects of fear of liability on the behavior of gun manufacturers and retailers. In other areas of injury control the argument has been made that exposure to potential liability has
been an effective force in changing the manufacture and marketing of products. Recently attention has been drawn to the liability of gun retailers for injuries that occur after illegal “straw-man” sales to minors. Such a transaction involves selling a gun to an adult, who is legally permitted to purchase the gun, when the salesperson knows that the adult is merely standing in for a minor who wishes to acquire the gun but cannot legally do so directly. One recent court case held that a dealer could be liable for the negligent sale and entrustment of a concealable firearm to a minor through a straw-man sale. In this case the minor had used the gun to kill another person at a party.

Redirection Of Gun Policy

Most gun policy, which to date has been directed at controlling the possession and use of guns, has had limited success. We suggest that gun policy would be more effective in reducing gun deaths if it were focused on the manufacture, marketing, and sale of guns. This orientation to the product, or to the vehicle of the injury, rather than an orientation restricted to the behavior of the product’s users, is in keeping with proven examples of injury control. For example, in the 1960s) when motor vehicle fatalities were recognized as constituting a public health problem, cars were redesigned to be more crashworthy, resulting in the saving of many lives.

Efforts to ban outright the manufacture, sale, or possession of certain types of guns often are met with the false argument that the Second Amendment to the United States Constitution forbids such bans. The Amendment reads, “A well regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed.” As is the case with any law, the meaning of the Second Amendment is determined by courts, especially the U.S. Supreme Court. Courts have consistently held that the Second Amendment applies to state militias. The amendment does not guarantee an individual the right to own whatever firearm he or she may choose. Furthermore, its provisions address federal action; the Second Amendment does not control the ability of states and localities to legislate a ban. For example, the ban on handgun possession enacted by Morton Grove, Illinois, has withstood constitutional scrutiny.

Federal regulation is of particular importance, as the nature and extent of local restrictions on firearm purchase and use vary widely. Tight restrictions in one location can be undermined if neighboring jurisdictions allow relatively easy access. A massive illegal flow of firearms from states with loose restrictions, such as Ohio, Florida, and Virginia, to states that have adopted stricter policies has been well documented.
Decisions regarding manufacture and sales bans on certain types of guns should be informed by data. At present, data are lacking with regard to what guns are used by which persons to perform what acts. It has been suggested that the federal government establish a firearm fatality reporting system, which would collect information on every firearm fatality in much the same way as data are collected on highway fatalities. A bill to create the system has been introduced recently in Congress. Such a system would inform policy development. For example, data compiled by the Federal Bureau of Investigation (FBI) on handguns used in homicides of law enforcement officers show that gun caliber is associated with as much as a fifteenfold variation in risk for involvement in these fatal shootings.

**Consumer protection and government jurisdiction.** The design and production of guns are not now regulated in the same manner that we regulate other consumer products. The Consumer Product Safety Commission has been expressly forbidden by Congress to exercise jurisdiction over firearms or ammunition. The Bureau of Alcohol, Tobacco, and Firearms, which is located within the Treasury Department, does not pursue a vigorous public safety agenda. As of August 1993 the Clinton administration was considering a proposal to transfer the bureau to the Department of Justice as part of its effort to consolidate the nation’s law enforcement agencies. Such a restructuring should be accompanied by a major expansion of the bureau’s authority to regulate the manufacture of and commerce in firearms.

The design of handguns should be altered, through regulation, to decrease certain types of gun deaths. For example, Sturm, Ruger and Company made a handgun from 1953 to 1972 that fired when dropped, notwithstanding that the company allegedly knew of the product’s hazards. There never has been an adequate recall of these guns, which have resulted in significant numbers of unintentional deaths and injuries. (The company will convert these guns to a safer design at no cost, if the consumer hears of the defect and returns the gun to the manufacturer at the consumer’s expense. Only about 10 percent of the affected handguns have been converted.) Another example is the failure of gun manufacturers to use existing technology to make their handguns child-resistant, especially when they are marketing the guns to young women. The fact that gun manufacturers can design their products without a concern for safety results from a conscious, deliberate failure to establish the regulatory framework that protects the public from other hazardous consumer products.

Gun advertising is a relatively unexplored field. Recent advertisements have focused on women as a new market, and advertisements have gone beyond placement in gun magazines to include advertisements in several more widely read magazines. Advertisements often portray a handgun as a
necessary possession for the protection of oneself and one’s family. However, data do not support this claim. In fact, well-conducted studies suggest that the risk of homicide in the home may be increased by a factor of 2.7 and the risk of suicide may be increased by as much as 4.8 times if a firearm is present. Regulation of false claims in gun advertisements, however, has not been forthcoming from the government agencies with jurisdiction over that area.

**Regulation of retail sales.** Policy regarding the retail sale of guns needs attention. By early 1992 there were nearly 250,000 federally licensed gun dealers in the United States; the country has more gun dealers than gas stations. The dealer’s license, which costs only $10 per year and is available virtually on demand, allows its holder to buy large numbers of firearms at wholesale prices and to avoid restrictions such as waiting periods that apply to private purchasers. It is estimated that no more than 20 percent of the license holders are “commercial enterprises operating storefront businesses.” The huge network of “kitchen table” dealers has vastly outgrown the Bureau of Alcohol, Tobacco, and Firearms’ oversight capacities (further restricted by Congress in 1986), and cases of such dealers becoming major sources of supply for guns used in crimes have been well documented. Storefront dealers have not been immune, either. The investigation of Ruben Floyd, a former Purdue University linebacker who became “the number one gun supplier to Philadelphia street gangs” in 1991, established that he obtained twenty to thirty guns at a time from a single gun store in Canton, Ohio. When the store’s manager was asked why he didn’t question these exceptional purchases, he replied, “It’s not really my business. The less I know, the safer I’m going to be.”

Legal commerce in firearms and ammunition should be regulated in a manner that reflects the uniquely hazardous nature of these products. Licensure to sell should be restricted to entities that are engaged substantially in that business. A central registry of all sales should be maintained and computerized for assistance in law enforcement activities. On-site surveillance of the activities of licensed dealers should be routine, and sanctions for abuse of the privileges of licensure should be substantial.

**Need for evaluation.** Policy regulating the manufacture, marketing, sale, possession, and use of firearms in the United States suffers from inadequate evaluation. Policy has focused largely on the use of guns, allowing large numbers of guns to be manufactured and large numbers of people to acquire them. Redirection of the policy to address the manufacture, marketing, and sale of guns can reduce the unacceptable number of gun deaths in the United States. This redirection of policy, with a focus on the product itself, is in keeping with the tenets of successful injury prevention strategies.
NOTES

12. Ibid.
13. Ibid.
17. Hoosier v. Randa, 17 Cal. Rptr. 2d 5 18, as discussed in Firearms Litigation Reporter (June 1993): 1.


25. Ibid.
