



Bureau of Justice Statistics Selected Findings

April 1996, NCJ-160093

Firearms, crime, and criminal justice

Firearm Injury from Crime

By Marianne W. Zawitz
BJS Statistician

What information is available about firearm injury from crime?

Firearm injuries caused by crime include those caused by interpersonal violence regardless of whether or not the victim was the intended target. Such injuries can be fatal (homicides) or nonfatal (assaults). As discussed on page 6, firearm homicide data from several good sources have been available for many years. Little data on nonfatal firearm injuries caused by crime were available until recently. While many jurisdictions have laws mandating the reporting of gunshot wounds to law enforcement, there is no national registry of such injuries.

To understand firearm injury better, the Centers for Disease Control and Prevention (CDC) initiated the Firearms Injury Surveillance Study in June 1992. As discussed on page 5, this study collects data about gun-related injuries treated at hospital emergency departments through the Consumer Product Safety Commission's National Electronic Injury Surveillance System.

Firearm-related crime and resulting injury is a relatively rare event

• In 1994 the BJS National Crime Victimization Survey (NCVS) found that

Highlights

- Of the victims of nonfatal violent crime who faced an assailant armed with a firearm, 3% suffered gunshot wounds. *page 1*
- Over half of all nonfatal firearm-related injuries treated in emergency departments were known to have resulted from an assault. *page 2*
- An estimated 57,500 nonfatal gunshot wounds from assaults were treated in hospital emergency departments from June 1992 through May 1993. *page 2*
- Of those victims who received nonfatal gunshot wounds from crime and were treated in an emergency room, 65% arrived by emergency medical service, rescue squad, or ambulance. *page 2*
- Almost half of the victims of nonfatal gunshot wounds from crime were shot in an arm, hand, leg, or foot. *page 2*
- About 60% of the victims of nonfatal firearm injury from crime who went

- to an emergency room were subsequently hospitalized. *page 2*
- Over half of the victims of nonfatal gunshot wounds from crime who were treated in emergency departments were black males; a quarter were black males age 15-24. *page 3*
- While the majority of victims of intentional gunshot wounds were black, most victims of unintentional firearm injury and suicide attempts with firearms were white. *page 3*
- For 12% of the victims of nonfatal gunshot wounds from crime, the term "drive-by" was used to describe the assault. *page 4*
- The firearm injury rate for police officers declined in the early 1980s and began climbing again after 1987, but has not exceeded the peak reached in 1980-81. *page 4*

This report is the third in a series on firearms, crime, and criminal justice. The first report in the series, *Guns Used in Crime* (NCJ-148201, July 1995), includes definitions of commonly used firearm terms.

29% of the victims of nonfatal violent crime, excluding simple assault, faced an offender armed with a gun.

- An earlier analysis of NCVS data for 1987-92 found that of the victims of nonfatal violent crime who faced an assailant armed with a firearm, 3% suffered gunshot wounds.

- According to the 1992 National Hospital Ambulatory Medical Care Survey, about 0.3% of all injury visits to emergency departments (3 of every 1,000 visits) were caused by firearms. This estimate includes all causes of firearm injury and may also include visits for patients seeking follow-up care and patients who died at the hospital.

How often are victims injured as a result of crimes committed with firearms?

According to an analysis of NCVS data for 1987-92, about 17% of the victims of nonfatal gun crimes were injured.

Of those injured, 61% received minor injuries. Few of those injured in nonfatal gun crimes received injuries that resulted from the discharge of a firearm; about 19% of the victims injured in gun crimes suffered from gunshot wounds. The NCVS does not include victims who died.

	Percent of victims
Injured in gun crime	100 %
Gunshot wound	19
Serious injury	15
Rape/Attempted rape	5
Minor injury	61

Of the victims who suffered gunshot wounds, over 90% reported that they were treated at a hospital.

How many people are injured by firearms and how many are the result of crime?

The Centers for Disease Control and Prevention (CDC) estimates that between June 1, 1992, and May 31, 1993, about 99,000 nonfatal firearm-related injuries were treated in U.S. hospital emergency departments. Of these, an estimated 57,500 nonfatal gunshot wounds were known to have resulted from assaults.¹

Of the total firearm injuries —

- 58% resulted from assaults
- 20% were unintentional
- 5% were suicide attempts
- 1% were legal interventions
- 16% were from unknown causes.

CDC estimates that there were 3.3 nonfatal firearms-related injuries from assault or legal intervention for every firearm-related homicide. While most nonfatal firearm-related injuries are the result of intentional, interpersonal

violence, most firearm-related deaths are self-inflicted. According to the Vital Statistics, 37,776 firearm deaths occurred in 1992; 48% were suicides, and 47% homicides/legal interventions, and 4% unintentional.

How did the victims of firearm injury from crime get to the hospital?

About two-thirds of the victims of gunshot wounds from crime who were treated in emergency departments were taken to the emergency department by an emergency medical service, ambulance, or rescue squad.

Mode of transport to the hospital	Percent of victims of gunshot wounds from crime
EMS/Rescue/Ambulance	65%
Private vehicle	19
Walk-in	6
Police	4
Unknown	4
Air transport	2

Source: Centers for Disease Control and Prevention, Firearm Injury Surveillance Study, June 1, 1992, through May 31, 1993.

Victims of unintentional firearm injury differ from other types of gunshot victims in that a higher percentage come to hospital by private vehicle than any other means.

Where were victims of gunshot assaults wounded?

Data from the CDC study of nonfatal firearm injury show that almost half of the victims shot as a result of an assault received wounds to the extremities (arms, hands, legs, or feet). Over a third of these victims were shot in the trunk, and the remainder were shot in the head or neck.

By contrast, three-quarters of the victims of unintentional gunshot wounds were shot in the arms, legs, or feet, while two-thirds of the victims of suicide attempts were shot in the head or neck or upper trunk.

Webster and others analyzed all crime-related gunshot wound cases that were admitted to a level I trauma unit in Washington, D.C., from 1983 to 1990.* They found that the severity of gunshot wounds increased during the study period. Increased mortality among victims of gunshot wounds was a function of an increase in the percentage of patients who suffered wounds to the head or thoracic regions that included the vital organs. In addition, the increase in patient mortality during the last 3 years of the study was partially attributable to increases in the proportion of patients with multiple thoracic wounds. Overall, they found that the proportion of patients with two or more gunshot wounds grew from about 26% before 1987 to 43% from 1988 through 1990.

Most victims of intentional firearms injury treated in an emergency room are subsequently hospitalized

The CDC data show that about 60% of the victims of nonfatal intentionally inflicted gunshot wounds (an estimated 34,500) were hospitalized after their initial treatment in an emergency room. The remainder (40%) were released after being treated or transferred.² The CDC firearms study did not follow treatment after admission but did estimate that about 92% of the victims hospitalized for firearm injury were discharged from the hospital alive.

Data from the NCVS on nonfatal firearm crimes for 1987-92 showed that over half of the victims of gunshot wounds were hospitalized and of these victims over half were hospitalized less than 1 week.

The analysis by Webster and others found that 28% of the admitted patients received some care in an intensive care unit. In 1990 the gunshot wound patients in intensive care spent an average of 2.2 days in the unit.*

*A full citation for this source is at the end of this paper.

²95% confidence interval estimates the number to be between 20,300 to 48,700. See *Methodology*.

¹95% confidence interval estimates the number to be between 33,800 to 81,000. See *Methodology*.

Who are the victims of gunshot wounds from crime?

Victim characteristic	Percent of victims of nonfatal gunshot wounds from crime treated in hospital emergency departments	
Sex		
Male	87%	➤ Almost 9 of 10 victims were male
Female	13	
Race and ethnicity		
White*	19%	➤ About 6 in 10 victims were black
Black	59	
Hispanic	14	
Other	4	
Unknown	5	
Age		
0-14	3%	➤ One quarter of the victims were under age 20
15-19	22	➤ About half of the victims were between 15 and 24 years old
20-24	27	
25-29	17	
30-34	12	
35-39	10	
40-44	5	
45+	6	

*Represents white, non-Hispanic.

Source: Centers for Disease Control and Prevention, Firearm Injury Surveillance Study, June 1, 1992, through May 31, 1993.

Over half the victims of gunshot wounds from crime who were treated in hospital emergency departments were black males

	Percent of victims of nonfatal gunshot wounds from crime
Black male	52%
White male*	15
Hispanic male	13
Black female	6
White female*	4
Other male	3
Hispanic female	1
Other female	1
Unknown	5

*Represents white, non-Hispanic.

Source: Centers for Disease Control and Prevention, Firearm Injury Surveillance Study, June 1, 1992, through May 31, 1993.

Over a quarter of all the victims of intentional gunshot wounds were black males age 15 to 24.

While the majority of victims of intentional gunshot wounds were black, most victims of unintentional firearm injury and suicide attempts with firearms were white.

How do the victims of nonfatal gunshot wounds from crime compare to firearm homicide victims?

A comparison of two sources of firearm homicide data to the CDC's data on nonfatal firearm injury from crime shows similar demographic patterns among victims. Black males are the most frequent victims of firearm homicide and nonfatal firearm injury from crime. Young people are also more frequently victims in all three sources. Older victims are more frequent in the homicide statistics since they are less able than younger victims to recover from gunshot wounds.

Although these sources cover slightly different periods and have different population coverage (see page 5), the homicide victims in the Vital Statistics and the FBI's Supplementary Homicide Reports appear to be very similar. Some of the differences between these sources and the firearm injury study may be due to differences in population coverage or the estimation procedures used with the firearm injury surveillance sample.

Victim characteristics	Firearm homicides		
	1992 Vital Statistics	FBI's Supplementary Homicide Reports, June 1992 -May 1993	Nonfatal firearm injury from crime, June 1992 -May 1993
Race and sex			
White male	37%	35%	28% †
White female	9	9	5 †
Black male	45	47	52
Black female	6	7	6
Other	2	2	4
Unknown	*	1	5
Age			
0-14	3%	2%	3%
15-19	16	16	22
20-24	22	22	27
25-29	17	17	17
30-34	13	14	12
35-44	16	17	15
45+	13	12	6
Unknown		1	

*Less than 0.5%

†For comparison, Hispanics who were included in the other racial category in the original data were included in the whites racial category. The homicide sources do not classify Hispanics as a racial category.

Sources: 1992 Vital Statistics of the United States, Centers for Disease Control, and Prevention National Center for Health Statistics; FBI, Uniform Crime Reports, Supplementary Homicide Reports, June 1992 — May 1993; and Centers for Disease Control and Prevention, National Center for Injury Prevention, Firearms Injury Surveillance Study, June 1992 — May 1993.

What were the circumstances surrounding the crimes that resulted in gunshot wounds?

For most of the victims of nonfatal gunshot wounds from crime in the CDC study, little is known about the event or the type of weapon, because much of this information is unavailable in hospital emergency departments. Information about whether the injury resulted from another crime such as a robbery, from a physical fight, or from a verbal argument was recorded for less than a third of the cases.

For the victims of firearm homicide included in the Supplementary Homicide Reports from June 1992 through May 1993, 82% were killed with a handgun. Of these firearm homicide victims —

- 29% were killed because of an argument
- 21% were killed during the commission of another crime including 11% during a robbery and 7% during a drug law violation
- 6% died as a result of a juvenile gang killing.

Where did the assaults that resulted in nonfatal gunshot wounds occur?

The CDC study found that the location of the assault was —

- unknown by hospital staff in more than half the injuries
- a street or highway in 18%
- a home, apartment, or condominium in 16%
- other property, including schools or recreation areas, in 13%.

In 83% of the cases, the assault did not occur when the victim was on the job. In the text descriptions provided by hospital staff, the term "drive-by" was used to describe what happened to 12% of the victims of nonfatal gunshot injury from assaults.

What was the relationship of injured victims to their attackers?

In almost half of the cases in the CDC study, the victim's relationship to the

offender was unknown. In 28% of the cases the perpetrator was a stranger to the victim, and 10% of the victims did not see who shot them.

Victim-offender relationship	Percent of victims of nonfatal gunshot wounds from crime
Relationship unknown	48%
Stranger	28
Did not see offender	10
Friend/acquaintance	8
All other	6

Source: Centers for Disease Control and Prevention, Firearm Injury Surveillance Study, June 1, 1992 through May 31, 1993.

About 60% of the victims of gunshot wounds for 1987-92 in the NCVS reported that they were victimized by strangers. Another quarter reported that they were victimized by an acquaintance.

The relationship to the offender was unknown in 40% of the firearm homicides in the Supplementary Homicide Reports from June 1992 through May 1993. In 44% of the homicides during the period, the killer was known to the victim including —

- 24% in which the victim and offender were friends or acquaintances
 - 13% in which the killer was a relative or intimate of the victim.
- The killer was a stranger to the victim in 15% of the homicides.

What is the cost of injuries caused by assaults with firearms?

Miller and Cohen estimated the average cost per gunshot wound from all causes in 1992.* The estimates for medical costs, mental health care, emergency transport, police services, and insurance administration were —

- \$21,700 per fatal gunshot wound
- \$28,000 per gunshot wound requiring hospitalization
- \$6,500 per gunshot wound treated in the emergency department and released without hospitalization.

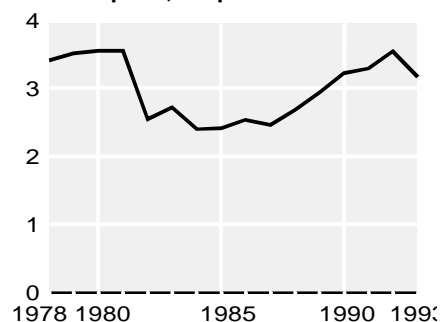
They estimated that the total cost per survivor of gunshot wounds caused by

assault was \$260,000. This figure included direct costs such as medical costs as well as those costs because of lost productivity and pain, suffering, and reduced quality of life. Overall, they estimated that firearm assault injury and death cost \$63.4 billion in 1992.

How often are police officers injured in assaults with firearms?

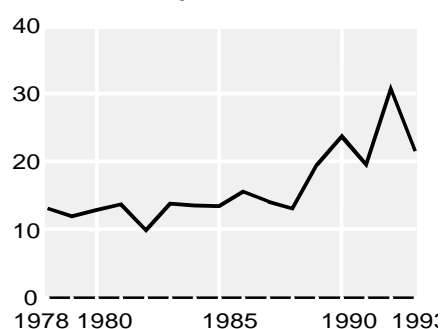
In 1993, over 1,400 police officers were injured in firearm assaults and 67 police officers were killed by a firearm while responding to a crime. The firearm injury rate for police officers declined in the early 1980s and began climbing again after 1987. Rates in the 1990s have not exceeded the peak reached in 1980-81.

Number of firearm injuries from assault per 1,000 police officers



Because fewer police officers are dying from gunshot wounds, the ratio of those injured to killed from assaults with firearms has been increasing.

For police officers who were shot, ratio of those injured to killed



Source: FBI, Uniform Crime Reports, Law Enforcement Officers Killed and Assaulted, 1978-93.

*A full citation for this source is at the end of this paper.

Over 44,000 violent State prison inmates in 1991 reported that victims of their crimes had been shot and killed or injured

The Survey of Inmates in State Correctional Facilities found that of the almost 328,000 State prison inmates serving time for a violent crime in 1991, 30% were armed with a firearm when they committed the crime. Of those armed, 56% said that they fired the gun and most of those who fired said their victims were shot and either wounded or killed.

Injury to the victim and the use of a firearm are both factors that can increase the severity of the sentence given to violent criminals. For example, according to *Federal Firearms-related offenses, over a quarter of the Federal offenders convicted of a violent crime were given longer sentences because of firearms involvement.*

caused by any weapon that uses a powder charge to fire a projectile. Additional estimates on injury caused by BB guns or pellet guns and other injuries that directly involve a gun including powder burns, pistol whipping, or recoil injuries are included in the report cited above and in "BB and Pellet Gun-Related Injuries, United States, June 1992, May 1994," *Morbidity and Mortality Weekly Report*, Centers for Disease Control and Prevention, Vol. 44, No. 49, December 15, 1995, pp. 909-13.

Are offenders more likely to be victims of firearm injury?

Several studies reported findings about the gunshot wound history of criminals and criminal defendants:

- Preliminary findings from a National Institute of Justice study of over 4,000 arrestees in 11 cities during the first 3 months of 1995 showed that 21% of the adult male arrestees and 11% of the juvenile male arrestees had been injured by a gunshot at some time.*
- May and others' study of 582 male detainees in the Cook County, Illinois jail, in 1994 found that 26% had survived gunshot wounds.*

According to a BJS study of murder in the 75 largest counties in 1988, 13% of the victims killed with a firearm had a prior criminal arrest and 7% a prior conviction — a pattern similar to victims of homicide killed with other weapons.*

McGonigal and others' study of firearm deaths in Philadelphia in 1985 and 1990 found that two-thirds of the victims killed in 1990 had a prior criminal history including 36% who had prior firearms arrests.*

*A full citation for this source is at the end of this paper.

Methodology

CDC Firearms Injury Surveillance Study— These data were compiled through the U.S. Consumer Product Safety Commission's (CPSC) National Electronic Injury Surveillance System (NEISS). The CPSC established NEISS in 1972 to track product-related injuries. NEISS collects data from 91 hospitals selected as a representative sample of the approximately 6,000 hospitals in the United States with emergency departments. The system includes very large inner-city hospitals with trauma centers, as well as other types of urban, suburban, and rural hospitals. Data from the 91 NEISS hospitals are weighted to provide national estimates about injuries treated in U.S. hospital emergency departments.

Through an agreement with CDC, NEISS was used to collect data on nonfatal gun-related injuries at all 91 hospitals beginning in June 1992. NEISS personnel abstracted information from medical records on each case identified. Further information about the study can be found in Annett and others, "National Estimates of Nonfatal Firearm-Related Injuries: Beyond the Tip of the Iceberg," *Journal of the American Medical Association*, June 14, 1995.

The CDC data for June 1992 through May 1993 consists of 4,874 unweighted cases. This report focuses on the 3,302 unweighted cases that involved nonfatal gunshot wounds

Because the CDC data are a sample of firearm injuries that occur in U.S. hospitals, the estimates that are derived from the data are subject to sampling error. To measure the precision of national estimates obtained from the data, CDC estimated the generalized standard errors for estimates of selected sample size as follows:

Estimate	Standard error	Relative sampling error in percent	95% Confidence Interval
1,000	300	30%	412-1,588
5,000	1,150	23%	2,746-7,254
10,000	2,200	22%	5,688-14,312
25,000	5,300	21%	14,612-35,388
50,000	10,600	21%	29,224-70,776
75,000	15,800	21%	44,032-105,968
99,000	21,800	22%	56,272-141,728

The Bureau of Justice Statistics is also using NEISS to collect information about both firearm and nonfirearm intentional interpersonal injury. The BJS study collects data from 31 hospitals in the NEISS sample. The information on intentional firearm injury in the BJS study comes from the CDC firearm injury data. This report used the CDC data since it has a larger number of firearm injury cases permitting more detailed analysis.

National Crime Victimization Survey— The National Crime Victimization Survey (NCVS) is the Nation's primary source of information on criminal victimization. The survey provides a detailed picture of crime incidents, victims and trends occurring each year in the

United States. The survey collects information on the frequency and nature of the crimes of rape, sexual assault, personal robbery, aggravated and simple assault, household burglary, theft and motor vehicle theft utilizing a nationally representative sample of approximately 49,000 households (about 101,000 persons).

The survey provides information about victims (age, sex, race, etc.), offenders (age, sex, race, etc.) and the crimes (use of weapons, nature of injury, etc.). Because firearm crime and resulting injury are relatively rare when compared to all types of crime, there were too few cases in any one year to permit detailed analysis of gun crime and gunshot injuries. It was therefore necessary to aggregate sample cases for 6 years, 1987-1992, to have a sufficient number of cases for analysis. The 6 year aggregate of firearm crimes consists of 2,011 unweighted cases.

Firearm homicide data — Firearm homicide data come from two primary sources:

- Vital Statistics of the United States, which collects data from all death certificates filed throughout the Nation
- Supplementary Homicide Reports, which includes data reported to the Uniform Crime Reporting Program of the FBI by State and local law enforcement agencies on a voluntary basis.

The Vital Statistics information includes the demographic characteristics of firearm homicide victims and is thought to be an accurate count of the number of such deaths. Firearm homicides include legal intervention deaths such as those caused by police officers in pursuit of criminals. It does not contain information about the circumstances surrounding the death, the type of firearm used, or suspected offenders. The Supplementary Homicide

Reports provide such detailed information. However, not all agencies report and not all reports are complete. In 1992, for example, the FBI estimated that there were 23,760 murders in the U.S. and provided Supplementary Homicide Reports on 22,540 murders. The homicide data from the Vital Statistics and the Uniform Crime Reports provide slightly different estimates of the number of homicides annually.³

Rokaw and others attributed this difference to differences in —

- coverage of the U.S. population
- practices or rules governing the reporting of homicides to NCHS and the FBI
- criteria used in defining a case as a homicide
- categories used and rules employed to classify people among demographic subgroups.

The calendar year 1992 Vital Statistics used here included 17,790 firearm homicide and legal intervention deaths. FBI Supplementary Homicide Data covering the same period as the CDC Firearms Injury Surveillance Study were provided by James Alan Fox, Dean, College of Criminal Justice, Northeastern University. Reports on 15,610 murders involving a firearm were included.

Other data — This report includes information analyzed and published by others. Full citations for these sources are included at the end. Some of the data presented are from single site and multijurisdictional studies and are not representative of the Nation as a whole.

³Additional information about the differences between the Vital Statistics and the Uniform Crime Reports estimates of homicide can be found in the following :

Cantor, David and Lawrence E. Cohen, "Comparing Measures of Homicide Trends: Methodological and Substantive Differences in the Vital Statistics and the Uniform Crime Report Time Series (1933-1975)," *Social Science Research*, Vol. 9, 1980, pp.121-145.

Hindelang, Michael J., "The Uniform Crime Reports Revisited," *Journal of Criminal Justice*, Vol. 2, 1974, pp.1-17.

Rand, Michael R., "The Study of Homicide Case-flow: Creating a Comprehensive Homicide Dataset," paper presented to the annual meeting of the American Society of Criminology in New Orleans, Louisiana, November 1992.

Rokaw, William M., James A. Mercy, and Jack C. Smith, "Comparing Death Certificate Data with FBI Crime Reporting Statistics on U.S. Homicides," *Public Health Reports*, Vol. 105, 1990, pp. 447-455

Rosenberg, Mark L., M.D., M.P.P. and James A. Mercy, Ph.D., "Homicide: Epidemiologic Analysis at the National Level," *Bulletin of the New York Academy of Medicine*, Vol. 62, No. 5, June 1986, pp. 376-399.

The Bureau of Justice Statistics is the statistical arm of the U.S. Department of Justice. Jan M. Chaiken, Ph.D., is director.

BJS Selected Findings summarize statistics about a topic of current concern from both BJS and non-BJS datasets.

Substantial assistance in preparing this report was provided by J. Lee Annett, Ph.D., Director of the Office of Statistics and Programming, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; James Alan Fox, Dean, College of Criminal Justice, Northeastern University; and by Larry Greenfeld, Michael Rand, and Patrick A. Langan of the BJS staff.

Verification and publication review were provided by Rhonda Keith, Tom Hester, Marilyn Marbrook, and Yvonne Boston of the Bureau of Justice Statistics.

April 1996, NCJ-160093

Sources

Annest, J. Lee., Ph.D.; James A. Mercy, Ph.D., Delinda R. Gibson, and George W. Ryan, Ph.D., "National Estimates of Nonfatal Firearm-Related Injuries: Beyond the Tip of the Iceberg," *Journal of the American Medical Association*, Vol. 273, No. 22, pp. 1749-54, June 14, 1995

"BB and Pellet Gun-Related Injuries, United States, June 1992, May 1994," *Morbidity and Mortality Weekly Report*, Centers for Disease Control and Prevention, Vol. 44, No. 49, December 15, 1995, pp. 909-13.

BJJ, *Federal Firearms- related offenses, Crime Data Brief*, NCJ-148950, June 1995

BJJ, *Guns and Crime: Handgun Victimization, Firearm Self-Defense, and Firearm Theft*, NCJ-147003, April 1994

BJJ, *Guns Used in Crime: Firearms, Crime and Criminal Justice*, Selected Findings, NCJ-148201, July 1995

BJJ, *Murder in the 75 Largest Counties, 1988*, unpublished data

BJJ, *National Crime Victimization Survey, 1994*, unpublished data

BJJ, *National Crime Victimization Survey, Firearm crime from 1987-92*, unpublished data

BJJ, *Survey of Inmates in State Correctional Facilities, 1991*, unpublished data

BJJ, *Survey of State Prison Inmates, 1991*, NCJ-136949, March 1993

Burt, Catherine W., Ed.D. "Injury Related Visits to Hospital Emergency Departments: United States, 1992," *Advance Data from the Vital and Health Statistics*, Centers for Disease Control and Prevention, National Center for Health Statistics, No. 261, February 1, 1995

Centers for Disease Control and Prevention, National Center for Health Statistics, *Advance Report of Final Mortality Statistics, 1992, Monthly Vital Statistics Report*, Vol. 43, No. 6, December 1994

Centers for Disease Control and Prevention, National Center for Injury Prevention, *Firearms Injury Surveillance Study*, June 1992— May 1993

FBI, Uniform Crime Reports, *Crime in the U.S., 1992*

FBI, Uniform Crime Reports, *Law Enforcement Officers Killed and Assaulted, 1978-93.*

FBI, Uniform Crime Reports, *Supplementary Homicide Reports, June 1992 — May 1993*

McGonigal, Michael D., MD, John Cole, BS, C. William Schwab, MD, Donald R. Kauder, MD, Michael R. Rotondo, MD, and Peter B. Angood, "Urban Firearm Deaths: A Five-year Perspective," *The Journal of Trauma*, Vol. 35, No. 4, October 1993, pp. 532-37.

May, John P., MD, Martha G. Ferguson, MPH, Richard Ferguson, MS, and Karen Cronin, BA, "Prior Nonfatal firearm Injuries in Detainees of a Large Urban Jail," *Journal of Health Care for the Poor and Underserved*, Vol. 6, No. 3, 1995

Miller, Ted R. and Mark A. Cohen, "Costs of Penetrating Injury," *Textbook of Penetrating Trauma*, Rao Ivatury and C. Gene Cayten, editors (Philadelphia: Lee and Caviga) 1995

National Institute of Justice, "Arrestees and Guns: Monitoring the Illegal Firearms Market," Research Preview, September 1995

Rokaw, William M., James A. Mercy, and Jack C. Smith, "Comparing Death Certificate Data with FBI Crime Reporting Statistics on U.S. Homicides," *Public Health Reports*, Vol. 105, pp. 447-455

Webster, Daniel W. ScD, MPH, Howard R. Champion, FRCS (Edin), Patricia S. Gainer, JD, MPA, and Leon Sykes, MD, "Epidemiologic Changes in Gunshot Wounds in Washington, D.C., 1983-1990," *Archives of Surgery*, Vol. 127, No. 6, pp. 694-698

Some of the data utilized in this report are available from the National Archive of Criminal Justice Data at the University of Michigan, 1-800-999-0960.

The data and the report, as well as others from the Bureau of Justice Statistics, are available through the Internet —
<http://www.ojp.usdoj.gov/bjs/>

This report is part of a series on firearms and crime that will result in the publication of a comprehensive document entitled *Firearms, Crime, and Criminal Justice*. Other topics to be covered in this series include guns used in crime, how criminals obtain guns, and weapons offenses and offenders. The full report will focus on the use of guns in crime, trends in gun crime, consequences of gun crimes, and characteristics of and sanctions for offenders who use guns. This report will not cover the involvement of firearms in accidents or suicides.