Methods

Don't SF agencies have all of this information in an electronic format?
The San Francisco General Hospital Emergency Department and Trauma Registry records, and SHR from the CADOJ are available in an electronic format. However, information derived from the police reports and Medical Examiner reports are not in an electronic, transferable format.

If I am interested in the number of domestic violence homicides, where should I go to find this?
The number of monthly homicide incidents can be found on the SFPD website: www.ci.sf.ca.us/police/SFPD30.htm. However, if one is interested in the number of firearm homicides resulting from a domestic violence incident involving an assault weapon, where the victim had a blood alcohol content greater than 0.20, this information would not be found there. These data are now contained within the SFFIRS.

Who is entered into the SFFIRS?
All injuries and deaths resulting from a firearm projectile that occurred in the County.

How much time is required to collect this information?
The initial data collection for each police report, Medical Examiner case and autopsy reports, San Francisco General Hospital Trauma registry and San Francisco Emergency Department data can take between 2 1/2 to 3 hours per incident.

In this Section
- Case Definition
- Data Sources
- Case Entry
- Data Collection
- Analysis
- Limitation and Technical Notes

Methods

Case Definition[1]

Reportable incidents are those in which one or more people died or were injured as the result of a firearm projectile. Excluded from the case definition are deaths and injuries caused by nonpowder guns such as air guns, BB guns, and pellet guns; deaths and injuries caused by pistol-whipping or other non-projectile uses of a firearm; and deaths and injuries from bombs. Reportable victims within an incident include both those who died from a gunshot wound and those who sustained a gunshot wound (including graze wounds) but survived.

Data Sources

Data for this report were derived from the following sources.

1. Medical Examiner.
2. San Francisco General Hospital (SFGH)—including data from the Emergency Department (ED) and from the Trauma Registry.
3. Death certificates.
4. SFPD incident reports, including SHR from the CADOJ.

The Medical Examiner is a primary source for data on the victim, as well as the circumstances under which suicides and unintentional deaths occur.

SFGH is a Level I trauma center and serves as the primary source of identification of all nonfatal firearm-related injuries. Cases were obtained from the SFGH ED registry for all victims who were treated or hospitalized due to firearm-related injuries. For those victims who were hospitalized, the Trauma Registry data were merged into the database. This project was approved by the Institutional Review Board of the University of California, SF.

Death certificates were obtained through the SFDPH and from the State of California. Unique information provided by the death certificate includes the victim's marital, veteran, and employment status; highest educational level attained; country of birth; and industry of employment and usual occupation.

SFPD data were acquired by two methods. First, data on firearm-related homicides were obtained from the SHR. This report contains the age, race, gender, and ethnicity of the victim and suspected offender, as well as information on the victim-offender relationship, precipitating circumstances, and any weapon used. A second source of information was the police incident report. This is a labor-intensive form of data collection, but it provides more important details about circumstances, victims, and suspects. A unique feature of SFFIRS is that multiple circumstances can be coded for each victim involved in an incident. For example, in a SHR, a shooting between rival gang members that was preceded by an argument over drug trade turf issues will be coded as "juvenile gang," or "argument over money, property," or "narcotics law," but not all three circumstances. The level of detail provided by the police incident report allows each dimension of the circumstance to be coded in SFFIRS. Criminal history was obtained through police reports. The basic criminal history information was abstracted from a summary sheet, including the number of misdemeanor and felony charges, as well as the first and last date

[1]Harvard Injury Control Research Center. *Uniform Data Elements: National Fatal Firearm Injury Reporting System, Release 1.1.* Harvard School of Public Health; 2000. www.nviss.org.

that was recorded on their "rap" sheet. Data was not collected with regard to whether or not a person was convicted, and the specific type of charges (e.g., weapon related, drug related, etc.).

Table 3 shows that there were overlapping data sources for many of the variables. Data was prioritized as it was collected. The Death Certificate, Medical Examiner's data, and SHR were considered to be the primary sources for fatalities, and the SFGH ED and SFGH data, and police incident reports were the primary sources for nonfatalities.

Table 3: Sources of Data for Fatal and Nonfatal Firearm-related Injuries

Variables Collected	Medical Examiner	San Francisco Police Department	San Francisco General Emergency Department	San Francisco General Trauma Registry	Supplemental Homicide Reports (SHR)	Death certificates
Incident type	x	x			x	x
Date/time of injury	x	x	x	x	x	x
Date/time of death	x	x	x	x	x	x
Location of incident	x	x			x	x
Manner of death	x	x				x
Victim's demographics	x	x	x		x	x
EMS rendered	x	x				
Victim/suspect relationship	x	x			x	
Autopsy report	x					
Toxicological data	x					
Work-relatedness	x	x				
School/gang/domestic violence	x	x				
Employment/occupation	x					x
Marital status	x					x
Veteran's status						x
Country/state of birth						x
Homelessness	x	x				x
Public housing	x	x				
Circumstances	x	x			x	
Number and location of wounds	x	x	x	x		
Suspect's demographics		x			x	
Victim/suspect criminal history		x				
Firearm and ballistics	x	x			x	
E- and ICD-codes				x		
Hospitalization				x		
Insurance			x	x		
Severity of injury			x	x		
Length of hospitalization				x		
Narrative of incident	x	x				
	Violation and penal codes	x				

Case Entry

The flow chart in Figure 7 shows the coding schemes used for presenting the victim data according to intent, manner, and outcome. For certain tabulations, the recommended framework for presenting mortality and morbidity data was modified as shown in the flow charts as the 1999 SFFIRS Manner/Outcome.[2,3] This was done in order to condense the 12 possible outcomes to 7 categories of manner and outcome of major interest because 5 categories had no events and 4 had

[2]McLoughlin E, Annest JL, Fingerhut LA, Rosenberg HM, Kochanek KD, Pickett D, and Berenholz. *Recommended framework for presenting injury mortality data*. MMWR Recommendations and Reports, Vol. 46, No. RR-14; 1997.

[3]Centers for Disease and Control and Prevention. *Revised Framework of External Cause of Injury (E code) Groupings for Presenting Injury Mortality and Morbidity Data.* MMWR Recommendations and Reports; 1999. http://www.cdc.gov/ncipc/whatsnew/matrix2.htm

mall counts. The flowchart allows the intent, manner, and outcome data to be compared with other reports.

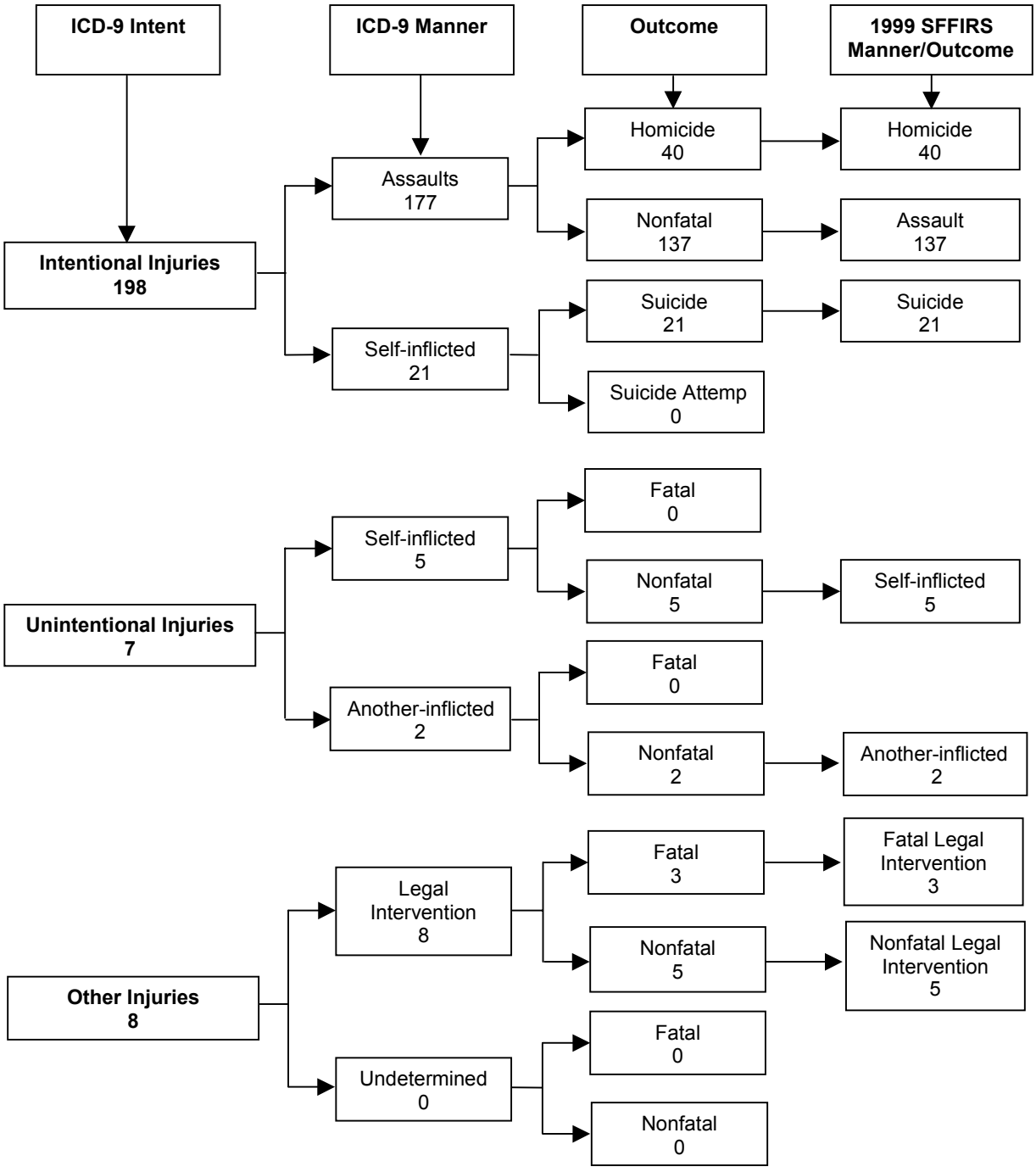

Figure 7: Flow Chart of Coding Scheme Used for Presenting the Victim Data According to Manner, Intent, and Outcome: San Francisco, 1999

A relational database was designed in order to capture 127 data elements regarding the incident, persons involved (including victim and suspect), and firearm. Figure 8 shows the basic table structure for the database and the number of variables in each table.

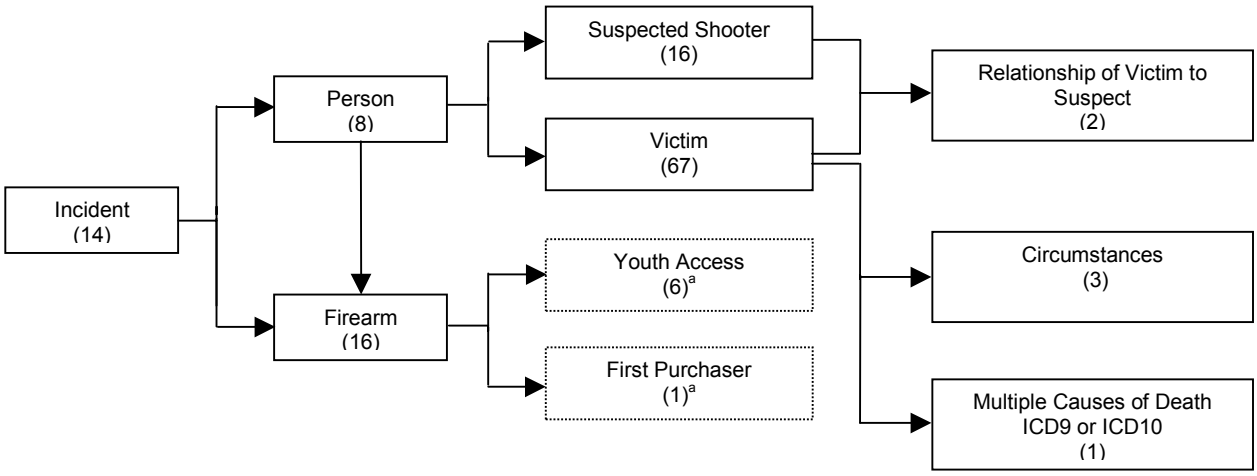

Figure 8: Structure of the Database with Number of Elements in Each Table
[a]These data elements are not routinely collected by any of the agencies, and consequently this database does not currently contain this information.

Incident Table

An incident is an event that results in a firearm death or injury, or multiple related firearm deaths or injuries, during a continuous period of time. For example, an episode in which a person shoots a family member and then shoots himself would be entered as one incident with two persons involved. The incident table contains variables that describe the event, including location of the incident, number of victims and suspects involved, narrative, and type of incident. The variables include:

Incident ID
Incident date
Precinct
Incident narrative
Incident location type
Involvement of public housing
Address of incident (latitude/longitude and census tract and block)
Number of victims and suspects
Type of incident
Penal and violation codes for incident
Other injuries

Person Table

The Person Table stores the variables that are collected in common on both the victim and the suspect, such as age, race/ethnicity, gender, whether the shooting occurred at the person's residence or while the person was at work, and person type. The "Person Type" on the Person Table which indicates whether the individual is a victim, suspect, or both.

Person (Victim and Suspect) Characteristics
Person type

Age
Gender
Race
Ethnicity
Whether incident occurred at person's residence/work

Victims
"Victims" are persons who sustained projectile injuries from a firearm. Victims do not include people who were threatened with a firearm but not injured, or people who were injured by a weapon other than a firearm. Victims who received a graze wound from a firearm were reported.

Suspected Shooters (or, Suspects)
"Suspects" is a collective term for those people who are suspected of having shot another person in an incident, whether intentionally or accidentally. However, law enforcement officers are only discussed in the legal interventions section of this report since they are not considered suspects. A suspect can be described: for example, a white teenager; or a suspect can be identified—John Smith, born March 3, 1956. Suicide victims are not considered suspects (unless they also shot someone else in the same incident). If more than one person was involved in the shooting, each was listed as a suspect in the case, even if only one actually pulled the trigger. For example, in the case of two armed robbers who enter a store and shoot the clerk, even if only one pulled the trigger both robbers would be listed as suspected shooters in the shooting.

Both Victim and Suspects
"Both" are victims who also shot someone else in the incident. For example, a person who kills his wife and himself would have a person type (ptype) of "Both", as would a person who shoots a police officer and then is himself shot by another police officer during apprehension. A suicide victim would have a Ptype of "Victim" (unless the suicide victim also shot someone else during the incident). A person's status as a victim, suspect, or both is not affected by whether the shooting was fatal or nonfatal.

Victim Table

The Victim Table includes variables that are collected only on victims. The following is a list of the variables collected for each victim:

Homelessness
Victim's residential address ((latitude/longitude and census tract and block)
County and city of residence
Place of death
Date of injury
Time of injury
Date of death
Time of death
Gang-relatedness and name
Mode to hospital
Name of hospital
Transfer
Number of bullets and wounds

Admitted from emergency department to hospital
Medical Examiner's determination of manner of death
Incident type and type of injury
Victim/offender relationship (SHR)
Circumstance (SHR)
Justifiable shooting circumstances (SHR)
Violent circumstance
Accident/unintentional/another-inflicted/self-inflicted circumstance
Suicide circumstance
Specimen date and time
Evidence of past drug use
Drugs tested
Alcohol presence and blood alcohol level
Drug presence
Employment status
EMS assistance rendered
SFGH ED treatment, date, time, wound location, injury type, insurance, and severity
SFGH date, time, injury type, wound location, ICD and E codes, AIS, ISS, and final disposition
Marital, employment, and veteran's status, highest education level, usual occupation and industry
Criminal history
Booked
Charges past and charges for this incident
First and last contact date with the SFPD
FBI or a CAII number
Number of prior felony and misdemeanor contacts
Parole and probation violation

Suspect Table

The suspect table contains variables related to the individual who was believed to have been involved in the incident. Variables include:

Suspect's residential address (latitude/longitude and census tract and block)
County and city of residence
Suicide committed
Gang-relatedness and name
Criminal history
Booked
Charges
Penal and violations codes
First and last contact date with the SFPD
FBI or a CAII number
Number of prior felony and misdemeanor contacts
Parole and probation violation

Relationship Table

This table pairs each victim listed in an incident with each suspect listed. Up to two codes are entered to describe the relationship of the victim to the offender. In complex incidents, a

victim-suspect pair may not be relevant because the suspect is not a suspect for that particular victim.

Circumstance Table

There are three sets of variables to describe the circumstances leading to the injury or fatality: violence-related circumstances, accident-related circumstances, and suicide information. Multiple circumstances for each victim can be entered.

Multiple Cause of Death Tables (Mult9 and Mult10)

Death certificates include not only the Underlying Cause of Death code, but other Multiple Cause of Death codes that describe all of the injuries and medical conditions contributing to death.

Firearm Table

The firearm table documents information about the gun(s) suspected of being used in the incident. Firearms are linked only to incidents, not to individuals.

- Information on type of firearm (e.g., from witnesses)
- Physical evidence from scene of incident indicating type of firearm
- Firearm type
- Firearm make
- Firearm model
- Firearm caliber/gauge
- Firearm barrel length
- Firearm magazine capacity
- Safety features present
- Storage of firearm
- Firearm reported stolen
- Casings or shells found
- Serial number
- Assault weapon and type
- Trace

First Purchaser Table

Currently, we are not collecting any information regarding the first purchaser of a firearm used in an incident. We would like in the future to collect these data since they would provide additional information on the life of the firearm. Potentially useful information includes whether or not the owner of the firearm resided at the same address as the victim or suspect in the injury incident, whether a gun used in the incident was first purchased by either the victim or suspect, or whether the owner shares the same last name as the victim or suspect.

Youth Access Table

Currently, data on these elements are not routinely collected. This table has been established to support potential future collection of youth information. When a youth (under18 years old) commits suicide with a gun or uses a firearm to shoot another person, the following additional variables relating to access would be collected: the owner of the firearm; the source of the firearm (e.g., whether the youth was the owner of the firearm and where the youth obtained the firearm); storage of the firearm, including whether or not it was locked and/or loaded; and whether the youth's access to the firearm was authorized.

Data Collection

There is an approximately 6 to12-month delay between the date of an incident and the date that data collection is initiated. Rather than providing real-time reporting of a limited number of variables, the goal is to focus on comprehensive data collection, when all initial and supplementary reports from police investigation and the medical examiner are completed.

To identify firearm fatalities, Medical Examiner's case reports were reviewed (Figure 9). Each case and autopsy, including toxicology reports, were reviewed and pertinent data were extracted and entered directly into the database using a laptop computer.

Figure 9 shows how the identification of nonfatal firearm-related injuries was performed. First, the SFGH ED registry provided a monthly list of all victims treated for a gunshot wound. This list provided the date, time, age, race, gender, and location of injury. Second, this list was matched against all police reports with violation codes that identified that a firearm was potentially used to cause an injury. By reviewing all firearm-related police reports, victims who were not treated at SFGH were also identified. Each police report was reviewed to determine whether an injury resulted.

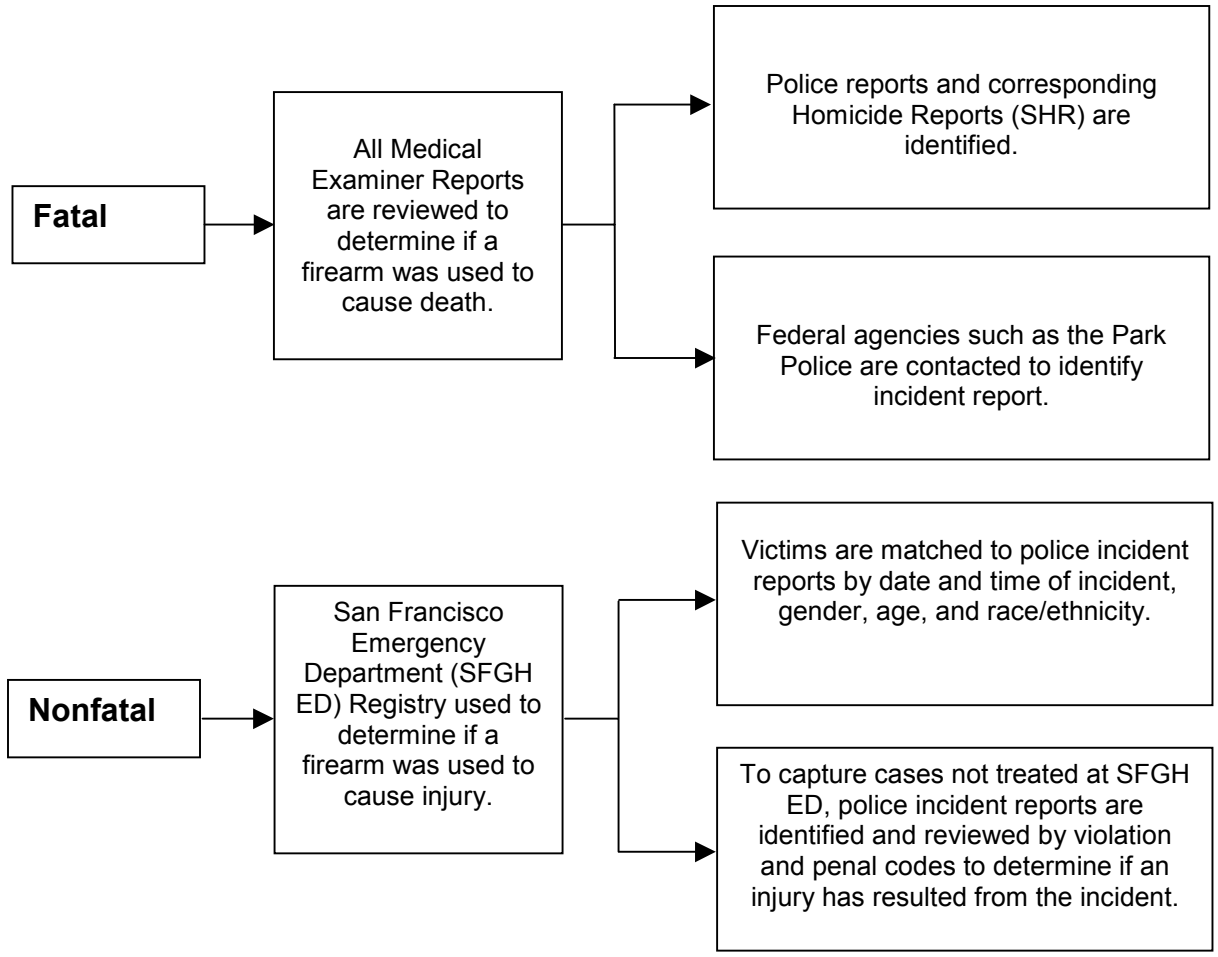

Figure 9: Steps in the Identification of Firearm Injury-related Cases: San Francisco, 1999

Analysis

ACCESS, SPSS, EXCEL, and MapInfo were used to analyze the data. Ranges were checked, relational consistency checks were made, duplicated data were investigated, and redundancies were removed. Inter and intra-coder reliability checks were conducted on 10% of the records. The rate of disagreement was less than 5%. All errors were reconciled and recoded. Age-adjusted rates were calculated for all SF residents using the standard million U.S. 2000 population. Age-adjusted rates allow comparisons across populations to determine the severity of an injury—for example, to assess whether one segment of the population is experiencing excessive deaths or injuries as compared with another segment. Age-specific rates were also calculated for all SF residents using the California Department of Finance populations for 1999. Age-specific rates are useful for describing the risk of violence because deaths and injuries from firearms are not consistent across life spans. All rates are reported per 100,000 population.

Limitations and Technical Notes

Rates reported do not include nonresidents due to the lack of applicable statistical information for the determination of the overall population denominators. These rates may not fully reflect the true impact that firearm violence has on the community where the incident occurred. When comparing rates for SF to other counties, the reader must be aware that these rates are based on the characteristics of the residents of the county were they reside.

When cell counts are 5 or less, rates are not reported due to the statistical unreliability of these numbers. Thus, no generalization or comparison based on such small numbers should be conducted.

It is important to note that the actual population living in the county may be less, especially for particular segments of the population. For example, these population counts do not account for the number of residents who are incarcerated. Thus, the rates reported may underestimate the actual risk of being injured by a firearm.