

## Acknowledgements

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## Introduction

Approximately 1,600 persons die every year in Georgia from violence-related injuries; among these, 57% are suicides and 41% are homicides (1). From 2001 to 2005, suicide and homicide ranked 11 and 14, respectively, among the leading causes of death in Georgia. Suicide was the third leading cause of death for persons aged 15 to 34 years, the fifth leading cause of death for persons aged 10 to 14 years and 35 to 44 years, and the seventh leading cause of death for persons aged 45 to 54 years. Homicide was the second leading cause of death for persons aged 1 to 4 years and 15 to 34 years, the third leading cause of death for persons aged 5 to 9 years, and the fourth leading cause of death for persons aged 10 to 14 years (2).

Despite their huge impact on health, injuries due to violence are challenging to measure and track because most types are not addressed by notifiable disease reporting. Public health surveillance of violent injuries depends on data sources that already exist for another purpose, e.g., emergency department and hospital discharge data. For fatal violent injuries, traditionally, surveillance has relied on death certificates for information on the number of injury deaths, the intent of fatal injuries, descriptions of the victims (sex, age, race, date of birth, place of residence), and locations of the initial injury that caused the death. This information is generally not enough to fully describe, understand, and prevent violent deaths.

To address the need for detailed surveillance, in the 1990s, Emory University was funded by the National Institute for Justice to develop a "Cops and Docs" program. For certain census tracts and patrol beats in Atlanta, it linked information from police reports, 911 calls, firearm records, emergency room records and medical examiner reports to provide firearm-related morbidity and mortality surveillance. In 1999, the Harvard Injury Control Research Center pilot launched the National Violent Injury Statistics System (NVISS), a pilot test of national reporting for violent injuries linking death certificates and reports from coroner/medical examiner reports, police, and crime laboratories. Metro Atlanta was an NVISS site operated by the Emory University Center for Injury Control.

In 2002, the Centers for Disease Control and Prevention (CDC) developed the National Violent Death Reporting System (NVDRS) to establish a state-based, active surveillance system that collects information on a variety of indicators associated with violent deaths, including homicides, suicides, unintentional deaths caused by firearms, deaths caused by police and other persons with legal authority to use deadly force, and deaths of undetermined intent. NVDRS links information from death certificates with information from medical examiner and coroner records and law enforcement reports to describe each violent death in a more comprehensive way.

NVDRS became operational in 2002, when six states received federal funds to develop and implement the system. Georgia joined NVDRS in 2003 after receiving cooperative agreement funding from CDC's National Center for Injury Prevention and Control (NCIPC). As of 2008, a total of 16 states and selected sites in California participate in the system.

The purpose of the Georgia Violent Death Reporting System (GVDRS) is to collect and analyze high-quality data that monitors the characteristics and magnitude of violent deaths to assist injury prevention programs and partners in developing, implementing, and evaluating interventions and policies that reduce and prevent injuries and violent deaths in the state.

## Methods

This report summarizes descriptive information on violent deaths occurring in Georgia, particularly suicides and homicides, compiled by the Georgia Violent Death Reporting System (GVDRS). GVDRS is a population-based active surveillance system designed to obtain a complete census of violent deaths occurring in the state, including both resident and non-resident deaths. To fully characterize violent death incidents or events in the state, GVDRS collected and linked information from death certificates, medical examiner and coroner death investigations, law enforcement records, and crime laboratory records. It also used newspaper clippings to identify potential violent deaths, determine intent, and clarify details for some deaths.

#### **Case definition**

A violent death was defined as a death resulting from either the intentional use of physical force or power against oneself, another person, or a group or community, or the unintentional use of a firearm, as defined by the World Health Organization. The case definition included deaths resulting from the following manners of death: suicide, homicide, undetermined intent, legal intervention, and unintentional firearm injury. All fatal injuries involving multiple victims and occurring within 24 hours of each other were linked in one incident or event. Each incident record included information about all known victims and suspects, their relationships, and any weapons involved in each incident. Examples of incidents or events with multiple victims or multiple suspects are multiple homicides, homicides followed by suicides, and multiple suicides. The ability to analyze incident records allowed for an assessment of risk and protective factors for violent deaths.

State-specific information was provided to CDC without personal identifiers, such as name and street address or incident narratives, for inclusion in the national database, National Violent Death Reporting System (NVDRS).

#### **Case selection**

A violent death was selected based on a date of death in 2004. Violent deaths were categorized by type using the abstractor-defined manner of death, using CDC guidelines.

#### **Occurrent deaths**

Data analyses examined occurrent deaths which were defined as deaths resulting from an initial injury that occurred within the state. That definition included deaths that occurred within the state but the state where the initial injury took place was unknown. Although most occurrent deaths involved state residents, they were not limited to state residents.

Occurrent, rather than resident, deaths are examined in this report because the risk of violent death, especially homicide, may be affected more by the circumstances, setting, and place of occurrence than by the place of residence. Strategies to prevent violent deaths in Georgia must consider all incidents that occurred within the state, not just those involving residents.

#### Data analysis

This report presents the following types of measures: 1) the number of deaths from a violent death type; 2) the percent of the total number of deaths for a violent death type; and 3) the occurrent death ratio per 100,000 persons for a violent death type.

Occurrent death ratios were calculated by taking the number of violent deaths in the year and dividing it by the population during that period (Ratio= [Number of deaths/Population] x100,000), for total cases and stratified by sex, age, race/ethnicity and marital status. Occurrent death ratios for persons categorized as "other/unknown" for race/ethnicity and marital status were not calculated because the population subgroup for the denominator was not available or known. Occurrent death ratios were not age-adjusted.

This report also describes the types of weapons used and the precipitating circumstances associated with suicides and homicides.

Counts and percents describe the frequency of an event or condition, providing an indication of the burden of the violent death types among specific population groups. Death ratios are summary statistics providing a standard unit of measurement that permit comparison among population groups and show levels of risk. Throughout the report, death ratios should be interpreted with caution for instances in which the number of deaths is less than five, as those estimates could be unstable.

#### Manner of death

The intent of the person inflicting a fatal injury is assigned by a trained abstractor after examining the manner reported in all the source documents. The manner of death types in GVDRS are:

- **Suicide**. A death resulting from the intentional use of force against oneself. It includes deaths of persons who intended to injure rather than kill themselves, persons playing "Russian roulette," and suicides involving passive assistance to the decedent, such as supplying the means or information needed to complete the act. This type does not include deaths caused by chronic or acute substance abuse without the intent to die or deaths attributed to autoerotic behavior, such as self-strangulation during sexual activity.
- **Homicide**. A death resulting from the intentional use of force or power, threatened or actual, against another person, group, or community, including arson with no intent to injure someone and stabbing with unspecified intent to injure. This type does not include vehicular homicide without intent to injure, unintentional firearm deaths, combat deaths, acts of war, and deaths of unborn fetuses.
- **Unintentional firearm**. Term used for deaths resulting from a penetrating injury or wound from a weapon that uses a powder charge to fire a projectile and for which the shooting was not directed intentionally at a person. It includes celebratory firing not intended to harm, frighten, or control someone; a soldier shot during an exercise, not

in a combat situation; a person who had a self-inflicted wound after playing with or handling a firearm. This type does not include firearm injuries caused by unintentionally hitting someone with a firearm and unintentional injuries from nonpowder weapons, such as BB guns, pellet, or other compressed-air or gas-powered guns.

- **Undetermined intent**. Term used for deaths resulting from the use of force or power against oneself or another person for which there is not enough evidence to indicate a specific manner of death. It includes medical examiner or coroner death rulings as accidents or suicides, undetermined, jumped or fell, and self-inflicted injuries without evidence favoring either unintentional or intentional injuries.
- Legal intervention. Term used for deaths resulting from the intervention of a police or peace officer and military police acting in the line of duty. This type excludes legal executions.

#### **Circumstances Preceding Death**

Circumstances are precipitating events that led to a fatal injury, as reported by medical examiner and coroner death investigations and law enforcement reports, when enough evidence exists to indicate one. A body found without any detailed information that describes events preceding the death is an example of a death without evidence of precipitating circumstances that is addressed in data abstraction. Each manner of death has its specific set of circumstances. A detailed list of circumstances preceding a fatal injury by manner of death appears on the April 11, 2008 issue of the Morbidity and Mortality Weekly Report Surveillance Summaries at: <u>http://cdc.gov/mmwr/PDF/ss/ss5703.pdf</u> (3).

## Overview

A total of 1,902 violent deaths occurred in Georgia in 2004. Among all violent deaths, one-half were suicides and one-third were homicides.

### Number of Violent Deaths by Type, Georgia, 2004

Violent Death Type	Number of Occurrent Deaths	%
Suicide	1,015	53
Homicide	669	35
Undetermined	157	8
Legal intervention	33	2
Unintentional firearm injury	28	1
Total	1,902	100

Violent deaths resulted from events or incidents involving either a single or multiple victims. The majority of the violent deaths in 2004 had only one victim in the incident. A total of 1,834 incidents yielded 1,902 victims.

Incidents and Violent Deaths, Georgia, 2004			
Number of Victims in Each Incident	Count of Incidents	Total Number of Deaths	
1	1,779	1,779	
2	46	92	
3	6	18	
4	2	8	
5	1	5	
Total	1,834	1,902	

This report focuses on suicides and homicides because they comprised the vast majority of violent deaths in Georgia.

## Suicide

#### Suicide by public health district of injury occurrence

The distribution of the number of suicides and death ratios by public health district where the injury occurred are shown on Table 1. The Fulton Health District had the highest number of suicides (91 deaths), followed closely by LaGrange (80 deaths), Cobb-Douglas (76 deaths), East Metro (75 deaths), and DeKalb (74 deaths). The public health district in which the injury occurred was not known for 29 suicides. The occurrent death ratio of suicides in Georgia in 2004 was 12 per 100,000 persons, but varied by public health district.

Public Health District where Injury Occurred	# of Suicides	Percent <sup>1</sup>	Ratio per 100,000 <sup>2</sup>
South Central (Dublin)	24	2%	17
Northeast (Athens)	56	<u> </u>	14
North Central (Macon)	65	7%	13
North (Gainesville)	69	7%	13
South (Valdosta)	30	3%	13
East Central (Augusta)	52	5%	12
Northwest (Rome)	68	7%	12
Coastal (Savannah)	59	6%	12
LaGrange	80	8%	11
Fulton	91	9%	11
DeKalb	74	8%	11
Southeast (Waycross)	35	4%	11
North Georgia (Dalton)	39	4%	10
Southwest (Albany)	36	4%	10
Cobb-Douglas	76	8%	10
West Central (Columbus)	34	3%	10
Clayton County (Morrow)	23	2%	9
East Metro (Lawrenceville)	75	8%	9
Unknown District <sup>3</sup>	29		
Total known District	986		
Total	1,015		12

<sup>3</sup> Percent and ratio were not calculated when the District in which the injury occurred was unknown.

The South Central and Northeast health districts had the highest suicide ratios. The health districts with the lowest suicide ratios were Clayton County and East Metro.

#### Suicide by sex and age group

In Georgia in 2004, more males than females died from suicide. The number of suicides increased with increasing age, peaking at age group 35-44 years for both males and females. The number of suicides declined after age 35-44 years (Figure 1).



The number of suicides in Georgia in 2004 among persons aged 24 years and younger was highest at age 20 years, followed by ages 19 and 23 years and age 22 years. The youngest age reported was 10 years, with two cases (Figure 2).



Suicide ratios were higher among males than among females. Suicide ratios among males increased with increasing age; the highest ratio was 80 per 100,000 persons for males ages 85 years and older. Suicide ratios among females peaked at ages 35-44 years, at 9 per 100,000 persons (Figure 3).



#### Suicide by sex and race/ethnicity

More non-Hispanic white males and females died from suicide in 2004 than persons from other race/ethnicities. Non-Hispanic black males accounted for 115 deaths, while non-Hispanic black females accounted for 19 deaths. Hispanic males and Hispanic females accounted for fewer suicides than males and females with other or unknown race (Figure 4).

Suicide ratios in Georgia in 2004 were higher among non-Hispanic white males (24.0 per 100,000 persons) and non-Hispanic white females (6.7 per 100,000 persons). The suicide ratio among non-Hispanic white males was approximately three times higher than the ratio among non-Hispanic black males and Hispanic males. The suicide ratio among non-Hispanic white females was nearly five times higher than the ratio among non-Hispanic black females and eight times higher than the ratio among Hispanic females (Figure 5).





As with the number of suicides, the ratio of suicide in Georgia in 2004 was higher among males than females. Male suicide ratios were nearly four times higher among non-Hispanic whites; nearly seven times higher among non-Hispanic blacks, and nine times higher among Hispanics (Figure 5).

#### Suicide by sex and marital status

Among persons aged 15 years and older in Georgia, nearly 40% of persons who died from suicide in 2004 were married. Among those not married, never married males accounted for a larger number than divorced males whereas divorced females accounted for a larger number than never married females. Widowed males and females had the lowest number of suicides (Figure 6).

#### Figure 6. Number of Suicides by Marital Status\* and Sex, Georgia, 2004 🗆 Male 🔳 Female 350 316 300 Number of suicides 250 237 200 176 150 100 50 ٨ \*Among persons ages >15 years Missing=1

Although married persons accounted for a large number of suicides, suicide ratios among persons ages 15 years and older in Georgia in 2004 were higher among widowed males and divorced females (65.8 and 15.0 per 100,000 persons, respectively) and lowest among married males and females. Among widowed persons, the male suicide ratio was 14 times higher than that of females. The suicide ratio for divorced females was three times higher than the ratio for married, single, and widowed females (Figure 7).



#### Method of injury

Firearm use was the most common method for completing a suicide in Georgia in 2004 (Figure 8).



Hanging, strangulation, suffocation was the second most common method used by males to complete a suicide. Among females, the second most common method used to complete a suicide was poisoning. Poisoning was more commonly used by females than by males (Figure 9).

## Figure 9. Methods Used for Suicide by Sex, Georgia, 2004



#### Suicide circumstances

In 2004, GVDRS was able to determine circumstances for 80% of suicides from the data it received. Current mental health problem (36%) was the most common suicide circumstance reported, followed by having a crisis within the past two weeks (29%), having intimate partner problems (24%), and having a current depressed mood (24%). A suicide note was left in 28% of deaths and an intent to commit suicide was disclosed in 22% of deaths. These circumstance categories are not mutually exclusive; therefore, any of them could occur more than once (Table 2).

Table 2. Most common suicide circumstances, Georgia 2004.		
Suicide Circumstance	Percent of deaths (N=816)*	
Current mental health problem	36%	
Crisis within past two weeks	29%	
Person left suicide note	28%	
Intimate partner problem	24%	
Current depressed mood	24%	
Disclosed intent to commit suicide	22%	
Ever treated for mental illness	21%	
Current treatment for mental illness	18%	
Physical health problem contributed	13%	
Alcohol dependence	12%	
Other substance abuse problem	12%	
History of attempting suicide	12%	
* Note: Circumstances were known for only 8	0% of suicides	

## Homicide

#### Homicide by public health district of injury occurrence

The distribution of the number of homicides and death ratios by public health district where the injury occurred are shown on Table 3. The Fulton Health District had the highest number of homicides (154 deaths), followed by DeKalb (80 deaths), Coastal (44 deaths), and East Metro (38 deaths). The public health district in which the injury occurred was not known for 21 homicides. The occurrent death ratio of homicides in Georgia in 2004 was 8 per 100,000 persons, but varied by public health district.

Public Health District where Injury Occurred	# of Homicides	Percent <sup>1</sup>	Ratio per 100,000 <sup>2</sup>
Fulton	154	12%	19
DeKalb	80	6%	12
West Central (Columbus)	37	3%	11
Clayton County (Morrow)	23	2%	9
Coastal (Savannah)	44	3%	9
Southwest (Albany)	28	2%	8
North Central (Macon)	37	3%	8
Southeast (Waycross)	25	2%	8
South (Valdosta)	14	1%	6
East Central (Augusta)	25	2%	6
South Central (Dublin)	8	1%	6
Northwest (Rome)	29	2%	5
Northeast (Athens)	20	2%	5
North Georgia (Dalton)	17	1%	5
East Metro (Lawrenceville)	38	3%	4
LaGrange	27	2%	4
Cobb-Douglas	27	2%	4
North (Gainesville)	15	1%	3
Unknown District <sup>3</sup>	21		
Total known District	648		
Total	669		8

<sup>3</sup> Percent and ratio were not calculated when the District in which the injury occurred was unknown.

The Fulton and DeKalb health districts had the highest ratios of homicide. The health districts with the lowest homicide ratios were Cobb-Douglas and North (Table 3).

#### Homicide by sex and age group

In Georgia in 2004, more males than females died from homicide. The number of homicides was highest at age groups 15-54 years for both males and females. Persons aged 25-34 years accounted for the largest number of homicides, followed by age group 15-24 years among males and age group 35-44 years among females (Figure 10).

The number of homicides in Georgia in 2004 among persons aged 24 years and younger was highest at age 23 years, followed by age 24 years, and infants less than one year of age (Figure 11).





#### Homicide by sex and age group, cont.

Homicide ratios among males were highest for infants less than one year of age (20 per 100,000 persons), followed closely by males aged 25-34 years (19 per 100,000 persons), and males aged 15-24 years (18 per 100,000). Homicide ratios among females were highest for infants less than one year of age (13 per 100,000 persons), followed by females aged 25-34 years (6 per 100,000 persons) (Figure 12).



#### Homicide by sex and race/ethnicity

Far more non-Hispanic black males died from homicide in 2004 than persons from other race/ethnicities. Non-Hispanic white males accounted for 112 deaths, while non-Hispanic white and black females accounted for 81 and 79 deaths, respectively. Hispanic males and Hispanic females accounted for slightly more deaths than males and females of other or unknown race/ethnic groups (Figure 13).

Homicide ratios in Georgia in 2004 were highest among non-Hispanic black males (25 per 100,000 persons) and Hispanic males (16 per 100,000 persons). The homicide ratio among non-Hispanic black males was approximately six times higher than the ratio among non-Hispanic white males and nearly 1.5 times higher than the ratio among Hispanic males. While the homicide ratio for females was lower than that among males for all race/ethnic groups, the homicide ratio among non-Hispanic black females was nearly two times higher than the ratio among non-Hispanic white females and 1.6 times higher than the ratio among Hispanic females (Figure 14).





As with the number of homicides, the ratio of homicide was higher among males than among females. Male homicide ratios were four times higher among non-Hispanic blacks and nearly five times higher among Hispanics. Non-Hispanic black females were also at elevated risk compared to their non-Hispanic white and Hispanic counterparts (Figure 14).

#### Homicide by sex and marital status

Among persons aged 15 years and older in Georgia, never married males accounted for a disproportionate number (about 45%) of homicide deaths. Married persons accounted for a larger number than divorced and widowed persons (Figure 15).



Homicide ratios in Georgia in 2004 were highest among never married males (29 per 100,000 persons) and lowest among married males and females. Homicide ratios among never married males were four times higher than that of females. Among divorced persons, the homicide ratio for males was approximately two times higher than that for females. Similarly, the homicide ratio among widowed males was nearly three times higher than that of widowed females (Figure 16).



#### Method of injury

Firearm use was the most common method of homicide in Georgia in 2004 (Figure 17).



Males were more commonly killed by firearms than were females. Females were more commonly killed by a sharp instrument, a blunt instrument, and by hanging, strangulation, suffocation than were males (Figure 18).



#### Homicide circumstances

In 2004, GVDRS was able to determine circumstances for 60% of homicides from the data it received. Other argument, abuse or conflict (40%) was the most common homicide circumstance reported, followed by the categories of precipitated by another crime, conflict with intimate partner, and drug-related (19%). These circumstance categories are not mutually exclusive; e.g., an incident could have been in the categories of precipitated by another crime, a precipitating crime in progress, and precipitated by robbery at the same time (Table 4).

Table 4. Most common homicide circumstances, Georgia 2004.		
	_	
Homicide Circumstance	Percent of deaths (N=400)*	
Other argument (not money, drugs, jealousy)	40%	
Precipitated by another crime	19%	
Conflict with Intimate partner	19%	
Drug-related	19%	
Precipitating crime in progress	16%	
Victim used weapon	9%	
Precipitated by robbery	9%	
Jealousy (lovers' triangle)	3%	
Argument over money/property	2%	
Bystander	2%	
Justifiable self-defense	1%	
Gang-related	<1%	
* Note: Circumstances were known for only	60% of homicides	
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## Summary

Suicides and homicides accounted for the majority of types of violent deaths in Georgia. Firearms were the most common method used for suicide and for homicide. Over a third of suicides had a current mental health problem prior to their death and two in five homicides resulted from a conflict or argument. Males had both a higher burden and higher risk for suicide and homicides than female. The population subgroups with the most cases of suicide or homicide were not always those with the highest risk once the size of the subgroup was accounted for in the death ratio.

#### Suicide

The highest suicide burden, that is, the number of suicides, occurred in the highly-populated Fulton, LaGrange, and DeKalb public health districts. However, the South Central and Northeast public health districts were at a higher risk for suicide than other districts in the state.

A high burden of suicide was found among persons aged 35 to 54 years compared to other adult age groups. A high burden of suicide was also found among young adults aged 19-20 years and 23 years. However, the highest risk of suicide occurred among older males; suicide ratios in males increased with increasing age.

More non-Hispanic whites died from suicide than persons of other race/ethnic groups. Non-Hispanic white males had a higher burden of suicide than both males of other race/ethnicity and non-Hispanic white females. For both males and females, non-Hispanic whites were at a higher risk for suicide than persons of other race/ethnicity. Among all race/ethnic groups, males were at the highest risk for suicide.

A high burden of suicide was also found among married persons. More married males died from suicide than never married, divorced, and widowed males. However, the risk of suicide for males was highest among the divorced or widowed. Among women, the divorced had the highest risk.

#### Homicide

The highest homicide burden, that is, the number of homicides, occurred in the highlypopulated Fulton, DeKalb, Coastal, and East Metro public health districts. The Fulton and DeKalb public health districts also had higher homicide ratios, putting them at a higher risk for homicide than other districts in the state.

A high burden of homicides was found among persons aged 15 to 34 years compared to persons in other age groups. A high burden of homicide was also found among infants less than a year old and young adults aged 23 and 24 years. Homicide ratios were highest among infants less than one year of age and among males aged 25 to 34 years of age, indicating that these two groups were at highest risk of dying from homicide. The infant homicide rate was higher than expected; further exploration of GVDRS data is underway to explain this finding.

More non-Hispanic black males died from homicide than persons of any other sex and race/ethnic group. Their risk of homicide far exceeded that of other males and of non-Hispanic black females, as well as other sex and race/ethnic groups.

A high burden of homicide was also found among never married persons. More never married males died from homicide than did married, divorced, and widowed males. Similarly, never married males had the highest risk for homicide, greater than married, divorced and widowed males.

## References

- 1. Online Analytical Statistical Information System (OASIS). Georgia Department of Human Resources, Division of Public Health, Office of Health Information and Policy. July 8, 2008. http://oasis.state.ga.us/
- Web-based Injury Statistics Query and Reporting System (WISQARS). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. July 8, 2008. http://www.cdc.gov/ncipc/wisqars/
- Centers for Disease Control and Prevention. Surveillance for Violent Deaths National Violent Death Reporting system, 16 States, 2005. Surveillance Summaries, April 11, 2008. MMWR 2008; 57(No. SS-3).