OHIO VIOLENT DEATH REPORTING SYSTEM

Annual Report   2013

Ohio Department of Health

Violence and Injury Prevention Program

National Violent Death Reporting System

NVDRS

OHIO

Ohio Department of Health
Violence and Injury Prevention Program

Ohio Violent Death Reporting System

2013 Annual Report

The Ohio Violent Death Reporting System collects detailed information on deaths that occur in Ohio resulting from homicide, suicide, unintentional firearm deaths, legal intervention and deaths for which intent could not be determined. Based on information from multiple sources including death certificates, medical examiner reports, and law enforcement reports, these data create a definitive accounting of violent deaths in our state. This report presents data from 2013 that researchers, legislators, community leaders and others may use to guide prevention efforts.

*Data Accessed July 27, 2016.
Visit the Ohio Public Health Data Warehouse for the most recent public health data:
http://publicapps.odh.ohio.gov/EDW/DataCatalog

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Executive Summary

The Ohio Violent Death Reporting System collects detailed information on deaths that occur in Ohio resulting from suicide, homicide, unintentional firearm deaths, legal intervention and deaths of undetermined intent in which the cause of death may have been the result of violence. Based on information from multiple sources including death certificates, medical examiner reports and law enforcement reports, these data create a definitive accounting of violent deaths in our state. This report presents data from 2013 that researchers, legislators, community leaders and others may use to guide prevention efforts.

Violent Deaths

In 2013, 2,333 violent deaths occurred in Ohio. The most common manner was suicide (64 percent) followed by homicide (27 percent). In addition, there were 23 deaths due to legal intervention (1 percent), 26 deaths due to unintentional firearm injuries (1 percent) and 159 deaths of undetermined intent (7 percent of total). These figures were similar to those reported in 2012.

Age-adjusted violent death rates among men were 3.4 times greater than death rates among women (31.6 vs. 9.3 per 100,000). Blacks (non-Hispanics) had the highest age-adjusted rate of violent death (34.6 per 100,000), followed by white non-Hispanics (17.9 per 100,000) and Hispanics (8.0 per 100,000).

Rates of violent death also varied markedly by age, ranging from 3.5 per 100,000 among 0 to 14-year-olds to 29.4 per 100,000 among 25-34-year-olds. Age group differences were especially striking for black males, peaking at 131.3 per 100,000 among 25-34-year-olds.

Ohio's violent death rate was close to average across the 16 other states that used the National Violent Death Reporting System and reported data for 2013. However, Ohio was unusual in having the highest rate of violent death among black males: 59.3 per 100,000 compared to the mean of 38.1 per 100,000.

Suicide

There were 1,504 suicide deaths in Ohio in 2013, representing an age-adjusted rate of 12.7 per 100,000. This figure was similar to the 1,510 suicide deaths recorded in 2012.

In 2013, the age-adjusted suicide rate for males (20.4 per 100,000) was 3.6 times the rate for females (5.6 per 100,000). And the age-adjusted rate for whites (13.8 per 100,000) was nearly twice the rate for blacks (7.3 per 100,000). This racial disparity was particularly pronounced among females as the age-adjusted rate for white females (6.4 per 100,000) was more than 4 times the rate for black females (1.5 per 100,000).

Suicide deaths among males were much more likely to involve a firearm (58 percent) compared to females (31 percent); whereas poisoning was a much more common method among females (33 percent) compared to males (11 percent).

Notably, 258 suicide victims (17 percent of total) were known to be active duty military or veterans. This figure included 49 victims less than 45 years old.

Homicide

There were 621 homicides in Ohio in 2013, representing an age-adjusted rate of 5.6 per 100,000. This figure was similar to the 610 homicides reported in 2012.

The age-adjusted homicide rate for blacks (24.9 per 100,000) was more than 10 times the rate for whites (2.4 per 100,000). This racial disparity was particularly pronounced among males, as the age-adjusted rate for black males (43.2 per 100,000) was nearly 14 times the rate for white males (3.1 per 100,000). The 2013 age-adjusted homicide rate for Hispanics (4.8 per 100,000) was higher than that for whites, but lower than that for blacks.

Age-adjusted homicide rates varied by age, ranging from 1.1 per 100,000 among 10 to 14-year-olds to 11.9 per 100,000 among 15 to 24-year-olds. Age differences were especially striking for black males, with the rates peaking at 104.9 per 100,000 among 15 to 24-year-olds.

Firearms were used in 70 percent of homicides in Ohio in 2013. The proportion varied greatly by sex, however, with male victims being killed by a firearm in 78 percent of homicides, compared to 46 percent for females. There were also some differences by racial/ethnic group. Of white male homicide victims, 54 percent were killed with a firearm, compared to 88 percent of black homicide victims.

Deaths of undetermined intent

In Ohio in 2013, there were 159 violent deaths for which the manner of death could not be determined. This represents an age-adjusted rate of 1.4 per 100,000.

Compared to victims of violent deaths where the manner was determined (e.g., suicide, homicide), victims of undetermined deaths were more likely to be white and female.

For undetermined deaths, the most common method was "unknown" (42 percent) although poisoning (31 percent) was also common. In addition, victims of an undetermined violent death were more likely than others to test positive for some type of substance use (80 percent vs. 67 percent).

Other manners of violent deaths

Of the 23 deaths due to legal intervention (e.g., by law enforcement) in 2013, 21 were males, 13 were black and 17 occurred in metropolitan counties. The age of decedents ranged from 20-64 years, although most (57 percent) were under 35 years old.

The 26 unintentional firearm deaths in 2013 included 23 decedents who were male, 20 who were white, non-Hispanic and 13 deaths that occurred in rural counties. Most of these deaths (58 percent), involved decedents less than 24 years old.

Introduction

Injury and violence-related deaths are a significant public health concern in the United States, and are among the leading causes of death for individuals aged 1 to 39 years. In 2013, there were more than 57,000 violent deaths nationwide, including 2,333 in Ohio.

Recognizing the need for an active, centralized, population-based surveillance system for violent deaths, Congress authorized the Centers for Disease Control and Prevention (CDC) to create the National Violent Death Reporting System (NVDRS). NVDRS data collection began in 2003 with six participating states and has since expanded to 40 states, the District of Columbia, and Puerto Rico. Ohio became a participating state in 2010. In 2013, data were available from 17 participating states, including Alaska, Colorado, Georgia, Kentucky, Maryland, Massachusetts, New Jersey, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, Utah, Virginia and Wisconsin. The data from these states accounted for 31 percent of all suicides and 28 percent of all homicides in the United States in 2013. Although NVDRS data are not representative of the entire nation, comparing Ohio data to other NVDRS states can help highlight patterns that may be distinctive for our state.

A violent death is defined as a death that results from the intentional use of physical force, or power against oneself, another person, or against a group or community. Following standard NVDRS definitions, this report focuses on suicides, homicides, legal intervention and unintentional firearm deaths. It also includes deaths of undetermined intent in which the cause of death may have been the result of violence.

NVDRS data collection relies on abstraction from three primary sources: death certificates, coroner/medical examiner (CME) records and law enforcement reports. Currently, though these records may be available, they are often in different forms and locations. Death certificate data lack sufficient detail on the nature and circumstances surrounding the violent death. By linking coroner and law enforcement records with death certificates, the use of the data can be expanded, allowing researchers to explore violent incidents, risk factors and underlying circumstances surrounding the death.

The purpose of OH-VDRS is multifold; it not only provides information relating to counts of violent deaths in Ohio, it also provides detailed descriptions of the characteristics and circumstances associated with these violent deaths. Specifically, it can detect specific types of violent deaths, examine the circumstances associated with incidents involving multiple victims and identify risk factors associated with types of violent deaths. This data informs legislators, public health officials, law enforcement and violence prevention groups in effective ways to reduce and prevent future violent deaths in Ohio. Understanding the patterns and trends in violent deaths can help policy-makers develop policies and programs that save lives. The results presented in this report provide valuable and comprehensive data on the characteristics and circumstances associated with violent deaths in Ohio in 2013.

Methods

Case Definition

Violent deaths were defined as suicides, homicides, legal interventions, unintentional firearm deaths, terrorism-related deaths or deaths of undetermined intent. OH-VDRS cases were identified based on manner of death and/or cause of death codes, specifically the International Classification of Diseases codes, version 10 (ICD-10). The manner of death was obtained primarily from death certificates; abstractors assigned the OH-VDRS manner of death based on the manner of death provided on the death certificate and the corresponding ICD-10 cause of death codes.

ICD-10 Codes for Manners of Death Meeting the NVDRS Case Definition

Manner of death	Death < 1 year after injury	Death 1+ year after injury
Intentional Self-harm (Suicide)	X60-X84	Y87.0
Assault (Homicide)	X85-X99, Y00-Y09	Y87.1
Undetermined Intent	Y10-Y34	Y87.2, Y89.9
Unintentional Firearm	W32-W34	Y86 (guns)
Legal Intervention	Y35.0-Y35.7	Y89.0
Terrorism	U01, U03	U02

Legal executions were excluded from the case definition, as were unintentional injury deaths not caused by a firearm, such as motor vehicle collisions (classified as "vehicular homicides"). Please refer to the glossary for more information on case definition.

Data collection for OH-VDRS relies on the abstraction of three primary sources: death certificates, coroner/medical examiner (CME) records and law enforcement reports. Death certificates were provided electronically by the Bureau of Vital Statistics at the Ohio Department of Health (ODH). Electronic records and hardcopies of CME reports were obtained from county-specific offices. Reports from law enforcement agencies were provided to abstractors either electronically or via hard copy. Since 2012, death certificate, coroner and law enforcement data encompassed all 88 counties in Ohio.

Analysis

The analysis[1] for this surveillance report includes descriptive statistics, namely counts and percentages of violent death types and their characteristics. Rates for homicides, suicides, and deaths of undetermined intent are reported at the county level as well as across various demographic groupings. Demographic groupings include age, sex, race, ethnicity and educational attainment. Rates were calculated by dividing the number of group-specific deaths by the total group-specific population. Population estimates were obtained from bridged Ohio population data (vintage 2015) from the National Center for Health Statistics. Rates were

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[1] Data for this analysis was accessed on July 27, 2016

expressed per 100,000 persons. Crude rates are reported, unless otherwise specified. Some percentages may not sum to 100.0 because of rounding.

Rates, both crude and age-adjusted, are prevalence measures that are used to quantify the burden of disease in a population. Unlike percentages and counts, rates are relative to the total population of the group of interest (e.g. age, race, sex, etc.) in a given time period. Rates also allow for comparisons between different populations such as men and women, Hispanics and non-Hispanics, and urban and rural regions. Crude rates are calculated by dividing the count of events by the total population of interest and multiplying it by 100,000. Rates are typically given as estimates per 100,000 persons. Age-adjusted rates are calculated in lieu of crude rates to adjust for differences in age distributions in the population of interest. In order to do so, crude rates are first calculated for age-specific groups. Each of these age-specific crude rates was then multiplied by a population weight, obtained from a reference population. The reference population distribution used in this report was the U.S. standard million for 2000. Once each age-specific crude rate was multiplied by its corresponding weight, these products were then summed to yield an overall age-adjusted rate for the population of interest.

County Types

Because many individual counties report too few violent deaths to calculate a stable rate, we grouped counties into four types: METROPOLITAN: Allen, Butler, Cuyahoga, Franklin, Hamilton, Lorain, Lucas, Mahoning, Montgomery, Richland, Stark, Summit. SUBURBAN: Auglaize, Clark, Delaware, Fairfield, Fulton, Geauga, Greene, Lake, Licking, Madison, Medina, Miami, Pickaway, Portage, Union, Wood. APPALACHIAN: Adams, Ashtabula, Athens, Belmont, Brown, Carroll, Clermont, Columbiana, Coshocton, Gallia, Guernsey, Harrison, Highland, Hocking, Holmes, Jackson, Jefferson, Lawrence, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pike, Ross, Scioto, Trumbull, Tuscarawas, Vinton, Washington. RURAL NON-APPALACHIAN: Ashland, Champaign, Clinton, Crawford, Darke, Defiance, Erie, Fayette, Hancock, Hardin, Henry, Huron, Knox, Logan, Marion, Mercer, Morrow, Ottawa, Paulding, Preble, Putnam, Sandusky, Seneca, Shelby, Van Wert, Warren, Wayne, Williams, Wyandot.

Data Restrictions

The calculation of rates was limited to instances where death counts were sufficiently large. Small numbers of events can vary considerably over time and could also pose concerns with respect to confidentiality and identifiable data. Several rules of thumb apply for what constitutes as sufficiently large counts. Typically rate calculations require a count of at least 10 to 20 events and a denominator of at least 100. In the rate calculations generated for this report, denominators were sufficiently large. Counts, however, varied considerably and could decrease substantially once parsed into specific demographic or geographic groupings. Mortality rates were calculated for counts of 10 or more, but in instances with fewer events, mortality rates were suppressed. Data were captured for all occurrent deaths in Ohio, however for these analyses, violent death data were restricted to Ohio residents at the time of their death.

1. Violent Deaths

Overall, 2,333 violent deaths occurred in Ohio in 2013 representing an age-adjusted rate of 20.1 per 100,000. As presented in Table 1.1, this figure includes 1,504 suicides (65 percent of the total), 621 homicides (27 percent), 159 deaths of undetermined intent (7 percent), 23 deaths due to legal intervention (1 percent) and 26 deaths from unintentional firearm injuries (1 percent). No deaths were attributable to terrorist attack. These figures were similar to those reported in 2012.[2]

Table 1.1: Types of violent deaths and number of victims, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Suicide	1,168	65.4	336	61.5	1,504	64.5
Homicide	478	26.8	143	26.2	621	26.6
Legal intervention	21	1.2	2	0.4	23	1.0
Unintentional firearm injury	23	1.3	3	0.6	26	1.1
Undetermined	97	5.4	62	11.4	159	6.8
Total	1,787	100.0	546	100.0	2,333	100.0

Sources: ODH and OH-VDRS

Most incidents resulted in only one violent death, although some incidents resulted in multiple violent deaths (Table 1.2). For instance, there were 2 incidents with multiple suicides, 24 incidents with multiple homicides and 26 incidents with one or more homicides followed by a suicide. The 2,333 deaths in 2013 resulted from 2,252 incidents.

Table 1.2: Number of incidents resulting in a violent death by type of incident, Ohio, 2013

Incident type	Count	Percent
Single suicide	1,475	65.5
Multiple suicide	2	0.1
Single homicide	567	25.2
Multiple homicide	24	1.1
Homicide(s) followed by suicide	26	1.2
Undetermined intent	157	7.0
Other	1	0.0
Total	2,252	100.0

"Single Homicide", "Multiple Homicide" and "Homicide(s) followed by suicide" may include Legal Intervention Deaths
Sources: ODH and OH-VDRS

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[2] Violence and Injury Prevention Program, Ohio Department of Health. *Ohio Violent Death Reporting System – Annual Report, 2012*. Columbus, OH: Violence and Injury Prevention Program, Ohio Department of Health; 2015.

Demographic characteristics

Counts and rates of violent deaths varied by racial/ethnic group and by sex (Table 1.3). The age-adjusted rate of violent death in 2013 for males (31.6 per 100,000) was 3.4 times the rate for females (9.3 per 100,000). In addition, the age-adjusted rate of violent death in 2013 for blacks (34.6 per 100,000) was nearly twice the rate for whites (17.9 per 100,000). Nearly all this racial disparity, however, was among males, as the age-adjusted rate of violent death in 2013 for black males (61.3 per 100,000) was more than twice the rate for white males (27.1 per 100,000). Age-adjusted rates of violent deaths in 2013 for black and white females were much more similar (respectively 10.2 per 100,000; 9.3 per 100,000). The age-adjusted rate of violent death in 2013 for Hispanics was lower than for other racial/ethnic groups (8.0 per 100,000).

Table 1.3: Counts and rates (per 100,000) of violent deaths by race/ethnicity and sex, Ohio, 2013

	Male			Female			Total		
	Count	Crude Rate	Age-Adjusted Rate	Count	Crude Rate	Age-Adjusted Rate	Count	Crude Rate	Age-Adjusted Rate
White, non-Hispanic	1,284	27.9	27.1	452	9.4	9.3	1,736	18.5	17.9
Black, non-Hispanic	446	61.9	61.3	81	10.3	10.2	527	35.0	34.6
Hispanic	26	13.0	12.6	5	--*	--*	31	8.0	8.0
Other	18	--*	--*	2	--*	--*	20	--*	--*
Unknown	13	--*	--*	6	--*	--*	19	--*	--*
Total	1,787	31.6	31.6	546	9.2	9.3	2,333	20.2	20.1

Rates based on <10 cases are omitted to avoid unstable estimates. Rates for whites and blacks exclude victims of Hispanic ethnicity. Rates for Hispanics include those of any race. Rates are omitted for "other" and "unknown" racial/ethnic groups because of no population denominator.
Sources: ODH, OH-VDRS and Vital Statistics

Most violent deaths occurred among people whose education level was high school graduate (48 percent) or less (21 percent). Table 1.4 presents the number of violent deaths for each education level.

Table 1.4: Violent deaths by level of education, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
<High school	383	21.4	97	18.8	480	20.6
High school graduate	875	49.0	244	44.7	1,119	48.0
Some college	278	15.6	116	21.3	394	16.9
4-year college graduate	136	7.6	53	9.7	189	8.1
Graduate degree	64	3.6	19	3.5	83	3.6
Other/Unknown	51	2.9	17	3.1	68	2.9
Total	1,787	100.0	546	100.0	2,333	100.0

"Some college" include victims with an Associate's Degree and those who attended, but did not graduate from a 4-year college.
Sources: ODH, OH-VDRS and Vital Statistics

Age

Rates of violent death also varied markedly by age, ranging from 3.5 per 100,000 among 0 to 14-year-olds to 29.4 per 100,000 among 25-34-year-olds (Table 1.5). Among males, age group differences were especially striking for 15-34-year-olds, with rates for black males being much higher than rates for white males (Figure 1.1). Among seniors, however, rates of violent death were higher for white males than for black males. Age group differences among white and black females were less pronounced (Figure 1.2).

Table 1.5: Age-specific crude rates (per 100,000) of violent deaths by race and sex, Ohio, 2013

Age group	White, non-Hispanic			Black, non-Hispanic			Total (including all race/ethnic groups)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 to 14	3.5	1.8	2.6	7.4	9.8	8.6	3.9	3.1	3.5
15 to 24	21.1	7.2	14.3	130.6	14.3	73.1	39.0	8.3	23.9
25 to 34	33.5	12.9	23.2	131.3	16.3	71.0	46.0	12.8	29.4
35 to 44	39.8	13.4	26.6	68.1	10.6	37.9	41.5	12.3	26.8
45 to 54	37.6	16.5	27.0	51.6	12.1	30.8	38.3	15.8	26.9
55 to 64	33.3	9.9	21.3	28.0	--*	15.9	32.8	9.1	20.6
65+	34.3	7.0	18.9	24.9	--*	10.5	33.1	6.4	17.9

Rates based on <10 cases are omitted to avoid unstable estimates. Rates for whites and blacks exclude victims of Hispanic ethnicity.
Sources: ODH, OH-VDRS and Vital Statistics

Figure 1.1: Age-specific crude rates of violent death (per 100,000) among white and black males, Ohio, 2013
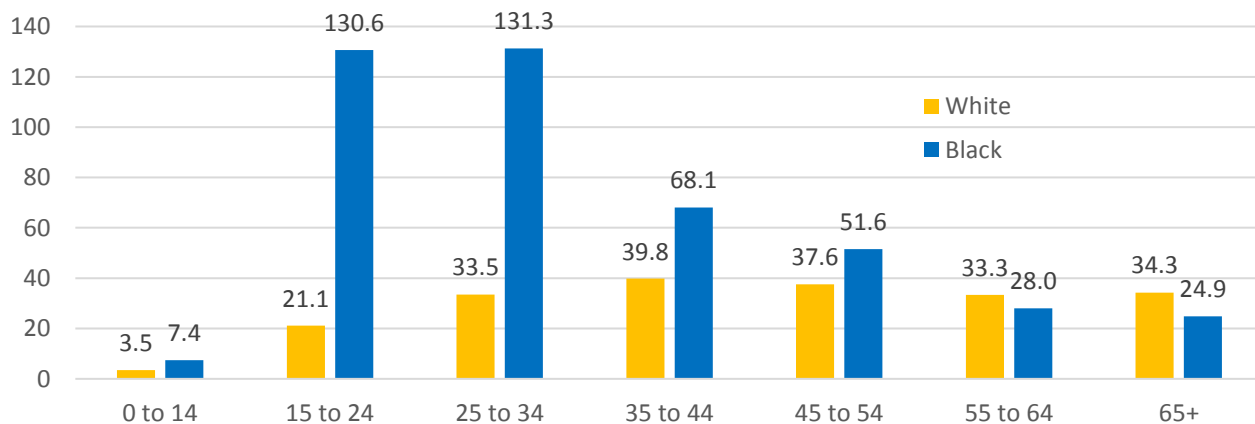
Sources: ODH, OH-VDRS and Vital Statistics

**Figure 1.2: Age-specific crude rates of violent death (per 100,000)
among white and black females, Ohio, 2013**
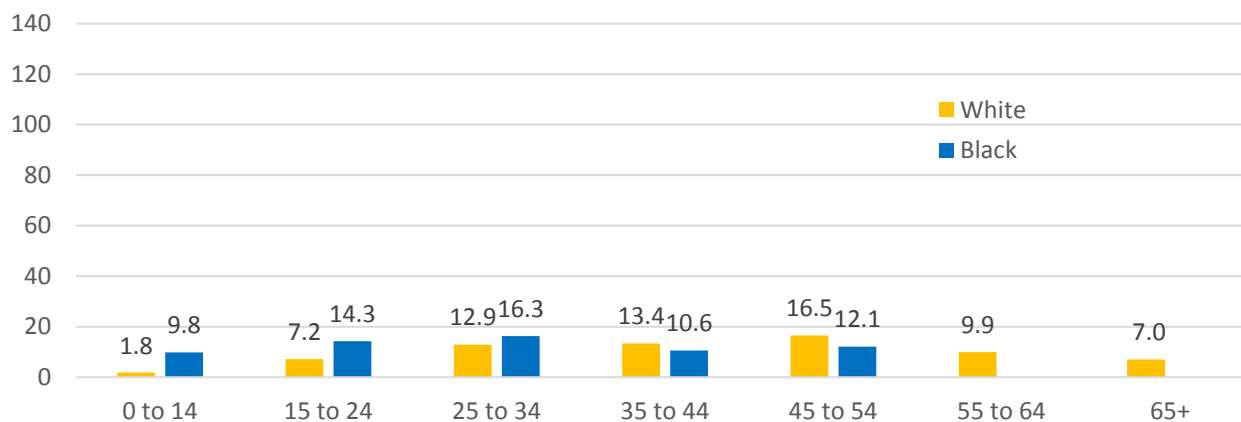
■ White
■ Black

Age group	0 to 14	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+
White	1.8	7.2	12.9	13.4	16.5	9.9	7.0
Black	9.8	14.3	16.3	10.6	12.1		

Rates based on <10 cases are omitted to avoid unstable estimates.
Sources: ODH, OH-VDRS and Vital Statistics

Locality

Locality refers to the victim's county of residence, not necessarily where the fatal injury occurred. Rates of violent death in 2013 were higher for residents of metropolitan and rural Appalachian counties compared to suburban and rural non-Appalachian counties (Table 1.6).

Table 1.6: Counts and rates (per 100,000) of violent deaths by county type, Ohio, 2013

County type	Count	Percent	Crude Rate	Age-Adjusted Rate
Metropolitan	1,419	60.8	22.5	22.4
Suburban	297	12.7	15.3	15.3
Rural Appalachian	387	16.6	21.6	21.3
Rural non-Appalachian	230	9.9	14.9	14.7
Total	2,333	100.0	20.2	20.1

County type refers to the victim's county of residence. **for a list of counties of each type.**
Sources: ODH, OH-VDRS and Vital Statistics

In 2013, there were at least 10 violent deaths among residents of 50 Ohio counties – a number large enough to calculate a rate. Table 1.7 presents the counts and rates for these counties and the accompanying figure below presents this information in a map.

Among the counties with adequate data, the highest age-adjusted rates of violent death in 2013 occurred in Hocking (44.7 per 100,000), Coshocton (43.8), Brown (32.2), Highland (32.2) and Guernsey (31.0) counties – all rural Appalachian counties. The lowest rates occurred in suburban counties including Geauga (11.5 per 100,000), Medina (11.1), Warren (10.1), and Delaware (8.6) counties. Among Ohio's six largest metropolitan counties, Montgomery (28.9 per 100,000) had the highest age-adjusted rate of violent death, while Summit County (20.7) had the lowest.

Table 1.7: Counts and rates (per 100,000) of violent deaths by county, Ohio, 2013

County	Count	Crude Rate	Age-Adjusted Rate	County	Count	Crude Rate	Age-Adjusted Rate
Adams	6	--*	--*	Licking	33	19.6	20.6
Allen	9	--*	--*	Logan	7	--*	--*
Ashland	7	--*	--*	Lorain	72	23.8	24.0
Ashtabula	26	26.1	25.4	Lucas	94	21.5	21.3
Athens	10	15.5	20.3	Madison	6	--*	--*
Auglaize	8	--*	--*	Mahoning	57	24.3	26.7
Belmont	13	18.7	16.7	Marion	10	15.2	14.4
Brown	14	31.6	32.2	Medina	18	10.3	11.1
Butler	54	14.5	15.2	Meigs	7	--*	--*
Carroll	4	--*	--*	Mercer	5	--*	--*
Champaign	10	25.3	23.6	Miami	19	18.4	17.0
Clark	30	21.9	23.0	Monroe	2	--*	--*
Clermont	40	20	19.1	Montgomery	148	27.7	28.9
Clinton	5	--*	--*	Morgan	6	--*	--*
Columbiana	29	27.4	27.0	Morrow	5	--*	--*
Coshocton	16	43.5	43.8	Muskingum	16	18.7	17.9
Crawford	8	--*	--*	Noble	1	--*	--*
Cuyahoga	298	23.6	23.4	Ottawa	11	26.8	24.2
Darke	7	--*	--*	Paulding	0	--*	--*
Defiance	2	--*	--*	Perry	7	--*	--*
Delaware	16	8.6	8.6	Pickaway	16	28.4	27.9
Erie	10	13.1	12.2	Pike	3	--*	--*
Fairfield	22	14.8	14.7	Portage	22	13.6	14.3
Fayette	7	--*	--*	Preble	11	26.4	24.0
Franklin	270	22.2	22.2	Putnam	7	--*	--*
Fulton	4	--*	--*	Richland	21	17.2	14.1
Gallia	5	--*	--*	Ross	16	20.7	19.1
Geauga	12	12.8	11.5	Sandusky	4	--*	--*
Greene	29	17.7	17.2	Scioto	15	19.2	18.1
Guernsey	11	27.8	31.0	Seneca	12	21.5	22.4
Hamilton	198	24.6	24.5	Shelby	4	--*	--*
Hancock	9	--*	--*	Stark	85	22.7	22.1
Hardin	5	--*	--*	Summit	113	20.8	20.7
Harrison	1	--*	--*	Trumbull	43	20.8	20.6
Henry	3	--*	--*	Tuscarawas	17	18.3	18.1
Highland	13	30.1	32.2	Union	9	--*	--*
Hocking	12	41.9	44.7	Van Wert	6	--*	--*
Holmes	4	--*	--*	Vinton	0	--*	--*
Huron	15	25.5	24.9	Warren	23	10.5	10.1
Jackson	8	--*	--*	Washington	10	16.3	13.3
Jefferson	18	26.5	28.0	Wayne	21	18.2	17.0
Knox	8	--*	--*	Williams	5	--*	--*
Lake	36	15.7	14.1	Wood	17	13.2	14.1
Lawrence	14	22.6	21.6	Wyandot	3	--*	--*

* Rates are not calculated for counties with <10 cases to avoid unstable estimates.
Sources: ODH, OH-VDRS and Vital Statistics

Figure 1.3: Age-adjusted rates (per 100,000) of violent deaths by county quartile, Ohio, 2013

Rates are not calculated for counties with <5 cases to avoid unstable estimates.

Sources: ODH, OH-VDRS and Vital Statistics

Method of death

As presented in Table 1.8, firearms (55 percent) were the most common mechanism used in violent deaths, followed by hanging/strangulation (19 percent) and poisoning (12 percent).

Table 1.8: Count of violent deaths by method, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Firearm	1,101	61.6	176	32.2	1,277	54.7
Hanging/Strangulation	314	17.6	125	22.9	439	18.8
Poisoning	147	8.2	140	25.6	287	12.3
Sharp instrument	60	3.4	24	4.4	84	3.6
Other	118	6.6	56	10.3	174	7.5
Unknown	47	2.6	25	4.6	72	3.1
Total	1,787	100.0	546	100.0	2,333	100.0

Sources: ODH and OH-VDRS

These proportions varied greatly by sex. Violent deaths among males were much more likely than females to involve a firearm (62 percent vs. 32 percent). And poisoning was more commonly among females (26 percent) compared to males (8 percent). Such differences, however, may be largely attributed to the fact that different mechanisms were used in different manners of violent death. Poisoning, for instance, was common in suicide, but rare in homicide. Please refer to subsequent sections for more information.

Comparisons with other states

Although NVDRS data are not representative of the entire nation, comparing Ohio data to other NVDRS states can help highlight patterns that may be distinctive for our state. Table 1.9 presents counts and age-adjusted rates for violent deaths in 2013 among white and black males and females in 17 states with available data (there were too few cases among other racial/ethnic groups for comparison).

Table 1.9: Violent deaths and age-adjusted rates (per 100,000) by race, sex and state, 2013

| | Male | | | | Female | | | | Total | |
| | White | | Black | | White | | Black | | (including all races) | |
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Alaska	107	37.3	--*	--*	28	10.8	--*	--*	222	29.4
Colorado	862	35.7	45	30.1	311	12.6	11	9.5	1,272	23.6
Georgia	935	29.2	466	30.3	278	8.3	114	6.6	1,923	19.1
Kentucky	655	33.0	69	34.4	212	10.4	21	10.4	976	21.7
Maryland	708	37.7	464	51.8	259	13.9	102	9.8	1,563	25.5
Massachusetts	458	15.8	75	24.6	203	6.7	11	3.4	821	11.7
N. Carolina	1,086	29.5	366	34.6	344	9.1	72	6.1	1,917	19.1
New Jersey	535	15.4	290	42.1	173	4.7	47	6.4	1,267	13.9
New Mexico	400	45.7	11	26.9	135	14.6	--*	--*	607	29.0
Ohio	1,310	26.7	443	59.3	461	9.3	80	9.8	2,335	20.0
Oklahoma	587	38.8	93	55.2	203	13.4	15	8.9	991	26.0
Oregon	604	32.9	15	25.9	206	10.9	--*	--*	877	21.3
Rhode Island	122	26.5	13	23.9	46	8.9	--*	--*	193	17.7
S. Carolina	499	28.9	208	32.3	173	10.1	40	5.8	989	20.3
Utah	553	44.1	--*	--*	222	17.6	--*	--*	829	30.5
Virginia	825	26.8	250	29.2	273	8.8	47	5.5	1,439	16.9
Wisconsin	706	26.6	96	46.6	196	7.4	18	8.0	1,044	17.8
Total	10,952	28.8	2918	38.1	3,723	9.6	597	7.2	19,265	19.7

When the number of deaths was < 10; the count has been suppressed to retain confidentiality and rates are not calculated to avoid unstable estimates. Total includes deaths of all sexes and racial groups, not only whites and blacks. There were too few deaths among other racial groups to be distinguished in this table. Figures for Ohio may differ very slightly from those reported elsewhere in this report because of lag time in recording cases, because these data include both Hispanics and non-Hispanics, and different population estimates.
Sources: ODH, NVDRS and Vital Statistics

Ohio's overall age-adjusted violent death of 20.0 per 100,000 was similar to the cumulative mean rate of 19.7 per 100,000 across the 17 NVDRS states in 2013. However, Ohio was unusual in having the highest rate of violent death among black males: 59.3 per 100,000 compared to the mean of 38.1 per 100,000.

2. Suicide

There were 1,504 suicide deaths in Ohio in 2013, representing an age-adjusted rate of 12.7 per 100,000. This figure was similar to the 1,510 suicide deaths recorded in 2012.[1]

Demographic characteristics

Rates of suicide varied by racial/ethnic group and by sex (Table 2.1). In 2013, the age-adjusted suicide rate for males (20.4 per 100,000) was 3.6 times the rate for females (5.6 per 100,000). And the age-adjusted rate for whites (13.8 per 100,000) was nearly twice the rate for blacks (7.3 per 100,000). This racial disparity was particularly pronounced among females as the age-adjusted rate for white females (6.4 per 100,000) was more than 4 times the rate for black females (1.5 per 100,000). The age-adjusted suicide in 2013 for Hispanics (4.8 per 100,000) was lower than for other racial/ethnic groups.

Table 2.1: Counts and rates (per 100,000) of suicide deaths by race/ethnicity and sex, Ohio, 2013

	Male			Female			Total		
	Count	Crude Rate	Age-Adjusted Rate	Count	Crude Rate	Age-Adjusted Rate	Count	Crude Rate	Age-Adjusted Rate
White, non-Hispanic	1,039	22.5	21.7	319	6.7	6.4	1,358	14.4	13.8
Black, non-Hispanic	94	13.0	13.9	12	1.5	1.5	106	7.0	7.3
Hispanic	15	7.5	7.4	3	--*	--*	18	4.6	4.8
Other	15	--*	--*	1	--*	--*	16	--*	--*
Unknown	5	--*	--*	1	--*	--*	6	--*	--*
Total	1,168	20.6	20.4	336	5.7	5.6	1,504	13.0	12.7

Rates are not calculated for <10 cases to avoid unstable estimates. Rates for whites and blacks exclude victims of Hispanic ethnicity. Rates for Hispanics include those for any race. Rates are omitted for "other" and "unknown" racial/ethnic groups because of no population denominator.
Sources: ODH, OH-VDRS and Vital Statistics

Most suicide victims were not graduates of four-year colleges. About 15 percent of suicide decedents had less than a high school education, 50 percent were high school graduates and 19 percent had some college education (Table 2.2).

Table 2.2: Suicide deaths by level of education, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
<High school	180	15.4	42	12.5	222	14.8
High school graduate	597	51.1	155	46.1	752	50.0
Some college	201	17.2	84	25.0	285	19.0
4-year college graduate	114	9.8	37	11.0	151	10.0
Graduate degree	58	5.0	16	4.8	74	4.9
Other/Unknown	18	1.5	2	0.6	20	1.3
Total	1,168	100.0	336	100.0	1,504	100.0

"Some college" include victims with an Associate's Degree and those who attended, but did not graduate from a 4-year college.
Sources: ODH, OH-VDRS and Vital Statistics

Age

In 2013, rates of suicide varied by age, from 1.0 per 100,000 among 10 to 14-year-olds to 19.3 per 100,000 among 45 to 54-year-olds (Table 2.3). Age group differences were especially striking for white males, with the highest rates occurring among 35 to 44-year-olds and for people older than 75 years of age (Table 2.3). A fact sheet provides additional OH-VDRS data on suicides among people younger than 25 years old.[3]

Table 2.3: Age-specific crude rates (per 100,000) of suicide deaths by race and sex, Ohio, 2013

Age group	White, non-Hispanic			Black, non-Hispanic			Total (including all race/ethnic groups)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
10 to 14	--*	--*	--*	--*	--*	--*	--*	--*	1.0
15 to 24	16.1	4.4	10.3	17.9	--*	9.8	16.3	3.6	10.0
25 to 34	27.2	9.0	18.1	22.2	--*	12.1	25.6	7.7	16.7
35 to 44	31.6	9.1	20.3	17.6	--*	8.9	28.4	7.6	17.9
45 to 54	29.7	12.7	21.1	20.2	--*	10.1	27.8	11.0	19.3
55 to 64	28.7	7.9	18.0	--*	--*	--*	26.6	6.9	16.4
65 to 74	23.5	7.7	15.1	--*	--*	--*	21.8	7.0	13.9
75 to 84	38.0	--*	17.1	--*	--*	--*	35.5	--*	15.8
85+	52.8	--*	19.2	--*	--*	--*	51.9	--*	18.7
Total	22.5	6.7	14.4	13.0	1.5	7.0	20.6	5.7	13.0

Rates are not calculated for <10 cases to avoid unstable estimates. Rates for whites and blacks exclude victims of Hispanic ethnicity. Rates for Hispanics include those for any race. Rates are omitted for "other" and "unknown" racial/ethnic groups because of no population denominator.
Sources: ODH, OH-VDRS and Vital Statistics

Locality

Locality refers to the victim's county of residence, not necessarily where the suicide occurred. Rates of suicide in 2013 were higher for residents of Appalachian counties compared to other counties (Table 2.4). In addition, 36 counties had at least 10 residents who were victims of suicide in 2013 – a number large enough to calculate a rate. Table 2.5 presents the counts and rates for these counties.

Table 2.4: Counts and rates (per 100,000) of suicide by county type, Ohio, 2013

County type	Count	Percent	Crude Rate	Age-Adjusted Rate
Metropolitan	802	53.3	12.7	12.4
Suburban	243	16.2	12.5	12.3
Rural Appalachian	280	18.6	15.7	15.1
Rural non-Appalachian	179	11.9	11.6	11.3
Total	1,504	100.0	13.0	12.7

County type refers to the victim's county of residence. for a list of counties of each type.
Sources: ODH, OH-VDRS and Vital Statistics

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[3] Violence and Injury Prevention Program, Ohio Department of Health. *Youth Suicide in Ohio.* Columbus, OH: Violence and Injury Prevention Program, Ohio Department of Health; 2016.

Table 2.5: Counts and rates (per 100,000) of suicide deaths by county, Ohio, 2013

County	Count	Crude Rate	Age-Adjusted Rate	County	Count	Crude Rate	Age-Adjusted Rate
Adams	5	--*	--*	Licking	25	14.8	15.4
Allen	5	--*	--*	Logan	7	--*	--*
Ashland	3	--*	--*	Lorain	54	17.8	17.4
Ashtabula	20	20.1	18.7	Lucas	50	11.5	11.5
Athens	6	--*	--*	Madison	5	--*	--*
Auglaize	7	--*	--*	Mahoning	33	14.1	14.3
Belmont	12	17.3	14.7	Marion	9	--*	--*
Brown	9	--*	--*	Medina	14	8.0	8.7
Butler	37	10.0	10.1	Meigs	5	--*	--*
Carroll	4	--*	--*	Mercer	5	--*	--*
Champaign	7	--*	--*	Miami	16	15.5	13.4
Clark	19	13.9	14	Monroe	2	--*	--*
Clermont	36	18.0	17	Montgomery	82	15.3	15.6
Clinton	3	--*	--*	Morgan	4	--*	--*
Columbiana	20	18.9	18.3	Morrow	3	--*	--*
Coshocton	10	27.2	28.4	Muskingum	14	16.3	16.4
Crawford	6	--*	--*	Noble	9	--*	--*
Cuyahoga	154	12.2	11.5	Ottawa	4	--*	--*
Darke	6	--*	--*	Paulding	0	--*	--*
Defiance	2	--*	--*	Perry	0	--*	--*
Delaware	15	8.1	8.1	Pickaway	12	21.3	21.4
Erie	9	--*	--*	Pike	2	--*	--*
Fairfield	19	12.8	12.3	Portage	19	11.8	11.7
Fayette	6	--*	--*	Preble	8	--*	--*
Franklin	130	10.7	10.8	Putnam	5	--*	--*
Fulton	4	--*	--*	Richland	18	14.7	12.3
Gallia	3	--*	--*	Ross	13	16.8	14.7
Geauga	9	--*	--*	Sandusky	3	--*	--*
Greene	24	14.6	14.2	Scioto	7	--*	--*
Guernsey	8	--*	--*	Seneca	9	--*	--*
Hamilton	104	12.9	12.7	Shelby	3	--*	--*
Hancock	7	--*	--*	Stark	65	17.3	16.1
Hardin	4	--*	--*	Summit	70	12.9	12.7
Harrison	1	--*	--*	Trumbull	25	12.1	11.4
Henry	2	--*	--*	Tuscarawas	13	14.0	13.7
Highland	9	--*	--*	Union	7	--*	--*
Hocking	10	35.0	38.2	Van Wert	5	--*	--*
Holmes	3	--*	--*	Vinton	0	--*	--*
Huron	13	22.1	21.2	Warren	20	9.1	8.7
Jackson	6	--*	--*	Washington	7	--*	--*
Jefferson	9	--*	--*	Wayne	16	13.9	12.7
Knox	5	--*	--*	Williams	3	--*	--*
Lake	32	13.9	11.9	Wood	16	12.4	13.4
Lawrence	13	21.0	20.1	Wyandot	1	--*	--*

* Rates are not calculated for counties with <10 cases to avoid unstable estimates.
Sources: ODH, OH-VDRS and Vital Statistics

Among the counties with adequate data in 2013, the highest age-adjusted rates of suicide in 2013 occurred in Hocking (38.2 per 100,000) and Coshocton (28.4) counties, whereas the lowest rates occurred in Medina (8.7), Warren (8.7), and Delaware (8.1) counties. Among Ohio's six largest metropolitan counties, Montgomery (15.6 per 100,000) had the highest age-adjusted rate of suicide, while Franklin County (10.8) had the lowest.

Combining data from multiple years provides additional data that permits calculating rates for more counties. Figure 2.1 present age-adjusted annual rates of suicide for the period 2012 to 2014. Many rural Appalachian counties had higher age-adjusted rates during this period.

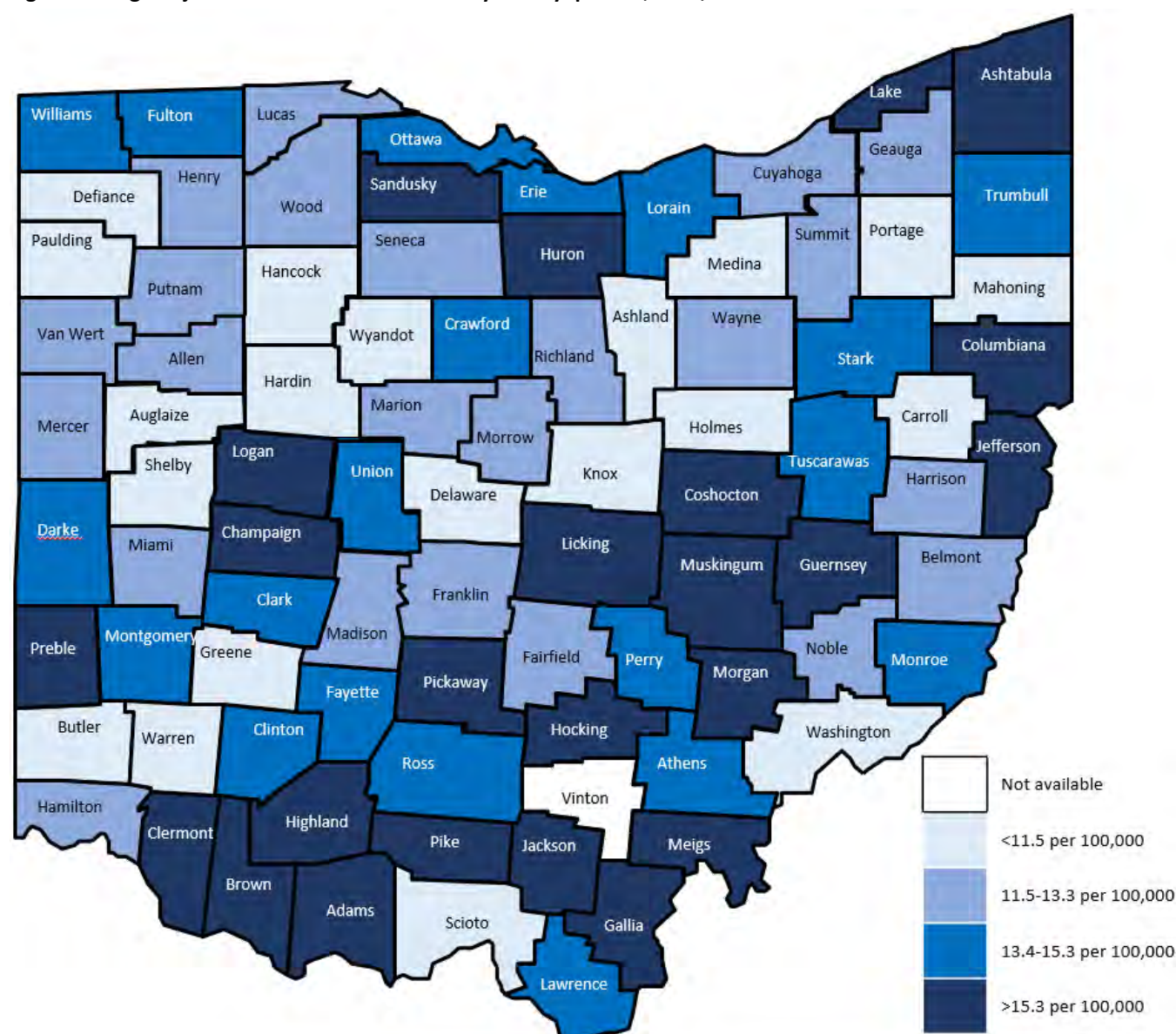**Figure 2.1: Age-adjusted rates of suicide deaths by county quartile, Ohio, 2012 - 2014**

Rates are not calculated for counties with <5 cases to avoid unstable estimates.
Sources: ODH, OH-VDRS and Vital Statistics

Method of death

Firearms were the most common mechanism used in suicide (52 percent of all suicide deaths), followed by hanging/strangulation (26 percent) and poisoning (16 percent). These proportions varied greatly by sex, however (Table 2.6). Suicide deaths among males were much more likely to involve a firearm (58 percent) compared to females (31 percent); whereas poisoning was a much more common method among females (33 percent) compared to males (11 percent).

Table 2.6: Suicides by method of death, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
Firearm	679	58.1	105	31.3	784	52.1
Hanging/Strangulation	296	25.3	99	29.5	395	26.3
Poisoning	123	10.5	112	33.3	235	15.6
Sharp instrument	20	1.7	4	1.2	24	1.6
Other/Unknown	50	4.3	16	4.8	66	4.4
Total	1,168	100.0	336	100.0	1,504	100.0

Sources: ODH and OH-VDRS

Circumstances

For most suicides, OH-VDRS provides information on the circumstances, such as the type of location where the suicide occurred, toxicology results, mental health issues, life stressors and relationship circumstances.

Type of location

As presented in Table 2.7, most suicide deaths in Ohio in 2013 occurred in a house or apartment (79 percent). Other locations included a private motor vehicle (7 percent) and public areas like a street or playground (5 percent). Thirty suicide deaths occurred in Ohio prisons during 2013, compared to 20 in 2012.

Table 2.7: Locations where suicide deaths occurred by sex, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
House/Apartment	899	77.0	287	85.4	1,186	78.9
Public area (e.g., street, road, playground)	63	5.4	8	2.4	71	4.7
Private motor vehicle	85	7.3	16	4.8	101	6.7
Commercial establishment	9	0.8	1	0.3	10	0.7
Natural area	34	2.9	4	1.2	38	2.5
Prison/Jail	27	2.3	3	0.9	30	2.0
Other	49	4.2	15	4.5	64	4.3
Unknown	2	0.2	2	0.6	4	0.3

Sources: ODH and OH-VDRS

Toxicology results

Table 2.8 presents the number and percent of suicide decedents testing positive for various substances.

Table 2.8: Percent of suicide victims testing positive for various substances, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Alcohol	264	30.2	81	29.8	345	30.1
Benzodiazepines	136	15.6	79	29.0	215	18.8
Opiates	139	15.9	73	26.8	212	18.5
Antidepressants	118	13.5	73	26.8	191	16.7
Marijuana	106	12.1	32	11.8	138	12.0
Anticonvulsants	19	2.2	35	12.9	54	4.7
Barbiturates	5	0.6	9	3.3	14	1.2
Cocaine	40	4.6	13	4.8	53	4.6
Carbon Monoxide	40	4.6	11	4.0	51	4.5
Amphetamines	22	2.5	9	3.3	31	2.7
Antipsychotics	14	1.6	17	6.3	31	2.7
Muscle Relaxants	12	1.4	14	5.2	26	2.3
One or more of the above substances	542	62.0	203	74.6	745	65.0

Percent is based on a denominator of suicide deaths (n=1,146) with available toxicology results. Victims may test positive for >1 type of substance.

Alcohol (30 percent) was the most common substance found in toxicology results. Blood alcohol concentration for those testing positive appear in Table 2.9. Other common substances were benzodiazepines (19 percent), opiates (19 percent), antidepressants (17 percent) and marijuana (12 percent). About two thirds (65 percent) of suicide victims screened positive for substance use.

Female suicide victims were more likely than male victims to screen positive for substance use (75 percent vs. 62 percent). Differences by sex were most pronounced for benzodiazepines, opiates, antidepressants and anticonvulsants.

Table 2.9: Blood alcohol concentration results for suicide victims testing positive for alcohol, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Less than 0.040	37	14.2	13	16.1	50	14.7
0.040-0.079	36	13.9	13	16.1	49	14.4
0.080-0.119	50	19.2	10	12.4	60	17.6
0.120-0.159	30	11.5	11	13.6	41	12.0
0.160-0.199	36	13.9	12	14.8	48	14.1
0.200 and above	71	27.3	22	27.2	93	27.3

A total of 345 suicide victims tested positive for alcohol. Blood alcohol concentration results were missing for four victims.
Sources: ODH and OH-VDRS

Mental health

Mental health concerns were common among many suicide decedents. Among the 94 percent of suicide victims with available data on circumstances, over half (52 percent) had a current mental health problem, 39 percent had been treated previously for mental illness, and in 26 percent of cases the victim was perceived by self or others to be depressed at the time of the injury (Table 2.10). There were relatively few differences between male and female victims.

Table 2.10: Mental health circumstances of suicide victims, by sex, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
Alcohol problem	162	14.8	53	16.6	215	15.2
Other substance abuse	161	14.7	63	19.8	224	15.8
Current depressed mood	293	26.7	84	26.3	377	26.6
Current diagnosed mental health problem	517	47.2	222	69.6	739	52.2
Currently received mental health treatment	314	28.7	155	48.6	469	33.1
History of mental health treatment	375	34.2	179	56.1	554	39.2

The denominator used for calculating percentage of specific circumstances is based on the number of suicides with at least one circumstance identified in either the coroner/medical examiner (CME) or law enforcement report. Suicide victims may report more than one circumstance. Over 94 percent of suicide victims had circumstances available (n=1,415).
Sources: ODH and OH-VDRS

Other circumstances

Overall, 258 (17 percent) suicide victims were known to be active duty military or veterans. This total includes 253 male victims and 49 victims less than 45 years old.

Many suicide deaths were also associated with different personal issues (Table 2.11), including physical health (15 percent), job (10 percent) and financial (10 percent) problems. Legal problems and school problems were less common.

Table 2.11: Life stressors of suicide victims, by sex, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
Physical health problem	174	15.9	37	11.6	211	14.9
Job problem	114	10.4	28	8.8	142	10.0
Financial problem	103	9.4	31	9.7	134	9.5
Recent criminal legal problem	99	9.0	9	2.8	108	7.6
Non-criminal legal problem	20	1.8	4	1.3	24	1.7
School problem	12	1.1	1	0.3	13	0.9

The denominator used for calculating percentage of specific circumstances is based on the number of suicides with at least one circumstance identified in either the coroner/medical examiner (CME) or law enforcement report. Suicide victims may report more than one circumstance. Over 94 percent of suicide victims had circumstances available (n=1,415).
Sources: ODH and OH-VDRS

Relationship circumstances also were associated with many suicide deaths (Table 2.12). Nearly 18 percent of suicide deaths were preceded by an argument or conflict and 27 percent were related to a problem with an intimate partner.

Table 2.12: Relationship circumstances of suicide victims, by sex, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
Argument or conflict led to death	197	18.0	50	15.7	247	17.5
Intimate partner problem	319	29.1	69	21.6	388	27.4
Family relationship problem	69	6.3	28	8.8	97	6.9
Other relationship problem	13	1.2	1	0.3	14	1.0
Suicide death of family member in past 5 years	22	2.0	10	3.1	32	2.3
Other death of family member in past 5 years	80	7.3	33	10.3	113	8.0

The denominator used for calculating percentage of specific circumstances is based on the number of suicides with at least one circumstance identified in either the coroner/medical examiner (CME) or law enforcement report. Suicide victims may report more than one circumstance. Over 94 percent of suicide victims had circumstances available (n=1,415). "Other relationship problem" refers to relationship problem other than those with a family member or intimate partner.
Sources: ODH and OH-VDRS

More than 18 percent of suicide victims were known have made a previous suicide attempt, 25 percent had disclosed their intent to commit suicide, and 39 percent left a suicide note (Table 2.13).

Table 2.13: Other suicide circumstances, differences by sex, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
History of previous suicide attempt	159	14.5	100	31.4	259	18.3
Disclosed suicide intent to someone	263	24.0	94	29.5	357	25.2
Left suicide note	409	37.3	136	42.6	545	38.5

The denominator used for calculating percentage of specific circumstances is based on the number of suicides with at least one circumstance identified in either the coroner/medical examiner (CME) or law enforcement report. Suicide victims may report more than one circumstance. More than 94 percent of suicide victims had circumstances available (n=1,415).
Sources: ODH and OH-VDRS

3. Homicide

There were 621 homicides in Ohio in 2013, representing an age-adjusted rate of 5.6 per 100,000. This figure was similar to the 610 homicides reported in 2012.[1]

Demographic characteristics

Rates of homicide varied markedly by racial/ethnic group and by sex (Table 3.1). In 2013, the age-adjusted homicide rate for males (8.7 per 100,000) was 3.3 times the rate for females (2.6 per 100,000). And the age-adjusted rate for blacks (24.9 per 100,000) was more than 10 times the rate for whites (2.4 per 100,000). This racial disparity was particularly pronounced among males, as the age-adjusted rate for black males (43.2 per 100,000) was nearly 14 times the rate for white males (3.1 per 100,000). The 2013 age-adjusted homicide rate for Hispanics (4.8 per 100,000) was higher than that for whites, but lower than that for blacks.

Table 3.1: Counts and rates (per 100,000) of homicide deaths by race/ethnicity and sex, Ohio, 2013

	Male			Female			Total		
	Count	Crude Rate	Age-Adjusted Rate	Count	Crude Rate	Age-Adjusted Rate	Count	Crude Rate	Age-Adjusted Rate
White, non-Hispanic	138	3.0	3.1	75	1.6	1.7	213	2.3	2.4
Black, non-Hispanic	320	44.4	43.2	62	7.9	7.9	382	25.3	24.9
Hispanic	10	5.0	4.8	2	--*	--*	12	3.1	3.0
Other	10	--*	--*	4	--*	--*	14	--*	--*
Unknown	0	--*	--*	0	--*	--*	0	--*	--*
Total	478	8.4	8.7	143	2.4	2.6	621	5.4	5.6

Rates are not calculated for <10 cases to avoid unstable estimates. Rates for whites and blacks exclude victims of Hispanic ethnicity. Rates for Hispanics include those of any race. Rates are omitted for "other" and "unknown" racial/ethnic groups because of no population denominator.
Sources: ODH, OH-VDRS and Vital Statistics

For the plurality of homicide victims, their highest level of education was high school graduate (45 percent) However, more than one third (34 percent) had less than a high school education and less than 4 percent of homicide victims had graduated college (Table 3.2).

Table 3.2: Number of homicide deaths by education level, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
<High school	171	35.8	41	28.7	212	34.1
High school graduate	224	46.9	57	39.9	281	45.2
Some college	54	11.3	21	14.7	75	12.1
4-year college graduate	8	1.7	9	6.3	17	2.7
Graduate degree	1	0.2	2	1.4	3	0.5
Other/Unknown	20	4.2	13	9.1	33	5.3
Total	478	100.0	143	100.0	621	100.0

"Some college" include victims with an Associate's Degree and those who attended, but did not graduate from a 4-year college.
Sources: ODH, OH-VDRS and Vital Statistics

Age

In 2013, age-adjusted homicide rates varied by age, ranging from 1.1 per 100,000 among 5 to 14-year-olds to 11.9 per 100,000 among 15 to 24-year-olds (Table 3.3). Age differences were especially striking for black males, with the rates peaking at 104.9 per 100,000 among 15 to 24-year-olds. (Figure 3.1).

Table 3.3: Age-specific counts and crude homicide rates (per 100,000) by race and sex, Ohio, 2013

	Male				Female				TOTAL	
	White		Black		White		Black			
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
<1 year	2	--*	3	--*	1	--*	5	--*	11	8.0
1 to 4 years	4	--*	1	--*	5	--*	4	--*	15	2.7
5 to 14	10	1.7	3	--*	1	--*	3	--*	17	1.1
15 to 24	18	2.9	135	104.9	13	2.2	14	11.1	188	11.9
25 to 34	24	4.2	98	103.8	12	2.1	13	12.5	156	10.7
35 to 44	27	4.7	40	47.0	16	2.8	9	--*	94	6.6
45 to 54	29	4.3	23	25.8	10	1.4	10	10.1	75	4.6
55 to 64	10	1.5	10	13.3	8	--*	4	--*	34	2.2
65 to 74	10	2.5	4	--*	3	--*	0	--*	17	1.8
75 to 84	2	--*	2	--*	4	--*	0	--*	9	--*
85+	2	--*	1	--*	2	--*	0	--*	5	--*
Total	138	3.0	320	44.4	75	1.6	62	7.9	621	5.4

Rates are not calculated for <10 cases to avoid unstable estimates. Rates for whites and blacks exclude victims of Hispanic ethnicity. There were too few cases among other racial/ethnic group to generate reliable rates.
Sources: ODH, OH-VDRS and Vital Statistics

Figure 3.1: Age-specific rates of homicide (per 100,000) among white and black males, Ohio, 2013
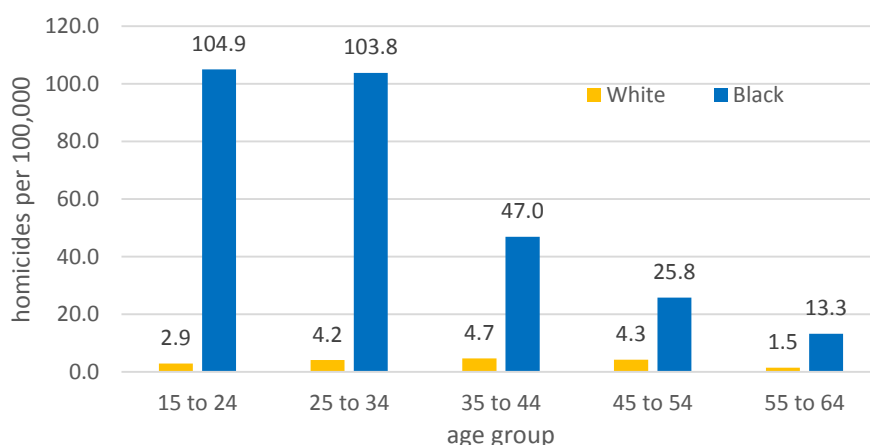
There were too few deaths among other racial groups and age groups to be distinguished in this figure. Figure excludes victims of Hispanic ethnicity.
Sources: ODH, OH-VDRS and Vital Statistics

Locality

Locality refers to the victim's county of residence, not necessarily where the homicide occurred. More than 78 percent (486/621) of homicides in 2013 occurred among residents of metropolitan counties. Age-adjusted rates were much higher for residents of metropolitan counties compared to other counties (Table 3.4). In addition, 11 counties had at least 10 residents who were homicide victims in 2013 – a number large enough to calculate a rate. Table 3.5 presents the counts and crude rates for these counties.

Table 3.4: Counts and rates (per 100,000) of homicide by county type, Ohio, 2013

County type	Count	Percent	Crude Rate	Age-Adjusted Rate
Metropolitan	486	78.3	7.7	8.0
Suburban	33	5.3	1.7	1.7
Rural Appalachian	73	11.8	4.1	4.3
Rural non-Appalachian	29	4.7	1.9	1.9
Total	621	100.0		

County type refers to the victim's county of residence. **for a list of counties of each type.**
Sources: ODH, OH-VDRS and Vital Statistics

Table 3.5: Counts and rates (per 100,000) of homicides by county, Ohio, 2013

County	Count	Crude Rate	Age-Adjusted Rate	County	Count	Crude Rate	Age-Adjusted Rate
Adams	0	--*	--*	Licking	5	--*	--*
Allen	4	--*	--*	Logan	0	--*	--*
Ashland	0	--*	--*	Lorain	11	3.6	4.1
Ashtabula	4	--*	--*	Lucas	33	7.6	7.5
Athens	4	--*	--*	Madison	0	--*	--*
Auglaize	0	--*	--*	Mahoning	22	9.4	11.3
Belmont	1	--*	--*	Marion	1	--*	--*
Brown	2	--*	--*	Medina	2	--*	--*
Butler	10	2.7	3.0	Meigs	2	--*	--*
Carroll	0	--*	--*	Mercer	0	--*	--*
Champaign	1	--*	--*	Miami	1	--*	--*
Clark	7	--*	--*	Monroe	0	--*	--*
Clermont	2	--*	--*	Montgomery	52	9.7	10.6
Clinton	2	--*	--*	Morgan	1	--*	--*
Columbiana	7	--*	--*	Morrow	0	--*	--*
Coshocton	4	--*	--*	Muskingum	1	--*	--*
Crawford	1	--*	--*	Noble	0	--*	--*
Cuyahoga	127	10.0	10.6	Ottawa	1	--*	--*
Darke	1	--*	--*	Paulding	0	--*	--*
Defiance	0	--*	--*	Perry	2	--*	--*
Delaware	1	--*	--*	Pickaway	4	--*	--*
Erie	1	--*	--*	Pike	0	--*	--*
Fairfield	1	--*	--*	Portage	3	--*	--*
Fayette	0	--*	--*	Preble	1	--*	--*
Franklin	98	8.1	7.9	Putnam	2	--*	--*
Fulton	0	--*	--*	Richland	2	--*	--*
Gallia	1	--*	--*	Ross	2	--*	--*
Geauga	2	--*	--*	Sandusky	0	--*	--*
Greene	2	--*	--*	Scioto	3	--*	--*
Guernsey	3	--*	--*	Seneca	2	--*	--*
Hamilton	83	10.3	10.6	Shelby	1	--*	--*
Hancock	2	--*	--*	Stark	14	3.7	4.2
Hardin	1	--*	--*	Summit	30	5.5	5.8
Harrison	0	--*	--*	Trumbull	17	8.2	8.7
Henry	1	--*	--*	Tuscarawas	0	--*	--*
Highland	2	--*	--*	Union	2	--*	--*
Hocking	2	--*	--*	Van Wert	1	--*	--*
Holmes	0	--*	--*	Vinton	0	--*	--*
Huron	2	--*	--*	Warren	2	--*	--*
Jackson	1	--*	--*	Washington	2	--*	--*
Jefferson	9	--*	--*	Wayne	3	--*	--*
Knox	2	--*	--*	Williams	0	--*	--*
Lake	2	--*	--*	Wood	1	--*	--*
Lawrence	1	--*	--*	Wyandot	1	--*	--*

* Rates are not calculated for counties with <10 cases to avoid unstable estimates.
Sources: ODH, OH-VDRS and Vital Statistics

Combining data from multiple years provides additional data that permits calculating rates for more counties. Figure 3.2 presents age-adjusted annual rates of homicide for the period 2011 to 2013. The six major metropolitan counties in the state had higher age-adjusted rates during this period, as did selected rural Appalachian counties.

Figure 3.2: Age-adjusted annual rates of homicide, by county quartile, Ohio, 2011-2013
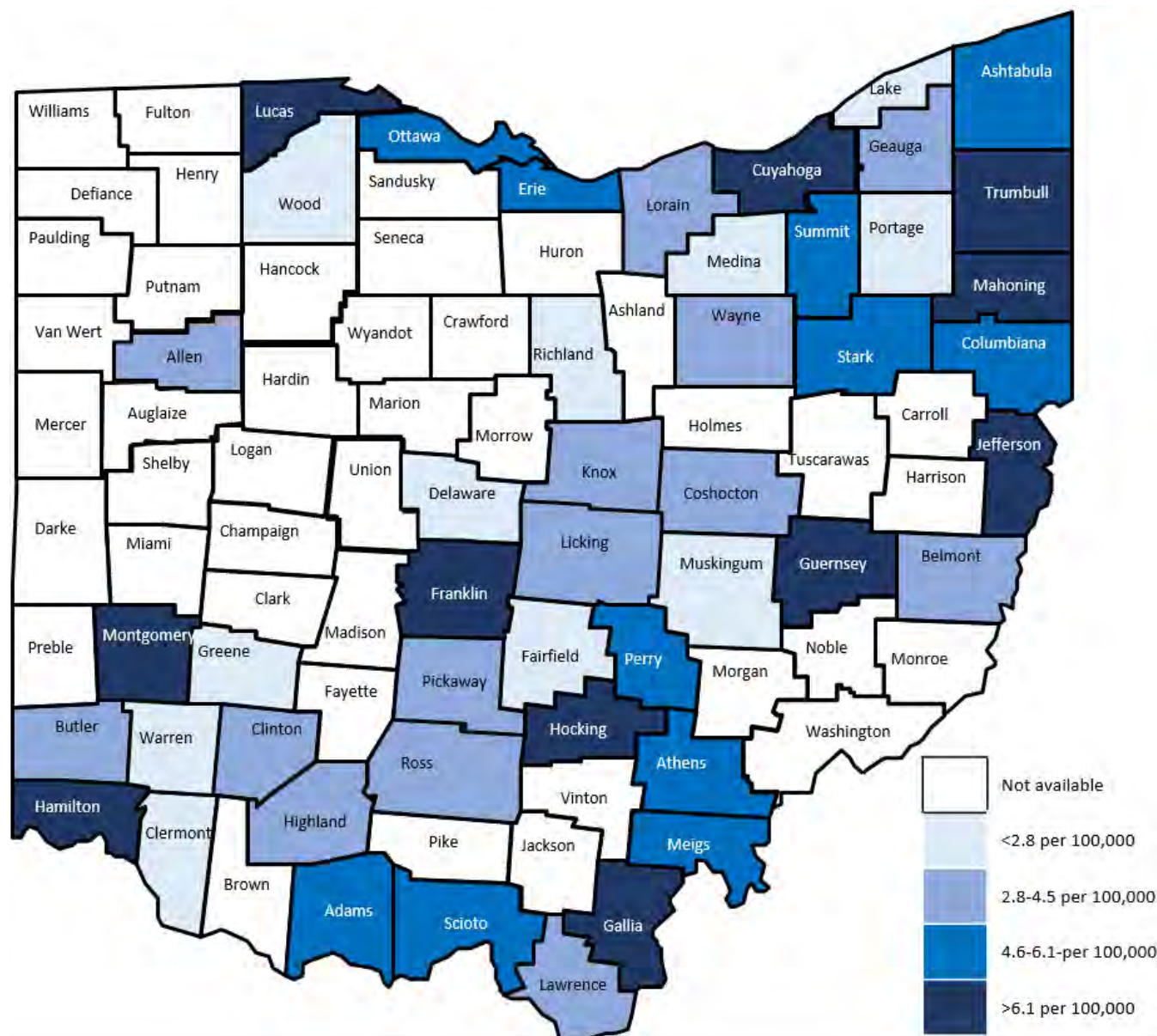
Rates are not calculated for counties with <5 cases to avoid unstable estimates.
Sources: ODH, OH-VDRS and Vital Statistics

Method of death

Firearms were used in 70 percent of homicides in Ohio in 2013. The proportion varied greatly by sex, however, with male victims being killed by a firearm in 78 percent of homicides, compared to 46 percent for females (Table 3.6). Compared to males, female victims were more likely to be killed by hanging/strangulation (17 percent), a sharp instrument (14 percent) or other methods (e.g., blunt instrument, personal weapons; 22 percent).

Table 3.6: Homicides by method of death, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
Firearm	371	77.6	66	46.2	437	70.4
Hanging/Strangulation	13	2.7	24	16.8	37	6.0
Poisoning	0	0.0	2	1.4	2	0.3
Sharp instrument	40	8.4	20	14.0	60	9.7
Other/Unknown	54	11.3	31	21.7	31	13.7
Total	478	100.0	143	100.0	621	100.0

Sources: ODH and OH-VDRS

Circumstances

For most homicides, OH-VDRS provides information on the circumstances surrounding death. Toxicology results, for example, were available for 562 (91 percent) of the 621 homicides in Ohio in 2013.

Type of location

As presented in Table 3.7, 53 percent of homicides in Ohio in 2013 occurred in a house or apartment. Other locations included public areas like a street or playground (21 percent) or a private motor vehicle (9 percent). Five homicides occurred in Ohio prisons during 2013, compared to 3 in 2012.

Table 3.7: Locations where homicide deaths occurred by sex, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
House/Apartment	231	48.3	96	67.1	327	52.7
Public area (e.g., street, road, playground)	114	23.9	16	11.2	130	20.9
Private motor vehicle	46	9.6	11	7.7	57	9.2
Commercial establishment	46	9.6	4	2.8	50	8.1
Natural area	3	0.6	2	1.4	5	0.8
Prison/Jail	5	1.1	0	0.0	5	0.8
Other	18	3.8	9	6.3	27	4.4
Unknown	15	3.1	5	3.5	20	3.2
Total	478	100.0	143	100.0	621	100.0

Sources: ODH and OH-VDRS

Toxicology results

Table 3.8 presents the number and percent of homicide victims testing positive for various substances.

Table 3.8: Percent of homicide deaths testing positive for various substances, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Marijuana	193	45.1	30	22.4	223	39.7
Alcohol	142	33.2	38	28.4	180	32.0
Opiates	54	12.6	14	10.5	68	12.1
Cocaine	39	9.1	13	9.7	52	9.3
Antidepressants	21	4.9	13	9.7	34	6.1
Benzodiazepines	24	5.6	9	6.7	33	5.9
Amphetamines	10	2.3	5	3.7	15	2.7
Anticonvulsants	7	1.6	5	3.7	12	2.1
Carbon Monoxide	6	1.4	2	1.5	8	1.4
Antipsychotics	5	1.2	1	0.8	6	1.1
Barbiturates	2	0.5	1	0.8	3	0.5
Muscle Relaxants	1	0.2	2	1.5	3	0.5
One or more of the above substances	326	76.2	78	58.2	404	71.9

Percent is based on a denominator of homicide deaths (n=562) with available toxicology results
Sources: ODH and OH-VDRS

Marijuana (40 percent) was the most common substance found in toxicology results, followed by alcohol (32 percent), opiates (12 percent) and cocaine (9 percent). Male victims were more likely than female victims to screen positive for one or more substances (76 percent vs. 58 percent). For the 180 homicide victims screening positive for alcohol, blood alcohol concentration results appear in Table 3.9.

Table 3.9: Blood alcohol concentration results for homicide victims testing positive for alcohol, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Less than 0.040	29	20.4	10	26.3	39	21.7
0.040-0.079	25	17.6	10	26.3	35	19.4
0.080-0.119	24	16.9	8	21.1	32	17.8
0.120-0.159	17	12.0	5	13.2	22	12.2
0.160-0.199	14	9.9	1	2.6	15	8.3
0.200 and above	33	23.2	4	10.5	37	20.6

A total of 180 homicide victims tested positive for alcohol.
Sources: ODH and OH-VDRS

Victim-suspect relationship

For 36 percent (226/621) of homicide victims, data were available to describe their relationship with the suspect. The victim-suspect relationship was available from both law enforcement reports and coroner/medical examiner (CME) records.

Among homicide victims with available data, nearly all were killed by someone they knew; less than 4 percent were killed by a stranger (Table 3.10). There were, however, significant differences by sex: females were much more likely than males to be killed by current/former spouse or intimate partner, whereas males were more likely to be killed by an acquaintance or friend. Also, male homicide victims were much more likely than female victims to lack information on their relationship to the suspect (71 percent vs. 39 percent).

Table 3.10: Relationship between homicide suspect and victim, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Acquaintance	30	6.3	4	2.8	34	5.5
Friend	16	3.4	1	0.7	17	2.7
Roommate (not intimate partner)	3	0.6	1	0.7	4	0.6
Current/former work relationship	1	0.2	0	0.0	1	0.2
Other person, known to victim	21	4.4	5	3.5	26	4.2
Girlfriend or boyfriend	4	0.8	20	14.0	24	3.9
Ex-girlfriend or ex-boyfriend	1	0.2	6	4.2	7	1.1
Spouse	6	1.3	19	13.3	25	4.0
Ex-spouse	0	0.0	2	1.4	2	0.3
Child of suspect`s boyfriend/girlfriend	4	0.8	6	4.2	10	1.6
Intimate partner of suspect`s parent	2	0.4	0	0.0	2	0.3
Parent	3	0.6	8	5.6	11	1.8
Child	9	1.9	6	4.2	15	2.4
Stepchild	3	0.6	0	0.0	3	0.5
Sibling	4	0.8	1	0.7	5	0.8
Grandparent	0	0.0	3	2.1	3	0.5
Grandchild	1	0.2	0	0.0	1	0.2
In-law	2	0.4	0	0.0	2	0.3
Babysitter (e.g., child killed by babysitter)	2	0.4	0	0.0	2	0.3
Other family member (e.g., cousin, uncle)	6	1.3	2	1.4	8	1.3
Stranger	19	4.0	3	2.1	22	3.5
Victim injured by law enforcement officer	0	0.0	1	0.7	1	0.2
Victim was law enforcement officer injured by suspect	1	0.2	0	0.0	1	0.2
Unknown/Missing	340	71.1	55	38.5	395	63.6
Total	478	100.0	143	100.0	621	100.0

Data are for the primary victim-suspect relationship only, and omit the few incidents where multiple suspects were associated with a homicide. The victim-suspect relationship is the description of the relationship of the victim to the suspect, for example, when a parent (suspect) kills a child (victim), the relationship is described as child, not parent.
Sources: ODH and OH-VDRS

Other circumstances

Many homicides occurred in the context of other crimes, especially among males (Table 3.11). Among cases with circumstance data, more than 12 percent of homicides were precipitated by drug dealing or drug use, and more than 30 percent were precipitated by another crime.

Different types of arguments and conflicts were also common (Table 3.12). Eighty-seven homicides in 2013 were associated with intimate partner violence. For more information and OH-VDRS data on this important topic, please refer to the 2016 fact sheet prepared by the Ohio Department of Health.[4]

Table 3.11: Crime-related circumstances of homicide victims, by sex, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Drug dealing/trade/use precipitated homicide	65	15.9	3	2.3	68	12.6
Another crime precipitated homicide	139	34.1	25	19.2	164	30.5
A crime was in progress at the time of the incident	104	25.5	18	13.9	122	22.7
Gang-related	21	5.2	3	2.3	24	4.5
Drive-by shooting	10	2.5	0	0.0	10	1.9
Hate crime	0	0.0	0	0.0	0	0.0
Victim was a bystander, not the intended target	3	0.7	2	1.5	5	0.9
Victim used a weapon during the incident	45	11.0	2	1.5	47	8.7
Victim killed in legitimate act of self-defense	17	4.2	0	0.0	17	3.2

The denominator used for calculating percentage of specific circumstances is based on the number of homicides with at least one circumstance identified in either the CME or law enforcement report (n=538). Homicide victims may report more than one circumstance.
Sources: ODH and OH-VDRS

Table 3.12: Arguments and conflicts circumstances of homicide victims, by sex, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Argument or conflict led to homicide	129	31.6	33	25.4	162	30.1
Homicide was preceded by fight between 2 persons	51	12.5	5	3.9	56	10.4
Homicide was preceded by fight among 3+ persons	14	3.4	4	3.1	18	3.4
Intimate partner violence	31	7.6	56	43.1	87	16.2
Jealousy	11	2.7	6	4.6	17	3.2
Victim had a (non- alcohol) substance abuse problem	66	16.2	18	14.9	84	15.6
Victim suspected of using alcohol before incident	53	13.0	7	5.4	60	11.2
Homicide was direct result of suspect's mental illness	6	1.5	4	3.1	10	1.9

The denominator used for calculating percentage of specific circumstances is based on the number of homicides with at least one circumstance identified in either the CME or law enforcement report (n=538). Homicide victims may report more than one circumstance.
Sources: ODH and OH-VDRS

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[4] Violence and Injury Prevention Program, Ohio Department of Health. *Intimate Partner Violence and Homicide in Ohio.* Columbus, OH: Violence and Injury Prevention Program, Ohio Department of Health; 2016.

4. Deaths of Undetermined Intent

In Ohio in 2013, there were 159 violent deaths for which the manner of death could not be determined. This represents an age-adjusted rate of 1.4 per 100,000.

Demographic characteristics

Most deaths of undetermined intent were among white victims (Table 4.1). Compared to victims of violent deaths where the manner was determined (e.g., suicide, homicide), victims of undetermined deaths were more likely to be white (135/159=85 percent vs. 1,601/2,174=74 percent) and female (62/159=39 percent vs. 484/2,174=22 percent). There were no noteworthy differences by sex across racial/ethnic groups.

Table 4.1: Deaths of undetermined intent, by race and sex, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
White, non-Hispanic	80	82.5	55	88.7	135	84.9
Black, non-Hispanic	15	15.5	5	8.1	20	12.6
Hispanic	1	1.0	0	0.0	1	0.6
Other	1	1.0	2	3.2	3	1.9
Unknown	0	0	0	0.0	0	0.0
Total	97	100.0	62	100.0	159	100.0

Sources: ODH, OH-VDRS

Most deaths of undetermined intent were among victims who did not graduate from four-year colleges. About 18 percent of decedents has less than a high school education, 41 percent were high school graduates and 16 percent had some college education (Table 4.2).

Table 4.2: Number of deaths of undetermined intent by education level, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
<High school	17	17.5	12	19.4	29	18.2
High school graduate	34	35.1	31	50.0	65	40.9
Some college	17	17.5	9	14.5	26	16.4
4-year college graduate	12	12.4	7	11.3	19	12.0
Graduate degree	5	5.2	1	1.6	6	3.8
Other/Unknown	12	12.4	2	3.2	14	8.8
Total	97	100.0	62	100.0	159	100.0

"Some college" includes victims with an Associate's Degree and those who attended, but did not graduate from a 4-year college.
Sources: ODH, OH-VDRS

Age

Nearly 75 percent of deaths of undetermined intent in 2013 were among adults 25 to 64 years old (Table 4.3).

Table 4.3: Deaths of undetermined intent, by age group, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
<1 year	6	6.2	3	4.8	9	5.7
1 to 4	2	2.1	1	1.6	3	1.9
5 to 14	1	1.0	2	3.2	3	1.9
15 to 24	7	7.2	5	8.1	12	7.6
25 to 34	9	9.3	10	16.1	19	12.0
35 to 44	18	18.6	7	11.3	25	15.7
45 to 54	25	25.8	19	30.7	44	27.7
55 to 64	21	21.7	6	9.7	27	17.0
65 to 74	5	5.2	3	4.8	8	5.0
75 to 84	2	2.1	5	8.1	7	4.4
85+	1	1.0	1	1.6	2	1.3
Total	97	100.0	62	100.0	159	100.0

Sources: ODH and OH-VDRS

Locality

Locality refers to the victim's county of residence, not necessarily where the homicide occurred. Residents of 43 counties had a violent death of undetermined intent in 2013 (Table 4.4). Nearly all of these counties had less than 10 undetermined violent deaths during 2013. The only exceptions were Cuyahoga (15 deaths), Franklin (34 deaths) and Montgomery (10 deaths).

Table 4.4: Deaths of undetermined intent, by county, Ohio, 2013

County	Count	County	Count	County	Count	County	Count
Adams	1	Fairfield	2	Licking	3	Portage	0
Allen	0	Fayette	0	Logan	0	Preble	2
Ashland	4	Franklin	34	Lorain	6	Putnam	0
Ashtabula	1	Fulton	0	Lucas	8	Richland	1
Athens	0	Gallia	0	Madison	1	Ross	1
Auglaize	0	Geauga	0	Mahoning	1	Sandusky	1
Belmont	0	Greene	2	Marion	0	Scioto	4
Brown	2	Guernsey	0	Medina	2	Seneca	0
Butler	6	Hamilton	9	Meigs	0	Shelby	0
Carroll	0	Hancock	0	Mercer	0	Stark	5
Champaign	2	Hardin	0	Miami	1	Summit	9
Clark	2	Harrison	0	Monroe	0	Trumbull	0
Clermont	2	Henry	0	Montgomery	10	Tuscarawas	4
Clinton	0	Highland	2	Morgan	1	Union	0
Columbiana	2	Hocking	0	Morrow	0	Van Wert	0
Coshocton	0	Holmes	1	Muskingum	0	Vinton	0
Crawford	1	Huron	0	Noble	1	Warren	1
Cuyahoga	15	Jackson	0	Ottawa	1	Washington	1
Darke	0	Jefferson	0	Paulding	0	Wayne	2
Defiance	0	Knox	1	Perry	0	Williams	2
Delaware	0	Lake	1	Pickaway	0	Wood	0
Erie	0	Lawrence	0	Pike	0	Wyandot	1

Sources: ODH and OH-VDRS

Combining data from multiple years provides additional data that permits calculating rates for more counties. Figure 4.1 presents age-adjusted annual rates of deaths of undetermined intent from 2011 to 2013. Of the six major metropolitan counties in the state, Franklin County had the highest age-adjusted rate during this period.

Figure 4.1: Age-adjusted annual rates of deaths of undetermined intent, by county quartile, Ohio, 2011-2013
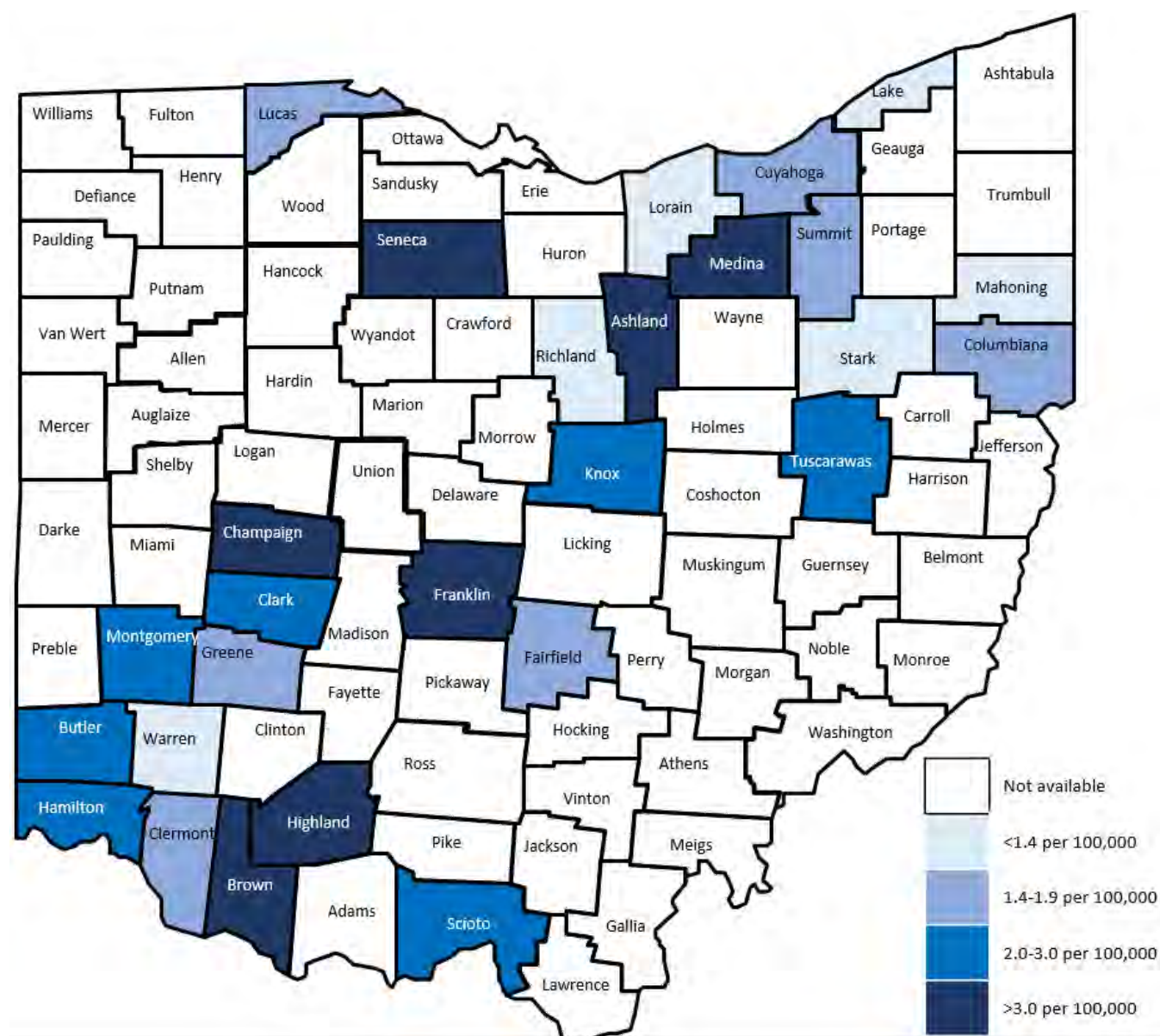
Rates are not calculated for counties with <5 cases to avoid unstable estimates.
Sources: ODH, OH-VDRS and Vital Statistics

Method of death

For undetermined deaths, the most common method was "unknown" (42 percent) although poisoning was also common (31 percent). In comparison, for violent deaths with a determined manner, less than 1 percent used unknown methods and only 11 percent used poisoning (Table 4.5). Poisoning as a method of death for undetermined cases may reflect overdose deaths in which it was unclear whether the injury was intentional, self-inflicted or intentionally caused by another person.

Table 4.5: Method used in determined vs. undetermined violent deaths, by sex, Ohio, 2013

| | Undetermined | | | | | | | Determined | |
| | Male | | Female | | Total | | | Total | |
	Count	Percent	Count	Percent	Count	Percent		Count	Percent
Firearm	8	8.2	0	0.0	8	5.0		1,269	58.4
Hanging/Strangulation	5	5.2	2	3.2	7	4.4		432	19.9
Poisoning	24	24.7	26	41.9	50	31.4		237	10.9
Sharp instrument	0	0.0	0	0.0	0	0.0		84	3.9
Other	16	16.5	11	17.7	27	17.0		147	6.8
Unknown	44	45.4	23	37.1	67	42.1		5	0.2
Total	97	100.0	62	100	159	100.0		2,174	100.0

Sources: ODH and OH-VDRS

Circumstances

For most deaths of undetermined intent, OH-VDRS provides information on the circumstances, such as the type of location where the death occurred, toxicology results, mental health issues, life stressors and relationship circumstances. In 127 of the 159 cases (80 percent), law enforcement or CME reports included at least one type of circumstance.

Type of location

As presented in Table 4.6, 50 percent of deaths of undetermined intent in Ohio in 2013 occurred in a house or apartment. Location was unknown in 33 percent of cases.

Table 4.6: Locations where undetermined intent deaths occurred by sex, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
House/Apartment	45	46.4	35	56.5	80	50.3
Public area (e.g., street, road, playground)	3	3.1	3	4.8	6	3.8
Private motor vehicle	3	3.1	0	0.0	3	1.9
Commercial establishment	4	4.1	0	0.0	4	2.5
Natural area	3	3.1	2	3.2	5	3.1
Prison/Jail	1	1.0	0	0.0	1	0.6
Other	6	6.2	1	1.6	7	4.4
Unknown	32	33.0	21	33.9	53	33.3
Total	97	100.0	62	100.0	159	100.0

Sources: ODH and OH-VDRS

Toxicology results

Of the 135 victims of an undetermined violent death who had an available toxicology report, 80 percent (n=108) tested positive for some type of substance use (Table 4.7). In comparison, 67 percent of the 1,747 other types of violent death (i.e., where the manner was determined) with an available toxicology screening tested positive for substance use. The most common substance use was opiates (37 percent), followed by benzodiazepines (31 percent) and antidepressants (30 percent).

Table 4.7: Percent of deaths of undetermined intent testing positive for various substances, by sex, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Opiates	23	29.5	27	47.4	50	37.0
Benzodiazepines	27	34.6	15	26.3	42	31.1
Antidepressants	19	24.4	22	38.6	41	30.4
Alcohol	23	29.5	9	15.8	32	23.7
Anticonvulsants	11	14.1	8	14.0	19	14.1
Marijuana	12	15.4	5	8.8	17	12.6
Muscle Relaxants	4	5.1	6	10.5	10	7.4
Cocaine	5	6.4	4	7.0	9	6.7
Antipsychotics	6	7.7	2	6.5	8	5.9
Carbon Monoxide	3	3.9	2	3.5	5	3.7
Amphetamines	3	3.9	1	1.8	4	3.0
Barbiturates	0	0.0	1	1.8	1	0.7
One or more of the above substances	64	82.1	44	77.2	108	80.0

Percent is based on a denominator of deaths of undetermined intent (n=135) with available toxicology results
Sources: ODH and OH-VDRS

For the 32 victims with an undetermined manner of death who tested positive, blood alcohol concentration results appear in Table 4.8. Compared to victims with a determined manner of death (results not shown), those with an undetermined manner of death were more likely to have a blood alcohol concentration of less than 0.040 (18 percent vs. 31 percent).

Table 4.8: Blood alcohol concentration results for victims with an undetermined manner of death who tested positive for alcohol, Ohio, 2013

	Male		Female		Total	
	Count	Percent	Count	Percent	Count	Percent
Less than 0.040	5	21.8	5	55.6	10	31.3
0.040-0.079	3	13.0	1	11.1	4	12.5
0.080-0.119	5	21.7	1	11.1	6	18.8
0.120-0.159	2	8.7	1	11.1	3	9.4
0.160-0.199	8	34.8	1	11.1	9	28.1
0.200 and above	23	100.0	9	100.0	32	100.0

A total of 32 victims of an undetermined manner of death tested positive for alcohol.
Sources: ODH and OH-VDRS

Mental health circumstances were associated with many victims with an undetermined manner of death (Table 4.9). Compared to suicide victims (see Table 2.10), those with an undetermined manner of death were more likely to report each of the circumstances below, except for current depressed mood. For example, 38 percent of victims with an undetermined manner of death were reported to have had a substance abuse problem (other than alcohol), whereas the figure was 16 percent for suicide victims.

Table 4.9: Mental health circumstances of victims with a death of undetermined intent, by sex, Ohio, 2013

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
Alcohol problem	21	26.3	7	14.9	28	22.1
Other substance abuse	37	33.8	21	44.7	48	37.8
Current depressed mood	7	8.8	7	14.9	14	11.0
Current diagnosed mental health problem	44	55.0	30	63.8	74	58.3
Currently received mental health treatment	26	32.5	19	40.4	45	35.4
History of mental health treatment	30	37.5	25	53.2	55	43.3

The denominator used for calculating percentage of specific circumstances is based on the number of with an undetermined manner of death who had at least one circumstance identified in either the coroner/medical examiner (CME) or law enforcement report. Victims may report more than one circumstance. Nearly 80 percent of victims had circumstances available (n=127).
Sources: ODH and OH-VDRS

5. Other Manners of Violent Death

Other manners of death include legal intervention and unintentional firearm deaths.

Legal intervention

In Ohio, there were 23 deaths due to legal intervention in 2013 – that is, deaths caused by law enforcement and other persons with legal authority to use deadly force (excluding legal executions). This figure represents an age-adjusted rate of 0.2 per 100,000.

Given the limited number of cases, detailed tables of demographics and other characteristics were inadvisable and would compromise confidentiality. However, a few patterns were noteworthy and involved at least 10 deaths. Of the 23 deaths due to legal intervention, 21 involved males, 13 involved blacks and 17 occurred in the state's metropolitan counties. Also, 19 of the cases involved individuals between 15 and 44 years of age and in 22 of the deaths a firearm was the weapon used.

Unintentional firearm deaths

In Ohio, there were 26 deaths due to unintentional firearm injury in 2013, whether self-inflicted or inflicted unintentionally by someone else. This figure represents an age-adjusted rate of 0.2 per 100,000.

Given the limited number of cases, detailed tables of demographics and other characteristics were inadvisable and would compromise confidentiality. However, a few patterns were noteworthy and involved at least 10 deaths. Of the 26 deaths due to unintentional firearm injury, 18 involved white males, and 15 involved individuals less than 25 years of age. Ten deaths occurred in the state's metropolitan counties and 13 occurred in rural counties (combining both Appalachian and non-Appalachian).

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Archbold Police Department
Arlington Heights Police Department
Ashland County Sheriff's Office
Ashland Police Department
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Columbus Police Department
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Glossary

Violent death - A death due to the intentional use of physical force against oneself, another person, or against a community or group.

Incident - The national reporting system is incident-based rather than victim-based. Incidents include a single violent death, two or more suicides, two or more homicides, homicides followed by suicides, or an unintentional firearm death combined with one or more suicides. The inclusion of two or more deaths in a single incident is based on the timing of the injuries rather than the timing of the deaths and the establishment of a clear link between victims. In order to be considered as the same incident, the fatal injuries must have been inflicted within a 24-hour period.

Manner of death - The way in which the death was caused. This could be due to a suicide, homicide, unintentional or undetermined death.

Method of death - The weapon or instrument employed to administer the fatal injury.

Suicide - A death resulting from the intentional use of force against oneself. A preponderance of evidence should indicate that the use of force was intentional. Only persons ages 10 or older can have the violent death classified as a suicide.

Homicide - A death resulting from the intentional use of force or power, threatened or actual, against another person, group or community. A preponderance of evidence must indicate that the use of force was intentional.

Blunt instruments - Clubs, bats, rocks or other similar objects used to inflict the injury.

Criminal legal problem - The victim had recent criminal problems such as an arrest or police pursuit that appeared to contribute to the death.

Depressed mood -The victim had been perceived by self or others as having recent depression symptoms at the time of the injury.

Drug involvement - Drug dealing or illegal drug use is suspected to have played a role in precipitating the incident.

Financial problem - The victim was experiencing financial problems such as bankruptcy, overwhelming debt, or a home or business foreclosure at the time of the incident and these problems contributed to their death.

Gang-related - Gang rivalry or gang activities are suspected to have played a role in precipitating the incident.

Mental health problem - The victim had been identified as having a current mental health problem.

Mental health treatment -The victim had been currently receiving mental health treatment. Treatment can include seeing a psychiatrist for a mental health problem or receiving a prescription for psychiatric drugs.

Physical health problem - The victim was experiencing physical health problems that appeared to have contributed to the death. Physical health problems could include a debilitating disease, chronic pain or a terminal disease.

Other relationship problem - The victim had problems with a family member, friend or associate (other than intimate partner) that appeared to have contributed to the death.

Substance use problem - The victim was perceived to have a problem with drugs other than alcohol.

Crisis - The victim experienced a crisis within two weeks of the incident or a crisis was imminent within two weeks of the incident.

Intimate partner violence - The death is related to physical violence, sexual violence, stalking and/or psychological aggression (including coercive acts) by a current or former intimate partner

Personal weapons - Include fists, feet, and hands in actions such as punching, kicking or hitting. Manual strangulation is not categorized as personal weapons, but rather as strangulation.

Undetermined intent - A death resulting from the use of force or power against oneself or another person for which the evidence indicating manner of death is insufficient to determine intent.

Unintentional firearm death - A death resulting from a penetrating injury or gunshot wound from a weapon that uses a powder charge to fire a projectile and for which a preponderance of evidence indicates that the shooting was not directed intentionally at the victim.