

Arizona Violent Death Reporting System: Annual Report on Homicide 2016



By the
Center for Violence Prevention & Community Safety
Arizona State University

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About the Center for Violence Prevention and Community Safety

In order to become more committed to the Arizona community and to society as a whole, Arizona State University is setting a new standard for research universities through the model of the New American University. As a New American University, ASU is measured not by who we exclude, but by who we include; our pursuit of research that considers the public good; and we assume major responsibility for the economic, social, and cultural vitality of our community. Social embeddedness is core to the development of ASU as the New American University. Social embeddedness is a university-wide, interactive, and mutually supportive partnership with the communities of Arizona.

Toward the goal of social embeddedness, Arizona State University established the Center for Violence Prevention and Community Safety in July 2005 to respond to the growing need of Arizona's communities to improve the public's safety and well-being. The Center for Violence Prevention and Community Safety is a research unit within the College of Public Service and Community Solutions at Arizona State University. The Center's mission is to generate, share, and apply quality research and knowledge to create "best practice" standards. The center specifically evaluates policies and programs, analyzes and evaluates patterns and causes of violence, develops strategies and programs, develops a clearinghouse of research reports and "best practice" models, educates, trains and provides technical assistance, and facilitates the development of and construction of databases. For more information about the Center for Violence Prevention and Community Safety please contact us using the information provided below.

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We thank and acknowledge the cooperation and support of the Arizona Department of Health Services, Bureau of Vital Records, and the many local law enforcement agencies and medical examiner offices throughout the State of Arizona that have provided information to the AZ-VDRS. Without our partners the AZ-VDRS would not be possible. The agencies that provided data for this report are:

Apache County Medical Examiner's Office	Marana Police Department
Coconino County Medical Examiner's Office	Maricopa Police Department
Gila Messinger Mortuary	Mesa Police Department
Maricopa County Medical Examiner's Office	Oro Valley Police Department
Mohave County Medical Examiner's Office	Paradise Valley Police Department
Navajo County Medical Examiner's Office	Peoria Police Department
New Mexico Office of the Medical Examiner	Phoenix Police Department
Pima County Medical Examiner's Office	Prescott Police Department
Pinal County Medical Examiner's Office	Prescott Valley Police Department
Yavapai County Medical Examiner's Office	Safford Police Department
Yuma County Medical Examiner's Office	Sahuarita Police Department
	Scottsdale Police Department
Apache Junction Police Department	Sedona Police Department
Avondale Police Department	Show Low Police Department
Buckeye Police Department	Sierra Vista Police Department
Casa Grande Police Department	St. Johns Police Department
Chandler Police Department	Surprise Police Department
Chino Valley Police Department	Tempe Police Department
Douglas Police Department	Tucson Police Department
El Mirage Police Department	
Flagstaff Police Department	Coconino County Sheriff Office
Gilbert Police Department	Maricopa County Sheriff Office
Glendale Police Department	Pima County Sheriff Office
Kingman Police Department	Yuma County Sheriff Office
Lake Havasu City Police Department	
	ADHS, Bureau of Vital Records

During 2016, the AZ-VDRS Advisory Board provided input, advice and support. These individuals and their agencies were paramount to establishing and maintaining the program in its first year. We would like to especially thank Tomi St. Mars and Pam Goslar for their serving as the executive leaders of the steering committee. They have been our strongest champions and provided continuous leadership throughout the project. We would be remiss if we did not thank our CDC science officer Dr. Shane Davis and our CDC project officer Michele LaLand for their tireless support and answering all of our questions.

INTRODUCTION

The National Violent Death Reporting System (NVDRS) is a state-based surveillance tool, developed by the Centers for Disease Control and Prevention (CDC), to improve our understanding of violent deaths. As of 2016, 42 states, including Arizona, participated in NVDRS and currently, all 50 states, plus Puerto Rico and the District of Columbia participate. The primary goal of NVDRS is to provide high quality data useful for the prevention of all types of violence including homicide, suicide, unintentional firearm deaths, legal intervention, and deaths for which intent could not be determined.

Arizona began its partnership in the surveillance system with the collection of 2015 violent death data. Through the mechanisms of data integration and abstraction from death certificates, medical examiner reports, and law enforcement reports the Arizona Violent Death Reporting System (AZ-VDRS), as an NVDRS site, seeks to contribute to these efforts of reducing homicides and suicides in Arizona. Understanding the scope and nature of the homicide problem at state and local levels in order to inform local and state authorities, policymakers and other stakeholders to assist in determining resource allocation and finding more effective or efficient strategies to respond to homicide. This report presents findings from the AZ-VDRS, which is sponsored by the Centers for Disease Control and Prevention (CDC) and describes homicide patterns and trends in Arizona in calendar year 2016. In doing so, we examine circumstances surrounding homicide incidents, the general characteristics of victims and suspects, and the geographic characteristics where homicides took place.

DATA AND METHODS

This report used data gathered on all decedents in the AZ-VDRS database who were victims of homicide during the period January 1, 2016 through December 31, 2016. The violent death data are collected from three principal sources and are used to populate a usable, anonymous database. The three sources include death certificates, medical examiner reports and law enforcement reports. NVDRS contain data on victim/suspect demographics and specific circumstances about the incident, such as mental health problems, recent problems with a job, finances, or personal relationships, and physical health problems. Deaths from legal intervention, which refers to a subtype of homicide where the victim is killed by or died as a result of law enforcement acting in the line of duty, are not included in this study. Population estimates used for the calculation of homicide rates were obtained from the U.S. Census Bureau, 2016 American Community Survey 5-Year Estimates¹.

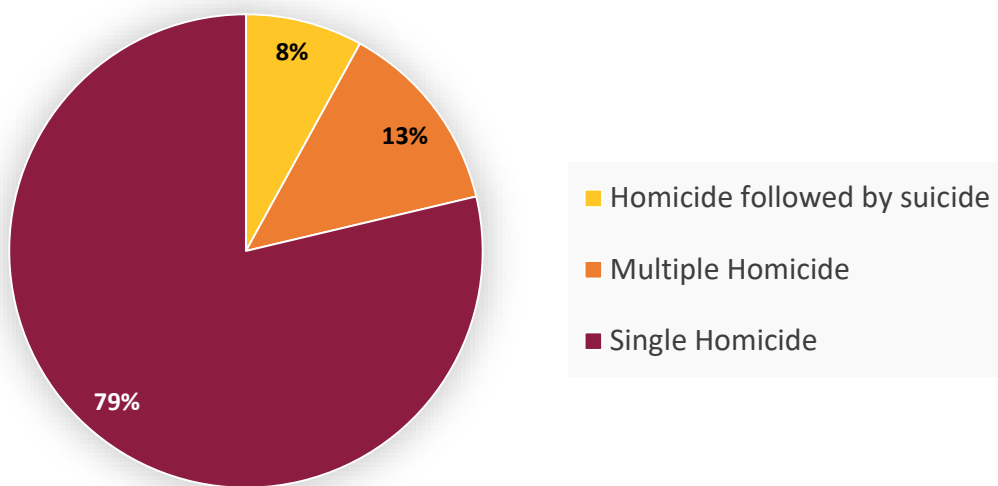
¹ <https://www.census.gov/programs-surveys/acs/>

FINDINGS

Homicides in Arizona, 2016

In 2016, there were a total of 390 homicide victims in Arizona, a total of 347 incidents. There were 307 victims of single homicide (78.7%), 31 victims of homicide followed by the suicide of the perpetrator (7.9%), and 52 victims of multiple homicide (13.3%, see Exhibit 1).

Exhibit 1: Homicide incidents in Arizona by Type, 2016 (n=390)



The Arizona statewide homicide rate was 5.8 per 100,000 population, which is slightly higher than the national homicide rate of 5.3 per 100,000, as reported by the Federal Bureau of Investigation.² The vast majority of the homicides occurred in Maricopa County. Specifically, 62.8% (n=245) of the homicides occurred in Maricopa County, 13.3% (n=52) in Pima county, and 24.1% (n=94) occurred in counties throughout the rest of the state.

If we exclude counties with less than five homicides or populations less than 100,000, which is consistent with CDC recommended reporting guidelines, residents in Navajo County were at higher risk for homicide than those in other counties (see Exhibit 2). The homicide rate in Navajo County was 11.1 per 100,000 population, compared with 6.0 per 100,000 in Maricopa County and a rate of 5.3 in Pima County, the second and third highest homicide rates in Arizona, among reportable populations. There were no homicides reported in Greenlee or Santa Cruz Counties, and 0.8% (n=3) homicides occurred in unknown locations.

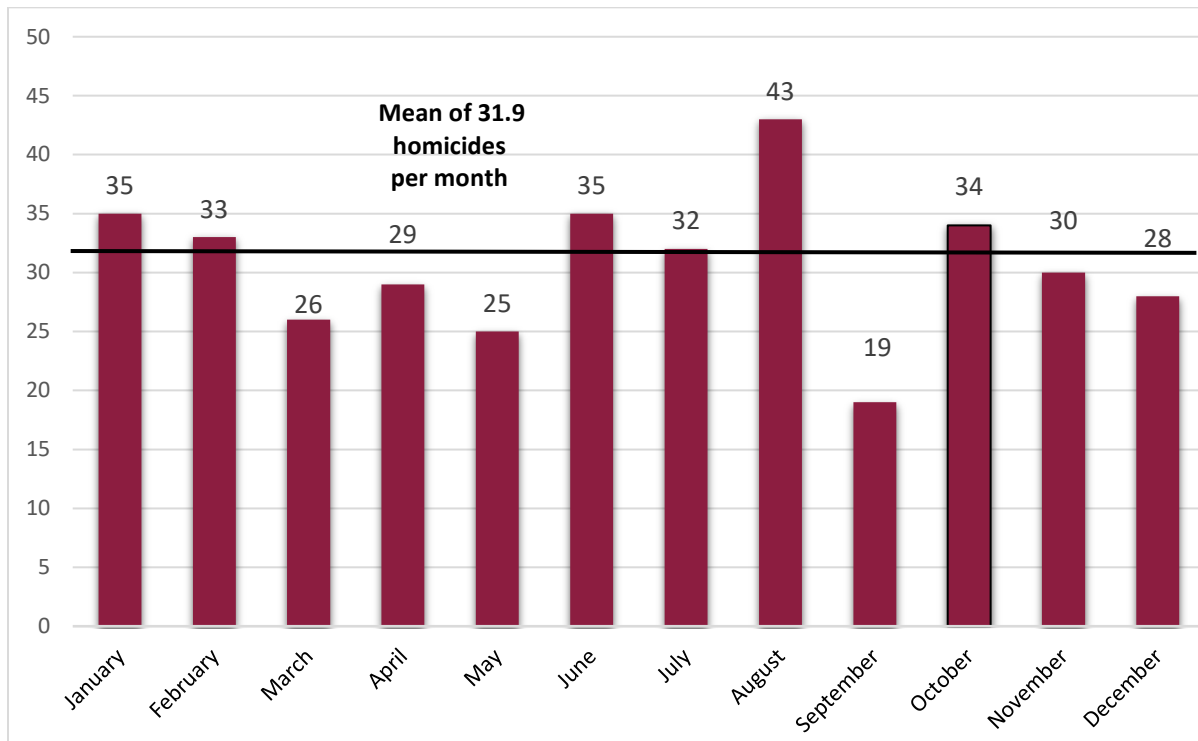
Exhibit 2: Homicide Rate per 100,000 Population in Arizona

*Note: Findings are suppressed for counties that have fewer than five homicides or have a population of less than 100,000 (see legend above).

² The national rate includes murders, non-negligent manslaughter, and legal intervention incidents.

We also examined temporal patterns among Arizona homicides by month (see Exhibit 3). There was a low of 19 homicides in September, followed by 26 and 25 in April and May, respectively, to a maximum of 43 in August. Overall, there was a mean of 31.9 (SD=5.8) homicides per month, which puts August (n=43) at a statistically higher than expected homicide rate. There were 21 cases that we were unable to accurately determine the date/month of death, and were excluded from the analysis in Exhibit 3.

Exhibit 3: Number of Homicides by Month, 2016 (n=369)



*Note. There were 21 cases were unknown for injury date.

Incident Characteristics

The incident characteristics are detailed in Exhibits 4 and 5. Exhibit 4 indicates the number of victims and suspects per homicide incident and Exhibit 5 presents the type of location where the injury incident occurred per victim. First, the analysis (see Exhibit 4) shows that the majority of the homicides (59.7%) were classified as Single Victim/Single Suspect. The overall percentage of single-victim homicide incidents was 86.9. In addition, 62.3 percent of homicides involved only one suspect, 16.4 percent of homicides involved multiple suspects, and there was an unknown number of suspects in 21.3 percent of incidents.

Exhibit 4: Number of Victims and Suspects per Homicide Event

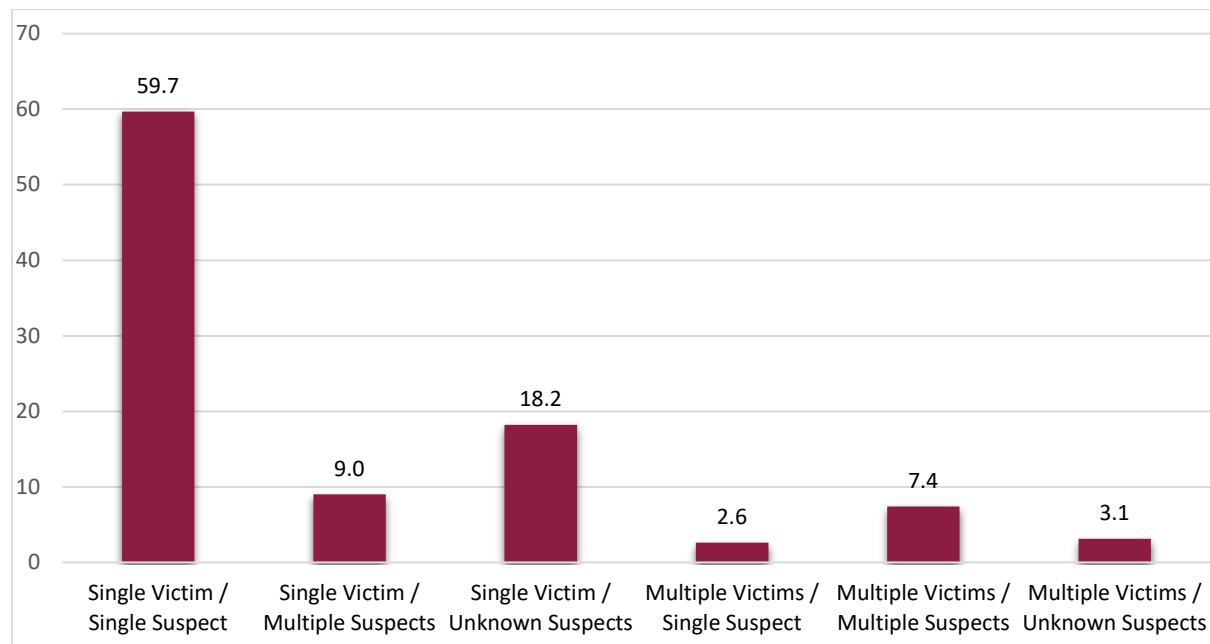


Exhibit 5 presents findings on the location where the homicide occurred (see Exhibit 5). About 48.2 percent (n=188) of homicide victims were injured in a house or apartment, and, of these, 78.1 percent (n=135; 34.6% of all victims) were injured in their own home. About 14.4 percent (n=56) of victims were injured in a street, alley, highway or parking lot, and 4.3 percent (n=17) of victims were injured in outdoor areas such as parks, fields and other natural areas. Approximately 10 percent (n=38) of victims were injured at an unknown injury location.

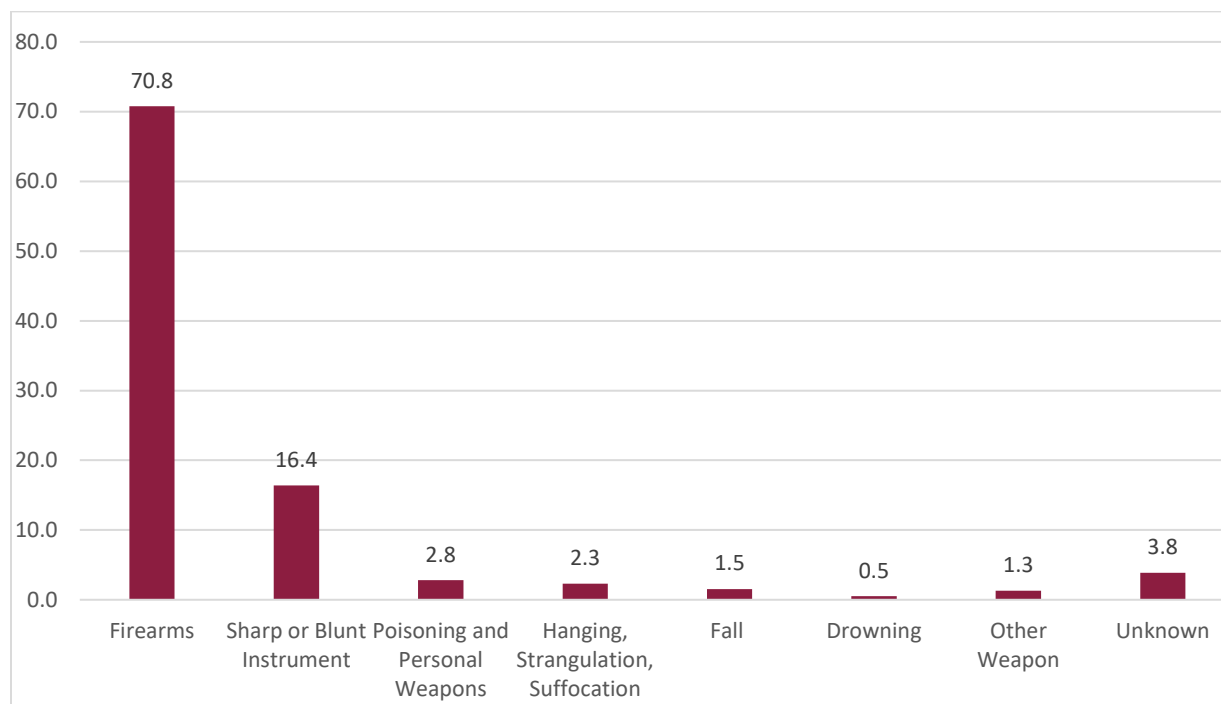
Exhibit 5: Location Type of Injury Incident, per Homicide Victim (n = 322)

	Frequency	Percent
House, apartment	188	48.2
At victim's home	135	34.6
Not at victim's home	51	13.1
Unknown home	2	0.5
Street/road, sidewalk, alley, highway, freeway	56	14.4
Parking lot/public parking garage	27	6.9
Natural area (e.g., field, river, beaches, woods)	13	3.3
Jail, prison, detention facility	3	0.8
Bar, nightclub	4	1.0
Motor vehicle (excluding school bus and public transportation)	17	4.4
Park, playground, public use area, and commercial establishment (e.g., grocery store, retail outlet, etc.)	4	1.0
Other (e.g., Hospital or medical facility, hotel/motel, office building, public transportation or station, service station, farm, etc.)	40	10.3
Unknown	38	9.7
Total	390	100.0

Weapon Used

Exhibit 6 shows the type of weapon used in Arizona homicides per incident. A firearm was used in 70.8 percent of homicides, followed by sharp or blunt objects (16.4%), poisoning and personal weapons (2.8%), hanging, strangulation, suffocation (2.3%), falling (1.5%), drowning (0.5%) or other weapons (1.3%) which includes fire/burns, Taser/electrocution etc. The weapon used was unknown in less than 4 percent (3.8%) of homicides.

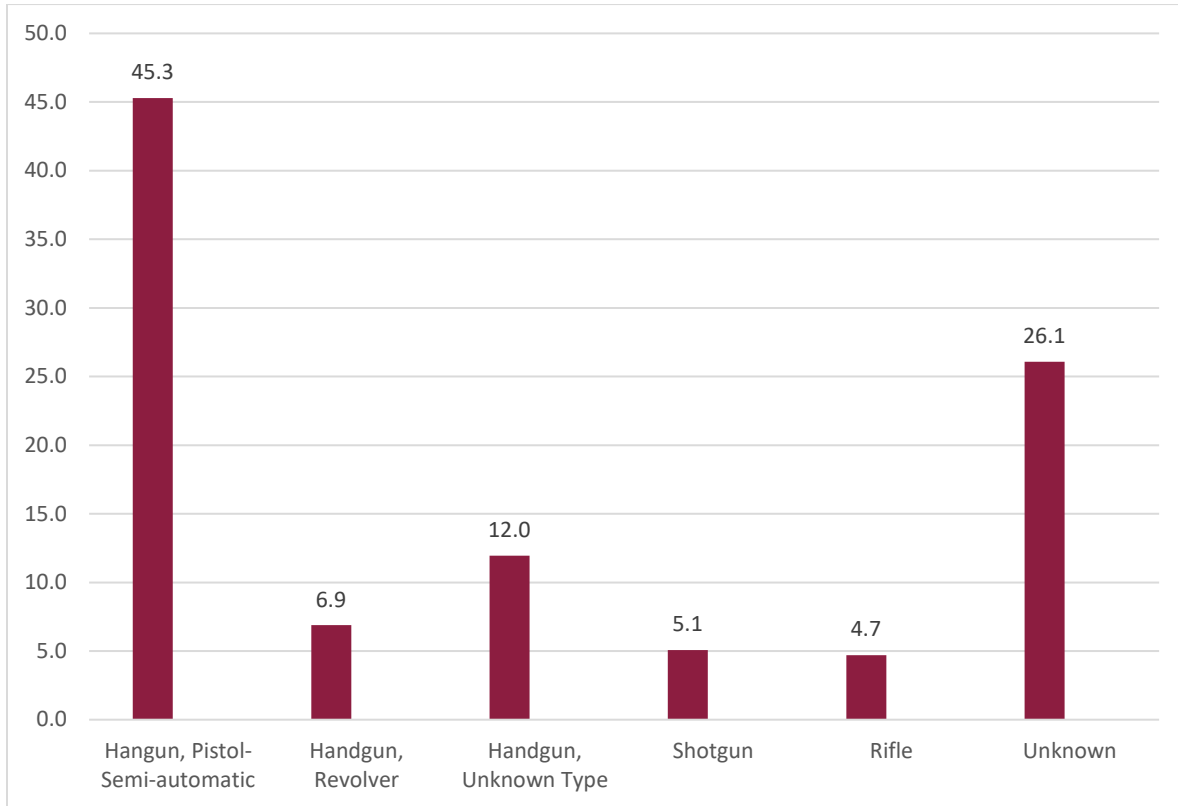
Exhibit 6: Weapon Type (n=388)



*Note. Personal weapons include fists, feet, and hands in actions such as punching, kicking or hitting

Exhibit 7 shows the type of firearm used per incident in Arizona homicides. Of a total of 276 firearm related homicides, a semi-automatic pistol/handgun was used in 45.3 percent of homicides, followed by unknown type of handgun (12.0%), revolvers (6.9%), shotguns (5.1%), and rifles (4.7%). The type of firearm used was unknown in 26.1 percent of incidents.

Exhibit 7: Homicide by Firearm Type (n=276)



Victim and Suspect Demographic Characteristics

Exhibits 8a-8c show the characteristics of victims and suspects involved in Arizona homicides. Exhibit 8a indicates that the majority of victims and suspects involved in homicide were male. Specifically, 77.7 percent (n=302) of homicide victims were male and 72.9 percent (n=223) of suspects were male. With respect to age, victims and suspects were most likely to be between the ages of 15 and 34.

It should be noted that the high volume of known characteristics of suspects is derived from information known to law enforcement at the time of data abstraction. Information on suspects does not necessarily reflect that a given suspect has been positively identified, or arrested, and the case may still be open. The suspect information also includes information regarding multiple suspects to a single homicide. Given these conditions, no assumption about the clearance rates of homicides should be inferred.

Exhibit 8a: Demographic Characteristics of Homicide Victims and Suspects

	Victims (n = 390)		Suspects (n = 336)		General population (n = 6,728,577)	
	n	%	n	%	n	%
<i>Gender</i>						
Male	303	77.7	245	72.9	3,344,106	49.7
Female	87	22.3	32	9.5	3,384,471	50.3
Unknown	0	0	59	17.6	-	-
<i>Age</i>						
0 – 14	16	4.1	NA	NA	1,346,748	20.0
15 – 24	78	20.0	76	22.6	941,194	14.0
25 – 34	111	28.5	66	20.2	899,711	13.4
35 – 44	64	16.4	36	10.7	835,719	12.4
45 – 54	58	14.9	22	6.5	840,159	12.5
55 – 64	34	8.7	13	3.9	794,895	11.8
65 – 74	17	4.4	NA	NA	620,856	9.2
75 +	11	2.8	NA	NA	449,295	6.7
Unknown/Missing	1	.3	116	34.5		
Mean (SD)	31.9 (5.76)		32.3 (13.72)			
Median	32.0		28.0			

*Note. Population estimate sources: U.S. Census Bureau, 2016 American Community Survey 5-Year Estimates

The numbers are suppressed for columns that have fewer than five deaths, except for unknown or unspecified cases.

Exhibit 8b shows that Whites were the most likely to be involved in a homicide when compared to other racial groups. About 65 percent (n=255) of victims were White, followed by 17.7 percent (n=69) who were Black, 11.3 percent (n=44) who were Native American, 2.6 percent (n=10) who were Asian, and 4.1 percent (n=16) were an unspecified race. Likewise, 43.8 percent (n=147) of suspects were White, 14.9 percent (n=50) were Black, and 38.1 percent (n=128) of suspects were an unspecified race. With regard to the victim and suspect's ethnicity, 34.4 percent (n=134) of victims and 27.1 percent (n=91) of suspects were identified as Hispanic.

Exhibit 8b: Demographic Characteristics of Homicide Victims and Suspects Known to Law Enforcement

	Victims (n = 390)		Suspects (n = 336)		General population (n = 6,728,577)	
	n	%	n	%	n	%
<i>Race</i>						
White	255	65.4	147	43.8	5,235,158	77.8
Black	69	17.7	50	14.9	287,110	4.3
Native American	44	11.3	5	1.5	296,732	4.4
Asian	10	2.6	5	1.5	205,229	3.1
Pacific Islander	0	0	NA	NA	12,863	0.2
Multi-Race	NA	NA	5	1.5	222,579	3.3
Unspecified Race	16	4.1	128	38.1		
<i>Ethnicity</i>						
Hispanic	134	34.4	91	27.1	2,098,411	30.7
Non-Hispanic	230	59.0	105	31.3	4,729,654	69.3
Unknown/Missing	26	6.7	139	41.4		

*Note. Population estimate sources: U.S. Census Bureau, 2016 American Community Survey 5-Year Estimates

The numbers are suppressed for columns that have fewer than five deaths, except for unknown or unspecified cases.

We also examined the marital status, education, and birthplace of victims. Exhibit 8c presents that about 59 percent (n=229) of victims were never married, about 20 percent (n=76) were married, and about 16 percent (n=61) were divorced at the time of the homicide. Few of the victims were found to be separated (1.0%, n=4) from their spouse or widowed (3.6%, n=14). In terms of educational attainment, 38.7 percent (n=151) of victims were high school graduates, followed by 33.9 percent (n=132) who had not completed high school or GED equivalency, 14.6 percent (n=57) who had obtained some college credit, and 11.0 percent (n=43) who had earned a college degree of some type. Our findings also indicated that the majority of homicide victims in Arizona were born in the United States. About 45.9 percent (n=180) of victims were born in Arizona, 48.2 percent (n=188) were born in other U.S. states, and 4.1 percent (n=16) of victims were born outside the United States.

Exhibit 8c: Demographic Characteristics of Homicide Victims and Suspects Known to Law Enforcement (n=390)

	Victims (n = 390)		General population (n = 6,728,577)	
	n	%	n	%
Marital Status ^a				
Never married	229	58.7	1,776,004	33.0
Married/Civil Union/Domestic Partnership	76	19.5	2,540,223	47.2
Divorced	61	15.6	667,347	12.4
Widowed	14	3.6	301,382	5.6
Married, but separated	4	1.0	96,873	1.8
Unknown/Missing	6	1.5	-	-
Education ^b				
< 8th grade	42	10.8	270,834	6.1
9th-12th grade	90	23.1	340,406	7.7
High School or GED	151	38.7	1,078,358	24.3
Some college credit	57	14.6	1,130,402	25.5
Associate	18	4.6	379,207	8.5
Bachelor	15	3.8	777,681	17.5
Master +	10	2.6	463,744	10.4
Unknown	7	1.8	-	-
Birth Place				
Arizona	180	46.2	2,623,391	39.0
Other states	188	48.2	3,113,841	46.3
Other Countries	16	4.1	991,345	14.7
Unknown/Missing	6	1.5	-	-

Note. Population estimate sources: U.S. Census Bureau, 2016 American Community Survey 5-Year Estimates

The numbers are suppressed for columns that have fewer than five deaths, except for unknown or unspecified cases.

a. Population estimates are based on 15 years and over.

b. Population estimates are based on 25 years and over.

Cumulative Risk for Homicide

We examined the cumulative risk for homicide among higher risk populations in Arizona. The analysis (as shown in Exhibit 9) shows that the homicide rate per 100,000 population for males in Arizona was 8.9, which is higher than the overall homicide rate in Arizona of 5.8 per 100,000 population. Analyses described above found those aged 15 to 34 were the most common age groups for victims of homicide, and thus cumulatively, males aged 15 to 34 had a homicide rate of 16.7 per 100,000. In addition, when ethnicity and race are taken into account, the homicide rates among Hispanic, Native American, and Black males between the age of 15 and 34 were at greatest risk with homicide rates of 18.4, 32.4, and 74.5, respectively. Further, homicide rates for Hispanic males aged 15 to 34 were nearly quadruple, for Native Americans more than five times as high, and for Black victims nearly fourteen times greater than the overall statewide homicide rate (5.8 per 100,000 population).

Exhibit 9: Cumulative Risk for Homicide (n=390)

Victim Characteristic(s)	# of Homicide Victims	Population	Homicide rate per 100,000
Male	303	3,344,106	8.9
Male, ages 15 to 34	159	949,779	16.7
Male, ages 15 to 34, Hispanic	67	358,198	18.4
Male, ages 15 to 34, Native American	17	50,538	32.4
Male, ages 15 to 34, Black	41	51,511	74.5

*Note. Population estimate sources: U.S. Census Bureau, 2016 American Community Survey 5-Year Estimates.

Victim/Suspect Relationship

Findings about relationships between the victim and suspect are presented in Exhibit 10. Our analysis indicated that about 12 percent (n=39) of suspects were close family members of victims including spouses, parents, children, and siblings, and other relatives. Nearly one in four (22.6%, n=76) suspects were either friends or acquaintances of the victim. Current spouses or romantic partners (i.e. boyfriend or girlfriend) were suspects in about 13 percent (n=43) of homicide incidents. Collectively, about 56 percent (n=187) of homicides involved a suspect who was known to the victim(s). Approximately 19 percent (n=62) of suspects were strangers. Findings also showed that a little more than one-quarter (n=87) of victim/suspect relationships were unspecified or unknown.

Intimate Partner Violence (IPV) was a contributing circumstance in 14.5 percent of homicide cases. These cases involved physical, sexual and/or psychological violence that occurred in the context of a current or former relationship, and where a perpetrator may abuse power in order to control his/her partner. Collectively, AZ-VDRS data shows that current and former spouses and other romantic partners accounted for 50 (14.5%) homicide incidents.

Exhibit 10: Victim/Suspect Relationship (n=336)

	# of suspects	%
Spouse	20	6.0
Current Romantic Partner	23	6.8
Former Romantic Partner or Spouse	7	2.1
Family members (e.g. parents, child, sibling, cousin)	39	11.6
Friend or Acquaintance	76	22.6
Other person, known to victim *	22	6.5
Stranger	62	18.5
Relationship unknown	87	25.9
Total	336	100.0

*Note. Others include such relationships as babysitter (e.g., child killed by babysitter), current/former work relationship rival gang member, roommate (not intimate partner), etc.

Exhibit 10: Victim/Suspect Relationship (n=336)		
	# of suspects	%
Spouse	20	6.0
Current Romantic Partner	23	6.8
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Family members (e.g. parents, child, sibling, cousin)	39	11.6
Friend or Acquaintance	76	22.6
Other person, known to victim *	22	6.5

Stranger	62	18.5
Relationship unknown	87	25.9
Total	336	100.0
*Note. Others include such relationships as babysitter (e.g., child killed by babysitter), current/former work relationship rival gang member, roommate (not intimate partner), etc.		

Circumstance Characteristics of Homicide Victims

The circumstance characteristics of victims are presented in Exhibit 11. Approximately, 6 percent (6.4%, n=25) of victims were diagnosed with a mental health problem and 0.8 percent (n=3) of homicide victims experienced recent depressed mood. In addition, 3.1 percent (n=12) of victims were currently or had recently received treatment for a mental health or a substance abuse problem and another 4.8 percent (n=19) had received treatment at some point during their life. About 6 percent (n=24) of victims had an alcohol problem and 20.4 percent (n=80) of victims had some other addiction or substance abuse problem.

More than two in five (42.5%, n=167) victims had life stressors (e.g., physical fights, an argument, legal problems, physical health problem, job/financial problem) at the time of their death. About 30 percent (30.5%, n=120) of victims had relationship problems (e.g., intimate partner violence, family relationship problem, or other relationship problem), and about 10 percent (10.2%, n=40) of victims experienced previous exposure to violence (e.g., abuse or neglect).

In terms of crime and criminal activity, 21.1 percent (n=83) of homicides were precipitated by another serious crime (e.g., drug dealing, robbery), 17.8 percent (n=70) of homicides occurred during the course of another crime, 6.1 percent (n=24) of homicides were gang related, and 3.8 percent (n=14) were related to other crimes (e.g. stalking, prostitution, etc.).

In addition, about 20 percent (n=80) of homicides were related to trafficking a controlled substance (e.g., drug deal gone bad, drug market turf battle, theft of drugs or money from a dealer during a drug deal, etc.) or drug habit (e.g., addict committing robbery to obtain money for drugs, arguments over drugs). About 7 percent (n=26) of victims used a weapon, and 7.4 percent (n=29) of victims were killed by a random act of violence. Approximately 4 percent (4.3%, n=17) of homicides were related to justifiable self-defense, 3.8 percent (n=15) were related to jealousy, and 1.8 percent (n=7) victims were an intervener of the incident. About 9 percent (n=36) of homicides were related to such circumstances as a brawl, drive-by shooting, being a bystander, or a mercy killing.

Exhibit 11: Circumstance Characteristics of Homicide Victims (n=390)

	Frequency	Percent
Mental health, Substance abuse, and other addiction		
Diagnosed mental health problem	25	6.4
Depressed mood	3	0.8
Mental health/substance abuse treatment	12	3.1
Ever treated for mental health or substance abuse problem	19	4.8
Alcohol Problem	24	6.1
Other addiction or substance abuse problem	80	20.4
Relationship and Life Stressors		
Life stressors (e.g., physical fights, argument, legal problems, physical health problem, job/financial problem, etc.)	167	42.5
Relationship problems (i.e., intimate partner violence, family relationship problem, or other relationship problem)	120	30.5
Previous exposure to violence (i.e., abuse or neglect)	40	10.2
Crime and Criminal Activity		
Precipitated by another serious crime	83	21.1
Crime in progress	70	17.8
Gang related	24	6.1
Others (e.g., stalking, walk-by assault, prostitution or sex trafficking, etc.)	14	3.6
Manner Specific Circumstances		
Drug involvement	80	20.4
Victim used a weapon	26	6.6
Random violence	29	7.4
Justifiable self-defense	17	4.3
Jealousy (lover's triangle)	15	3.8
Victim was an intervener	7	1.8
Others (e.g., brawl, drive-by shooting, bystander, mercy killing, etc.)	36	9.2

Circumstance Characteristics of Homicide Suspects

The suspect's circumstance characteristics are detailed in Exhibit 12. The analysis indicated that 31.3 percent (n=95) of suspects were reported to have used a substance or alcohol at the time of the incident, 7.6 percent (n=23) of suspects attempted suicide after the incident, and 8.6 percent (n=26) of suspects were also a victim in the incident. To clarify, suspects who were also a victim in the incident means that while the suspect ended up mortally wounding the victim, the suspect also suffered an injury in the incident. About 17 percent (17.4%, n=53) of suspects had been in contact with law enforcement. Twenty-nine suspects were identified by the police as being mentally ill or had a developmental disability (9.5%). Additionally, 3.3 percent (n=10) of suspects were a caregiver for the victim, 4.3 percent (n=13) had a history of abusing the victim, and 10.5 percent (n=32) were recently released from institutions including jail, prison, detention facility, hospital, and treatment facility.

Exhibit 12: Suspect's characteristics (n=336)

	Frequency	Percent
Suspected substance or alcohol use by suspect	95	31.3
Suspect attempted suicide after incident	23	7.6
Suspect is also a victim in the incident	26	8.6
Suspect had been in contact with law enforcement	53	17.4
Suspect mentally ill or had developmental disability	29	9.5
Suspect was a caregiver for the victim	10	3.3
History of abuse of victim by the suspect	13	4.3
Suspect was recently released from an institution (e.g., jail, prison, detention facility, hospital, treatment facility, etc.)	32	10.5

Toxicology Results of Homicide Victims

The toxicology results for homicide victims are detailed in Exhibit 13. Of the 392 homicide victims in 2016, 355 underwent toxicology testing and 260 (73.2%) tested positive for at least one drug. The results of the analysis indicated that of the 354 victims who were tested for alcohol, 32.8 percent (n=116) tested positive for alcohol at the time of their death. Additionally, of the 355 victims tested for amphetamine use at the time of death, 32.1 percent (n=114) tested positive. Of the 253 tested for antidepressants, only twenty (7.9%) tested positive. Of the 349 tested for cocaine use at the time of death, 12.3 percent (n=43) tested positive. About 44 percent (44.4%; n=52) of victims tested for marijuana tested positive, and, 14.3 percent (n=50) tested positive for opiates. Last, 346 victims were tested for other substances (i.e. carbon monoxide, barbiturates, and benzodiazepines) and 17.3 percent tested positive (n=60).

Exhibit 13: Toxicology Results of Homicide Victims by Drug (n=355)

	# Victims Tested (n=355)	# Victims testing positive (n=258)	% testing positive among the tested (n=355)
Alcohol	354	116	32.8
Amphetamine	355	114	32.1
Antidepressant	253	20	7.9
Cocaine	349	43	12.3
Marijuana	117	52	44.4
Opiates	352	50	14.3
Other substances*	346	60	17.3
Any	355	260	73.2

*Other substances include carbon monoxide, barbiturates, and benzodiazepines.

CONCLUSIONS AND SUMMARY

Homicide is the most serious form of violence in any community. The purpose of this report is to provide a general description of the scope and nature of the homicide problem in Arizona. This report relies on data provided through death certificates, law enforcement and medical examiner reports, and thus, details principally rely upon officially collected and reported information. Our major findings were as follows:

- In 2016, there were a total of 390 homicide victims in Arizona. There were 307 victims of single homicide (78.7%), 31 victims of homicide followed by the suicide of the perpetrator (7.9%), and 52 victims of multiple homicide (13.3%, see Exhibit 1).
- Homicides were largely concentrated in Maricopa and Pima counties, which are the two population centers of the state. These two counties accounted for about 76 percent of the homicides in the state.
- Most Arizona homicide victims were injured in a house or apartment (48.2%).
- A firearm was the most common weapon used for homicide in Arizona (70.8%).
- The majority of victims and suspects involved in homicide were males, white, and were between the ages of 15 and 34. In addition, most of victims were never married (58.7%), had a high school degree or less (72.4%), and were known to be born in U.S. (94.4%).³
- Risk for homicide was particularly concentrated among Hispanic, Native American, and Black males, aged 15 to 34 years old. While Arizona's homicide rate was 5.8 per 100,000 population in 2016, it was 18.4 per 100,000 for Hispanic males, aged 15 to 34; 32.4 per 100,000 for Native American males, aged 15 to 34; and was 74.5 per 100,000 for Black males, aged 15 to 34.
- Most homicide victims knew the suspects involved, with 18.5% (n=56) attributed to strangers, and an additional 25.6% (n=87) of homicides with an unidentified suspect, or an undocumented relationship between victim and suspect.
- Current life stressors, including, but not necessarily limited to physical fights, argument, legal problems, physical health problem, job and financial problems, were frequent among homicide victims (42.5%, n=167).
- At the time of their death, 30.5% (n=120) of victims were having relationship problems.
- About 21 percent (n=83) of homicides were precipitated by another serious crime, and another 17.8% (n=70) were committed while another crime was in progress. Related, about 20 percent (n=80) of homicides were related to illegal drugs.

³ About 4.1% of victims were known to be foreign-born and the national origin of 1.5% of victims was unknown.

- About 8 percent (n=23) of suspects attempted suicide after the incident.
- Almost 10 percent (n=29) of suspects were mentally ill or had a developmental disability.
- Additionally, 3.3% (n=10) of suspects were the caregiver for the victim, and 4.3% (n=13) had a history of abusing the victim.
- Toxicology results showed that among the 355 homicide victims test, 32.8% tested positive for alcohol use at the time of death, 32.1% tested positive for amphetamines, 44.4% tested positive for marijuana, and 14.3% tested positive for opiates.

REFERENCES

Armour, M. P. (2002). Experiences of convictism of homicide: Implications for research and practice. *Trauma, Violence, & Abuse, 3*, 109-124.

National Center for Health Statistics. (2017). *Health, United States, 2016: With chartbook on long-term trends in health*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

Hamermesh, D. S. (1999). Crime and the timing of work. *Journal of Urban Economics, 45*, 311-330.

Kochanek, K. D., Murphy, S. L., Xu, J., & Tejada-Vera, B. (2016). Deaths: Final data for 2014. *National Vital Statistic Reports, 65*, 1-121.

Skaperdas, S., Soares, R., Willman, A., & Miller, S. C. (2009). *The costs of violence*. Washington, DC: The World Bank.