Arizona Violent Death Reporting System: Homicide in Arizona, 2015–2019

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About the Center for Violence Prevention and Community Safety

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 whom we exclude but by whom we include and 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 a 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 Watts 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 databases. For more information regarding the Center for Violence Prevention and Community Safety, please contact us using the information provided below.

Mailing Address
Center for Violence Prevention and Community Safety
Arizona State University
411 N. Central
Ave., University
Center Suite
680
Mail Code 3120
Phoenix, AZ 85004

Phone
(602) 496-1425

Web site
http://cvpcs.asu.edu/

Acknowledgments

ADHS, Bureau of Vital Records	Marana Police Department
Arizona Department of Public Safety	Maricopa Police Department
	Mesa Police Department
Apache County Medical Examiner's Office	Miami Police Department
Coconino County Medical Examiner's Office	Nogales Police Department
Gila Messinger Mortuary	Northern Arizona University 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	Payson Police Department
New Mexico Office of the Medical Examiner	Peoria Police Department
Pima County Medical Examiner's Office	Phoenix Police Department
	Pinetop-Lakeside Police Department
Pinal County Medical Examiner's Office	Prescott Police Department
Yavapai County Medical Examiner's Office	Prescott Valley Police Department
Yuma County Medical Examiner's Office	Safford Police Department
	Sahuarita Police Department
Apache Junction Police Department	San Luis Police Department
Arizona State University Police Department	Scottsdale Police Department
Avondale Police Department	Sedona Police Department
Bullhead City Police Department	Show Low Police Department
Buckeye Police Department	Sierra Vista Police Department
Casa Grande Police Department	Snowflake-Taylor Police Department
Chandler Police Department	South Tucson Police Department
Chino Valley Police Department	St. Johns Police Department
Coolidge Police Department	Somerton Police Department
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Clarkdale Police Department	Surprise Police Department
Camp Verde Marshall	Tempe Police Department
Douglas Police Department	Tolleson Police Department

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 2018, all 50 states, Puerto Rico, and the District of Columbia participate. The primary goal of the NVDRS is to provide high-quality data that may be useful for the prevention of all types of fatal violence, including homicide, suicide, unintentional firearm deaths, legal intervention deaths, and deaths for which manner could not be determined but may be among one or more of the aforementioned manners.

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 toward reducing homicides and suicides in Arizona.

Understanding the scope and nature of the homicide problem at both state and local levels in order to inform local and state authorities, policymakers, and other stakeholders can assist in determining resource allocation and finding more effective or efficient strategies to respond to homicide. This report presents findings from the AZ-VDRS and describes homicide patterns and trends in Arizona for the calendar years 2015–2019. 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 from January 1, 2015, through December 31, 2019. 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. The NVDRS contains data on victim/suspect demographics and specific circumstances related to 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 in which the victim is killed by or dies due to law enforcement actions in the line of duty, are not included in this study.

For population estimates, we relied on the U.S. Census (2020 decennial) and its American Community Survey five-year and one-year estimates for 2015 through 2019 available at the writing of this report. Note that in all exhibits below, the data and analyses represented are for the state of Arizona, 2015–2019, unless otherwise indicated. Further, it should be noted that rates presented in this report are crude rates (e.g., not age-adjusted) and are standardized to per 100,000 population.

The AZ-VDRS recorded a total of 9,801 violent deaths for this period; circumstance data were available for 8,809 (89.9%) of the decedents. From these, we excluded 6,175 (70.1%) suicides, 750 (8.5%) violent deaths of unintentional or undetermined manner, and 232 (2.6%) legal intervention deaths, leaving 1,652 (18.8%) homicides for analysis. We use these complete data for analyses in all exhibits, except where noted (e.g., Exhibit 2).

FINDINGS

Homicides in Arizona, 2015–2019

From 2015 to 2019, we analyzed 1,652 homicide victims involved in a total of 1,526 incidents in Arizona. Of these victims, 1,340 were involved in a single homicide (81.1%), 130 were involved in a homicide followed by the suicide of the perpetrator (7.9%), and 182 were part of a multiple-victim incident (11.0%; see Exhibit 1).

Exhibit 1: Percent of Homicide Victims in Arizona by Incident Type, 2015–2019 (n=1,652)

Exhibit 2 shows the number and rate of homicides per 100,000 population by county. Consistent with CDC-recommended reporting guidelines, we have suppressed counts in counties that had fewer than six homicides in our data. These are indicated by "<5" in the column displaying the number ofvictims and "NA" for the percentage of the statewide sample that the count in question represents. In the "rate" column, we report the estimated rate for five victims in that county and indicate that the county's actual rate is below the indicated value. For example, Santa Cruz County had fewer than six homicides in our data; therefore, in the table, we report "<5" for the number of victims, "NA" for the percentage of the state total, and "<2.0" for the rate of homicides per 100,000 population, which would be the rate for five homicides in Santa Cruz.

The Arizona statewide homicide rate over the study period was 5.5 per 100,000 population, which is statistically significantly higher than the U.S. average homicide rate over that same period, 5.1 per 100,000 population, according to the *Crime in the United States* report of the Uniform Crime Reports (UCR). The Federal Bureau of Investigation (FBI) reported rates ranging from 4.9 to 5.4 per 100,000 population for the years 2015 through 2019.[1] The difference in rates is somewhat reduced, as the homicide rates for AZ-VDRS are computed with the exclusion of legal intervention deaths, while the FBI rates are inclusive of legal intervention homicides.

Most of the homicides in Arizona occurred in Maricopa County (61.3%; n=1,149), followed by Pima County (15.3%; n=287). Apache and Navajo Counties had the highest homicide rates, at 10.3 and 10.2 per 100,000 population, respectively, both of which are nearly double the Arizona homicide rate of 5.5. La Paz (7.8), and Coconino (7.1) Counties also had homicide rates that were substantially higher than the overall state rate. Notably, Cochise (2.7), Santa Cruz (<2.0), Yavapai (3.2), and Yuma (3.5) Counties had lower homicide rates during our study period. Greenlee County reported no homicides during the period.

It should be noted that we show all of the homicides in our data (n=1,874) in Exhibit 2 rather than only homicides for which we have complete data (n=1,652) for the purpose of better reflecting accurate homicide rates.

Exhibit 2: Counties Where Homicides Occurred, 2015–2019 (n=1,874)

County	# of Victims	%	Homicide Rate per 100,000
Apache	37	2.0	10.3
Cochise	17	0.9	2.7
Coconino	49	2.6	7.1
Gila	15	0.8	5.6
Graham	10	0.5	5.3
Greenlee	0	0.0	0.0
La Paz	8	0.4	7.8
Maricopa	1149	61.3	5.5
Mohave	41	2.2	4.0
Navajo	55	2.9	10.2
Pima	287	15.3	5.7
Pinal	89	4.7	4.4
Santa Cruz	<5	NA	<2.0
Yavapai	35	1.9	3.2
Yuma	36	1.9	3.5
Unknown	42	2.2	NA
Arizona	1874	100.0	5.5

[1] The national rate includes murders, non-negligent manslaughter, and legal intervention incidents and was sourced from the FBI at https://ucr.fbi.gov/crime-in-the-u.s/2019/crime-in-the-u.s.-2019/topic-pages/tables/table-1

We also examined temporal patterns of homicides by month over the five-year study period (see Exhibit 3). Over this period, the statewide monthly average was 137.7 homicides per month. A low of 101 homicides occurred in September, closely followed by March with 114. May was also below average, with a total of 128 homicides. June (n=160), April (n=151), January (n=148), August (n=147), and July (n=147) each had a higher number of homicides than the monthly average.

Exhibit 3: Number of Homicides by Month, 2015–2019 (n=1,652)

Incident Characteristics

The incident characteristics of homicides are detailed in Exhibits 4 and 5. Exhibit 4 indicates the percentages of homicides by the number of victims and suspects associated with the respective homicide incident. About two-thirds (66.8%; n=1,103) of homicide victims were killed by a single suspect in an incident in which they were the sole victim. Another 13.6% (n=224) of victims were part of a single-victim/multiple-suspect (7.7%; n=127) or single-victim/unknown-suspect (5.9%; n=97) incident. Just 5.3% (n=88) of victims were part of a multiple-victim/single-suspect incident, and 14.1% (n=233) were part of a multiple-victim/multiple-suspect incident, while very few (0.2%; n=4) reported multiple-victim incidents had no suspect information.

Exhibit 4: Percentage of Homicides by Number of Victims and Suspects per Homicide Incident, 2015–2019 (n=1,652)

Exhibit 5 presents findings on the location where the homicides occurred. Almost half (47.8%; n=789) of homicide victims were injured in a house or an apartment, and of those, 69.6% (n=549; 33.2% of all victims) were injured in their own home. About 14.0% (n=232) of victims were injured in a street, alley, or highway. Among the victims, 8.9% (n=147) were injured in a parking lot, 1.7% (n=28) in a natural area such as beach or field, 3.1% (n=52) in a park playground or public use area, 7.6% (n=125) in a jail, prison, or detention center, 2.0% (n=33) in a bar or nightclub, 6.5% (n=108) in a motor vehicle, and 3.8% (n=63) in an "other" location such as a hotel, office building, or hospital. Finally, 4.5% (n=75) of victims were injured at an unknown location.

Exhibit 5: Location of Injury per Victim 2015–2019 (n=1,652)

	n	%
House, apartment	789	47.8
At victim's home	549	69.6
Not at victim's home	223	13.5
Unknown home	17	1.0
Street/road, sidewalk, alley, highway, freeway	232	14.0
Parking lot/public parking garage	147	8.9
Natural area (e.g., field, river, beach, woods)	28	1.7
Park, playground, public use area, commercial establishment (e.g., grocery store, retail outlet, etc.)	52	3.1
Jail, prison, detention facility	125	7.6
Bar, nightclub	33	2.0
Motor vehicle (excluding school bus and public transportation)	108	6.5
Other (e.g., hospital or medical facility, hotel/motel, office building, public transportation or station, service station, farm)	63	3.8
Unknown	75	4.5
Total	1652	100.0

Weapon Used

Exhibit 6 shows the type of weapon used in Arizona homicides. The number of weapons (n=1,733) exceeds the number of homicide victims (n=1,652), due to some victims receiving contributing fatal injuries from multiple weapons. Among all weapons, a firearm was used 68.3% (n=1,183) of the time, followed by a sharp (14.0%; n=242) or blunt object (6.0%; n=104), personal weapon(s) (e.g., punching/kicking) (4.1%; n=71), hanging, strangulation, suffocation (3.2%; n=56), drowning (0.6%; n=10), and some "other" type of weapon (2.2%; n=38), which includes fire/burns, taser/electrocution, and other specified means. The weapon used was unknown about 1.7% (n=29) of the time.

Exhibit 6: Percentage by Weapon Type Used in Homicides (n=1,733)

† Personal weapons include fists, feet, and hands used in actions such as punching, kicking, or hitting.
†† Includes falls, fire, burns, intentional neglect, and other unspecified means.

Exhibit 7 shows the type of firearm used in Arizona homicides. Among the 1,183 firearms used in a homicide, , a semi-automatic pistol/handgun was used in 41.7% (n=493), followed by an unknown type of handgun (20.4%; n=241), a revolver (7.7%; n=91), a shotgun (6.2%; n=73), and a rifle (2.3%; n=27). The type of firearm used was unknown in 21.9% (n=259) of firearm-related homicides. Collectively, handguns were used 69.8% (n=825) of the time (not shown).

Exhibit 7: Percentage Firearm Type Used in Homicides (n=1,183)

Percent

Firearm Type	Percent
Handgun, Semi-automatic	41.7
Handgun, Revolver	7.7
Handgun, Unknown Type	20.4
Rifle	2.3
Shotgun	6.2
Unknown	21.9

Victim and Suspect Demographic Characteristics

Exhibits 8a–8c show the characteristics of victims and suspects involved in Arizona homicides. Exhibit 8a indicates that most victims and suspects involved in homicide were male. Specifically, 77.6% (n=1,282) of homicide victims were male, as were 77.2% (n=1,392) of suspects. With respect to age, both victims and suspects were most likely to be between 15 and 34 years old.

It should be noted that the majority of the known characteristics of suspects are 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 in a single homicide. Given these conditions, no assumption regarding the clearance rates of homicides should be inferred.

Exhibit 8a: Sex and Age Characteristics of Homicide Victims and Suspects Known to Law Enforcement

	Victims (n = 1652)		Suspects (n = 1804)	
	n	%	n	%
Gender				
Male	1282	77.6	1392	77.2
Female	370	22.4	147	8.1
Unknown	0	0	265	14.7
Age				
0–14	70	4.2	8	0.4
15–24	378	22.9	387	21.5
25–34	451	27.3	347	19.2
35–44	288	17.4	197	10.9
45–54	212	12.8	121	6.7
55–64	139	8.4	57	3.2
65–74	72	4.4	18	1.0
75+	40	2.4	16	0.9
Unknown/Missing	2	0.1	653	36.2
Mean (SD)	36.03 (16.71)		32.48 (13.65)	

Exhibit 8b shows that about 35.5% (n=586) of victims were of Hispanic/Latinx origin, while 34.7% (n=573) of victims were White, non-Hispanic/Latinx, 17.8% (n=294) were Black, 9.3% (n=154) were Native American or American Indian, and about 1.8% (n=29) were Asian, Pacific Islander, or multi-racial. A significant proportion of suspects did not have race/ethnicity information reported (41.1%; n=742). Similar to victims, identified suspects were typically White, non-Hispanic/Latinx (19.6%; n=354), or Hispanic/Latinx (20.6%; n=371).

Exhibit 8b: Race/Ethnicity of Homicide Victims and Suspects Known to Law Enforcement

	Victims (n = 1652)		Suspects (n = 1804)	
	n	%	n	%
Race				
White	573	34.7	354	19.6
Black	294	17.8	280	15.5
Native American	154	9.3	44	2.4
Hispanic or Latino, any race	586	35.5	371	20.6
Other †	29	1.8	13	0.7
Unspecified Race	16	1.0	742	41.1

We also examined the marital status, education level, and birthplace of victims. Exhibit 8c shows that 60.7% (n=1,003) of victims were never married, 18.2% (n=301) were married, and 14.4% (n=238) were divorced at the time of the homicide. Few victims were separated from their spouse (2.0%, n=33) or widowed (2.4%, n=39). In terms of educational attainment, 39.3% (n=650) of victims were high school graduates, while 33.9% (n=559) had not completed high school or GED equivalency, 13.0% (n=215) had obtained some college credit, and 10.4% (n=172) had earned a college degree of some type. Our findings also indicated that most homicide victims in Arizona were born in the United States. About 45.3% (n=748) of victims were born in Arizona, 39.7% (n=656) were born in other U.S. states, and 12.3% (n=203) of victims were born outside the United States.

Exhibit 8c: Demographic Characteristics of Homicide Victims

	Victims (n = 1652)	
	n	%
Marital Status		
Single (never married)	1003	60.7
Married/Civil Union/Domestic Partnership	301	18.2
Married, but separated	33	2.0
Divorced	238	14.4
Widowed	39	2.4
Unknown/Missing	38	2.3
Education		
< 8th grade	168	10.2
9th–12th grade	391	23.7
High School or GED	650	39.3
Some college credit	215	13.0
Associate or Bachelor's degree	134	8.1
Master's +	38	2.3
Unknown	56	3.4
Birthplace		
Arizona	748	45.3
Other states	656	39.7
Other countries	203	12.3
Unknown/Missing	45	2.7

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 7.6, which is higher than the overall homicide rate in Arizona of 5.5 per 100,000 population. Those aged 15 to 34 comprised the most common age group for victims of homicide; thus, cumulatively, males aged 15 to 34 had a homicide rate of 14.4 per 100,000 population. In addition, when ethnicity and race are considered, Hispanic/Latinx, Native American, and Black males between the ages of 15 and 34 were at the greatest risk of homicide victimization, with homicide rates of 16.6, 27.5, and 61.0, respectively. Thus, homicide rates for Hispanic/Latinx males aged 15 to 34 were almost double those among males in general; these rates were more than three times greater for Native American males and more than eight times greater for Black males, compared to the overall statewide homicide rate for all males (7.6 per 100,000 population).

Exhibit 9: Cumulative Risk for Homicide

Victim Characteristic(s)	# Homicide Victims	Homicide Rate per 100,000
Male	1282	7.6
Male, ages 15 to 34	689	14.4
Male, ages 15 to 34, Hispanic	302	16.6
Male, ages 15 to 34, Black	168	61.0
Male, ages 15 to 34, American Indian	72	27.5

Disproportional Involvement of Intimate-Partner Factors in Homicides Among Female Victims

We examined intimate-partner factors in female homicide victimization. We first looked at the sex of the victims and the suspects in their homicides. Female victims were disproportionally killed by male suspects, with more than three-quarters (79.2%) of female victims killed by male suspects, compared to about two-thirds (68.6%) of male victims killed by male suspects. Female victims were also half as likely to have an unknown suspect in their homicide (12.2% vs. 23.4%). See Exhibit 10 below.

Exhibit 10: Comparison of Percentage of Victims by Victim Sex and Suspect Sex (n=1,652)
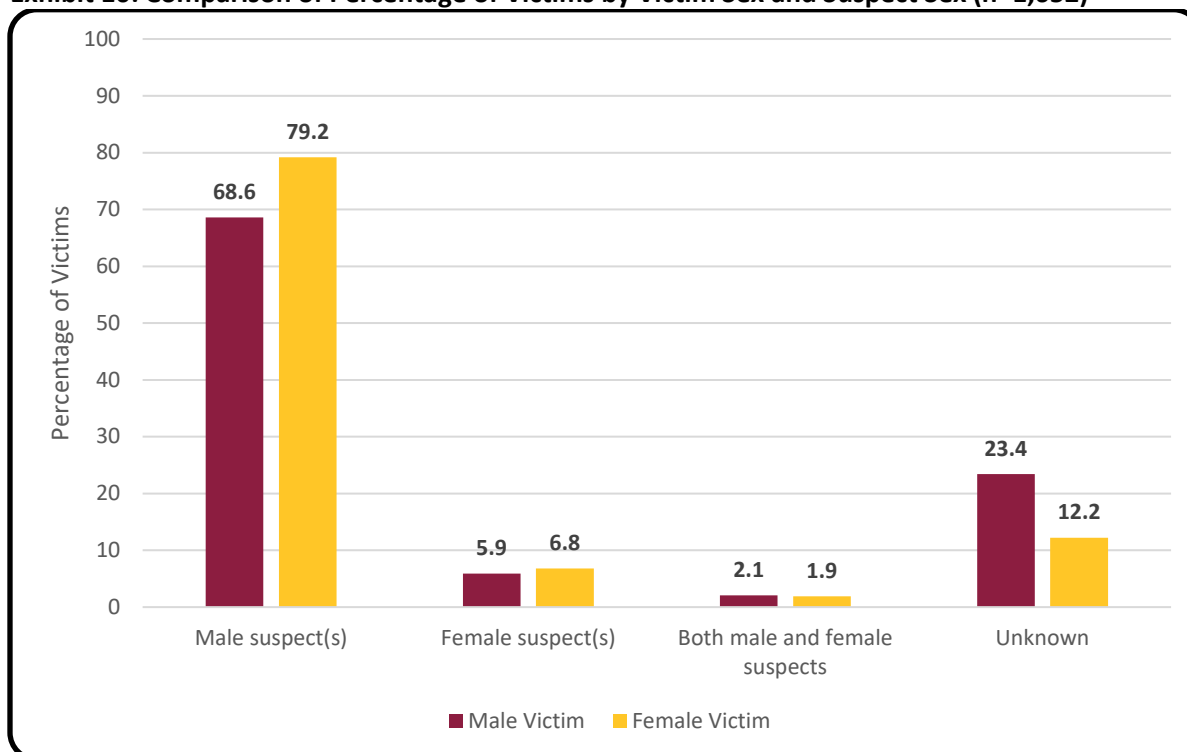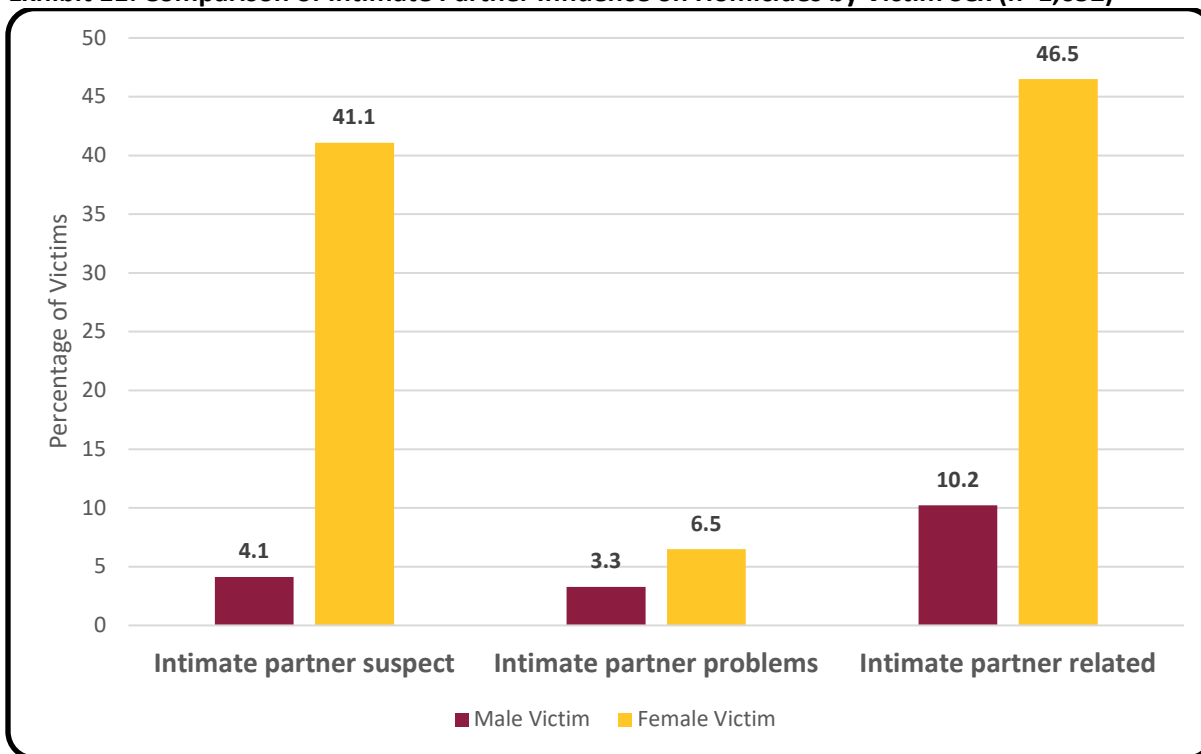

Exhibit 11 shows the comparison of homicide associated with intimate partners for females and males using three different measures. The first measure, *intimate partner suspect*, is defined by the victim-to-suspect relationship, whereby the suspect and victim were either current or former romantic partners. Female victims were more than ten times as likely to be killed by a current or former intimate partner than males (41.1% vs. 4.1%). Second, we looked at homicides occurring in the context of *intimate partner problems*. This measure combines circumstance data from the incidents in which intimate partner problems or jealousy were coded as contributing circumstances to the homicide.

Female victims were almost twice as likely to experience intimate partner problems prior to their homicide as males (6.5% vs. 3.3%). Finally, we looked at our circumstance data for the *intimate partner-related* measure to include victims killed in the context of an intimate partner relationship, regardless of the victim's particular relationship to the perpetrator. For example, the homicide victim was a friend or relative of the perpetrator's current or former intimate partner and was killed as a result of problems or violence related to the intimate partner relationship. Again, we see a disproportionate association of such scenarios with almost half (46.5%) of all female homicide victims killed in the context of our intimate partner-related measure, compared to about one in ten (10.1%) male victims.

Exhibit 11: Comparison of Intimate Partner Influence on Homicides by Victim Sex (n=1,652)

Victim-to-Suspect Relationship

Findings regarding the relationship between the victim and suspect are presented in Exhibit 12. Our analysis indicated that about 23.3% (n=384) of suspects were close family members of the respective victim, such as spouses, parents, children, siblings, and other relatives, including 12.5% (n=205) who were current spouses or romantic partners of the victim. Nearly one in six (17.8%, n=294) suspects were either friends or acquaintances of the victim. Collectively, about 77% (n=1,269) of homicides involved a suspect known to the victim(s). Approximately 15.2% (n=251) of suspects were strangers. The findings also showed that 8.0% (n=132) of victim/suspect relationships were unspecified or unknown.

Exhibit 12: Victim-to-Suspect Relationship (n=1,652)

	# of suspects	%
Current Romantic Partner	171	10.4
Former Romantic Partner or Spouse	34	2.1
Family members (e.g. parents, child, sibling, cousin)	179	10.8
Friend or Acquaintance	294	17.8
Other person, known to victim *	591	35.8
Stranger	251	15.2
Relationship unknown	132	8.0
Total	1652	100.0

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

Circumstance Characteristics of Homicide Victims

The circumstance characteristics of victims are presented in Exhibit 13. Overall, 8.7% (n=143) of victims were diagnosed with a mental health problem, and 1.2% (n=19) had been experiencing a depressed mood around the time of the incident. In addition, 3.9% (n=65) of victims were currently receiving or had recently received treatment for mental health or substance abuse problems, and 5.8% (n=96) had received treatment at some point during their life. About 7.5% (n=124) of victims had an alcohol problem.

More than two in five (42.3%, n=698) of victims had experienced an argument or fight prior to the homicide. Almost one in four (24.0%, n=396) victims had relationship problems (i.e., intimate partner violence, family relationship problem, or other relationship problem), and about 19.9% (n=328) of victims had experienced previous exposure to violence (e.g., abuse or neglect).

In terms of crime and criminal activity, 26.0% (n=429) of homicides were precipitated by another serious crime (e.g., drug dealing, robbery), and more than three-quarters (77.4%; n=332) of homicides precipitated by another crime occurred during while that crime was in-progress. About 8.2% (n=136) of homicides were gang-related, and 3.7% (n=61) were related to other crimes (e.g., stalking, prostitution).

In addition, 17.2% (n=284) of homicides were related to trafficking a controlled substance (e.g., drug market turf battle, theft of drugs or money from a dealer during a drug deal) or a drug habit (e.g., addict committing robbery to obtain money for drugs, argument over drugs). Moreover, 7.7% (n=127) of victims used a weapon. The results also show that 3.3% (n=55) of homicides were related to justifiable self-defense, and 3.9% (n=65) were related to jealousy, while 2.1% (n=35) of victims were interveners in the incident. Furthermore, 10.4% (n=172) of homicides were related to other circumstances such as a brawl, a drive-by shooting, being a bystander, or a mercy killing.

Exhibit 13. Circumstance Characteristics of Homicide Victims (n=1,652)

	n	%
Mental health, Substance abuse, and Other addiction		
Current diagnosed mental health problem	143	8.7
Current depressed mood	19	1.2
Current mental health/substance abuse treatment	65	3.9
Ever treated for mental health or substance abuse problem	96	5.8
Alcohol Problem	124	7.5
Other addiction or substance abuse problem	≤5	≤1.0
Relationship stressors		
Argument or fight precipitated homicide	698	42.3
Relationship problems (i.e., intimate partner violence, family relationship problem, or other relationship problem)	396	24.0
Previous exposure to violence (i.e., abuse or neglect)	328	19.9
Crime and Criminal Activity		
Precipitated by another crime	429	26.0
First crime in progress	332	77.4
Gang related	136	8.2
Other crimes (i.e., Stalking, Walk-by assault, Prostitution or sex trafficking, etc.)	61	3.7
Manner Specific Circumstances		
Drug involvement	284	17.2
Victim used a weapon	127	7.7
Justifiable self-defense	55	3.3
Jealousy (lover's triangle)	65	3.9
Victim was an intervener	35	2.1
Others (i.e., Brawl, drive-by shooting, victim was a bystander, mercy killing, etc.)	172	10.4

Circumstance Characteristics of Homicide Suspects

The suspects' circumstance characteristics are detailed in Exhibit 14. The analysis indicated that 24.2% (n=437) of suspects were reported to have used an intoxicating substance or alcohol at the time of the incident, 8.4% (n=152) attempted suicide after the incident, and 8.2% (n=148) were also a victim in the incident. To clarify, a suspect who was also a victim in the incident refers to a suspect who, in addition to mortally wounding the victim, suffered a fatal injury themselves in the incident.

The analysis indicates that 15.8% (n=285) of suspects had been in contact with law enforcement, and 8.8% (n=158) of suspects were identified by the police or medical examiner's office as mentally ill or having a developmental disability. Additionally, 4.0% (n=72) of suspects were caregivers for the respective victim, 4.6% (n=83) had a history of abusing the victim, and 3.6% (n=65) were recently released from an institution such as jail, prison, detention facility, hospital, and treatment facility.

Exhibit 14. Suspect Characteristics (n=1,804)

	n	%
Suspected substance or alcohol use by suspect	437	24.2
Suspect attempted suicide after incident	152	8.4
Suspect is also a victim in the incident	148	8.2
Suspect had been in contact with law enforcement	285	15.8
Suspect mentally ill or had developmental disability	158	8.8
Suspect was a caregiver for the victim	72	4.0
History of abuse of victim by the suspect	83	4.6
Suspect was recently released from an institution (e.g., jail, prison, detention facility, hospital, treatment facility)	65	3.6

Toxicology Results of Homicide Victims

The toxicology results for homicide victims are detailed in Exhibit 15. Toxicology testing is not conducted for all decedents, including those in our analyses. Further, when toxicology is ordered, it may not be conducted to test for all possible substances. As such, Exhibit 15 reports the number of victims tested for a given substance, the number of victims who tested positive, and the percentage positive among those victims tested for the given substance.

Of the 1,652 homicide victims, 1,533 (92.8%, not shown) underwent toxicology testing, and 1,108 (72.3%) tested positive for at least one substance. The analysis indicated that of the 1,533 victims who were tested for alcohol, 33.8% (n=513) tested positive for alcohol at the time of their death. Additionally, of the 1,517 victims tested for amphetamines at the time of death, 30.9% (n=469) tested positive. Of the 692 tested for antidepressants, less than 10% (9.7%; n=64) tested positive. Of the 1,506 tested for cocaine use at the time of death, 11.7% (n=176) tested positive. Almost two in five (37.2%; n=234) victims tested for marijuana tested positive, as did 14.3% (n=216) of those tested for opiates (n=1,511). Finally, 256 victims were tested for other substances (i.e., anticonvulsants, antipsychotics, barbiturates, benzodiazepines, and muscle relaxers), and of those, 72.7% tested positive (n=186).

Exhibit 13: Toxicology Results of Homicide Victims by Drug (n=1,533)			
	# Victims Tested	# Victims testing positive	% testing positive among the tested
Alcohol	1516	513	33.8
Amphetamine	1517	469	30.9
Antidepressant	692	67	9.7
Cocaine	1506	176	11.7
Marijuana	629	234	37.2
Opiates	1511	216	14.3
Other substances†	256	186	72.7
Any	1533	1108	72.3

†Other substances include anti-psychotic, barbiturates, benzodiazepines, carbon monoxide, and others.

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. The report relies on data provided through death certificates, law enforcement reports, and medical examiner reports. Our major findings were as follows:

- From 2015 through 2019, there were 1,652 homicide victims in Arizona. There were 1,340 victims of single homicide (81.1%), 130 victims of homicide followed by the suicide of the perpetrator (7.9%), and 182 victims of multiple homicide (11.0%; see Exhibit 1).

- Homicides were primarily concentrated in Maricopa and Pima Counties, which are the state's two population centers. These two counties accounted for about 80% (n=1,328) of the homicides in the state.

- Most commonly, Arizona homicide victims were injured in a house or apartment (47.8%; n=789).

- A firearm was the most common weapon used for homicide in Arizona (68.3%; n=1,183).

- Most victims and suspects involved in homicide were males, White, non-Hispanic/Latinx, and between 15 and 34 years old.

- In addition, most of the victims were never married (60.7%; n=1,003), had a high school degree or less (73.2%; n=1,209), and were known to be born in the U.S. (85.0%; n=1,404).[3]

- The risk for homicide was mainly concentrated among Hispanic/Latinx, Native American, and Black males aged 15 to 34 years old. While Arizona's homicide rate was 5.5 per 100,000 population overall, it was 16.6 per 100,000 for Hispanic/Latinx males aged 15 to 34, 22.5 per 100,000 for Native American males aged 15 to 34, and 61.0 per 100,000 for Black males aged 15 to 34.

- Most homicide victims knew the suspects involved (76.8%; n=1,269). About 15.2% (n=251) of homicides were attributed to strangers and an additional 8.0% (n=132) were attributed to an unidentified suspect or an undocumented relationship between the victim and suspect.

- One in eight (12.5%; n=205) homicide victims were killed by a current or former romantic partner, and among female victims, this rose to two in five (41.1%; n=152).

- Arguments and physical fights between two people frequently preceded homicides (42.3%, n=698).

- At the time of their death, 24.0% (n=396) of victims had relationship problems.

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[3] About 12.3% of victims were known to be foreign-born, and the national origin of 2.7% of victims was unknown.

- Among all homicides, 26.0% (n=429) were precipitated by another serious crime, and 77.4% (n=332) were committed while that crime was in progress. In addition, 17.2% (n=284) of homicides were related to illegal drugs.

- A total of 8.4% (n=152) of suspects attempted suicide after the incident.

- Overall, 8.8% (n=158) of suspects had a mental health condition or a developmental disability; 4.0% (n=72) of suspects were the caregivers for the respective victim, and 4.6% (n=83) had a history of abusing the victim.

- Toxicology results showed that among the 1,533 homicide victims tested, 72.3% (n=1,108) tested positive for some substance at the time of death.

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