

2020

Macomb County Medical Examiner Annual Report



Daniel J. Spitz, M.D.
Chief Medical Examiner
9/24/2021

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MACOMB COUNTY HEALTH DEPARTMENT
Medical Examiner's Office
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<http://health.macombgov.org/Health-Home>

Andrew Cox, MPH, REHS
Director/Health Officer

Daniel J. Spitz, M.D.
Chief Medical Examiner

September 1, 2021

To the Macomb County Executive, Macomb County Board of Commissioners, and the Citizens of Macomb County:

The Medical Examiner's duty is to investigate deaths to determine the cause and manner of death for cases that fall under the medical examiner's jurisdiction. Deaths included in this report reflect both resident and non-resident deaths.

The Medical Examiner's Office investigated more deaths in 2020 than in any previous year. The number of medical examiner cases doubled from 2019, which amounted to a total of 6,577 investigations. Forensic examinations decreased by 14.5% when compared to 2019, resulting in 684 examinations. Cremation permits issued increased from 4,518 to 5,599 in 2020, a 23.9% increase from 2019. Hospice deaths increased 10% to a total of 2,704 cases.

In 2020 (compared to 2019) there was a 122.4% increase in the number of deaths due to natural causes, a 33.3% increase in the total number of accidental deaths, and a 15.7% decrease in the number of suicides.

Drug related deaths, including deaths related to heroin and fentanyl/fentanyl analogs, continued to be a public health concern in 2020. Drug-related deaths increased 2.5% since 2019 to a total of 327 deaths. The number of heroin-only deaths has been decreasing since 2017, and in 2020, the number of heroin-only deaths decreased to zero. This highlights the increasing prevalence of fentanyl within heroin-related deaths. Heroin-related deaths increased by 26.8% (total of 52) and fentanyl-related deaths increased by 47% (total of 241). Though still high, opioid-related deaths were the lowest since 2017 at 83 total deaths, a decrease of 73.8%

We would like to thank the Macomb County Executive and the Board of Commissioners for their continued support, which enables the medical examiner staff to provide this valuable and necessary service to the citizens of Macomb County.

We are pleased to present you with the Macomb County Medical Examiner's 2020 Annual Report.

Respectfully Submitted,

Andrew Cox, MPH, REHS
Director/Health Officer

Daniel J. Spitz, M.D.
Chief Medical Examiner

Organization of the Medical Examiner's Office

Macomb County Health Department

Director/Health Officer

Andrew Cox, M.P.H., R.E.H.S.

Medical Director

Kevin P. Lokar, M.D., M.P.H.

Deputy Health Officer

Krista Willette, R.N., M.S.A.

Medical Examiner's Office

Chief Medical Examiner

Daniel J. Spitz, M.D.

Deputy Medical Examiner

Mary E. Pietrangelo, M.D.

Public Health Services Coordinator

Jacqueline Fontenot

Forensic Investigations Specialist

Gretchen Terebesi, D-ABMDI

Morgue Specialist

Jocelyn Fetting

Jeff Novak

Jacob Kettlewell

Forensic Investigator

Erick Acre, D-ABMDI

Kevin Boaz, D-ABMDI

Kiara Brooks, D-ABMDI

Jennifer Skridulis, D-ABMDI

Kelly Burke

Alan Gwyn

Office Assistant Senior

Denise Calhoun

Board Certification



The American Board of Medicolegal Death Investigators (ABMDI) sets quality and process standards for death investigators. Investigators who pass the certification requirements of the ABMDI are designated as Registered Diplomats (D-ABMDI). Investigators who meet further requirements and pass an additional test are designated as Certified Fellows (F-ABMDI).

Accreditation



The Macomb County Medical Examiner's Office is a fully accredited office of the [National Association of Medical Examiners \(NAME\)](#). NAME accredited offices represent the highest quality of death investigation systems demonstrated by the hard work, dedication, and leadership made by the staff of the Medical Examiner's Office. The Macomb County Medical Examiner's Office is one of five NAME fully accredited Medical Examiner offices in Michigan.

Medical Examiner's Location

Location:

43585 Elizabeth Road
Mount Clemens, Michigan 48043
Phone: (586) 469-5214, Fax: (586)
469-6636

Office Hours:

Monday through Friday
except for official holidays
8:30 a.m. - 5:00 p.m.

Medical Examiner's Facility

The Medical Examiner's Office was built in 2007 and was completely remodeled with a large addition in 2020. It has over 15,200 square feet of space which is divided into an office/administrative space and an autopsy suite. The autopsy suite has a walk-in cooler, four autopsy stations, digital X-ray equipment and a special dissection room for decomposed/infectious cases.

Mission Statement

The mission of the Macomb County Medical Examiner's Office is to provide medicolegal investigations into all deaths requiring a public inquiry to determine and record the cause and manner of death for all decedents' families and the legal and medical communities, in accordance with the highest level of professionalism, compassion and efficiency.

Laws Governing the Medical Examiner's Office

Act 181 of 1953, MCL Section 52.201-52.216, requires every county in Michigan to appoint a county Medical Examiner - a physician licensed by the State of Michigan, to carry out the duties and functions specified in the Act, including "being in charge of the office of the county medical examiner and promulgating rules relative to the conduct of his office."

The primary role of a county medical examiner is to determine and certify the cause of death and the manner of death in cases where death has occurred violently, accidentally, unexpectedly, or without medical attendance, and to ascertain the identity of the decedent in order to notify the next of kin. The cause of death is the disease or injury responsible for initiating the events that directly lead to a death. The manner of death is how the cause of death came into being. The county medical examiner has broad powers and specific responsibilities to act under the aforementioned section of State law to carry out that mission.

2020 Budget

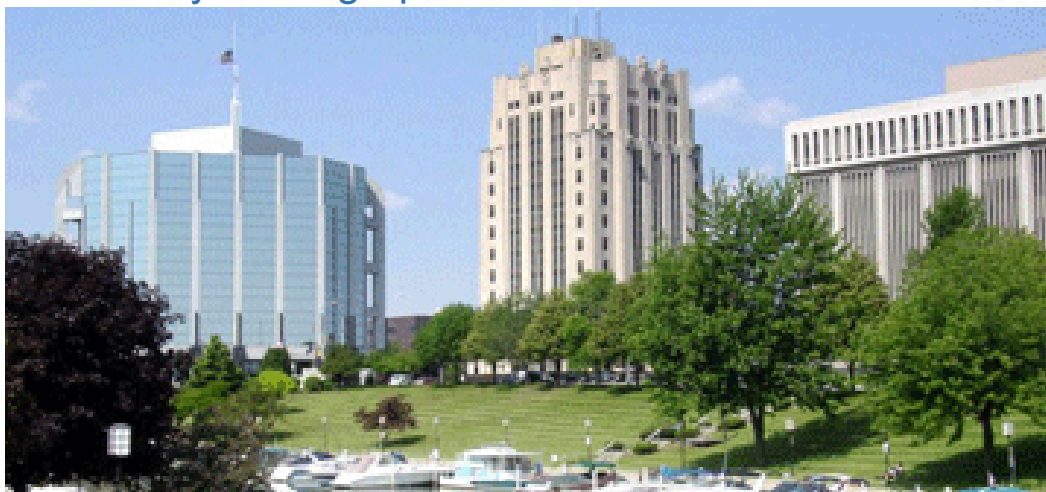
Revenues	Expenses
\$ 2,185,202	\$ 2,185,202

Activities of the Medical Examiner's Office

Macomb County residents are well served by the standards achieved through accreditation by the National Association of Medical Examiners (NAME), a national body that sets and certifies adherence to high standards for medical examiners. Accreditation from NAME shows that the office meets professional standards and provides assurance to the community that a medical examiner's office is committed to excellence.

- **Autopsy and Investigations:** As part of the duties of the Medical Examiner's Office, autopsy and investigative reports are prepared and maintained on all cases. The work performed by the office includes, but is not limited to, death scene investigations as well as external examination of bodies, autopsies, and medical chart reviews conducted by forensic pathologists.
- **Legal Assistance:** The Macomb County Medical Examiner's Office fulfills legal obligations by testifying in criminal and civil proceedings relating to the cause and manner of death.
- **Public Health Emergencies:** Public health emergencies can take on many forms ranging from naturally occurring events (storms, floods, fires) to man-made events including delivery of weapons of mass destruction (bomb/blast, chemical, nuclear, or biological). In partnership with other county services, the Medical Examiner's Office developed the Macomb County Mass Fatality Plan, which addresses mortuary surge capacity events and methods to respond and mitigate such issues.
- **Education:** Teaching has always been an integral portion of the Medical Examiner's Office duties. Such academic endeavors include forensic pathology lectures and presentations at Wayne State University. Teaching rotations at the Medical Examiner facility include Wayne State University Forensic Investigation internship, Macomb Community College EMT and surgical tech students, Baker College EMT, and individual autopsy observations for law enforcement personnel, nurses and medical students. The Medical Examiner's Office is also involved in community projects: drinking and driving campaigns for local high schools, and lectures for community groups and health care providers.
- **Organ and Tissue Donation Referral:** The Medical Examiner's Office continues to collaborate with local organ and tissue procurement agencies to refer tissue and cornea donors.

Macomb County Demographics



Macomb County is located in southeastern Michigan and is one of three counties that comprise the Detroit Metropolitan area (one of the top 10 metro areas in the U.S.). Macomb County is the ninth smallest of Michigan's 83 counties with 479 square miles, yet it ranks third in population with 873,972 residents (2019 U.S. Census Estimate), an increase in population of 3.9% since 2010 (841,126).

Macomb County includes 27 municipalities. Three of these municipalities are included in Michigan's top ten largest cities: Warren (3rd), Sterling Heights (4th), and Clinton Township (7th).

Census Summary Profile^{1 2}

	2010 Estimate		2019 Estimate		Population Growth	Percent Change
	841,126 Population		873,972 Population			
White	715,853	85.11%	722,056	83.21%	0.87%	-2.23%
Black or African American	74,275	8.83%	118,588	13.67%	59.66%	54.77%
American Indian & Alaska Native	2,716	0.32%	9,323	1.07%	243.26%	232.74%
Asian	25,870	3.08%	44,307	5.11%	71.27%	66.02%
Native Hawaiian & Other Pacific Islander	195	0.02%	1,257	0.14%	544.62%	524.85%
Some other race	5,423	0.64%	6,476	0.75%	19.42%	15.76%
Two or more races	16,794	2.00%	24,974	2.88%	48.71%	44.15%
Hispanic or Latino	19,276	2.29%	24,084	2.78%	24.94%	21.11%

¹ Source: U.S. Census Bureau, 2010 B020001, 2010 B03003, 2019 B02001, 2018 B03003. Estimates from the American Community Survey 1-Year Estimates.

² Race and Ethnic groups are not mutually exclusive

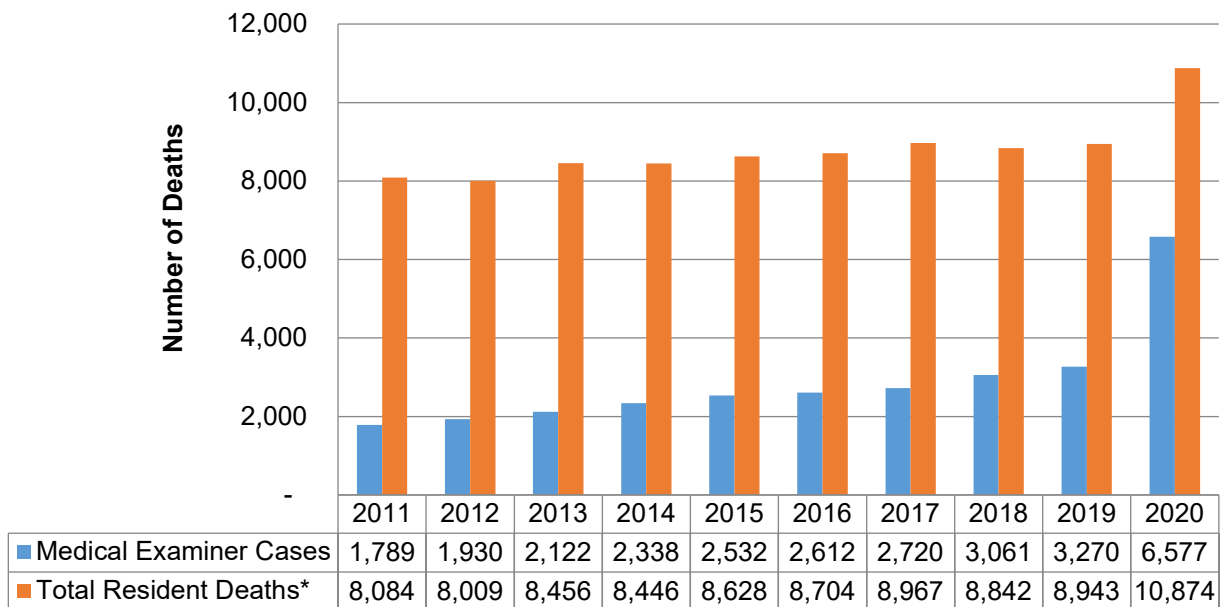
Overview of Cases for 2020

Macomb County Population (2019 estimate)	873,972
Resident Deaths in Macomb County (estimate)	10,874
Macomb County Medical Examiner Cases	6,577
Forensic Examinations	684

Local deaths (those that occur within the boundaries of Macomb County) that fall under the jurisdiction of the medical examiner are transported by a contract body transport company to the Macomb County Medical Examiner's Office (MCMEO) for examination. Medical examiner cases include both residents and non-residents of Macomb County. In most cases, a forensic investigator attends the death scene and performs an investigation and examination of the body. The medical examiner investigative staff are on-call and available 24 hours/day, 365 days/year.

In 2020, the Macomb County Medical Examiner's Office investigated 60.5% (6,577/10,874) of all deaths that occurred in the county. The graph below illustrates the number of deaths of Macomb County residents, regardless of their location at the time of death³.

Medical Examiner Cases and Resident Deaths, 2011-2020

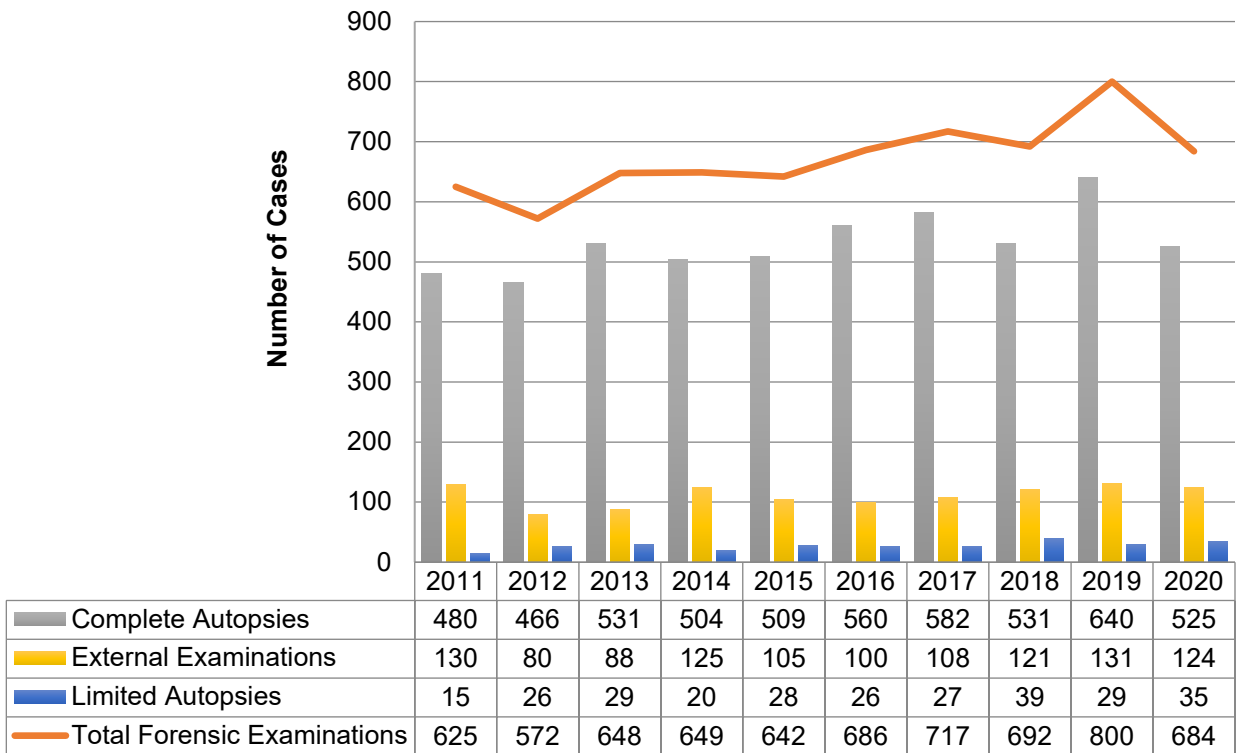


³ The number of total 2020 resident deaths is provided by the Division for Vital Records & Health Statistics, of Michigan Department of Health & Human Services, and is a provisional number.

Forensic Examinations

The total number of forensic examinations includes complete autopsies, limited autopsies, and external examinations. In 2020, the Medical Examiner's Office investigated 6,577 deaths, of which 684 were brought to the office for a forensic examination by a forensic pathologist. Of the 684 forensic examinations, 525 were complete autopsies, 124 were external examinations, and 35 were limited autopsies. There were 667 toxicology assessments performed.

Forensic Examinations 2011-2020

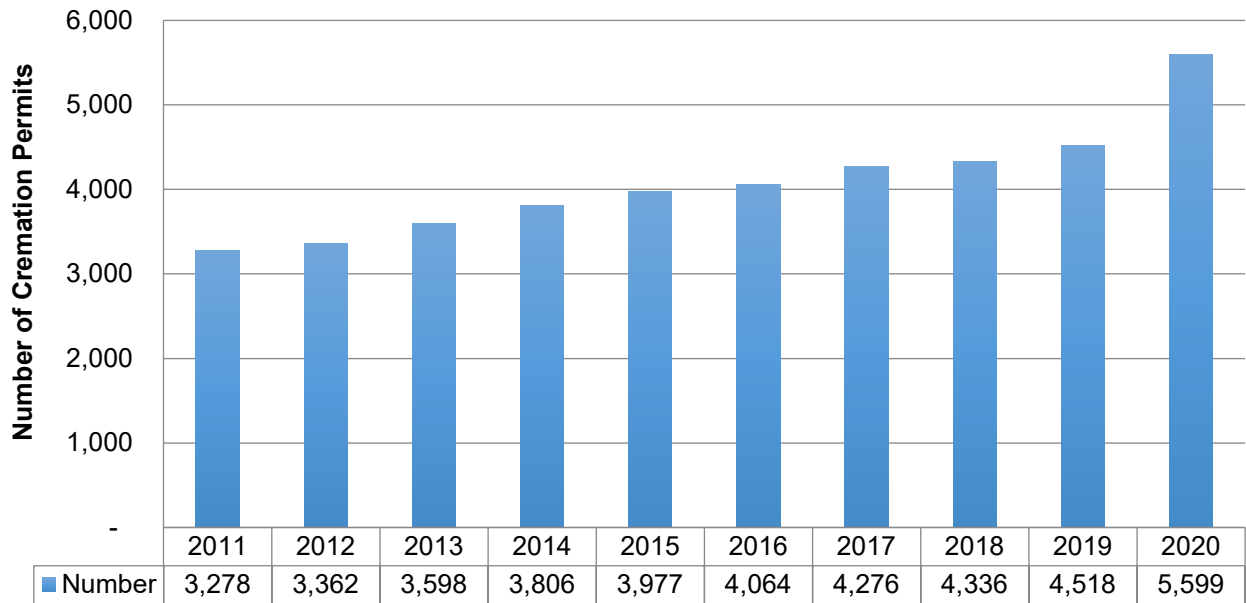


Cremation Permits

In Macomb County, the Medical Examiner's Office is required to sign cremation permit authorizations before a body is cremated. In order for a cremation permit to be issued, the death certificate is reviewed and, in some cases, a more detailed investigation is required prior to authorization.

Cremation permits issued in 2020 showed a 24% increase from 2019.

Cremation Permit Authorizations by Year, 2011-2020



Overview of Manner of Death⁴

Manner of death is one of the items that must be reported on the death certificate and is a classification of death based on the circumstances, autopsy findings, toxicology results and all available information associated with the death investigation. There are five "manner" classifications: natural, accident, suicide, homicide and indeterminate:

- **Natural deaths** are due solely to disease and/or the aging process.
- **Accident** applies when an injury or poisoning causes death and there is no evidence that injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.
- **Suicide** results from an injury or poisoning as a result of an intentional, self-inflicted act.
- **Homicide** occurs when death results from a volitional act committed by another person.
- **Indeterminate** is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death.

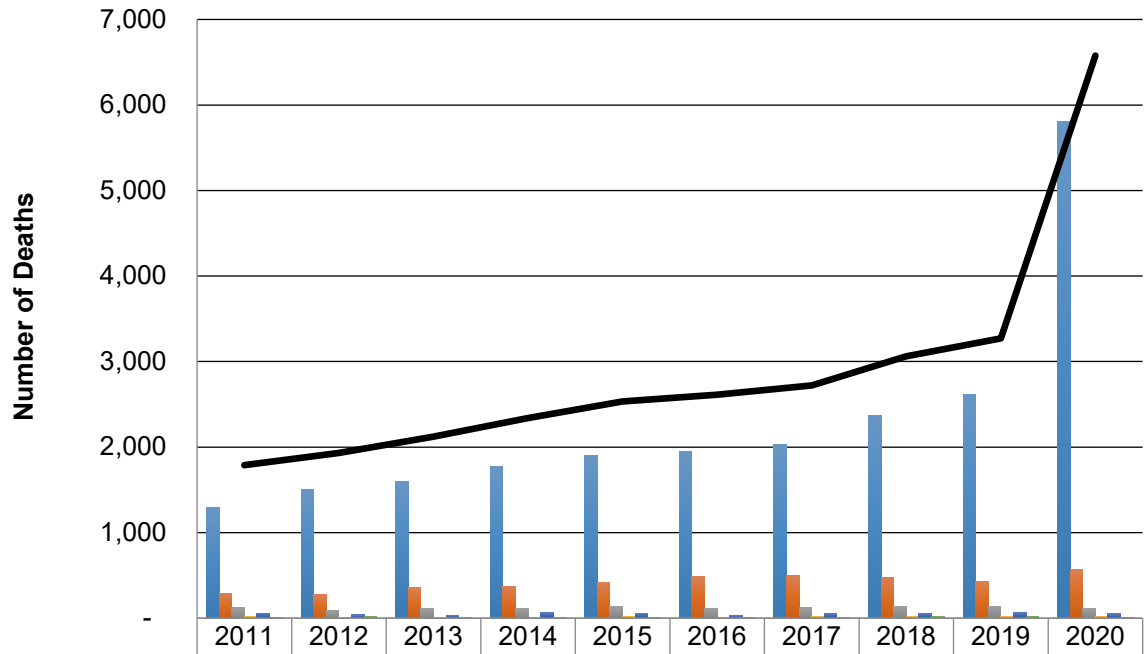
Cases by Manner of Death

Manner of Death	Number	Percent
Natural	5,807	88.3%
Accident	565	8.6%
Suicide	118	1.8%
Homicide	22	0.3%
Indeterminate	51	0.8%
Pending	1	0.0%
Unspecified (non-human bones, tissue, etc.)⁵	8	0.1%
TOTAL	6,577	100.0%

⁴ From this point on, the graphs and tables will only include cases examined by the Medical Examiner.

⁵ Unspecified may include non-human bones and tissues, or cases where a manner of death was not recorded.

Medical Examiner Cases by Manner of Death, 2011-2020

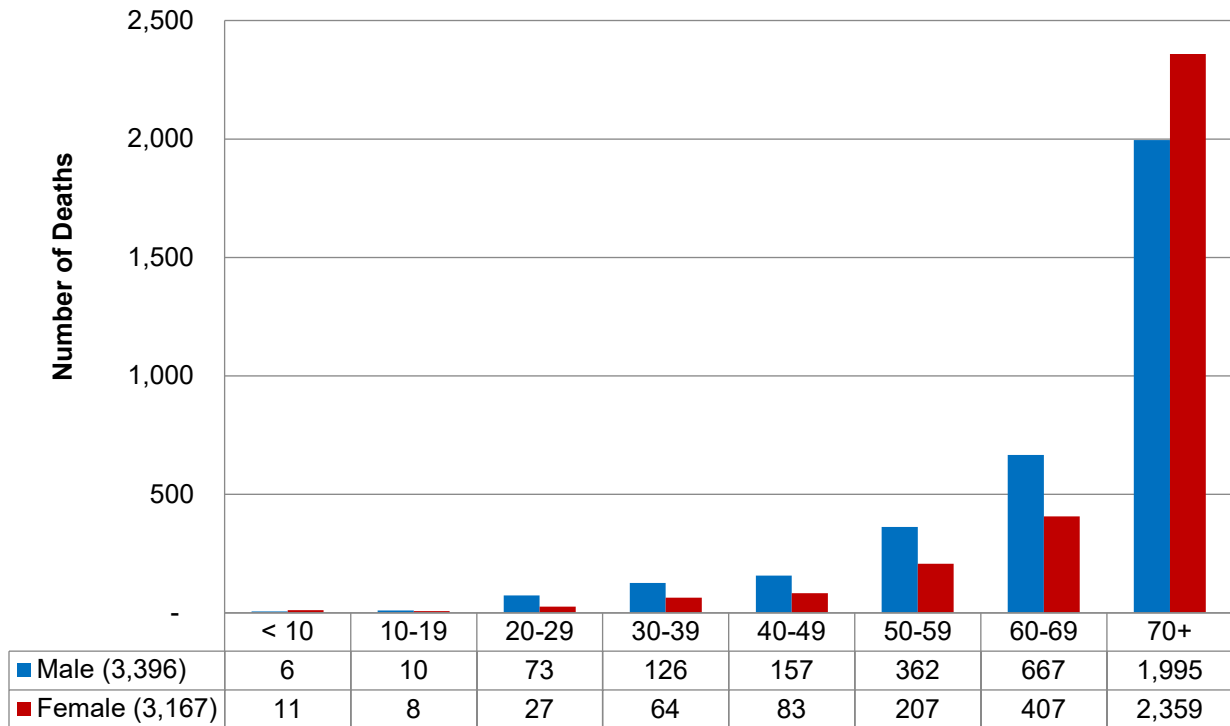


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
■ Natural	1,290	1,505	1,596	1,768	1,898	1,952	2,025	2,368	2,613	5,812
■ Accident	294	271	358	375	415	490	496	471	424	565
■ Suicide	127	94	115	112	133	116	120	136	140	118
■ Homicide	14	7	12	13	23	13	20	18	14	22
■ Indeterminate	55	38	34	61	55	31	52	52	61	51
■ Unspecified & Pending	9	15	7	9	8	10	7	16	18	9
— Total	1,789	1,930	2,122	2,338	2,532	2,612	2,720	3,061	3,270	6,577

Cases by Age and Sex

There were a total of 6,577 investigations performed in 2020; of these 3,397 (51.6%) were males, 3,168 (48.2%) were females, and 12 (0.2%) were categorized as other (non-human bones and tissue, other sex, or unreported sex).

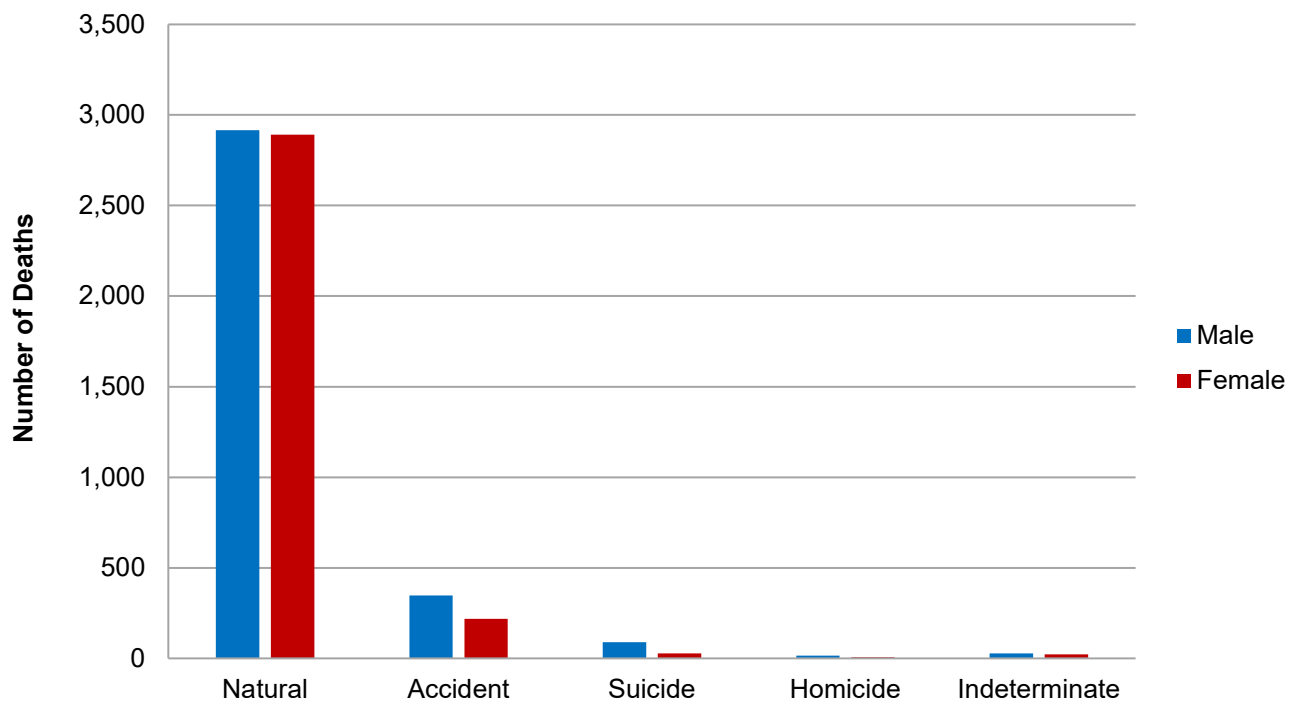
Medical Examiner Deaths by Age and Gender, 2020



Age Group	Male	Female	Other Sex	Non-Human Bones/Tissues	Unreported Sex	Total
0 - 18 Years	11	18	0	0	0	29
19 Years and Older	3,386	3,149	2	1	2	6,540
Unreported Age	0	1	0	6	1	8
TOTAL	3,397	3168	2	7	3	6,577

Cases by Manner and Sex⁶

Cases by Manner of Death and Sex, 2020



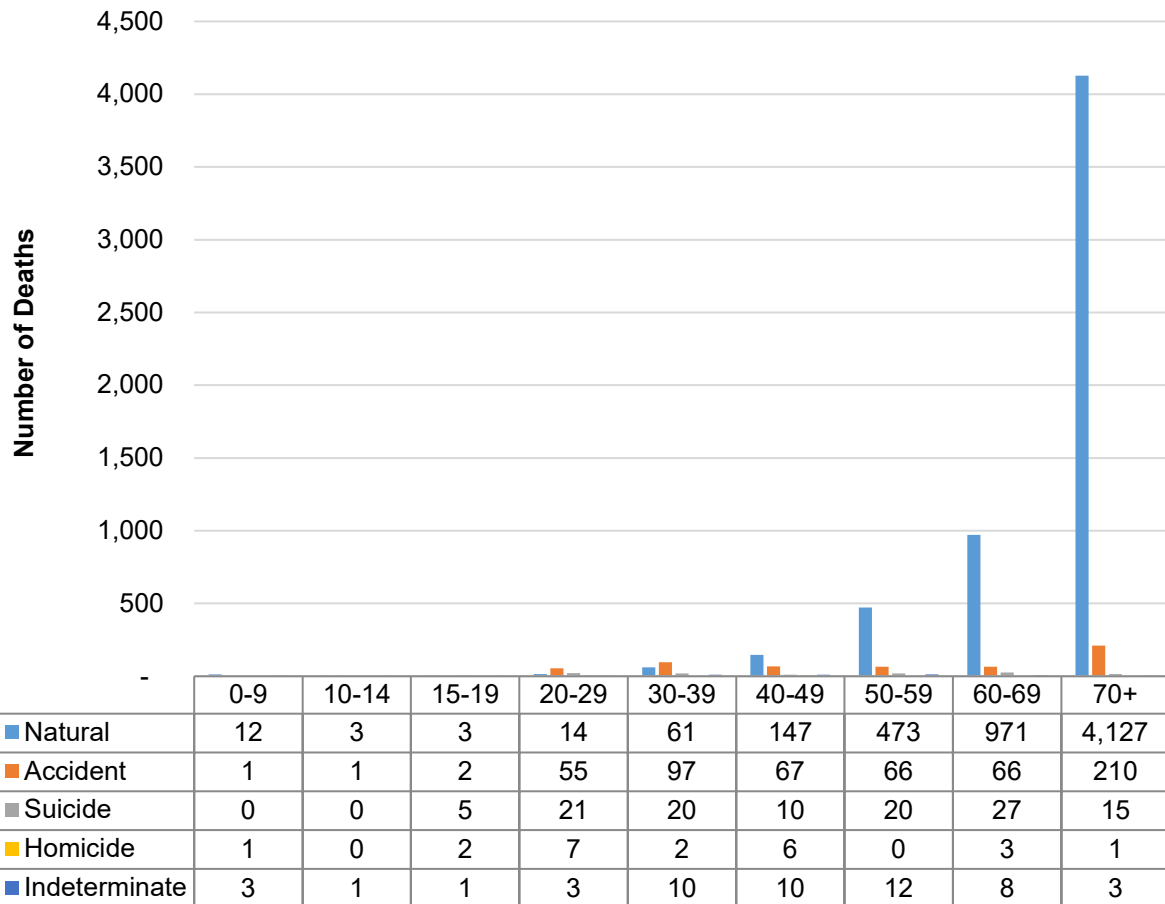
Manner of Death	Male	Female	Other ⁷	Total
Natural	2,916	2,891	5	5,812
Accident	347	218	0	565
Suicide	90	28	0	118
Homicide	15	7	0	22
Indeterminate	28	23	0	51
Pending	0	0	1	1
Unspecified	1	1	6	8
TOTAL	3,397	3,168	12	6,577

⁶ From this point on, the graphs and tables will not include the 9 unspecified and pending cases because they did not have a manner of death

⁷ From this point on, Other includes Other Sex, Unreported Sex, and Non-Human Bones/Tissues

Cases by Manner of Death and Age

Cases by Manner of Death and Age, 2020



Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Other	Total
Hispanic	12	9	0	21
White	3001	2821	5	5,827
African American	332	286	0	618
American Indian	4	3	0	7
Asian Pacific	29	33	0	62
Other	12	5	0	17
Multiracial	7	9	0	16
Unknown	0	0	0	0
Unreported	0	0	0	0
Total	3,397	3,166	5	6,568

Manner of Death – Natural

Cases by Age and Sex

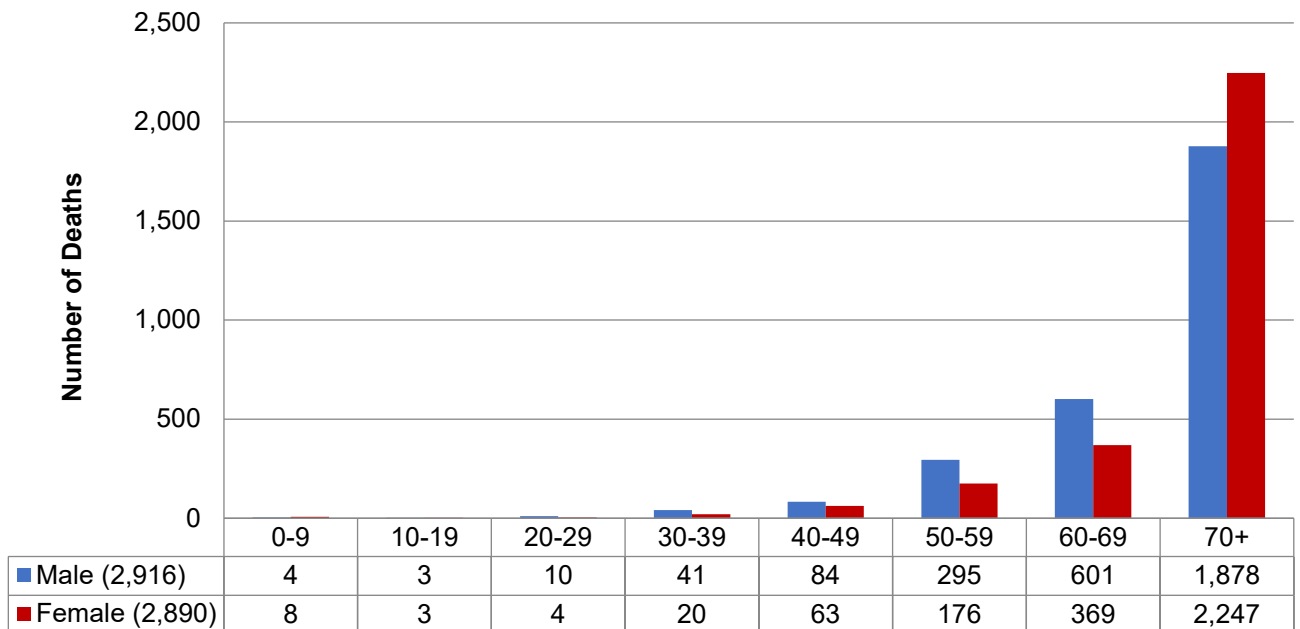
Natural deaths represented 88.4% (5,812/6,577) of all medical examiner cases.

Males accounted for 50.2% (2,916/5,812) of the natural deaths; females accounted for 49.8% (2,891/5,812) of the natural deaths.

The male 70+ age group accounted for 64.4 % (1,878/2,916) of all male natural deaths, while the female 70+ age group accounted for 77.7% (2,247/2,891) of all female natural deaths.

The combined male/female 70+ age groups represented 71% (4,125 /5,812) of the natural deaths, a greater proportion than in 2019 (62.3%).

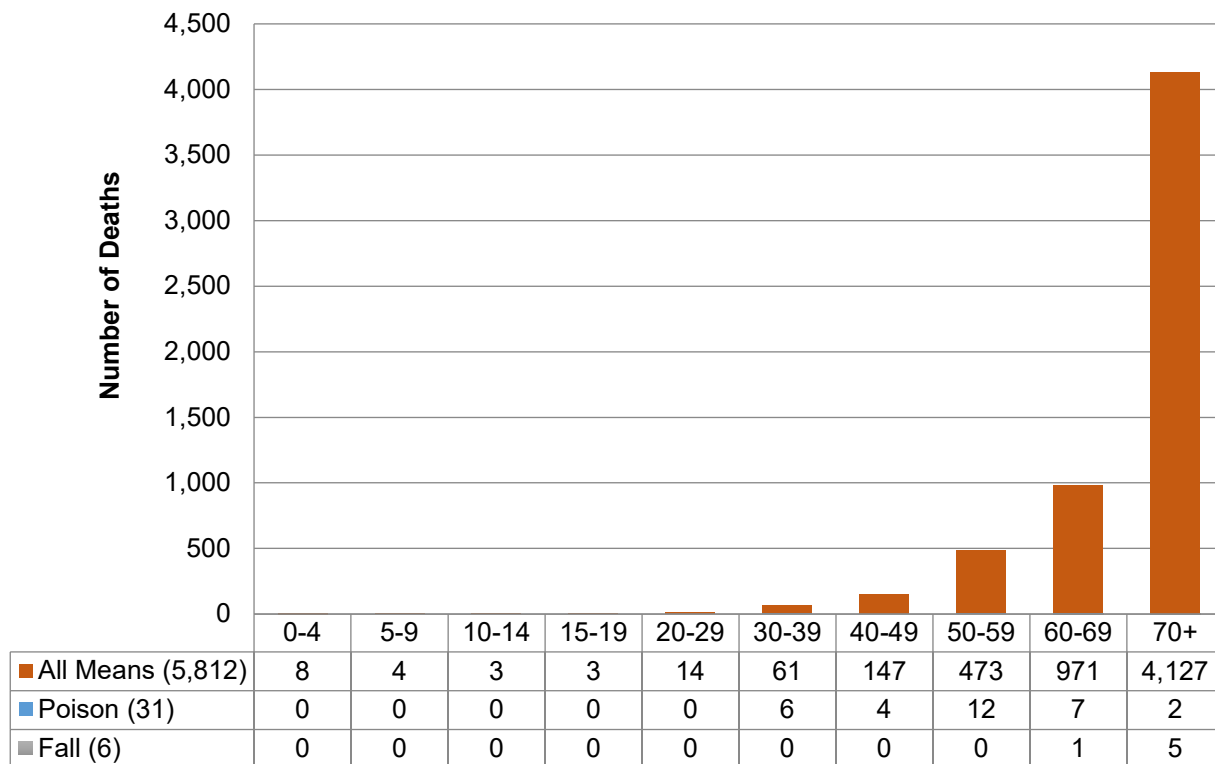
Natural Deaths by Age and Gender, 2020



Age Group	Male	Female	Other	Total	Percent
0-19 Years	7	11	0	18	0.31%
20 Years and Older	2,909	2,879	5	5,793	99.67%
Unknown	0	1	0	1	0.02%
Total	2,916	2,891	5	5,812	100.00%

Cases by Age and Means⁸

Natural Deaths by Age and Means, 2020



Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Other	Total
Hispanic	7	7	0	14
White	2,585	2,578	5	5,168
African American	282	256	0	538
American Indian	3	2	0	5
Asian/PI	25	33	0	58
Other	9	5	0	14
Multiple	5	9	0	14
Unknown	0	0	0	0
Total	2,916	2,890	5	5,811

⁸ Some deaths may have multiple Means of Death recorded, and some may have no Means recorded.

Manner of Death – Accident

Accidental deaths represented 8.6% (565/6,577) of all medical examiner cases.

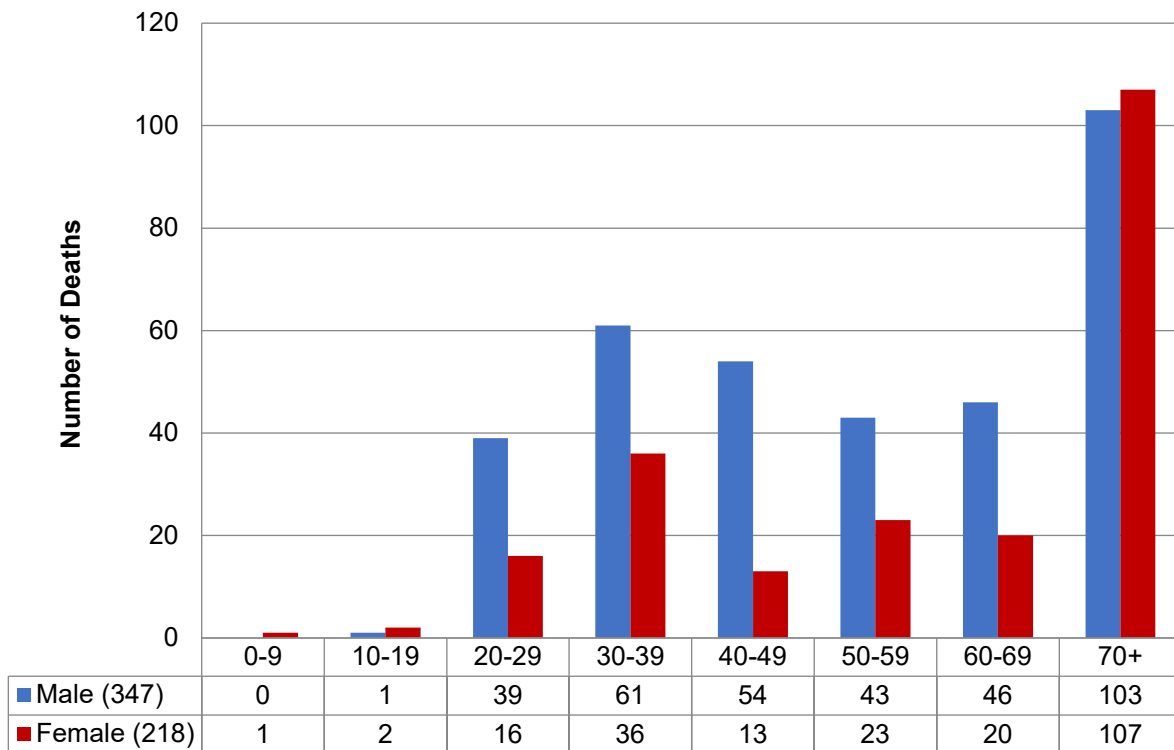
Males accounted for 61.4% (347/565) of the accidental deaths; females accounted for 38.6% (218/565) of the accidental deaths.

The female 70+ age group accounted for 49.1% (107/218) of all female accidental deaths, while the male 70+ age group accounted for 29.7% (103/347) of all male accidental deaths.

The combined male/female 70+ age groups represented 37.2% (210/565) of the accidental deaths, a similar proportion as in 2018 (37.7%).

Cases by Age and Sex

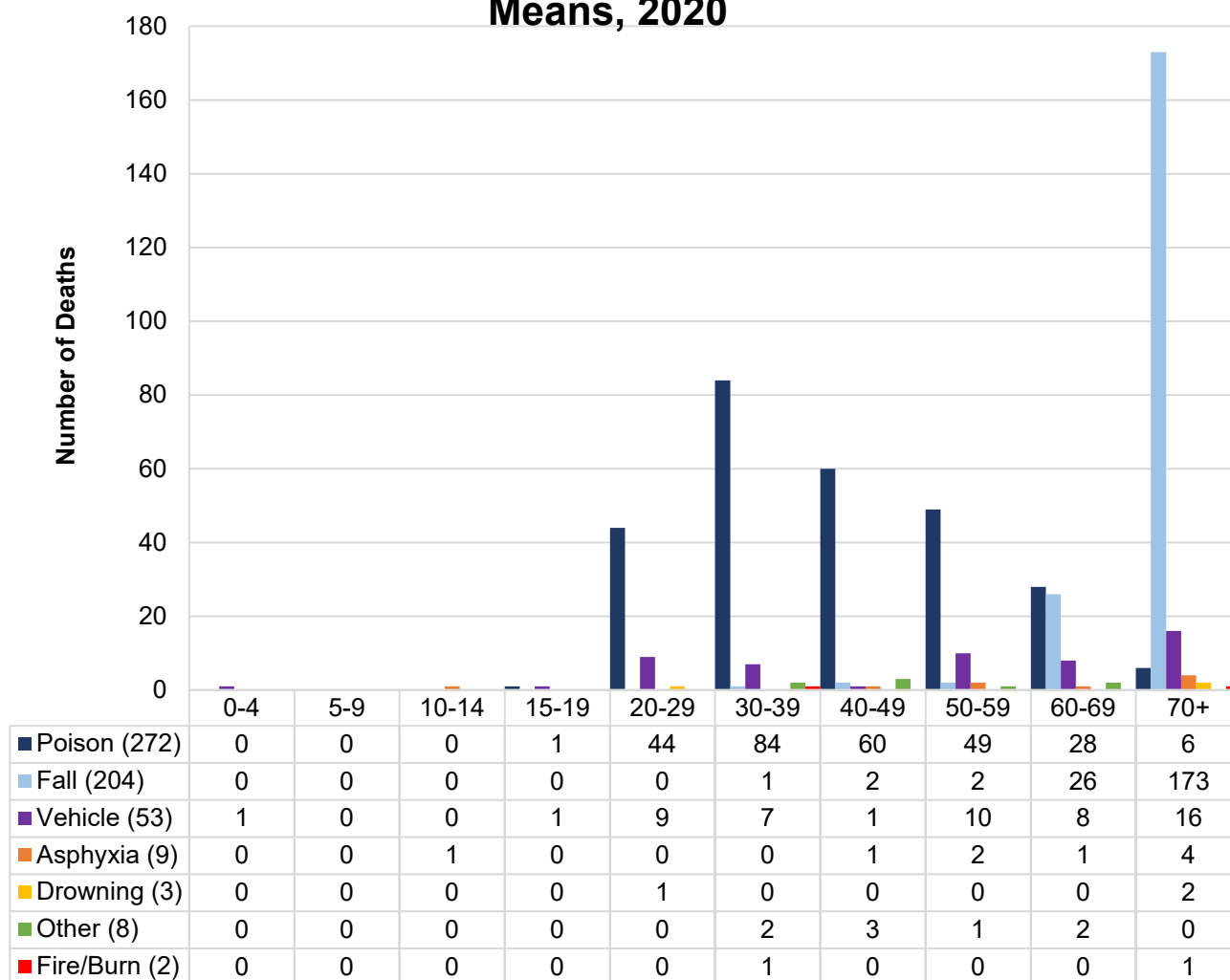
Accident Deaths by Age and Sex, 2020



Age Group	Male	Female	Other	Total	Percent
0-19 Years	1	3	0	4	0.71%
20 Years and Older	346	215	0	561	99.29%
TOTAL	347	218	0	565	100.00%

Cases by Age and Means⁹

Number of Accident Deaths by Age (years) and Means, 2020



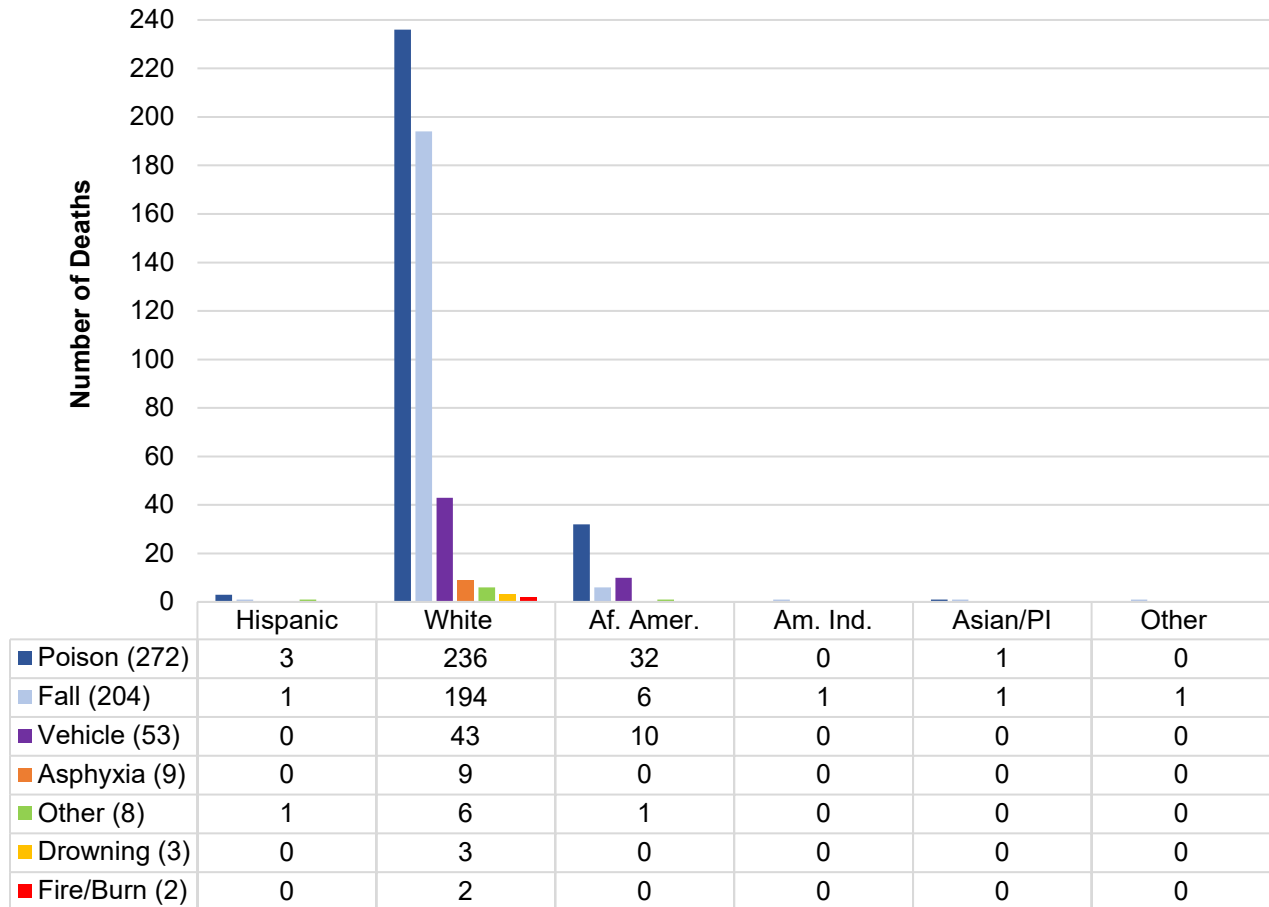
Accidental poisoning accounted for 48.1% (272/565) of all accidental death cases, with the 30-39 age group having the highest number of all accidental poisoning deaths (84).

Falls accounted for the second highest percentage of accidental deaths at 36.1% (204/565), with the majority of deaths occurring in the 70+ age group (173).

⁹ Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means¹⁰

Number of Accident Deaths by Race/Ethnicity and Means, 2020



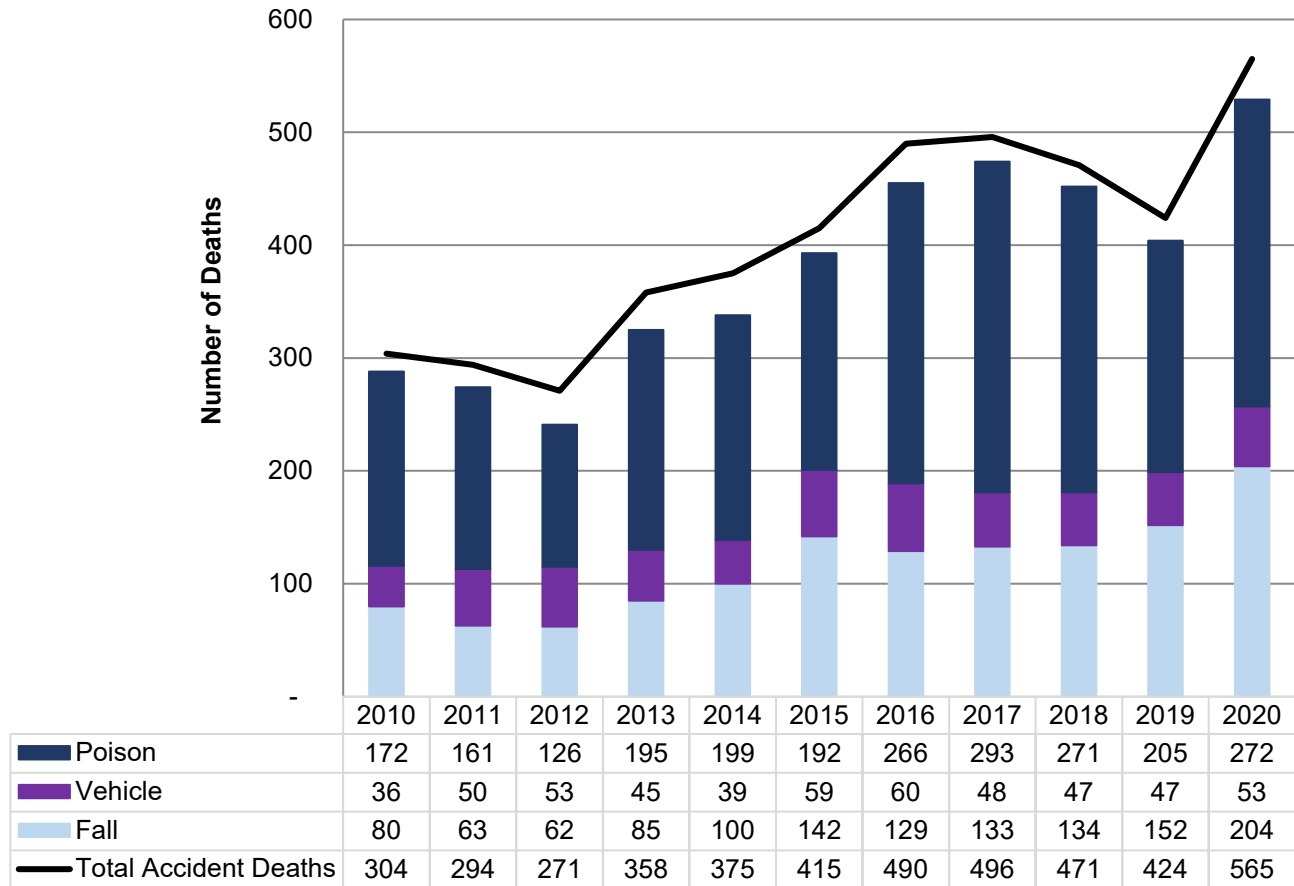
Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Other	Total
Hispanic	3	1	0	4
White	309	196	0	505
African American	31	20	0	51
American Indian	1	1	0	2
Asian/PI	2	0	0	2
Other	1	0	0	1
Multiple	0	0	0	0
Unknown	0	0	0	0
Total	347	218	0	565

¹⁰ Some deaths may have multiple Means of Death recorded.

Specific Means of Death by Year¹¹

Leading Causes of Accident Deaths by Year, 2010-2020



Between 2010 and 2020, there was a 155% increase in the number of accident deaths by falls, a 47.2% increase in the number of vehicular deaths, and a 58.1% increase in the number of accident deaths by poison. There was a 33.3% increase in total accident deaths compared to 2019.

¹¹ This graph highlights the top three predominant means of death within the accident classification. The black line shows the total number of accidental deaths. There are other means of death not shown in this graph.

Manner of Death – Suicide

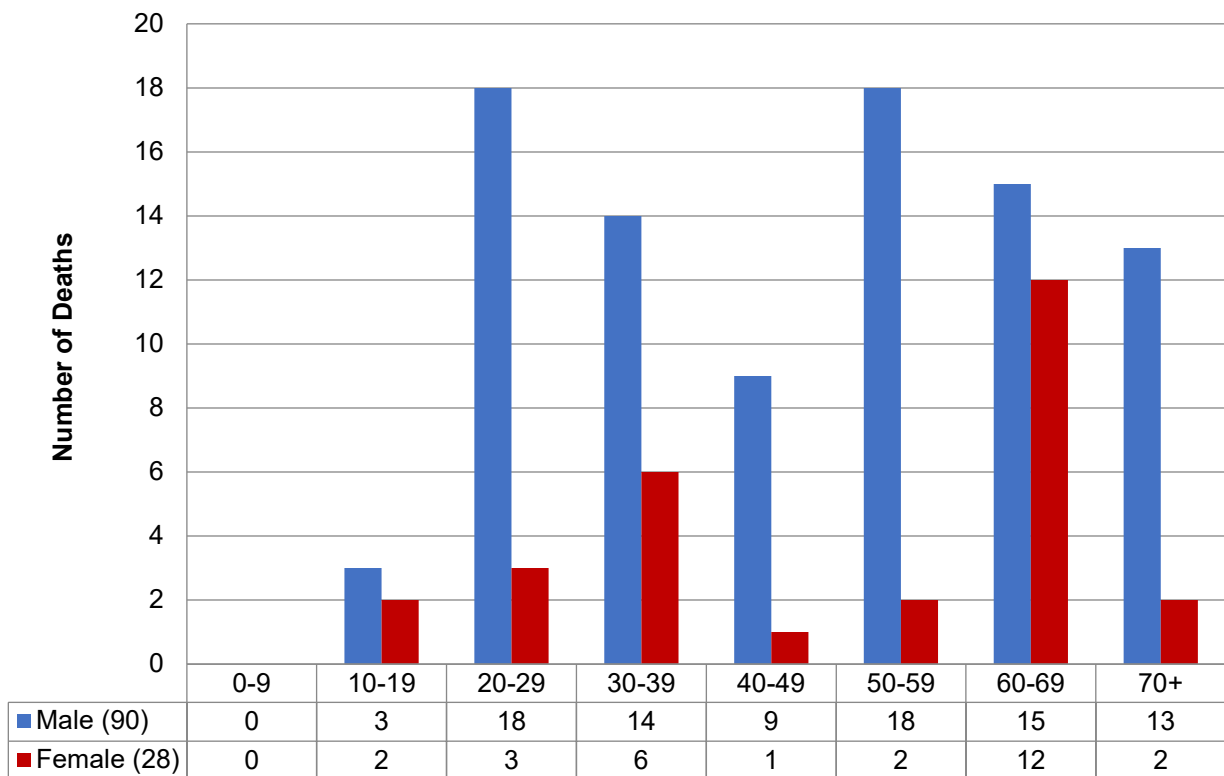
Suicide deaths represented 1.8% (118/6,577) of all medical examiner cases. In 2019, they represented 4.3% of all cases.

Males accounted for 76.3% (90/118) of the suicide deaths; females accounted for 23.7% (28/118) of the suicide deaths.

The male 50+ age group accounted for 51.1% (46/90) of all male suicide deaths, while the female 50+ age group accounted for 57.1% (16/28) of all female suicide deaths. The female 60-69 age group had the highest proportion of all female suicide deaths (12/28, 42.9%).

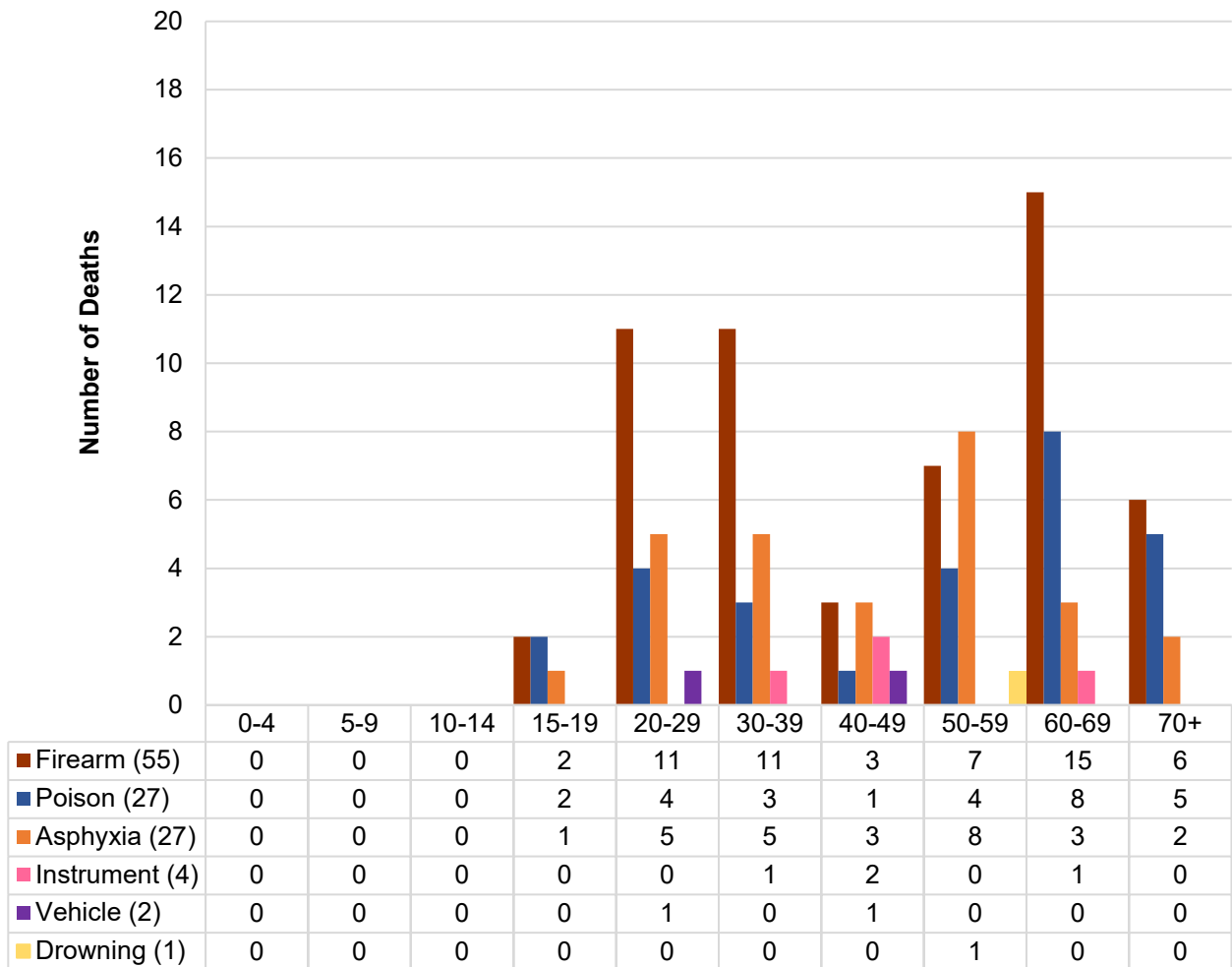
Cases by Age and Sex

Suicide Deaths by Age and Sex, 2020



Age Group	Male	Female	Total	Percent
0-19 Years	3	2	5	4.2%
20 Years and Older	87	26	113	95.8%
TOTAL	90	28	118	100%

Number of Suicide Deaths by Age and Means, 2020



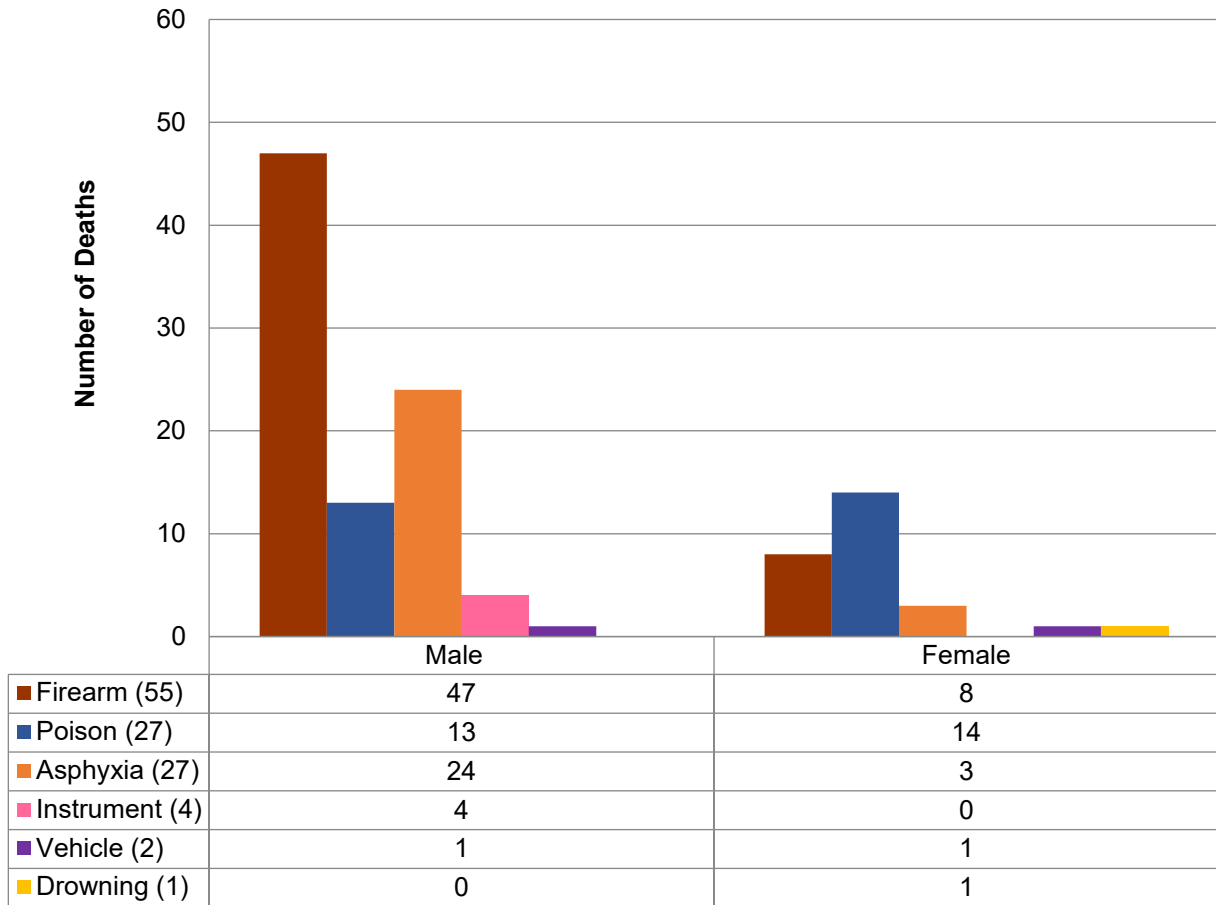
Firearm suicide cases accounted for 46.1% (55/118) of all suicide death cases, with the majority of deaths occurring in the 60-69 age group (15).

Poison and asphyxia accounted for the second highest percentages of suicides, each at 22.9%. The 60-69 age group had the highest proportion of poison suicides (8/27, 29.6%), and the 50-59 age group had the highest proportion of asphyxia suicides (8/20, 40%).

¹² Some deaths may have multiple Means of Death recorded.

Cases by Sex and Means¹³

Number of Suicide Deaths by Sex and Means, 2020



Males accounted for 76.3% (90/118) of all deaths by suicide, while females accounted for 23.7% (28/118) of deaths by suicide.

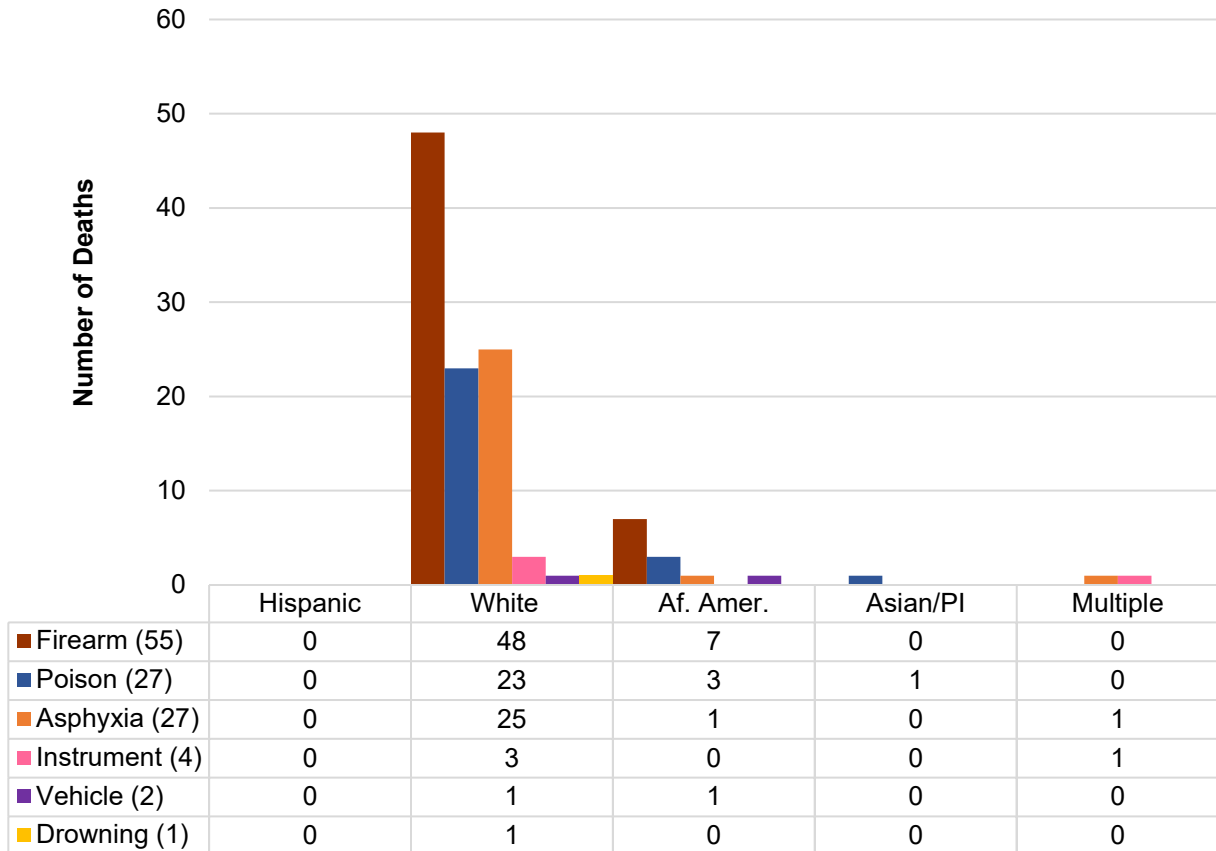
Suicide by firearm accounted for the greatest percentage of suicide deaths in males at 52.2% (47/90) while suicide by asphyxia accounted for the second greatest percentage of suicide deaths in males at 26.7% (24/90).

Suicide by poison accounted for the greatest percentage of suicide deaths in females at 50% (14/28) while suicide by firearm accounted for the second greatest percentage of suicide deaths in females at 28.6% (8/28).

¹³ Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means^{14,15}

Number of Suicide Deaths by Race and Means, 2020



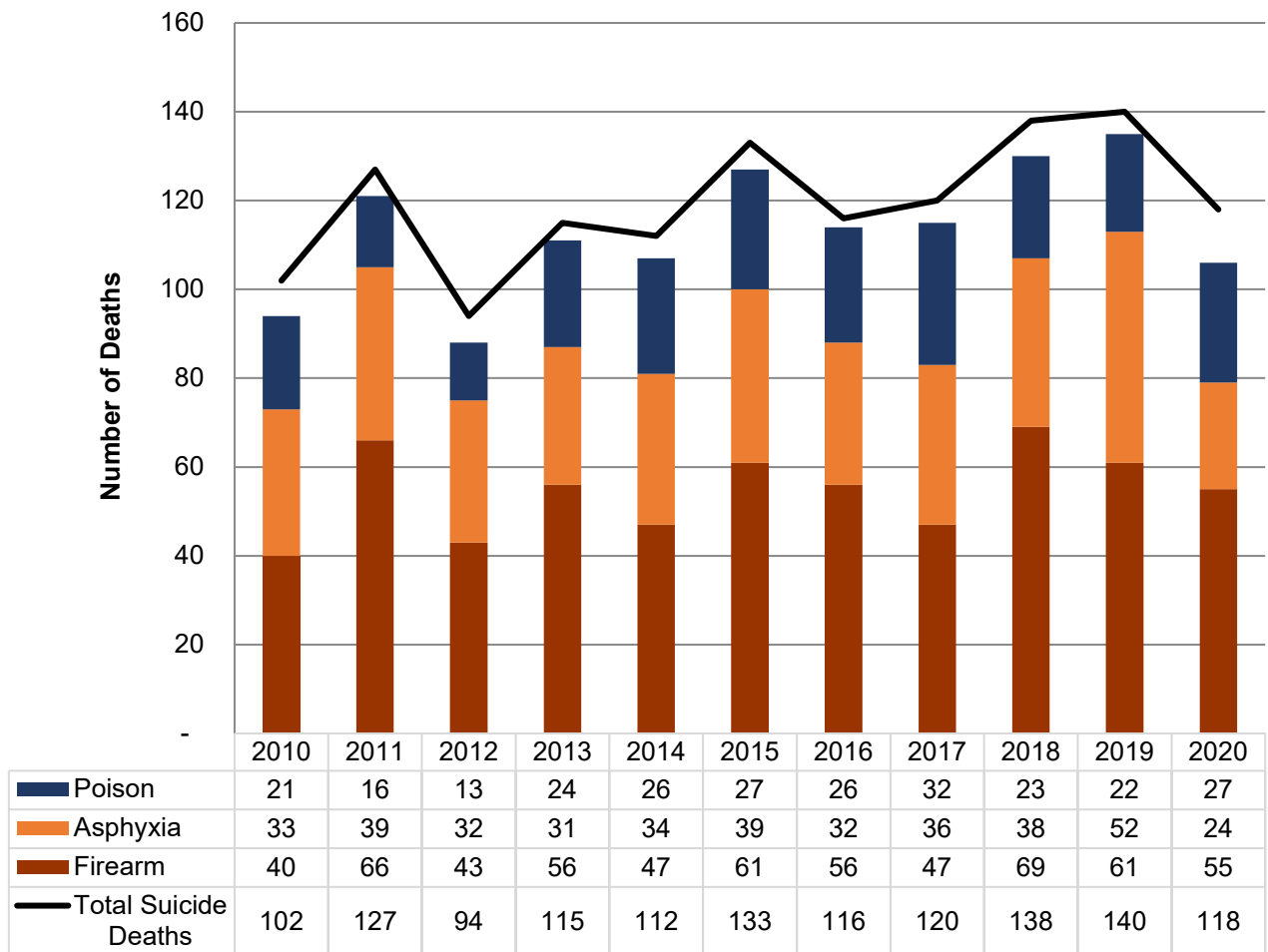
Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Total
Hispanic	0	0	0
White	79	24	103
African American	8	4	12
American Indian	0	0	0
Asian Pacific	1	0	1
Other	0	0	0
Multiracial	2	0	2
TOTAL	90	28	118

¹⁴ Some deaths may have multiple Means of Death recorded.

¹⁵ American Indian and Other race categories did not have a means of suicide recorded and were excluded from the chart.

Leading Causes of Suicide Deaths, 2010 - 2020



Between 2010 and 2020, there was a 37.5% increase in the number of suicide deaths by firearm, a 28.6% increase by poison, and a 27.3% decrease in the number of asphyxia deaths. Overall, there was a 15.7% increase in death by suicide since 2010. However, there was a 15.7% decrease in death by suicide compared to 2019, the first decrease in suicide deaths since 2016.

¹⁶ This graph highlights the top three predominant means of death within the suicide classification. The black line shows the total number of deaths by suicide. There are other means of death not shown in this graph.

Manner of Death – Homicide

Homicide deaths represented 0.3% (22/6,577) of all medical examiner cases.

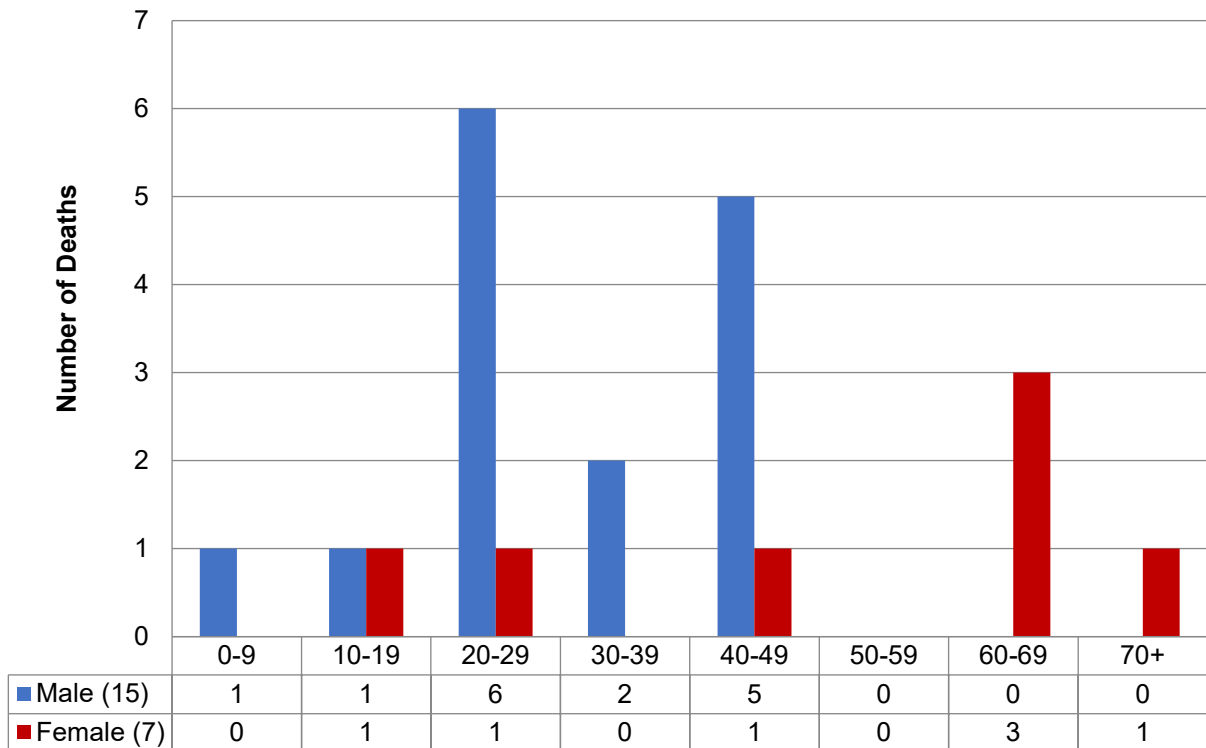
Males accounted for 68.2% of homicide deaths (15/22) and females accounted for 31.8% (7/22).

The female 40+ age group accounted for 71.4% (5/7) of all female homicide deaths, while the male 40+ age group accounted for 33.3% (5/15) of all male homicide deaths.

The male 20-29 age group accounted for 40% (6/12) of all male homicide deaths, while the female 60-69 age group accounted for 42.9% (3/7) of all female homicide deaths.

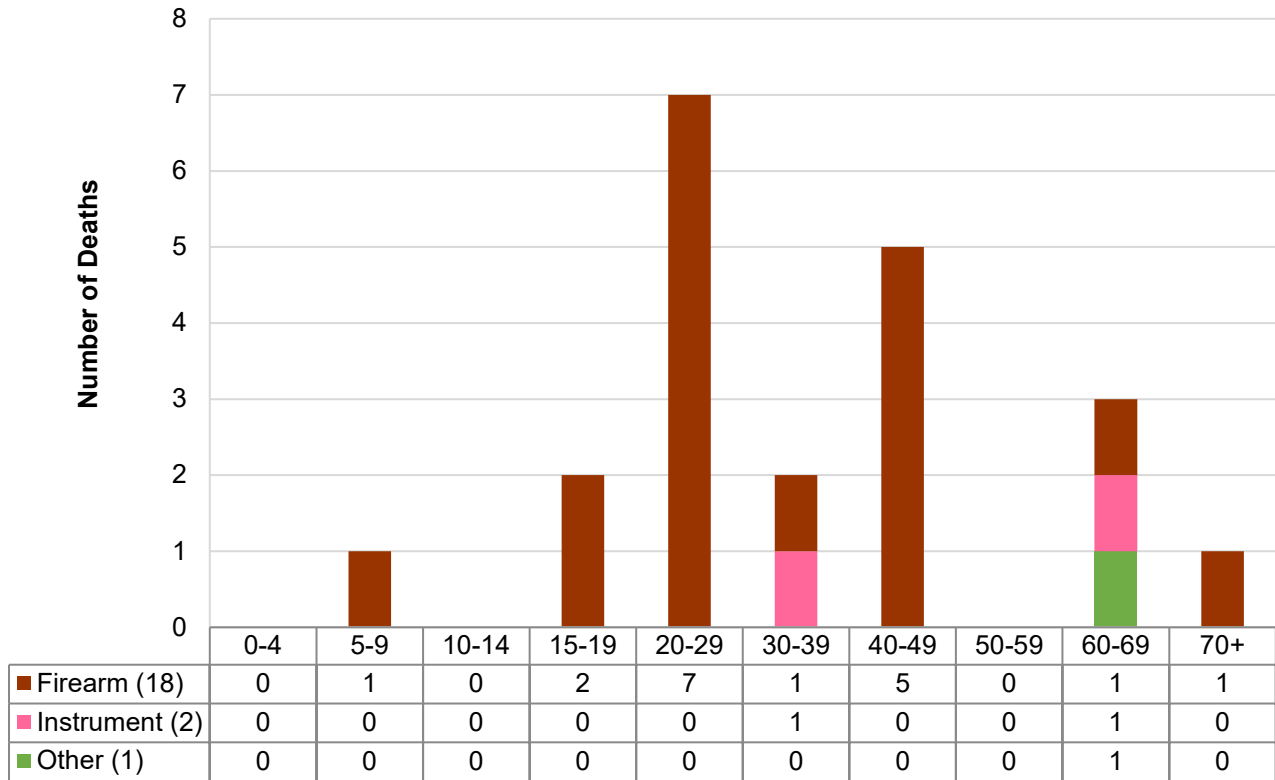
Cases by Age and Sex

Number of Homicide Deaths by Age and Sex, 2020



Age Group	Male	Female	Total	Percent
0-19 Years	2	1	3	13.6%
20 Years and Older	13	6	19	86.4%
TOTAL	15	7	22	100.0%

Number of Homicide Deaths by Age and Means, 2020



Homicide by firearm accounted for 78.3% (18/22) of all homicide death cases, with the majority of deaths occurring in the 20-29 age group (7).

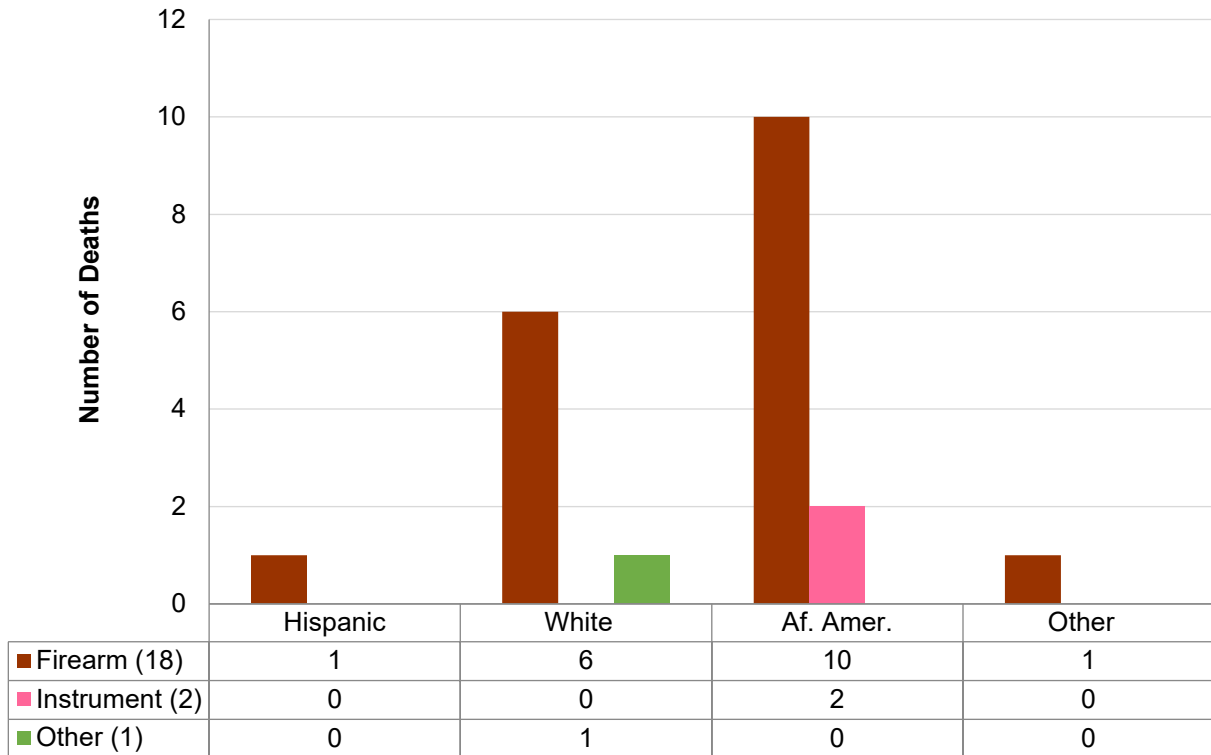
Death by instrument accounted for the second highest percentage of homicides at 9.1% (2/22), with the one death occurring in the 30-39 age group and one in the 60-69 age group.

¹⁷ Some deaths may have multiple Means of Death recorded.

¹⁸ Per the Alcestis Medical Examiner and Coroner Data Management System regarding means of death: The instrument category can be a blunt, sharp or unknown object.

Cases by Race/Ethnicity and Means^{19,20,21}

Number of Homicide Deaths by Race/Ethnicity and Means, 2020



Cases by Race/Ethnicity and Sex

Race/Ethnicity ²²	Male	Female	Total
Hispanic	1	0	1
White	3	4	7
African American	10	3	13
American Indian	0	0	0
Asian Pacific	1	0	1
Other	1	0	1
Multiracial	0	0	0
TOTAL	16	7	23

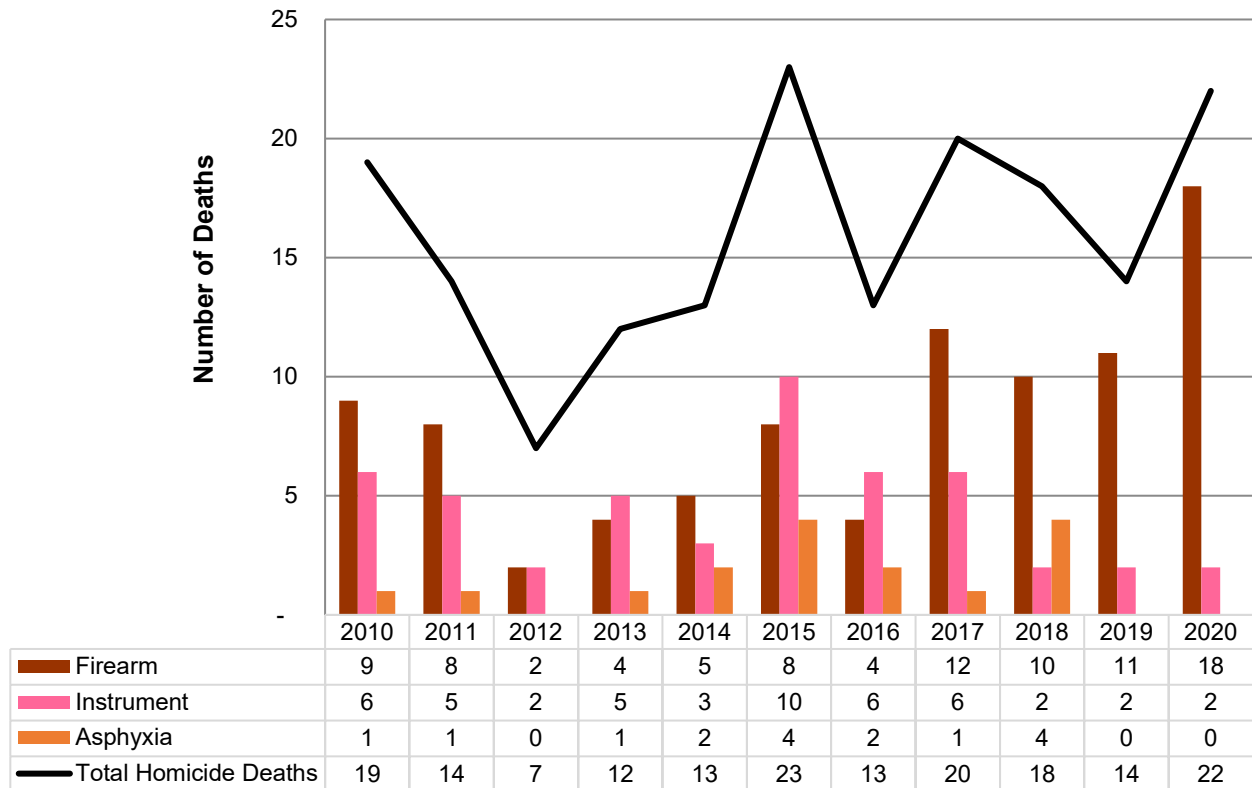
¹⁹ Some deaths may have multiple Means of Death recorded.

²⁰ Per the Alcestis Medical Examiner and Coroner Data Management System regarding means of death: The instrument category can be a blunt, sharp or unknown object.

²¹ There were no deaths by homicide recorded for American Indian, Asian/Pacific, and Multiracial, therefore they were not included in this chart.

²² Race/Ethnicity categories are not mutually exclusive.

Leading Causes of Homicide Deaths by Year, 2010 - 2020



Between 2010 and 2020, there was a 100% increase in the number of homicide deaths by firearm, and a 66.7% decrease in the number of instrument deaths. There were zero homicide deaths by asphyxia, a 100% decrease since 2010.

²³ This graph highlights the top three predominant means of death within the homicide classification. The black line shows the total number of homicidal deaths. There are other means of death not shown in this graph.

²⁴ Per the Alcestis Medical Examiner and Coroner Data Management System regarding means of death: The instrument category can be a blunt, sharp or unknown object.

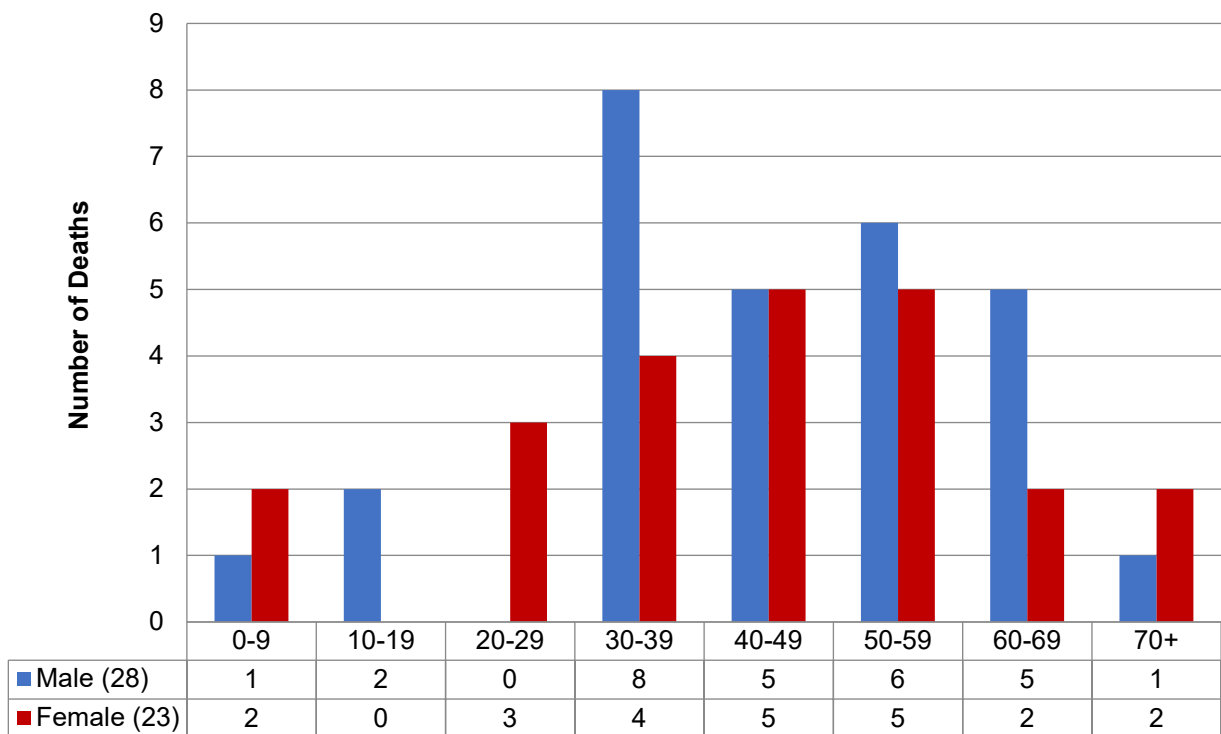
Manner of Death – Indeterminate

Indeterminate is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death. Indeterminate deaths represented 0.8% (51/6,577) of all medical examiner cases.

Males accounted for 54.9% (28/51) of the indeterminate deaths; females accounted for 45.1% (23/51) of the indeterminate deaths.

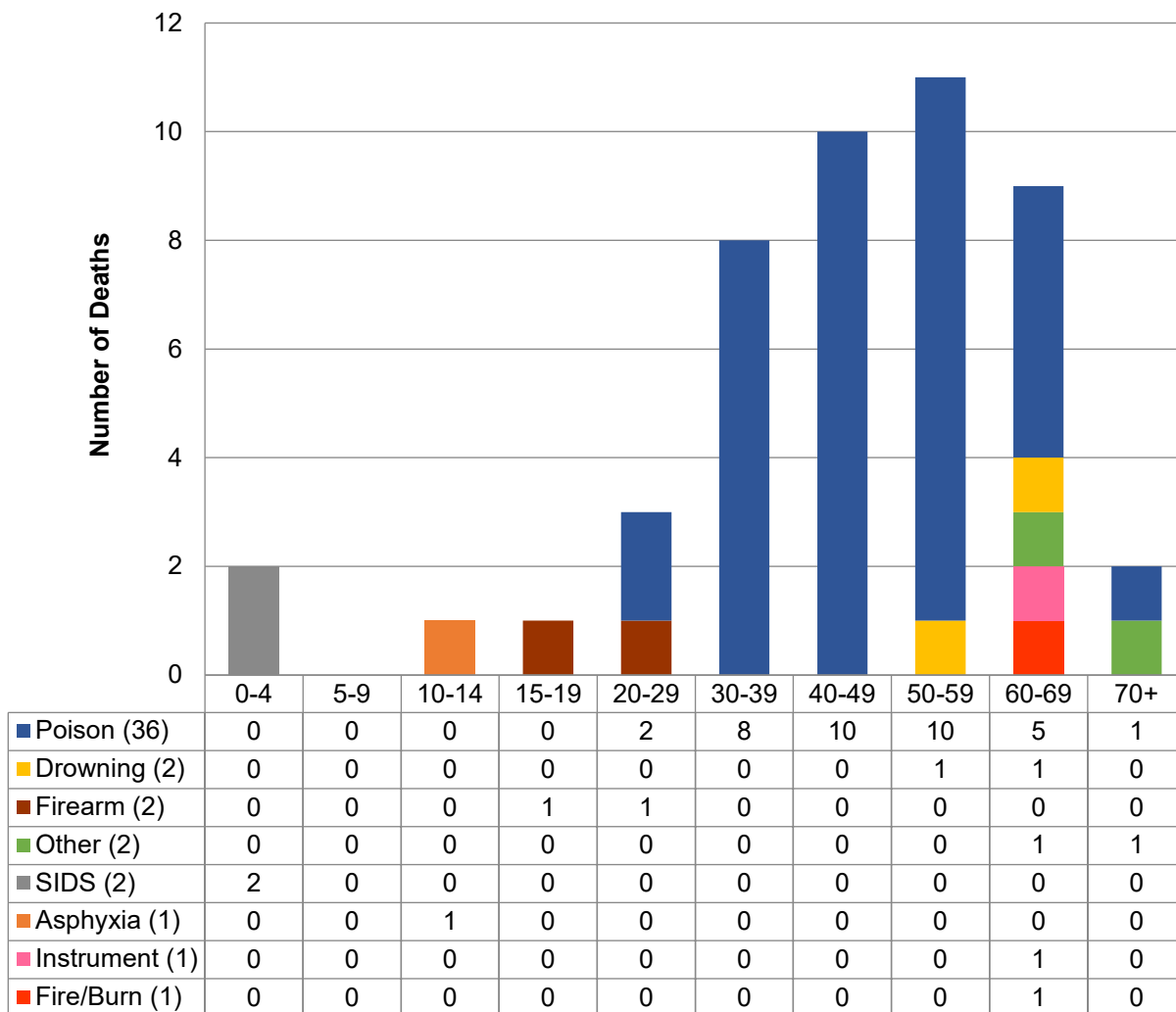
Cases by Age and Sex

Indeterminate Deaths by Age and Sex, 2020



Age Group	Male	Female	Total	Percent
0-19 Years	3	2	5	9.8%
20 Years and Older	25	21	46	90.2%
TOTAL	28	23	51	100.0%

Number of Indeterminate Deaths by Age and Means, 2020



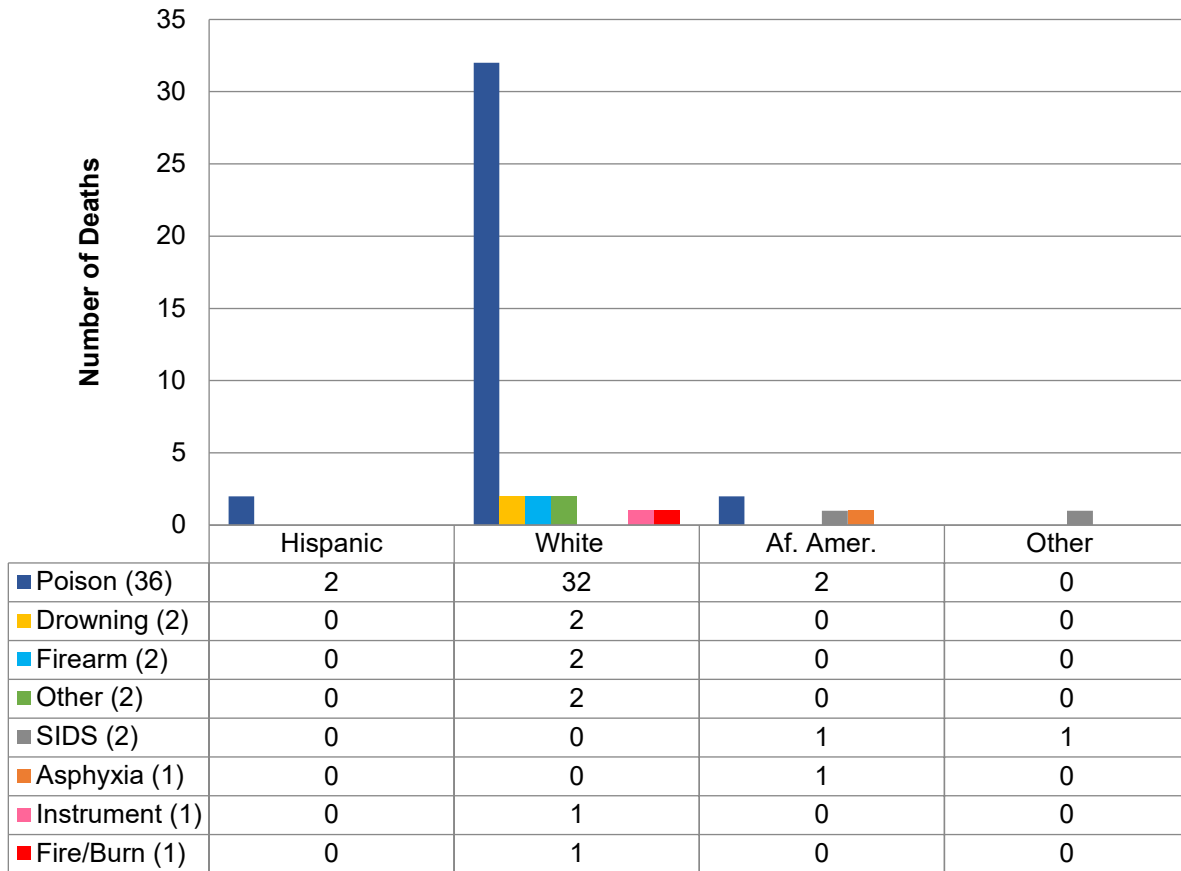
Poisoning cases accounted for 70.6% (36/51) of all indeterminate death cases, with the majority of deaths occurring in the 40-49 and 50-59 age groups (20).

Other, SIDS, firearm, and drowning each accounted for 3.9% of indeterminate cases.

²⁵ Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means^{26,27}

Number of Indeterminate Deaths by Race/Ethnicity and Means, 2020



Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Total
Hispanic	1	1	2
White	25	19	44
African American	1	3	4
American Indian	0	0	0
Asian Pacific	0	0	0
Other	1	0	1
Multiracial	0	0	0
Unknown	0	0	1
TOTAL	28	23	51

²⁶ Some deaths may have multiple Means of Death recorded.

²⁷ There were no indeterminate deaths recorded for American Indian, Asian Pacific and Multiracial race & ethnicity categories and therefore they were excluded from this chart.

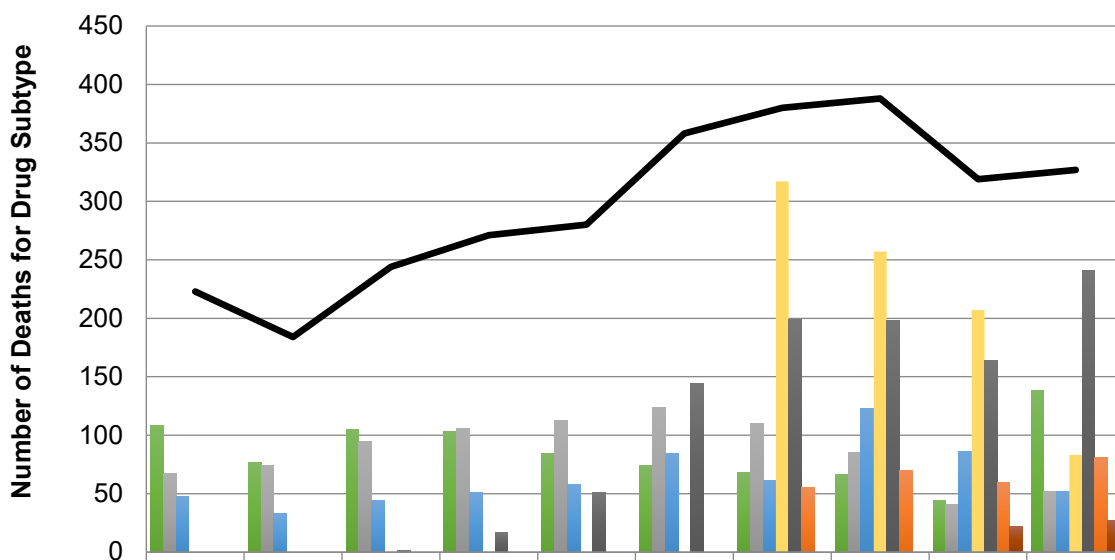
Drug-Related Deaths²⁸

Toxicology analysis using various body fluids and tissues continues to be a very important aspect of death investigations occurring under the Macomb County Medical Examiner’s jurisdiction.

There is concern with regard to the rise in the number of drug related deaths, particularly heroin and controlled prescription drug abuse deaths involving drugs like Methadone, Oxycodone, Fentanyl, Hydrocodone, Valium and Xanax which can be detected with toxicological analysis. Alcohol in combination with drugs can also be a contributory factor.

In 2020, total drug-related deaths increased by 2.5%, compared to 2019. Heroin-related deaths increased by 26.8%, and fentanyl deaths (including heroin) increased by 47%. Please note that total drug deaths is not a sum of the drug classifications.

Drug Related Deaths, 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Prescription Medication Deaths	108	77	105	103	84	74	68	66	44	138
Heroin-Related Deaths**	67	74	95	106	113	124	110	85	41	52
Other***	48	33	44	51	58	84	61	123	86	52
Opioid-Related Deaths							317	257	207	83
Fentanyl-Related Deaths*	0	0	1	17	51	144	199	198	164	241
Cocaine-Related Deaths							55	70	60	81
Mitragynine-Related Deaths****									22	27
Total Drug-Related Deaths	223	184	244	271	280	358	380	388	319	327

²⁸ *From 2011-2013 Fentanyl Deaths were included in Prescription Medication Deaths.

**Heroin-related deaths are deaths due to heroin alone or heroin in combination with other drugs or alcohol.

***The “Other” category are deaths due to illicit drugs (excluding heroin), prescription drugs in combination with other drugs or alcohol (excluding heroin), and other ingested, injected or inhaled substances.

****Mitragynine is a recreational drug known as kratom. Recording of Mitragynine-related deaths began in 2019.