2019

Macomb County Medical Examiner Annual Report

Daniel J. Spitz, M.D.
Chief Medical Examiner
9/24/2020

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MACOMB COUNTY HEALTH DEPARTMENT
Medical Examiner's Office
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William J. Ridella, MPH, MBA
Director/Health Officer

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

September 24, 2020

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 2019 than in any previous year. The number of Medical Examiner cases increased 6.8% from 2018, which amounted to a total of 3,270 investigations. Forensic examinations increased by 15.6% when compared to 2018, resulting in 800 examinations. Cremation permits issued increased from 4,336 to 4,518 in 2019, a 4.2% increase from 2018. Hospice deaths slightly decreased to a total of 2,464 cases.

In 2019 (compared to 2018) there was a 10.3% increase in the number of deaths due to natural causes, a 10% decrease in the total number of accidental deaths, and a 2.9% increase in the number of suicides.

Drug related deaths, including deaths related to opioids, heroin and fentanyl/fentanyl analogs continued to be a public health problem in 2019. With 319 total drug-related deaths, Macomb County experienced a 17.8% decrease from 2018's all-time high of 388. Although deaths related to heroin and fentanyl/fentanyl analogs continue to be a major concern, there was a 51.8% decrease in heroin-related deaths in 2019. Overall, each category of drug-related deaths experienced a decrease over the course of the year.

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 2019 Annual Report.

Respectfully Submitted,

Daniel J. Spitz, M.D.

Chief Medical Examiner

William J. Ridella, M.P.H, M.B.A

Director/Health Officer

Organization of the Medical Examiner's Office

Macomb County Health Department

Director/Health Officer
William J. Ridella, M.P.H., M.B.A.

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.

Manager of Operations
Patricia Roland, B.S.N., F-ABMDI

Forensic Investigations Specialist
Gretchen Terebesi, D-ABMDI

Morgue Specialist
Brittney Hella, M.S.
Jeff Novak
Veronica Stout

Forensic Investigator
Erick Acre
Anjanette Beaver
Kiara Brooks, D-ABMDI
Alan Gwyn
Kristina Krieger, D-ABMDI
Leanna Parrent
Jennifer Skridulis, D-ABMDI

Typist Clerk III
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 has over 6,000 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.

2019 Budget

Revenues	Expenses
$ 2,222,568	$ 2,222,568

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.

- **Macomb County Child Death Review Team**: As part of its greater role in promoting a safe and viable community, Medical Examiners serve on the Macomb County Child Death Review Team (MCCDRT). The MCCDRT is composed of various countywide agencies that review and discuss comprehensive information regarding specific child death cases. The team reviews the circumstances involved in the death and documents the investigative actions, services provided or needed, key risk factors with recommendations and/or actions taken by the MCCDRT team to improve coordination and effectiveness of child protection, investigation and legal processes. Since 2001, over 300 child death cases have been reviewed.

- **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 868,704 residents (2018 U.S. Census Estimate), an increase in population of 3.3% since 2010 (841,126).

Among the County's 27 municipalities are three of the ten largest cities in Michigan: Warren (3rd), Sterling Heights (4th), and Clinton Township (7th).

Census Summary Profile[1]

	2010 Estimate 841,126 Population		2018 Estimate 868,704 Population		Population Growth	Percent Change
White	715,853	85.11%	707,875	81.58%	-1.11%	-4.15%
Black or African American	74,275	8.83%	99,265	11.44%	33.65%	29.55%
American Indian & Alaska Native	2,716	0.32%	2,525	0.29%	-7.03%	-9.88%
Asian	25,870	3.08%	33,769	3.89%	30.53%	26.53%
Native Hawaiian & Other Pacific Islander	195	0.02%	346	0.04%	77.44%	72.00%
Some other race	5,423	0.64%	5,005	0.58%	-7.71%	-10.54%
Two or more races	16,794	2.00%	19,919	2.30%	18.61%	14.97%
Hispanic or Latino	19,276	2.29%	22,212	2.56%	15.23%	11.70%

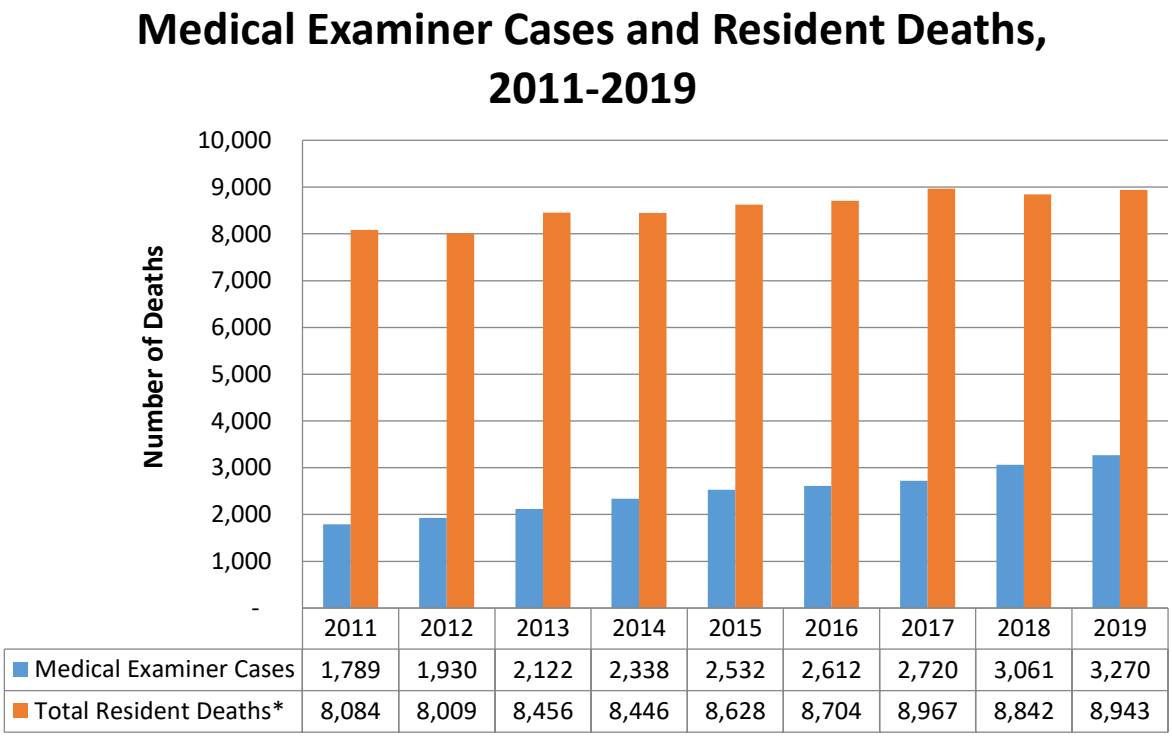
[1] Source: U.S. Census Bureau, 2010 B020001, 2010 B03003, 2018 B02001, 2018 B03003. Estimates from the American Community Survey 1-Year Estimates.

Overview of Cases for 2019

Macomb County Population (2018 estimate)	868,704
Resident Deaths in Macomb County (estimate)	8,943
Macomb County Medical Examiner Cases	3,270
Forensic Examinations	800

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 and investigative staff are on-call and available 24 hours/day, 365 days/year.

In 2019, the Macomb County Medical Examiner's Office investigated 36.6% (3,270/8,943) of all deaths that occurred in the county. The graph below illustrates the number of deaths of Macomb residents, regardless of their location at the time of death[2].

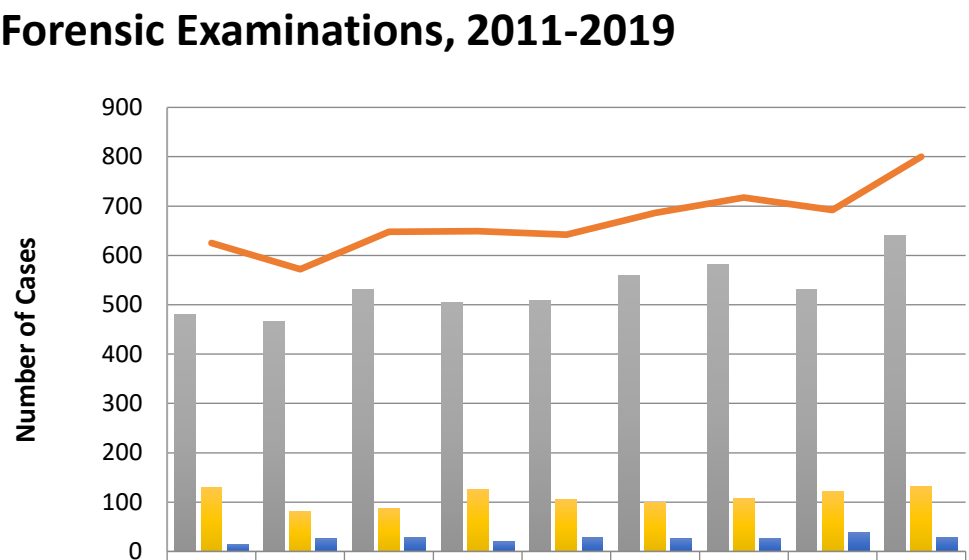


	2011	2012	2013	2014	2015	2016	2017	2018	2019
Medical Examiner Cases	1,789	1,930	2,122	2,338	2,532	2,612	2,720	3,061	3,270
Total Resident Deaths*	8,084	8,009	8,456	8,446	8,628	8,704	8,967	8,842	8,943

[2/*] The number of total 2019 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 2019, the Medical Examiner's Office investigated 3,270 deaths, of which 800 were brought to the office for a forensic examination by a forensic pathologist. Of the 800 forensic examinations, 640 were complete autopsies, 131 were external examinations, and 29 were limited autopsies. There were 616 toxicology assessments performed.

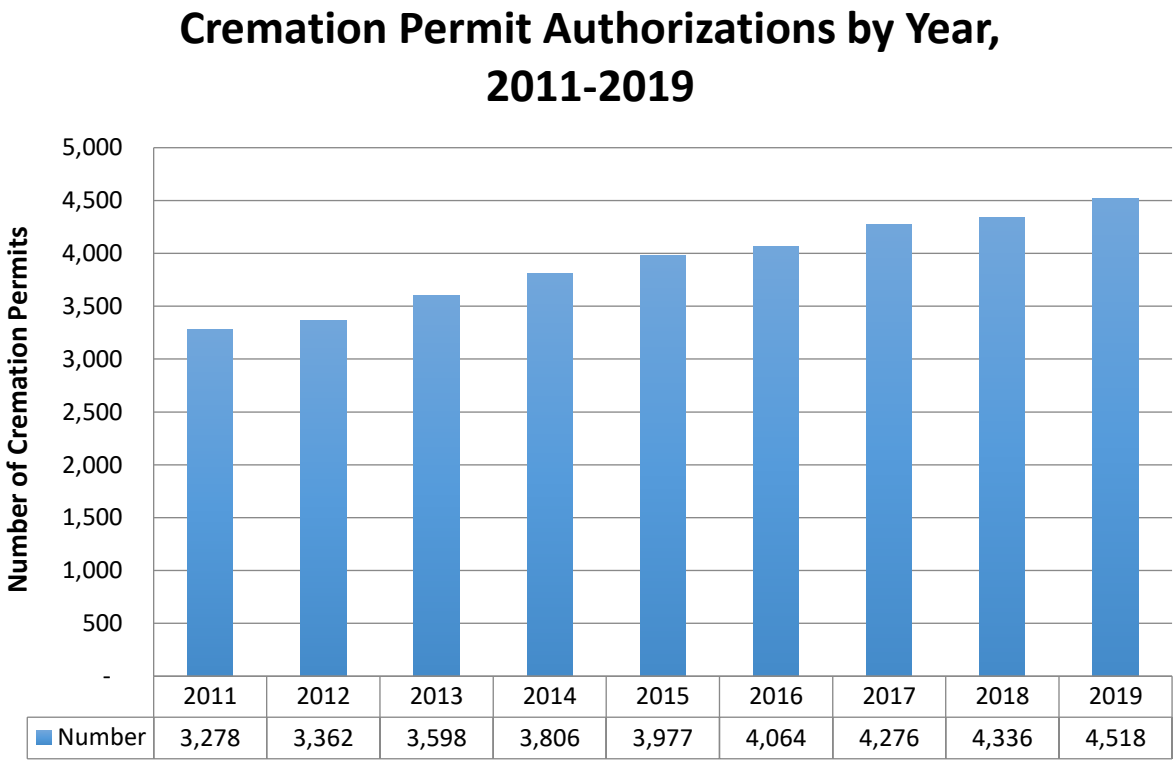


	2011	2012	2013	2014	2015	2016	2017	2018	2019
Complete Autopsies	480	466	531	504	509	560	582	531	640
External Examinations	130	80	88	125	105	100	108	121	131
Limited Autopsies	15	26	29	20	28	26	27	39	29
Total Forensic Examinations	625	572	648	649	642	686	717	692	800

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 2019 showed a 4.2% increase from 2018.



Overview of Manner of Death[3]

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:

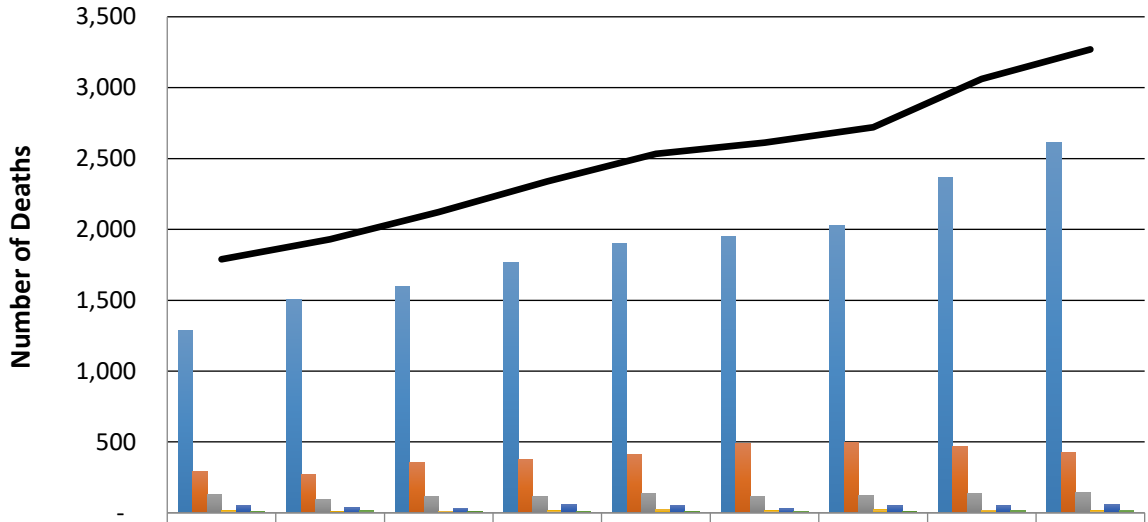
- **Natural deaths** are due solely to disease and/or the aging process.
- **Accident** applies when an injury or poisoning causes death and there is no evidence that injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.
- **Suicide** results 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	2613	79.91%
Accident	424	12.97%
Suicide	140	4.28%
Homicide	14	0.43%
Indeterminate	61	1.87%
Unspecified (non-human bones, tissue, etc.)[4]	18	0.55%
TOTAL	3,270	100.00%

[3] From this point on, the graphs and tables will only include cases examined by the Medical Examiner.
[4] Unspecified may include non-human bones and tissues, or cases where a manner of death was not recorded.

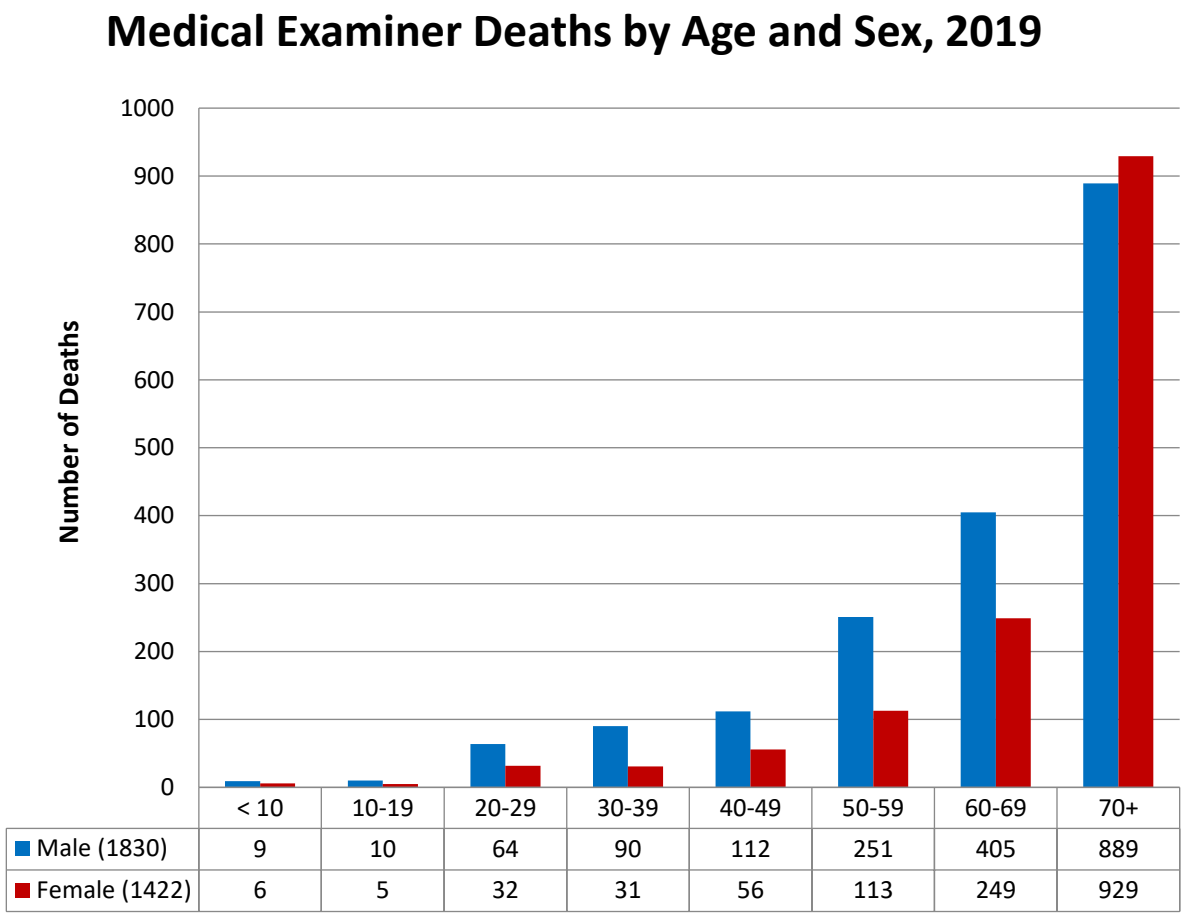
Medical Examiner Cases by Manner of Death, 2011-2019



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

Cases by Age and Sex

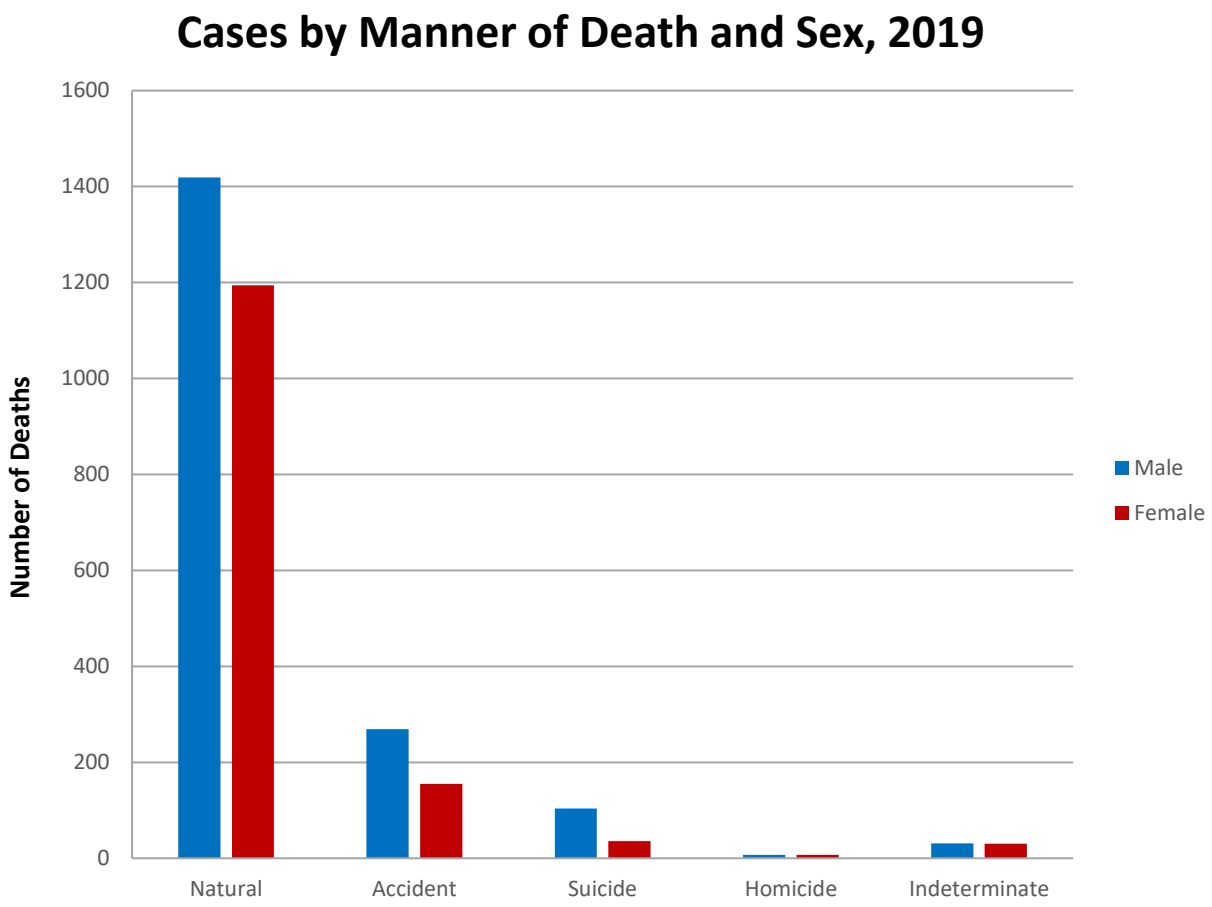
There were a total of 3,270 investigations performed in 2019; of these 1,830 (56%) were males, 1,422 (43.5%) were females, and 18 (0.5%) were other/bones (i.e., non-human bones, tissue, unspecified manner of death, etc.).



Age Group	Male	Female	Other	Bones	Total
0 – 19 Years	17	11	0	0	28
20 Years and Older	1,818	1,414	0	0	3,232
Unreported[5]	0	1	0	9	10
TOTAL	1,835	1,426	0	9	3,270

[5] Of the 18 cases classified as Unspecified (page 12), 9 had a sex determined and 9 were non-human bones. All 18 had no manner of death determined.

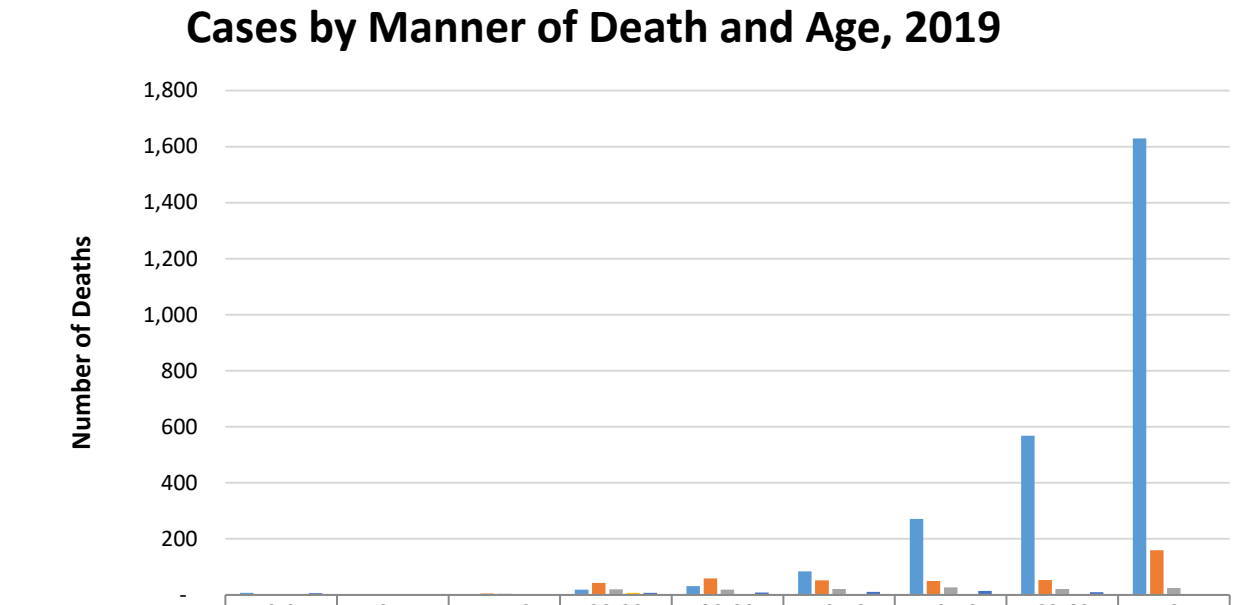
Cases by Manner and Sex[6]



Manner of Death	Male	Female	Total
Natural	1,419	1,194	2,613
Accident	269	155	424
Suicide	104	36	140
Homicide	7	7	14
Indeterminate	31	30	61
Unspecified (unknown manner of death, non-human bones, etc.)	-	-	18
TOTAL	1,830	1,422	3,270

[6] From this point on, the graphs and tables will not include the 18 unspecified cases (bones/tissues) because they did not have a manner of death.

Cases by Manner of Death and Age



	0-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70+
Natural (2,613)	7	3	0	19	32	84	271	568	1,629
Accident (424)	2	0	5	43	59	52	50	53	160
Suicide (140)	0	3	4	20	19	21	27	21	25
Homicide (14)	0	0	0	7	2	0	2	2	1
Indeterminate (61)	6	0	0	7	9	11	14	10	3

Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Total
Hispanic	7	2	9
White	1,608	1,249	2,857
African American	193	157	350
American Indian	3	0	3
Asian Pacific	15	12	27
Multiracial	1	0	1
Other	3	1	4
Unknown	0	1	1
TOTAL	1,830	1,422	3,252

Manner of Death – Natural

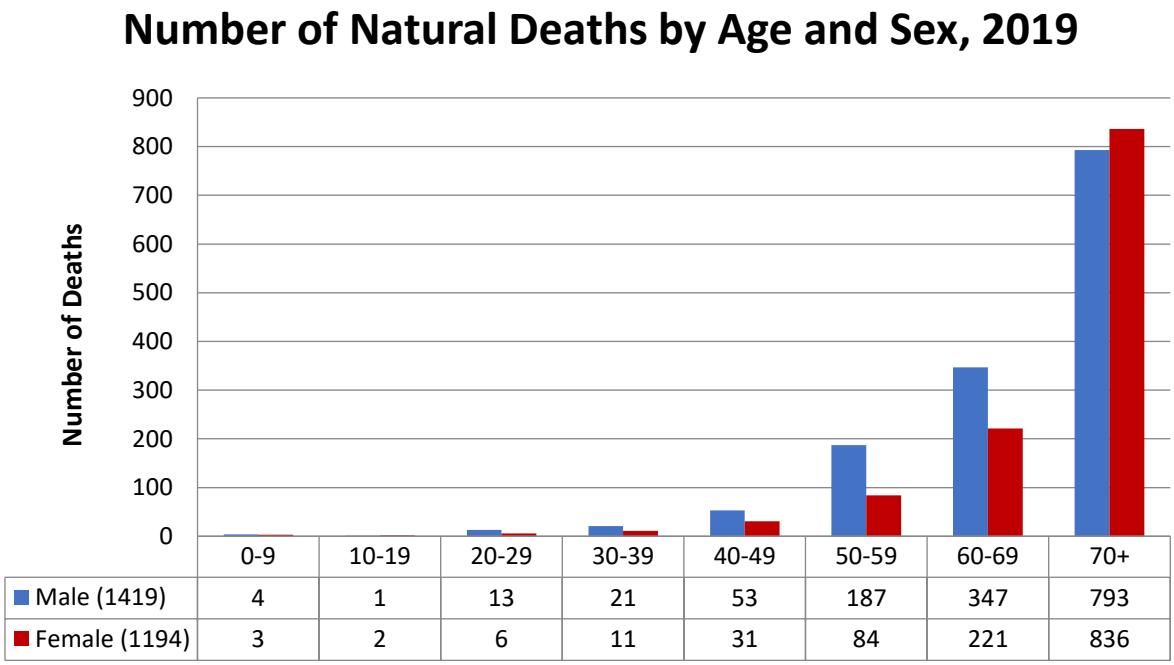
Cases by Age and Sex

Natural deaths represented 79.9% (2,613/3,270) of all Medical Examiner cases.

Males accounted for 54.3% (1,419/2,613) of the natural deaths; females accounted for 45.7% (1,194/2,613) of the natural deaths.

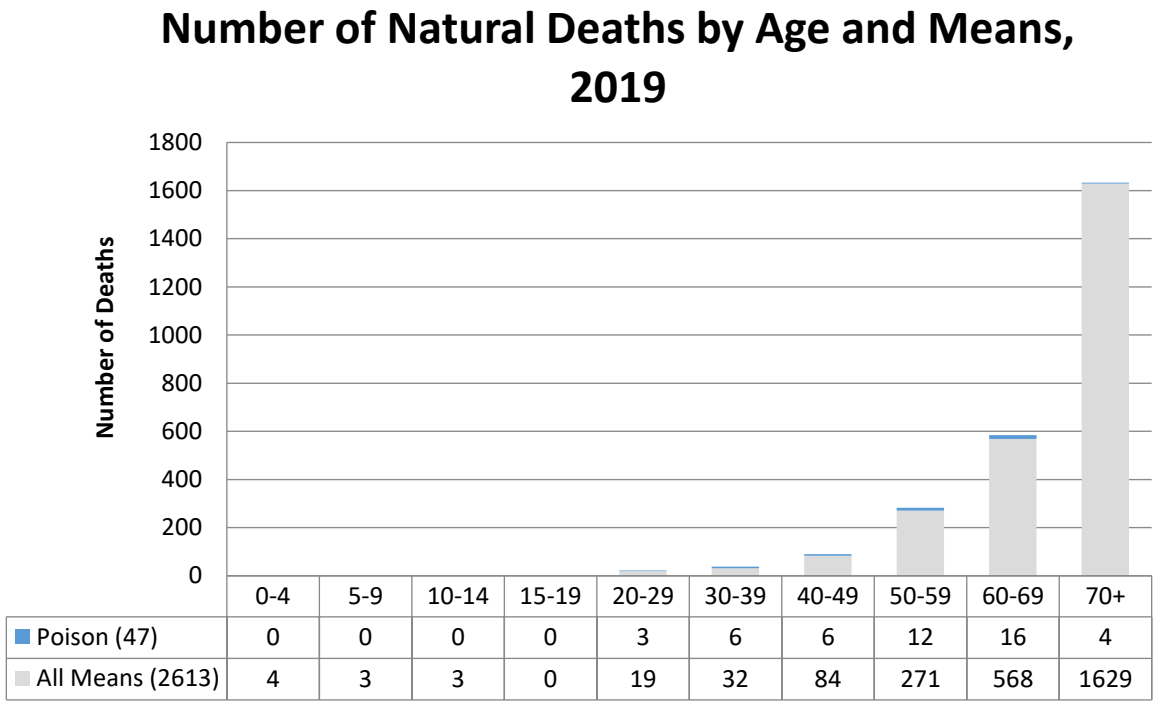
The male 70+ age group accounted for 55.9 % (793/1,419) of all male natural deaths, while the female 70+ age group accounted for 70% (836/1,194) of all female natural deaths.

The combined male/female 70+ age groups represented 62.3% (1,629/2,613) of the natural deaths, a greater proportion than in 2018 (60.4%).



Age Group	Male	Female	Total	Percent
0-19 Years	5	5	10	0.38%
20 Years and Older	1,414	1,189	2,603	99.62%
TOTAL	1,419	1,194	2,613	100.00%

Cases by Age and Means[7]



	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70+
Poison (47)	0	0	0	0	3	6	6	12	16	4
All Means (2613)	4	3	3	0	19	32	84	271	568	1629

Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Total
Hispanic	4	0	4
White	1,238	1,042	2,280
African American	156	141	297
American Indian	3	0	3
Asian Pacific	14	10	24
Multiracial	3	1	4
Other	1	0	1
TOTAL	1,419	1,194	2,613

[7] Some deaths may have multiple Means of Death recorded, and some may have no Means recorded.

Manner of Death – Accident

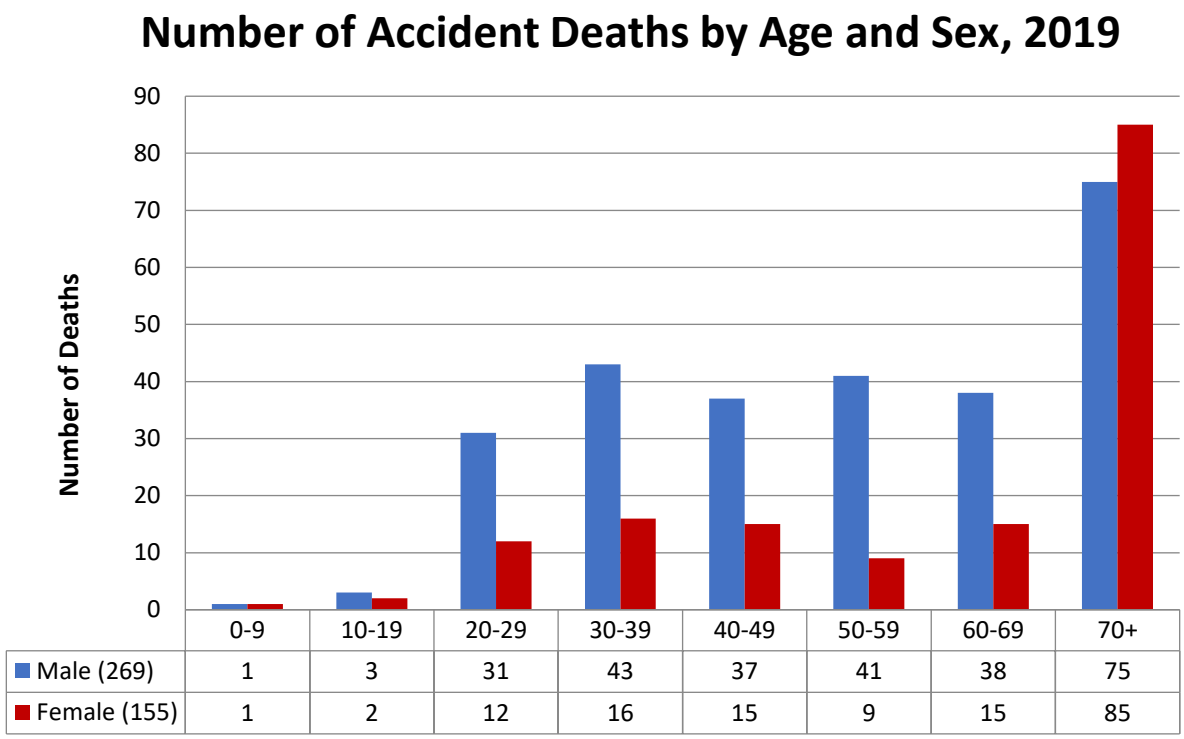
Accidental deaths represented 13% (424/3,270) of all Medical Examiner cases.

Males accounted for 63.4% (269/424) of the accidental deaths; females accounted for 36.6% (155/424) of the accidental deaths.

Females had a lower proportion of accidental deaths in each age group except for the 70+ group. The female 70+ age group accounted for 54.8% (85/155) of all female accidental deaths, while the male 70+ age group accounted for 27.9% (75/269) of all male accidental deaths.

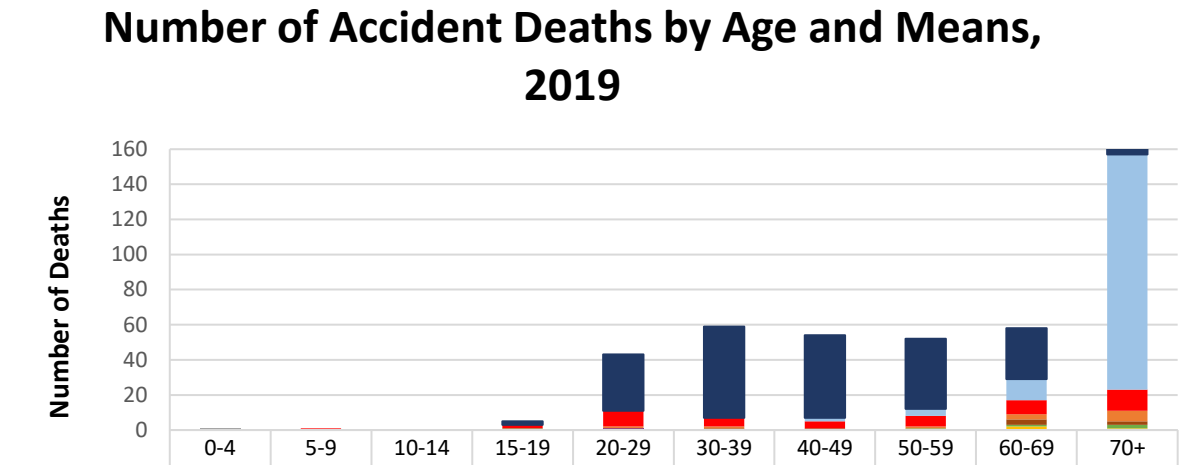
The combined male/female 70+ age groups represented 37.7% (160/424) of the accidental deaths, a larger proportion than in 2018 (30.1%).

Cases by Age and Sex



Age Group	Male	Female	Total	Percent
0-19 Years	4	3	7	1.65%
20 Years and Older	265	152	417	98.35%
TOTAL	269	155	424	100.00%

Cases by Age and Means[8]



Number of Accident Deaths by Age and Means, 2019

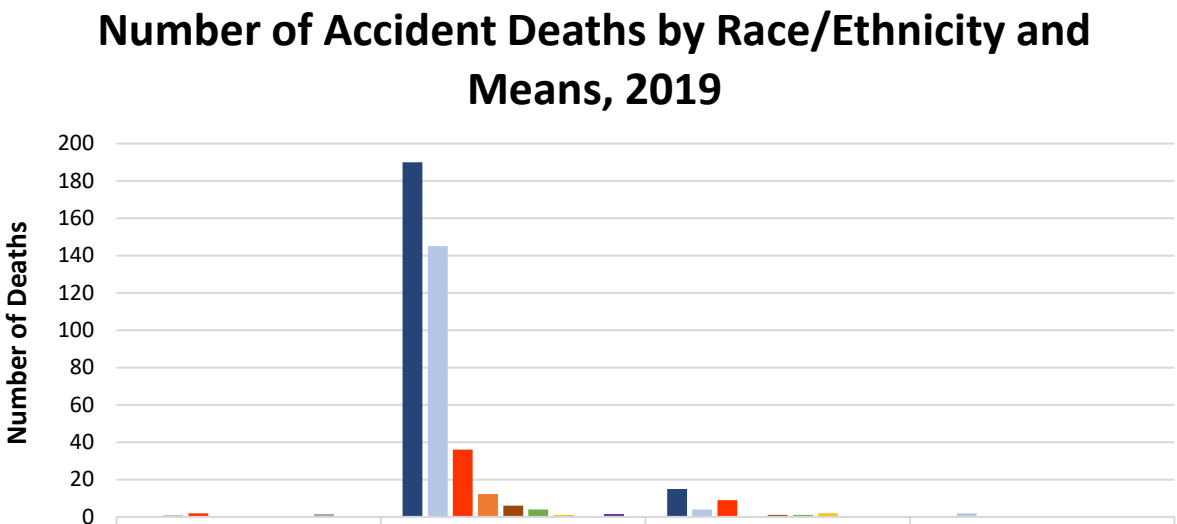
	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70+
Poison (205)	0	0	0	2	32	52	47	40	29	3
Fall (152)	0	0	0	0	0	0	2	4	12	134
Vehicle (47)	0	1	0	2	9	5	4	6	8	12
Asphyxia (12)	0	0	0	0	1	1	0	1	3	6
Other (7)	0	0	0	0	0	1	1	0	3	2
Drowning (5)	0	0	0	1	0	0	0	1	1	2
Fire/Burn (3)	0	0	0	0	0	0	0	0	2	1
SIDS (1)	1	0	0	0	0	0	0	0	0	0
Firearm (1)	0	0	0	0	1	0	0	0	0	0

Accidental poisoning accounted for 48.4% (205/424) of all accidental death cases, with the 30-39 age group having the highest number of all accidental poisoning deaths (52).

Falls accounted for the second highest percentage of accidental deaths at 35.9% (152/424), with the majority of deaths occurring in the 70+ age group (134).

[8] Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means[9,10]



	Hispanic	White	Af. Amer.	Asian/PI
Poison (205)	0	190	15	0
Fall (152)	1	145	4	2
Vehicle (47)	2	36	9	0
Asphyxia (12)	0	12	0	0
Other (7)	0	6	1	0
Drowning (5)	0	4	1	0
Fire/Burn (3)	0	1	2	0
SIDS (1)	1	0	0	0
Firearm (1)	0	1	0	0

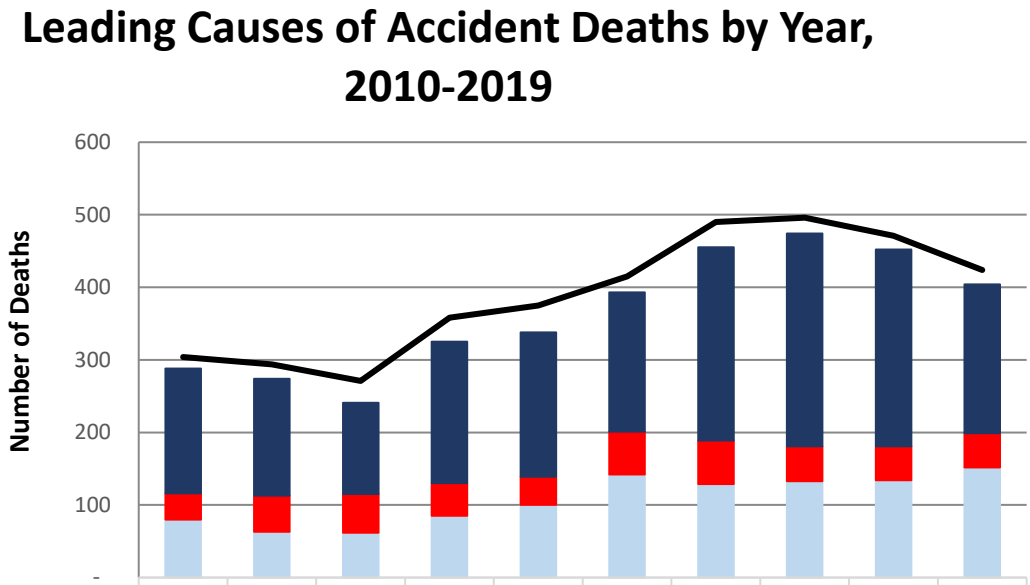
Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Total
Hispanic	2	2	4
White	246	143	389
African American	21	8	29
American Indian	0	0	0
Asian Pacific	0	2	2
Multiracial	0	0	0
Other	0	0	0
TOTAL	269	155	424

[9] Some deaths may have multiple Means of Death recorded.

[10] There were no accidental deaths recorded for the American Indian, Multiracial, and Other race categories and therefore were excluded from this chart.

Specific Means of Death by Year[11]



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Poison	172	161	126	195	199	192	266	293	271	205
Vehicle	36	50	53	45	39	59	60	48	47	47
Fall	80	63	62	85	100	142	129	133	134	152
Total Accident Deaths	304	294	271	358	375	415	490	496	471	424

Between 2011 and 2019, there was a 141.3% increase in the number of accident deaths by falls, and a 6% decrease in the number of vehicular deaths. There was a 27.3% increase in the number of accident deaths by poison. Overall, there was a 44.2% increase in accident deaths since 2011.

[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

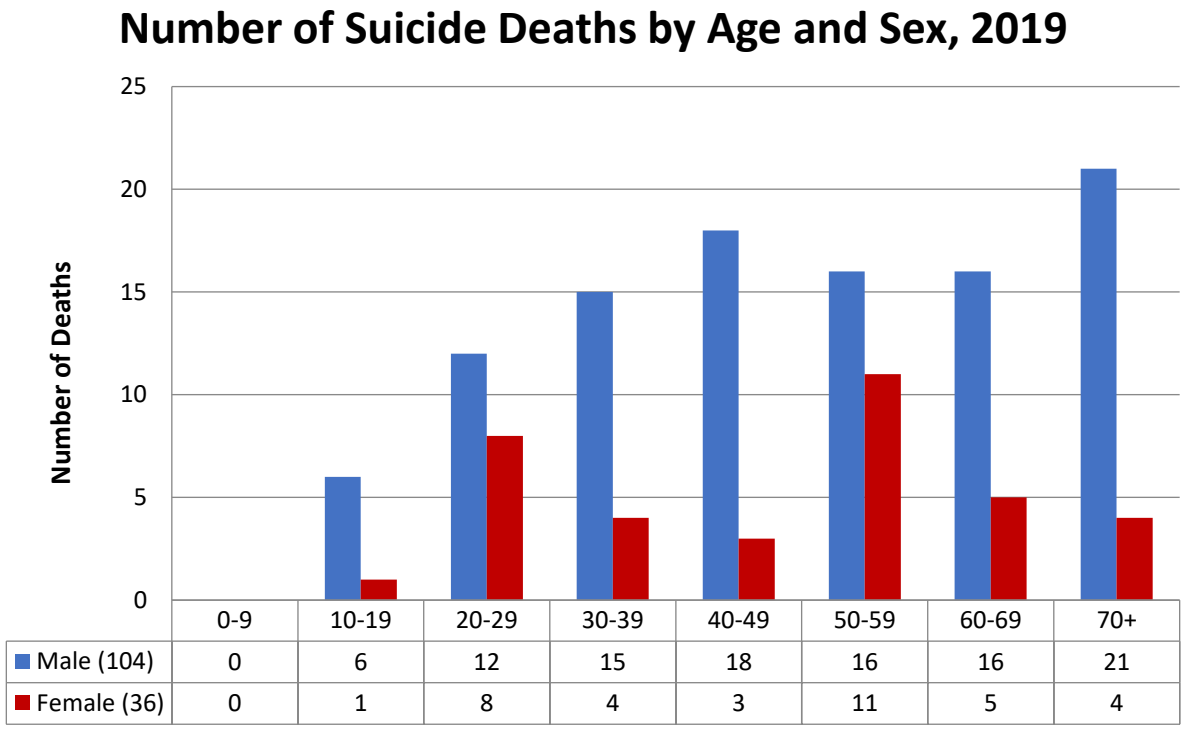
Suicide deaths represented 4.3% (140/3,270) of all Medical Examiner cases.

Males accounted for 74.3% (104/140) of the suicide deaths; females accounted for 25.7% (36/140) of the suicide deaths.

The male 70+ age group accounted for 20.2% (21/104) of all male suicide deaths, while the female 70+ age group accounted for 11.1% (4/36) of all female suicide deaths. The female 50-59 age group had the highest proportion of all female suicide deaths (30.6%).

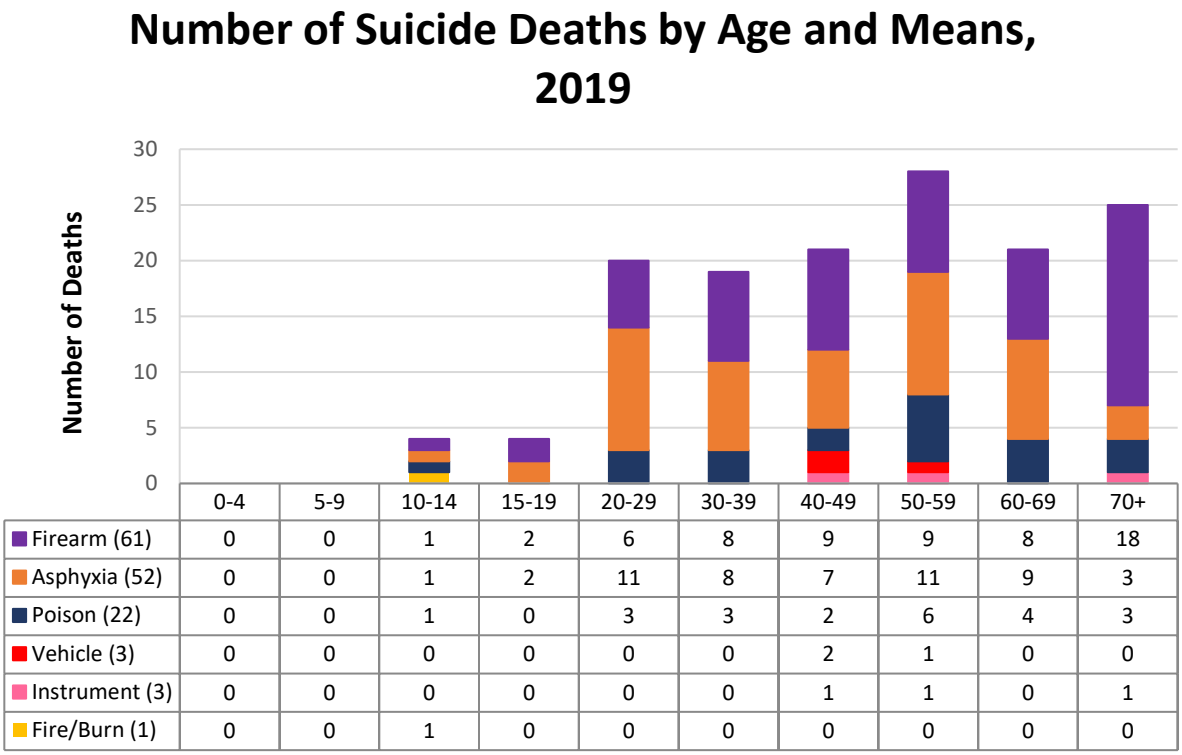
The combined male/female 50-59 age groups represented 19.3% (27/140) of the suicide deaths.

Cases by Age and Sex



Age Group	Male	Female	Total	Percent
0-19 Years	6	1	7	5.00%
20 Years and Older	98	35	133	95.00%
TOTAL	104	36	140	100.00%

Cases by Age and Means[12,13]



	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70+
Firearm (61)	0	0	1	2	6	8	9	9	8	18
Asphyxia (52)	0	0	1	2	11	8	7	11	9	3
Poison (22)	0	0	1	0	3	3	2	6	4	3
Vehicle (3)	0	0	0	0	0	0	2	1	0	0
Instrument (3)	0	0	0	0	0	0	1	1	0	1
Fire/Burn (1)	0	0	1	0	0	0	0	0	0	0

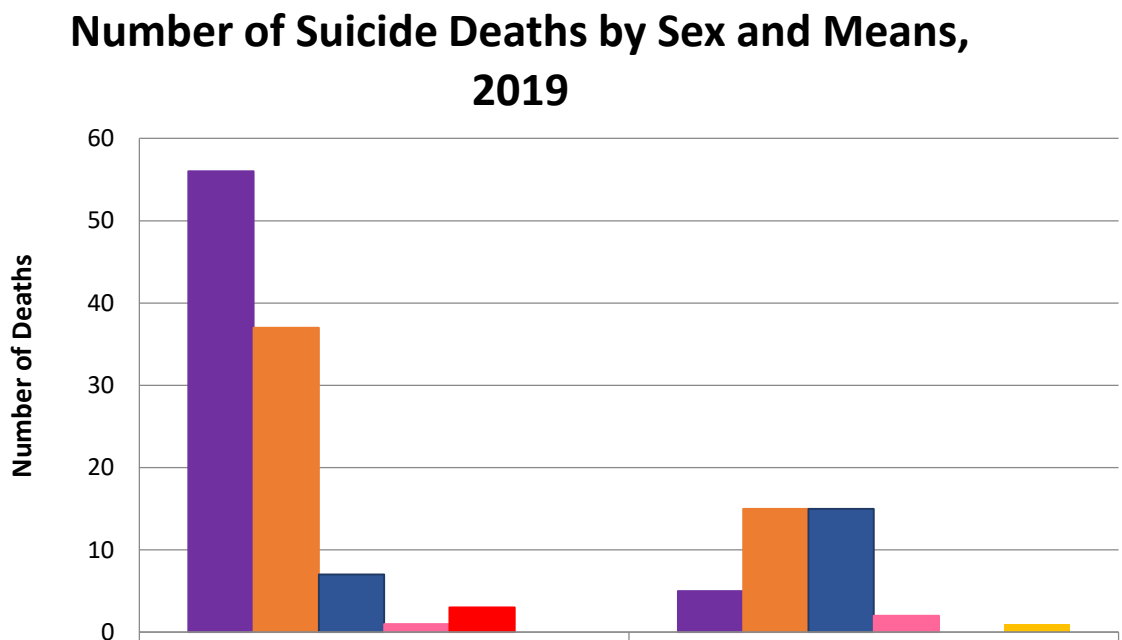
Firearm suicide cases accounted for 43.6% (61/140) of all suicide death cases, with the majority of deaths occurring in the 70+ age group (18).

Asphyxia accounted for the second highest percentage of suicides at 37.1% (52/140), with the majority of deaths occurring in the 20-29 and 50-59 age groups (22).

[12] Some deaths may have multiple Means of Death recorded.

[13] There were no deaths by suicide recorded for ages less than 10 years and therefore the respective age categories were excluded from this cart.

Cases by Sex and Means[14]



	Male	Female
Firearm (61)	56	5
Asphyxia (52)	37	15
Poison (22)	7	15
Instrument (3)	1	2
Vehicle (3)	3	0
Fire/Burn (1)	0	1

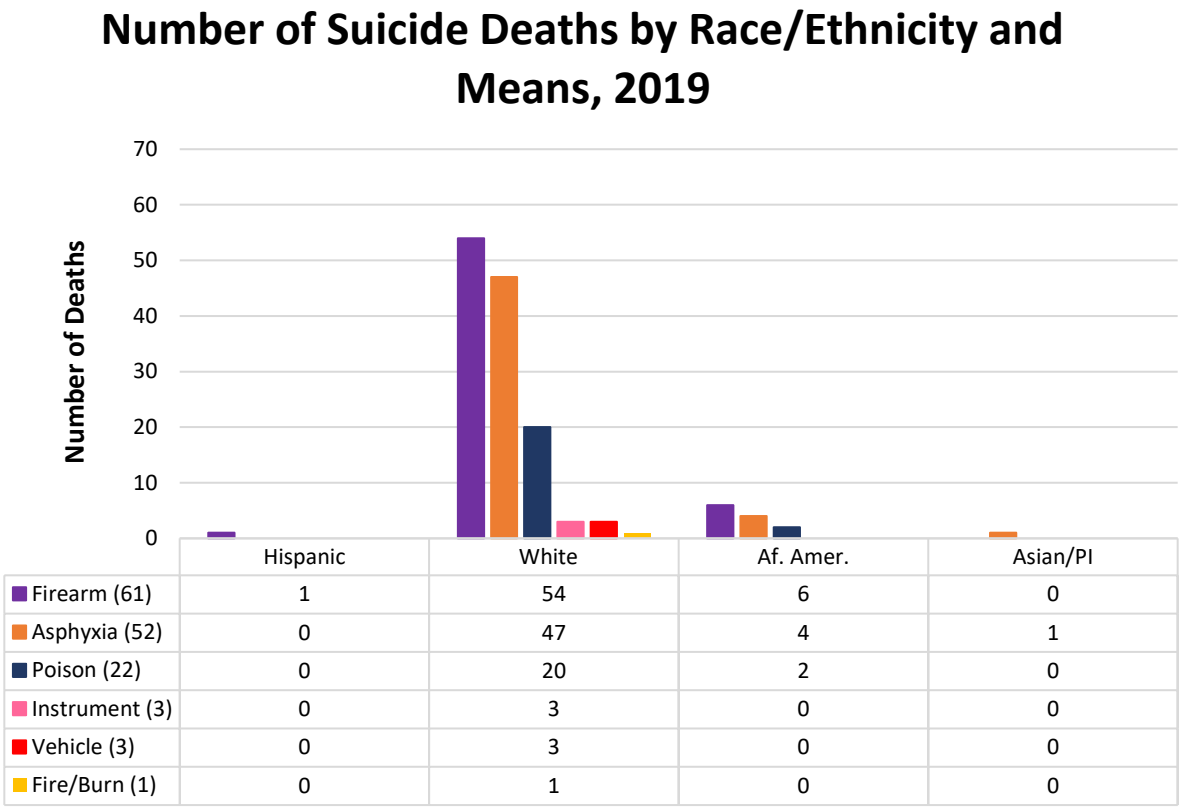
Males accounted for 74.3% (104/140) of all deaths by suicide, while females accounted for 25.7% (36/140) of deaths by suicide.

Suicide by firearm accounted for the greatest percentage of suicide deaths in males at 53.9% (56/104) and the second greatest percentage of suicide deaths in females at 13.9% (5/36).

Suicide by asphyxia and poison combined accounted for the greatest percentage of suicide deaths in females at 83.3% (30/36) and the second largest percentage of suicide deaths in males at 42.3% (44/104).

[14] Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means[15,16]



	Hispanic	White	Af. Amer.	Asian/PI
Firearm (61)	1	54	6	0
Asphyxia (52)	0	47	4	1
Poison (22)	0	20	2	0
Instrument (3)	0	3	0	0
Vehicle (3)	0	3	0	0
Fire/Burn (1)	0	1	0	0

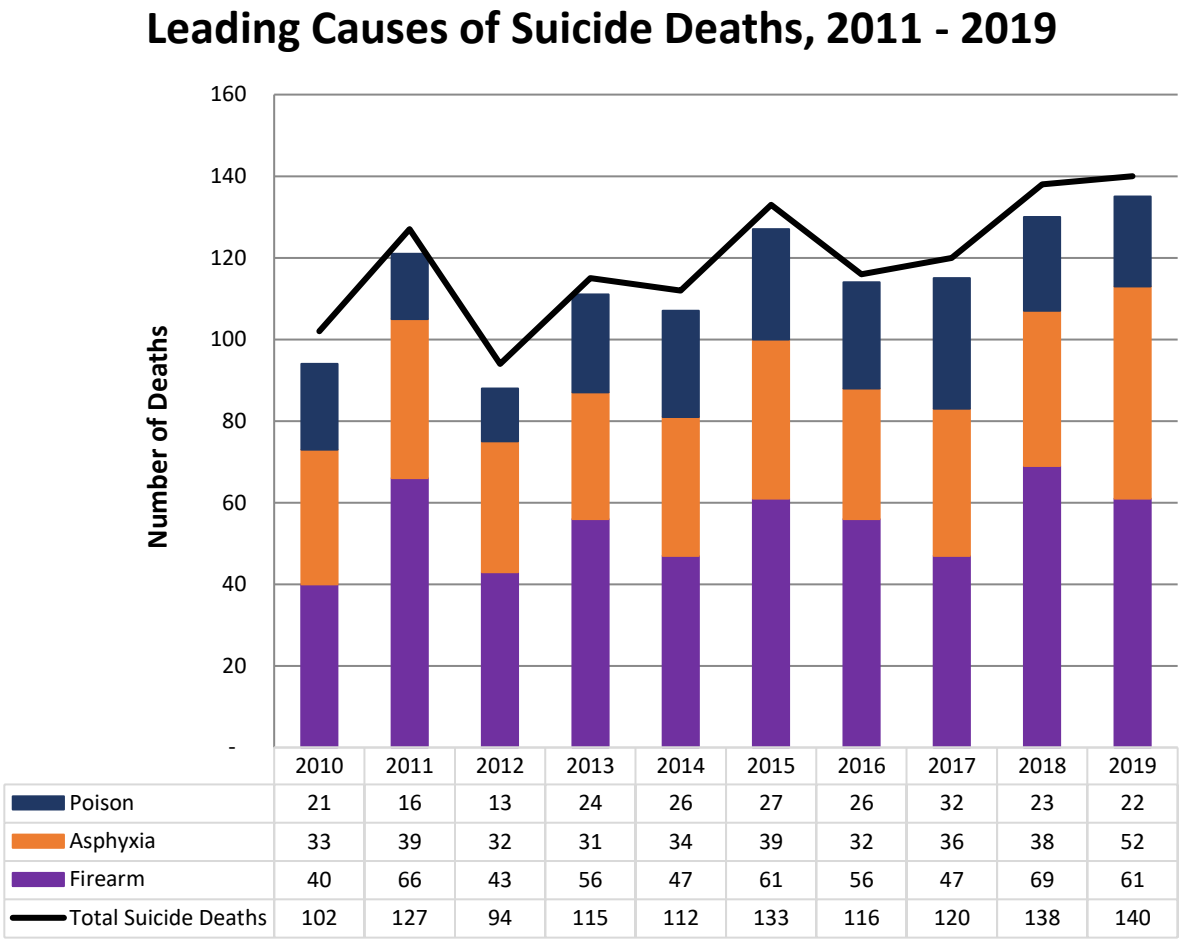
Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Total
Hispanic	1	0	1
White	94	32	126
African American	8	4	12
American Indian	0	0	0
Asian Pacific	1	0	1
Multiracial	0	0	0
Other	0	0	0
TOTAL	104	36	140

[15] Some deaths may have multiple Means of Death recorded.

[16] American Indian, Multiracial, and Other race categories did not have a means of suicide recorded and were removed from the chart.

Specific Means of Death by Year[17]



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Poison	21	16	13	24	26	27	26	32	23	22
Asphyxia	33	39	32	31	34	39	32	36	38	52
Firearm	40	66	43	56	47	61	56	47	69	61
Total Suicide Deaths	102	127	94	115	112	133	116	120	138	140

Between 2011 and 2019, there was a 7.6% decrease in the number of suicide deaths by firearm, and a 33.3% increase in the number of asphyxia deaths. There was a 37.5% increase in the number of suicide deaths by poison. Overall, there was a 10.2% increase in death by suicide since 2011.

[17] 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.

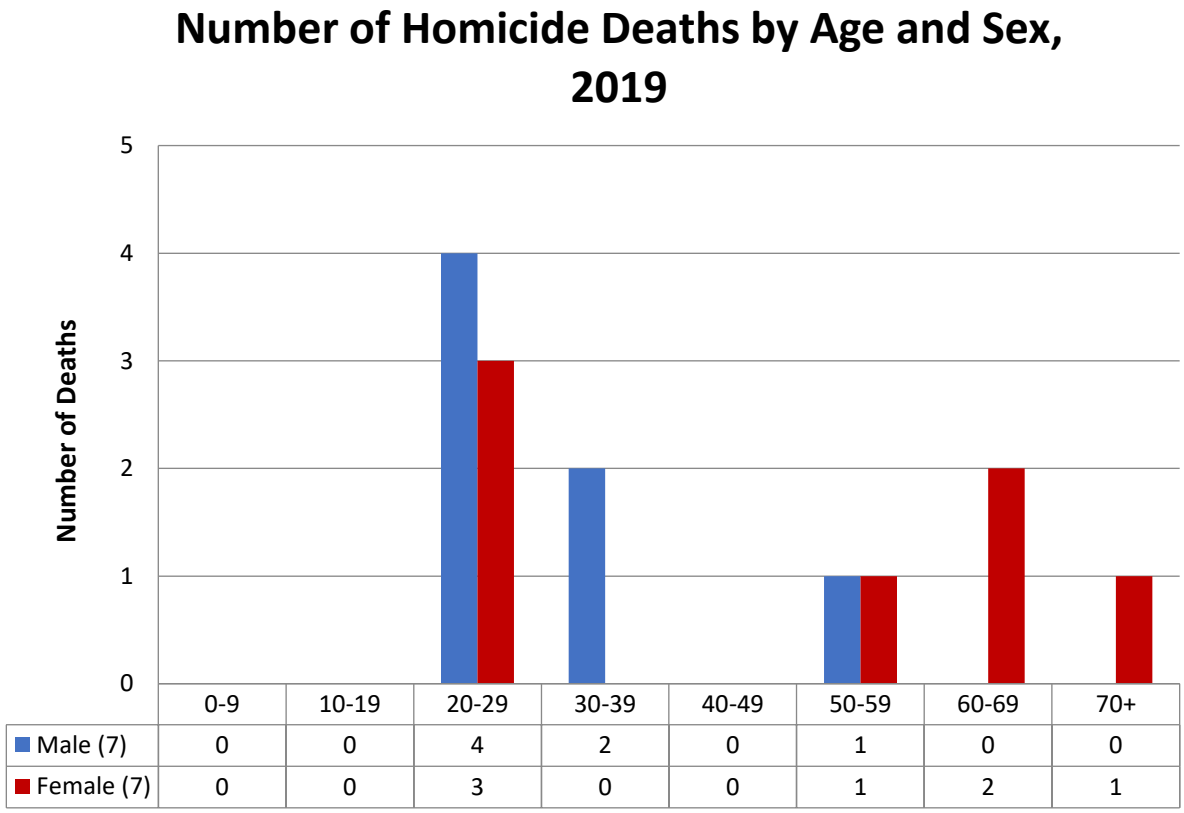
Manner of Death – Homicide

Homicide deaths represented 0.4% (14/3,270) of all Medical Examiner cases.

Males and females equally accounted for all homicide deaths (14).

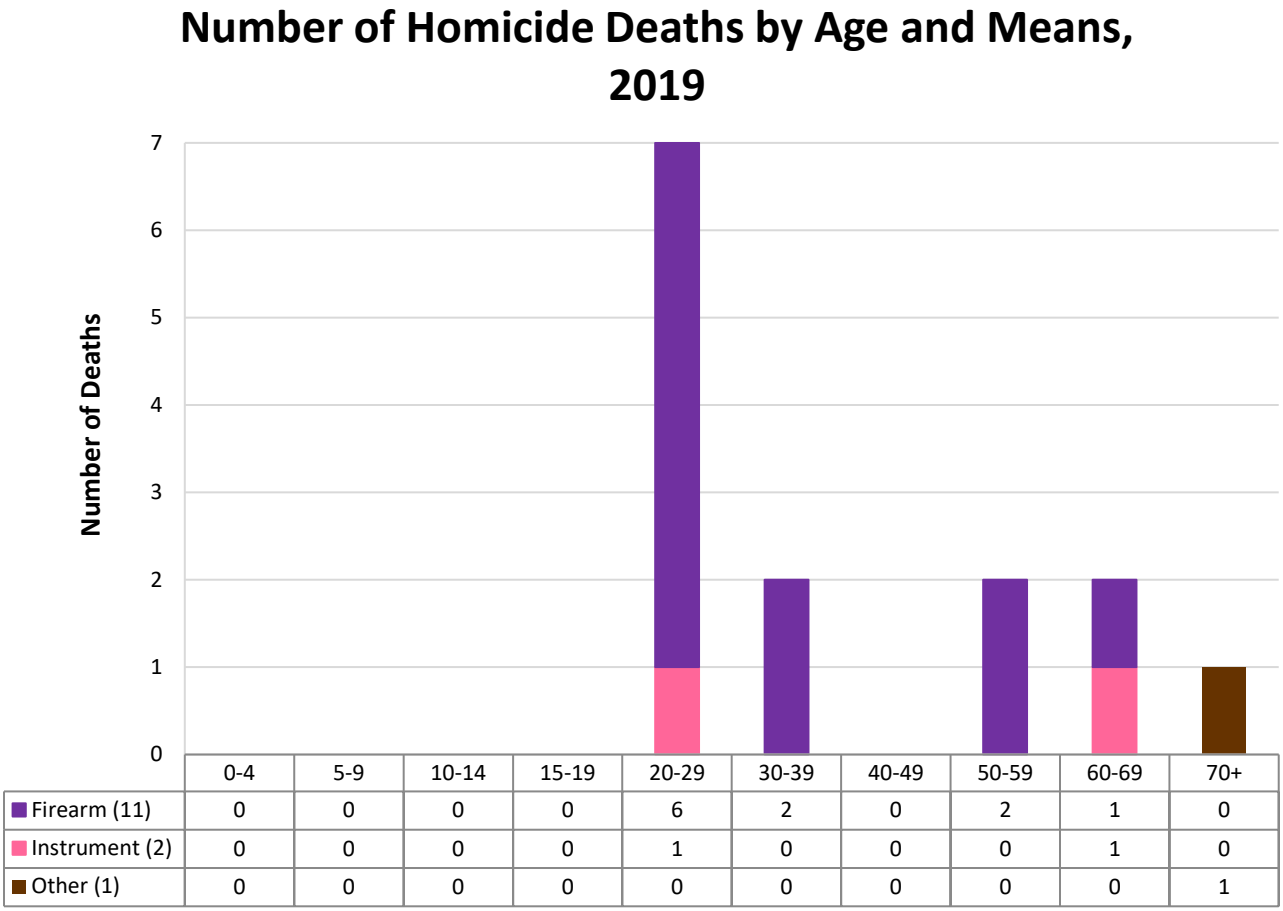
The male 20-29 age group accounted for 57.1% (4/7) of all male homicide deaths, while the female 20-29 age group accounted for 42.9% (3/7) of all female homicide deaths.

Cases by Age and Sex



Age Group	Male	Female	Total	Percent
0-19 Years	0	0	0	0.00%
20 Years and Older	7	7	14	100.00%
TOTAL	7	7	14	100.00%

Cases by Age and Means[18,19]



	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70+
Firearm (11)	0	0	0	0	6	2	0	2	1	0
Instrument (2)	0	0	0	0	1	0	0	0	1	0
Other (1)	0	0	0	0	0	0	0	0	0	1

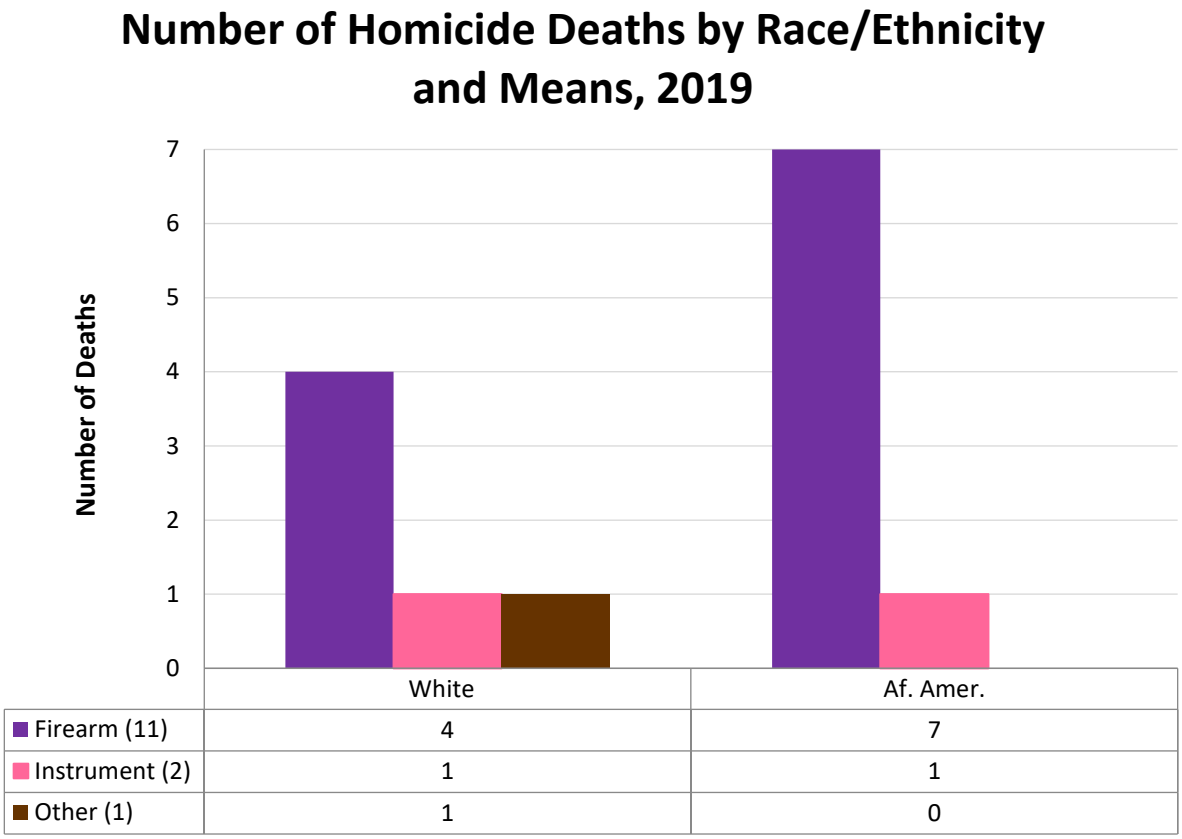
Homicide by firearm accounted for 78.6% (11/14) of all homicide death cases, with the majority of deaths occurring in the 20-29 age group (6).

Death by instrument accounted for the second highest percentage of homicides at 14.3% (2/14), with the one death occurring in the 20-29 age group and one in the 60-69 age group.

[18] Some deaths may have multiple Means of Death recorded.

[19] 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[20,21,22]

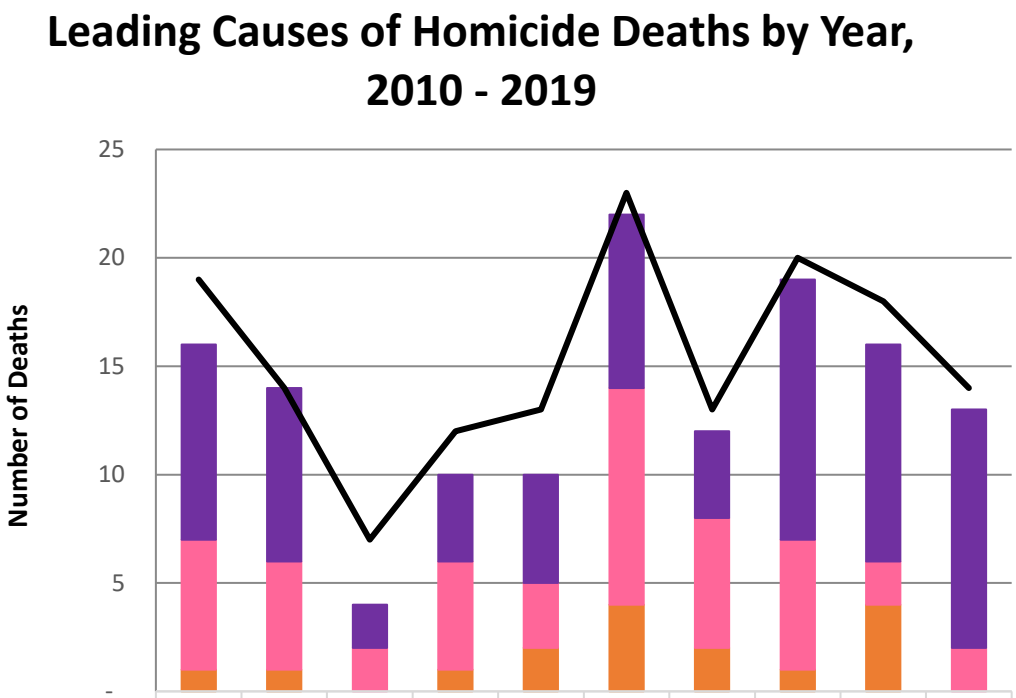


Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Total
Hispanic	0	0	0
White	1	5	6
African American	6	2	8
American Indian	0	0	0
Asian Pacific	0	0	0
Multiracial	0	0	0
Other	0	0	0
TOTAL	7	7	14

[20] Some deaths may have multiple Means of Death recorded.
[21] 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.
[22] There were no deaths by homicide recorded for American Indian, Asian Pacific, Multiracial, and Other race categories and therefore they were not included in this chart.

Specific Means of Death by Year[23,24]



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Firearm	9	8	2	4	5	8	4	12	10	11
Instrument	6	5	2	5	3	10	6	6	2	2
Asphyxia	1	1	0	1	2	4	2	1	4	0
Total Homicide Deaths	19	14	7	12	13	23	13	20	18	14

Between 2011 and 2019, there was a 37.5% increase in the number of homicide deaths by firearm, and a 60% decrease in the number of instrument deaths. There were zero homicide deaths by asphyxia, a 100% decrease since 2011.

[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.

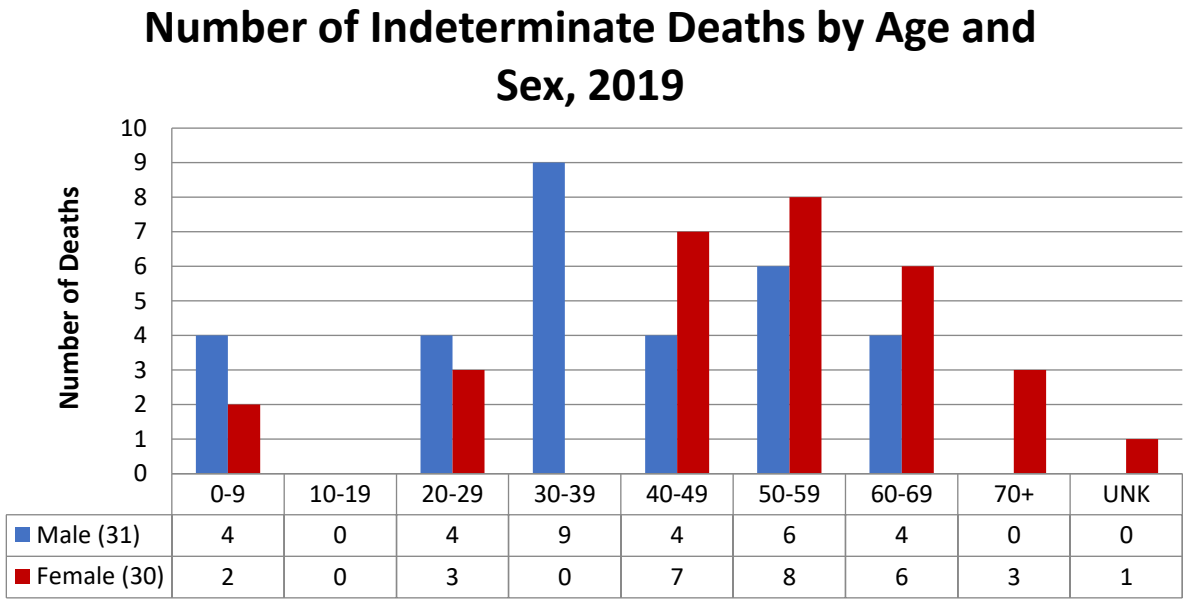
Manner of Death – Indeterminate

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 1.9% (61/3,270) of all Medical Examiner cases.

Males accounted for 50.8% (31/61) of the indeterminate deaths; females accounted for 49.2% (30/61) of the indeterminate deaths.

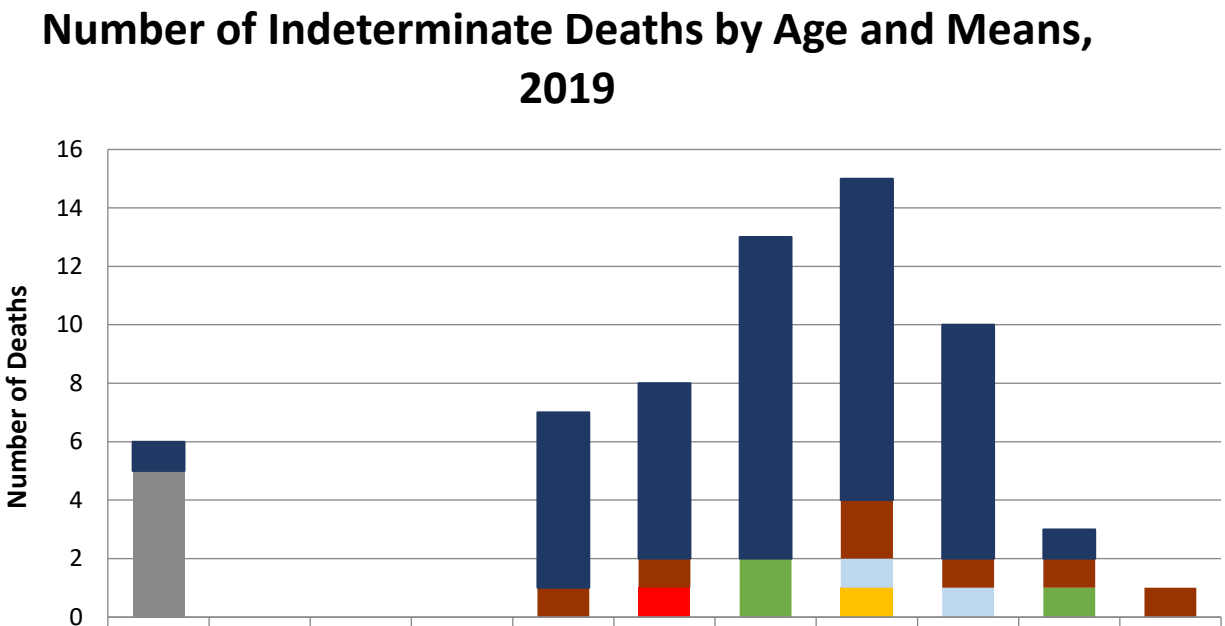
The male 30-39 age group accounted for the majority of all male indeterminate deaths at 29% (9/31), while the female 50-59 age group accounted for the majority of all female indeterminate deaths at 26.7 (8/30).

Cases by Age and Sex



Age Group	Male	Female	Total	Percent
0-19 Years	4	2	6	9.84%
20 Years and Older	27	27	54	88.52%
Unreported	0	1	1	1.64%
TOTAL	**31**	**30**	**61**	**100.00%**

Cases by Age and Means[25]



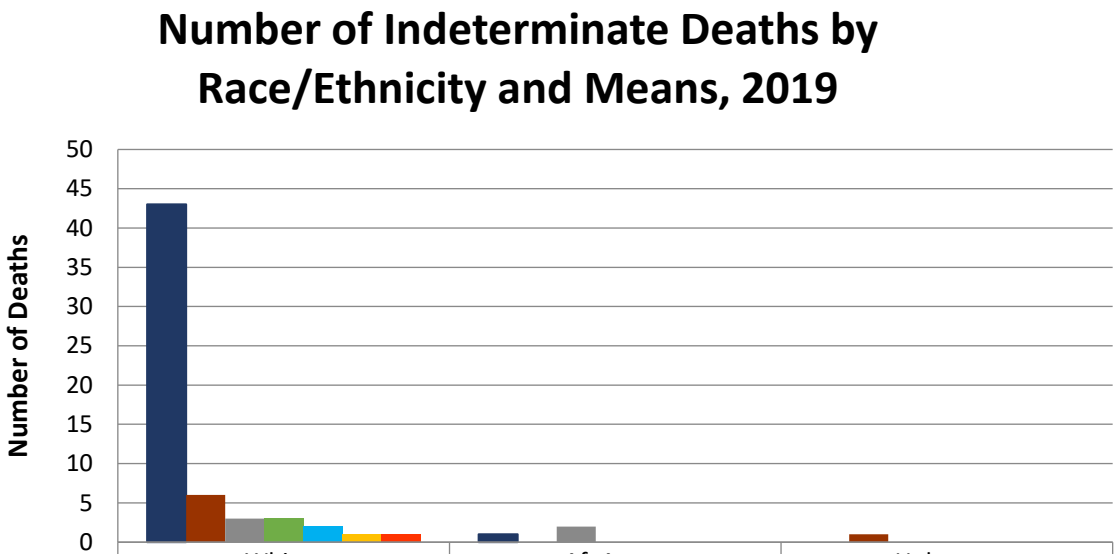
	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70+	UNK
Poison (44)	1	0	0	0	6	6	11	11	8	1	0
Other (7)	0	0	0	0	1	1	0	2	1	1	1
SIDS (5)	5	0	0	0	0	0	0	0	0	0	0
Drowning (3)	0	0	0	0	0	0	2	0	0	1	0
Fall (2)	0	0	0	0	0	0	0	1	1	0	0
Fire/Burn (1)	0	0	0	0	0	0	0	1	0	0	0
Vehicle (1)	0	0	0	0	0	1	0	0	0	0	0

Poisoning cases accounted for 72.1% (44/61) of all indeterminate death cases, with the majority of deaths occurring in the 40-49 and 50-59 age groups (22).

Other (miscellaneous) means accounted for the second highest percentage of indeterminate cases at 11.5% (7/61).

[25] Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means[26,27]



	White	Af. Amer.	Unknown
Poison (44)	43	1	0
Other (7)	6	0	1
SIDS (5)	3	2	0
Drowning (3)	3	0	0
Fall (2)	2	0	0
Fire/Burn (1)	1	0	0
Vehicle (1)	1	0	0

Cases by Race/Ethnicity and Sex

Race/Ethnicity	Male	Female	Total
Hispanic	0	0	0
White	29	27	56
African American	2	2	4
American Indian	0	0	0
Asian Pacific	0	0	0
Multiracial	0	0	0
Other	0	0	0
Unknown	0	1	1
TOTAL	31	30	61

[26] Some deaths may have multiple Means of Death recorded.

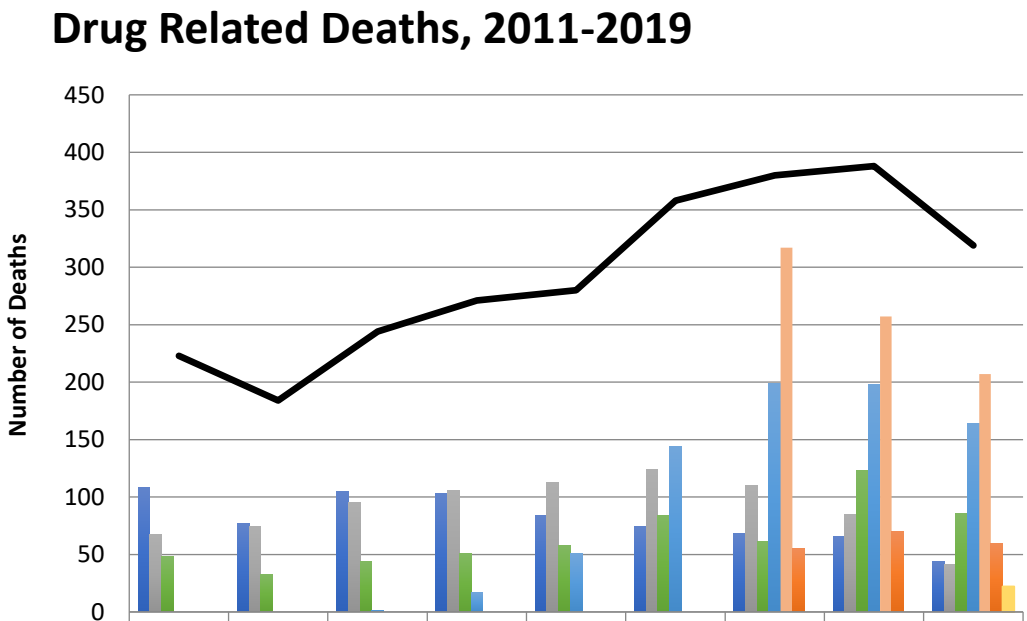
[27] There were no indeterminate deaths recorded for Hispanic, American Indian, Asian Pacific, Multiracial, and Other race & ethnic categories and therefore they were excluded from this chart.

Drug-Related Deaths[28]

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 2019, total drug-related deaths decreased by 17.8%, compared to 2018. Heroin-related deaths decreased by 51.8%, and fentanyl deaths (including heroin) decreased by 17.2%. Please note that total drug deaths is not a sum of the drug classifications.



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

[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.