

2017

Macomb County Medical Examiner Annual Report



Daniel J. Spitz, M.D.
Chief Medical Examiner
8/20/2018

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MACOMB COUNTY HEALTH DEPARTMENT
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<http://health.macombgov.org/Health-Home>

William J. Ridella, MPH, MBA
Director/Health Officer

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

August 20, 2018

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.

In 2017, the Medical Examiner's Office investigated more deaths than in any previous year. The number of Medical Examiner cases increased 4.1% from 2016, which amounted to a total of 2,720 investigations. Forensic examinations increased by 4.5% when compared to 2016, resulting in 717 examinations. Cremation permits issued increased from 4,064 in 2016 to 4,276 in 2017, a 5.2% increase. Hospice deaths also increased to a total of 2,403 cases.

In 2017 (compared to 2016) there was a 3.7% increase in the number of deaths due to natural disease, an 1.2% increase in the total number of accidental deaths, and a 3.4% increase in the number of suicides.

Drug-related deaths have been a significant problem over the past several years and hit an all-time high in 2017 (380 deaths). Abuse of prescription medications along with heroin and fentanyl/fentanyl-analogs continue to be major concerns in Macomb County. In 2017, there were 110 deaths related to heroin (heroin alone or heroin in combinations with other drugs) compared to 124 heroin-related deaths in 2016. Although deaths due to synthetic opiates occurred occasionally in previous years, such deaths were a frequent occurrence in 2017. The total number of fentanyl-related deaths (deaths due to fentanyl alone or fentanyl in combination with other drugs) that occurred in 2017 (199) increased by 38% from 2016 (144).

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 2017 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.

2017 Budget

| Revenues | Expenses |
|--------------|--------------|
| \$ 2,008,007 | \$ 2,008,007 |

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 867,730 residents (2016 U.S. Census Estimate), an increase in population of 3.16% 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 (10th).

Census Summary Profile¹

| | 2010 U.S. Census 841,126 Population | | 2016 Estimate 867,730 Population | | Population Growth | Percent Change |
|---|---|--------|--|--------|----------------------|-------------------|
| White | 715,853 | 85.11% | 706,518 | 81.42% | -1.30% | -4.33% |
| Black or African American | 74,275 | 8.83% | 100,689 | 11.60% | 35.56% | 31.41% |
| American Indian and Alaska Native | 2,716 | 0.32% | 1,762 | 0.20% | -35.13% | -37.11% |
| Asian | 25,870 | 3.08% | 32,772 | 3.78% | 26.68% | 22.80% |
| Native Hawaiian and Other Pacific Islander | 195 | 0.02% | 50 | 0.01% | -74.36% | -75.15% |
| Some other race | 5,423 | 0.64% | 4,781 | 0.55% | -11.84% | -14.54% |
| Two or More Races | 16,794 | 2.00% | 21,158 | 2.44% | 25.99% | 22.12% |
| Hispanic or Latino | 19,276 | 2.29% | 21,982 | 2.53% | 14.04% | 10.54% |

¹ Source: U.S. Census Bureau, 2010 B020001, 2010 B03003, 2016 B02001, 2016 B03003. Estimates from the American Community Survey 1-Year Estimates.

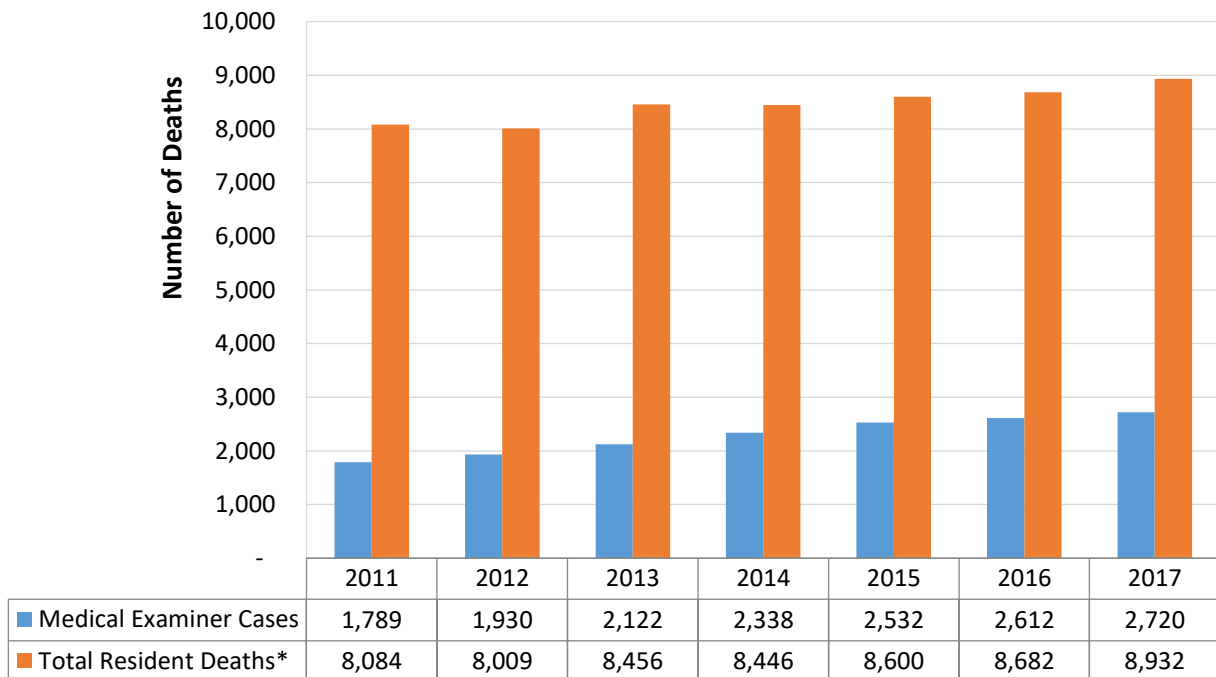
Overview of Cases for 2017

| | |
|--|----------------|
| Macomb County Population (2016 estimate) | 867,730 |
| Resident Deaths in Macomb County (estimate) | 8,932 |
| Macomb County Medical Examiner Cases | 2,720 |
| Forensic Examinations | 717 |

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 2017, the Macomb County Medical Examiner’s Office investigated 30.45% (2,720/8,932) 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 death².

Medical Examiner Cases and Resident Deaths, 2011-2017

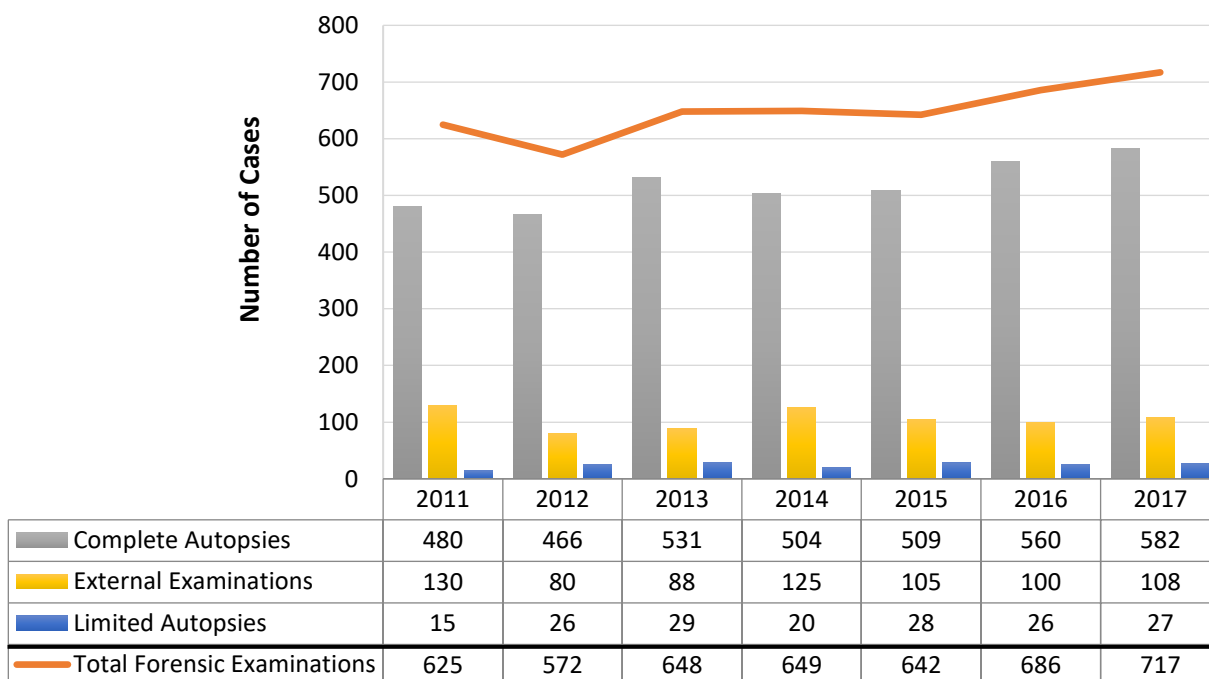


²/* The number of total 2017 resident deaths is provided by the Division for Vital Records & Health Statistics, of Michigan Department of Health & Human Services, and is a provisional number.

Forensic Examinations

The total number of forensic examinations includes complete autopsies, limited autopsies, and external examinations. In 2017, the Medical Examiner’s Office investigated 2,720 deaths, of which 717 were brought to the office for a forensic examination by a forensic pathologist. Of the 717 forensic examinations, 582 were complete autopsies, 108 were external examinations, and 27 were limited autopsies. There were 700 toxicology assessments performed.

Forensic Examinations, 2011-2017

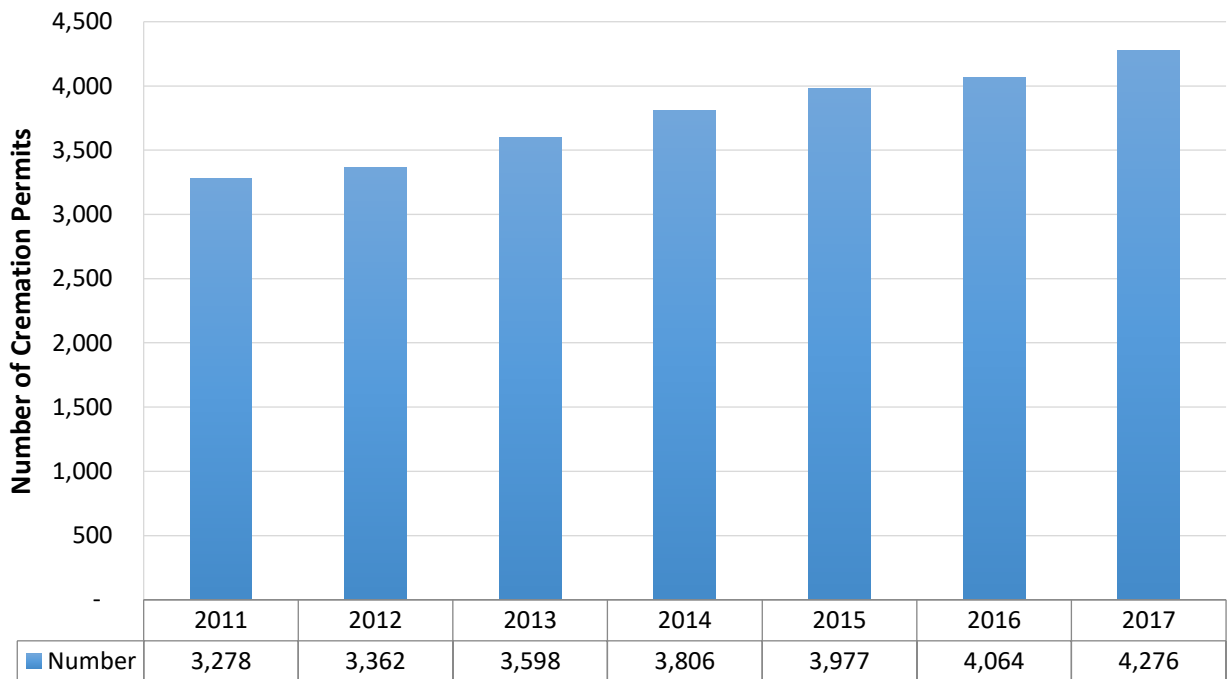


Cremation Permits

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 2017 showed a 5.22% increase from 2016.

Cremation Permit Authorizations by Year, 2011-2017



Overview of Manner of Death³

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:

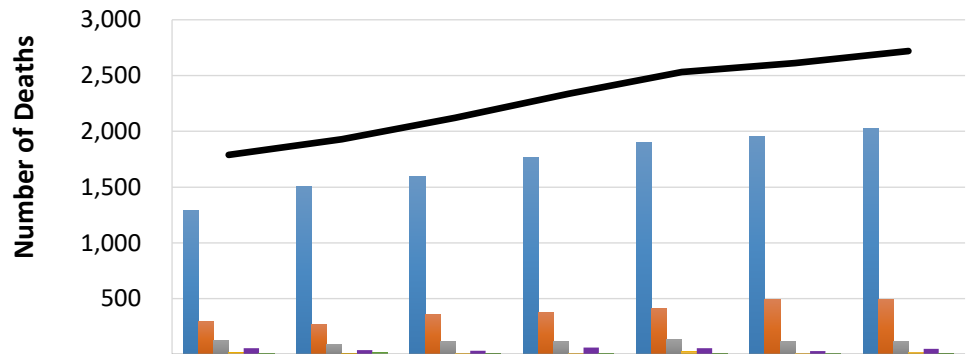
- **Natural deaths** are due solely to disease and/or the aging process.
- **Accident** applies when an injury or poisoning causes death and there is no evidence that injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.
- **Suicide** results 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 | 2,025 | 74.45% |
| Accident | 496 | 18.24% |
| Suicide | 120 | 4.41% |
| Homicide | 20 | 0.74% |
| Indeterminate | 52 | 1.91% |
| Unspecified (non-human bones, tissue, etc.) | 7 | 0.26% |
| TOTAL | 2,720 | 100.00% |

³ From this point on, the graphs and tables will only include cases examined by the Medical Examiner.

Cases by Manner of Death, 2011-2017

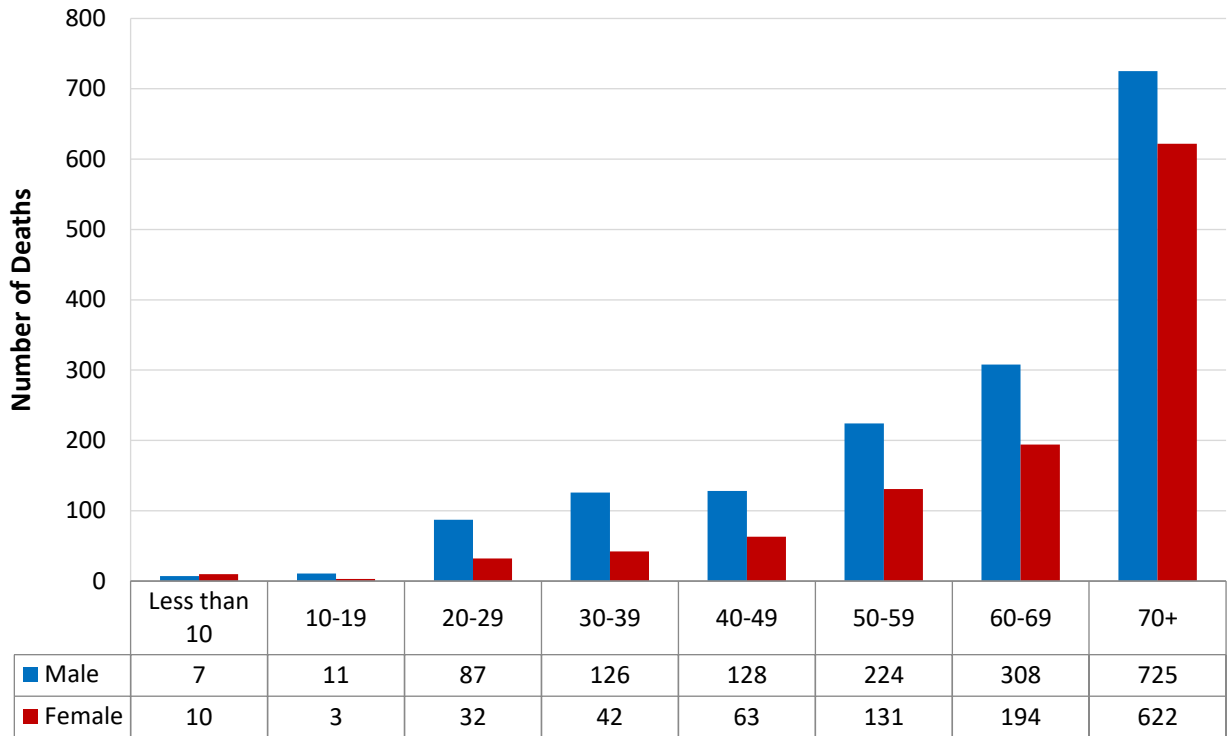


| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|-------|-------|-------|-------|-------|-------|-------|
| ■ Natural | 1,290 | 1,505 | 1,596 | 1,768 | 1,898 | 1,952 | 2,025 |
| ■ Accident | 294 | 271 | 358 | 375 | 415 | 490 | 496 |
| ■ Suicide | 127 | 94 | 115 | 112 | 133 | 116 | 120 |
| ■ Homicide | 14 | 7 | 12 | 13 | 23 | 13 | 20 |
| ■ Indeterminate | 55 | 38 | 34 | 61 | 55 | 31 | 52 |
| ■ Unspecified (non-human bones, etc) | 9 | 15 | 7 | 9 | 8 | 10 | 7 |
| — Total | 1,789 | 1,930 | 2,122 | 2,338 | 2,532 | 2,612 | 2,720 |

Cases by Age and Gender

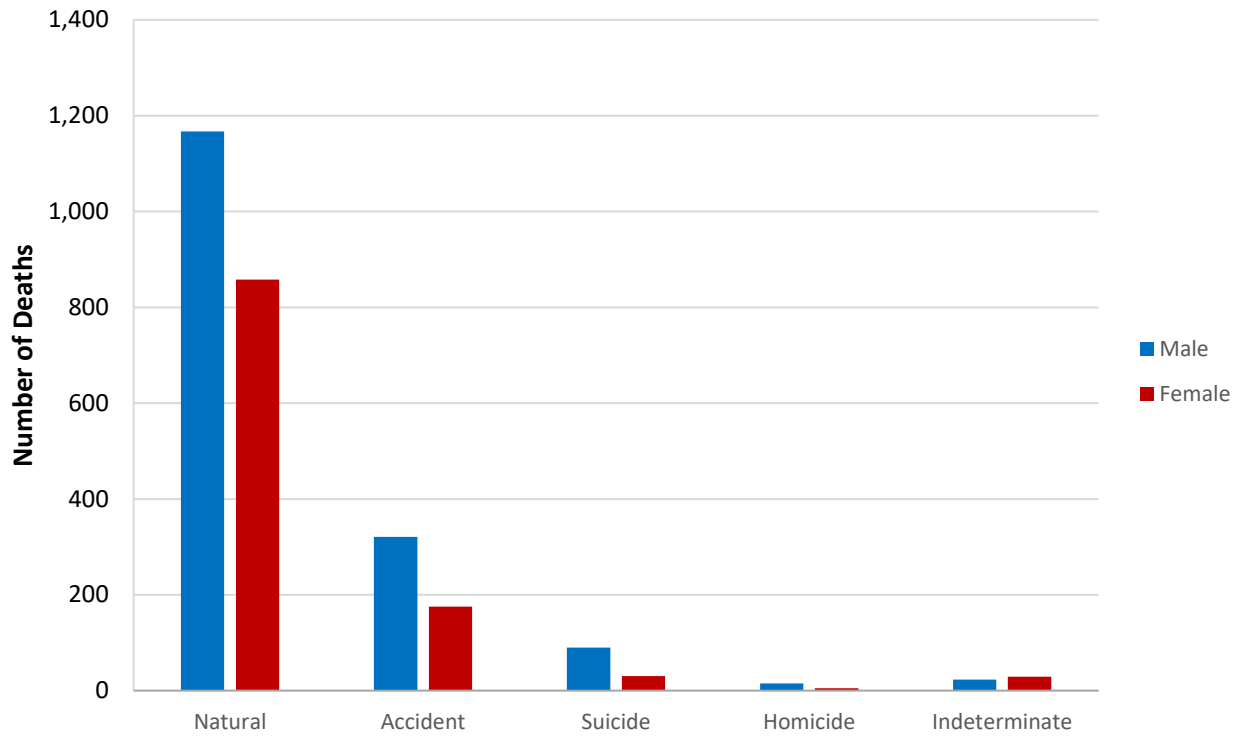
There were a total of 2,720 investigations performed in 2017; of these 1,616 (59.41%) were males, 1,097 (40.33%) were females, and 7 (0.26%) were unspecified (i.e., non-human bones, tissue, etc.).

Cases by Age and Gender, 2017



| Age Group | Male | Female | Bones | Total |
|---|--------------|--------------|----------|--------------|
| 0 – 19 Years | 14 | 12 | 0 | 26 |
| 20 Years and Older | 1,602 | 1,085 | 0 | 2,687 |
| Unspecified (non-human bones, tissue, etc.) | 0 | 0 | 7 | 7 |
| TOTAL | 1,616 | 1,097 | 7 | 2,720 |

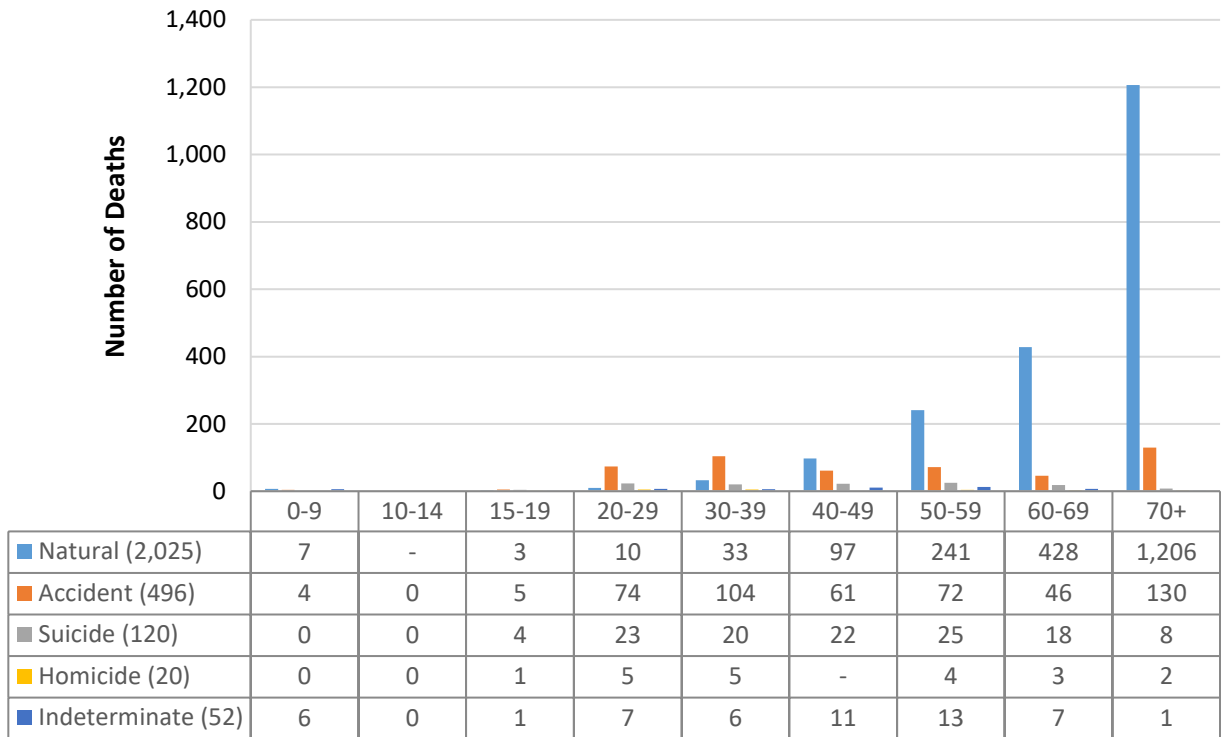
Cases by Manner of Death and Gender, 2017



⁴ From this point on, the graphs and tables will not include the 7 unspecified cases (bones/tissues) because they did not have a manner of death.

Cases by Manner of Death and Age

Cases by Manner of Death and Age, 2017



Cases by Race and Gender

| Race | Male | Female | Total |
|------------------|--------------|--------------|--------------|
| Hispanic | 7 | 3 | 10 |
| White | 1,439 | 974 | 2,413 |
| African American | 143 | 104 | 247 |
| American Indian | 2 | 1 | 3 |
| Asian Pacific | 14 | 8 | 22 |
| Multiracial | 4 | 3 | 7 |
| Other | 7 | 4 | 11 |
| TOTAL | 1,616 | 1,097 | 2,713 |

Manner of Death – Natural

Cases by Age and Gender

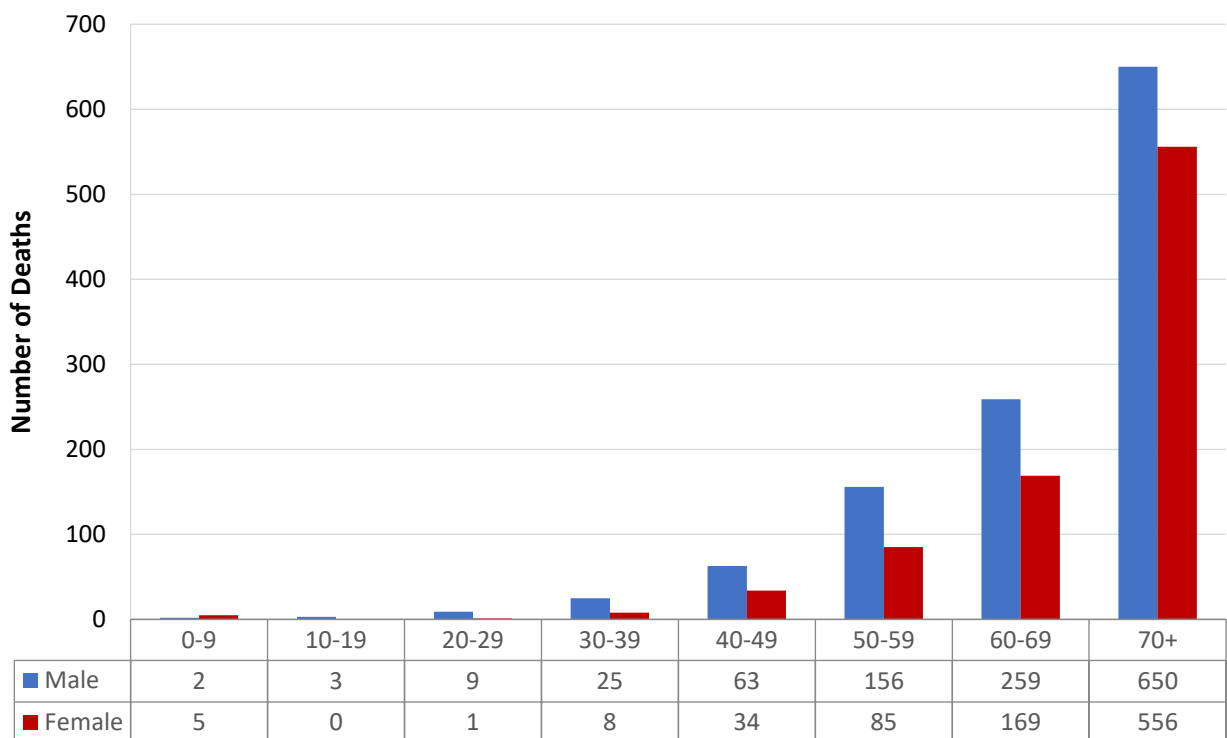
Natural deaths represented 74.45% (2,025/2,720) of all Medical Examiner cases.

Males accounted for 57.63% (1,167/2,025) of the natural deaths; females accounted for 42.37% (858/2,025) of the natural deaths.

The male 70+ age group accounted for 55.70% (650/1,167) of all male natural deaths, while the female 70+ age group accounted for 64.80% (556/858) of all female natural deaths.

The combined male/female 70+ age groups represented 59.56% (1,206/2,025) of the natural deaths.

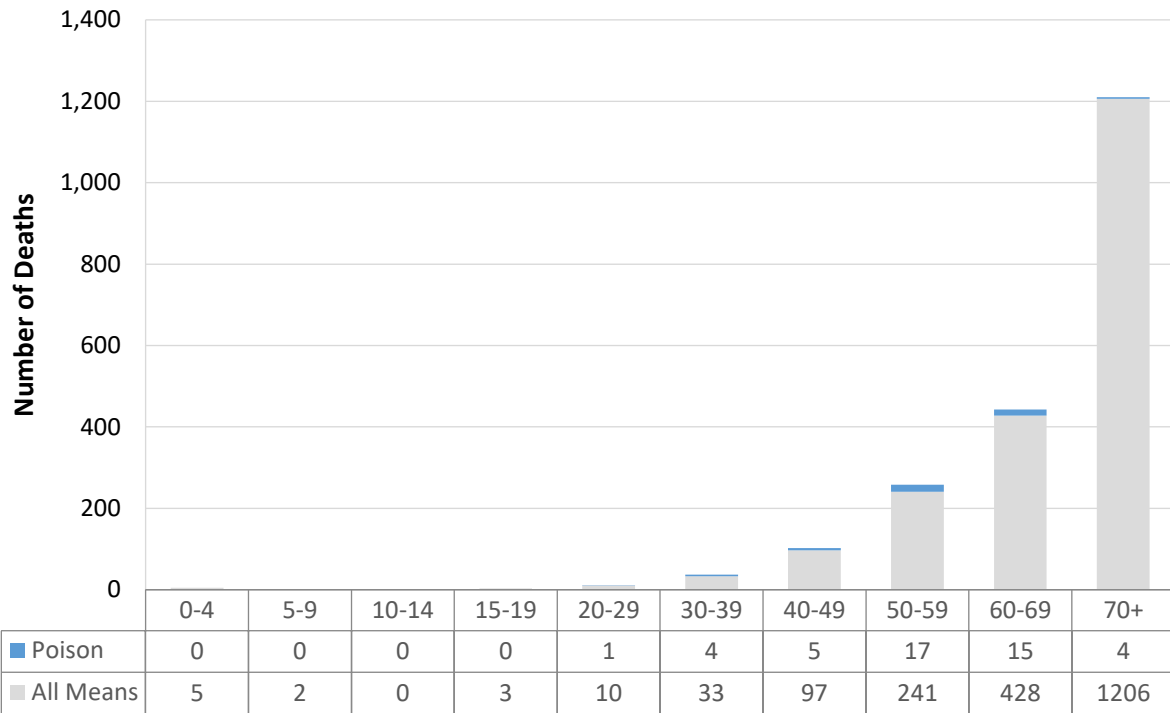
Number of Natural Deaths, by Age and Gender



| Age Group | Male | Female | Total | Percent |
|---------------------------|--------------|------------|--------------|----------------|
| 0-19 Years | 5 | 5 | 10 | 0.49% |
| 20 Years and Older | 1,162 | 853 | 2,015 | 99.51% |
| TOTAL | 1,167 | 858 | 2,025 | 100.00% |

Cases by Age and Means⁵

Number of Natural Deaths, by Age and Means



Cases by Race and Gender

| Race | Male | Female | Total |
|------------------|--------------|------------|--------------|
| Hispanic | 6 | 3 | 9 |
| White | 1,035 | 756 | 1,791 |
| African American | 104 | 85 | 189 |
| American Indian | 2 | 1 | 3 |
| Asian Pacific | 12 | 7 | 19 |
| Multiracial | 5 | 3 | 8 |
| Other | 3 | 3 | 6 |
| TOTAL | 1,167 | 858 | 2,025 |

⁵ Some deaths may have multiple Means of Death recorded, and some may have no Means recorded.

Manner of Death – Accident

Accidental deaths represented 18.24% (496/2,720) of all Medical Examiner cases.

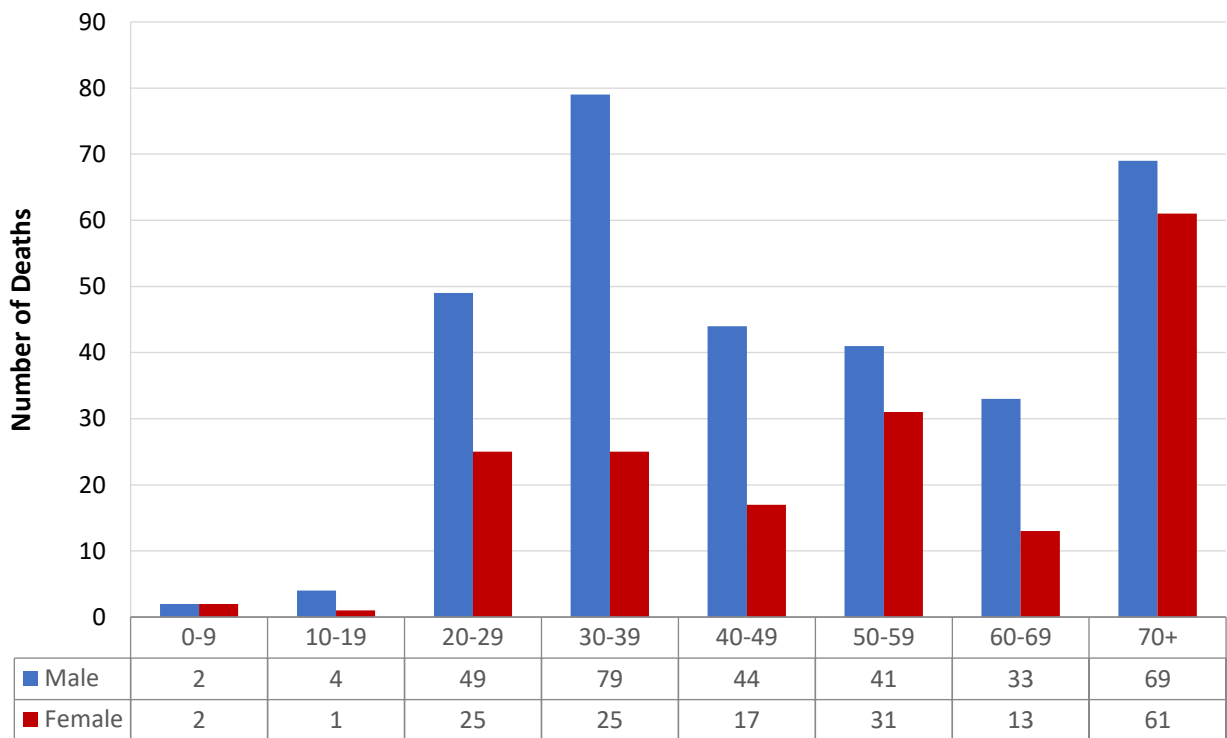
Males accounted for 64.73% (321/496) of the accidental deaths; females accounted for 35.28% (175/496) of the accidental deaths.

The male 70+ age group accounted for 21.50% (69/321) of all male accidental deaths, while the female 70+ age group accounted for 34.86% (61/175) of all female accidental deaths.

The combined male/female 70+ age groups represented 26.21% (130/496) of the accidental deaths.

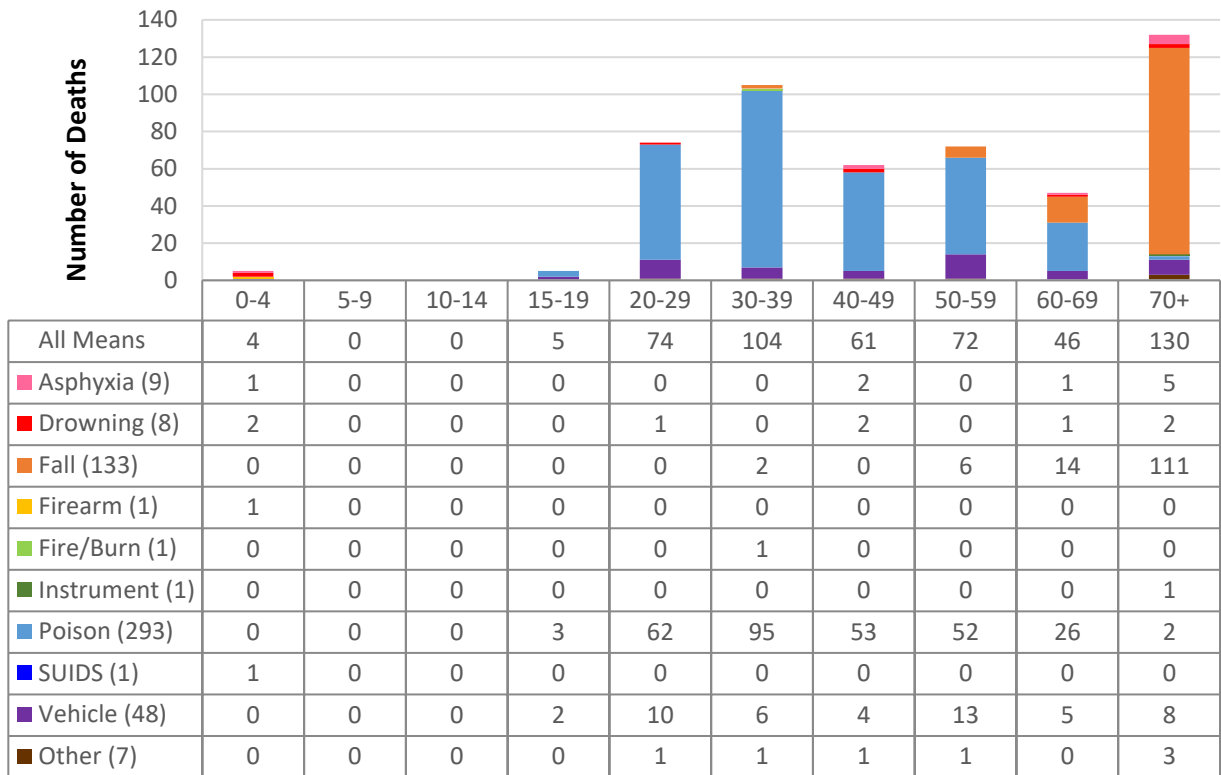
Cases by Age and Gender

Number of Accident Deaths, by Age and Gender



| Age Group | Male | Female | Total | Percent |
|---------------------------|------|--------|-------|---------|
| 0-19 Years | 6 | 3 | 9 | 1.81% |
| 20 Years and Older | 315 | 172 | 487 | 98.19% |
| TOTAL | 321 | 175 | 496 | 100.00% |

Number of Accident Deaths, by Age and Means



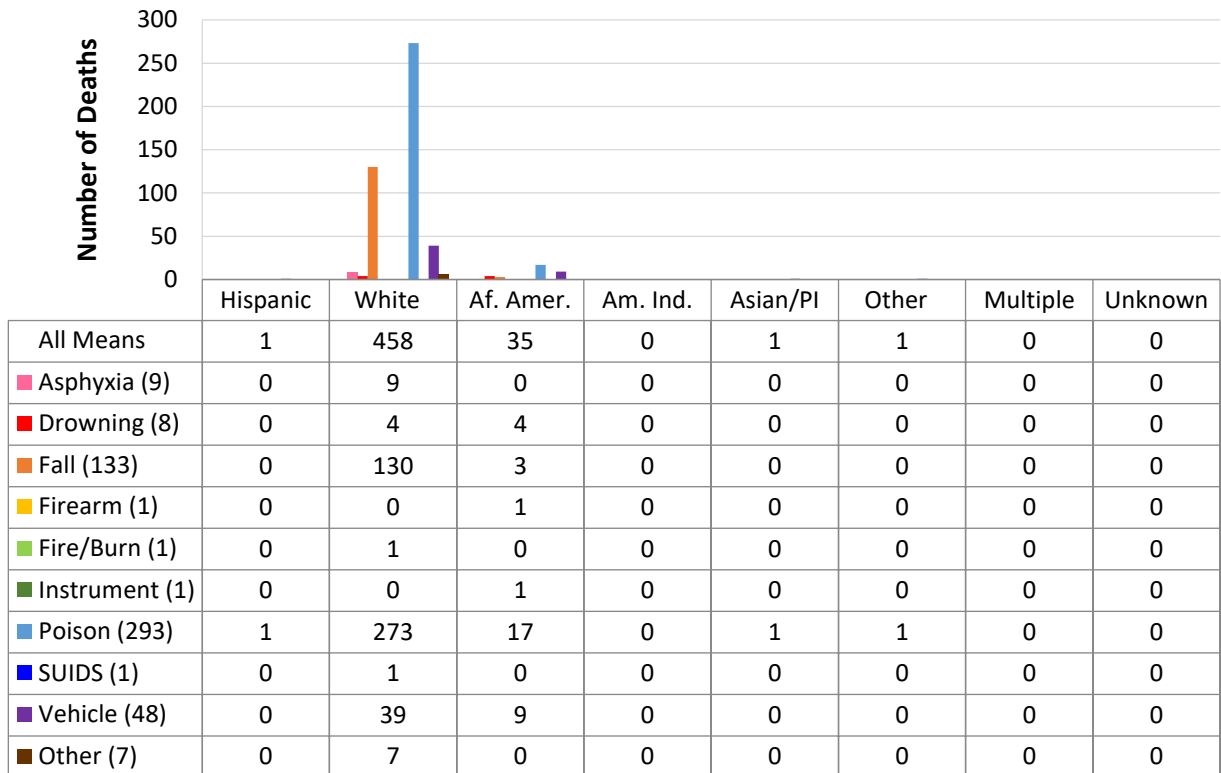
Accidental poisoning accounted for 59.07% (293/496) of all accidental death cases, with the 30-39 age group having the highest number of all accidental poisoning deaths (95).

Falls accounted for the second highest percentage of accidental deaths at 26.81% (133/496), with the majority of deaths occurring in the 70+ age group (111).

⁶ Some deaths may have multiple Means of Death recorded.

Cases by Race and Means⁷

Number of Accident Deaths, by Race and Means

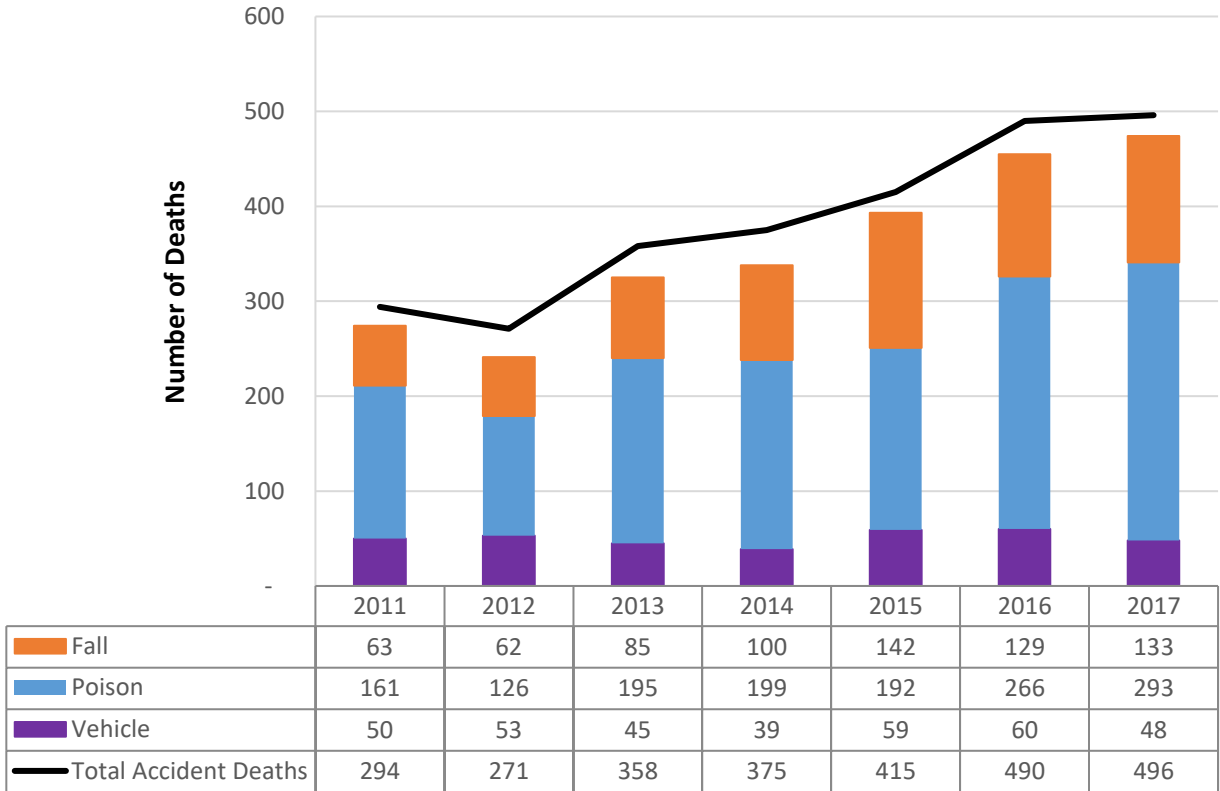


Cases by Race and Gender

| Race | Male | Female | Total |
|------------------|------------|------------|------------|
| Hispanic | 1 | 0 | 1 |
| White | 297 | 161 | 458 |
| African American | 21 | 14 | 35 |
| American Indian | 0 | 0 | 0 |
| Asian Pacific | 1 | 0 | 1 |
| Multiracial | 1 | 0 | 1 |
| Other | 0 | 0 | 0 |
| TOTAL | 321 | 175 | 496 |

⁷ Some deaths may have multiple Means of Death recorded.

Leading Causes of Accident Deaths, by Year



Between 2011 and 2017, there was a 111.11% increase in the number of accident deaths by falls, and a 4.00% decrease in the number of vehicular deaths. There was an 81.99% increase in the number of accident deaths by poison.

⁸ 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 4.41% (120/2,720) of all Medical Examiner cases.

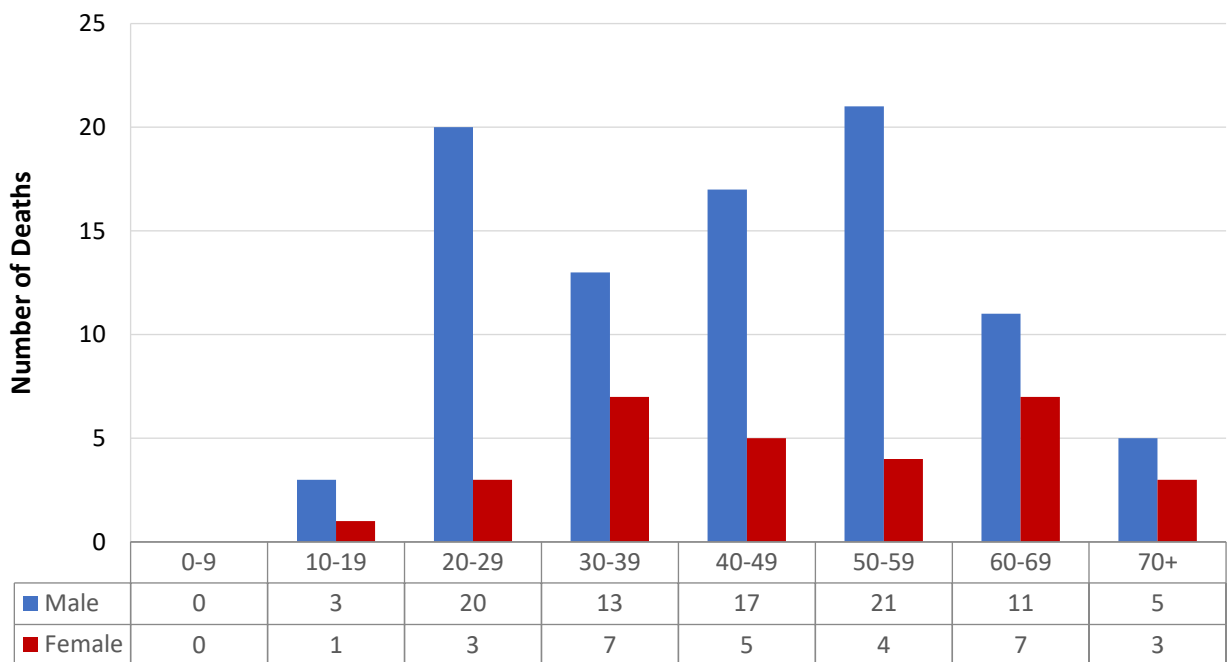
Males accounted for 75.00% (90/120) of the suicide deaths; females accounted for 25.00% (30/120) of the suicide deaths.

The male 50-59 age group accounted for 23.33% (21/90) of all male suicide deaths, while the female 50-59 age group accounted for 13.33% (4/30) of all female suicide deaths. The female 30-39 and 60-69 age groups both had the highest proportion (21.21%) of all female suicide deaths.

The combined male/female 50-59 age groups represented 20.83% (25/120) of the suicide deaths.

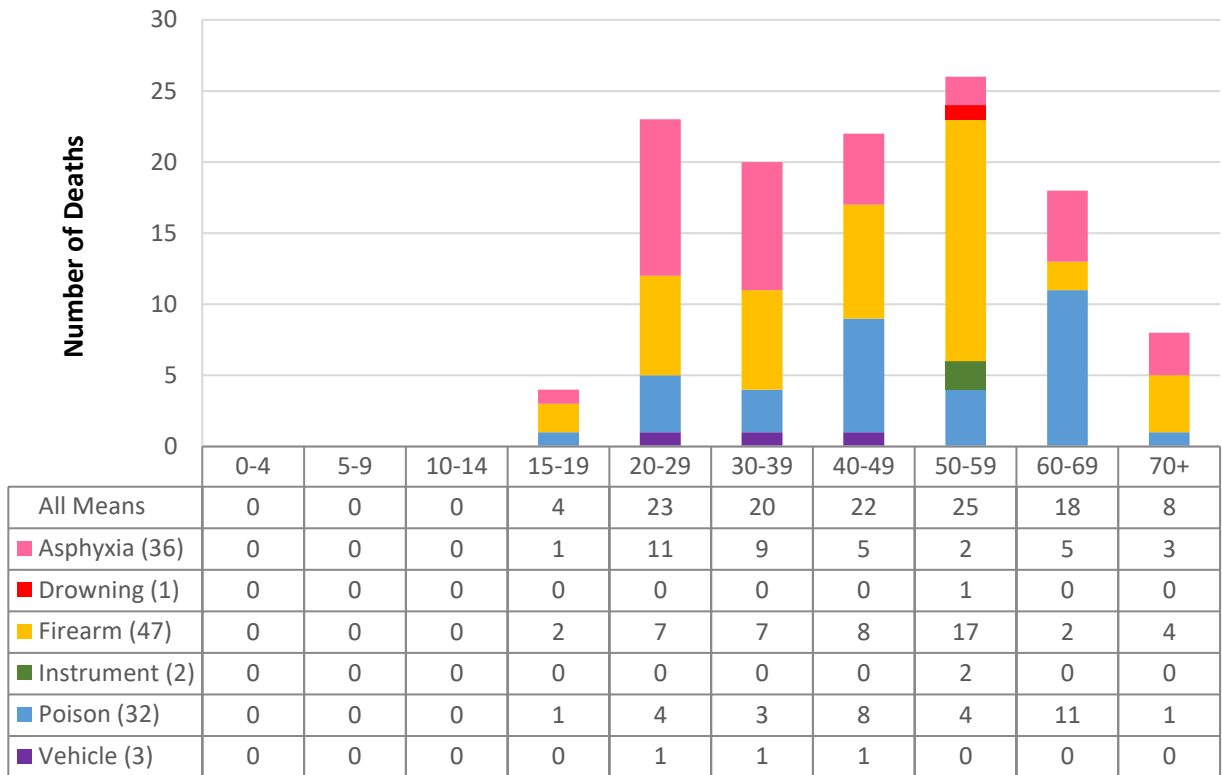
Cases by Age and Gender

Number of Suicide Deaths, by Age and Gender



| Age Group | Male | Female | Total | Percent | |
|---------------------------|------|--------|-------|---------|---------|
| 0-19 Years | | 3 | 1 | 4 | 3.33% |
| 20 Years and Older | | 87 | 29 | 116 | 96.67% |
| TOTAL | | 90 | 30 | 120 | 100.00% |

Number of Suicide Deaths, by Age and Means



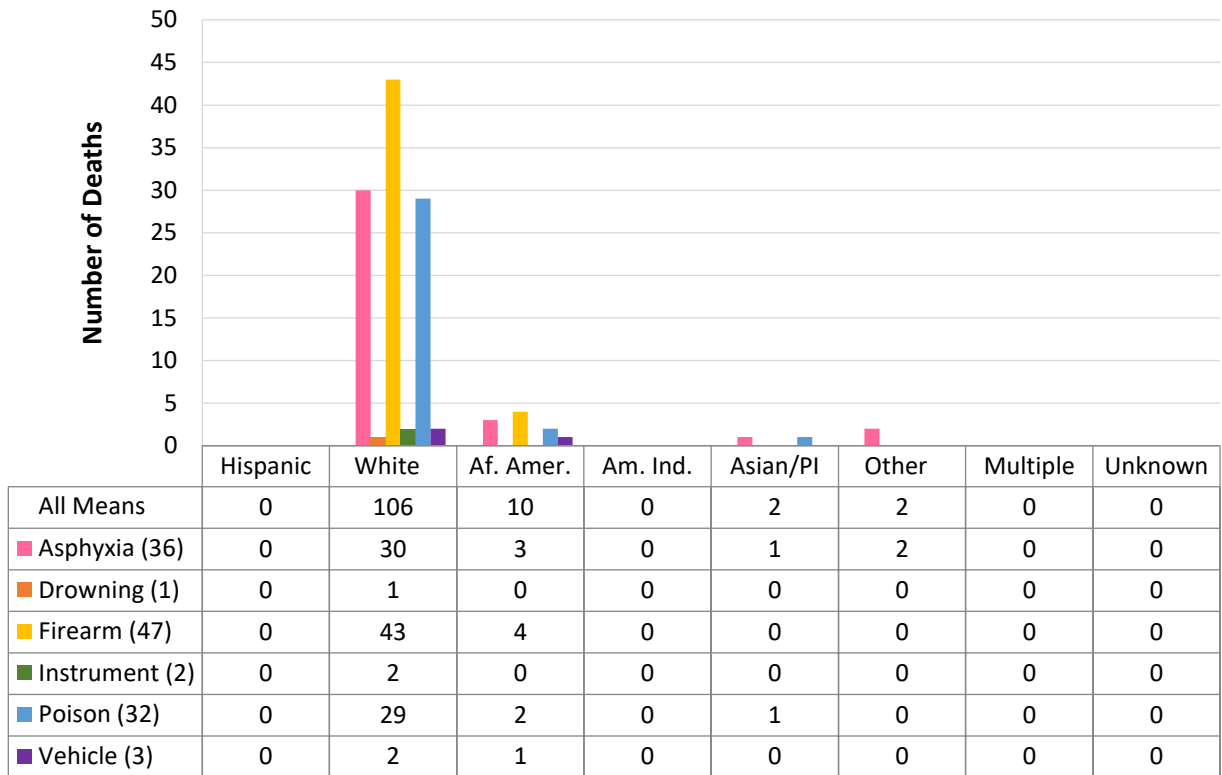
Firearm suicide cases accounted for 39.21% (47/120) of all suicide death cases, with the majority of deaths occurring in the 50-59 age group (17).

Asphyxia accounted for the second highest percentage of suicides at 30.00% (36/120), with the majority of deaths occurring in the 20-29 age group (11).

⁹ Some deaths may have multiple Means of Death recorded.

Cases by Race and Means¹⁰

Number of Suicide Deaths, by Race and Means

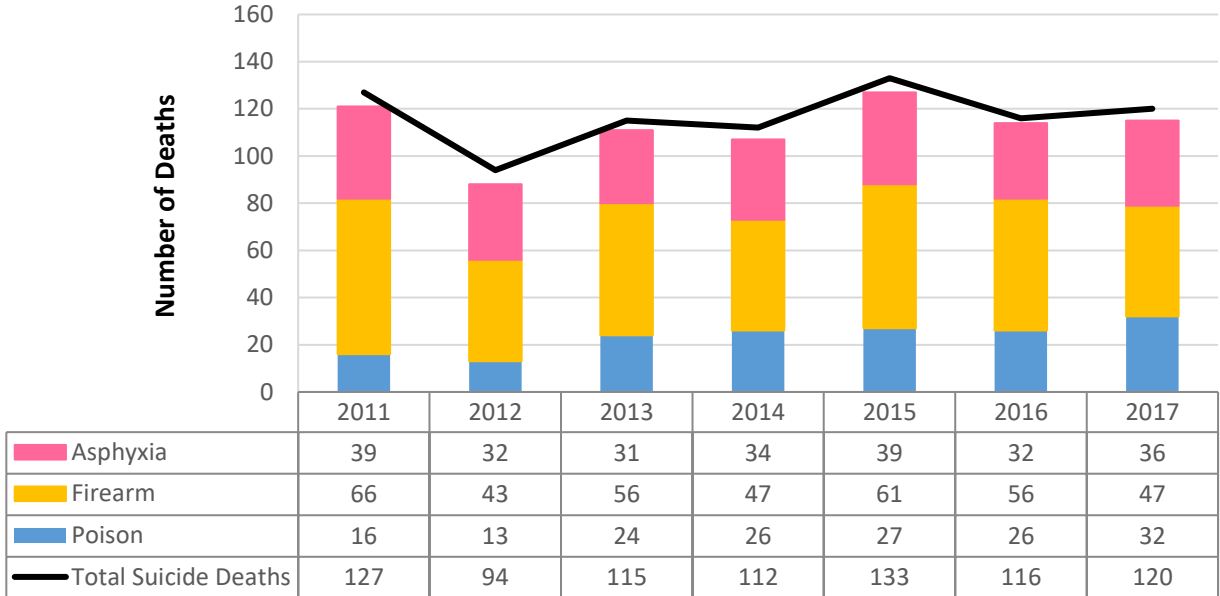


Cases by Race and Gender

| Race | Male | Female | Total |
|------------------|-----------|-----------|------------|
| Hispanic | 0 | 0 | 0 |
| White | 78 | 28 | 106 |
| African American | 10 | 0 | 10 |
| American Indian | 0 | 0 | 0 |
| Asian Pacific | 1 | 1 | 2 |
| Multiracial | 1 | 1 | 2 |
| Other | 0 | 0 | 0 |
| TOTAL | 90 | 30 | 120 |

¹⁰ Some deaths may have multiple Means of Death recorded.

Leading Causes of Suicide Deaths, by Year



Between 2011 and 2017, there was a 28.79% decrease in the number of suicide deaths by firearm, and a 7.69% decrease in the number of asphyxia deaths. There was a 100.00% increase in the number of suicide deaths by poison.

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

Manner of Death – Homicide

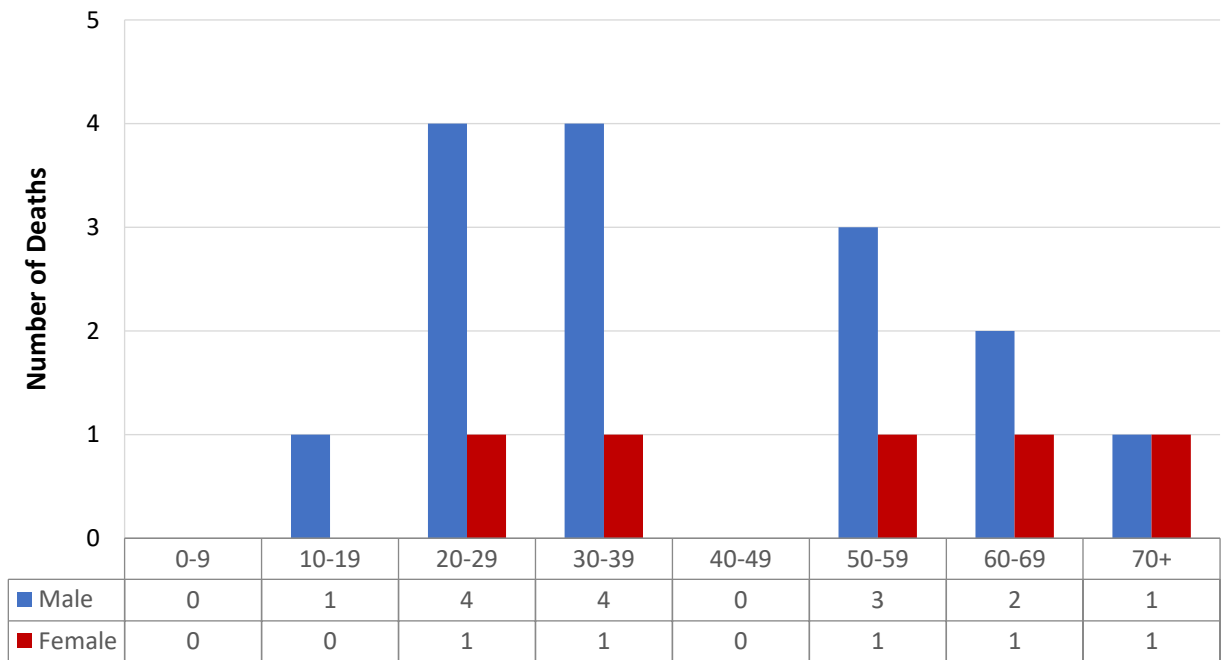
Homicide deaths represented 0.74% (20/2,720) of all Medical Examiner cases.

Males accounted for 75.00% (15/20) of the homicide deaths; females accounted for 25.00% (5/20) of the homicide deaths.

The male 20-29 and 30-39 age groups accounted each for 26.67% (4/15) of all male homicide deaths, while there was no predominant female age group.

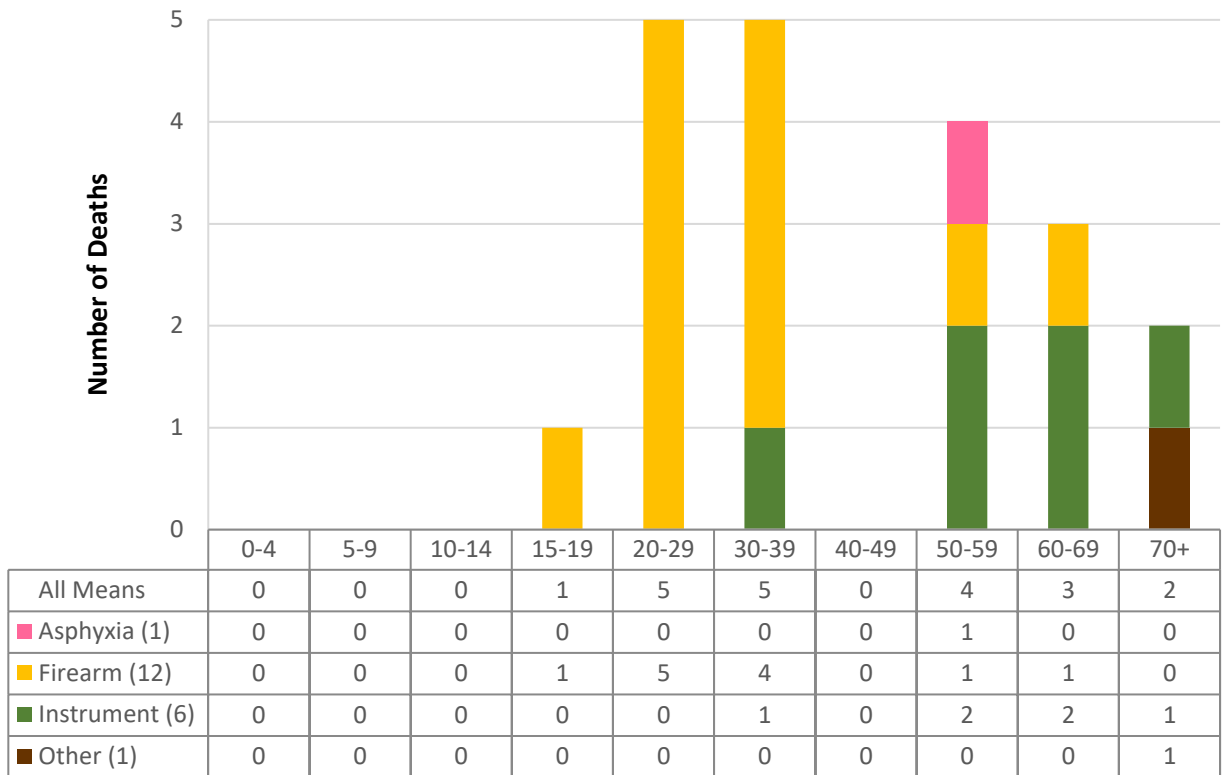
Cases by Age and Gender

Number of Homicide Deaths, by Age and Gender



| Age Group | Male | Female | Total | Percent |
|---------------------------|------|--------|-------|---------|
| 0-19 Years | 1 | 0 | 1 | 5.00% |
| 20 Years and Older | 14 | 5 | 19 | 95.00% |
| TOTAL | 15 | 5 | 20 | 100.00% |

Number of Homicide Deaths, by Age and Means



Homicide by firearm accounted for 60.00% (12/20) of all homicide death cases, with the majority of deaths occurring in the 20-29 age groups (5).

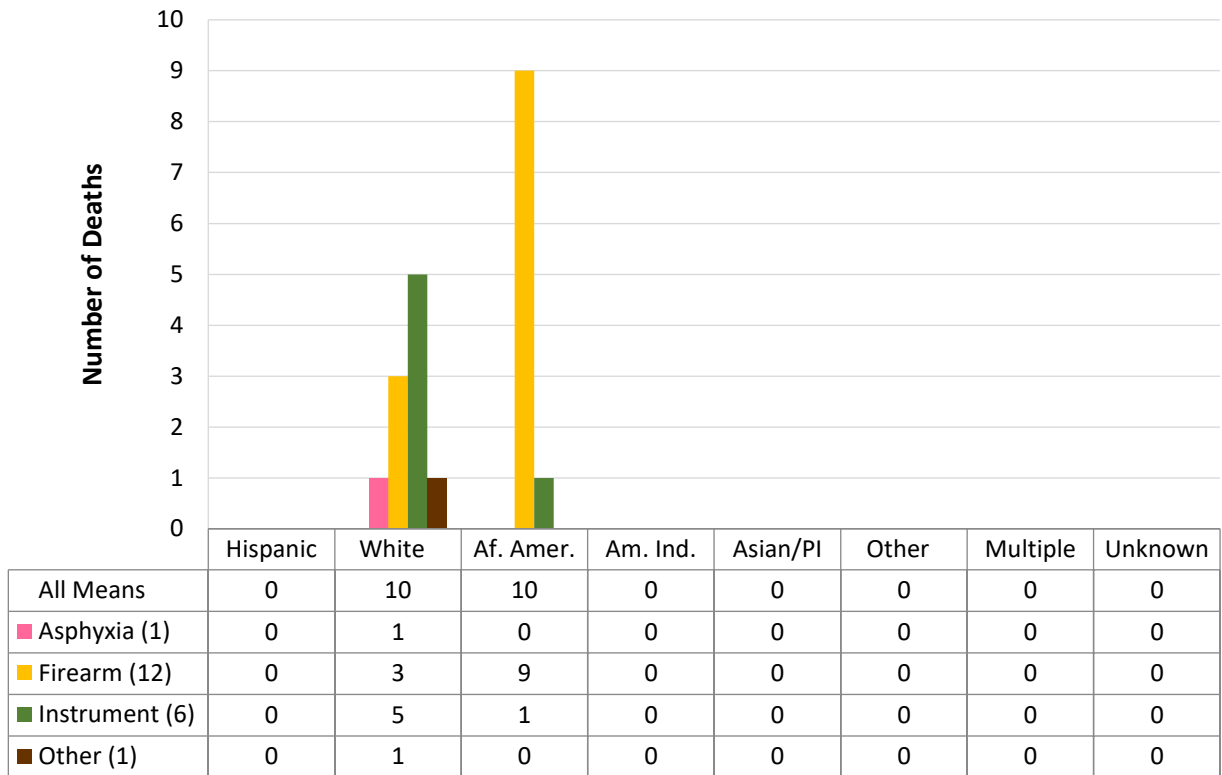
Instrument-related deaths accounted for the second highest percentage of homicides at 30.00% (6/20), with the majority of deaths occurring in both the 50-59 and 60-69 age groups (2).

¹² Some deaths may have multiple Means of Death recorded.

¹³ 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 and Means^{14,15}

Number of Homicide Deaths, by Race and Means



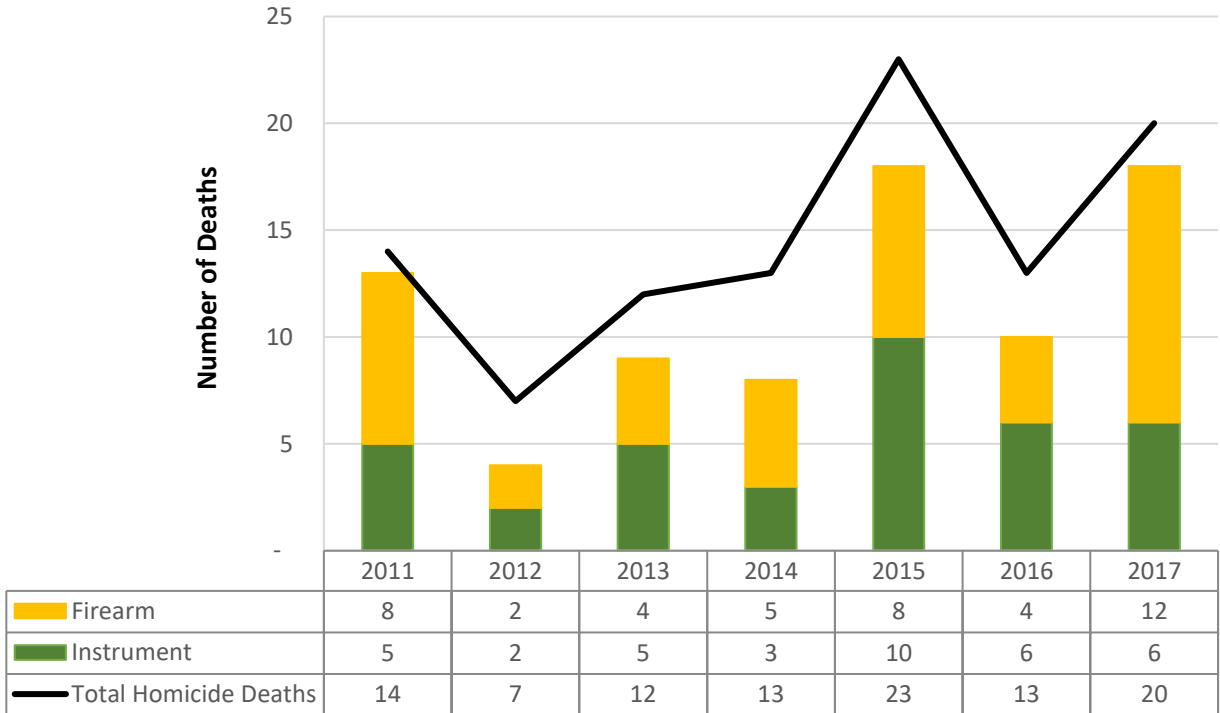
Cases by Race and Gender

| Race | Male | Female | Total |
|------------------|-----------|----------|-----------|
| Hispanic | 0 | 0 | 0 |
| White | 7 | 3 | 10 |
| African American | 8 | 2 | 10 |
| American Indian | 0 | 0 | 0 |
| Asian Pacific | 0 | 0 | 0 |
| Multiracial | 0 | 0 | 0 |
| Other | 0 | 0 | 0 |
| TOTAL | 15 | 5 | 20 |

¹⁴ Some deaths may have multiple Means of Death recorded.

¹⁵ 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.

Leading Causes of Homicide Deaths, by Year



Between 2011 and 2017, there was a 50.00% increase in the number of homicide deaths by firearm, and a 20.00% in the number of instrument deaths.

¹⁶ This graph highlights the top two 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.

¹⁷ 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

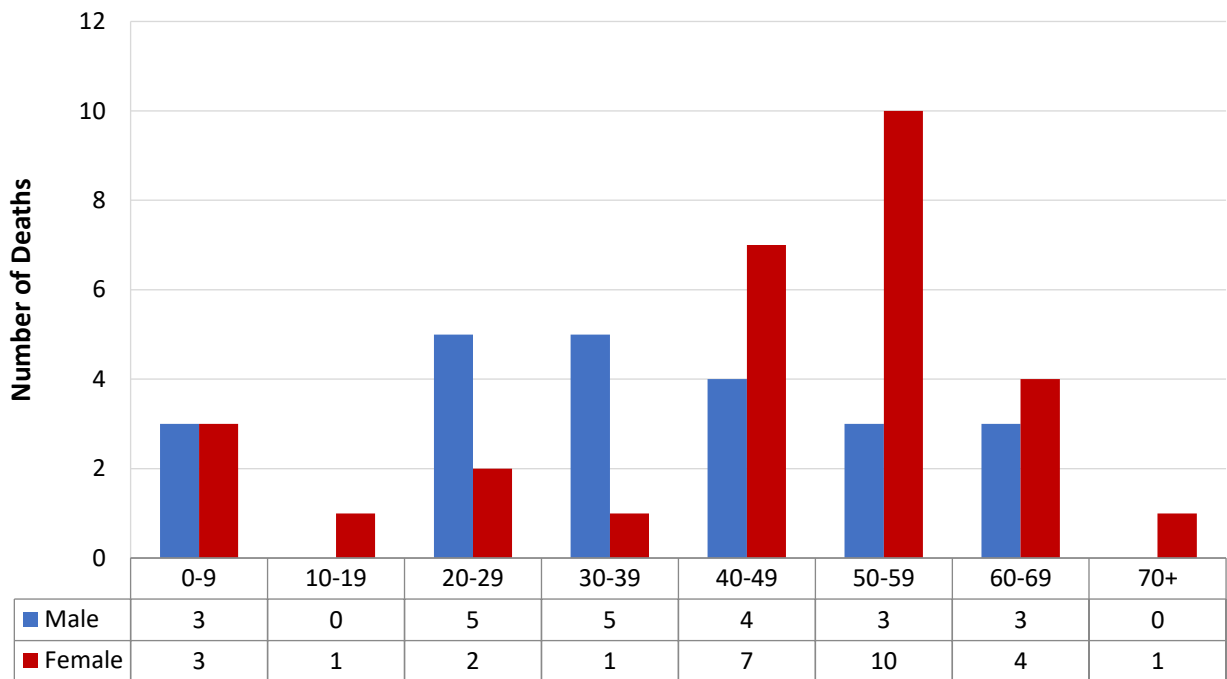
Indeterminate is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death. Indeterminate deaths represented 1.91% (52/2,720) of all Medical Examiner cases.

Males accounted for 44.23% (23/52) of the indeterminate deaths; females accounted for 55.77% (29/52) of the indeterminate deaths.

The male 20-29 and 30-39 age groups each accounted for 21.74% (5/23) of all male indeterminate deaths, while the female 50-59 age group accounted for 34.48% (10/29) of all female indeterminate deaths.

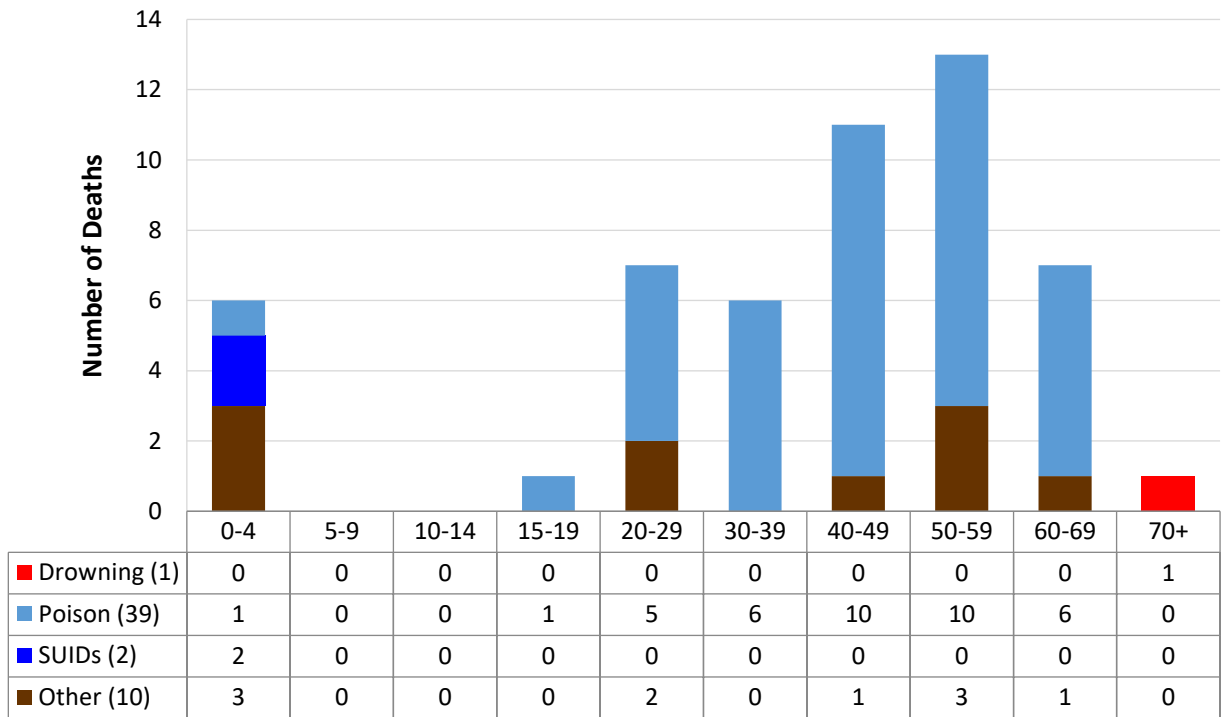
Cases by Age and Gender

**Number of Indeterminate Deaths,
by Age and Gender**



| Age Group | Male | Female | Total | Percent |
|---------------------------|-----------|-----------|-----------|----------------|
| 0-19 Years | 3 | 4 | 7 | 13.46% |
| 20 Years and Older | 20 | 25 | 45 | 86.54% |
| TOTAL | 23 | 29 | 52 | 100.00% |

Number of Indeterminate Deaths, by Age and Means

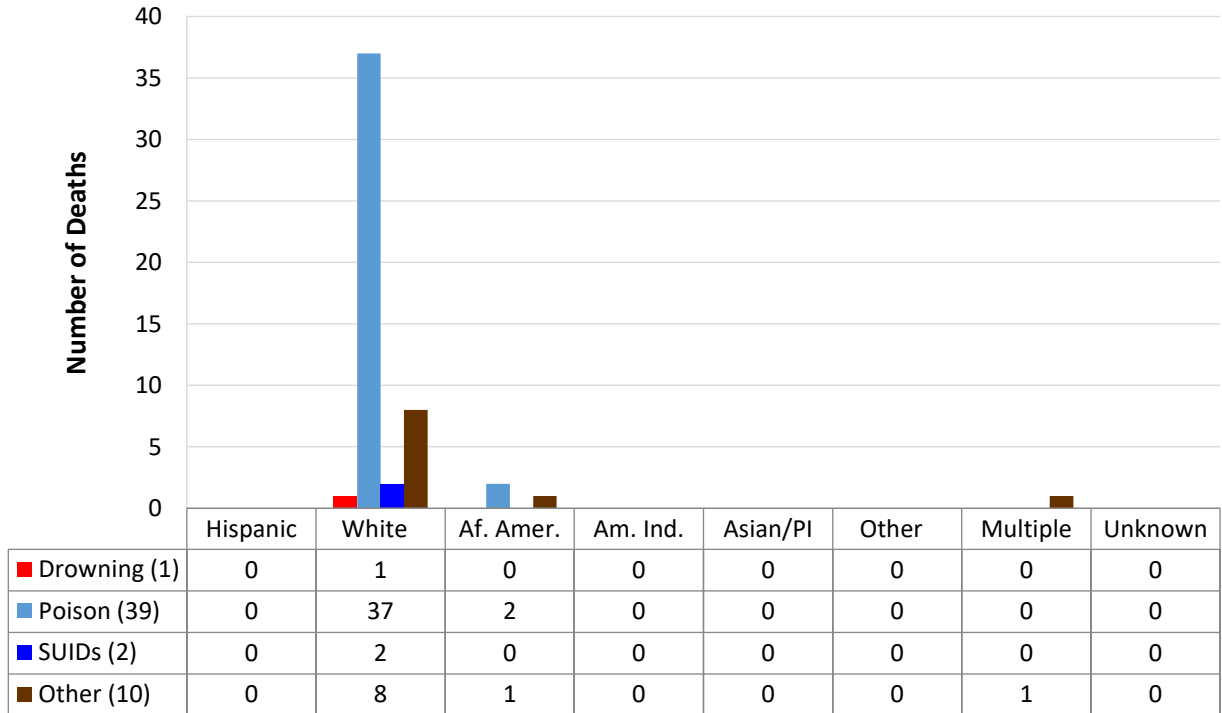


Poisoning cases accounted for 75.00% (39/52) of all indeterminate death cases, with the majority of deaths occurring in the 40-49 and 50-59 age groups (10 each).

Other (miscellaneous) means accounted for the second highest percentage of indeterminate cases at 19.2% (10/52).

¹⁸ Some deaths may have multiple Means of Death recorded.

Number of Indeterminate Deaths, by Race and Means



Cases by Race and Gender

| Race | Male | Female | Total |
|------------------|-----------|-----------|-----------|
| Hispanic | 0 | 0 | 0 |
| White | 22 | 26 | 48 |
| African American | 0 | 3 | 3 |
| American Indian | 0 | 0 | 0 |
| Asian Pacific | 0 | 0 | 0 |
| Multiracial | 0 | 0 | 0 |
| Other | 1 | 0 | 1 |
| TOTAL | 23 | 29 | 52 |

¹⁹ Some deaths may have multiple Means of Death recorded.

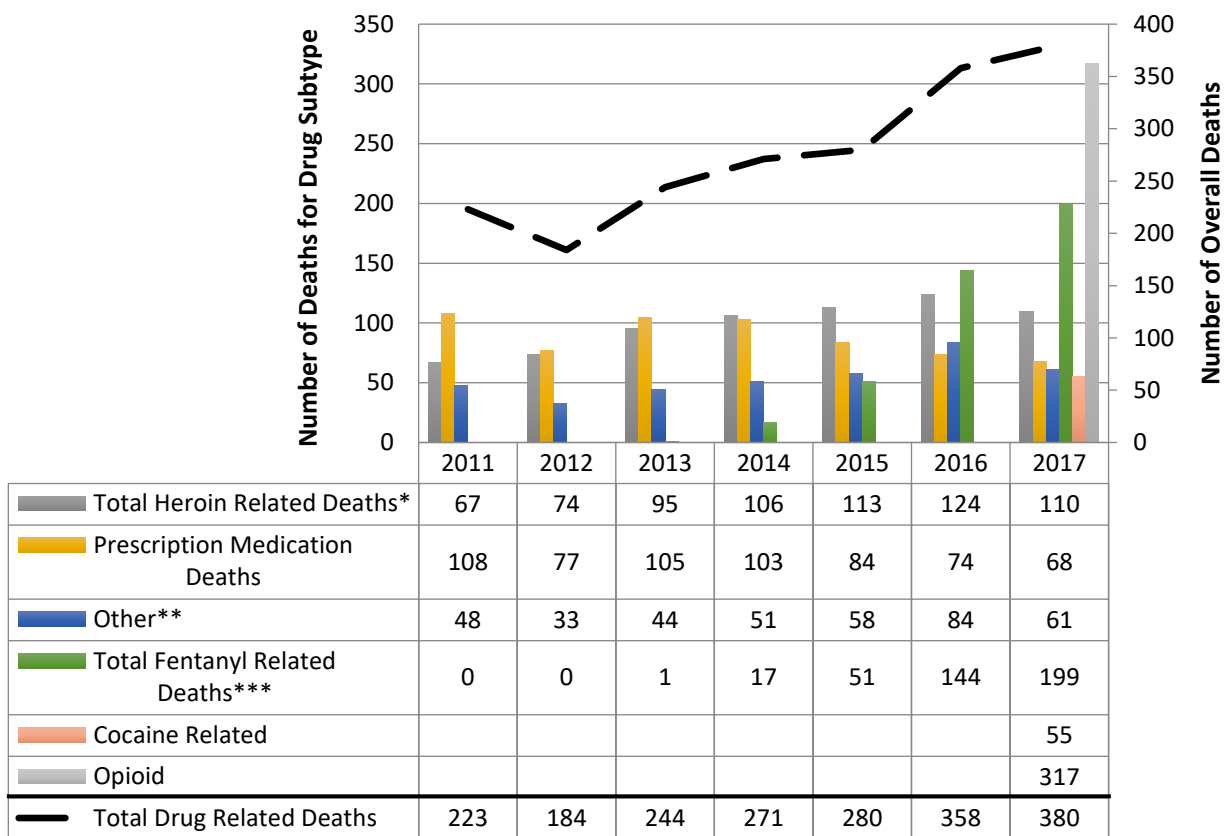
Drug-Related Deaths

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 2017, total drug-related deaths increased by 6.15%, compared to 2016. Heroin-related deaths decreased by 11.29%²⁰, whereas fentanyl deaths (including heroin) increased by 38.19%. Two new classifications were added this year due to rising numbers seen in the past year: opioid and cocaine-related. Please note that total drug deaths is not a sum of the drug classifications.

Drug-Related Deaths, 2011-2017



²⁰ * Total “heroin related deaths” are deaths due to either 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.

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