2021

Macomb County Medical Examiner Annual Report





Daniel J. Spitz, M.D. Chief Medical Examiner June 1, 2023

Table of Contents

Organization of the Medical Examiner's Office
Board Certification3
Accreditation3
Medical Examiner's Location4
Medical Examiner's Facility4
Mission Statement4
Laws Governing the Medical Examiner's Office4
2021 Budget4
Activities of the Medical Examiner's Office
Macomb County Demographics6
Census Summary Profile6
Overview of Cases for 20217
Forensic Examinations8
Cremation Permits9
Overview of Manner of Death10
Cases by Manner of Death10
Cases by Age and Sex12
Cases by Manner and Sex13
Cases by Manner of Death and Age14
Cases by Race/Ethnicity and Sex14
Manner of Death – Natural15
Cases by Age and Sex15
Cases by Age and Means16
Cases by Race/Ethnicity and Sex16
Manner of Death – Accident17
Cases by Age and Sex17
Cases by Age and Means18
Cases by Race/Ethnicity and Means 19
Cases by Race/Ethnicity and Sex19
Specific Means of Death by Year20
Manner of Death – Suicide21

Cases by Age and Sex21
Cases by Age and Means22
Cases by Race/Ethnicity and Means23
Cases by Race/Ethnicity and Sex24
Specific Means of Death by Year25
Manner of Death – Homicide26
Cases by Age and Sex26
Cases by Age and Means [,] 27
Cases by Race/Ethnicity and Means [,] 28
Cases by Race/Ethnicity and Sex28
Specific Means of Death by Year [,] 29
Manner of Death – Indeterminate
Cases by Age and Sex30
Cases by Age and Means31
Cases by Race/Ethnicity and Means32
Cases by Race/Ethnicity and Sex32
Drug-Related Deaths



MACOMB COUNTY HEALTH DEPARTMENT Medical Examiner's Office 43585 Elizabeth Road ◊ Mount Clemens, MI 48043 Phone: 586-469-5214 ◊ Fax: 586-469-6636 http://health.macombgov.org/Health-Home

Andrew Cox, MPH, REHS Director/Health Officer

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

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 2021 than in any previous year. The number of examinations in 2021 amounted to a total of 6,769 investigations. Forensic examinations increased 10.2% when compared to 2020, resulting in 754 examinations. Cremation permits issued decreased from 5,599 to 5,561 in 2021, a .7% decrease from 2020. Hospice deaths decreased 8% with a total of 2,488 cases.

In 2021 (compared to 2020) there was a 3.6% increase in the number of deaths due to natural causes, a 6.2% decrease in the total number of accidental deaths, and a 5.9% increase in the number of suicides.

Although drug-related deaths decreased in 2021, this continues to be a public health concern, especially drug-related deaths like heroin, fentanyl/fentanyl analogs, and opioids. Drug-related deaths decreased 26.3% (compared to 2020), with a total of 241 deaths. Since 2017 the number of heroin-only deaths decreased from 110 deaths to 14 deaths. Compared to 2020, heroin-related deaths decreased by 73%, fentanyl-related deaths decreased by 14.1%, and opioid-related deaths increased by 161.4%.

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 2021 Annual Report.

Respectfully Submitted,

And Co

Andrew Cox, MPH, REHS Director/Health Officer

ίtz. Μ.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.

Deputy Health Officer Krista Willette, R.N., M.S.A.

Medical Examiner's Office Chief Medical Examiner Daniel J. Spitz, M.D.

Public Health Services Manager Jacqueline Fontenot

Forensic Investigations Specialist Gretchen Terebesi, D-ABMDI

Forensic Investigator Erick Acre, D-ABMDI Kevin Boaz, D-ABMDI Kiara Brooks, D-ABMDI Jennifer Skridulis, D-ABMDI Kelly Burke Alan Gwyn

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

Epidemiologist Raina Padilla, M.P.H., C.I.C.

Deputy Medical Examiner Mary E. Pietrangelo, M.D.

Morque Specialist Jocelyn Fetting Jeff Novak Jacob Kettlewell

Office Assistant Senior **Denise Calhoun**



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.

2021 Budget

Revenues	Expenses
\$ 2,315,603	\$ 2,315,603

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 876,792 residents (2021 U.S. Census Estimate), an increase in population of 4% since 2011 (842,145).

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).

	2011 Estin	nate				
	842,145 Population		876,792 Population		Population Growth	Percent Change
White	711,399	84.50%	662,467	75.60%	-6.88%	-10.53%
Black or African American	76,300	9.10%	111,476	12.70%	46.10%	39.56%
American Indian & Alaska Native	3,154	0.40%	3,104	0.40%	-1.59%	0.00%
Asian	27,699	3.30%	41,235	4.70%	48.87%	42.42%
Native Hawaiian & Other Pacific Islander	57	0.00%	156	0.00%	173.68%	0.00%
Some other race	7,804	0.90%	9,297	1.10%	19.13%	22.22%
Two or more races	15,732	1.90%	49,057	5.60%	211.83%	194.74%
Hispanic or Latino	19,902	2.40%	25,813	2.90%	29.70%	20.83%

Census Summary Profile^{1 2}

¹ Source: U.S. Census Bureau, 2011 B020001, 2011 B03003, 2021 B02001, 2021 B03003. Estimates from the American Community Survey 1-Year Estimates.

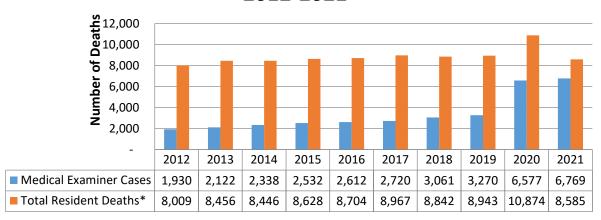
² Race and Ethnic groups are not mutually exclusive

Overview of Cases for 2021

Macomb County Population (2021 estimate)	876,792
Resident Deaths in Macomb County (estimate)	8,585
Macomb County Medical Examiner Cases	6,769
Forensic Examinations	754

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 2021, the Macomb County Medical Examiner's Office investigated 79% (6,769/8,585) 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.

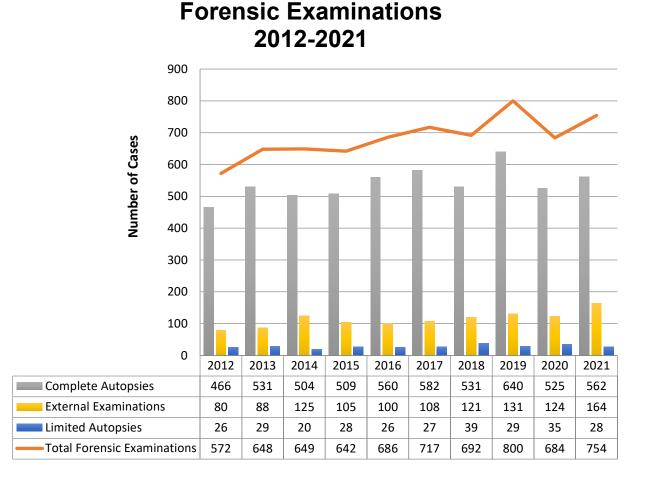


Medical Examiner Cases and Resident Deaths, 2012-2021

³ The number of total 2021 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

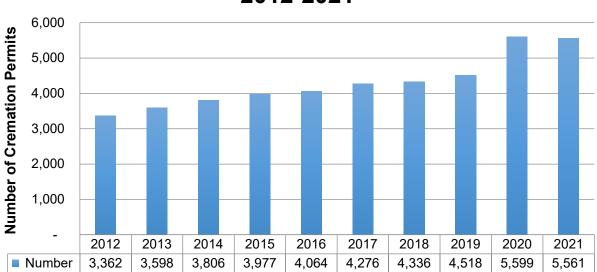
The total number of forensic examinations includes complete autopsies, limited autopsies, and external examinations. In 2021, the Medical Examiner's Office investigated 6,769 deaths, of which 754 were brought to the office for a forensic examination by a forensic pathologist. Of the 754 forensic examinations, 562 were complete autopsies, 164 were external examinations, and 28 were limited autopsies. There were 688 toxicology assessments performed.



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 2021 showed a less than 1% decrease from 2020.



Cremation Permit Authorizations by Year, 2012-2021

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:

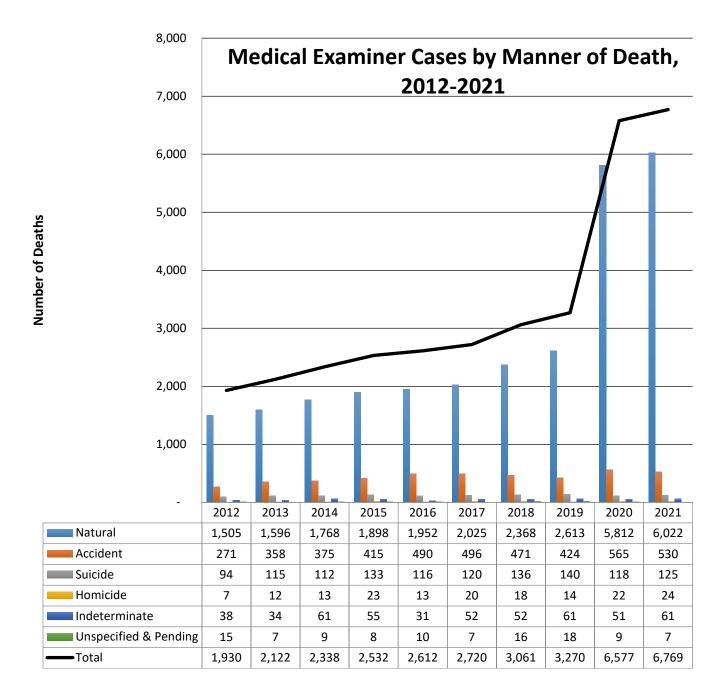
- Natural deaths are due solely to disease and/or the aging process.
- Accident applies when an injury or poisoning causes death and there is no evidence that injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.
- **Suicide** results from an 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.

Manner of Death	Number	Percent
Natural	6,022	88.9%
Accident	530	7.8%
Suicide	125	1.9%
Homicide	24	0.4%
Indeterminate	61	0.9%
Pending	0	0.0%
Unspecified (non-human bones, tissue, etc.) ⁵	7	0.1%
Total	6,769	100.0%

Cases by Manner of Death

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

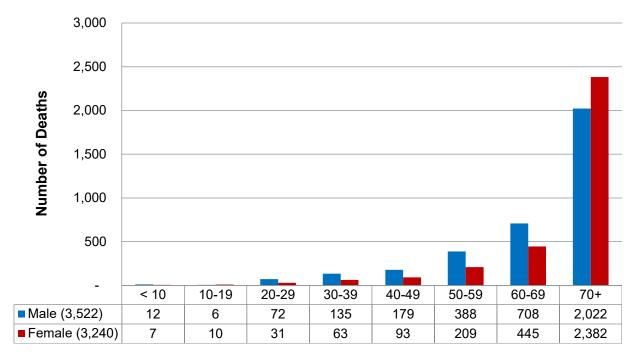
⁵ Unspecified may include non-human bones and tissues, or cases where a manner of death was not recorded.



2021 Annual Report

Cases by Age and Sex

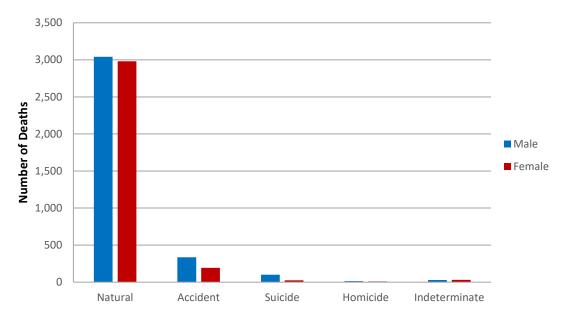
There was a total of 6,769 investigations performed in 2021; of these 3,522 (52.0%) were males, 3,240 (48%) were females, and 7 (0.1%) were categorized as other (non-human bones and tissue, other sex, or unreported sex).



Medical Examiner Deaths by Age and Gender, 2021

Age Group	Male	Female	Other Sex	Non-Human Bones/Tissues	Unreported Sex	Total
0 - 18 Years	18	17	0	0	0	35
19 Years and Older	3,504	3,223	0	0	0	6,727
Unreported Age	0	0	7	0	0	7
Total	3,522	3,240	7	0	0	6,769

Cases by Manner and Sex⁶

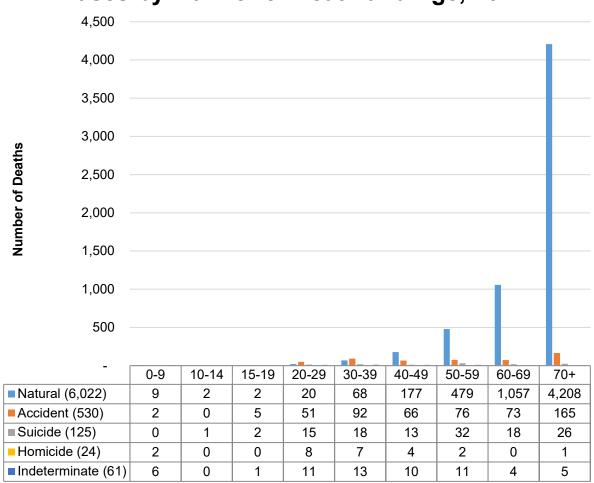


Cases by Manner of Death and Sex, 2021

Manner of Death	Male	Female	Other (Sex)	Non- Human Bones	Unreported (Sex)	Total	Percent of Total
Natural	3,042	2,980	0	0	0	6,022	88.96%
Accident	337	193	0	0	0	530	7.83%
Suicide	100	25	0	0	0	125	1.85%
Homicide	14	10	0	0	0	24	0.35%
Indeterminate	29	32	0	0	0	61	0.90%
Pending	0	0	0	0	0	0	-
Unspecified	0	0	7	0	0	7	0.10%
Total	3,522	3,240	7	0	0	6,769	100.0%

⁶ From this point on, the graphs and tables will not include the 7 unspecified and pending cases because they did not have a manner of death

Cases by Manner of Death and Age



Cases by Manner of Death and Age, 2021

Cases by Race/Ethnicity and Sex

Race	Male	Female	Other	Total
Hispanic	5	0	0	5
White	3,118	2,895	0	6,013
African American	334	297	0	631
American Indian	0	0	0	0
Asian Pacific	0	0	0	0
Other	16	14	0	30
Multiracial	0	0	0	0
Unknown	0	0	0	0
Unreported	49	34	7	90
Total	3,522	3,240	7	6,769

Manner of Death - Natural

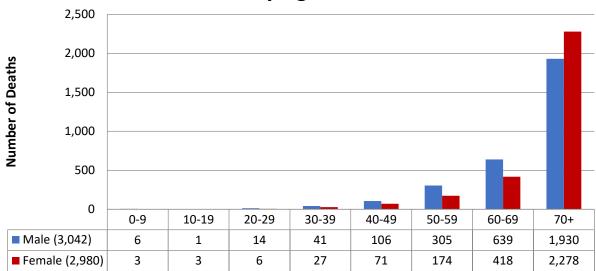
Cases by Age and Sex

Natural deaths represented 88.9% (6,022/6,769) of all medical examiner cases.

Males accounted for 50.5% (3,042/6,022) of the natural deaths; females accounted for 49.5% (2,980/6,022) of the natural deaths.

The male 70+ age group accounted for 63.5 % (1,930/3,042) of all male natural deaths, while the female 70+ age group accounted for 76.4% (2,278/2,980) of all female natural deaths.

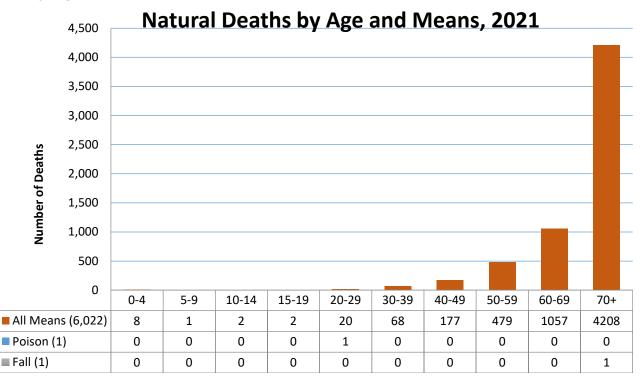
The combined male/female 70+ age groups represented 69.8% (4,208 /6,022) of the natural deaths.



Natural Deaths by Age and Gender, 2021

Age Group	Male	Female	Total	Percent
0-19 Years	7	6	13	0.22%
20 Years and Older	3,035	2,974	6,009	99.78%
Unknown	0	0	0	0.00%
Total	3,042	2,980	6,022	100.00%

Cases by Age and Means⁷



Cases by Race/Ethnicity and Sex

	Male	Female	Total
Hispanic	5	0	5
White	2,703	2,667	5,370
African American	272	268	540
American Indian	0	0	0
Asian/PI	0	0	0
Other	16	13	29
Multiple	0	0	0
Unknown	0	0	0
Unreported	46	32	0
Total	3,042	2,980	6,022

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

Manner of Death - Accident

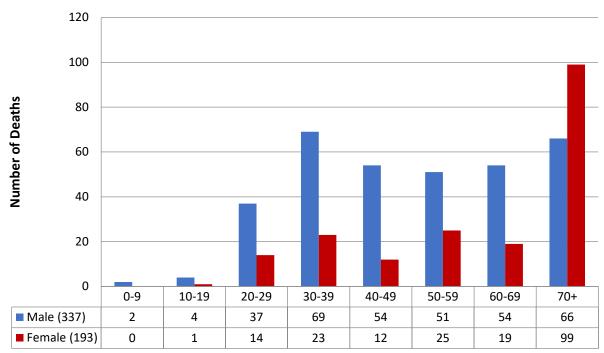
Accidental deaths represented 7.8% (530/6,769) of all medical examiner cases.

Males accounted for 63.6% (337/530) of the accidental deaths; females accounted for 36.4% (193/530) of the accidental deaths.

The female 70+ age group accounted for 51.3% (99/193) of all female accidental deaths, while the male 70+ age group accounted for 19.6% (66/337) of all male accidental deaths.

The combined male/female 70+ age groups represented 31.1% (165/530) of the accidental deaths.

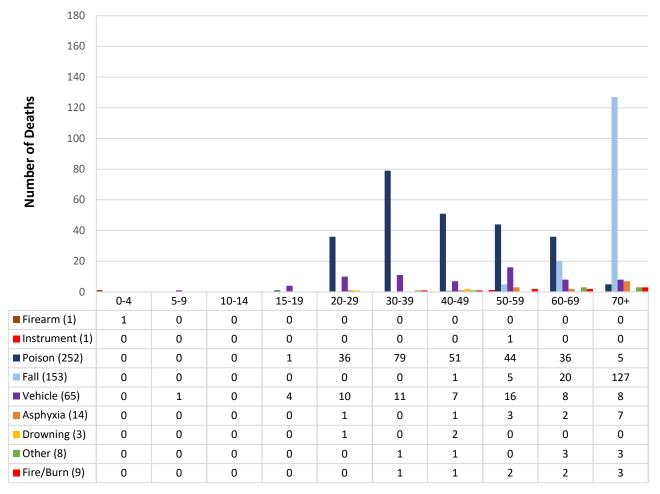
Cases by Age and Sex



Accident Deaths by Age and Sex, 2021

Age Group	Male	Female	Total	Percent
0-19 Years	6	1	7	1.32%
20 Years and Older	331	192	523	98.68%
Total	337	193	530	100.00%

Cases by Age and Means⁸



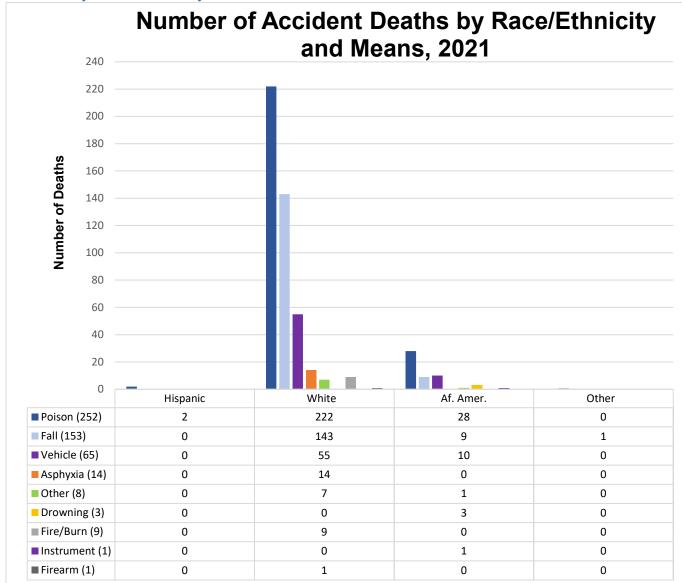
Number of Accident Deaths by Age and Means, 2021

Accidental poisoning accounted for 47.5% (252/530) of all accidental death cases, with the 30-39 age group having the highest number of all accidental poisoning deaths (79).

Falls accounted for the second highest percentage of accidental deaths at 28.8% (153/530), with the majority of deaths occurring in the 70+ age group (127).

⁸ Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means⁹

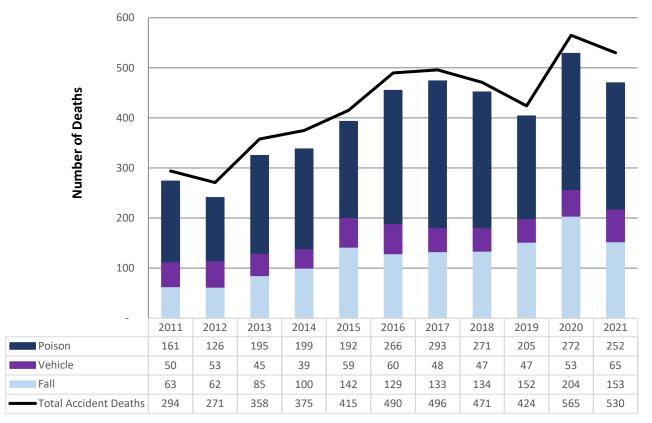


Cases by Race/Ethnicity and Sex

	Male	Female	Total
Hispanic	1	1	2
White	296	175	471
African American	40	16	56
Other	0	1	1
Total	337	193	530

⁹ Some deaths may have multiple Means of Death recorded.

Specific Means of Death by Year¹⁰



Leading Causes of Accident Deaths by Year, 2011-2021

Between 2011 and 2021, there was a 143% increase in the number of accident deaths by falls, a 30% increase in the number of vehicular deaths, and a 56.5% increase in the number of accident deaths by poison. There was a 6.2% decrease in total accident deaths compared to 2020.

¹⁰ 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.

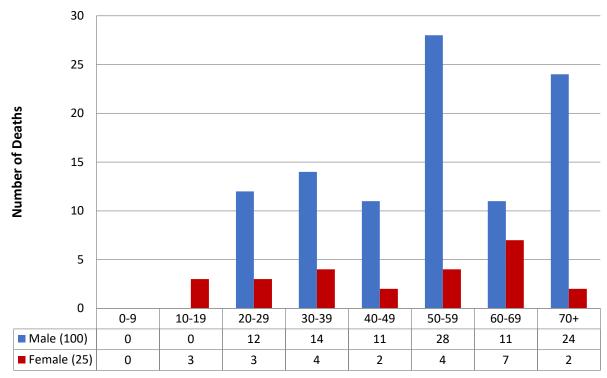
Manner of Death - Suicide

Suicide deaths represented 1.85% (125/6,769) of all medical examiner cases.

Males accounted for 80% (100/125) of the suicide deaths; females accounted for 20% (25/125) of the suicide deaths.

The male 50+ age group accounted for 63% (63/100) of all male suicide deaths, while the female 50+ age group accounted for 52% (13/25) of all female suicide deaths. The male 50-59 age group had the highest proportion of all male suicide deaths (28/125, 22.4%)

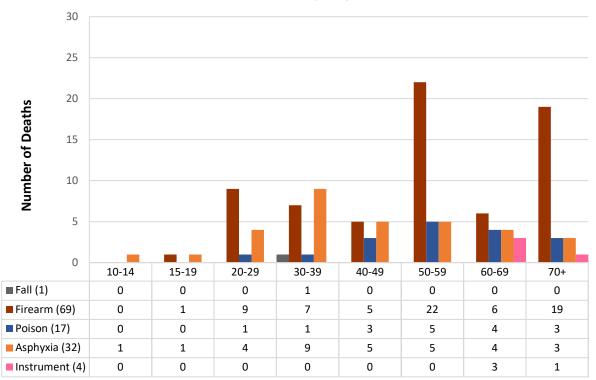
Cases by Age and Sex



Suicide Deaths by Age and Sex, 2021

Age Group	Male	Female	Total	Percent
0-19 Years	0	3	3	2.40%
20 Years and Older	100	22	122	97.60%
Total	100	25	125	100.00%

Cases by Age and Means^{11,}



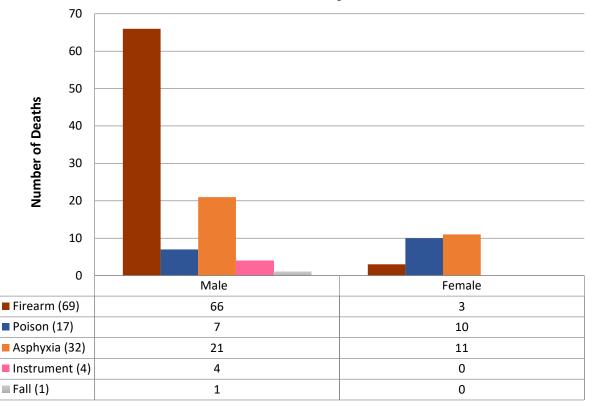
Number of Suicide Deaths by Age and Means, 2021

Firearm suicide cases accounted for 55.2% (69/125) of all suicide death cases, with the majority of deaths occurring in the 50-59 age group (22).

Asphyxia (35/125, 25.6%) and poison (17/125, 13.6%) and accounted for the second and third highest percentages of suicides.

¹¹ Some deaths may have multiple Means of Death recorded.

Cases by Sex and Means¹²



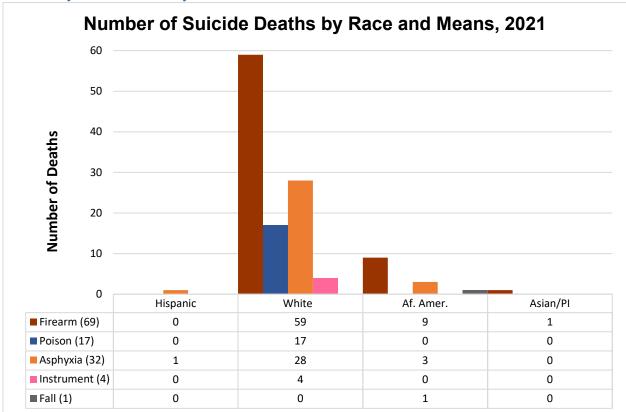
Number of Suicide Deaths by Sex and Means, 2021

Suicide by firearm accounted for the greatest percentage of suicide deaths in males at 66% (66/100) while suicide by asphyxia accounted for the second greatest percentage of suicide deaths in males at 21% (21/100).

Suicide by asphyxia accounted for the greatest percentage of suicide deaths in females at 44% (11/25) while suicide by poison accounted for the second greatest percentage of suicide deaths in females at 40% (10/25).

¹² Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means^{13,14}



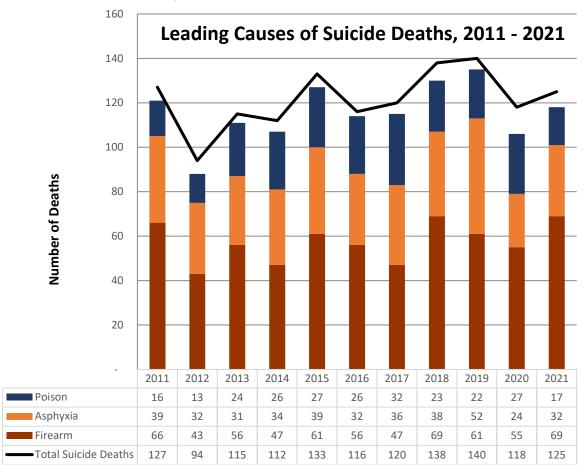
Cases by Race/Ethnicity and Sex

	Male	Female	Sum
Hispanic	1	0	1
White	88	22	110
African American	10	3	13
American Indian	0	0	0
Asian/PI	1	0	1
Total	100	25	125

¹³ Some deaths may have multiple Means of Death recorded.

¹⁴ American Indian and Other race categories did not have a means of suicide recorded and were excluded from the chart.

Specific Means of Death by Year¹⁵



Between 2011 and 2021, there was a 4.5% increase in the number of suicide deaths by firearm, a 6.25% increase by poison, and a 17.95% decrease in the number of asphyxia deaths. Overall, there was a 1.57% decrease in death by suicide since 2011. However, there was a 5.93% increase in death by suicide compared to 2020.

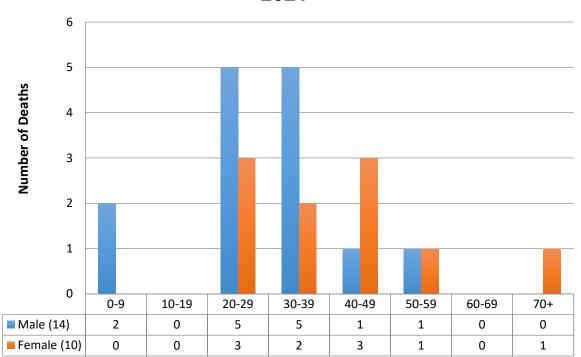
¹⁵ This graph highlights the top three predominant means of death within the suicide classification. The black line shows the total number of deaths by suicide. There are other means of death not shown in this graph.

Manner of Death – Homicide

Homicide deaths represented 0.35% (24/6,769) of all medical examiner cases.

Males accounted for 58.3% of homicide deaths (14/24) and females accounted for 41.7% (10/24).

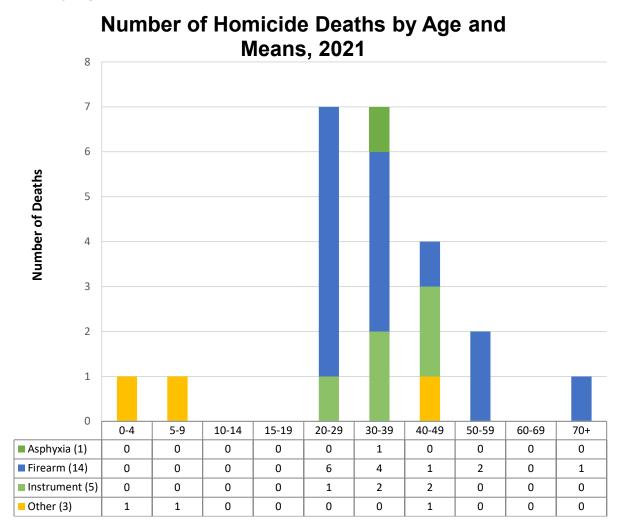
Cases by Age and Sex



Number of Homicide Deaths by Age and Sex, 2021

Age Group	Male	Female	Total	Percent
0-19 Years	2	0	2	8.33%
20 Years and Older	12	10	22	91.67%
Total	14	10	24	100.00%

Cases by Age and Means^{16,17}



Homicide by firearm accounted for 58.3% (14/24) of all homicide death cases, with the majority of deaths occurring in the 20-29 age group (8).

Death by instrument accounted for the second highest percentage of homicides at 20.8% (5/24).

¹⁶ Some deaths may have multiple Means of Death recorded.

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.

Cases by Race/Ethnicity and Means^{18, 19, 20}



Number of Homicide Deaths by Race/Ethnicity and Means, 2021

Cases by Race/Ethnicity and Sex

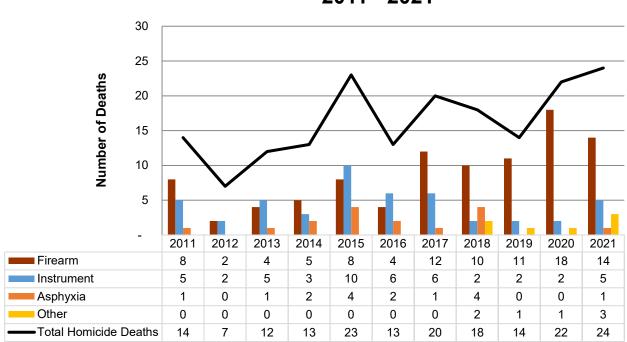
	Male	Female	Total
White	5	6	11
African American	9	4	13
Total	14	10	24

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.

²⁰ There were no deaths by homicide recorded for American Indian, Asian/Pacific, and Multiracial, therefore they were not included in this chart.

Specific Means of Death by Year^{21,22}



Leading Causes of Homicide Deaths by Year, 2011 - 2021

Between 2011 and 2021, there was a 75% increase in the number of homicide deaths by firearm. There was a 9.1% increase in total homicide deaths compared to 2021.

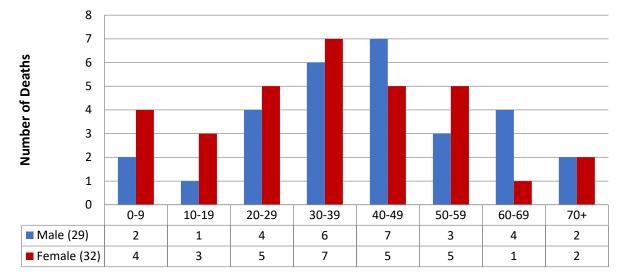
 ²¹ This graph highlights the top three predominant means of death within the homicide classification. The black line shows the total number of homicidal deaths. There are other means of death not shown in this graph.
 ²² Per the Alcestis Medical Examiner and Coroner Data Management System regarding means 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 0.9% (61/6,769) of all medical examiner cases.

Males accounted for 47.5% (29/61) of the indeterminate deaths; females accounted for 52.5% (32/61) of the indeterminate deaths.

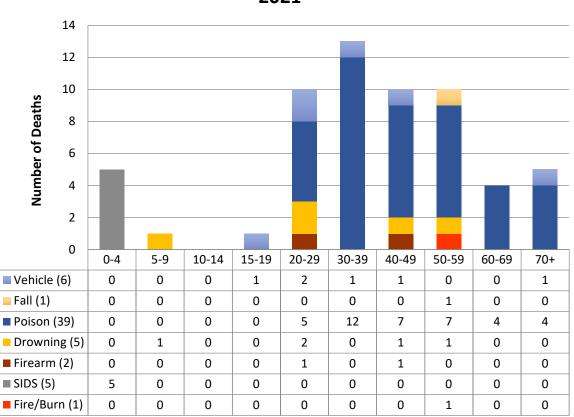
Cases by Age and Sex



Indeterminate Deaths by Age and Sex, 2021

Age Group	Male	Female	Total	Percent
0-19 Years	3	4	7	11.48%
20 Years and Older	26	28	54	88.52%
Total	29	32	61	100.00%

Cases by Age and Means²³



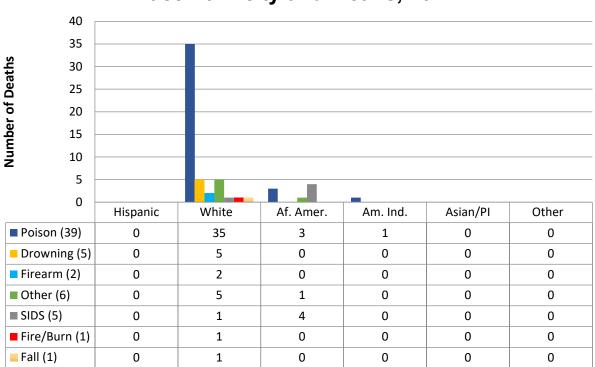
Number of Indeterminate Deaths by Age and Means, 2021

Poisoning cases accounted for 63.9% (39/61) of all indeterminate death cases, with the majority of deaths occurring in the 30-39 (12).

SIDS (5/61) and drowning (5/61) each accounted for 8.2% of indeterminate cases.

²³ Some deaths may have multiple Means of Death recorded.

Cases by Race/Ethnicity and Means^{24,25}



Number of Indeterminate Deaths by Race/Ethnicity and Means, 2021

Cases by Race/Ethnicity and Sex

	Male	Female	Total
White	26	25	51
African American	3	6	9
American Indian	0	1	1
Total	29	32	61

²⁴ Some deaths may have multiple Means of Death recorded.

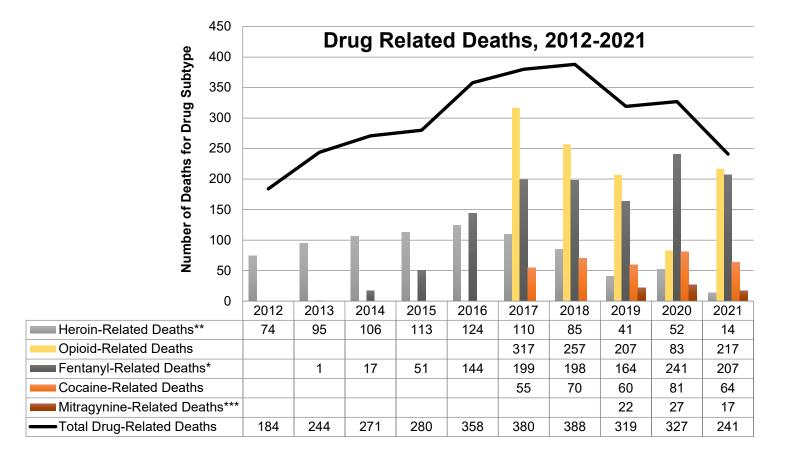
²⁵ There were no indeterminate deaths recorded for American Indian, Asian Pacific and Multiracial race & ethnicity categories and therefore they were excluded from this chart.

Drug-Related Deaths²⁶

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 2021, total drug-related deaths decreased by 26.3% (compared to 2020), with a total of 241 deaths. Since 2017 the number of heroin-only deaths decreased from 110 deaths to 14 deaths, 184.6% decrease. Compared to 2020, heroin-related deaths decreased by 73.1%, fentanyl deaths decreased by 14.1%, and opioid-related deaths increased by 161.4%. Please note that total drug deaths are not a sum of the drug classifications.



²⁶ *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.

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