

Office of the Medical Examiner

2022 Annual Report

Executive Summary

Eaton County • Ingham County • Ionia County
Isabella County • Shiawassee County

We are pleased to present our 2022 Annual Report. This report reflects the work of the Office of the Medical Examiner during the 2022 calendar year. Only those deaths that fall within the geographical jurisdiction of the Medical Examiner, which is based on the county in which death was pronounced, are included.

We pride ourselves on providing outstanding service to the communities we serve. Our commitment to excellence was recognized in 2009, when our office was granted full accreditation by the National Association of Medical Examiners (NAME), and that full accreditation status was renewed by NAME in 2021. We have developed a regional system that delivers standardized death investigations. Thanks to leadership provided by Sparrow Forensic Pathology, there is an expected process which ensures quality, compassionate care when people need it most.

It would not be possible for the Office of the Medical Examiner to operate efficiently without our dedicated staff, including our investigators, who are essential to our success and to whom we are grateful for their service. The investigators are listed by county in the text of this report.

Sparrow Forensic Pathology

Office of the Medical Examiner • 2022 Staff

Michael A. Markey, M.D.

*Medical Examiner
& Medical Director*

Patrick A. Hansma, D.O.

Deputy Medical Examiner

David S. Moons, M.D.

Deputy Medical Examiner

Christopher A. Hauch, M.D.

Deputy Medical Examiner

Michelle A. Fox, D-ABMDI

*Chief Investigator
& Supervisor*

Debra Parsons

*Team Advisor
& Autopsy Assistant*

Holly Marsh

Administrative Assistant

Krystin Smith

*Autopsy Assistant
& In-House Investigator*

Amanda Wallace, D-ABMDI

*Autopsy Assistant
& In-House Investigator*

Jacob Stair

*Autopsy Assistant
& In-House Investigator*

Jessica Nicholson

Medical Examiner Investigator

Karen Phelps

Medical Examiner Investigator

Marissa Timko

Medical Examiner Investigator

Shelly Travis

Medical Examiner Investigator

Medical Examiner Services

Investigation of Deaths

As the Office of the Medical Examiner for five counties in Michigan, we perform autopsies and other postmortem examinations as an important part of the death investigation process. Each county in Michigan has a licensed physician, appointed by the County Commissioners to serve as Medical Examiner, who is responsible for investigating deaths as defined by the Michigan Compiled Laws.

In general, the deaths investigated by our office include those that are thought to result from injury or poisoning (such as homicide, suicide, and accidental deaths), and those deaths that are sudden, unexpected, and not readily explainable at the time of death. Because deaths occur around the clock, the Office of the Medical Examiner is staffed 24 hours a day, 365 days a year.

The typical sequence of events that occurs following a death is:

- » A death is reported to the on-call Medical Examiner Investigator (MEI).
- » The MEI assesses whether we have legal authority and duty to investigate the death.
- » The death scene is visited and investigated, if indicated.
- » Investigative information is obtained about the decedent's medical and social history, as well as other information surrounding the events that were associated with the death.
- » If an examination is indicated, the body is transported to the Forensic Pathology Laboratory at E.W. Sparrow Hospital (EWSH) in Lansing, MI.
- » If the investigator believes the death does not require a postmortem examination, the on-call Medical Examiner or Chief Investigator may be contacted to discuss the case before the body is released to the funeral home.
- » An investigative report is written by the MEI.
- » When applicable, the decedent's primary care physician is contacted and notified of the death, and medical history is confirmed.
- » A death certificate is generated by either the decedent's personal physician, the attending physician in the medical facility, or the assigned Medical Examiner or Deputy Medical Examiner.
- » If a postmortem examination is performed, following receipt and review of all appropriate test results and records, a postmortem examination report is written.
- » Permanent records are maintained for future use, as needed, and distributed to those who have requested a copy of the report and are authorized to receive the report.

Some deaths require additional follow-up investigations, which are conducted by our In-House Investigators based at EWSH. For 2022, these investigations were performed by Michelle Fox, Jessica Nicholson, Karen Phelps, Krystin Smith, Jacob Stair, Marissa Timko, Shelly Travis, and Amanda Wallace.

Death Certification

The primary focus of our investigation is to determine the cause and manner of death and to clarify circumstances surrounding the death. The cause of death is related to the underlying disease or injury that resulted in the individual's death. The manner of death, in the state of Michigan, is limited to these five options: natural, accident, suicide, homicide, or indeterminate. In addition, information gathered during the investigation and/or evidence collected may be critical for future legal proceedings.

Case Management Approach

A board-certified Forensic Pathologist is assigned to each death and determines the level of medical investigation required. Cases are handled by one of the following approaches:

- » **Direct Release** – The body is released directly from the scene to the funeral director. The MEI is typically at the scene and views the body. Based upon scene and medical history information, and in consultation with the on-call Medical Examiner or Chief Investigator, a decision may be made to release a body directly to the funeral home chosen by the family, without further examination.
- » **External Examination** – An external examination includes a detailed record of external observations of the body and in many cases laboratory/toxicology testing. A report of the external exam and laboratory findings is written by the responsible pathologist.
- » **Autopsy** – An autopsy includes an external examination as described above, as well as an internal examination. This internal examination may be a “limited” or “partial” autopsy, or a “full” or “complete” autopsy. A limited autopsy is an internal examination within a specific anatomic boundary (e.g., head-only examination). Most often, limited autopsies are performed to recover a foreign body, surgical hardware, or answer specific questions. A full autopsy includes internal examination of all organs and body cavities. An autopsy usually includes laboratory/toxicology testing and may include histologic examination and additional examination by a subspecialty consultant (e.g., cardiac or neuropathologist). A report of examination and laboratory findings is written by the responsible pathologist.

Decision to Autopsy

The Medical Examiners and Deputy Medical Examiners use standards established by the National Association of Medical Examiners (NAME) to determine whether an autopsy is indicated. The standards, most recently revised in October 2022, state:

The forensic pathologist shall perform a forensic autopsy when:

- » The death is known or suspected to have been caused by apparent criminal violence.
- » The death is unexpected and unexplained in an infant or child.
- » The death is associated with police action.
- » The death is apparently non-natural and in custody of a local, state, or federal institution.
- » The death is due to acute workplace injury.*
- » The death is caused by apparent electrocution.*
- » The death is by apparent intoxication by alcohol, drugs, or poison, unless a significant interval has passed, and the medical findings and absence of trauma are well documented.
- » The death is caused by unwitnessed or suspected drowning.*
- » The body is unidentified and the autopsy may aid in identification.
- » The body is skeletonized.
- » The body is charred.
- » The forensic pathologist deems a forensic autopsy is necessary to determine cause or manner of death, or document injuries/disease, or collect evidence.
- » The deceased is involved in a motor vehicle incident, and an autopsy is necessary to document injuries and/or determine the cause of death.

**Unless sufficient antemortem medical evaluation has adequately documented findings and issues of concern that would otherwise have required autopsy performance.*

Accreditation

All of the Medical Examiners' Offices operated by Sparrow Forensic Pathology are accredited by the National Association of Medical Examiners (NAME).

Manner of Death

Guidelines for classifying the manner of death include:

- » Natural deaths are due solely or nearly totally to disease and/or the aging process.
- » Accident applies when an injury or poisoning (such as a drug overdose) causes death, and there is little or no evidence that the 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 committed to do self-harm or cause the death of one's self.
- » Homicide occurs when the death results from a volitional act committed by another person to cause fear, harm, or death. Intent to cause death is a common element but is not required for classification as a homicide. It has to be emphasized that the classification of homicide for the purpose of death certification is a “neutral” term and neither indicates nor implies criminal intent, which remains a determination within the province of legal processes.
- » 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, in thorough consideration of all available information.

In general, when death involves a combination of natural processes and external factors, such as injury or poisoning, preference is given to the non-natural manner of death.

Cremation Permit Authorizations

Michigan law requires funeral directors to obtain a signed cremation permit from the Medical Examiner. Our office reviews thousands of cremation permit requests each year. We review the death certificates to ensure that deaths that should have been reported to our office were, in fact, reported. Deaths that were not properly reported are investigated before cremation is authorized.

Testimony at Trials

The Medical Examiner and Deputy Medical Examiners are often called upon to provide testimony in criminal and civil matters. They meet regularly with members of law enforcement, prosecutors, defense attorneys, and civil litigators.

Public Health and Safety Issues

Although the primary purpose of the Medical Examiner's Office is to conduct death investigations, the information obtained from individual death investigations may also be studied collectively to gather data that may inform public health and safety issues. Our office participates with the Michigan Child Death Review process, opiate prevention initiatives, and opiate death review teams, providing significant information with the goal of preventing future deaths.

Referrals to Gift of Life

We work closely with Gift of Life, Michigan's organ and tissue recovery program. Appropriate cases are referred to Gift of Life so that families who wish to consider tissue donation can do so. Recovered bone, skin, corneas, and other tissues help improve the lives of seriously injured and sick recipients.

Unclaimed Investigations

When a death occurs, there is not always someone available who is willing and able to claim the decedent and arrange for final disposition with a funeral director. Our team works diligently to find next of kin or someone willing to make final arrangements. When no one can be located, we work with the State of Michigan and area funeral directors to arrange a cremation. Each year our office works with the Diocese of Lansing to have unclaimed remains interred with dignity and respect at St. Joseph Cemetery in Lansing.

Comment on Methods and Terms

This annual report reflects the activities of our medical examiner offices during a given calendar year. With rare exception (e.g., deaths reported to the wrong medical examiner office), the data include only those cases over which the county's Medical Examiner can exercise jurisdiction.

Jurisdiction is determined by where the individual was pronounced dead rather than the county of residence or the county in which the incident leading to death might have occurred. Furthermore, the data reflect the calendar year in which the deaths were reported to the respective Medical Examiner's Offices, regardless of the year in which the death actually occurred. The category "Total Deaths in the County" is based upon numbers provided by that County Clerk's Office. Occasionally, these numbers may change after the time of publication of this report.

For "Accidental Deaths," the subcategory "Vehicle" consists of deaths that were classified as transportation-related fatalities and include all forms of transport; drivers/operators, passengers, and pedestrians; this category does not include types of death that might otherwise fall into a different sub classification, such as vehicle fires and traumatic asphyxia.

Eaton County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

Christopher A. Hauch, M.D.

David S. Moons, M.D.

Chief Investigator

Michelle A. Fox, D-ABMDI

Medical Examiner Investigators

Kenneth Barnes

Erica Betts, D.O., MPH

Jeffrey Carrow

Chad Chambers

Joy Dempsey, D-ABMDI

Mary Kueppers

Lynne Mark, D-ABMDI

Brett Ramsden, D-ABMDI

Daniel Sowles, D-ABMDI

Jacob Stair

Mary Stevens

Tori Vandermoere

Brett Vanhorn

Amanda Wallace, D-ABMDI

Gillian Wright

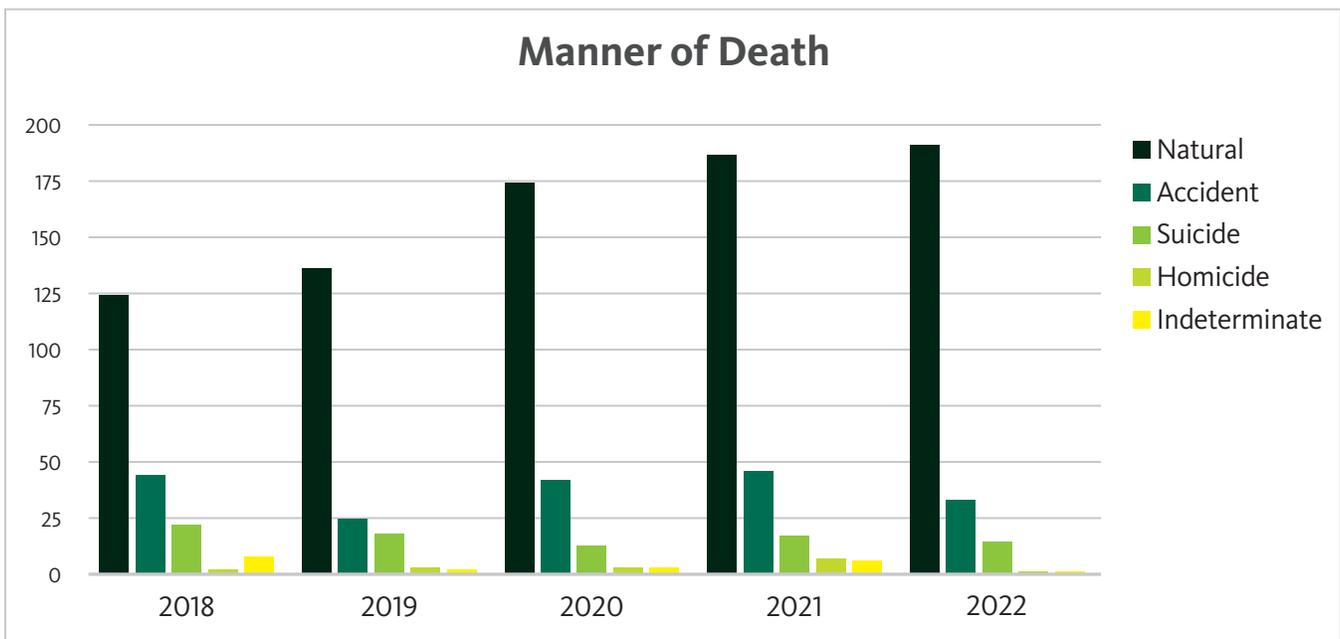
Eaton County Summary of Cases

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|-------|-------|-------|-------|-------|
| TOTAL DEATHS IN THE COUNTY | 817 | 710 | 866 | 844 | 811 |
| DEATHS REPORTED TO THE ME | 201 | 184 | 235 | 262 | 241 |
| CASES ACCEPTED FOR INVESTIGATION ¹ | 185 | 161 | 212 | 230 | 219 |
| MEI SCENE INVESTIGATIONS | 193 | 170 | 201 | 94 | 197 |
| DEATH CERTIFICATES SIGNED BY THE ME | 102 | 66 | 102 | 122 | 94 |
| BODIES TRANSPORTED TO SPARROW | 99 | 58 | 91 | 98 | 72 |
| COMPLETE AUTOPSY | 74 | 39 | 66 | 73 | 52 |
| LIMITED AUTOPSY | 5 | 6 | 6 | 9 | 6 |
| EXTERNAL EXAMINATION | 11 | 7 | 7 | 7 | 5 |
| STORAGE ONLY | 9 | 6 | 11 | 9 | 9 |
| UNCLAIMED BODIES | 3 | 3 | 4 | 2 | 5 |
| REFERRALS TO GIFT OF LIFE | 63 | 75 | 62 | 102 | 104 |
| TISSUE/CORNEA DONORS | 11 | 17 | 18 | 21 | 9 |
| CREMATION PERMITS REVIEWED | 498 | 411 | 544 | 538 | 543 |
| % OF TOTAL DEATHS WITH CREMATIONS | 61.0% | 57.9% | 62.8% | 63.7% | 67.0% |

¹ Not every case that is reported to the Medical Examiner's office falls within our jurisdiction. We accept cases for investigation based on the circumstances surrounding the death and the law that governs the Medical Examiner's authority (MCL 52.202).

Eaton County Manner of Death

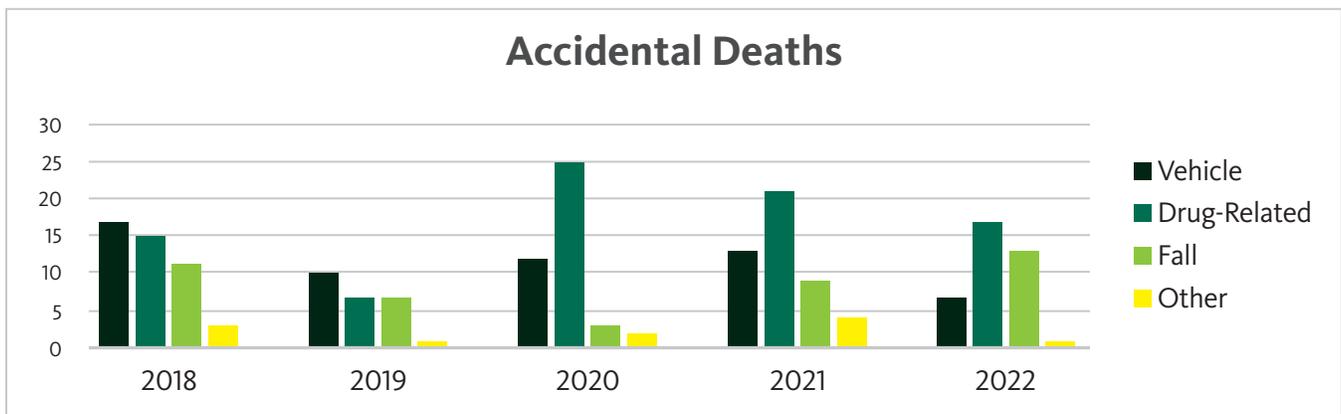
| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------------------|------|------|------|------|
| NATURAL | 124 | 136 | 174 | 186 | 191 |
| ACCIDENT | 44 | 25 | 42 | 46 | 33 |
| SUICIDE | 22 | 18 | 13 | 17 | 15 |
| HOMICIDE | 2 | 3 | 3 | 7 | 1 |
| INDETERMINATE | 8 | 2 | 3 | 6 | 1 |
| TOTAL | 201 ² | 184 | 235 | 262 | 241 |



² Includes one case of mummified fetal remains for which a manner of death was not assigned

Eaton County Accidental Deaths

| Accidental Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|-----------------|------|------|-----------------|----------------|
| VEHICLE | 17 ³ | 10 | 12 | 13 | 7 |
| DRUG-RELATED | 15 ⁴ | 7 | 25 | 21 | 17 |
| DROWNING | 1 | 1 | 0 | 3 | 0 |
| FALL | 11 | 7 | 3 | 9 | 8 |
| ASPHYXIA | 0 | 0 | 2 | 1 | 0 |
| OTHER | 2 ⁵ | 0 | 0 | 0 | 1 ⁶ |
| TOTAL | 44 | 25 | 42 | 46 ⁷ | 33 |



3 Does not include one car passenger listed in other category (see below)

4 Does not include two drowning cases in which ethanol intoxication was involved (categorized as drowning); includes one case of ethanol intoxication with associated hypothermia

5 One injury sustained when struck by falling tree branch; one injury due to head striking car window (not in car crash)

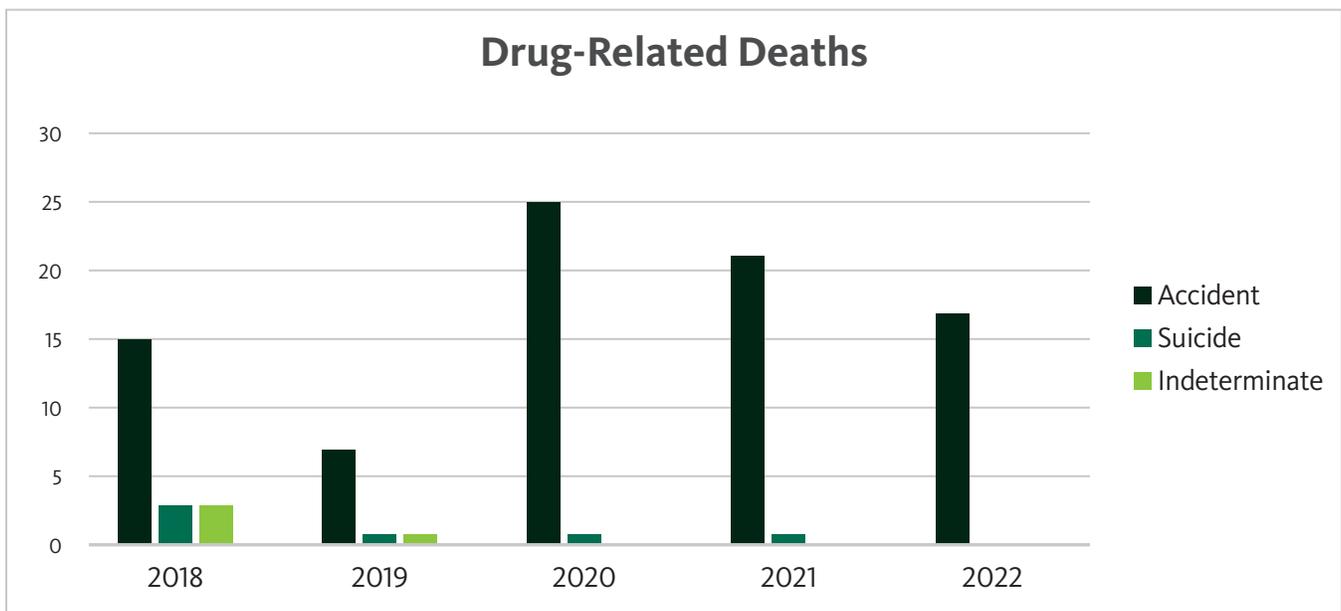
6 Injuries from farm equipment

7 Drowning associated with drug intoxication included in both categories

Eaton County Drug-Related Deaths

For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle crashes, falls, choking while eating, or environmental exposures.

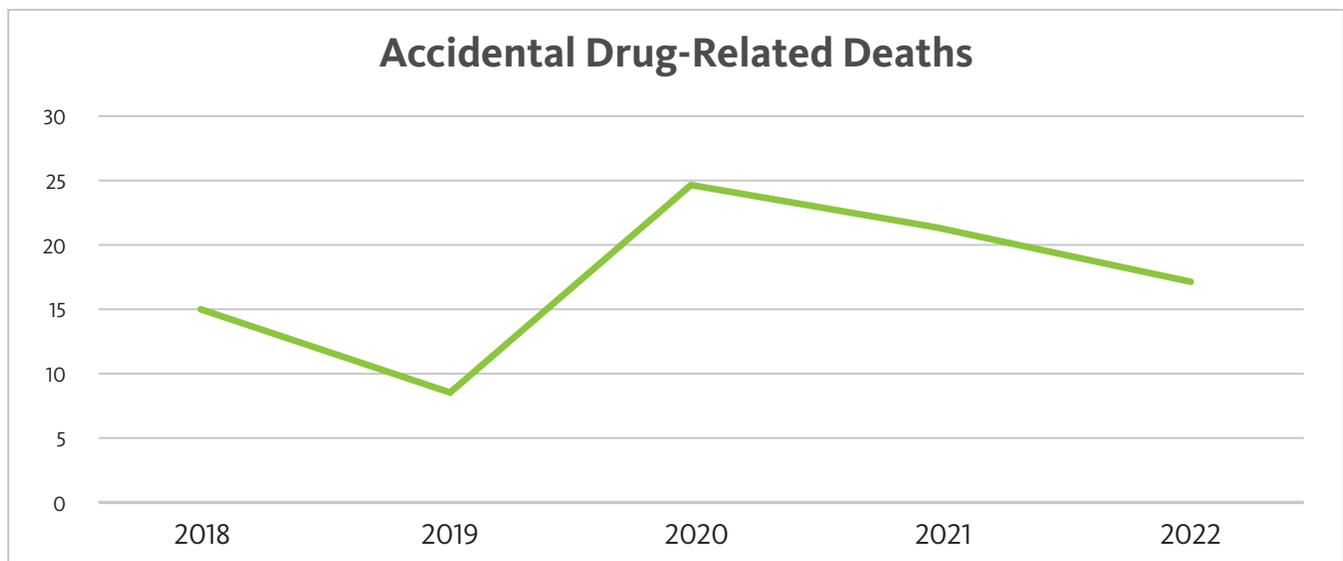
| Drug-Related Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|------|------|------|------|------|
| ACCIDENT | 15 | 7 | 25 | 21 | 17 |
| SUICIDE | 3 | 1 | 1 | 1 | 0 |
| INDETERMINATE | 3 | 1 | 0 | 0 | 0 |
| TOTAL | 21 | 9 | 26 | 22 | 17 |



Eaton County

Drug-Related Deaths

| 2022 Drug-Related Deaths Summary | |
|----------------------------------|------------------------------------|
| TOTAL | 17 cases |
| SEX | 4 female, 13 male |
| RACE | 16 white, 1 black |
| AGE RANGE | 22-67 years |
| AVERAGE AGE | 43.2 years |
| MEDIAN AGE | 43 years |
| OPIOID-RELATED | 13 cases (76% Drug-Related Deaths) |
| MANNER OF DEATH | 17 accidents |



Eaton County Suicides

| Suicide Totals by Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|------------------------|------|------|------|------|------|
| SUICIDES | 22 | 18 | 13 | 17 | 15 |

| Suicide Methods | 2018 | 2019 | 2020 | 2021 | 2022 |
|--------------------|----------------|----------------|-----------------|------|-----------------|
| FIREARM | 9 | 11 | 7 | 11 | 9 |
| HANGING | 5 | 4 | 4 | 5 | 4 |
| DRUG INTOXICATION | 3 | 1 | 1 | 1 | 0 |
| SHARP FORCE INJURY | 3 | 1 | 0 | 0 | 1 |
| OTHER | 2 ⁸ | 1 ⁹ | 1 ¹⁰ | 0 | 1 ¹¹ |

| Suicides by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| 0-17 | 0 | 1 | 0 | 1 | 1 |
| 18-25 | 4 | 3 | 1 | 2 | 1 |
| 26-44 | 6 | 7 | 3 | 7 | 5 |
| 45-64 | 5 | 4 | 7 | 4 | 4 |
| 65+ | 7 | 3 | 2 | 3 | 4 |

8 One carbon monoxide inhalation; one ethylene glycol ingestion

9 Drowning

10 Carbon monoxide inhalation

11 Blunt force injuries - Struck by train

Eaton County Deaths of Children

| Deaths of Children by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------------|-----------------|------|------|------|------|
| Stillborn | 2 ¹² | 0 | 0 | 1 | 0 |
| <1 year | 1 | 0 | 0 | 1 | 0 |
| 1-5 | 1 | 1 | 0 | 2 | 2 |
| 6-10 | 0 | 4 | 0 | 0 | 0 |
| 11-17 | 1 | 2 | 3 | 2 | 2 |
| TOTAL | 5 | 7 | 3 | 6 | 4 |

| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| NATURAL | 0 | 2 | 0 | 0 | 2 |
| ACCIDENT | 1 | 4 | 3 | 3 | 1 |
| SUICIDE | 0 | 1 | 0 | 1 | 1 |
| HOMICIDE | 0 | 0 | 0 | 1 | 0 |
| INDETERMINATE | 2 | 0 | 0 | 0 | 0 |

¹² Includes one mummified fetal remains discovered in a funeral home

Eaton County Deaths of Children

| 2022 Deaths of Children Summary | | | | |
|---------------------------------|-------------------------|------------|------------|---|
| <i>Manner</i> | <i>Number of Deaths</i> | <i>Age</i> | <i>Sex</i> | <i>Cause of Death</i> |
| STILLBORN | 0 | | | |
| NATURAL | 2 | 2 years | Male | Complications of congenital abnormality |
| | | 2 years | Female | Complications of congenital abnormality |
| ACCIDENT | 1 | 14 years | Male | |
| HOMICIDE | 0 | | | |
| SUICIDE | 1 | 16 years | Female | Gunshot wound |
| INDETERMINATE | 0 | | | |

Ingham County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

Christopher A. Hauch, M.D.

David S. Moons, M.D.

Chief Investigator

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Christi Stine

Mary Kueppers

Marissa Timko

Lynne Mark, D-ABMDI

Shelly Travis

Jessica Nicholson

Brett Vanhorn

Karen Phelps

Tori Vandermoere

Brett Ramsden, D-ABMDI

Amanda Wallace, D-ABMDI

Benjamin Smith

Gillian Wright

Ingham County Summary of Cases

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|------------------|-------|-------|-------|-------|
| TOTAL DEATHS IN THE COUNTY | 2,870 | 3,066 | 3,468 | 3,754 | 3,317 |
| DEATHS REPORTED TO THE ME | 888 | 936 | 1,087 | 1,138 | 1,035 |
| CASES ACCEPTED FOR INVESTIGATION ¹³ | 647 | 742 | 840 | 971 | 908 |
| MEI SCENE INVESTIGATIONS | 709 | 775 | 572 | 775 | 779 |
| DEATH CERTIFICATES SIGNED BY THE ME | 393 | 477 | 504 | 606 | 531 |
| BODIES TRANSPORTED TO SPARROW | 325 | 275 | 313 | 334 | 287 |
| COMPLETE AUTOPSY | 220 | 276 | 273 | 310 | 262 |
| LIMITED AUTOPSY | 13 | 13 | 24 | 22 | 26 |
| EXTERNAL EXAMINATION | 31 ¹⁴ | 44 | 59 | 66 | 57 |
| STORAGE ONLY | 61 | 47 | 53 | 63 | 42 |
| UNCLAIMED BODIES | 28 | 13 | 18 | 25 | 26 |
| REFERRALS TO GIFT OF LIFE | 292 | 264 | 294 | 375 | 524 |
| TISSUE/CORNEA DONORS | 48 | 51 | 54 | 52 | 81 |
| CREMATION PERMITS REVIEWED | 1,934 | 2,154 | 2,483 | 2,730 | 2,631 |

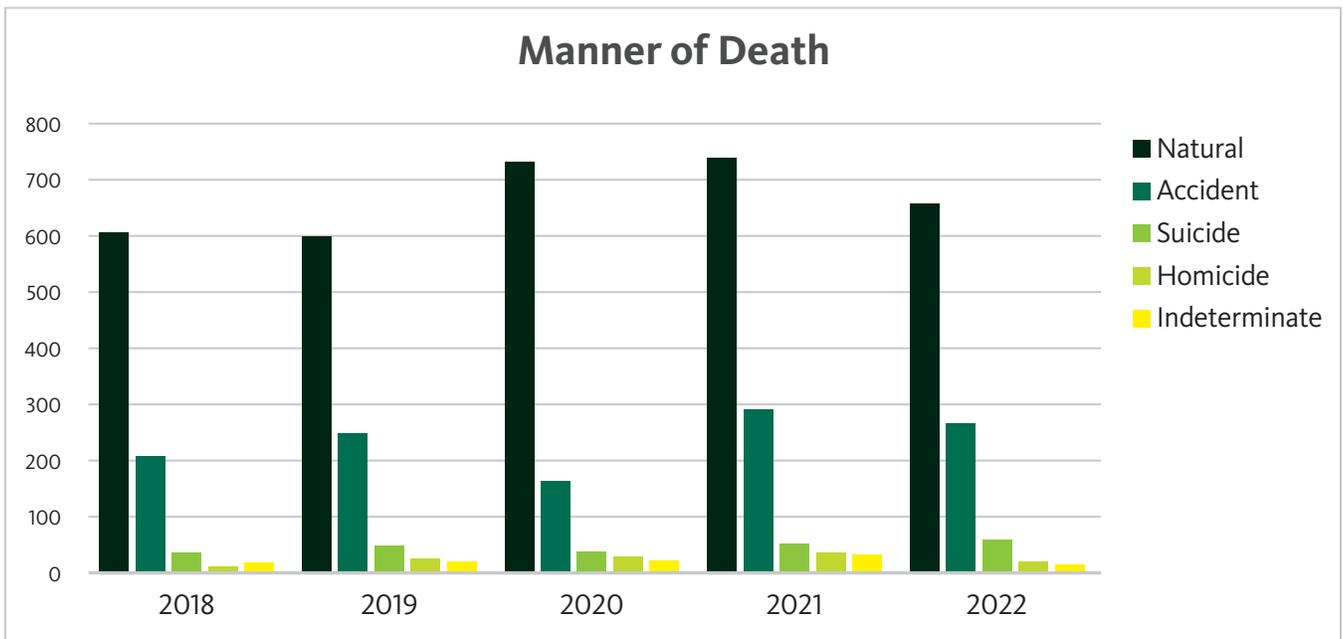
¹³ Not every case that is reported to the Medical Examiner's office falls within our jurisdiction. We accept cases for investigation based on the circumstances surrounding the death and the law that governs the Medical Examiner's authority (MCL 52.202).

¹⁴ One case examined by anthropology only for identification

Ingham County

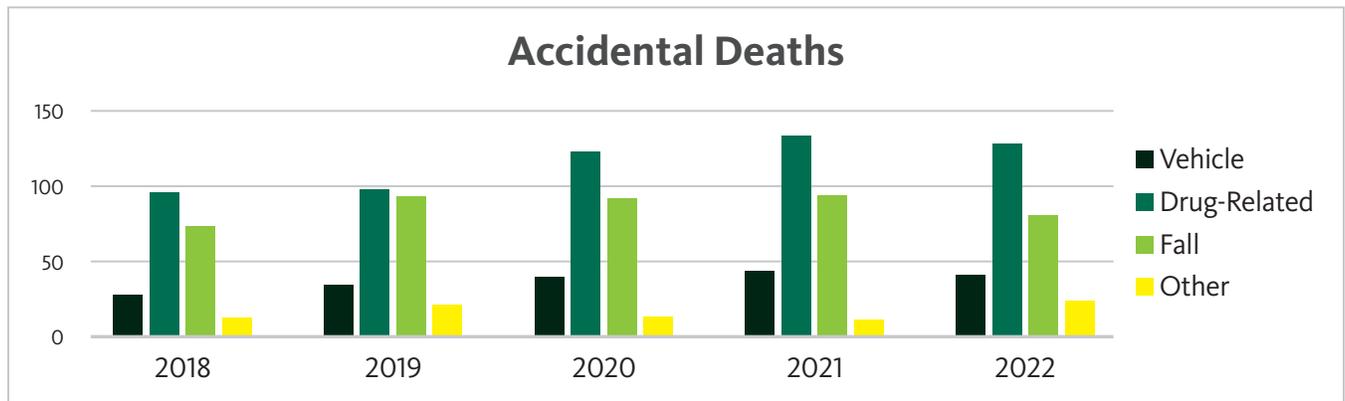
Manner of Death

| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|-------|-------|-------|
| NATURAL | 608 | 598 | 728 | 730 | 666 |
| ACCIDENT | 210 | 251 | 271 | 290 | 276 |
| SUICIDE | 38 | 51 | 39 | 56 | 60 |
| HOMICIDE | 12 | 16 | 26 | 31 | 19 |
| INDETERMINATE | 16 | 18 | 22 | 28 | 13 |
| TOTAL | 884 | 934 | 1,086 | 1,135 | 1,034 |



Ingham County Accidental Deaths

| Accidental Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| VEHICLE | 29 | 35 | 40 | 46 | 43 |
| DRUG-RELATED | 97 | 98 | 124 | 138 | 131 |
| DROWNING | 2 | 3 | 1 | 6 ¹⁵ | 7 ¹⁶ |
| FALL | 73 | 95 | 93 | 94 | 77 |
| FIRE | 2 | 5 | 2 | 0 | 2 |
| ASPHYXIA | 3 | 2 ¹⁷ | 2 ¹⁸ | 3 ¹⁹ | 0 |
| CHOKING | 0 | 6 | 3 | 2 | 8 |
| HYPOTHERMIA | 0 | 0 | 4 | 0 | 2 |
| OTHER | 4 ²⁰ | 7 ²¹ | 2 ²² | 3 ²³ | 8 ²⁴ |
| TOTAL | 210 | 251 | 271 | 290 ²⁵ | 276 ²⁶ |



¹⁵ One associated with drug intoxication (included in both categories)

¹⁶ Two associated with drug intoxication (included in both categories)

¹⁷ Two infants in unsafe sleep environments

¹⁸ Two infants in unsafe sleep environments

¹⁹ Two infants in unsafe sleep environment; one child compressed beneath trailer

²⁰ One carbon monoxide intoxication; one injuries from airplane crash; two remote neck injuries - one wrestling and one swimming

²¹ Two injuries from plane crash; one burns from hot coffee; one carbon monoxide; one hypothermia; one bicycle crash; one therapeutic injury

²² One pedestrian struck by train; One injuries from compaction in refuse vehicle

²³ One hypothermia; one thermal injury from smoking; one carbon monoxide intoxication associated with drug intoxication (included in both categories)

²⁴ Two carbon monoxide intoxication; two sharp force injuries; two pedestrians struck by trains; two blunt force injuries

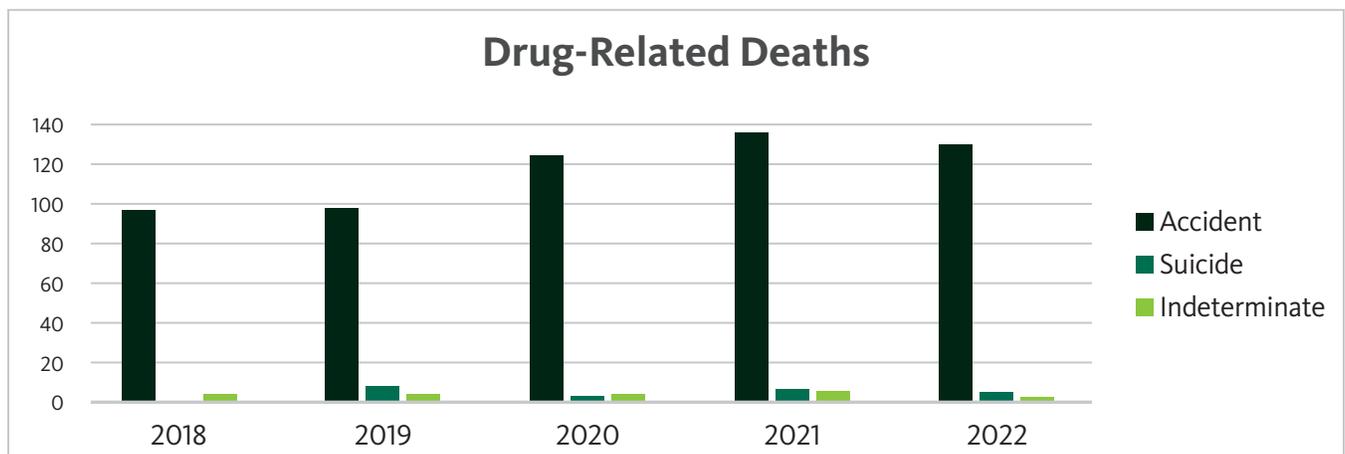
²⁵ Two are in more than one category

²⁶ Two are in more than one category

Ingham County Drug-Related Deaths

For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle crashes, falls, choking while eating, or environmental exposures.

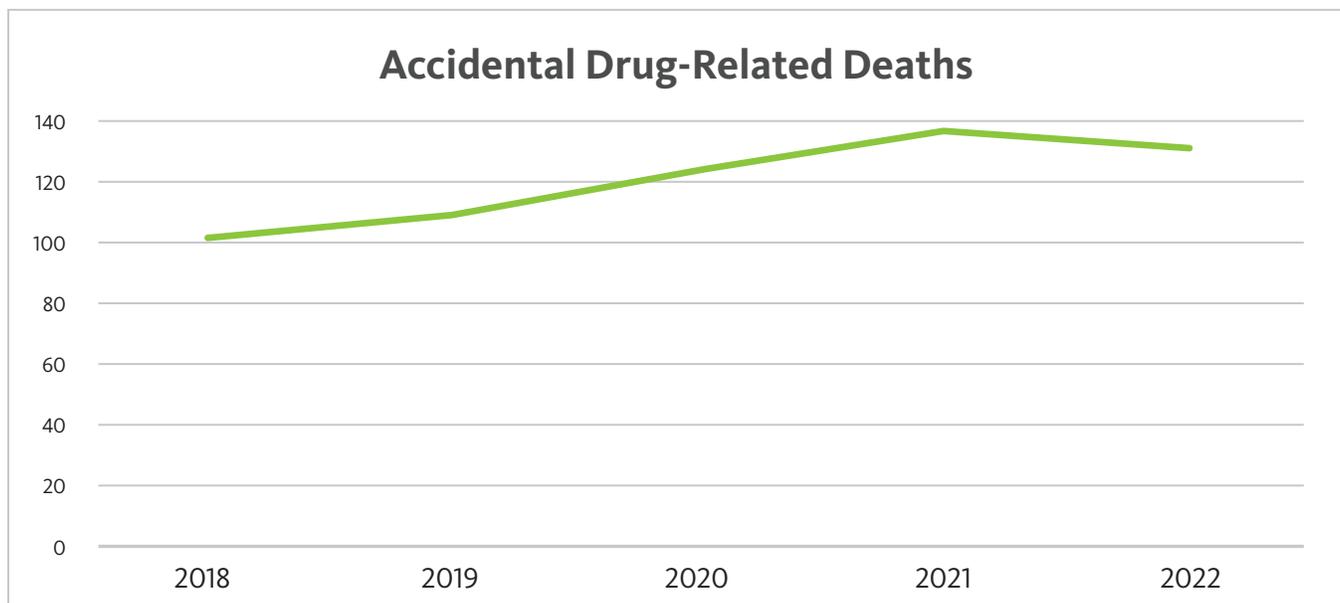
| Drug-Related Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|------|------|------|------|------|
| ACCIDENT | 97 | 98 | 124 | 138 | 131 |
| SUICIDE | 0 | 7 | 3 | 6 | 5 |
| INDETERMINATE | 4 | 4 | 4 | 7 | 1 |
| TOTAL | 101 | 109 | 131 | 151 | 137 |



Ingham County

Drug-Related Deaths

| 2022 Drug-Related Deaths Summary | |
|----------------------------------|--|
| TOTAL | 137 cases |
| SEX | 50 female, 87 male |
| RACE | 97 white, 36 black, 2 Native American, 1 Asian, 1 biracial |
| AGE RANGE | 19-73 years |
| AVERAGE AGE | 44.7 years |
| MEDIAN AGE | 44 years |
| OPIOID-RELATED | 115 cases (84% of Drug-Related Deaths) |
| MANNER OF DEATH | 131 accidents, 5 suicides, 1 indeterminate |



Ingham County Suicides

| Suicide Totals by Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|------------------------|------|------|------|------|------|
| SUICIDES | 38 | 51 | 39 | 56 | 60 |

| Suicide Methods | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|------|-----------------|-----------------|-----------------|-----------------|
| FIREARM | 21 | 20 | 21 | 28 | 34 |
| HANGING | 13 | 20 | 13 | 15 | 15 |
| DRUG INTOXICATION | 0 | 7 | 3 ²⁷ | 6 | 5 |
| SUFFOCATION | 1 | 0 | 0 | 1 | 1 |
| SHARP FORCE INJURY | 0 | 0 | 1 ²⁷ | 1 | 1 |
| JUMP FROM HEIGHT | 2 | 0 | 0 | 1 | 0 |
| MOTOR VEHICLE CRASH | 0 | 0 | 0 | 1 | 0 |
| CARBON MONOXIDE | 0 | 0 | 1 | 1 | 1 |
| STRUCK BY TRAIN | 1 | 1 | 1 | 0 | 0 |
| OTHER | 0 | 3 ²⁸ | 0 | 2 ²⁹ | 3 ³⁰ |

| Suicides by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| 0-17 | 3 | 2 | 2 | 2 | 3 |
| 18-25 | 10 | 13 | 5 | 7 | 9 |
| 26-44 | 12 | 14 | 13 | 29 | 18 |
| 45-64 | 7 | 18 | 15 | 11 | 16 |
| 65+ | 6 | 4 | 4 | 7 | 14 |

²⁷ One combined drug intoxication and stab wound - classified in both methods

²⁸ One jump from moving vehicle; one ingestion of household cleaning product; one puncture of dialysis fistula

²⁹ One insecticide poisoning; one neck trauma due to fall associated with suicide attempt via hanging

³⁰ One pedestrian struck by a motor vehicle; one ingestion of sodium nitrate; one ingestion of yew plant components

Ingham County Deaths of Children

| Deaths of Children by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------------|------|------|------|------|------|
| Stillborn | 3 | 2 | 1 | 1 | 1 |
| <1 year | 3 | 13 | 11 | 10 | 5 |
| 1-5 | 4 | 8 | 3 | 2 | 3 |
| 6-10 | 3 | 5 | 2 | 2 | 1 |
| 11-17 | 8 | 7 | 7 | 10 | 6 |
| TOTAL | 21 | 35 | 24 | 25 | 16 |

| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| NATURAL | 7 | 8 | 5 | 3 | 5 |
| ACCIDENT | 5 | 12 | 4 | 7 | 2 |
| SUICIDE | 3 | 2 | 2 | 2 | 3 |
| HOMICIDE | 2 | 2 | 4 | 7 | 1 |
| INDETERMINATE | 1 | 9 | 8 | 5 | 4 |

Ingham County Deaths of Children

| 2022 Deaths of Children Summary | | | | |
|---------------------------------|-------------------------|-------------------|------------|---|
| <i>Manner</i> | <i>Number of Deaths</i> | <i>Age</i> | <i>Sex</i> | <i>Cause of Death</i> |
| STILLBORN | 1 | - | Female | Intrauterine Fetal Demise |
| NATURAL | 5 | 1 day | Female | Complications of prematurity |
| | | 4 years | Male | Influenza A with complications of prematurity |
| | | 10 years | Male | Complications of cerebral palsy |
| | | 13 years | Male | Complications of cerebral palsy |
| | | 16 years | Male | Asthma |
| ACCIDENT | 2 | 1 year | Male | House fire |
| | | 4 years | Male | Drowning |
| HOMICIDE | 1 | 17 years | Female | Gunshot wound |
| SUICIDE | 3 | 16 years | Male | Blunt force trauma |
| | | 15 years | Male | Hanging |
| | | 15 years | Male | Hanging |
| INDETERMINATE | 4 | 1 month, 28 days | Male | Sudden Unexplained Infant Death ³¹ - Bed-sharing |
| | | 3 months, 23 days | Male | Sudden Unexplained Infant Death ³¹ - Minor respiratory infection |
| | | 5 months, 1 day | Female | Sudden Unexplained Infant Death ³¹ - Minor respiratory infection |
| | | 1 month, 11 days | Male | Potentially unsafe sleep and minor respiratory infection |

³¹ Sudden Unexplained Infant Death (SUID) refers to the death of an infant less than one year of age in which investigation, autopsy, medical history, review, and appropriate laboratory testing fails to identify a specific cause of death. SUID includes deaths that meet the definition of Sudden Infant Death Syndrome (SIDS).

Ionia County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

Christopher A. Hauch, M.D.

David S. Moons, M.D.

Chief Investigator

Michelle A. Fox, D-ABMDI

Medical Examiner Investigators

Kenneth Barnes

Erica Betts, D.O., MPH

James Buxton

Katharine Dernocoeur

Nigel Heftye

Zachary Jahnke, CCEMT-P

Derek Schroeder

Bill Simpson Sr., D-ABMDI

Benjamin Smith

Dan Sowles, D-ABMDI

Mitchell Tolan, D-ABMDI

Brett Vanhorn

Thomas Wodarek

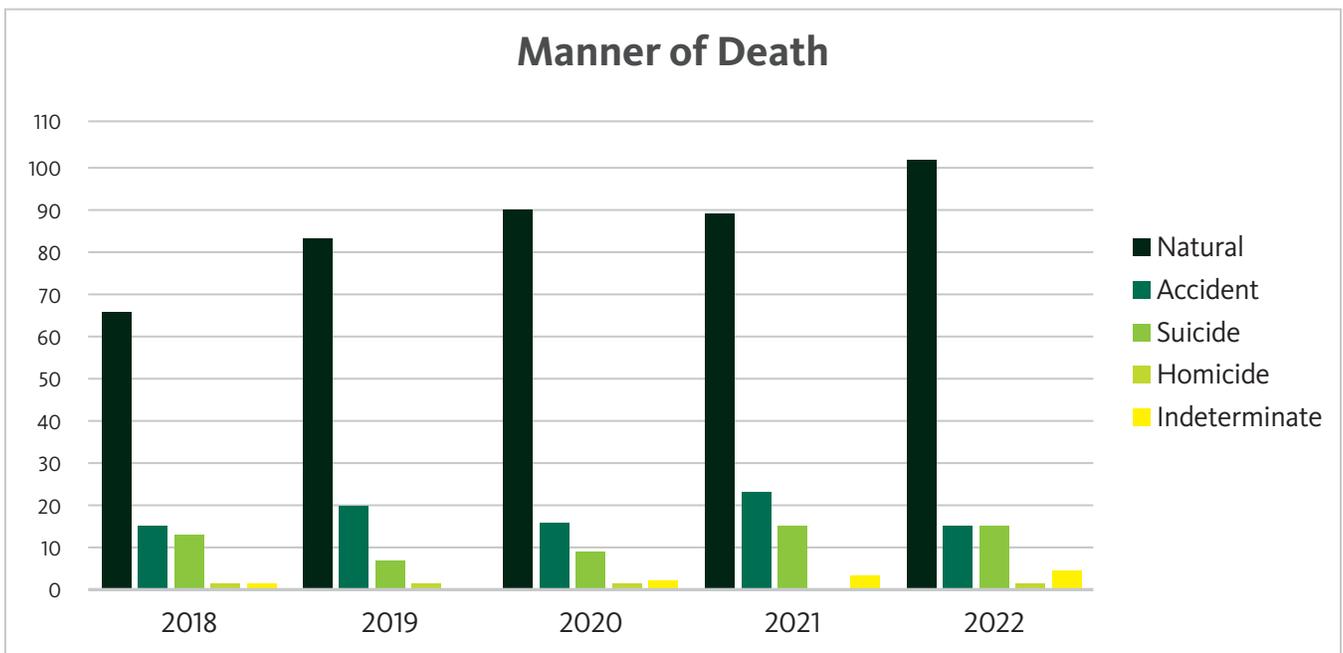
Ionia County Summary of Cases

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|------|------|------|------|------|
| TOTAL DEATHS IN THE COUNTY | 328 | 333 | 409 | 398 | 419 |
| DEATHS REPORTED TO THE ME | 96 | 111 | 119 | 130 | 137 |
| CASES ACCEPTED FOR INVESTIGATION ³² | 90 | 107 | 110 | 124 | 122 |
| MEI SCENE INVESTIGATIONS | 92 | 109 | 107 | 119 | 122 |
| DEATH CERTIFICATES SIGNED BY THE ME | 50 | 48 | 43 | 67 | 51 |
| BODIES TRANSPORTED TO SPARROW | 44 | 39 | 34 | 57 | 47 |
| COMPLETE AUTOPSY | 33 | 25 | 21 | 43 | 32 |
| LIMITED AUTOPSY | 5 | 6 | 5 | 5 | 9 |
| EXTERNAL EXAMINATION | 5 | 3 | 5 | 3 | 2 |
| STORAGE ONLY | 1 | 5 | 3 | 6 | 4 |
| UNCLAIMED BODIES | 1 | 2 | 4 | 1 | 1 |
| REFERRAL TO GIFT OF LIFE | 24 | 32 | 38 | 59 | 68 |
| TISSUE/CORNEA DONORS | 9 | 12 | 18 | 14 | 13 |
| CREMATION PERMITS REVIEWED | 214 | 212 | 281 | 281 | 305 |

³² Not every case that is reported to the Medical Examiner's office falls within our jurisdiction. We accept cases for investigation based on the circumstances surrounding the death and the law that governs the Medical Examiner's authority (MCL 52.202).

Ionia County Manner of Death

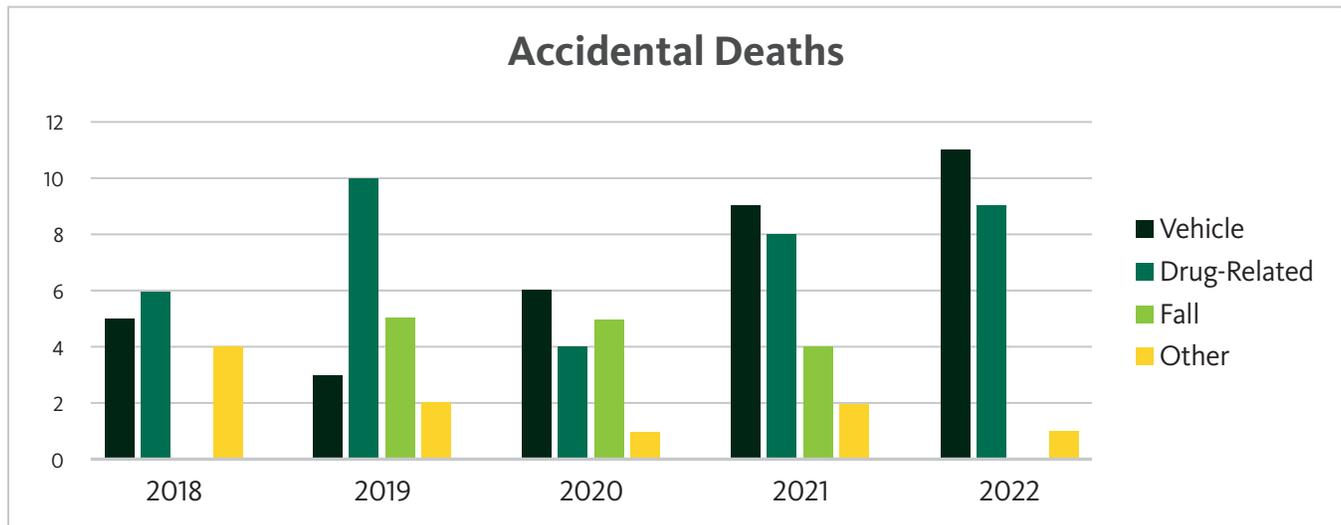
| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| NATURAL | 66 | 83 | 90 | 89 | 102 |
| ACCIDENT | 15 | 20 | 16 | 23 | 15 |
| SUICIDE | 13 | 7 | 9 | 15 | 15 |
| HOMICIDE | 1 | 1 | 1 | 0 | 1 |
| INDETERMINATE | 1 | 0 | 2 | 3 | 4 |
| TOTAL | 96 | 111 | 118 | 130 | 137 |



Ionia County

Accidental Deaths

| Accidental Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|-----------------|-----------------|------|-----------------|-----------------|
| VEHICLE | 5 | 3 | 6 | 9 | 5 |
| DRUG-RELATED | 6 ³³ | 10 | 4 | 8 | 9 |
| DROWNING | 4 | 0 | 1 | 0 | 0 |
| FALL | 0 | 5 | 5 | 4 | 0 |
| ASPHYXIA | 0 | 2 ³⁴ | 0 | 0 | 1 ³⁵ |
| OTHER | 0 | 0 | 0 | 2 ³⁶ | 0 |
| TOTAL | 15 | 20 | 16 | 16 | 15 |



33 One motor vehicle related fatality in 2018 had drug intoxication listed as a contributing condition; as the death was not directly related to the toxic effects of the drug(s) it is not included as a drug fatality in this report

34 One carbon monoxide; one mechanical - vehicle fell off jack

35 Mechanical - lawnmower rollover

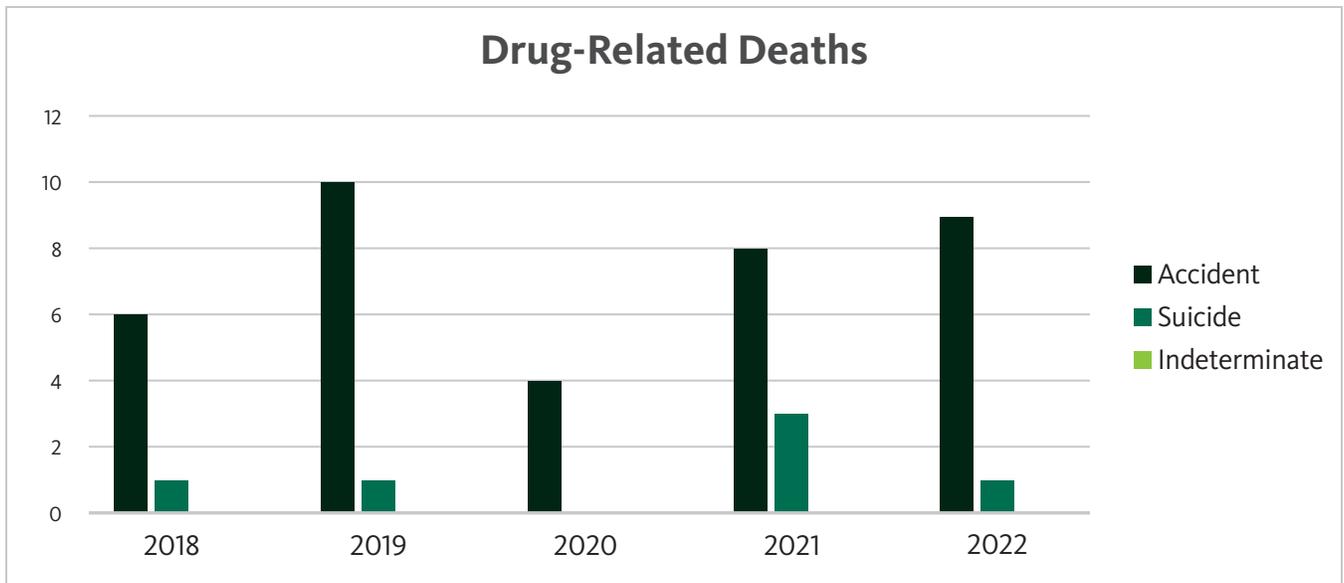
36 Two injuries from falling trees

Ionia County

Drug-Related Deaths

For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle crashes, falls, choking while eating, or environmental exposures.

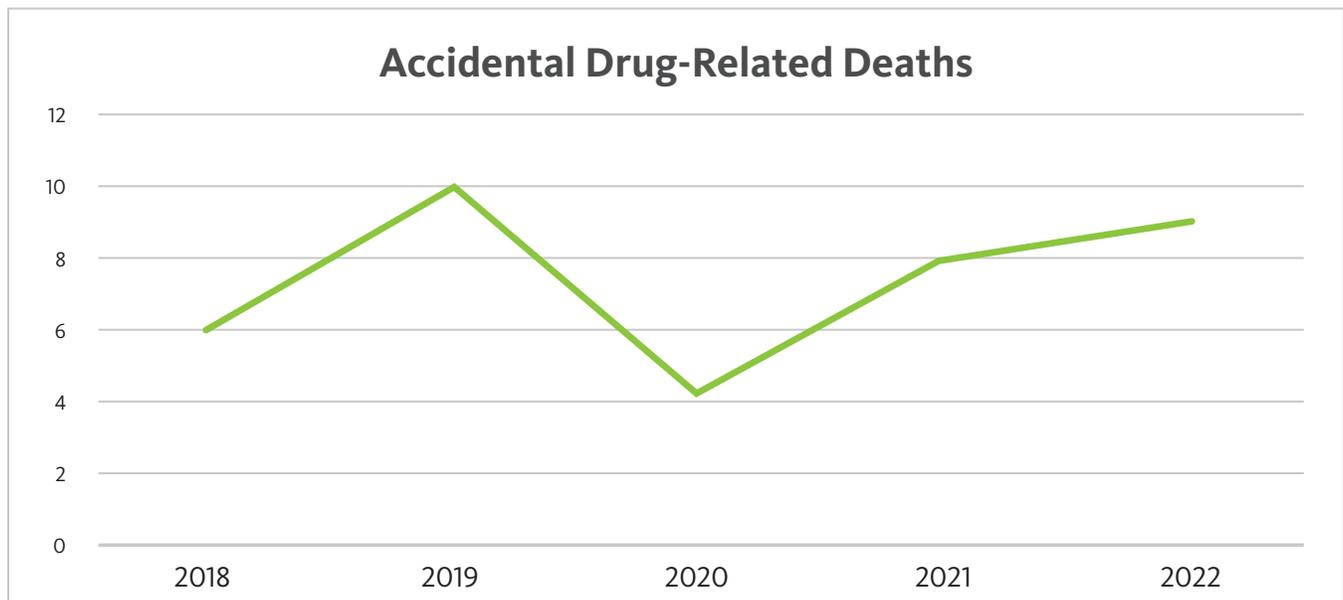
| Drug-Related Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|------|------|------|------|------|
| ACCIDENT | 6 | 10 | 4 | 8 | 9 |
| SUICIDE | 1 | 1 | 0 | 3 | 1 |
| INDETERMINATE | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 7 | 11 | 4 | 11 | 10 |



Ionia County

Drug-Related Deaths

| 2022 Drug-Related Deaths Summary | |
|----------------------------------|--------------------------------------|
| TOTAL | 10 cases |
| SEX | 3 female, 7 male |
| RACE | 10 white |
| AGE RANGE | 32-62 years |
| AVERAGE AGE | 43.3 years |
| MEDIAN AGE | 41 years |
| OPIOID-RELATED | 8 cases (80% of Drug-Related Deaths) |
| MANNER OF DEATH | 9 accidents, 1 suicide |



Ionia County Suicides

| Suicide Totals by Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|------------------------|------|------|------|------|------|
| SUICIDES | 13 | 7 | 9 | 15 | 15 |

| Suicide Methods | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|------|------|------|-----------------|-----------------|
| FIREARM | 9 | 4 | 5 | 6 | 8 |
| HANGING | 3 | 2 | 4 | 3 | 3 |
| DRUG INTOXICATION | 1 | 1 | 0 | 3 | 1 |
| CARBON MONOXIDE | 0 | 0 | 0 | 1 | 0 |
| MOTOR VEHICLE | 0 | 0 | 0 | 1 | 2 ³⁷ |
| OTHER | 0 | 0 | 0 | 1 ³⁸ | 1 ³⁹ |

| Suicides by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| 0-17 | 0 | 0 | 0 | 2 | 1 |
| 18-25 | 0 | 2 | 2 | 1 | 4 |
| 26-44 | 5 | 3 | 2 | 5 | 4 |
| 45-64 | 6 | 1 | 4 | 6 | 5 |
| 65+ | 2 | 1 | 1 | 1 | 1 |

³⁷ One motor vehicle crash; one drowning after intentionally driving vehicle into a drainage ditch

³⁸ Self-inflicted stab wound

³⁹ Poisoning via ingestion of sodium nitrate

Ionia County Deaths of Children

| Deaths of Children by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------------|------|------|------|------|------|
| Stillborn | 0 | 0 | 1 | 0 | 0 |
| <1 year | 1 | 0 | 2 | 1 | 2 |
| 1-5 | 0 | 0 | 1 | 0 | 0 |
| 6-10 | 0 | 0 | 1 | 0 | 0 |
| 11-17 | 0 | 0 | 0 | 2 | 2 |
| TOTAL | 1 | 0 | 5 | 3 | 4 |

| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| NATURAL | 0 | 0 | 1 | 0 | 0 |
| ACCIDENT | 0 | 0 | 2 | 0 | 1 |
| SUICIDE | 0 | 0 | 0 | 2 | 1 |
| HOMICIDE | 0 | 0 | 0 | 0 | 0 |
| INDETERMINATE | 1 | 0 | 1 | 1 | 2 |

Ionia County

Deaths of Children

| 2022 Deaths of Children Summary | | | | |
|---------------------------------|-------------------------|-------------------|------------|---|
| <i>Manner</i> | <i>Number of Deaths</i> | <i>Age</i> | <i>Sex</i> | <i>Cause of Death</i> |
| STILLBORN | 0 | | | |
| NATURAL | 0 | | | |
| ACCIDENT | 1 | 17 years | Male | ATV rollover (operator) |
| HOMICIDE | 0 | | | |
| SUICIDE | 1 | 16 years | Male | Gunshot wound |
| INDETERMINATE | 2 | 4 months, 22 days | Male | Non-acute injury; viral infection |
| | | 10 months, 0 days | Male | Viral infection; possibly related to unsafe sleep |

Isabella County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

Christopher A. Hauch, M.D.

David S. Moons, M.D.

Chief Investigator

Michelle A. Fox, D-ABMDI

Medical Examiner Investigators

Mindy Bailey

Zachary Brown

Kari Duman

Dakoda Gerke

Taylor Maylee Hoekwater, D-ABMDI

Meghan Jones

Karen Phelps

Tiffany Pickler

Robert Schumacker

Bill Simpson Sr., D-ABMDI

Krystin Smith

Jacob Stair

Michelle Thompson

Brett Vanhorn

Amanda Wallace, D-ABMDI

Isabella County Summary of Cases

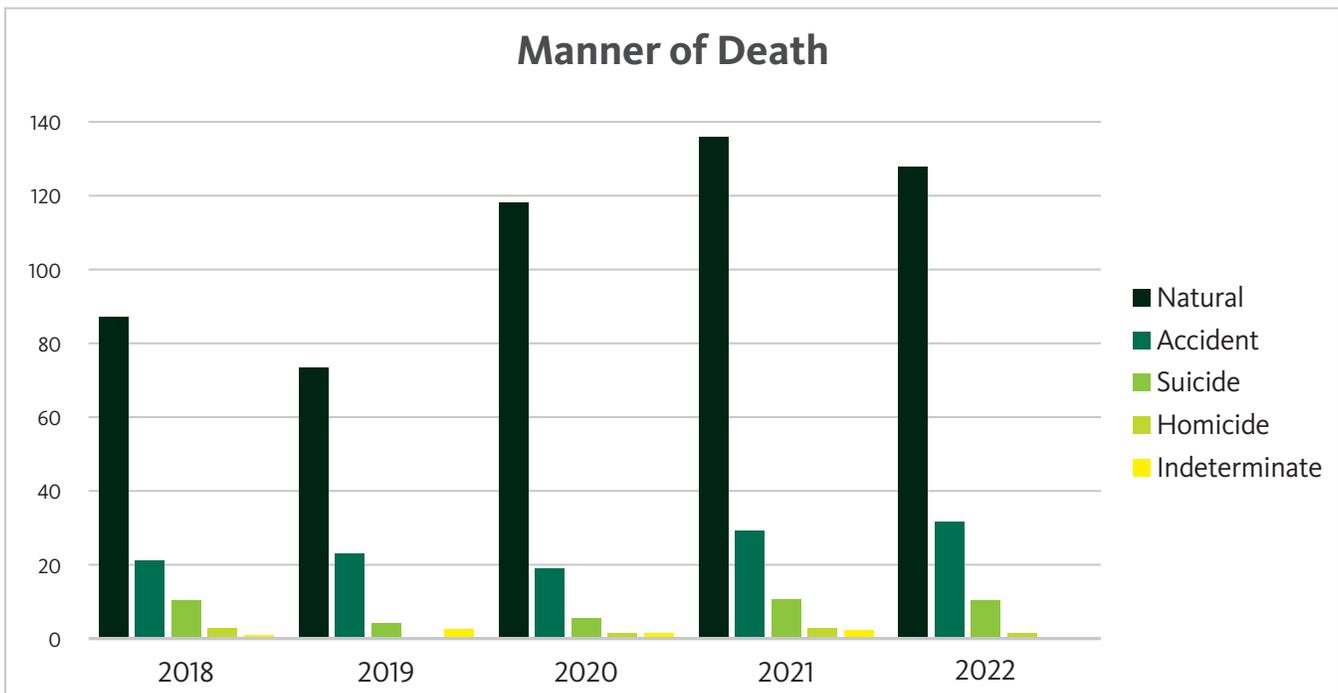
| | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|------|------|------|------|------|
| TOTAL DEATHS IN THE COUNTY | 549 | 479 | 603 | 624 | 605 |
| DEATHS REPORTED TO THE ME | 125 | 106 | 148 | 183 | 170 |
| CASES ACCEPTED FOR INVESTIGATION ⁴⁰ | 106 | 96 | 128 | 150 | 138 |
| MEI SCENE INVESTIGATIONS | 111 | 92 | 115 | 119 | 124 |
| DEATH CERTIFICATES SIGNED BY THE ME | 50 | 47 | 50 | 73 | 76 |
| BODIES TRANSPORTED TO SPARROW | 42 | 39 | 39 | 57 | 52 |
| COMPLETE AUTOPSY | 28 | 33 | 29 | 42 | 41 |
| LIMITED AUTOPSY | 4 | 2 | 2 | 6 | 4 |
| EXTERNAL EXAMINATION | 6 | 3 | 6 | 5 | 4 |
| STORAGE ONLY | 4 | 1 | 1 | 4 | 3 |
| UNCLAIMED BODIES | 1 | 1 | 1 | 5 | 1 |
| REFERRALS TO GIFT OF LIFE | 38 | 28 | 48 | 60 | 66 |
| TISSUE/CORNEA DONORS | 2 | 9 | 6 | 7 | 19 |
| CREMATION PERMITS REVIEWED | 352 | 310 | 384 | 409 | 426 |

⁴⁰ Not every case that is reported to the Medical Examiner's office falls within our jurisdiction. We accept cases for investigation based on the circumstances surrounding the death and the law that governs the Medical Examiner's authority (MCL 52.202).

Isabella County

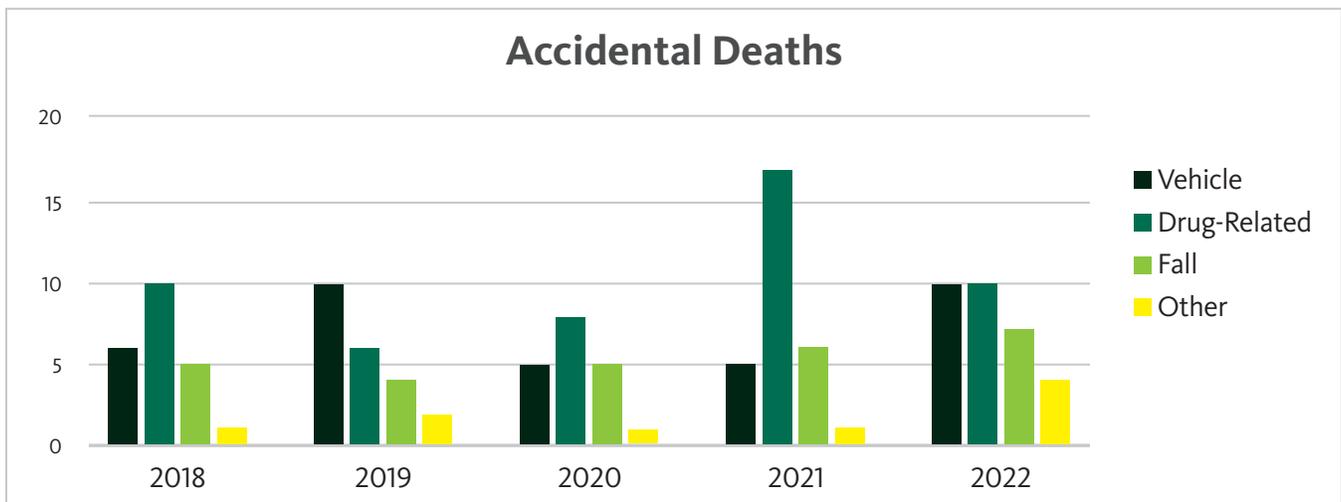
Manner of Death

| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| NATURAL | 88 | 74 | 119 | 137 | 127 |
| ACCIDENT | 22 | 24 | 19 | 29 | 31 |
| SUICIDE | 10 | 5 | 6 | 10 | 10 |
| HOMICIDE | 3 | 0 | 2 | 4 | 2 |
| INDETERMINATE | 1 | 2 | 2 | 2 | 0 |
| TOTAL | 124 | 105 | 148 | 182 | 170 |



Isabella County Accidental Deaths

| Accidental Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|-----------------|-----------------|------|-----------------|------|
| VEHICLE | 6 ⁴¹ | 10 | 5 | 5 | 10 |
| DRUG-RELATED | 10 | 6 | 8 | 17 | 10 |
| DROWNING | 1 ⁴² | 1 | 0 | 0 | 0 |
| FALL | 5 | 4 | 5 | 6 | 7 |
| ASPHYXIA | 0 | 1 | 1 | 0 | 4 |
| FIRE | 0 | 1 | 0 | 0 | 0 |
| OTHER | 0 | 1 ⁴³ | 0 | 1 ⁴⁴ | 0 |
| TOTAL | 22 | 24 | 19 | 29 | 31 |



41 One motor vehicle death was due to a post-crash fire (included here as a vehicle fatality and not as a fire fatality)

42 One drowning while intoxicated with drugs (included here as a drowning fatality and not a drug intoxication death as the death was not directly related to the toxic effects of the drug(s) it is not included as a drug fatality in this report)

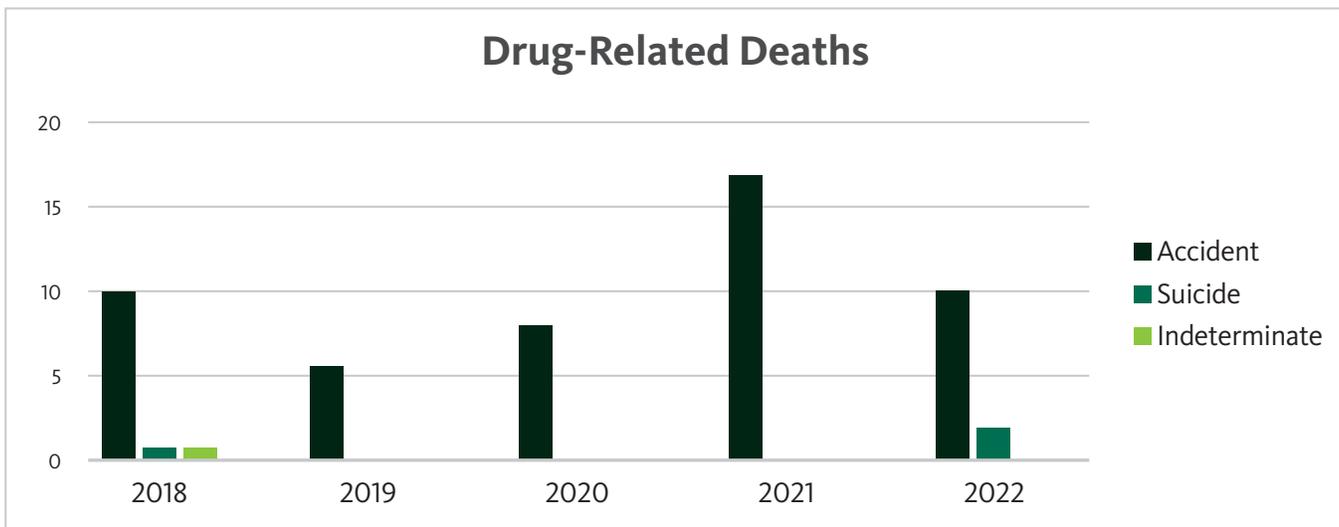
43 One work related tire explosion

44 One industrial injury

Isabella County Drug-Related Deaths

For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle crashes, falls, choking while eating, or environmental exposures.

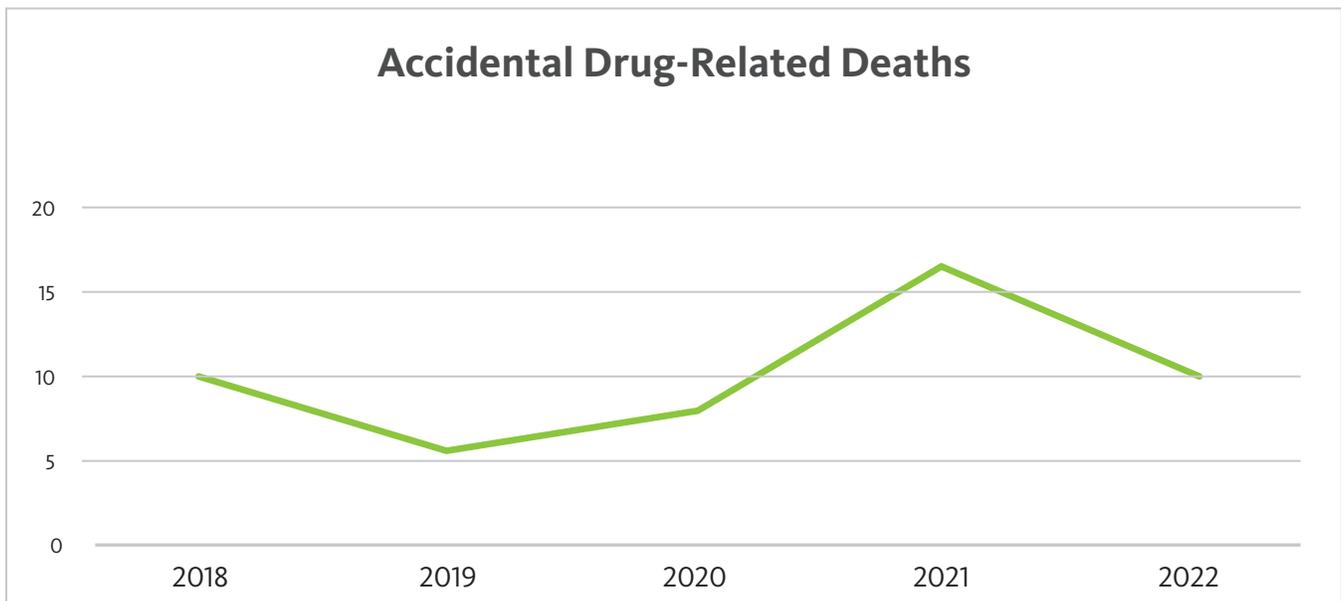
| Drug-Related Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|------|------|------|------|------|
| ACCIDENT | 10 | 6 | 8 | 17 | 10 |
| SUICIDE | 1 | 0 | 0 | 0 | 2 |
| INDETERMINATE | 1 | 0 | 0 | 0 | 0 |
| TOTAL | 12 | 6 | 8 | 17 | 12 |



Isabella County

Drug-Related Deaths

| 2022 Drug-Related Deaths Summary | |
|----------------------------------|--------------------------------------|
| TOTAL | 12 cases |
| SEX | 9 female, 3 male |
| RACE | 10 white, 2 Native American |
| AGE RANGE | 23-75 years |
| AVERAGE AGE | 39.5 years |
| MEDIAN AGE | 34.5 years |
| OPIOID-RELATED | 8 cases (67% of Drug-Related Deaths) |
| MANNER OF DEATH | 10 accidents, 2 suicides |



Isabella County Suicides

| Suicide Totals by Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|------------------------|------|------|------|------|------|
| SUICIDES | 10 | 5 | 6 | 10 | 10 |

| Suicide Methods | 2018 | 2019 | 2020 | 2021 | 2022 |
|--------------------|------|------|------|-----------------|------|
| FIREARM | 5 | 4 | 3 | 5 | 5 |
| HANGING | 3 | 1 | 3 | 4 | 2 |
| DRUG INTOXICATION | 1 | 0 | 0 | 0 | 2 |
| MOTOR VEHICLE/FIRE | 1 | 0 | 0 | 0 | 1 |
| OTHER | 0 | 0 | 0 | 1 ⁴⁵ | 0 |

| Suicides by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| 0-17 | 0 | 0 | 1 | 0 | 2 |
| 18-25 | 2 | 0 | 1 | 2 | 0 |
| 26-44 | 3 | 1 | 1 | 4 | 2 |
| 45-64 | 4 | 3 | 2 | 1 | 2 |
| 65+ | 1 | 1 | 1 | 3 | 4 |

⁴⁵ Sharp force injury

Isabella County Deaths of Children

| Deaths of Children by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------------|------|------|------|------|------|
| Stillborn | 0 | 0 | 0 | 0 | 0 |
| <1 year | 0 | 1 | 3 | 1 | 1 |
| 1-5 | 0 | 4 | 1 | 1 | 1 |
| 6-10 | 0 | 0 | 0 | 0 | 0 |
| 11-17 | 1 | 0 | 2 | 3 | 3 |
| TOTAL | 1 | 5 | 6 | 5 | 5 |

| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| NATURAL | 0 | 0 | 2 | 0 | 0 |
| ACCIDENT | 1 | 4 | 2 | 2 | 2 |
| SUICIDE | 0 | 0 | 1 | 0 | 2 |
| HOMICIDE | 0 | 0 | 0 | 2 | 1 |
| INDETERMINATE | 0 | 1 | 1 | 1 | 0 |

| 2022 Deaths of Children Summary | | | | |
|--|-------------------------|-------------------|------------|--|
| <i>Manner</i> | <i>Number of Deaths</i> | <i>Age</i> | <i>Sex</i> | <i>Cause of Death</i> |
| STILLBORN | 0 | | | |
| NATURAL | 0 | | | |
| ACCIDENT | 2 | 4 months, 11 days | Male | Asphyxia associated with an unsafe sleep environment |
| | | 16 years | Male | Driver of golf cart pinned beneath vehicle after rollover accident |
| HOMICIDE | 1 | 2 years | Male | Gunshot wounds |
| SUICIDE | 2 | 12 years | Male | Hanging |
| | | 14 years | Female | Blunt force trauma - put self in front of motor vehicle |
| INDETERMINATE | 0 | | | |

Shiawassee County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

Christopher A. Hauch, M.D.

David S. Moons, M.D.

Chief Investigator

Michelle A. Fox, D-ABMDI

Medical Examiner Investigators

Mark Pendergraff, D-ABMDI

April Archer

Kenneth Barnes

Erica Betts, D.O., MPH

James Buxton

Lynn Carpenter

Laura Hammersley

Lisa Higbee

Savannah Kryza

Alanna Pendergraff

Jacob Scheib

Stephanie Schieb

Krystin Smith

Daniel Sowels, D-ABMDI

Joshua Sutton

Brett Vanhorn

Amanda Wallace, D-ABMDI

Shiawassee County Summary of Cases

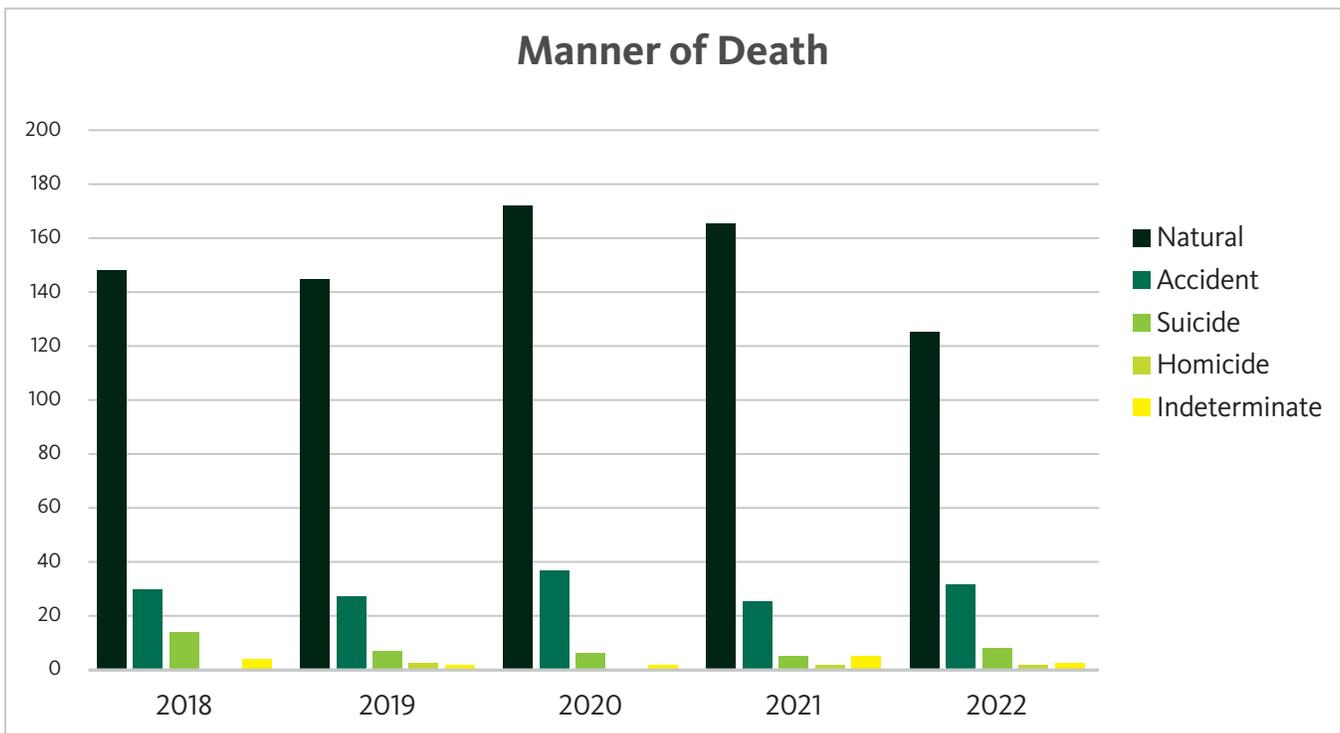
| | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|------|------|------|------|------|
| TOTAL DEATHS IN THE COUNTY | 704 | 708 | 730 | 804 | 836 |
| DEATHS REPORTED TO THE ME | 200 | 185 | 219 | 200 | 220 |
| CASES ACCEPTED - INVESTIGATION ⁴⁶ | 175 | 162 | 182 | 162 | 191 |
| MEI SCENE INVESTIGATIONS | 180 | 160 | 152 | 143 | 162 |
| DEATH CERTIFICATES SIGNED BY THE ME | 74 | 69 | 75 | 72 | 81 |
| BODIES TRANSPORTED TO SPARROW | 57 | 52 | 52 | 41 | 51 |
| COMPLETE AUTOPSY | 40 | 41 | 43 | 31 | 40 |
| LIMITED AUTOPSY | 8 | 6 | 4 | 3 | 5 |
| EXTERNAL EXAMINATION | 5 | 0 | 3 | 3 | 3 |
| STORAGE ONLY | 1 | 1 | 1 | 2 | 1 |
| UNCLAIMED BODIES | 4 | 5 | 2 | 2 | 2 |
| REFERRALS TO GIFT OF LIFE | 40 | 41 | 24 | 28 | 81 |
| TISSUE/CORNEA DONORS | 6 | 11 | 4 | 2 | 11 |
| CREMATION PERMITS REVIEWED | 436 | 439 | 466 | 538 | 543 |

⁴⁶ Not every case that is reported to the Medical Examiner's office falls within our jurisdiction. We accept cases for investigation based on the circumstances surrounding the death and the law that governs the Medical Examiner's authority (MCL 52.202).

Shiawassee County

Manner of Death

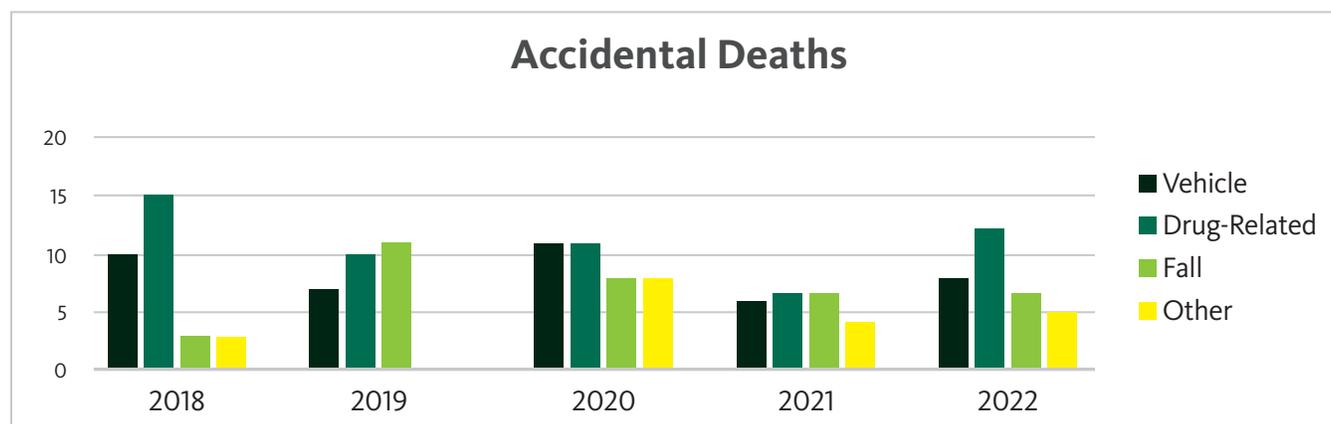
| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|-------------------|
| NATURAL | 148 | 145 | 172 | 166 | 175 |
| ACCIDENT | 31 | 28 | 38 | 24 | 32 |
| SUICIDE | 15 | 8 | 7 | 4 | 8 |
| HOMICIDE | 0 | 2 | 0 | 1 | 1 |
| INDETERMINATE | 4 | 1 | 1 | 5 | 2 |
| TOTAL | 198 | 184 | 218 | 200 | 220 ⁴⁷ |



⁴⁷ Two stillbirth cases with no manner of death

Shiawassee County Accidental Deaths

| Accidental Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|-----------------|------|------|------|-----------------|
| VEHICLE | 10 | 7 | 11 | 6 | 8 |
| DRUG-RELATED | 15 | 10 | 11 | 7 | 12 |
| DROWNING | 1 | 0 | 3 | 1 | 0 |
| FALL | 3 | 11 | 8 | 7 | 7 |
| FIRE | 0 | 0 | 1 | 0 | 0 |
| ASPHYXIA | 0 | 0 | 2 | 0 | 2 |
| HYPOTHERMIA | 1 | 0 | 2 | 0 | 1 |
| OTHER | 1 ⁴⁸ | 0 | 0 | 3 | 2 ⁴⁹ |
| TOTAL | 31 | 28 | 38 | 24 | 32 |



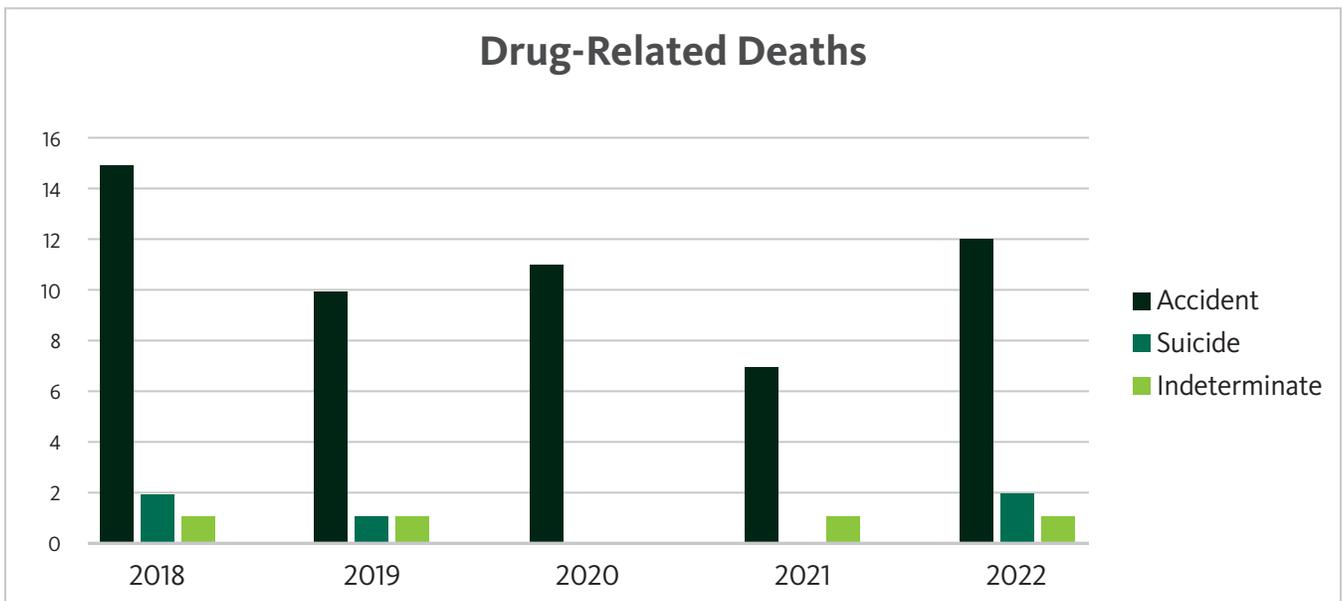
⁴⁸ Blunt force trauma - car fell from jack

⁴⁹ One remote diving injury; one remote snowmobile crash

Shiawassee County Drug-Related Deaths

For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle crashes, falls, choking while eating, or environmental exposures.

| Drug-Related Deaths | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|------|------|------|------|-----------------|
| ACCIDENT | 15 | 10 | 11 | 7 | 12 |
| SUICIDE | 2 | 1 | 0 | 0 | 2 |
| INDETERMINATE | 1 | 1 | 0 | 1 | 1 ⁵⁰ |
| TOTAL | 18 | 12 | 11 | 8 | 15 |

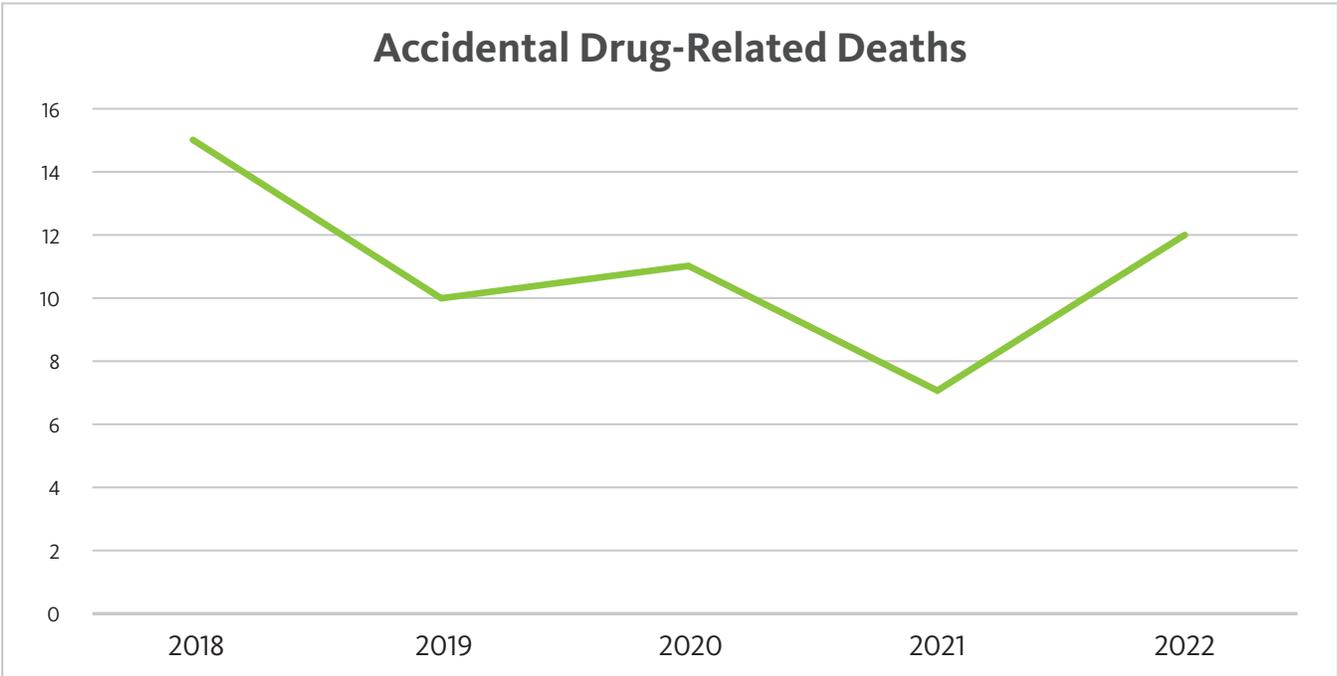


⁵⁰ One-year-old ingested fentanyl

Shiawassee County

Drug-Related Deaths

| 2022 Drug-Related Deaths Summary | |
|----------------------------------|---|
| TOTAL | 15 cases |
| SEX | 1 female, 14 male |
| RACE | 15 white |
| AGE RANGE | 1-67 years |
| AVERAGE AGE | 41.8 years |
| MEDIAN AGE | 44 years |
| OPIOID-RELATED | 12 cases (80% of Drug-Related Deaths) |
| MANNER OF DEATH | 12 accidents, 2 suicides, 1 indeterminate |



Shiawassee County Suicides

| Suicide Totals by Year | 2018 | 2019 | 2020 | 2021 | 2022 |
|------------------------|------|------|------|------|------|
| SUICIDES | 15 | 8 | 7 | 4 | 8 |

| Suicide Methods | 2018 | 2019 | 2020 | 2021 | 2022 |
|-------------------|------|------|------|------|------|
| FIREARM | 12 | 6 | 4 | 3 | 6 |
| HANGING | 1 | 0 | 3 | 1 | 0 |
| DRUG INTOXICATION | 2 | 1 | 0 | 0 | 2 |
| CARBON MONOXIDE | 0 | 1 | 0 | 0 | 0 |

| Suicides by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| 0-17 | 2 | 0 | 0 | 0 | 0 |
| 18-25 | 1 | 0 | 2 | 1 | 0 |
| 26-44 | 2 | 6 | 2 | 0 | 4 |
| 45-64 | 6 | 1 | 3 | 1 | 3 |
| 65+ | 4 | 1 | 0 | 2 | 1 |

Shiawassee County Deaths of Children

| Deaths of Children by Age | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------------|-----------------|------|------|------|------|
| Stillborn | 2 | 1 | 1 | 2 | 2 |
| <1 year | 0 | 0 | 0 | 2 | 3 |
| 1-5 | 0 | 0 | 0 | 1 | 1 |
| 6-10 | 0 | 0 | 0 | 0 | 0 |
| 11-17 | 4 | 1 | 0 | 0 | 0 |
| TOTAL | 8 ⁵¹ | 2 | 1 | 5 | 6 |

| Manner of Death | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------|------|------|------|------|------|
| NATURAL | 1 | 0 | 0 | 0 | 2 |
| ACCIDENT | 1 | 1 | 0 | 1 | 0 |
| SUICIDE | 2 | 0 | 0 | 0 | 0 |
| HOMICIDE | 0 | 0 | 0 | 0 | 0 |
| INDETERMINATE | 2 | 0 | 0 | 2 | 2 |

⁵¹ Two mummified previable infants/fetuses were discovered (unable to determine if stillborn or died after birth); therefore, age is not classified on these two cases

| 2022 Deaths of Children Summary | | | | |
|---------------------------------|-------------------------|------------------|------------|---|
| <i>Manner</i> | <i>Number of Deaths</i> | <i>Age</i> | <i>Sex</i> | <i>Cause of Death</i> |
| STILLBORN | 2 | | | |
| NATURAL | 2 | 7 months, 5 days | Female | Acute pneumonia with complications of premature birth |
| | | 0 days | Female | Premature birth |
| ACCIDENT | 0 | | | |
| HOMICIDE | 0 | | | |
| SUICIDE | 0 | | | |
| INDETERMINATE | 2 | 1 month, 23 days | Male | Sudden Unexplained Infant Death ⁵² |
| | | 1 year | Male | Acute fenanyl toxicity |

⁵² Sudden Unexplained Infant Death (SUID) refers to the death of an infant less than one year of age in which investigation, autopsy, medical history, review, and appropriate laboratory testing fails to identify a specific cause of death. SUID includes deaths that meet the definition of Sudden Infant Death Syndrome (SIDS).

Comparisons Across Counties

| | <i>Eaton</i> | <i>Ingham</i> | <i>Ionia</i> | <i>Isabella</i> | <i>Shiawassee</i> |
|---|----------------|------------------|----------------|-----------------|-------------------|
| POPULATION | 108,944 | 284,034 | 67,197 | 64,813 | 67,877 |
| TOTAL DEATHS | 811 | 3,317 | 419 | 605 | 836 |
| DEATHS REPORTED TO THE ME (% OF TOTAL DEATHS) | 241 (30%) | 1,035 (31.2%) | 137 (32.7%) | 170 (28.1%) | 220 (26.3%) |
| CASES ACCEPTED FOR INVESTIGATION | 219 | 908 | 122 | 138 | 191 |
| MEI SCENE INVESTIGATION | 197 | 779 | 122 | 124 | 162 |
| DEATH CERTIFICATES SIGNED BY THE ME | 94 | 531 | 51 | 76 | 81 |
| TOTAL EXAMS (% OF CASES ACCEPTED) | 63 (28.8%) | 345 (38.0%) | 43 (35.2%) | 49 (35.5%) | 48 (25.1%) |
| NATURAL DEATHS (% OF DEATHS REPORTED) | 191 (79.3%) | 666 (64.3%) | 102 (74.5%) | 127 (74.7%) | 175 (79.5%) |
| ACCIDENTAL DEATHS (% OF DEATHS REPORTED) | 33 (13.7%) | 276 (26.7%) | 15 (10.9%) | 31 (18.2%) | 32 (14.5%) |
| SUICIDE DEATHS (% OF DEATHS REPORTED) | 15 (6.2%) | 60 (5.8%) | 15 (10.9%) | 10 (5.9%) | 8 (3.6%) |
| HOMICIDE DEATHS (% OF DEATHS REPORTED) | 1 (0.4%) | 19 (1.8%) | 1 (0.7%) | 2 (1.2%) | 1 (0.5%) |
| INDETERMINATE DEATHS (% OF DEATHS REPORTED) | 1 (0.4%) | 13 (1.3%) | 4 (2.9%) | 0 | 2 (0.9%) |
| DRUG-RELATED DEATHS (% OF DEATHS REPORTED) | 17 (7.1%) | 131 (12.7%) | 10 (7.3%) | 12 (7.1%) | 15 (6.8%) |
| REFERRALS TO GIFT OF LIFE | 104 | 524 | 68 | 66 | 81 |
| TISSUE/CORNEA DONORS | 9 | 81 | 13 | 19 | 11 |
| UNCLAIMED BODIES | 5 | 26 | 1 | 1 | 2 |

Additional Information

On Sept. 20, 2022, Livingston County entered into an agreement with Sparrow Forensic Pathology for Medical Examiner services. On Oct. 1, 2022, Clinton County also selected Sparrow Forensic Pathology to serve as the county's Medical Examiner. Below are abbreviated statistics for these two counties based on the three months that we served as their Medical Examiner in 2022. Full statistics for these counties will be included in the 2023 Annual Report.

| Overview | Livingston ⁵³ | Clinton ⁵⁴ |
|-------------------------------------|--------------------------|-----------------------|
| DEATHS REPORTED TO THE ME | 123 | 38 |
| CASES ACCEPTED FOR INVESTIGATION | 112 | 37 |
| MEI SCENE INVESTIGATIONS | 109 | 36 |
| DEATH CERTIFICATES SIGNED BY THE ME | 44 | 12 |
| COMPLETE AUTOPSIES | 27 | 9 |
| LIMITED AUTOPSIES | 4 | 1 |
| EXTERNAL EXAMINATIONS | 2 | 1 |

| Manner of Death | Livingston ⁵⁰ | Clinton ⁵¹ |
|-----------------|--------------------------|-----------------------|
| NATURAL | 98 | 29 |
| ACCIDENT | 17 | 5 |
| SUICIDE | 7 | 4 |
| INDETERMINATE | 1 | 0 |
| TOTAL | 123 | 38 |

| Accidental Deaths | Livingston ⁵⁰ | Clinton ⁵¹ |
|-------------------|--------------------------|-----------------------|
| VEHICLE | 7 | 1 |
| DRUG-RELATED | 7 | 1 |
| FALL | 3 | 0 |
| FIREARM | 0 | 1 |
| CHOKING | 0 | 2 |

⁵³ Data for Livingston County Sept. 20 - Dec. 31, 2022

⁵⁴ Data for Clinton County Oct. 1 - Dec. 31, 2022

| Drug-Related Deaths | <i>Livingston</i> ⁵⁰ | <i>Clinton</i> ⁵¹ |
|----------------------------|---------------------------------|------------------------------|
| ACCIDENT | 7 | 1 |
| SUICIDE | 1 | 0 |

| Suicide Deaths | <i>Livingston</i> ⁵⁰ | <i>Clinton</i> ⁵¹ |
|-------------------------|---------------------------------|------------------------------|
| FIREARMS | 5 | 1 |
| HANGING | 1 | 0 |
| DRUG INTOXICATION | 1 | 0 |
| MOTOR VEHICLE | 0 | 1 |
| SHARP FORCE INJURY | 0 | 1 |
| POISON (SODIUM NITRITE) | 0 | 1 |

Lastly, in the counties in which Sparrow Forensic Pathology served as the Office of the Medical Examiner in 2022:

- » No bodies were exhumed for examination.
- » No cases remained unidentified at the time a final disposition.
- » Toxicology testing was performed in 584 of the 591 (98.8%) examinations performed.



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