Office of the Medical Examiner

2021 Annual Report

Sparrow

Executive Summary

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

We are pleased to present our 2021 Annual Report. This report reflects the work of the Office of the Medical Examiner during the 2021 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 consistency and standardization. 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 • 2021 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

Michelle A. Fox, D-ABMDI
Chief Investigator
& Supervisor

Holly Marsh
Administrative Assistant

Krystin Smith
Autopsy Assistant
& In-House Investigations

Amanda Wallace
Autopsy Assistant
& In-House Investigations

Debra Parsons
Team Advisor
& Autopsy Assistant

Kelsey Daniels
Autopsy Assistant

Paul Hughes
Autopsy Assistant

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 2021, this function was performed by Michelle Fox, Jessica Nicholson, Karen Phelps, Krystin Smith, Marissa Timko, Shelly Travis, and Amanda Wallace.

Death Certification

The main 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 of event(s) before death 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 generally 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 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 September 2020, 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 that contract for services with 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 (including drug overdoses) 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 major 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 information that may be used to address public health and safety issues. Our office participates with the Michigan Child Death Review process in all counties, providing significant information regarding how children died, with the goal of preventing future deaths.

Education

We have a strong affiliation with Michigan State University. We routinely have medical students from Michigan State University (and occasionally other medical schools) rotate through our office to gain experience and exposure to forensic pathology. We provide lectures to forensic science students at the university. Additionally, we participate in many programs designed to teach youth about careers in forensic pathology.

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 reflects the calendar year in which the deaths were reported to the respective medical examiner 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.

The category "Referrals to Gift of Life" refers to the number of deaths in our medical examiner database that were automatically referred to the organ/tissue procurement agency using pre-established criteria.

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.

David S. Moons, M.D.

Chief Investigator

Michelle A. Fox, D-ABMDI

Medical Examiner Investigators

Kenneth Barnes

Erica Betts, D.O., MPH

Chad Chambers

Joy Dempsey, D-ABMDI

Lynne Mark, D-ABMDI

Brett Ramsden, D-ABMDI

Daniel Sowles, D-ABMDI

Mary Stevens

Tori Vandermoere

Lydia Vargas

Eaton County
Summary of Cases

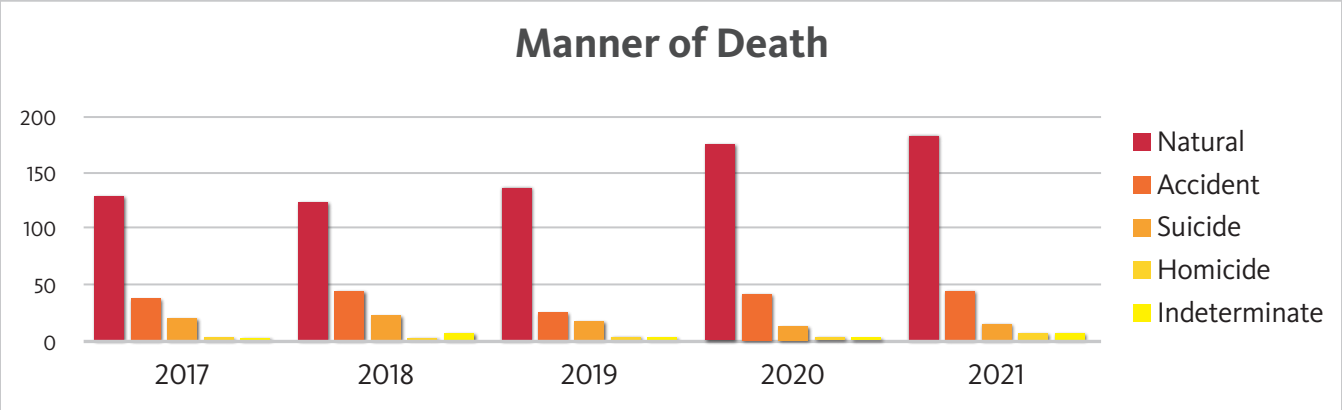
	2017	2018	2019	2020	2021
TOTAL DEATHS IN THE COUNTY	783	817	710	866	844
DEATHS REPORTED TO THE ME	191	201	184	235	262
CASES ACCEPTED FOR INVESTIGATION[1]	176	185	161	212	230
MEI SCENE INVESTIGATIONS	187	193	170	201	220
DEATH CERTIFICATES SIGNED BY THE ME	91	102	66	102	122
BODIES TRANSPORTED TO SPARROW	85	99	58	91	98
COMPLETE AUTOPSY	56	74	39	66	73
LIMITED AUTOPSY	4	5	6	6	9
EXTERNAL EXAMINATION	13	11	7	7	7
STORAGE ONLY	12	9	6	11	9
UNCLAIMED BODIES	4	3	3	4	2
REFERRALS TO GIFT OF LIFE	53	63	75	62	102
TISSUE/CORNEA DONORS	11	11	17	18	21
CREMATION PERMITS REVIEWED	450	498	411	544	538

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). We declined jurisdiction in 32 cases that were reported to us in 2021.

Eaton County
Manner of Death

The data on the following pages refers to those deaths that were reported to the Medical Examiner's Office.

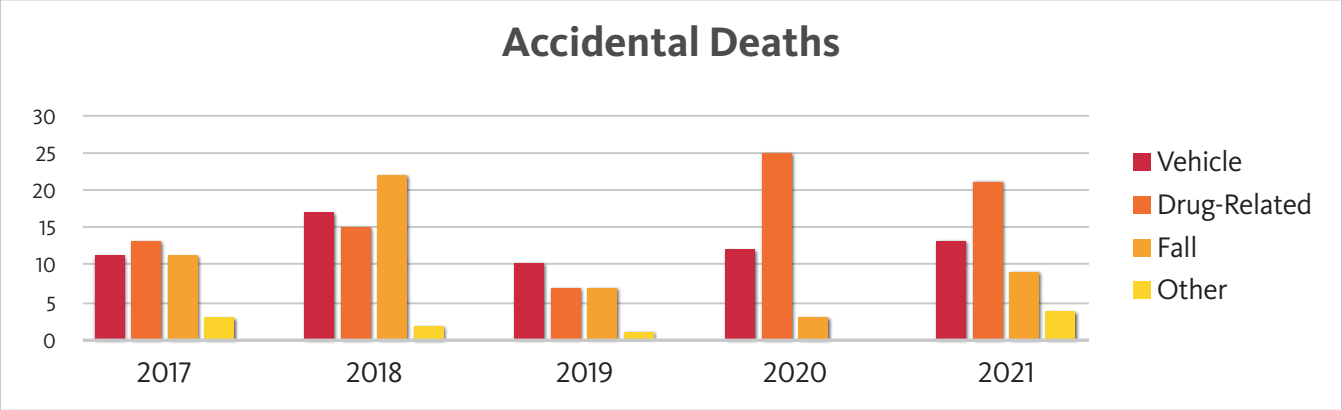
Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
NATURAL	128	124	136	174	186
ACCIDENT	38	44	25	42	46
SUICIDE	20	22	18	13	17
HOMICIDE	3	2	3	3	7
INDETERMINATE	2	8	2	3	6
TOTAL	191	201[2]	184	235	262



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

Eaton County
Accidental Deaths

Accidental Deaths	2017	2018	2019	2020	2021
VEHICLE	11	17[3]	10	12	13
DRUG-RELATED	13	15[4]	7	25	21
DROWNING	1	1	1	0	3
FALL	11	11	7	3	9
FIRE	0	0	0	0	0
ASPHYXIA	0	0	0	2	1
HYPOTHERMIA	0	0	0	0	0
OTHER	2[5]	2[6]	0	0	0
TOTAL	38	44	25	42	46[7]

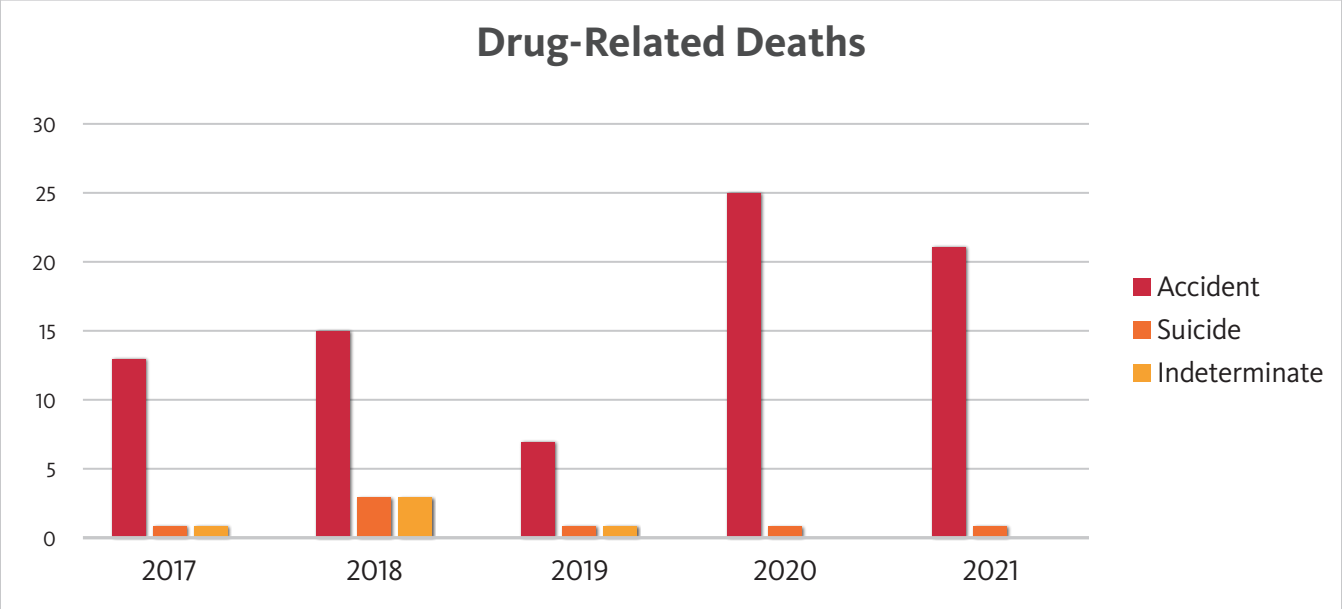


3 Does not include one car passenger listed in other category (see below)
4 Does not include two drowning cases in which ethanol intoxication was involved (categorized as drowning); includes one case of ethanol intoxication with associated hypothermia
5 (1) natural disease complicated by environmental exposure, (1) delayed complications of anaphylaxis
6 (1) injuries sustained when struck by falling tree branch, (1) head injury due to head striking car window; not in car crash
7 (1) drowning associated with drug intoxication included in both categories

Eaton County
Drug-Related Deaths

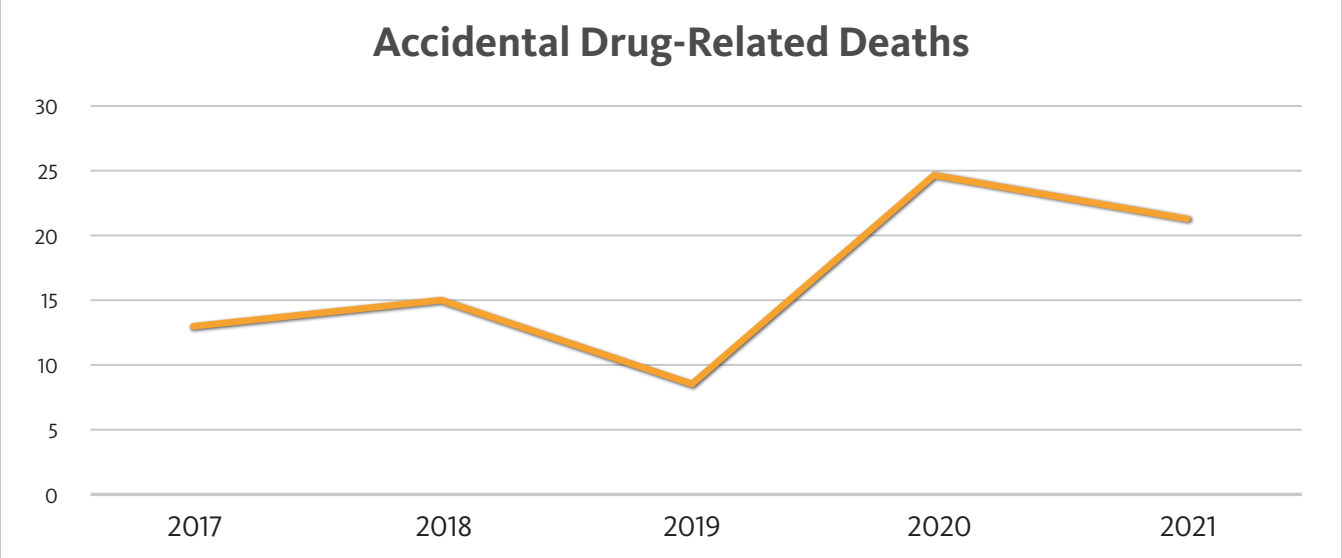
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
ACCIDENT	13	15	7	25	21
SUICIDE	1	3	1	1	1
INDETERMINATE	1	3	1	0	0
TOTAL	15	21	9	26	22



Eaton County
Drug-Related Deaths

2021 Drug-Related Deaths Summary	
TOTAL	22 cases
SEX	8 female, 14 male
RACE	19 white, 3 black
AGE RANGE	20-65 years
AVERAGE AGE	44 years
MEDIAN AGE	45.5 years
OPIOID-RELATED	15 cases involved an opiate or opioid (68%)
MANNER OF DEATH	21 accidents, 1 suicide, 0 indeterminate



Eaton County
Suicides

Suicide Totals by Year	2017	2018	2019	2020	2021
SUICIDES	20	22	18	13	17

Suicide Methods	2017	2018	2019	2020	2021
FIREARM	12	9	11	7	11
HANGING	7	5	4	4	5
DRUG INTOXICATION	1	3	1	1	1
SHARP FORCE INJURY	0	3	1	0	0
OTHER	0	2[8]	1[9]	1[10]	0

Suicides by Age	2017	2018	2019	2020	2021
0-17	1	0	1	0	1
18-25	4	4	3	1	2
26-44	6	6	7	3	7
45-64	7	5	4	7	4
65+	2	7	3	2	3

8 (1) carbon monoxide inhalation (1) ethylene glycol ingestion
9 (1) Drowning
10 (1) Carbon monoxide inhalation

Eaton County

Reported Deaths of Children

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).

Deaths of Children by Age	*2017*	*2018*	*2019*	*2020*	*2021*
Stillborn	0	2[11]	0	0	1
<1 year	1	1	0	0	1
1-5	0	1	1	0	2
6-10	0	0	4	0	0
11-17	2	1	2	3	2
TOTAL	3	5	7	3	6

Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
NATURAL	0	0	2	0	0
ACCIDENT	1	1	4	3	3
SUICIDE	1	0	1	0	1
HOMICIDE	0	0	0	0	1
INDETERMINATE	1	2	0	0	0

11 Includes one mummified fetal remains discovered in a funeral home

Eaton County
Reported Deaths of Children

2021 Reported Deaths of Children Summary		
Manner	***Number of Deaths***	***Cause of Death***
Stillbirth	1	Stillbirth
Accident	3	Asphyxia (reported bed sharing with adult) Motor vehicle crash (child passenger, teenage pedestrian struck by vehicle)
Homicide	1	Gunshot wound (child)
Suicide	1	Gunshot wound (teenager)

Ingham County

Medical Examiner

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Deputy Medical Examiners

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Krystin Smith

Daniel Sowles, D-ABMDI

Mary Stevens

Marissa Timko

Shelly Travis

Tori Vandermoere

Lydia Vargas

Amanda Wallace

Ingham County
Summary of Cases

	2017	2018	2019	2020	2021
TOTAL DEATHS IN THE COUNTY	2,872	2,870	3,066	3,468	3,754
DEATHS REPORTED TO THE ME	916	888	936	1,087	1,138
CASES ACCEPTED FOR INVESTIGATION[12]	677	647	742	840	971
MEI SCENE INVESTIGATIONS	752	709	775	572	775
DEATH CERTIFICATES SIGNED BY THE ME	422	393	477	504	606
BODIES TRANSPORTED TO SPARROW	250	325	275	313	334
COMPLETE AUTOPSY	232	220	276	273	310
LIMITED AUTOPSY	12	13	13	24	22
EXTERNAL EXAMINATION	42	31[13]	44	59	66
STORAGE ONLY	55	61	47	53	63
UNCLAIMED BODIES	34	28	13	18	25
REFERRALS TO GIFT OF LIFE	326	292	264	294	375
TISSUE/CORNEA DONORS	92	48	51	54	52
CREMATION PERMITS REVIEWED	1,920	1,934	2,154	2,483	2,730

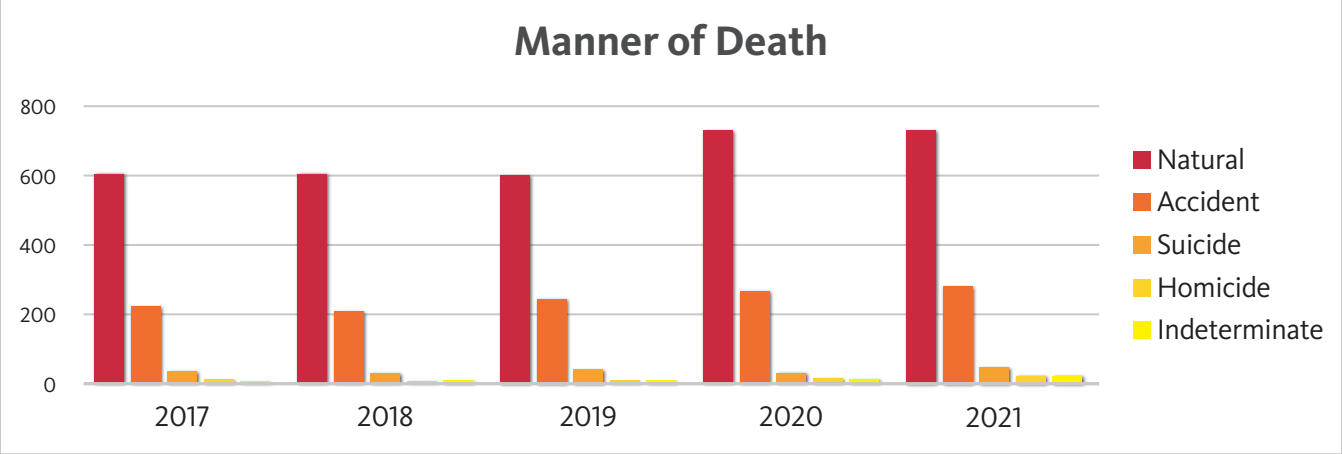
12 Not every case that is reported to the Medical Examiner's Office falls within our jurisdiction. We accept cases for investigation based on the circumstances surrounding the death and the law that governs the Medical Examiner's authority (MCL 52.202). We declined jurisdiction in 167 cases that were reported to us in 2021.

13 (1) case examined by anthropology only for identification

Ingham County
Manner of Death

The data on the following pages refers to those deaths that were reported to the Medical Examiner's Office.

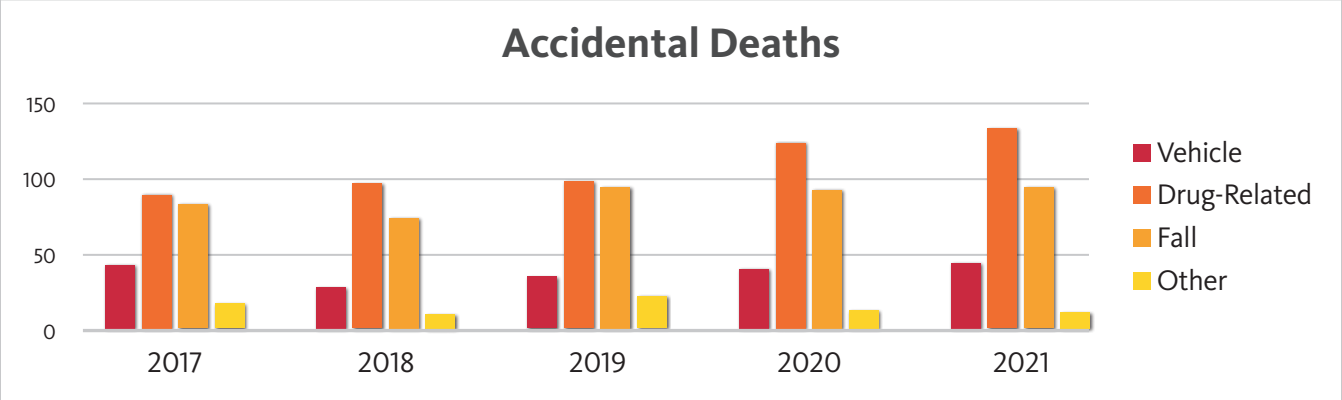
Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
NATURAL	605	608	598	728	730
ACCIDENT	231	210	251	271	290
SUICIDE	44	38	51	39	56
HOMICIDE	20[14]	12	16	26	31
INDETERMINATE	16[15]	16	18	22	28
TOTAL	916[16]	884[17]	934[18]	1,086[19]	1,135[20]



14 Based on new investigative information, one manner of death was changed from indeterminate to homicide on Dec. 6, 2018
15 Based on new investigative information, one manner of death was changed from indeterminate to homicide on Dec. 6, 2018
16 Cases with no manner of death: (1) stillbirth
17 Cases with no manner of death: (2) stillbirths; (1) non-human animal remains; (1) cremation permit authorization for death outside of country
18 Cases with no manner of death: (2) stillbirths
19 Cases with no manner of death: (1) stillbirth
20 Cases with no manner of death: (1) non-human tissue; (1) tissue belonging to another case; (1) outside county death incorrectly reported

Ingham County
Accidental Deaths

Accidental Deaths	2017	2018	2019	2020	2021
VEHICLE	43	29	35	40	46
DRUG-RELATED	89	97	98	124	138
DROWNING	3	2	3	1	6[21]
FALL	83	73	95	93	94
FIRE	0	2	5	2	0
ASPHYXIA	4	3	8[22]	5[23]	5[24]
HYPOTHERMIA	1	0	0	4	0
OTHER	9[25]	4[26]	7[27]	2[28]	3[29]
TOTAL	231	210	251	271	290[30]

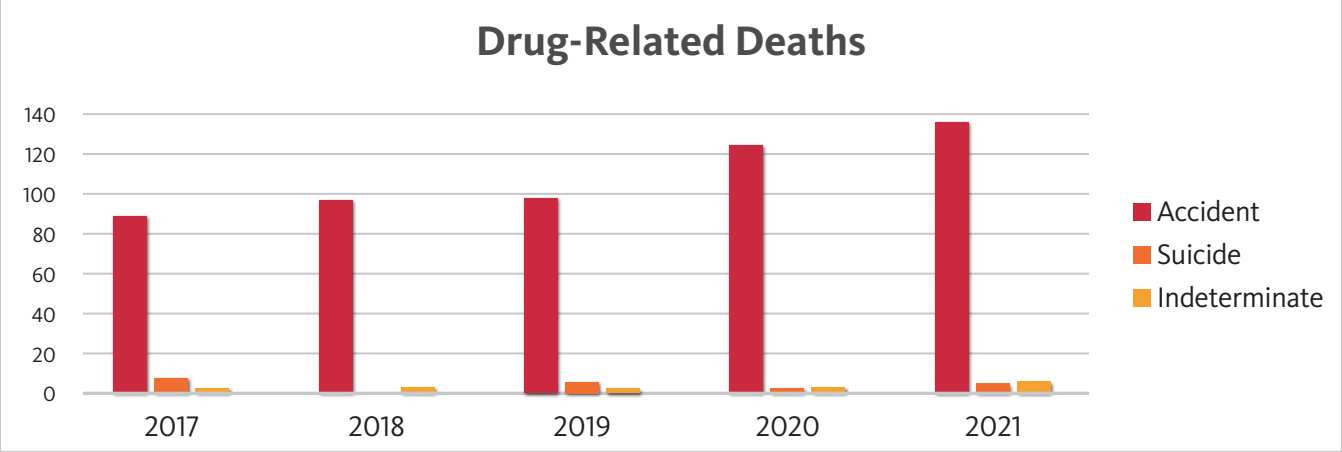


21 (1) associated with drug intoxication
22 (6) choking on food, (2) infant in unsafe sleep environment
23 (3) choking on food, (2) infant in unsafe sleep environment
24 (2) choking on food; (2) infant in unsafe sleep environment; (1) child compressed beneath trailer
25 (1) complications of injury from boxing; (1) fall from bicycle; (1) multiple injuries-struck by falling chimney; (1) pneumonia associated with acute on chronic ethanol use; (1) ingestion of poisonous mushroom; (1) rectal perforation from enema; (1) fell into wedged position on railroad – blunt and compression injuries; (1) esophageal rupture from acute on chronic ethanol use
26 (1) carbon monoxide intoxication; (1) injuries from airplane crash; (2) remote neck injuries – one wrestling and one swimming
27 (2) injuries from plane crash; (1) burns from hot coffee; (1) carbon monoxide; (1) hypothermia; (1) bicycle crash; (1) therapeutic injury
28 (1) pedestrian struck by train; (1) Injuries from compaction in refuse vehicle
29 (1) hypothermia; (1) thermal injury from smoking; (1) carbon monoxide intoxication associated with drug intoxication
30 Some are in more than one category

Ingham County
Drug-Related Deaths

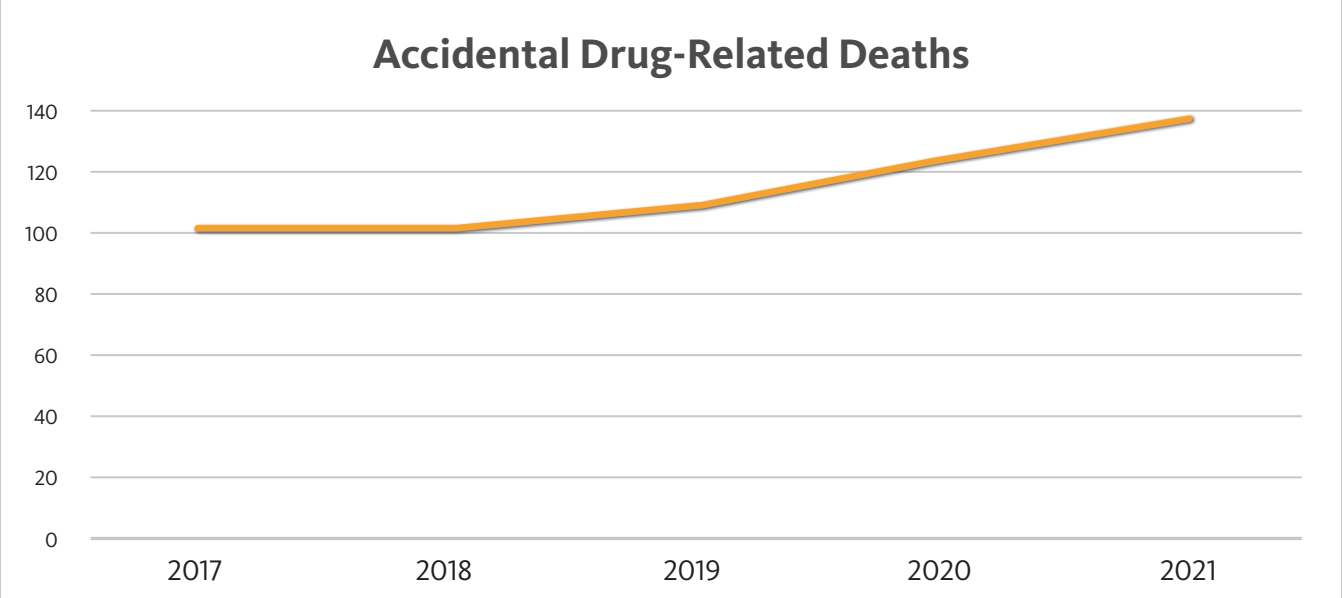
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
ACCIDENT	89	97	98	124	138
SUICIDE	8	0	7	3	6
INDETERMINATE	4	4	4	4	7
TOTAL	101	101	109	131	151



Ingham County
Drug-Related Deaths

2021 Drug-Related Deaths Summary	
TOTAL	151 cases
SEX	58 female, 93 male
RACE	113 white, 34 black, 1 Native American, 3 Asian
AGE RANGE	14-73 years
AVERAGE AGE	43 years
MEDIAN AGE	41 years
OPIOID-RELATED	126 cases involved an opiate or opioid (83%)
MANNER OF DEATH	138 accidents, 6 suicides, 1 indeterminate



Ingham County
Suicides

Suicide Totals by Year	2017	2018	2019	2020	2021
SUICIDES	44	38	51	39	56

Suicide Methods	2017	2018	2019	2020	2021
FIREARM	18	21	20	21	28
HANGING	13	13	20	13	15
DRUG INTOXICATION	8	0	7	3[31]	6
SUFFOCATION	1	1	0	0	1
SHARP FORCE INJURY	1	0	0	1[32]	1
JUMP FROM HEIGHT	2	2	0	0	1
MOTOR VEHICLE CRASH	1	0	0	0	1
CARBON MONOXIDE	0	0	0	1	1
STRUCK BY TRAIN	0	1	1	1	0
OTHER	0	0	3[33]	0	2[34]

Suicides by Age	2017	2018	2019	2020	2021
0-17	2	3	2	2	2
18-25	9	10	13	5	7
26-44	12	12	14	13	29
45-64	18	7	18	15	11
65+	3	6	4	4	7

31 (1) combined drug intoxication and stab wound classified in both methods
32 (1) combined drug intoxication and stab wound classified in both methods (footnotes 31 and 32 are one case)
33 (1) jump from moving vehicle; (1) Ingestion of household cleaning product; (1) puncture of dialysis fistula
34 (1) insecticide poisoning; (1) neck trauma due to fall associated to suicide attempt via hanging

Ingham County
Reported Deaths of Children

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).

Deaths of Children by Age	*2017*	*2018*	*2019*	*2020*	*2021*
Stillborn	1	3	2	1	1
<1 year	8	3	13	11	10
1-5	3	4	8	3	2
6-10	1	3	5	2	2
11-17	4	8	7	7	10
TOTAL	17	21	35	24	25

Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
NATURAL	7	7	8	5	3
ACCIDENT	4	5	12	4	7
SUICIDE	2	3	2	2	2
HOMICIDE	1	2	2	4	7
INDETERMINATE	2	1	9	8	5

Ingham County
Reported Deaths of Children

2021 Reported Deaths of Children Summary		
Manner	***Number of Deaths***	***Cause of Death***
Accident	7	Asphyxia (2 infant sleep related, 1 child mechanical asphyxia) Motor vehicle crash (fetal demise in utero, child bicyclist v. vehicle, teenage driver) Drowning (teenager)
Homicide	7	All gunshot wounds (6 teenagers ages 15-17, 1 child)
Indeterminate	5	Sleep related deaths (3 reported as sharing a sleep surface with an adult, all ages are 1-4 months)
Stillbirth	1	Intrauterine Fetal Demise
Natural	3	Pneumonia (2 cases, both infants)
Suicide	2	Hanging (teenager) Drug intoxication (teenager)

Ionia County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

David S. Moons, M.D.

Chief Investigator

Michelle A. Fox, D-ABMDI

Medical Examiner Investigators

Erica Betts, D.O., MPH

James Buxton

Katharine Dernocoeur

Matthew Kasper, D-ABMDI

Derek Schroeder

Bill Simpson Sr., D-ABMDI

Dan Sowles, D-ABMDI

Mitchell Tolan, D-ABMDI

Thomas Wodarek

Ionia County
Summary of Cases

	2017	2018	2019	2020	2021
TOTAL DEATHS IN THE COUNTY	348	328	333	409	398
DEATHS REPORTED TO THE ME	113	96	111	119	130
CASES ACCEPTED FOR INVESTIGATION[35]	110	90	107	110	124
MEI SCENE INVESTIGATIONS	109	92	109	107	119
DEATH CERTIFICATES SIGNED BY THE ME	59	50	48	43	67
BODIES TRANSPORTED TO SPARROW	54	44	39	34	57
COMPLETE AUTOPSY	36	33	25	21	43
LIMITED AUTOPSY	2	5	6	5	5
EXTERNAL EXAMININATION	13	5	3	5	3
STORAGE ONLY[36]	3	1	5	3	6
UNCLAIMED BODIES	1	1	2	4	1
REFERRAL TO GIFT OF LIFE	49	24	32	38	59
TISSUE/CORNEA DONORS	9	9	12	18	14
CREMATION PERMITS REVIEWED	221	214	212	281	281

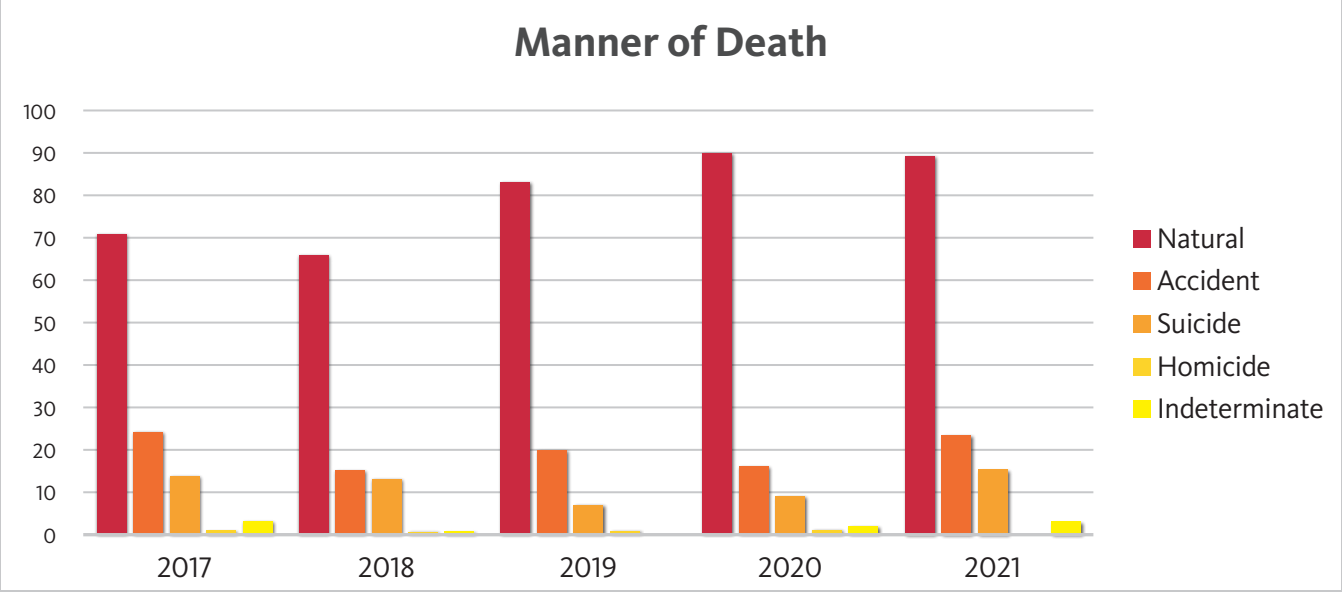
35 Not every case that is reported to the Medical Examiner's Office falls within our jurisdiction. We accept cases for investigation based on the circumstances surrounding the death and the law that governs the Medical Examiner's authority (MCL 52.202). We declined jurisdiction in six cases that were reported to us in 2021.

36 (1) case not included due to not falling under medical examiner jurisdiction-sent for storage from Sparrow Ionia

Ionia County
Manner of Death

The data on the following pages refers to those deaths that were reported to the Medical Examiner's Office.

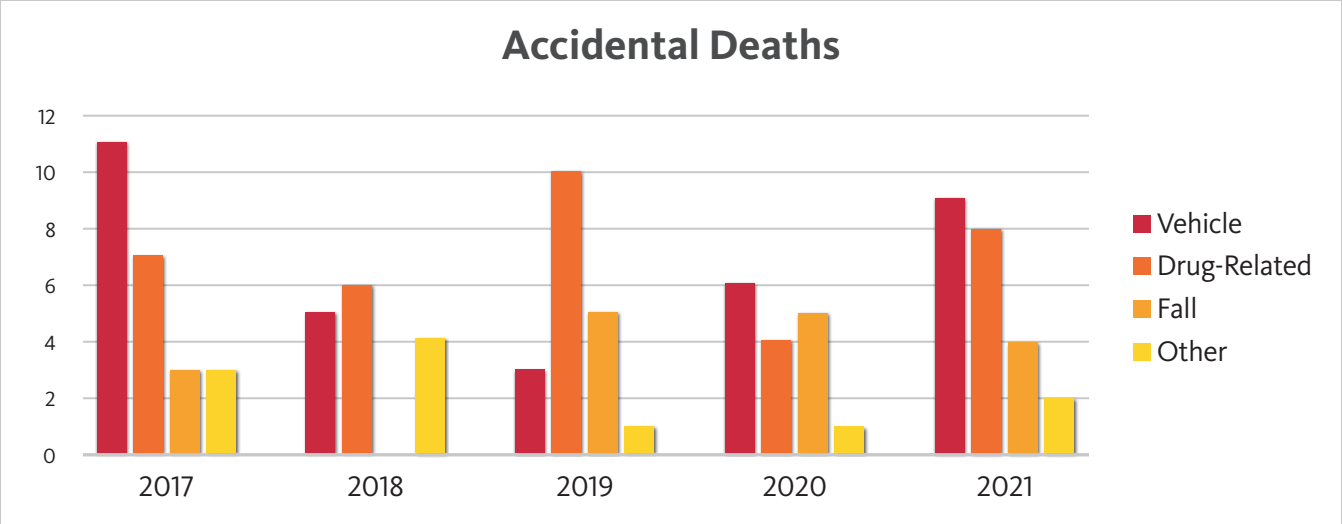
Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
NATURAL	71	66	83	90	89
ACCIDENT	24	15	20	16	23
SUICIDE	14	13	7	9	15
HOMICIDE	1	1	1	1	0
INDETERMINATE	3	1	0	2	3
TOTAL	113	96	111	118[37]	130



37 Cases with no manner of death: stillbirth

Ionia County
Accidental Deaths

Accidental Deaths	2017	2018	2019	2020	2021
VEHICLE	11	5	3	6	9
DRUG-RELATED[38]	7	6	10	4	8
DROWNING	1	4	0	1	0
FALL	3	0	5	5	4
FIRE	1	0	0	0	0
OTHER	1[39]	0	1[40]	0	2[41]
TOTAL	24	15	19[42]	16	16



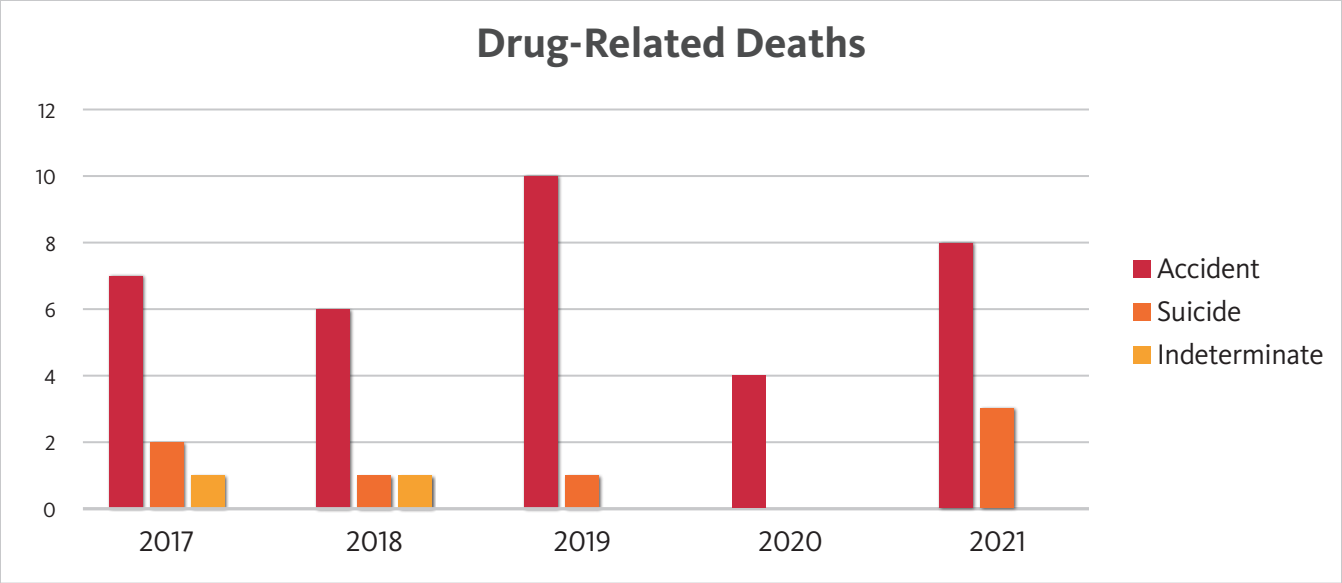
38 (1) motor vehicle related fatality in 2018 had drug intoxication listed as a contributing condition; as the death was not directly related to the toxic effects of the drug(s) it is not included as a drug fatality in this report.
39 (1) asphyxia
40 (1) asphyxia
41 (2) injuries from falling trees
42 (1) carbon monoxide

Ionia County

Drug-Related Deaths

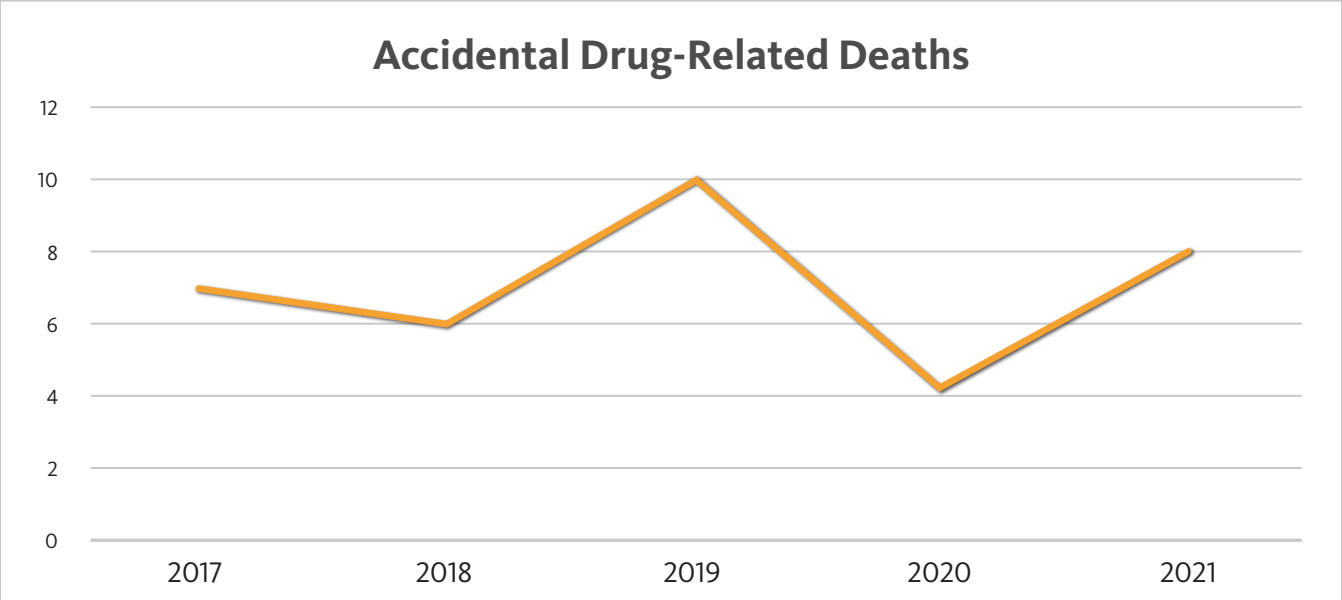
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
ACCIDENT	7	6	10	4	8
SUICIDE	2	1	1	0	3
INDETERMINATE	1	0	0	0	0



Ionia County
Drug-Related Deaths

2021 Drug-Related Deaths Summary	
TOTAL	11 cases
SEX	7 female, 4 male
RACE	10 white, 1 black
AGE RANGE	12-63 years
AVERAGE AGE	43.3 years
MEDIAN AGE	47 years
OPIOID-RELATED	7 cases involved an opiate or opioid (64%)
MANNER OF DEATH	8 accidents and 3 suicides



Ionia County
Suicides

Suicide Totals by Year	2017	2018	2019	2020	2021
SUICIDES	14	13	7	9	15

Suicide Methods	2017	2018	2019	2020	2021
FIREARM	3	9	4	5	6
HANGING	6	3	2	4	3
DRUG INTOXICATION	2	1	1	0	3
CARBON MONOXIDE	2	0	0	0	1
MOTOR VEHICLE	0	0	0	0	1
OTHER	1[43]	0	0	0	1[44]

Suicides by Age	2017	2018	2019	2020	2021
0-17	0	0	0	0	2
18-25	2	0	2	2	1
26-44	4	5	3	2	5
45-64	5	6	1	4	6
65+	3	2	1	1	1

43 (1) pedestrian struck by train
44 (1) stab wound

Ionia County

Reported Deaths of Children

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).

Deaths of Children by Age	*2017*	*2018*	*2019*	*2020*	*2021*
Stillborn	0	0	0	1	0
<1 year	1	1	0	2	1
1-5	0	0	0	1	0
6-10	0	0	0	1	0
11-17	2	0	0	0	2
TOTAL	3	1	0	5	3

Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
NATURAL	1	0	0	1	0
ACCIDENT	0	0	0	2	0
SUICIDE	0	0	0	0	2
HOMICIDE	1	0	0	0	0
INDETERMINATE	1	1	0	1	1

2021 Reported Deaths of Children Summary		
Manner	***Number of Deaths***	***Cause of Death***
Indeterminate	1	Sudden Unexplained Infant Death (reported bed sharing)
Suicide	2	Hanging (teenager) Drug intoxication (teenager)

Isabella County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

David S. Moons, M.D.

Chief Investigator

Michelle A. Fox, D-ABMDI

Medical Examiner Investigators

Michayla Bierschbach

Zachary Brown

Kari Duman

Taylor Maylee Hoekwater, D-ABMDI

Philip Nartker

Robert Schumacker

Bill Simpson Sr., D-ABMDI

Krystin Smith

Daniel Sowles, D-ABMDI

Shelly Travis

Amanda Wallace, D-ABMDI

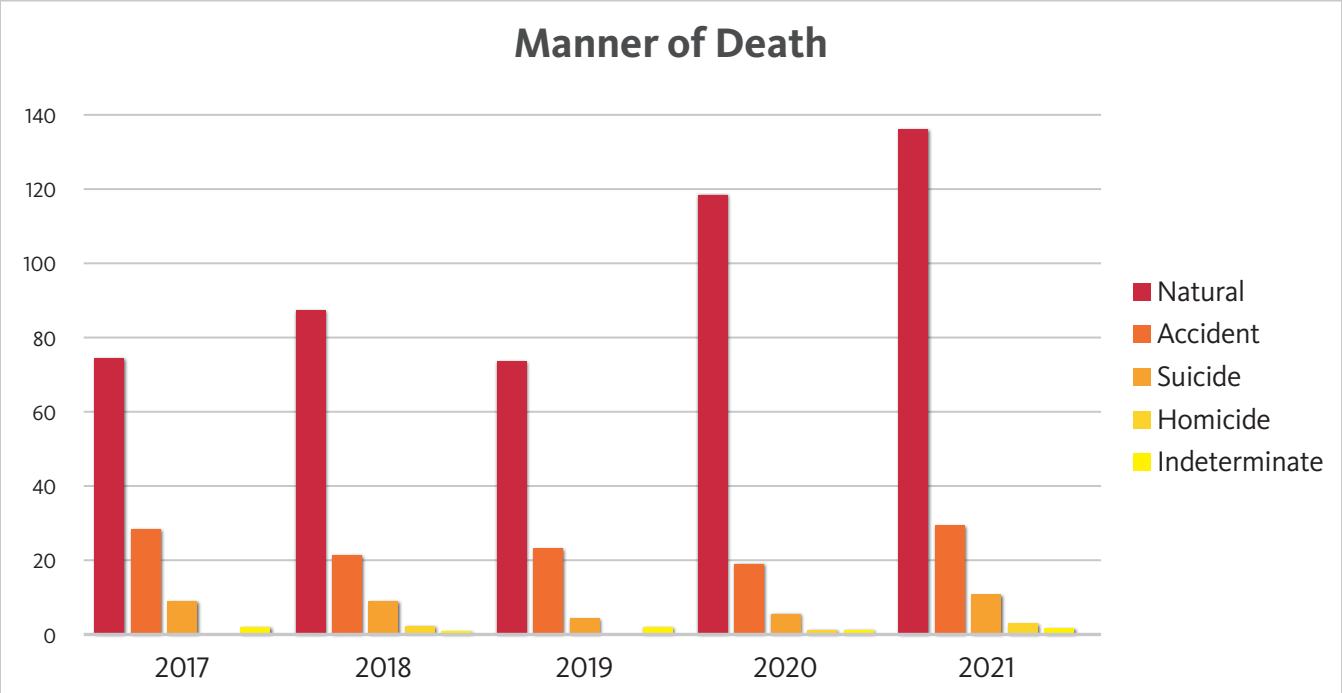
Isabella County
Summary of Cases

	2017	2018	2019	2020	2021
TOTAL DEATHS IN THE COUNTY	528	549	479	603	624
DEATHS REPORTED TO THE ME	118	125	106	148	183
CASES ACCEPTED FOR INVESTIGATION[45]	110	106	96	128	150
MEI SCENE INVESTIGATIONS	105	111	92	115	119
DEATH CERTIFICATES SIGNED BY THE ME	56	50	47	50	73
BODIES TRANSPORTED TO SPARROW	45	42	39	39	57
COMPLETE AUTOPSY	38	28	33	29	42
LIMITED AUTOPSY	2	4	2	2	6
EXTERNAL EXAMINATION	5	6	3	6	5
STORAGE ONLY	0	4	1	1	4
UNCLAIMED BODIES	1	1	1	1	5
REFERRALS TO GIFT OF LIFE	51	38	28	48	60
TISSUE/CORNEA DONORS	10	2	9	6	7
CREMATION PERMITS REVIEWED	315	352	310	384	409

45 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). We declined jurisdiction in 33 cases that were reported to us in 2021.

Isabella County
Manner of Death

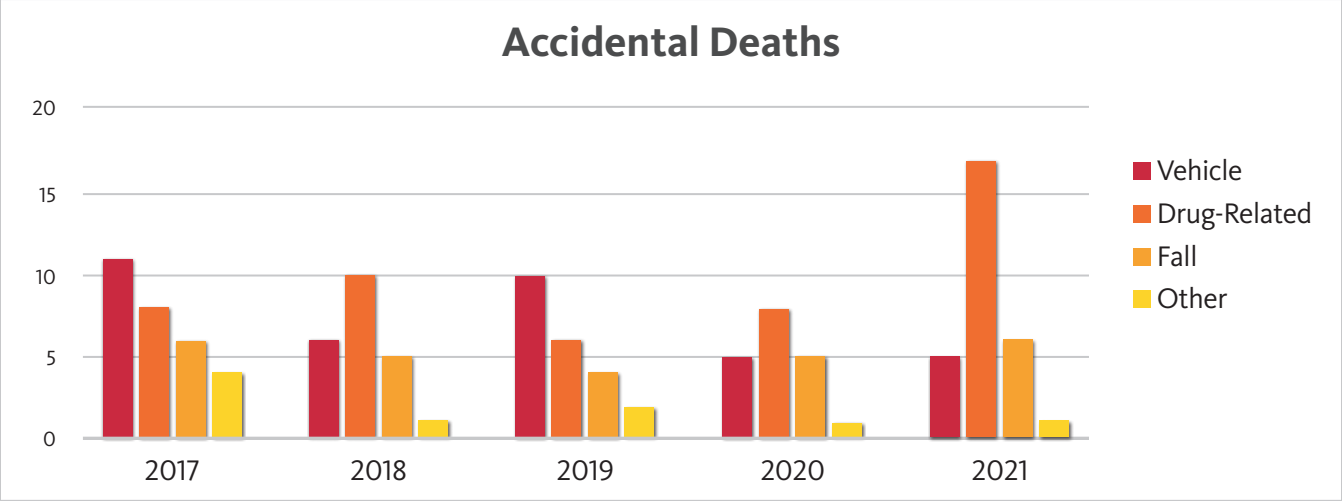
Manner of Death	2017	2018	2019	2020	2021
NATURAL	75	88	74	119	137
ACCIDENT	29	22	24	19	29
SUICIDE	10	10	5	6	10
HOMICIDE	0	3	0	2	4
INDETERMINATE	3	1	2	2	2
TOTAL	118[46]	124[47]	105[48]	148	182[49]



46 Case with no manner of death: stillbirth
47 Case with no manner of death: stillbirth in another county; reported to office due to burial in county
48 Case with no manner of death: blood clot specimen – unknown if it is of human origin
49 Case with no manner of death: blood clot specimen

Isabella County
Accidental Deaths

Accidental Deaths	2017	2018	2019	2020	2021
VEHICLE	11	6[50]	10	5	5
DRUG-RELATED	8	10[51]	6	8	17
DROWNING	2	1[52]	1	0	0
FALL	6	5	4	5	6
ASPHYXIA	2	0	1	1	0
FIRE	0	0	1	0	0
OTHER	0	0	0	0	1[53]
TOTAL	29	22	24	19	29

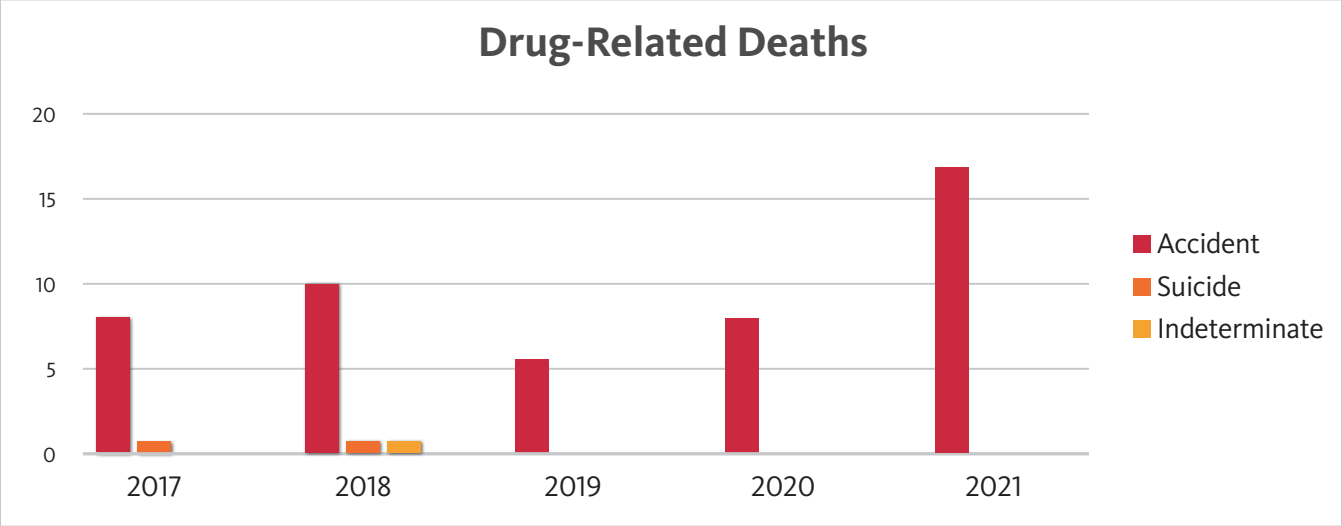


50 (1) motor vehicle death was due to a post-crash fire (included here as a vehicle fatality and not as a fire fatality)
51 (1) drowning while intoxicated with drugs (included here as a drowning fatality and not a drug intoxication death as the death was not directly related to the toxic effects of the drug(s) it is not included as a drug fatality in this report)
52 (1) drowning while intoxicated with drugs (included here as a drowning fatality)
53 (1) industrial injury

Isabella County
Drug-Related Deaths

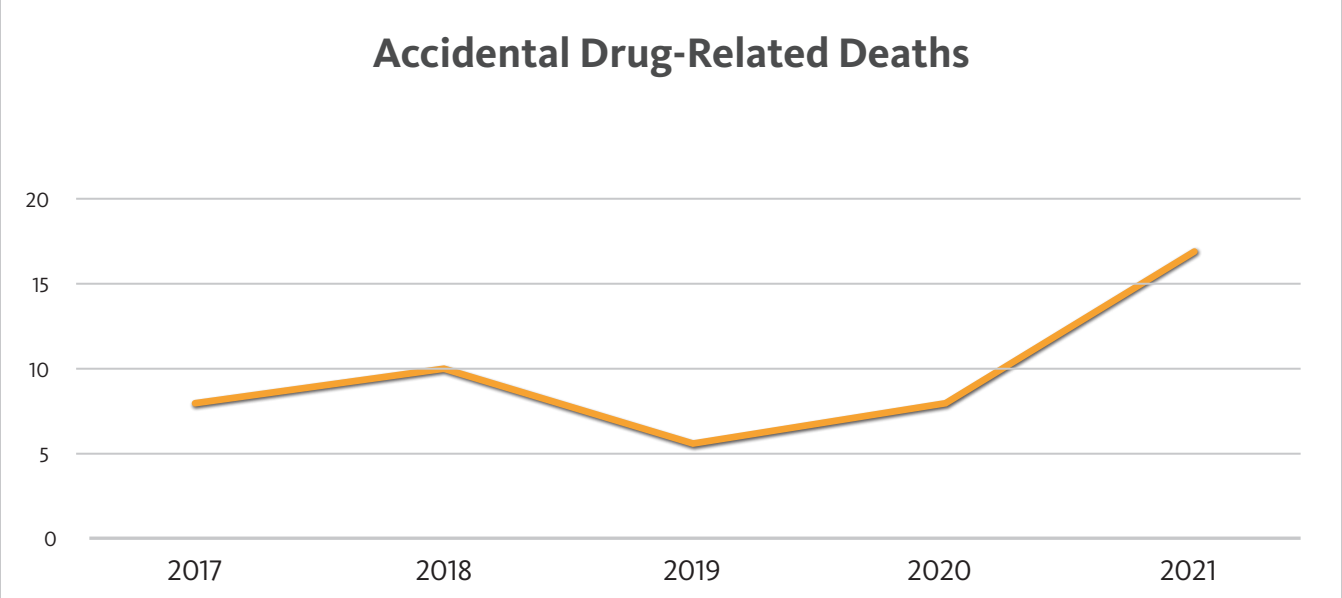
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
ACCIDENT	8	10	6	8	17
SUICIDE	1	1	0	0	0
INDETERMINATE	0	1	0	0	0



Isabella County
Drug-Related Deaths

2021 Drug-Related Deaths Summary	
TOTAL	17 cases
SEX	5 female, 12 male
RACE	13 white, 4 Native American
AGE RANGE	22-64 years
AVERAGE AGE	42.9 years
MEDIAN AGE	41 years
OPIOD-RELATED	14 cases involved an opiate or opioid (88%)
MANNER OF DEATH	17 accidents



Isabella County
Suicides

Suicide Totals by Year	2017	2018	2019	2020	2021
SUICIDES	10	10	5	6	10

Suicide Methods	2017	2018	2019	2020	2021
FIREARM	7	5	4	3	5
HANGING	2	3	1	3	4
ASPHYXIA	0	0	0	0	0
DRUG INTOXICATION	1	1	0	0	0
MOTOR VEHICLE/FIRE	0	1	0	0	0
OTHER	0	0	0	0	1[54]

Suicides by Age	2017	2018	2019	2020	2021
0-17	0	0	0	1	0
18-25	0	2	0	1	2
26-44	3	3	1	1	4
45-64	6	4	3	2	1
65+	1	1	1	1	3

54 (1) sharp force injury

Isabella County

Reported Deaths of Children

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).

Deaths of Children by Age	*2017*	*2018*	*2019*	*2020*	*2021*
Stillborn	1	0	0	0	0
<1 year	0	0	1	3	1
1-5	1	0	4	1	1
6-10	0	0	0	0	0
11-17	1	1	0	2	3
TOTAL	3	1	5	6	5

Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
NATURAL	0	0	0	2	0
ACCIDENT	2	1	4	2	2
SUICIDE	0	0	0	1	0
HOMICIDE	0	0	0	0	2
INDETERMINATE	0	0	1	1	1

2021 Reported Deaths of Children Summary		
Manner	***Number of Deaths***	***Cause of Death***
Accidents	2	Motor vehicle crash (child passenger, teen driver)
Homicide	2	Sharp force Injuries (both teenagers)
Indeterminate	1	Sudden Unexplained Infant Death (reported bed sharing)

Shiawassee County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

David S. Moons, M.D.

Chief Investigator

Michelle A. Fox, D-ABMDI

Medical Examiner Investigators

April Archer

Lynn Carpenter

Joy Dempsey, D-ABMDI

Laura Hammersley

Jessica Krakowiak

Savannah Kryza

Jacob Masters

Alanna Pendergraff

Mark Pendergraff

Krystin Smith

Tori Vandermoere

Amanda Wallace, D-ABMDI

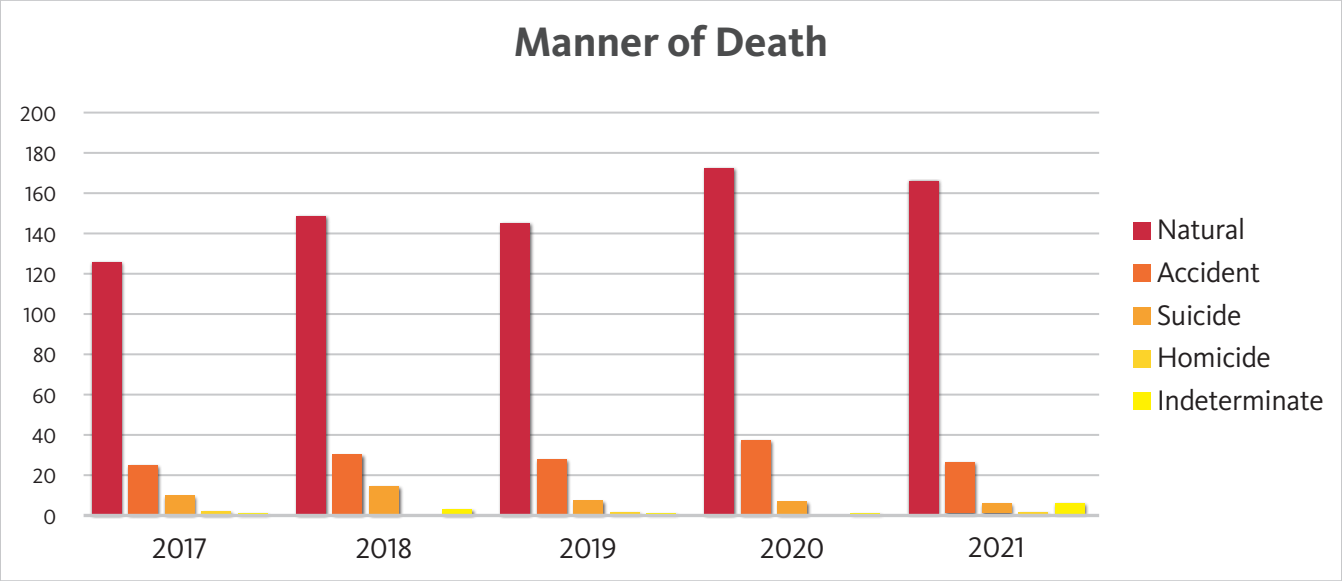
Shiawassee County
Summary of Cases

	2017	2018	2019	2020	2021
TOTAL DEATHS IN THE COUNTY	618	704	708	730	804
DEATHS REPORTED TO THE ME	168	200	185	219	200
CASES ACCEPTED - INVESTIGATION[55]	151	175	162	182	162
MEI SCENE INVESTIGATIONS	151	180	160	152	143
DEATH CERTIFICATES SIGNED BY THE ME	66	74	69	75	72
BODIES TRANSPORTED TO SPARROW	57	57	52	52	41
COMPLETE AUTOPSY	41	40	41	43	31
LIMITED AUTOPSY	7	8	6	4	3
EXTERNAL EXAMINATION	3	5	0	3	3
UNCLAIMED BODIES	0	1	1	1	2
STORAGE ONLY	6	4	5	2	2
REFERRALS TO GIFT OF LIFE	44	40	41	24	28
TISSUE/CORNEA DONORS	8	6	11	4	2
CREMATION PERMITS REVIEWED	356	436	439	466	538

55 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). We declined jurisdiction in 38 cases that were reported to us in 2021.

Shiawassee County
Manner of Death

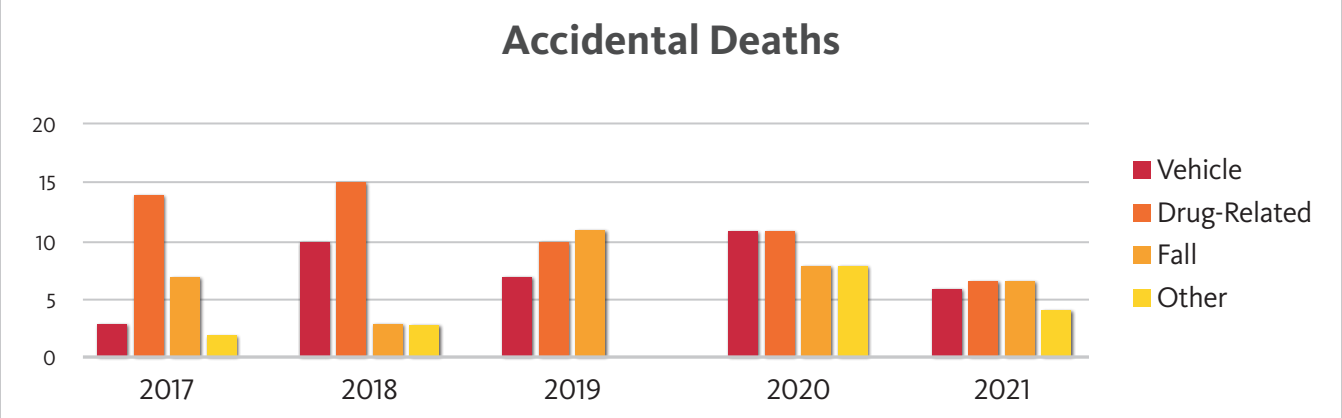
Manner of Death	2017	2018	2019	2020	2021
NATURAL	125	148	145	172	166
ACCIDENT	26	31	28	38	24
SUICIDE	11	15	8	7	4
HOMICIDE	3	0	2	0	1
INDETERMINATE	1	4	1	1	5
TOTAL	168[56]	198[57]	184[58]	218[59]	200



56 Cases with no manner of death: (1) stillbirth; (1) found "trophy" human skull of no contemporary forensic interest
57 Cases with no manner of death: stillbirth
58 Cases with no manner of death: stillbirth
59 Cases with no manner of death: stillbirth

Shiawassee County
Accidental Deaths

Accidental Deaths	2017	2018	2019	2020	2021
VEHICLE	3	10	7	11	6
DRUG-RELATED	14	15	10	11	7
DROWNING	0	1	0	3	1
FALL	7	3	11	8	7
FIRE	1	0	0	1	0
ASPHYXIA	0	0	0	2	0
HYPOTHERMIA	0	1	0	2	0
OTHER	1[60]	1[61]	0	0	3[62]
TOTAL	26	31	28	38	24

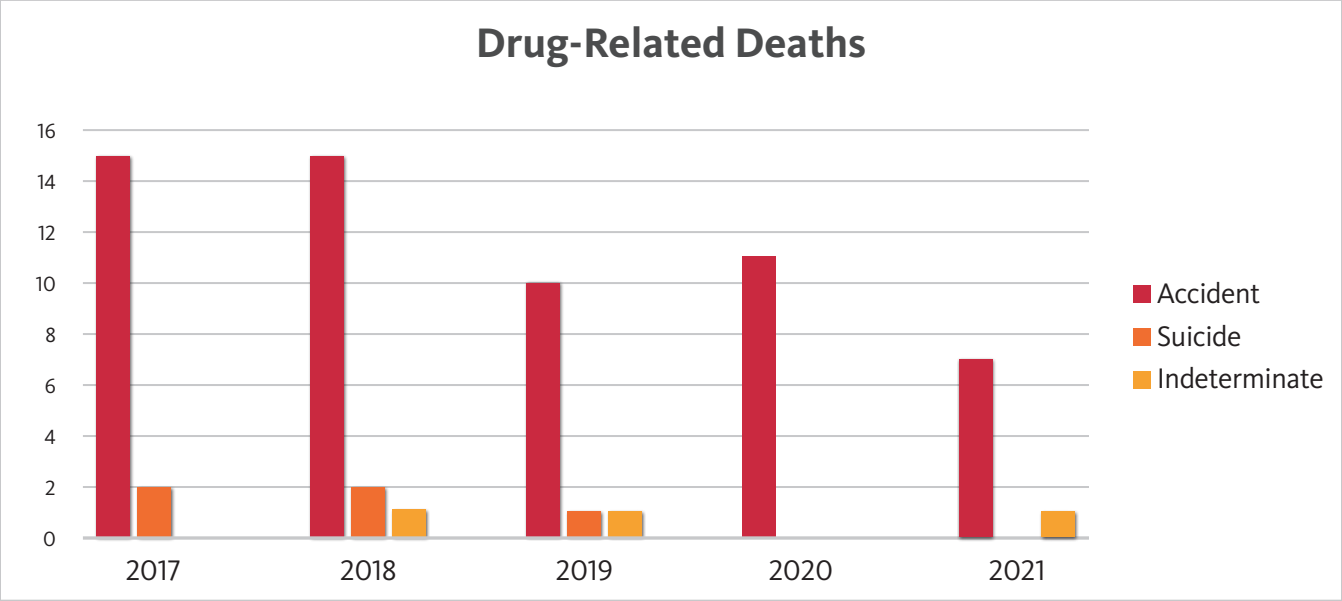


60 Hypothermia complicated by multiple drug intoxication, blunt head trauma, and cardiopulmonary disease
61 Blunt force head trauma-car fell from jack
62 (1) gunshot wound; (1) carbon monoxide; (1) blunt force injury-farm equipment

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.

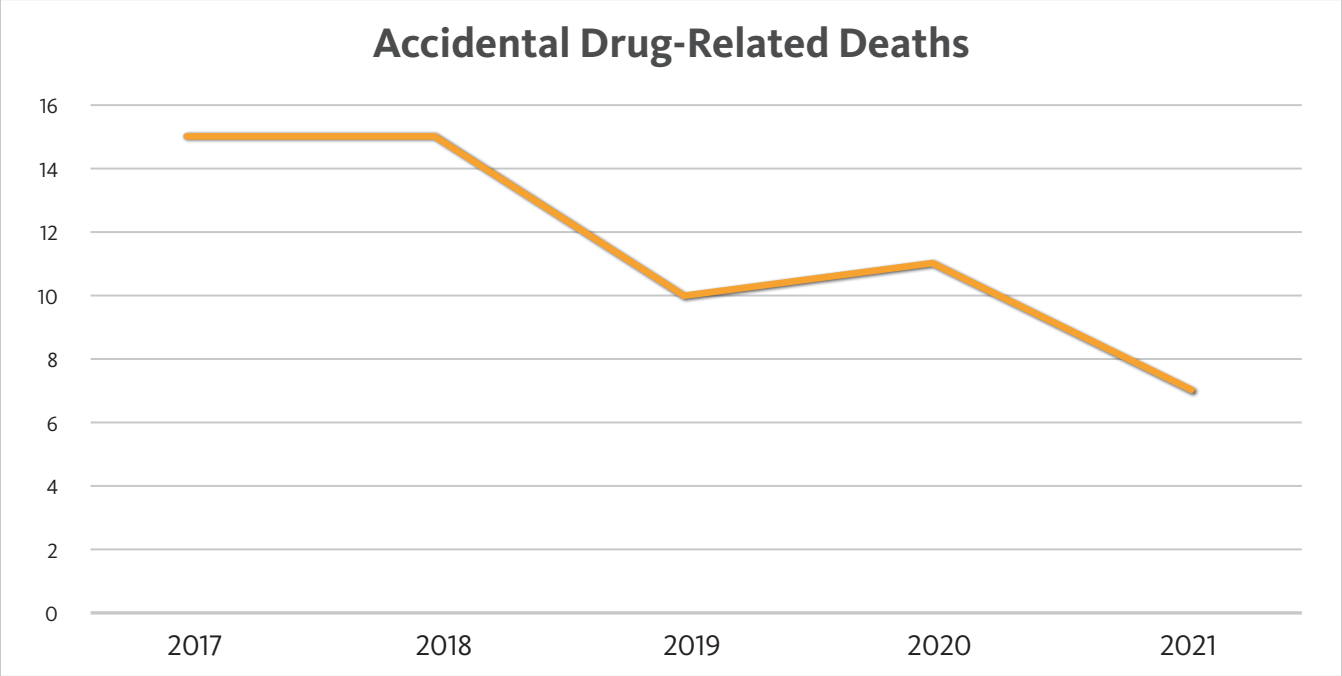
Manner of Death	*2017*	*2018*	*2019*	*2020*	*2021*
ACCIDENT	15[63]	15	10	11	7
SUICIDE	2	2	1	0	0
INDETERMINATE	0	1	1	0	1
TOTAL	17	18	12	11	8



63 (1) case is multifactorial – hypothermia complicated by multiple drug intoxication, blunt head injuries, and cardiopulmonary disease (explains discrepancy in total number of accidental drug-related deaths between this chart and that on previous page)

Shiawassee County
Drug-Related Deaths

2021 Drug-Related Deaths Summary	
TOTAL	8 cases
SEX	4 female, 4 male
RACE	8 white
AGE RANGE	22-74 years
AVERAGE AGE	44.9 years
MEDIAN AGE	42.5 years
OPIOD-RELATED	7 cases involved an opiate or opioid (88%)
MANNER OF DEATH	7 accidents, 0 suicides, 1 indeterminate



Shiawassee County
Suicides

Suicide Totals by Year	2017	2018	2019	2020	2021
SUICIDES	11	15	8	7	4

Suicide Methods	2017	2018	2019	2020	2021
FIREARM	9	12	6	4	3
HANGING	0	1	0	3	1
DRUG INTOXICATION	2	2	1	0	0
CARBON MONOXIDE	0	0	1	0	0
MOTOR VEHICLE	0	0	0	0	0
STRUCK BY TRAIN	0	0	0	0	0

Suicides by Age	2017	2018	2019	2020	2021
0-17	0	2	0	0	0
18-25	1	1	0	2	1
26-44	3	2	6	2	0
45-64	4	6	1	3	1
65+	3	4	1	0	2

Shiawassee County
Reported Deaths of Children

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).

Deaths of Children by Age	2017	2018	2019	2020	2021
Stillborn	1	2[64]	1	1	2
<1 year	1	0	0	0	2
1-5	0	0	0	0	1
6-10	0	0	0	0	0
11-17	0	4	1	0	0
TOTAL	2	8	2	1	5

Manner of Death	2017	2018	2019	2020	2021
NATURAL	0	1	0	0	0
ACCIDENT	0	1	1	0	1
SUICIDE	0	2	0	0	0
HOMICIDE	0	0	0	0	0
INDETERMINATE	1	2	0	0	2

2021 Reported Deaths of Children Summary		
Manner	*Number of Deaths*	*Cause of Death*
Stillbirth	2	Stillbirth
Accident	1	Gunshot wound (child)
Indeterminate	2	Sleep related deaths (7-11 month old infants)

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

Comparisons Across Counties

	Eaton	*Ingham*	*Ionia*	*Isabella*	*Shiawassee*
POPULATION	108,944	284,034	67,197	64,813	67,877
TOTAL DEATHS	844	3,754	398	624	804
DEATHS REPORTED TO THE ME (% OF TOTAL DEATHS)	262 (31%)	1,138 (30.3%)	130 (32.7%)	183 (29.3%)	200 (24.5%)
CASES ACCEPTED FOR INVESTIGATION	230	971	124	180	162
MEI SCENE INVESTIGATION	220	775	49	119	143
DEATH CERTIFICATES SIGNED BY THE ME	122	606	67	73	72
TOTAL EXAMS (% OF CASES ACCEPTED)	89 (38.7%)	398 (41%)	51 (41.1%)	53 (35.5%)	39 (24.1%)
NATURAL DEATHS (% OF DEATHS REPORTED)	186 (71%)	730 (64.1%)	89 (68.8%)	137 (74.8%)	166 (83%)
ACCIDENTAL DEATHS (% OF DEATHS REPORTED)	46 (17.6%)	290 (25.5%)	15 (11.5%)	10 (5.5%)	24 (12%)
SUICIDES (% OF DEATHS REPORTED)	17 (6.5%)	56 (4.9%)	15 (11.5%)	10 (5.5%)	4 (2%)
HOMICIDES (% OF DEATHS REPORTED)	7 (2.7%)	31 (2.7%)	0 (0%)	4 (2.2%)	1 (0.5%)
INDETERMINATE (% OF DEATHS REPORTED)	6 (2.3%)	28 (2.9%)	3 (2.3%)	2 (1.1%)	5 (2.5%)
DRUG-RELATED DEATHS (% OF DEATHS REPORTED)	22 (8.4%)	131 (13.3%)	11 (8.5%)	17 (9.3%)	8 (4%)
REFERRALS TO GIFT OF LIFE	102	375	59	60	28
TISSUE/CORNEA DONORS	21	52	14	7	2
UNCLAIMED BODIES	2	25	1	5	2

Additional Information

In the five counties for which Sparrow Forensic Pathology served as the Office of the Medical Examiner in 2021:

- No bodies were exhumed for examination
- No cases remained unidentified at the time a final disposition
- Toxicology testing was performed in 603 of the 630 (95.7%) examinations performed[65]

65 Toxicology testing is performed in nearly all cases in which an examination is performed. Exceptions to this may include (but are not limited to): cases sent in for identification purposes only, apparent natural deaths sent in for external examination to rule out trauma, and cases for which adequate toxicology specimens cannot be obtained (due to prolonged stay in hospital following initial event or decomposition).

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تنبيه: إذا كنت تتحدث لغة بخلاف الإنجليزية، فإن خدمات المساعدة اللغوية مجانية ومتاحة لك. اتصل برقم **517.253.2406**.