Office of the Medical Examiner

2020 Annual Report

Sparrow

Executive Summary

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

We are pleased to present our 2020 Annual Report. This report reflects the work of the Office of the Medical Examiner during the 2020 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 2020. 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 • 2020 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

Antoinette Vicks
Autopsy Assistant & In-House Investigations

Amanda Wallace
Autopsy Assistant & In-House Investigations

Debra Parsons
Team Advisor & Autopsy Assistant

Kelsey Daniels
Autopsy Assistant

Claire Mutch
Autopsy Assistant

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 Sparrow Hospital 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 Sparrow Hospital. For 2020, this function was performed by Michelle Fox, Krystin Smith, Antoinette Vicks, 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 2016, 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

Mark Chojnowski

Wade Doane

Kevin Hearld

Lynne Mark, D-ABMDI

Jessica Nicholson

Karen Phelps

Brett Ramsden

Daniel Sowles, D-ABMDI

Mary Stevens

Eaton County
Summary of Cases

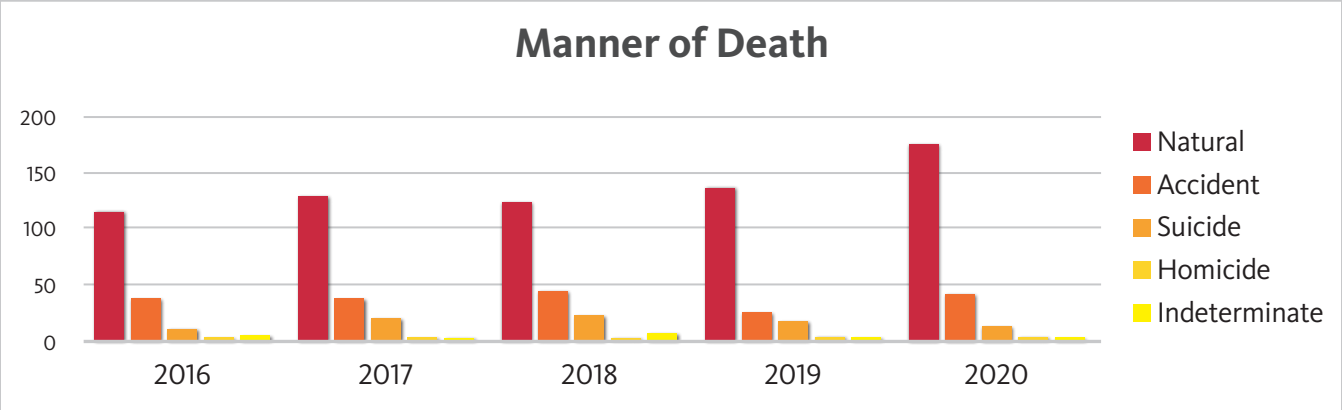
	2016	2017	2018	2019	2020
TOTAL DEATHS IN THE COUNTY	817	783	817	710	866
DEATHS REPORTED TO THE ME	170	191	201	184	235
CASES ACCEPTED FOR INVESTIGATION[1]	154	176	185	161	212
MEI SCENE INVESTIGATIONS	158	187	193	170	201
DEATH CERTIFICATES SIGNED BY THE ME	84	91	102	66	102
BODIES TRANSPORTED TO SPARROW	78	85	99	58	91
COMPLETE AUTOPSY	64	56	74	39	66
LIMITED AUTOPSY	2	4	5	6	6
EXTERNAL EXAMINATION	7	13	11	7	7
STORAGE ONLY	5	12	9	6	11
UNCLAIMED BODIES	2	4	3	3	4
REFERRALS TO GIFT OF LIFE	61	53	63	75	62
TISSUE/CORNEA DONORS	16	11	11	17	18
CREMATION PERMITS REVIEWED	452	450	498	411	544

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 23 cases that were reported to us in 2020.

Eaton County
Manner of Death

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

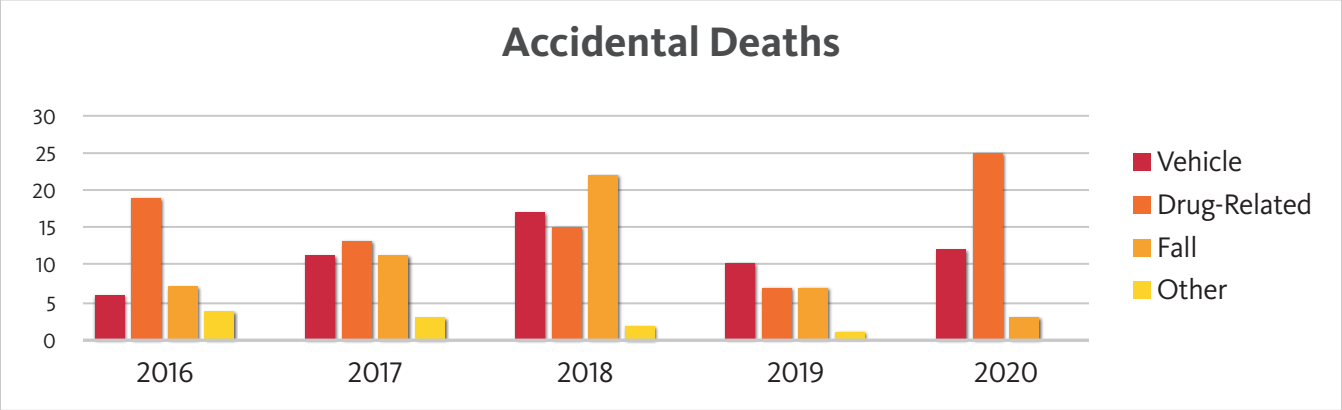
Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
NATURAL	116	128	124	136	174
ACCIDENT	36	38	44	25	42
SUICIDE	11	20	22	18	13
HOMICIDE	2	3	2	3	3
INDETERMINATE	4	2	8	2	3
TOTAL	170[2]	191	201[3]	184	235



2 Cases with no manner of death: (1) non-human bones
3 Includes one case of mummified fetal remains for which a manner of death was not assigned

Eaton County
Accidental Deaths

Accidental Deaths	2016	2017	2018	2019	2020
VEHICLE	6	11	17[4]	10	12
DRUG-RELATED	19	13	15[5]	7	25
DROWNING	0	1	1	1	0
FALL	7	11	11	7	3
FIRE	0	0	0	0	0
ASPHYXIA	0	0	0	0	2
HYPOTHERMIA	2	0	0	0	0
OTHER	2[6]	2[7]	2[8]	0	0
TOTAL	36	38	44	25	42

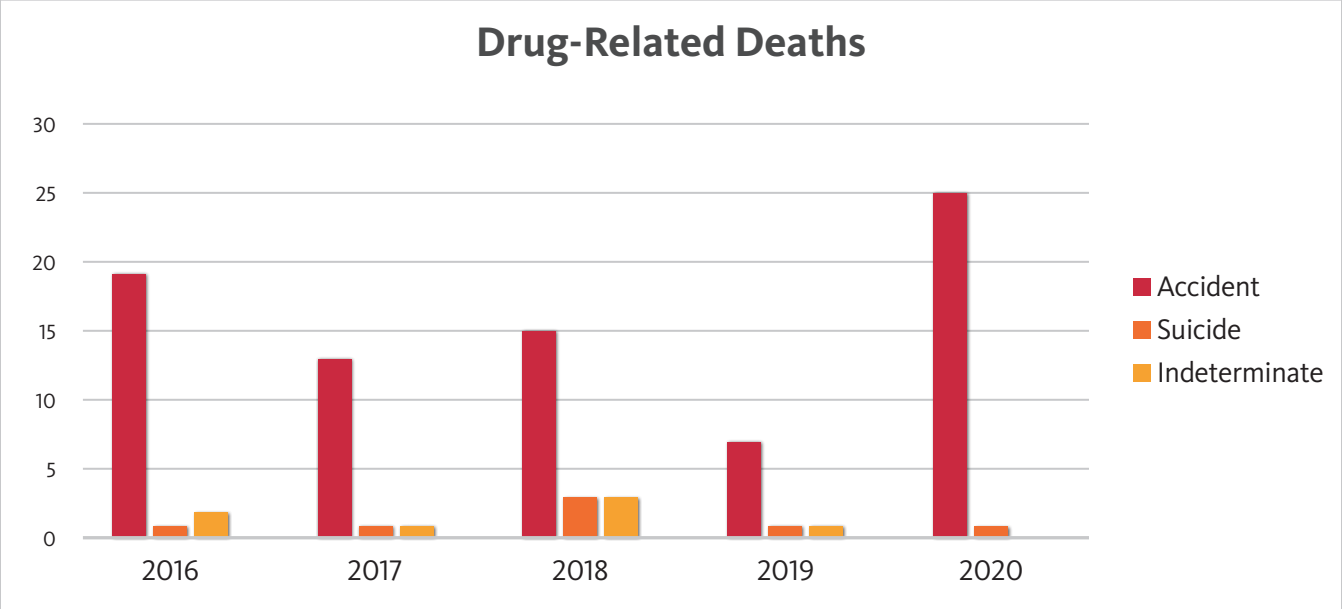


4 Does not include on car passenger listed in other category (see below)
5 Does not include two drowning cases in which ethanol intoxication was involved (categorized as drowning); includes one case of ethanol intoxication with associated hypothermia
6 (1) rib fractures due to injury from neck brace, (1) ruptured quadriceps tendon following syncopal episode
7 (1) natural disease complicated by environmental exposure, (1) delayed complications of anaphylaxis
8 (1) injuries sustained when struck by falling tree branch, (1) head injury due to head striking car window; not in car crash

Eaton County
Drug-Related Deaths

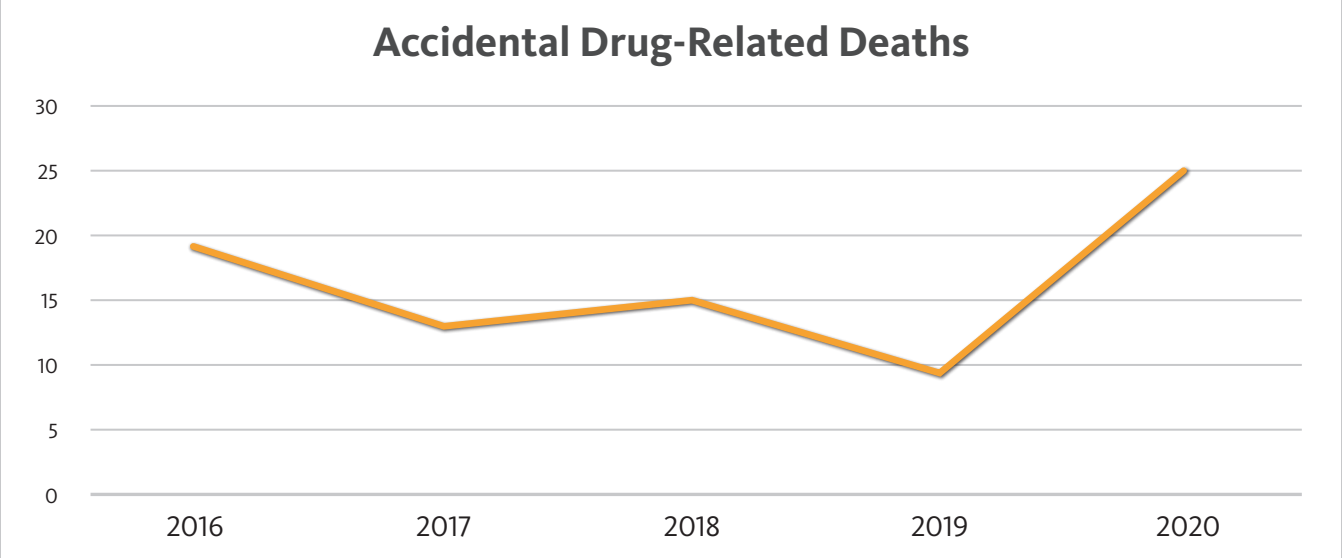
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
ACCIDENT	19	13	15	7	25
SUICIDE	1	1	3	1	1
INDETERMINATE	2	1	3	1	0
TOTAL	22	15	21	9	26



Eaton County
Drug-Related Deaths

2020 Drug-Related Deaths Summary	
TOTAL	26 cases
SEX	10 female, 16 male
RACE	20 white, 6 black
AGE RANGE	19-67 years
AVERAGE AGE	38.7 years
MEDIAN AGE	35 years
OPIOID-RELATED	23 cases involved an opiate or opioid (88%)
MANNER OF DEATH	25 accidents, 1 suicide, 0 indeterminate



Eaton County
Suicides

Suicide Totals by Year	2016	2017	2018	2019	2020
SUICIDES	11	20	22	18	13

Suicide Methods	2016	2017	2018	2019	2020
FIREARM	9	12	9	11	7
HANGING	1	7	5	4	4
DRUG INTOXICATION	1	1	3	1	1
SHARP FORCE INJURY	0	0	3	1	0
SUFFOCATION	0	0	0	0	0
OTHER	0	0	2[9]	1[10]	1[11]

Suicides by Age	2016	2017	2018	2019	2020
0-17	2	1	0	1	0
18-25	0	4	4	3	1
26-44	1	6	6	7	3
45-64	6	7	5	4	7
65 +	2	2	7	3	2

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

Eaton County
Reported Deaths of Children

Deaths of Children by Age	2016	2017	2018	2019	2020
Stillborn	0	0	2[12]	0	0
<1 year	0	1	1	0	0
1-5	0	0	1	1	0
6-10	0	0	0	4	0
11-17	2	2	1	2	3
TOTAL	2	3	5	7	3

Manner of Death	2016	2017	2018	2019	2020
NATURAL	0	0	0	2	0
ACCIDENT	0	1	1	4	3
SUICIDE	2	1	0	1	0
HOMICIDE	0	0	0	0	0
INDETERMINATE	0	1	2	0	0

12 Includes one mummified fetal remains discovered in a funeral home

Eaton County
Reported Deaths of Children

2020 Reported Deaths of Children Summary			
Age	***Sex***	***Cause of Death***	***Manner***
15 years	M	Blunt Force Injuries (Motor Vehicle Collision)	Accident
16 years	M	Blunt Force Injuries (Motor Vehicle Collision)	Accident
17 years	M	Airway Obstruction (Choked on Food)	Accident

Ingham County

Medical Examiner

Michael A. Markey, M.D.

Deputy Medical Examiners

Patrick A. Hansma, D.O.

David S. Moons, M.D.

Chief Investigator

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Medical Examiner Investigators

Kenneth Barnes

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Kathleen Brooks

Mark Chojnowski

Joy Dempsey, D-ABMDI

Matt Greene

Alyson Lipp

Lynne Mark, D-ABMDI

Jessica Nicholson

Karen Phelps

Brett Ramsden, D-ABMDI

Daniel Sowles, D-ABMDI

Mary Stevens

Ingham County
Summary of Cases

	2016	2017	2018	2019	2020
TOTAL DEATHS IN THE COUNTY	2655	2872	2870	3066	3468
DEATHS REPORTED TO THE ME	824	916	888	936	1087
CASES ACCEPTED FOR INVESTIGATION[13]	660	677	647	742	965
MEI SCENE INVESTIGATIONS	677	752	709	775	572
DEATH CERTIFICATES SIGNED BY THE ME	424	422	393	477	504
BODIES TRANSPORTED TO SPARROW	267[14]	250	325	275	313
COMPLETE AUTOPSY	286	232	220	276	273
LIMITED AUTOPSY	9	12	13	13	24
EXTERNAL EXAMINATION	46	42	31[15]	44	59
STORAGE ONLY	32	55	61	47	53
UNCLAIMED BODIES	20	34	28	13	18
REFERRALS TO GIFT OF LIFE	308	326	292	264	294
TISSUE/CORNEA DONORS	95	92	48	51	54
CREMATION PERMITS REVIEWED	1721	1920	1934	2154	2483

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). We declined jurisdiction in 247 cases that were reported to us in 2020.

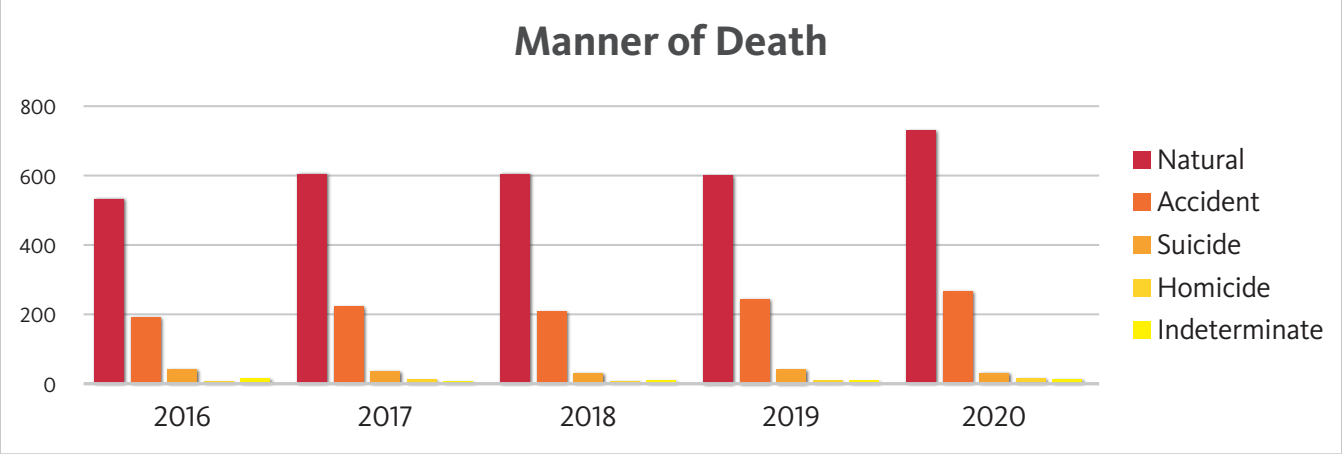
14 In previous years, this number was listed as the sum of exams (complete, limited, external) and bodies for storage only. In 2016, this number was obtained from the contracted transport provider, and thus excludes decedents who died at Sparrow hospital and would have been transported to Sparrow morgue by Sparrow staff regardless of their status as a ME or non-ME case.

15 (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.

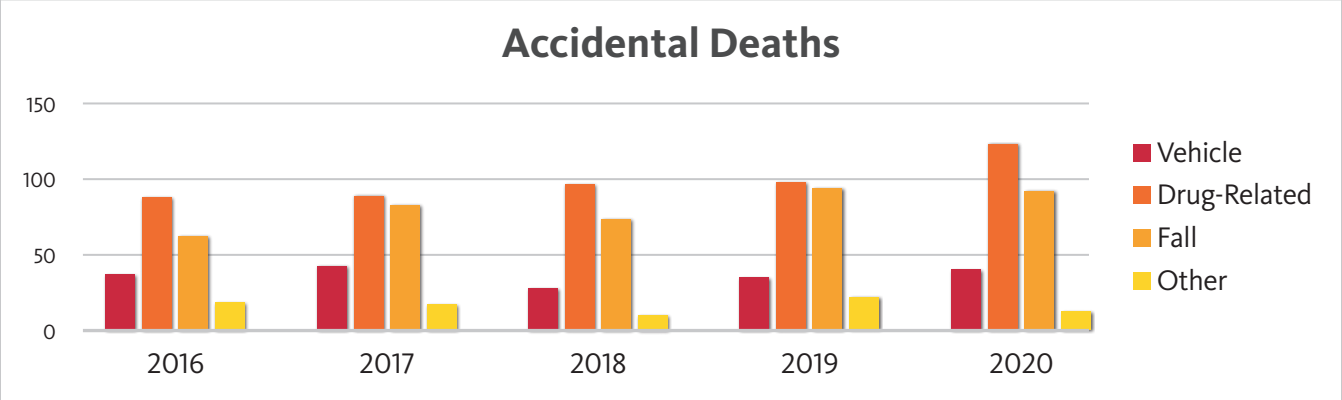
Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
NATURAL	535	605	608	598	728
ACCIDENT	199	231	210	251	271
SUICIDE	51	44	38	51	39
HOMICIDE	13	20[16]	12	16	26
INDETERMINATE	22	16[17]	16	18	22
TOTAL	820[18]	916[19]	884[20]	934[21]	1086[22]



16 Based on new investigative information, one manner of death was changed from indeterminate to homicide on Dec. 6, 2018
17 Based on new investigative information, one manner of death was changed from indeterminate to homicide on Dec. 6, 2018
18 Cases with no manner of death: (3) stillbirths; (1) human bone of no contemporary forensic interest
19 Cases with no manner of death: (1) stillbirth
20 Cases with no manner of death: (2) stillbirths; (1) non-human animal remains; (1) cremation permit authorization for death outside of country
21 Cases with no manner of death: (2) stillbirths
22 Cases with no manner of death: (1) stillbirth

Ingham County
Accidental Deaths

Accidental Deaths	2016	2017	2018	2019	2020
VEHICLE	36	43	29	35	40
DRUG-RELATED	88	89	97	98	124
DROWNING	3	3	2	3	1
FALL	63	83	73	95	93
FIRE	1	0	2	5	2
ASPHYXIA	3	4	3	8[23]	5[24]
HYPOTHERMIA	2[25]	1	0	0	4
OTHER	3[26]	9[27]	4[28]	7[29]	2[30]
TOTAL	199	231	210	251	271

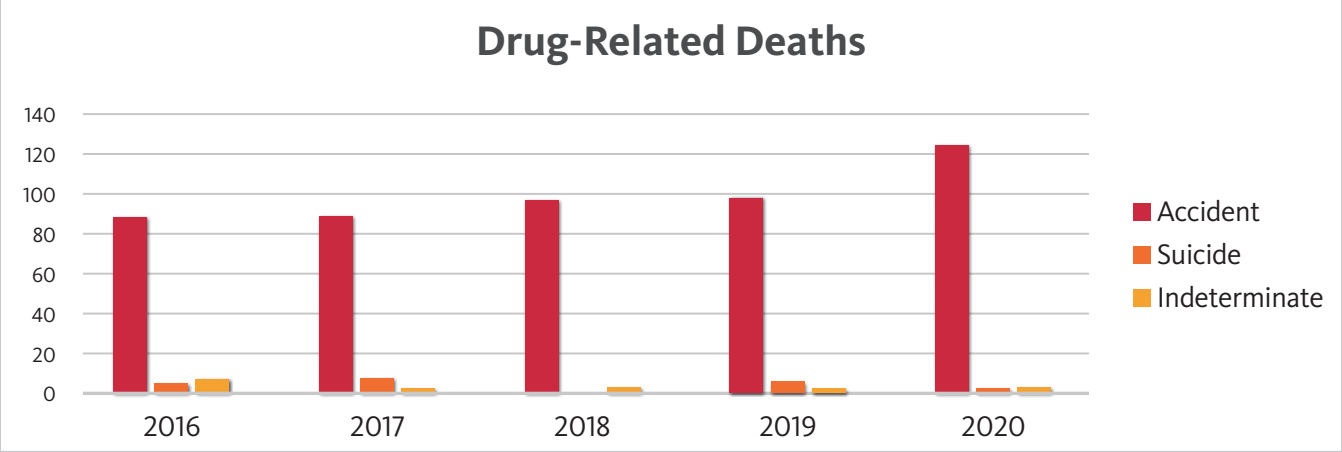


23 (6) choking on food, (2) infant in unsafe sleep environmen
24 (3) choking on food, (2) infant in unsafe sleep environment
25 Both decedents also acutely intoxicated with ethanol (these cases not included in the drug-related category)
26 (1) heart disease associated with anabolic androgenic steroid use; (1) methadone therapy contributing to complications of chronic ethanol abuse; (1) carbon monoxide intoxication
27 (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
28 (1) carbon monoxide intoxication; (1) injuries from airplane crash; (2) remote neck injuries - one wrestling and one swimming
29 (2) injuries from plane crash; (1) burns from hot coffee; (1) carbon monoxide; (1) hypothermia; (1) bicycle crash; (1) therapeutic injury
30 (1) pedestrian struck by train; (1) Injuries from compaction in refuse vehicle

Ingham County
Drug-Related Deaths

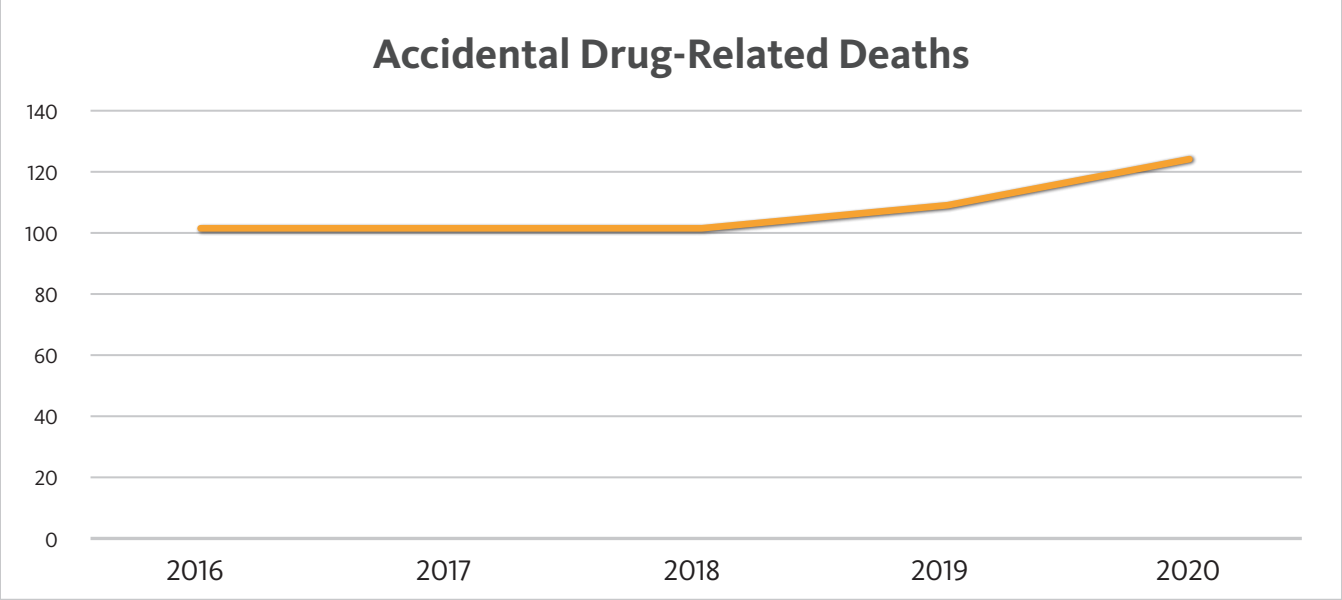
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
ACCIDENT	88	89	97	98	124
SUICIDE	6	8	0	7	3
INDETERMINATE	8	4	4	4	4
TOTAL	102	101	101	109	131



Ingham County
Drug-Related Deaths

2020 Drug-Related Deaths Summary	
TOTAL	131 cases
SEX	44 female, 87 male
RACE	102 white, 28 black, 1 Native American
AGE RANGE	1-74 years
AVERAGE AGE	42.4 years
MEDIAN AGE	39 years
OPIOID-RELATED	115 cases involved an opiate or opioid (88%)
MANNER OF DEATH	124 accidents, 3 suicides, 4 indeterminate



Ingham County
Suicides

Suicide Totals by Year	2016	2017	2018	2019	2020
SUICIDES	51	44	38	51	39

Suicide Methods	2016	2017	2018	2019	2020
FIREARM	26	18	21	20	21
HANGING	10	13	13	20	13
DRUG INTOXICATION	6	8	0	7	3[31]
SUFFOCATION	3	1	1	0	0
SHARP FORCE INJURY	1	1	0	0	1[32]
JUMP FROM HEIGHT	3	2	2	0	0
DROWNING	0	0	0	0	0
MOTOR VEHICLE CRASH	1	1	0	0	0
CARBON MONOXIDE	0	0	0	0	1
STRUCK BY TRAIN	0	0	1	1	1
OTHER	1[33]	0	0	3[34]	0

Suicides by Age	2016	2017	2018	2019	2020
0-17	3	2	3	2	2
18-25	9	9	10	13	5
26-44	21	12	12	14	13
45-64	7	18	7	18	15
65 +	11	3	6	4	4

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 Penetrating head trauma-shot self with nail gun
34 (1) jump from moving vehicle; (1) Ingestion of household cleaning product; (1) puncture of dialysis fistula

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	*2016*	*2017*	*2018*	*2019*	*2020*
Stillborn	3	1	3	2	1
<1 year	10	8	3	13	11
1-5	6	3	4	8	3
6-10	2	1	3	5	2
11-17	10	4	8	7	7
TOTAL	31	17	21	35	24

Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
NATURAL	9	7	7	8	5
ACCIDENT	5	4	5	12	4
SUICIDE	3	2	3	2	2
HOMICIDE	4	1	2	2	4
INDETERMINATE	7	2	1	9	8

Ingham County
Reported Deaths of Children

2020 Reported Deaths of Children Summary			
Age	***Sex***	***Cause of Death***	***Manner***
0	F	Intrauterine Fetal Demise	N/A (Stillbirth)
hours	M	Congenital Abnormalities	Natural
1 month	M	Undetermined Causes (potential unsafe sleep)	Indeterminate
2 months	M	Undetermined Causes (reported bed sharing)	Indeterminate
2 months	F	Undetermined Causes (reported bed sharing)	Indeterminate
3 months	F	Potential Asphyxia/Suffocation (wedged-unsafe sleep)	Accident
3 months	M	Undetermined (found in car seat)	Indeterminate
3 months	F	Undetermined Causes (reported bed sharing)	Indeterminate
5 months	M	Undetermined Causes (reported bed sharing)	Indeterminate
7 months	M	Hirschsprungs Disease	Natural
7 months	M	Undetermined Causes (no reported bed sharing)	Undetermined
10 months	F	Potential Asphyxia/Suffocation (reported bed sharing)	Accident
1 year	F	Fentanyl Intoxication	Indeterminate
4 years	M	Carbon Monoxide Inhalation (fire related)	Homicide
5 years	F	Myocarditis due to Influenza B	Natural
6 years	M	Blunt Force Injuries to Head	Homicide
8 years	M	Carbon Monoxide Inhalation (fire related)	Homicide
13 years	M	Hanging	Suicide
14 years	M	Blunt Force Injuries (motor vehicle crash-passenger)	Accident
15 years	F	Hanging	Suicide
15 years	F	Congenital Abnormalities	Natural
16 years	M	Congenital Abnormalities	Natural
17 years	M	Blunt Force Injuries (motor vehicle crash-passenger)	Accident
17 years	M	Gun Shot Wound	Homicide

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

Joy Dempsey, D-ABMDI

Katharine Dernocoeur

Matthew Kasper, D-ABMDI

Derek Schroeder

John Sigg

Bill Simpson Sr., D-ABMDI

Dan Sowles, D-ABMDI

Mitchell Tolan, D-ABMDI

Thomas Wodarek

Ionia County
Summary of Cases

	2016	2017	2018	2019	2019
TOTAL DEATHS IN THE COUNTY	324	348	328	333	409
DEATHS REPORTED TO THE ME	95	113	96	111	119
CASES ACCEPTED FOR INVESTIGATION[35]	92	110	90	107	110
MEI SCENE INVESTIGATIONS	92	109	92	109	107
DEATH CERTIFICATES SIGNED BY THE ME	47	59	50	48	43
BODIES TRANSPORTED TO SPARROW	38	54	44	39	34
COMPLETE AUTOPSY	33	36	33	25	21
LIMITED AUTOPSY	2	2	5	6	5
EXTERNAL EXAMININATION	2	13	5	3	5
STORAGE ONLY[36]	1	3	1	5	3
UNCLAIMED BODIES	1	1	1	2	4
REFERRAL TO GIFT OF LIFE	34	49	24	32	38
TISSUE/CORNEA DONORS	13	9	9	12	18
CREMATION PERMITS REVIEWED	196	221	214	212	281

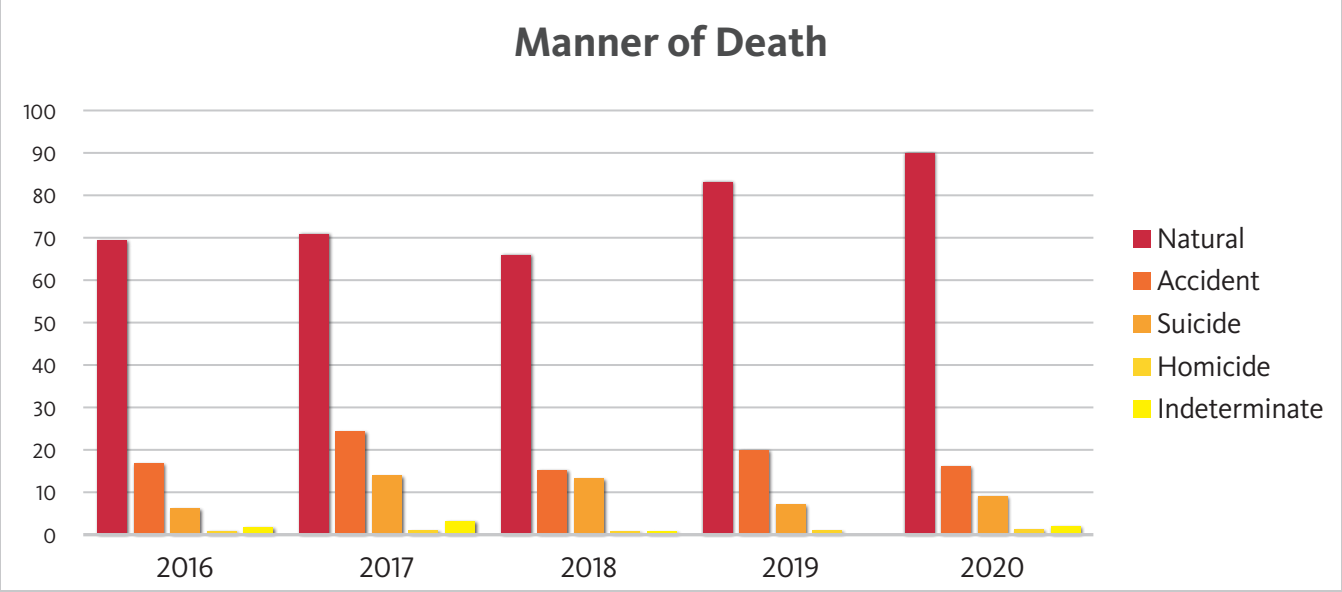
35 Not every case that is reported to the Medical Examiner's Office falls within our jurisdiction. We accept cases for investigation based on the circumstances surrounding the death and the law that governs the Medical Examiner's authority (MCL 52.202). We declined jurisdiction in nine cases that were reported to us in 2020.

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.

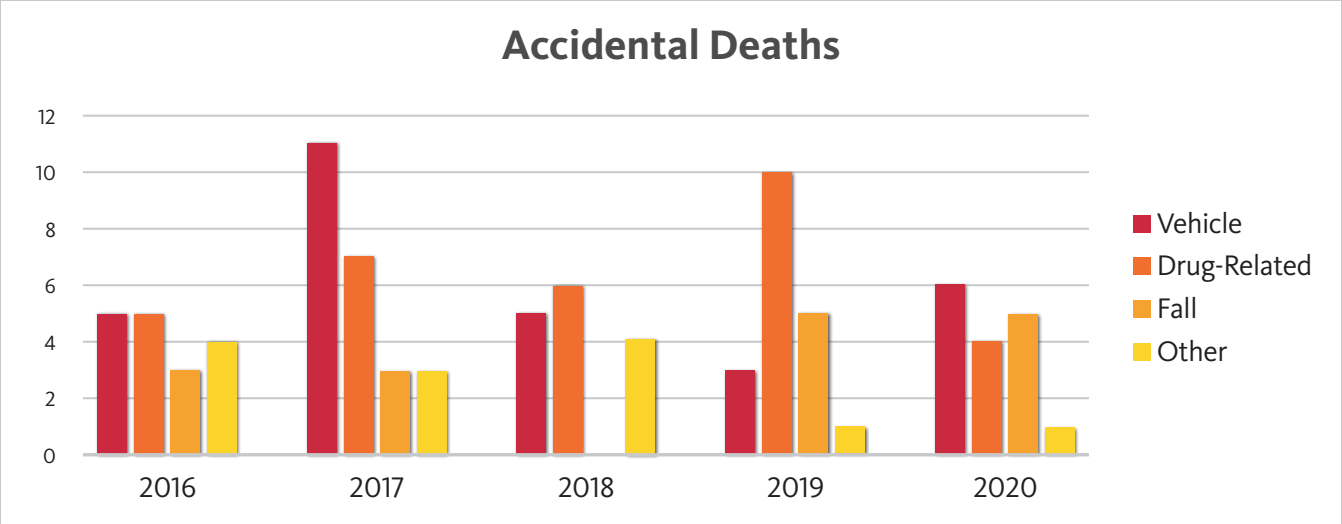
Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
NATURAL	69	71	66	83	90
ACCIDENT	17	24	15	20	16
SUICIDE	6	14	13	7	9
HOMICIDE	1	1	1	1	1
INDETERMINATE	2	3	1	0	2
TOTAL	95	113	96	111	118[37]



37 Cases with no manner of death: stillbirth

Ionia County
Accidental Deaths

Accidental Deaths	2016	2017	2018	2019	2020
VEHICLE	5	11	5	3	6
DRUG-RELATED[38]	5	7	6	10	4
DROWNING	0	1	4	0	1
FALL	3	3	0	5	5
FIRE	2	1	0	0	0
ASPHYXIA	1	1	0	1	0
TOTAL	17	24	15	19[39]	16



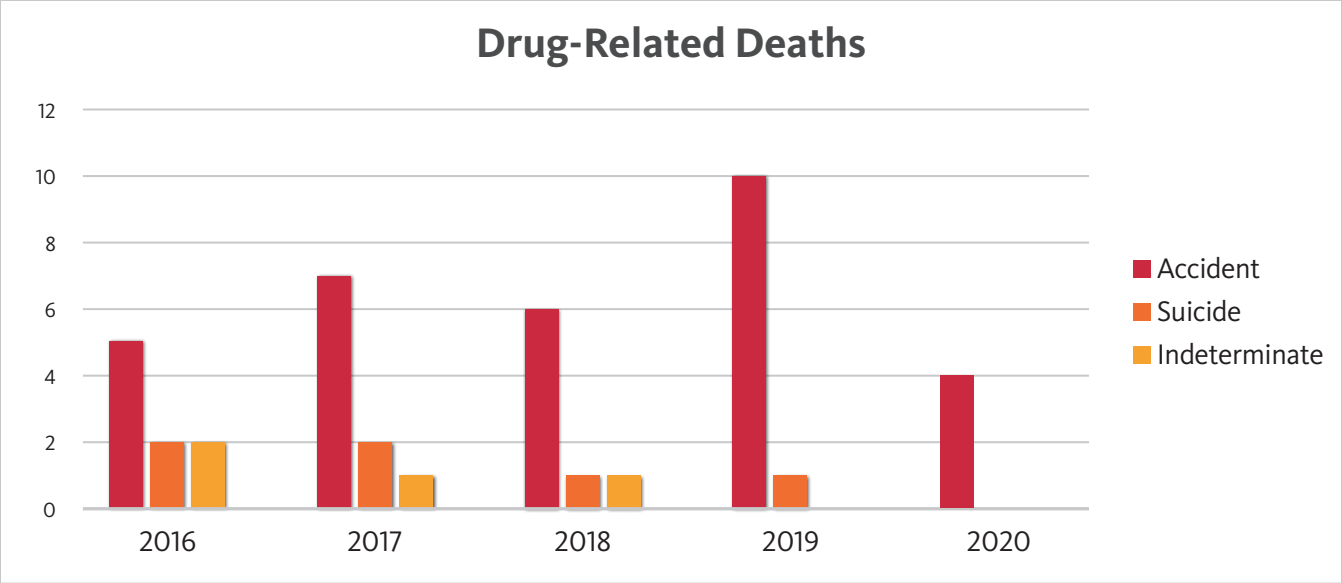
38 (1) motor vehicle related fatality in 2018 had drug intoxication listed as a contributing condition; as the death was not directly related to the toxic effects of the drug(s) it is not included as a drug fatality in this report.
39 (1) carbon monoxide

Ionia County

Drug-Related Deaths

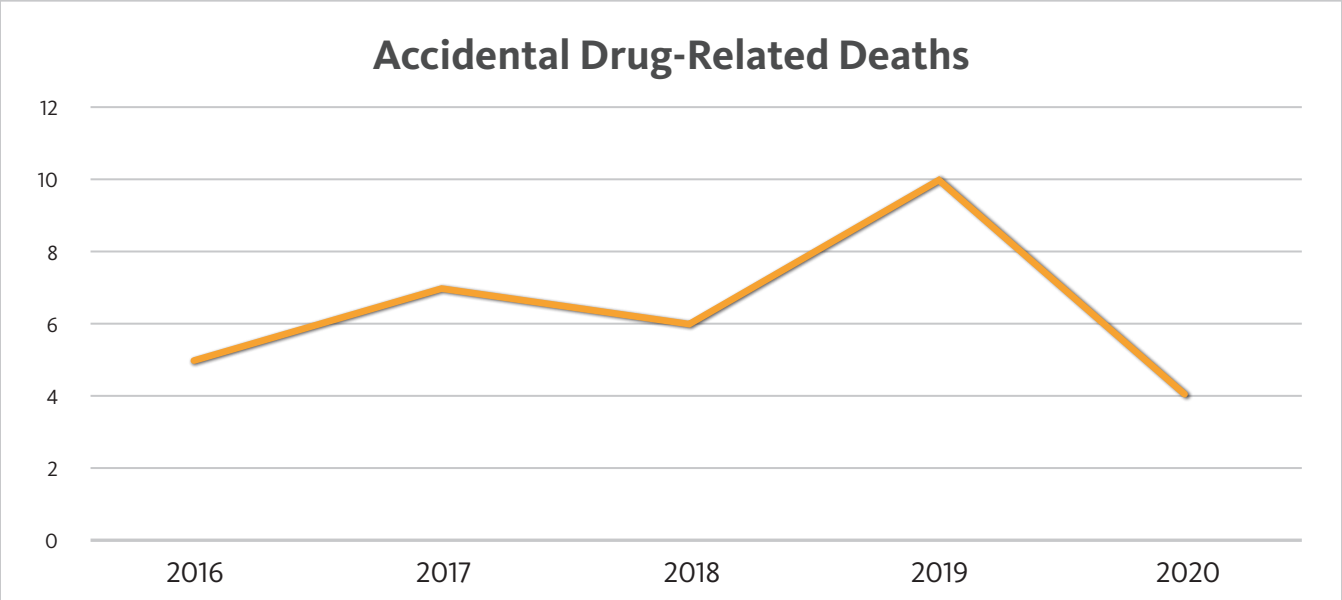
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
ACCIDENT	5	7	6	10	4
SUICIDE	2	2	1	1	0
INDETERMINATE	2	1	0	0	0



Ionia County
Drug-Related Deaths

2020 Drug-Related Deaths Summary	
TOTAL	4 cases
SEX	1 female, 3 male
RACE	4 white
AGE RANGE	24-57 years
AVERAGE AGE	44.5 years
MEDIAN AGE	48.5 years
OPIOID-RELATED	3 cases involved an opiate or opioid (75%)
MANNER OF DEATH	4 accidents and 0 suicide



Ionia County
Suicides

Suicide Totals by Year	2016	2017	2018	2019	2020
SUICIDES	6	14	13	7	9

Suicide Methods	2016	2017	2018	2019	2020
FIREARM	4	3	9	4	5
HANGING	0	6	3	2	4
DRUG INTOXICATION	2	2	1	1	0
CARBON MONOXIDE	0	2	0	0	0
MOTOR VEHICLE	0	0	0	0	0
OTHER	0	1[40]	0	0	0

Suicides by Age	2016	2017	2018	2019	2020
0-17	0	0	0	0	0
18-25	0	2	0	2	2
26-44	4	4	5	3	2
45-64	0	5	6	1	4
65 +	2	3	2	1	1

40 (1) pedestrian struck by train

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	*2016*	*2017*	*2018*	*2019*	*2020*
Stillborn	0	0	0	0	1
<1 year	0	1	1	0	2
1-5	0	0	0	0	1
6-10	0	0	0	0	1
11-17	0	2	0	0	0
TOTAL	0	3	1	0	5

Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
NATURAL	0	1	0	0	1
ACCIDENT	0	0	0	0	2
SUICIDE	0	0	0	0	0
HOMICIDE	0	1	0	0	0
INDETERMINATE	0	1	1	0	1

2020 Reported Deaths of Children Summary			
Age	*Sex*	*Cause of Death*	*Manner*
13 weeks	M	Intrauterine Fetal Demise	N/A
2 hours	F	Complications of Delivery-Meconium Aspiration	Natural
5 months	M	Undetermined (probable sleep related)	Indeterminate
2 years	M	Drowning (swimming pool)	Accident
10 years	M	Positional Asphyxia (Motor Vehicle Crash)	Accident

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

Zachary Brown

Kari Duman

Taylor Maylee Hoekwater, D-ABMDI

Philip Nartker

Robert Schumacker

Bill Simpson Sr., D-ABMDI

Shelly Travis

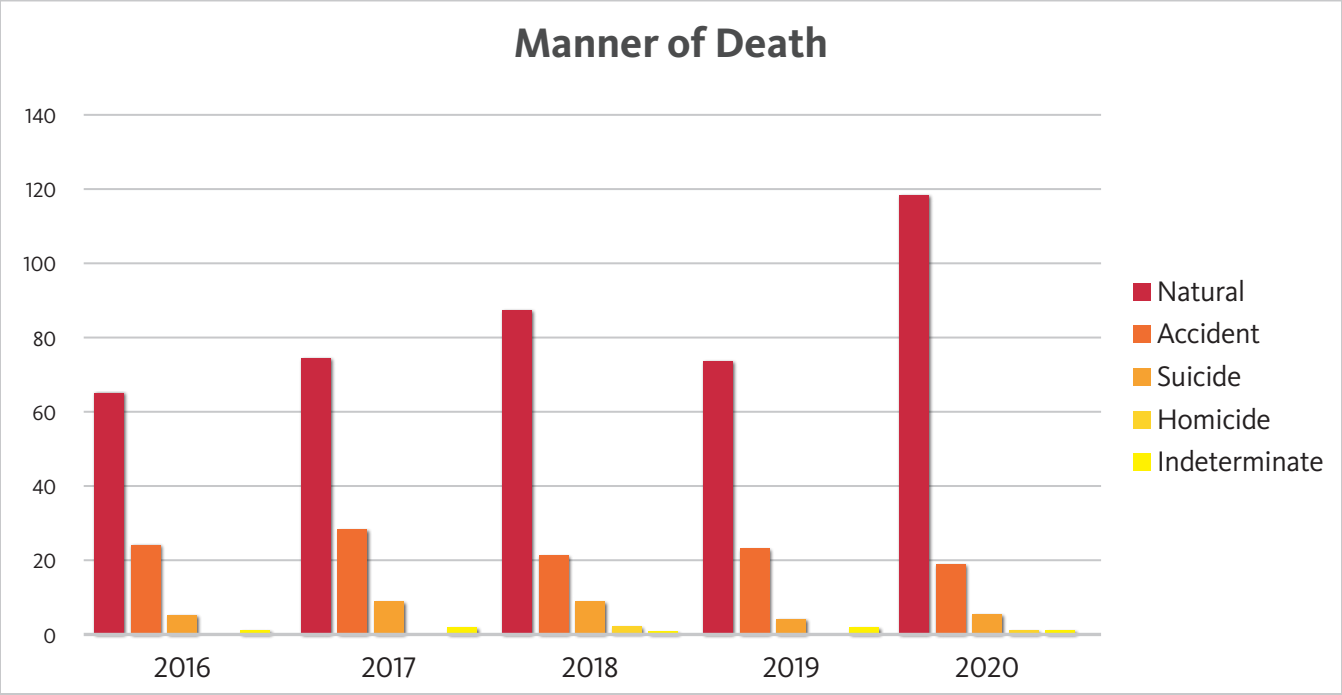
Isabella County
Summary of Cases

	2016	2017	2018	2019	2020
TOTAL DEATHS IN THE COUNTY	507	528	549	479	603
DEATHS REPORTED TO THE ME	100	118	125	106	148
CASES ACCEPTED FOR INVESTIGATION[41]	91	110	106	96	128
MEI SCENE INVESTIGATIONS	93	105	111	92	115
DEATH CERTIFICATES SIGNED BY THE ME	48	56	50	47	50
BODIES TRANSPORTED TO SPARROW	41	45	42	39	39
COMPLETE AUTOPSY	35	38	28	33	29
LIMITED AUTOPSY	1	2	4	2	2
EXTERNAL EXAMINATION	3	5	6	3	6
STORAGE ONLY	2	0	4	1	1
UNCLAIMED BODIES	2	1	1	1	1
REFERRALS TO GIFT OF LIFE	40	51	38	28	48
TISSUE/CORNEA DONORS	8	10	2	9	6
CREMATION PERMITS REVIEWED	267	315	352	310	384

41 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 20 cases that were reported to us in 2020.

Isabella County
Manner of Death

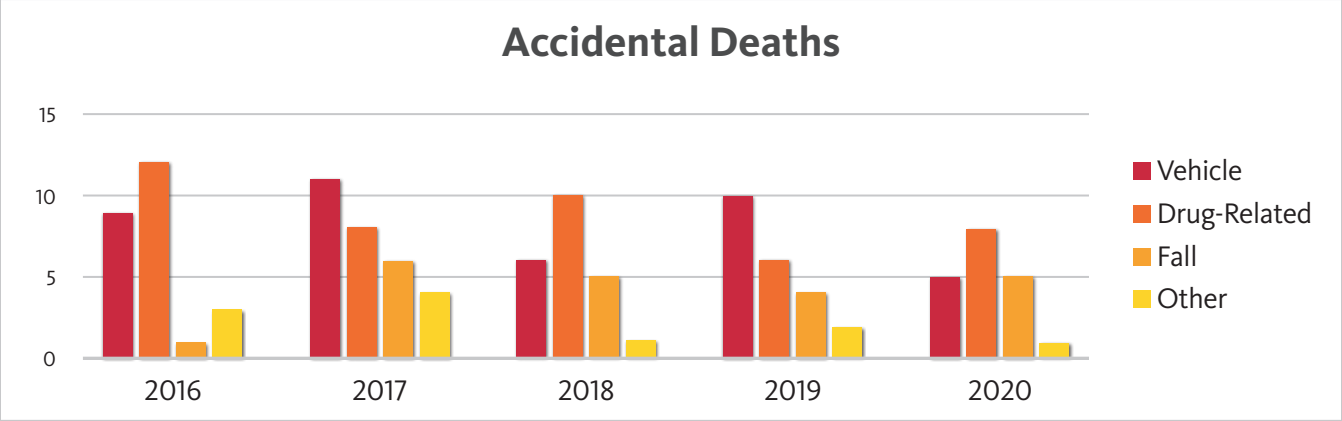
Manner of Death	2016	2017	2018	2019	2020
NATURAL	66	75	88	74	119
ACCIDENT	25	29	22	24	19
SUICIDE	6	10	10	5	6
HOMICIDE	0	0	3	0	2
INDETERMINATE	2	3	1	2	2
TOTAL	100[42]	118[43]	124[44]	105[45]	148



42 Case with no manner of death: stillbirth
43 Case with no manner of death: stillbirth
44 Case with no manner of death: stillbirth in another county; reported to office due to burial in county
45 Case with no manner of death: blood clot specimen-unknown if it is of human origin

Isabella County
Accidental Deaths

Accidental Deaths	2016	2017	2018	2019	2020
VEHICLE	9	11	6[46]	10	5
DRUG-RELATED	12	8	10[47]	6	8
DROWNING	0	2	1[48]	1	0
FALL	1	6	5	4	5
ASPHYXIA	0	2	0	1	1
HYPOTHERMIA	1	0	0	0	0
FIRE	0	0	0	1	0
FALLING TREE	1	0	0	0	0
PINNED IN MACHINERY	1	0	0	0	0
TOTAL	25	29	22	24	19



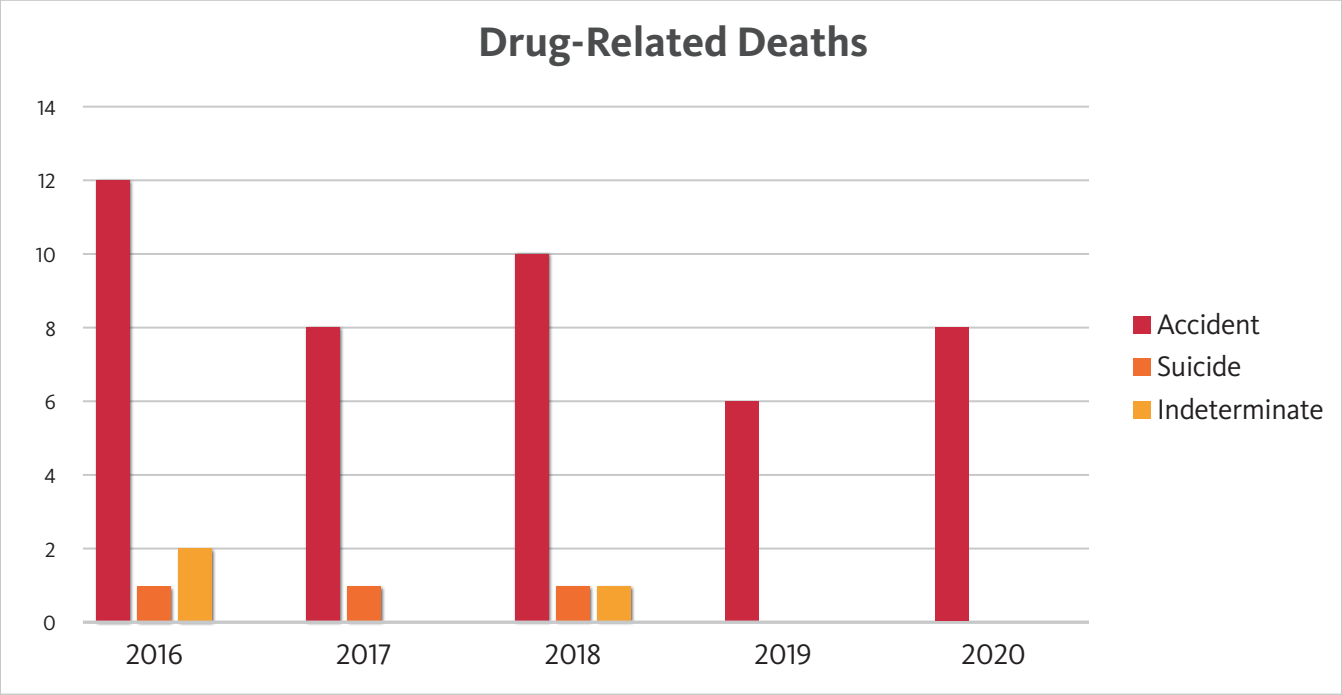
46 (1) motor vehicle death was due to a post-crash fire (included here as a vehicle fatality and not as a fire fatality)
47 (1) drowning while intoxicated with drugs (included here as a drowning fatality and not a drug intoxication death as the death was not directly related to the toxic effects of the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

Isabella County

Drug-Related Deaths

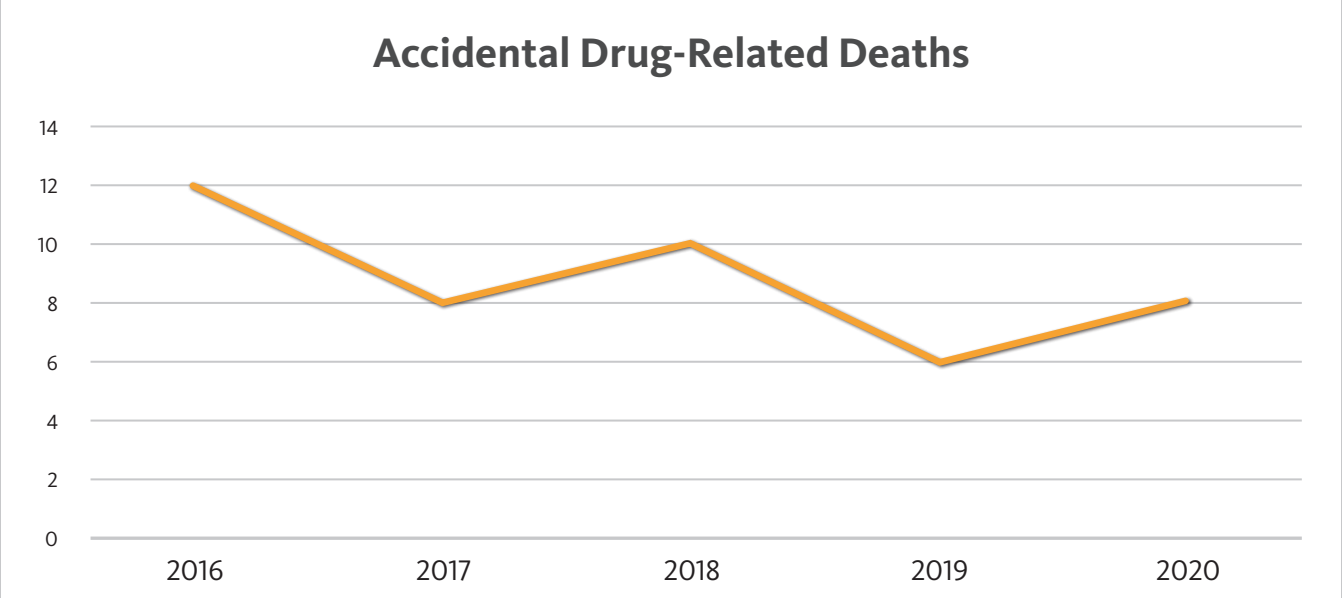
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
ACCIDENT	12	8	10	6	8
SUICIDE	1	1	1	0	0
INDETERMINATE	2	0	1	0	0



Isabella County
Drug-Related Deaths

2020 Drug-Related Deaths Summary	
TOTAL	8 cases
SEX	4 female, 4 male
RACE	5 white, 3 Native American
AGE RANGE	23-45 years
AVERAGE AGE	33 years
MEDIAN AGE	32 years
OPIOD-RELATED	8 cases involved an opiate or opioid (100%)
MANNER OF DEATH	8 accidents



Isabella County
Suicides

Suicide Totals by Year	2016	2017	2018	2019	2020
SUICIDES	6	10	10	5	6

Suicide Methods	2016	2017	2018	2019	2020
FIREARM	3	7	5	4	3
HANGING	1	2	3	1	3
ASPHYXIA	1	0	0	0	0
DRUG INTOXICATION	1[49]	1	1	0	0
MOTOR VEHICLE/FIRE	0	0	1	0	0

Suicides by Age	2016	2017	2018	2019	2020
0-17	0	0	0	0	1
18-25	1	0	2	0	1
26-44	3	3	3	1	1
45-64	2	6	4	3	2
65 +	0	1	1	1	1

49 Reported in previous annual reports as two drug related suicides, only one has been certified for 2016

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	*2016*	*2017*	*2018*	*2019*	*2020*
Stillborn	1	1	0	0	0
<1 year	0	0	0	1	3
1-5	0	1	0	4	1
6-10	0	0	0	0	0
11-17	0	1	1	0	2
TOTAL	1	3	1	5	6

Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
NATURAL	0	0	0	0	2
ACCIDENT	0	2	1	4	2
SUICIDE	0	0	0	0	1
HOMICIDE	0	0	0	0	0
INDETERMINATE	0	0	0	1	1

2020 Reported Deaths of Children Summary			
Age	*Sex*	*Cause of Death*	*Manner*
minutes	M	Congenital Abnormalities	Natural
1 month	M	Asphyxia/Suffocation (unsafe sleep)	Accident
2 months	F	Trisomy 18	Natural
2 years	F	Acute Hepatitis (undetermined etiology)	Indeterminate
16 years	F	Hanging	Suicide
17 years	F	Blunt Force Injuries (Motor Vehicle Crash)	Accident

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

Mark Pendergraff, D-ABMDI

April Archer

Dennis Campbell

Lynn Carpenter

Wade Doane

Lawrence Goff

Shane Grinnell

Laura Hammersley

Savannah Kryza

Alanna Pendergraff

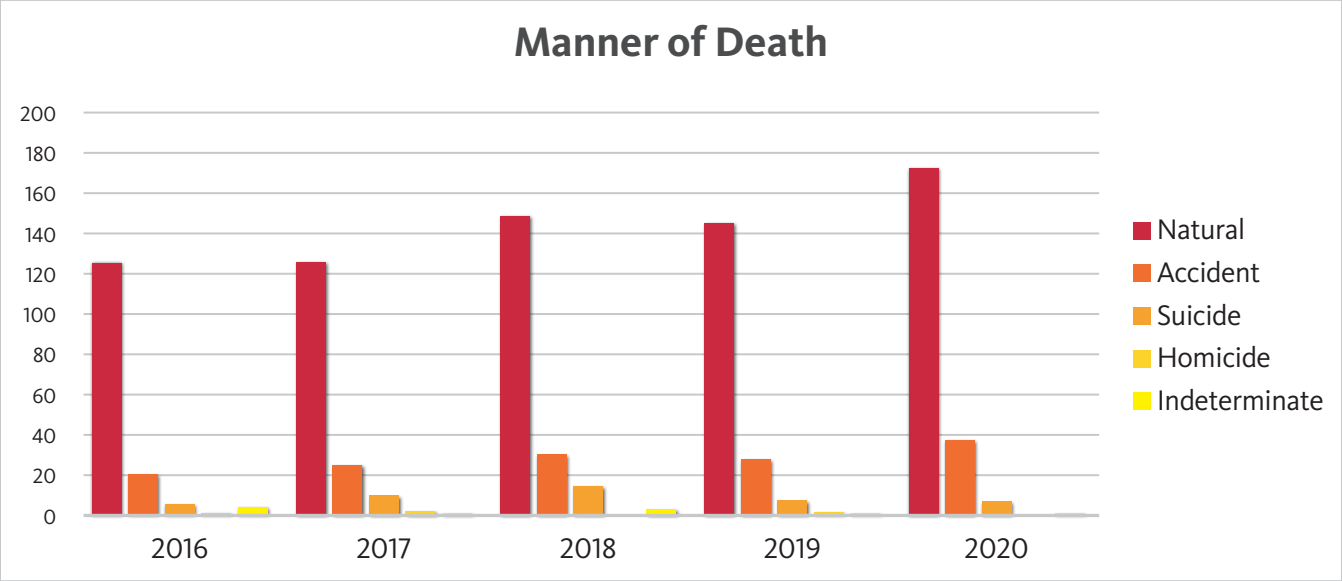
Shiawassee County
Summary of Cases

	2016	2017	2018	2019	2019
TOTAL DEATHS IN THE COUNTY	629	618	704	708	730
DEATHS REPORTED TO THE ME	158	168	200	185	219
CASES ACCEPTED - INVESTIGATION[50]	130	151	175	162	182
MEI SCENE INVESTIGATIONS	133	151	180	160	152
DEATH CERTIFICATES SIGNED BY THE ME	64	66	74	69	75
BODIES TRANSPORTED TO SPARROW	48	57	57	52	52
COMPLETE AUTOPSY	44	41	40	41	43
LIMITED AUTOPSY	1	7	8	6	4
EXTERNAL EXAMINATION	2	3	5	0	3
UNCLAIMED BODIES	1	0	1	1	1
STORAGE ONLY	1	6	4	5	2
REFERRALS TO GIFT OF LIFE	43	44	40	41	24
TISSUE/CORNEA DONORS	15	8	6	11	4
CREMATION PERMITS REVIEWED	375	356	436	439	466

50 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 37 cases that were reported to us in 2020.

Shiawassee County
Manner of Death

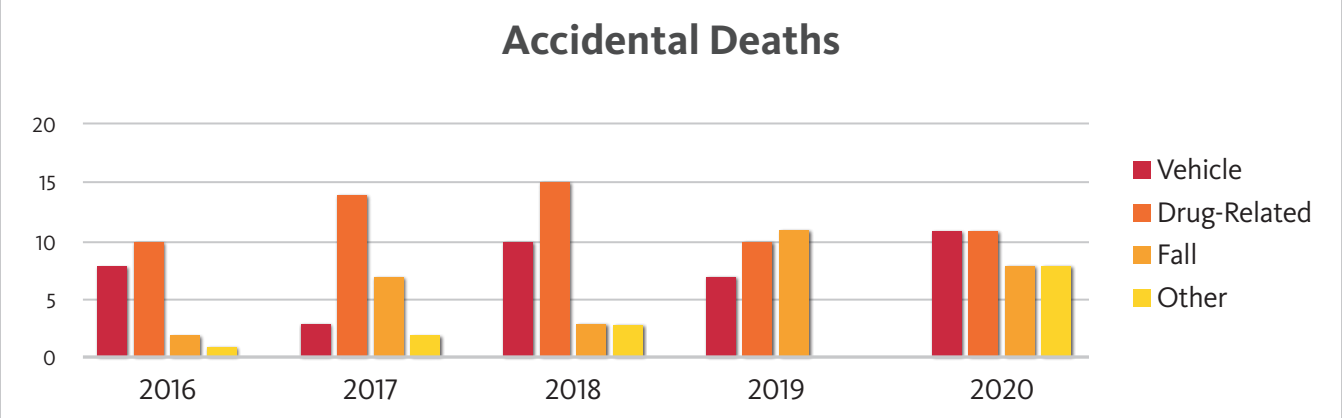
Manner of Death	2016	2017	2018	2019	2020
NATURAL	125	125	148	145	172
ACCIDENT	21	26	31	28	38
SUICIDE	6	11	15	8	7
HOMICIDE	1	3	0	2	0
INDETERMINATE	4	1	4	1	1
TOTAL	158[51]	168[52]	198[53]	184[54]	218[55]



51 Cases with no manner of death: stillbirth
52 Cases with no manner of death: (1) stillbirth; (1) found "trophy" human skull of no contemporary forensic interest
53 Cases with no manner of death: stillbirth
54 Cases with no manner of death: stillbirth
55 Cases with no manner of death: stillbirth

Shiawassee County
Accidental Deaths

Accidental Deaths	2016	2017	2018	2019	2020
VEHICLE	8	3	10	7	11
DRUG-RELATED	10	14	15	10	11
DROWNING	0	0	1	0	3
FALL	2	7	3	11	8
FIRE	1	1	0	0	1
ASPHYXIA	0	0	0	0	2
HYPOTHERMIA	0	0	1	0	2
OTHER	0	1[56]	1[57]	0	0
TOTAL	21	26	31	28	38

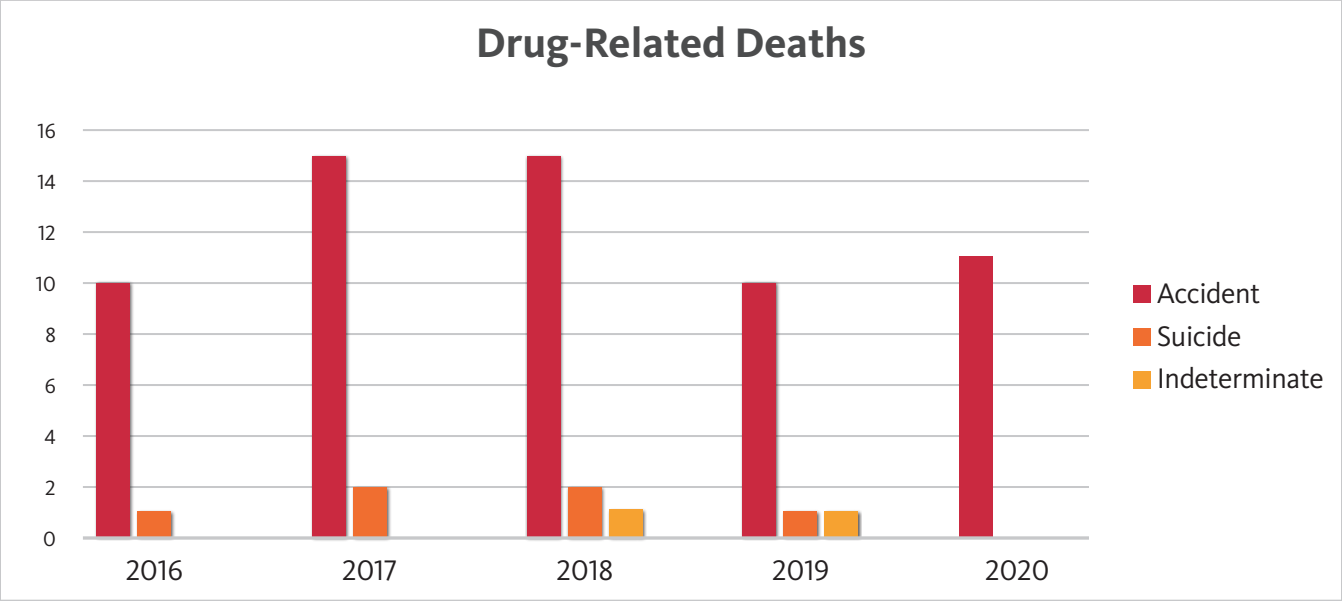


56 Hypothermia complicated by multiple drug intoxication, blunt head trauma, and cardiopulmonary disease
57 Blunt force head trauma-car fell from jack

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.

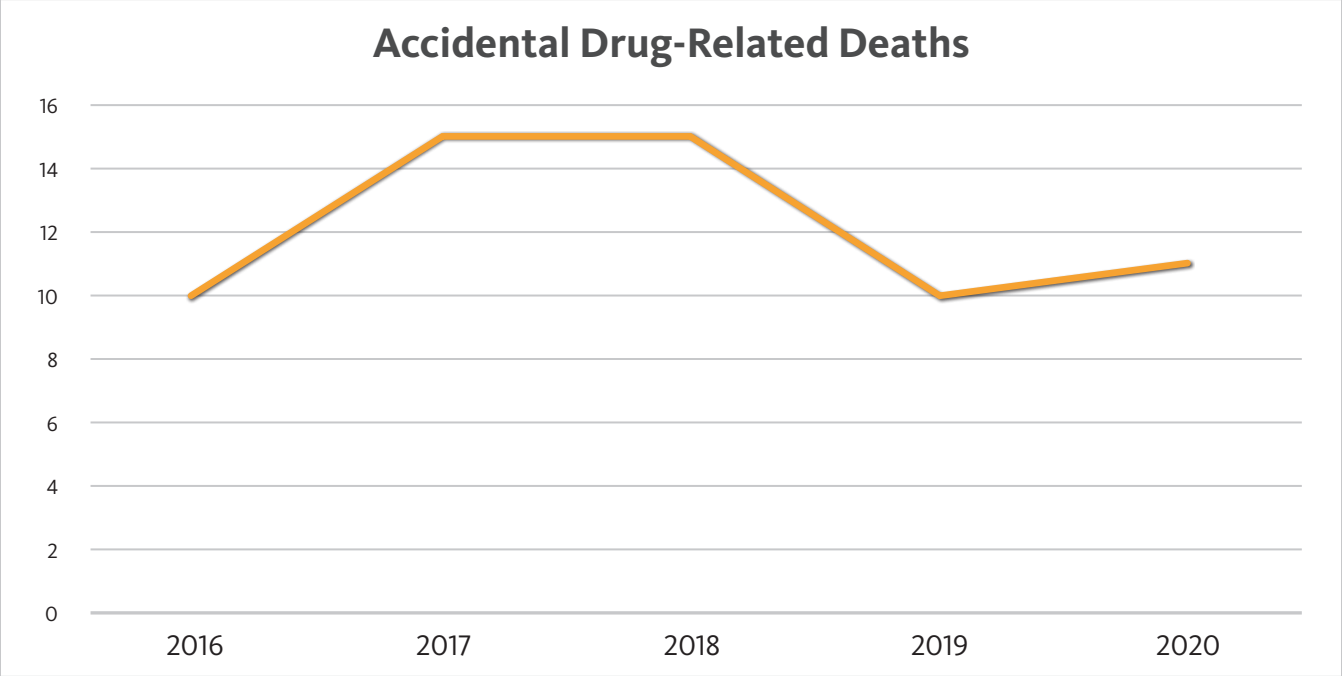
Manner of Death	*2016*	*2017*	*2018*	*2019*	*2020*
ACCIDENT	10	15[58]	15	10	11
SUICIDE	1	2	2	1	0
INDETERMINATE	0	0	1	1	0
TOTAL	11	17	18	12	11



58 (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

2020 Drug-Related Deaths Summary	
TOTAL	11 cases
SEX	1 female, 10 male
RACE	11 white
AGE RANGE	24-53 years
AVERAGE AGE	37.5 years
MEDIAN AGE	36 years
OPIOD-RELATED	11 cases involved an opiate or opioid (100%)
MANNER OF DEATH	11 accidents, 0 suicides



Shiawassee County
Suicides

Suicide Totals by Year	2016	2017	2018	2019	2020
SUICIDES	6	11	15	8	7

Suicide Methods	2016	2017	2018	2019	2020
FIREARM	3	9	12	6	4
HANGING	1	0	1	0	3
DRUG INTOXICATION	1	2	2	1	0
CARBON MONOXIDE	0	0	0	1	0
MOTOR VEHICLE	0	0	0	0	0
STRUCK BY TRAIN	1[59]	0	0	0	0

Suicides by Age	2016	2017	2018	2019	2020
0-17	0	0	2	0	0
18-25	0	1	1	0	2
26-44	1	3	2	6	2
45-64	5	4	6	1	3
65 +	0	3	4	1	0

59 Motor vehicle parked on train trucks – struck by train in motor vehicle

Shiawassee County
Reported Deaths of Children

Deaths of Children by Age	2016	2017	2018	2019	2020
Stillborn	1	1	2[60]	1	1
<1 year	2	1	0	0	0
1-5	0	0	0	0	0
6-10	1	0	0	0	0
11-17	0	0	4	1	0
TOTAL	4	2	8	2	1

Manner of Death	2016	2017	2018	2019	2020
NATURAL	0	0	1	0	0
ACCIDENT	1	0	1	1	0
SUICIDE	0	0	2	0	0
HOMICIDE	1	0	0	0	0
INDETERMINATE	1	1	2	0	0

2020 Reported Deaths of Children Summary			
Age	*Sex*	*Cause of Death*	*Manner*
0	U	Intrauterine Fetal Demise	N/A (Stillbirth)

60 (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	110,268	292,406	64,697	69,872	68,122
TOTAL DEATHS	866	3468	409	603	730
DEATHS REPORTED TO THE ME (% OF TOTAL DEATHS)	235 (27.1%)	1,087 (31.3%)	119 (29.1%)	148 (24.8%)	219 (30%)
CASES ACCEPTED FOR INVESTIGATION	212	965	110	128	182
MEI SCENE INVESTIGATION	201	572	107	115	152
DEATH CERTIFICATES SIGNED BY THE ME	102	504	43	50	75
TOTAL EXAMS (% OF CASES ACCEPTED)	79 (37.2%)	356 (36.9%)	31 (28.2%)	37 (28.9%)	50 (27.5%)
NATURAL DEATHS (% OF DEATHS REPORTED)	174 (74%)	728 (67%)	90 (75.6%)	119 (80.4%)	172 (78.5%)
ACCIDENTAL DEATHS (% OF DEATHS REPORTED)	42 (17.9%)	271 (24.9%)	16 (13.4%)	19 (12.9%)	38 (17.4%)
SUICIDES (% OF DEATHS REPORTED)	13 (5.5%)	39 (3.6%)	9 (7.6%)	6 (4%)	7 (3.2%)
HOMICIDES (% OF DEATHS REPORTED)	3 (1.3%)	26 (2.4%)	1 (0.8%)	2 (1.4%)	0 (0%)
INDETERMINATE (% OF DEATHS REPORTED)	3 (1.3%)	22 (2%)	2 (1.7%)	2 (1.4%)	1 (0.5%)
DRUG-RELATED DEATHS (% OF DEATHS REPORTED)	26 (11.1%)	131 (12.1%)	4 (3.4%)	8 (7.4%)	11 (5.9%)
REFERRALS TO GIFT OF LIFE	62	294	38	48	24
TISSUE/CORNEA DONORS	18	54	18	6	4
UNCLAIMED BODIES	4	18	4	1	1

Additional Information

In the five counties for which Sparrow Forensic Pathology served as the Office of the Medical Examiner in 2020:

- No bodies were exhumed for examination
- No cases remained unidentified at the time a final disposition
- Toxicology testing was performed in 554 of the 572 (96.9%) examinations performed[61]

61 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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