Office of the Medical Examiner

2019 Annual Report

Sparrow

Executive Summary

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

This is the Sparrow 2019 Annual Report which reflects the work of the Office of the Medical Examiner during the 2019 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 • 2019 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

Luke R. Vogelsberg, D-ABMDI
Chief Investigator & Supervisor

Holly Marsh
Administrative Assistant

Antoinette Vicks
Autopsy Assistant & In-House Investigations

Debra Parsons
Team Advisor & Autopsy Assistant

Krystin Smith
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 2019, this function was performed by Antoinette Vicks, Michelle Fox, and Luke Vogelsberg.

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 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 preestablished 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 subclassification, 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

Luke R. Vogelsberg, D-ABMDI

Medical Examiner Investigators

Ashley Ault

Kenneth Barnes

Erica Betts, D.O., MPH

Ruth Grant, D-ABMDI

Matt Greene

Kevin Hearld

Lynne Mark, D-ABMDI

Jessica Nicholson

Daniel Sowles, D-ABMDI

Mary Stevens

Eaton County
Summary of Cases

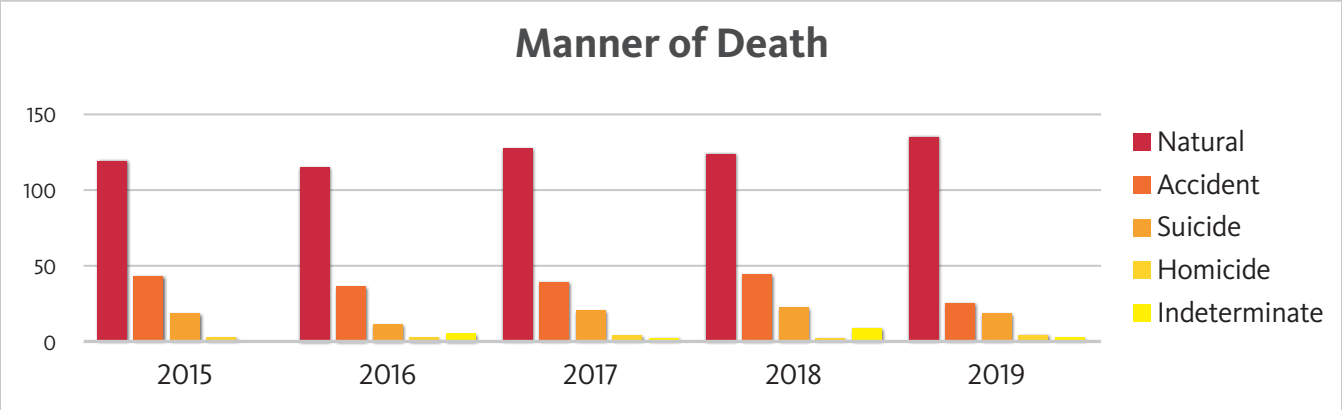
	2015	2016	2017	2018	2019
TOTAL DEATHS IN THE COUNTY	903	817	783	817	710
DEATHS REPORTED TO THE ME	183	170	191	201	184
CASES ACCEPTED FOR INVESTIGATION[1]	176	154	176	185	161
MEI SCENE INVESTIGATIONS	172	158	187	193	170
DEATH CERTIFICATES SIGNED BY ME	88	84	91	102	66
BODIES TRANSPORTED TO SPARROW	69	78	85	99	58
COMPLETE AUTOPSY	55	64	56	74	39
LIMITED AUTOPSY	3	2	4	5	6
EXTERNAL EXAMINATION	9	7	13	11	7
STORAGE ONLY	2	5	12	9	6
UNCLAIMED BODIES	1	2	4	3	3
REFERRALS TO GIFT OF LIFE	68	61	53	63	75
TISSUE/CORNEA DONORS	19	16	11	11	17
CREAMEATION PERMITS REVIEWED	482	452	450	498	411

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 16 cases that were reported to us in 2018.

Eaton County
Manner of Death

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

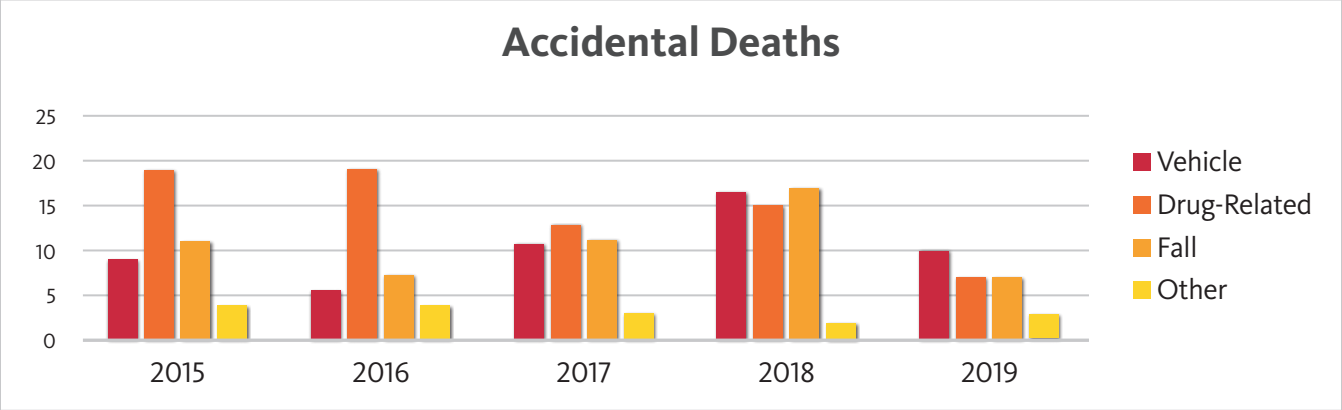
Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
NATURAL	119	116	128	124	136
ACCIDENT	43	36	38	44	25
SUICIDE	18	11	20	22	18
HOMICIDE	2	2	3	2	3
INDETERMINATE	1	4[2]	2[3]	8	2
TOTAL	183	170[4]	191	201[5]	184



2 (2) multiple drug intoxication, (1) multiple injuries - pedestrian struck by motor vehicle, (1) undetermined cause; severely decomposed body
3 (1) multiple drug intoxication, (1) sudden unexplained infant death
4 Cases with no manner of death: (1) non-human bones
5 Includes 1 case of mummified fetal remains for which a manner of death was not assigned

Eaton County
Accidental Deaths

Accidental Deaths	2015	2016	2017	2018	2019
VEHICLE	9	6	11	17[6]	10
DRUG-RELATED	19	19	13	15[7]	7
DROWNING	0	0	1	1	1
FALL	11	7	11	11	7
FIRE	2	0	0	0	0
ASPHYXIA	0	0	0	0	0
HYPOTHERMIA	1	2	0	0	0
OTHER	1[8]	2[9]	2[10]	2[11]	0
TOTAL	43	36	38	44	25

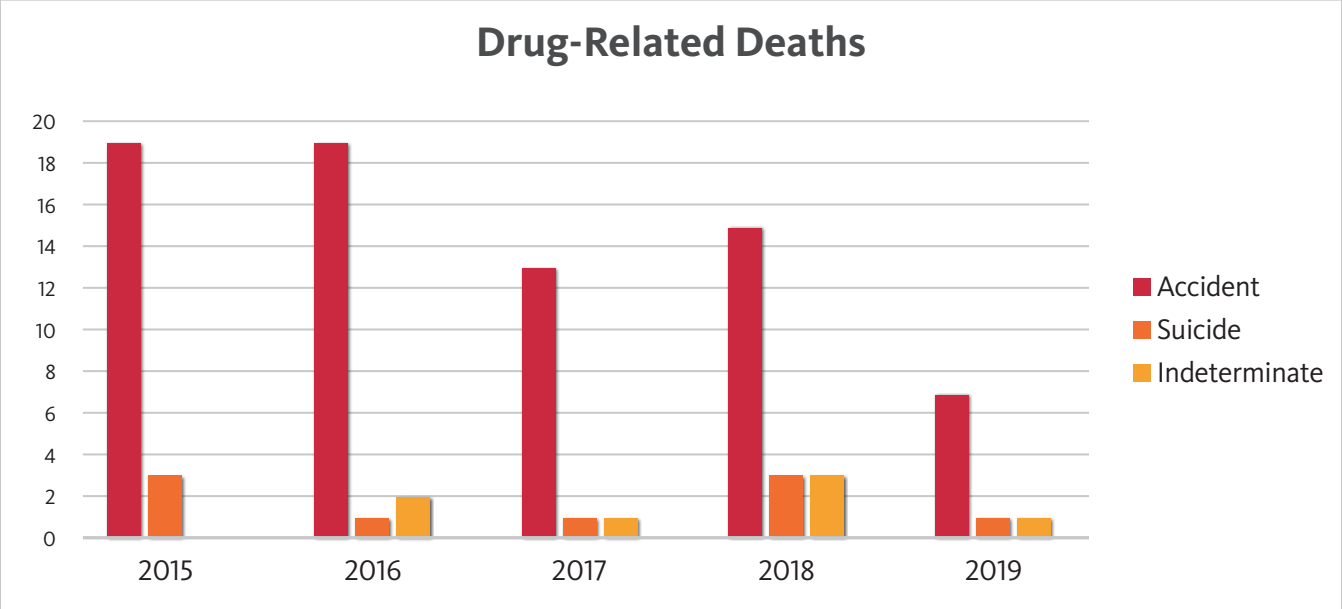


6 Does not include on car passenger listed in other category (see below)
7 Does not include two drowning cases in which ethanol intoxication was involved (categorized as drowning); includes one case of ethanol intoxication with associated hypothermia
8 (1) farm machinery accident
9 (1) rib fractures due to injury from neck brace, (1) ruptured quadriceps tendon following syncopal episode
10 (1) natural disease complicated by environmental exposure, (1) delayed complications of anaphylaxis
11 (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

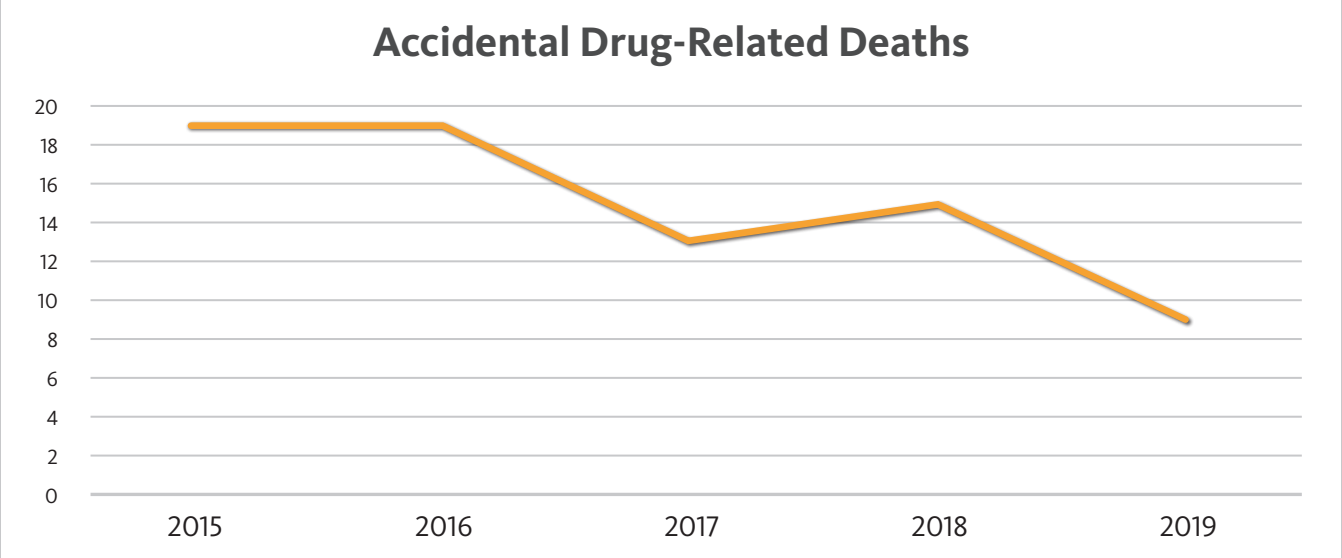
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
ACCIDENT	19	19	13	15	7
SUICIDE	3	1	1	3	1
INDETERMINATE	0	2	1	3	1
TOTAL	22	22	15	21	9



Eaton County
Drug-Related Deaths

2019 Drug-Related Deaths Summary	
TOTAL	9 cases
SEX	4 female, 5 male
RACE	7 white, 2 black
AGE RANGE	27-59 years
AVERAGE AGE	40.3 years
MEDIAN AGE	40 years
OPIOID-RELATED	8 cases involved an opiate or opioid (89%)
MANNER OF DEATH	7 accidents, 1 suicide, 1 indeterminate



Eaton County
Suicides

Suicide Totals by Year	2015	2016	2017	2018	2019
SUICIDES	18	11	20	22	18

Suicide Methods	2015	2016	2017	2018	2019
FIREARM	7	9	12	9	11
HANGING	4	1	7	5	4
DRUG INTOXICATION	3	1	1	3	1
SHARP FORCE INJURY	1	0	0	3	1
SUFFOCATION	2	0	0	0	0
OTHER	1[12]	0	0	2[13]	1[14]

Suicides by Age	2015	2016	2017	2018	2019
0-17	2	2	1	0	1
18-25	1	0	4	4	3
26-44	8	1	6	6	7
45-64	4	6	7	5	4
65 +	3	2	2	7	3

12 Drove in front of a train
13 (1) carbon monoxide inhalation (1) ethylene glycol ingestion
14 Drowning

Eaton County
Reported Deaths of Children

Deaths of Children by Age	2015	2016	2017	2018	2019
Stillborn	0	0	0	2[15]	0
<1 year	0	0	1	1	0
1-5	0	0	0	1	1
6-10	0	0	0	0	4
11-17	5	2	2	1	2
TOTAL	5	2	3	5	7

Manner of Death	2015	2016	2017	2018	2019
NATURAL	0	0	0	0	2
ACCIDENT	2	0	1	1	4
SUICIDE	2	2	1	0	1
HOMICIDE	1	0	0	0	0
INDETERMINATE	0	0	1	2	0

15 Includes one mummified fetal remains discovered in a funeral home

Eaton County
Reported Deaths of Children

2019 Reported Deaths of Children Summary			
Age	***Sex***	***Cause of Death***	***Manner***
1 year	M	Congenital Anomalies	Natural
8 years	F	Blunt Force Injuries (motor vehicle collision)	Accident
10 years	F	Blunt Force Injuries (motor vehicle collision)	Accident
10 years	F	Diabetic Ketoacidosis	Natural
10 years	M	Drowning	Accident
13 years	M	Blunt Force Injuries (motor vehicle collision)	Accident
17 years	F	Hanging	Suicide

Ingham 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

Luke R. Vogelsberg, D-ABMDI

Medical Examiner Investigators

Ashley Ault

Kenneth Barnes

Erica Betts, D.O., MPH

Kathleen Brooks

Mark Chojnowski

Joy Dempsey, D-ABMDI

Matt Greene

Alyson Lipp

Lynne Mark, D-ABMDI

Jessica Nicholson

Susan Nye

Karen Phelps

Brett Ramsden, D-ABMDI

Daniel Sowles, D-ABMDI

Mary Stevens

Jeff Weiss

Ingham County
Summary of Cases

	2015	2016	2017	2018	2019
TOTAL DEATHS IN THE COUNTY	2717	2655	2872	2870	3066
DEATHS REPORTED TO THE ME	843	824	916	888	936
CASES ACCEPTED FOR INVESTIGATION[16]	672	660	677	647	742
MEI SCENE INVESTIGATIONS	654	677	752	709	775
DEATH CERTIFICATES SIGNED BY ME	407	424	422	393	477
BODIES TRANSPORTED TO SPARROW	328	267[17]	250	325	275
COMPLETE AUTOPSY	255	286	232	220	276
LIMITED AUTOPSY	5	9	12	13	13
EXTERNAL EXAMINATION	40	46	42	31[18]	44
STORAGE ONLY	28	32	55	61	47
UNCLAIMED BODIES	21	20	34	28	13
REFERRALS TO GIFT OF LIFE	292	308	326	292	264
TISSUE/CORNEA DONORS	74	95	92	48	51
CREMATION PERMITS REVIEWED	1717	1721	1920	1934	2154

16 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 241 cases that were reported to us in 2018.

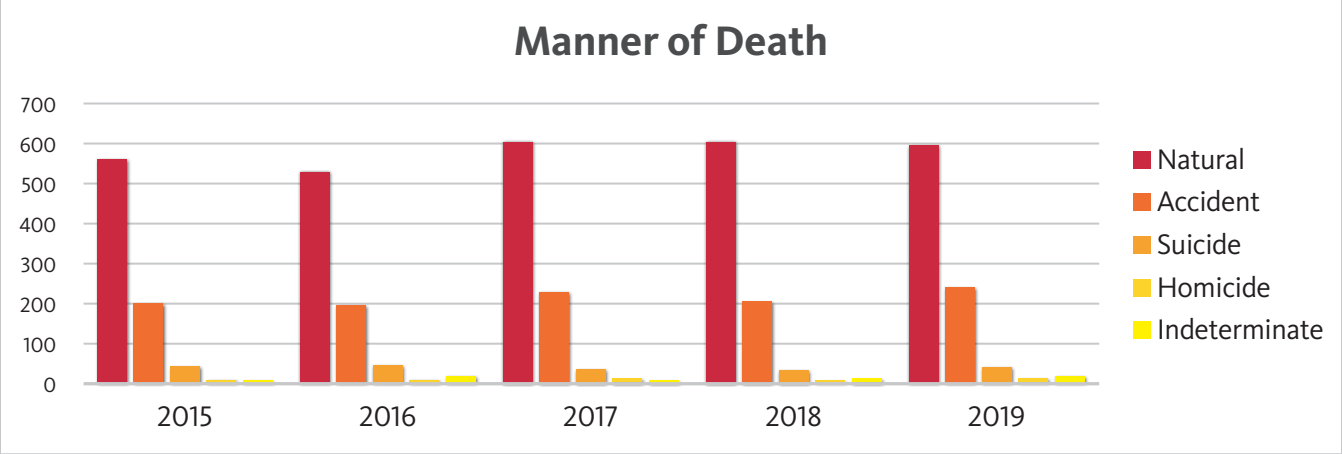
17 In previous years, this number was listed as the sum of exams (complete, limited, external) and bodies for storage only. In 2016, this number was obtained from the contracted transport provider, and thus excludes decedents who died at Sparrow hospital and would have been transported to Sparrow morgue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

18 (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.

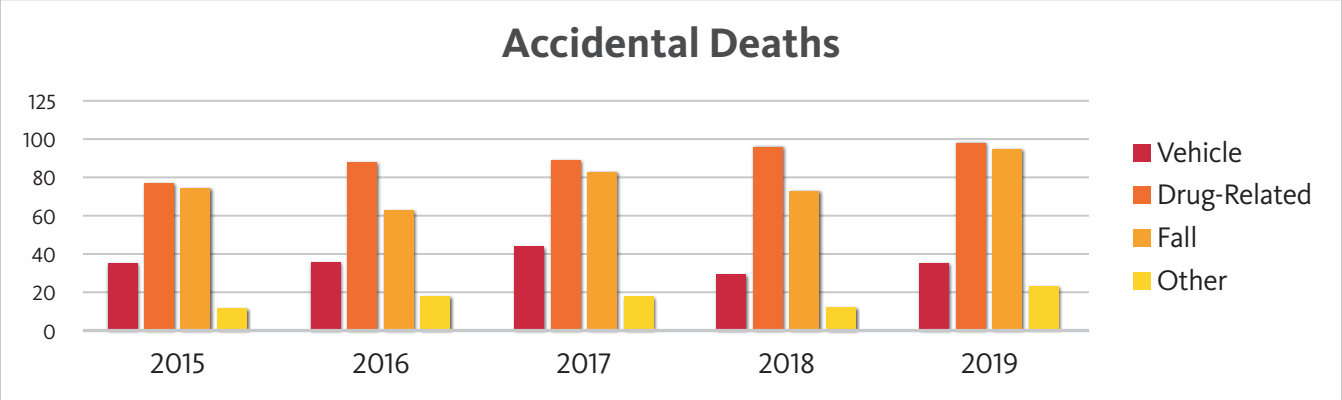
Manner of Death	2015	2016	2017	2018	2019
NATURAL	564	535	605	608	598
ACCIDENT	198	199	231	210	251
SUICIDE	46	51	44	38	51
HOMICIDE	14	13	20[19]	12	16
INDETERMINATE	19	22	16[20]	16	18
TOTAL	841[21]	820[22]	916[23]	884[24]	934[25]



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

Ingham County
Accidental Deaths

Accidental Deaths	2015	2016	2017	2018	2019
VEHICLE	35	36	43	29	35
DRUG-RELATED	77	88	89	97	98
DROWNING	2	3	3	2	3
FALL	75	63	83	73	95
FIRE	0	1	0	2	5
ASPHYXIA	1	3	4	3	8[26]
HYPOTHERMIA	1	2[27]	1	0	0
OTHER	7[28]	3[29]	9[30]	4[31]	7[32]
TOTAL	198	199	231	210	251

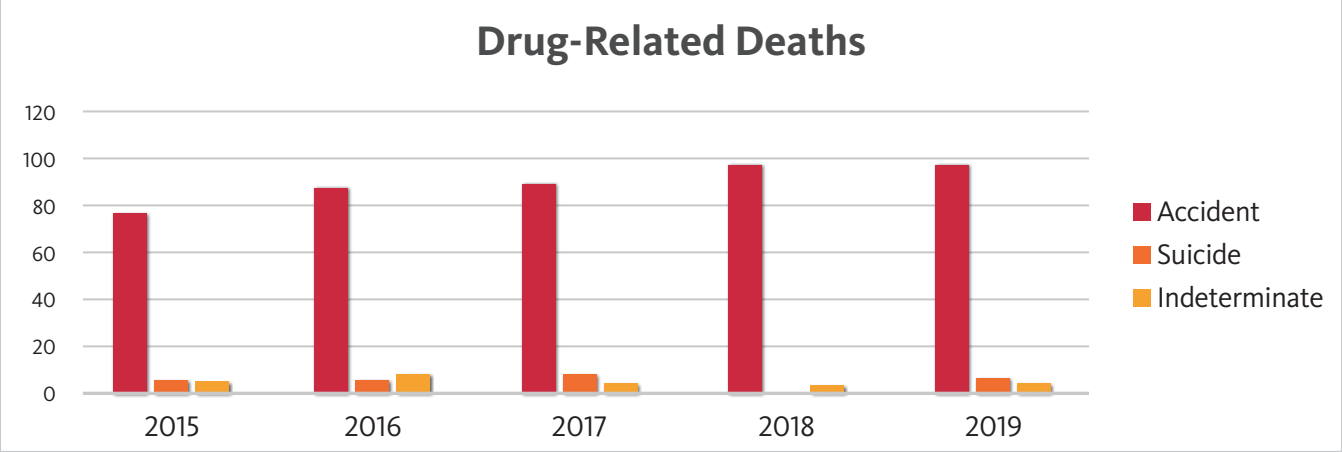


26 (6) choking on food, (2) infant in unsafe sleep environment
27 Both decedents also acutely intoxicated with ethanol (these cases not included in the drug-related category)
28 (2) gunshot wound deaths; (1) struck by person falling off ladder; (1) bowel obstruction from foreign object; (1) perforated bowel; (1) remote diving accident; (1) injuries from falling from tree
29 (1) heart disease associated with anabolic androgenic steroid use; (1) methadone therapy contributing to complications of chronic ethanol abuse; (1) carbon monoxide intoxication
30 (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
31 (1) carbon monoxide intoxication; (1) injuries from airplane crash; (2) remote neck injuries - 1 wrestling and 1 swimming
32 (2) injuries from plane crash; (1) burns from hot coffee; (1) carbon monoxide; (1) hypothermia; (1) bicycle crash; (1) therapeutic injury

Ingham County
Drug-Related Deaths

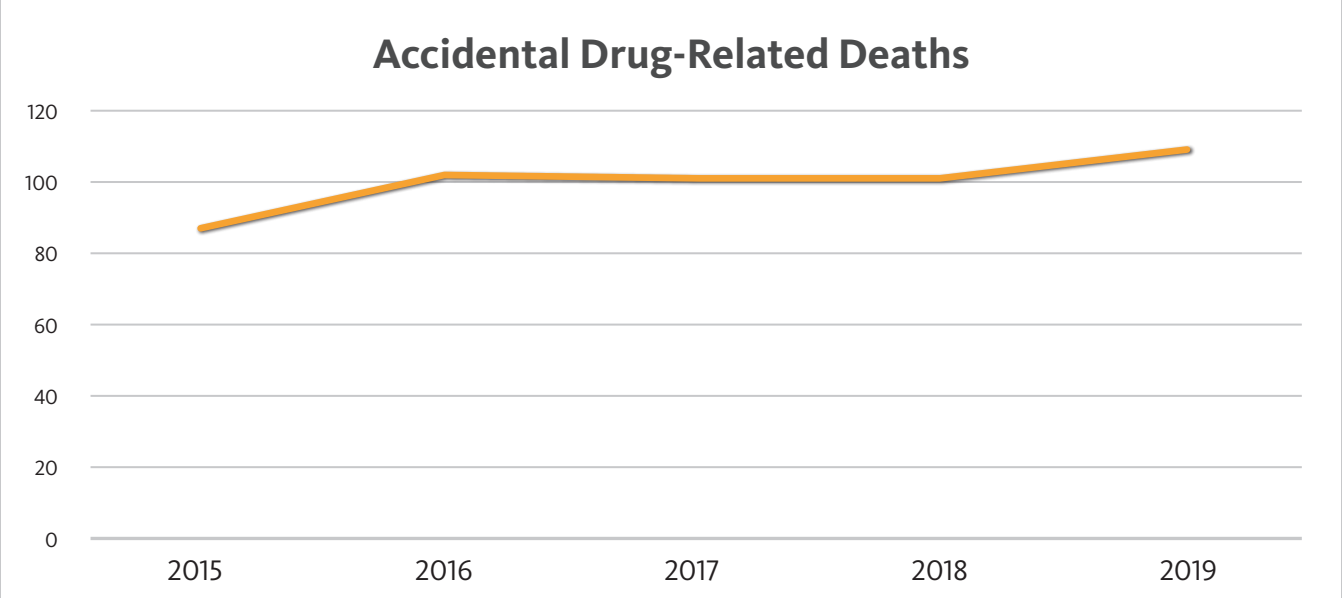
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
ACCIDENT	77	88	89	97	98
SUICIDE	6	6	8	0	7
INDETERMINATE	5	8	4	4	4
TOTAL	88	102	101	101	109



Ingham County
Drug-Related Deaths

2019 Drug-Related Deaths Summary	
TOTAL	109 cases
SEX	40 female, 69 male
RACE	85 white, 19 black, 5 mixed race
AGE RANGE	20-73 years
AVERAGE AGE	44.3 years
MEDIAN AGE	43 years
OPIOID-RELATED	89 cases involved an opiate or opioid (81.7%)
MANNER OF DEATH	98 accidents, 7 suicides, 4 indeterminate



Ingham County
Suicides

Suicide Totals by Year	2015	2016	2017	2018	2019
SUICIDES	46	51	44	38	51

Suicide Methods	2015	2016	2017	2018	2019
FIREARM	19	26	18	21	20
HANGING	16	10	13	13	20
DRUG INTOXICATION	6	6	8	0	7
SUFFOCATION	2	3	1	1	0
SHARP FORCE INJURY	1	1	1	0	0
JUMP FROM HEIGHT	1	3	2	2	0
DROWNING	0	0	0	0	0
MOTOR VEHICLE CRASH	0	1	1	0	0
CARBON MONOXIDE	0	0	0	0	0
STRUCK BY TRAIN	1	0	0	1	1
OTHER	0	1[33]	0	0	3[34]

Suicides by Age	2015	2016	2017	2018	2019
0-17	2	3	2	3	2
18-25	9	9	9	10	13
26-44	12	21	12	12	14
45-64	18	7	18	7	18
65 +	7	11	3	6	4

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	*2015*	*2016*	*2017*	*2018*	*2019*
Stillborn	2	3	1	3	2
<1 year	8	10	8	3	13
1-5	5	6	3	4	8
6-10	1	2	1	3	5
11-17	6	10	4	8	7
TOTAL	22	31	17	21	35

Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
NATURAL	8	9	7	7	8
ACCIDENT	2	5	4	5	12
SUICIDE	2	3	2	3	2
HOMICIDE	1	4	1	2	2
INDETERMINATE	4	7	2	1	9

Ingham County
Reported Deaths of Children

2019 Reported Deaths of Children Summary			
Age	***Sex***	***Cause of Death***	***Manner***
0	F	Intrauterine Fetal Demise	N/A (Stillbirth)
0	M	Intrauterine Fetal Demise	N/A (Stillbirth)
1 hour	M	Prematurity (preterm labor due to placental abruption)	Natural
4 days	M	Prematurity (congenital abnormalities)	Natural
6 days	F	Undetermined Causes (reported bedsharing)	Indeterminate
2 weeks	F	Asphyxia/Suffocation-Bedsharing	Accident
3 weeks	F	Undetermined Causes (reported bedsharing)	Indeterminate
4 weeks	F	Asphyxia/Suffocation-Bedsharing	Accident
1 month	M	Undetermined Causes (no reported bedsharing)	Indeterminate
2 months	M	Undetermined Causes (reported bedsharing)	Indeterminate
3 months	F	Undetermined Causes (potential unsafe sleep)	Indeterminate
3 months	F	Undetermined Causes (potential unsafe sleep)	Indeterminate
5 months	F	Undetermined Causes	Indeterminate
6 months	M	Pneumonia	Natural
9 months	M	Undetermined Causes	Indeterminate
1 year	F	Anoxic Brain Injury-Cause Undetermined	Indeterminate
1 year	M	Drowning-Swimming Pool	Accident
1 year	M	Drowning-Bathtub	Accident
3 years	M	Injuries-Motor Vehicle Collision	Accident
3 years	M	Smoke Inhalation/Burns-House Fire	Accident
4 years	M	DiGerorge Syndrome	Natural
5 years	M	Injuries (gun shot wound/other)	Homicide
5 years	M	Smoke Inhalation-House Fire	Accident
7 years	M	Complications of Cerebral Palsy	Natural
8 years	F	Injuries-Motor Vehicle Crash	Accident
8 years	M	Smoke Inhalation-House Fire	Accident
9 years	M	Injuries-Motor Vehicle Crash	Accident
10 years	M	Injuries-Bicycle Crash	Accident
12 years	M	Seizure Disorder	Natural
13 years	M	Gunshot Wound	Suicide
15 years	M	Gunshot Wound	Suicide
15 years	M	Injuries-Motor Vehicle Crash	Accident
15 years	F	Influenza	Natural
17 years	M	Gunshot Wound	Homicide
17 years	F	Cyctic Fibrosis/Asthma Complications	Natural

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

Luke R. Vogelsberg, D-ABMDI

Medical Examiner Investigators

Erica Betts, D.O., MPH

James Buxton

Katharine Dernocoeur

Kaley Kasper

Matthew Kasper, D-ABMDI

Susan Nye

Derek Schroeder

John Sigg

Dan Sowles, D-ABMDI

Mitchell Tolan, D-ABMDI

Thomas Wodarek

Ionia County
Summary of Cases

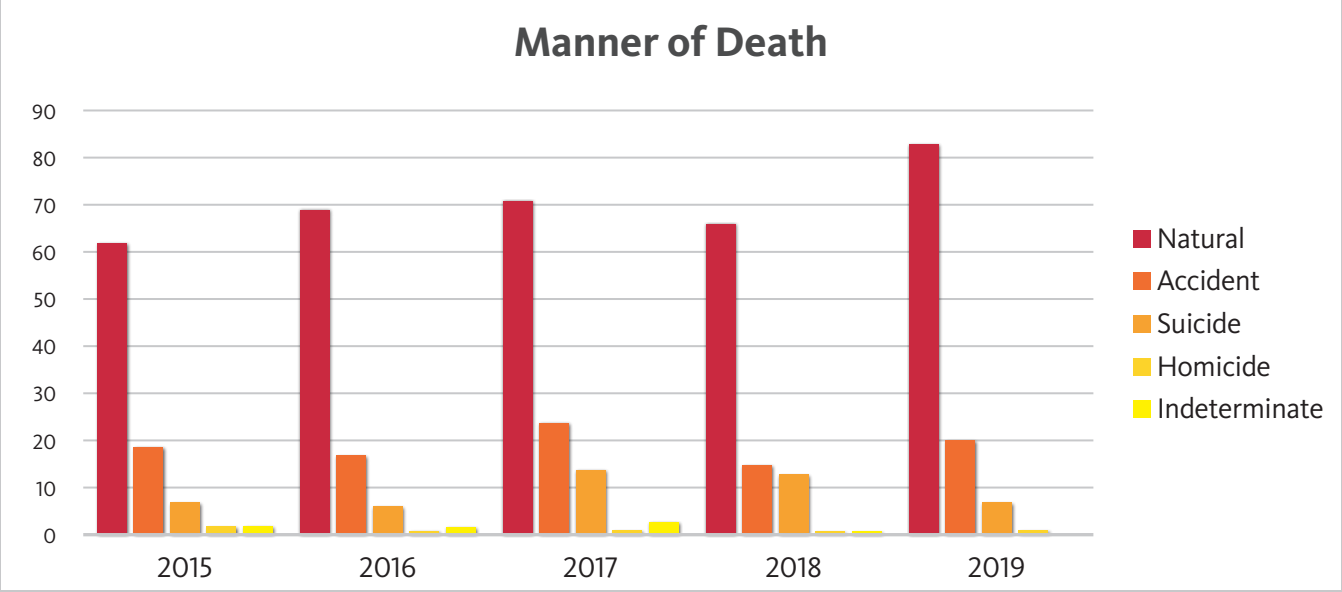
	2015	2016	2017	2018	2019
TOTAL DEATHS IN THE COUNTY	321	324	348	328	333
DEATHS REPORTED TO THE ME	92	95	113	96	111
CASES ACCEPTED FOR INVESTIGATION[35]	91	92	110	90	107
MEI SCENE INVESTIGATIONS	69	92	109	92	109
DEATH CERTIFICATES SIGNED BY ME	48	47	59	50	48
BODIES TRANSPORTED TO SPARROW	42	38	54	44	39
COMPLETE AUTOPSY	36	33	36	33	25
LIMITED AUTOPSY	0	2	2	5	6
EXTERNAL EXAMININATION	4	2	13	5	3
STORAGE ONLY	2	1	3	1	5
UNCLAIMED BODIES	0	1	1	1	2
REFERRAL TO GIFT OF LIFE	40	34	49	24	32
TISSUE/CORNEA DONORS	9	13	9	9	12
CREMATION PERMITS REVIEWED	166	196	221	214	212

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 6 cases that were reported to us in 2018.

Ionia County
Manner of Death

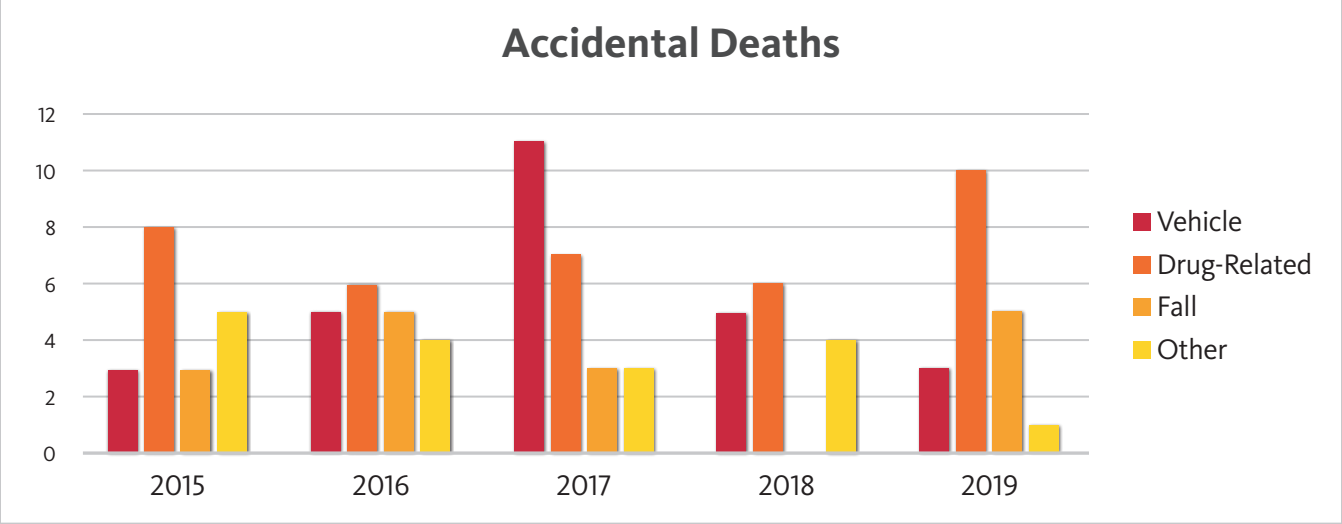
The data on the following pages refers to those deaths that were reported to the Medical Examiner's Office.

Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
NATURAL	62	69	71	66	83
ACCIDENT	19	17	24	15	20
SUICIDE	7	6	14	13	7
HOMICIDE	2	1	1	1	1
INDETERMINATE	2	2	3	1	0
TOTAL	92	95	113	96	111



Ionia County
Accidental Deaths

Accidental Deaths	2015	2016	2017	2018	2019
VEHICLE	3	5	11	5	3
DRUG-RELATED[36]	8	5	7	6	10
DROWNING	1	0	1	4	0
FALL	3	3	3	0	5
FIRE	2	2	1	0	0
ASPHYXIA	1	1	1	0	1
WATER INTOXICATION	0	0	0	0	0
HYPOTHERMIA	0	1	0	0	0
INDUSTRIAL ACCIDENT	1	0	0	0	0
TOTAL	19	17	24	15	20[37]



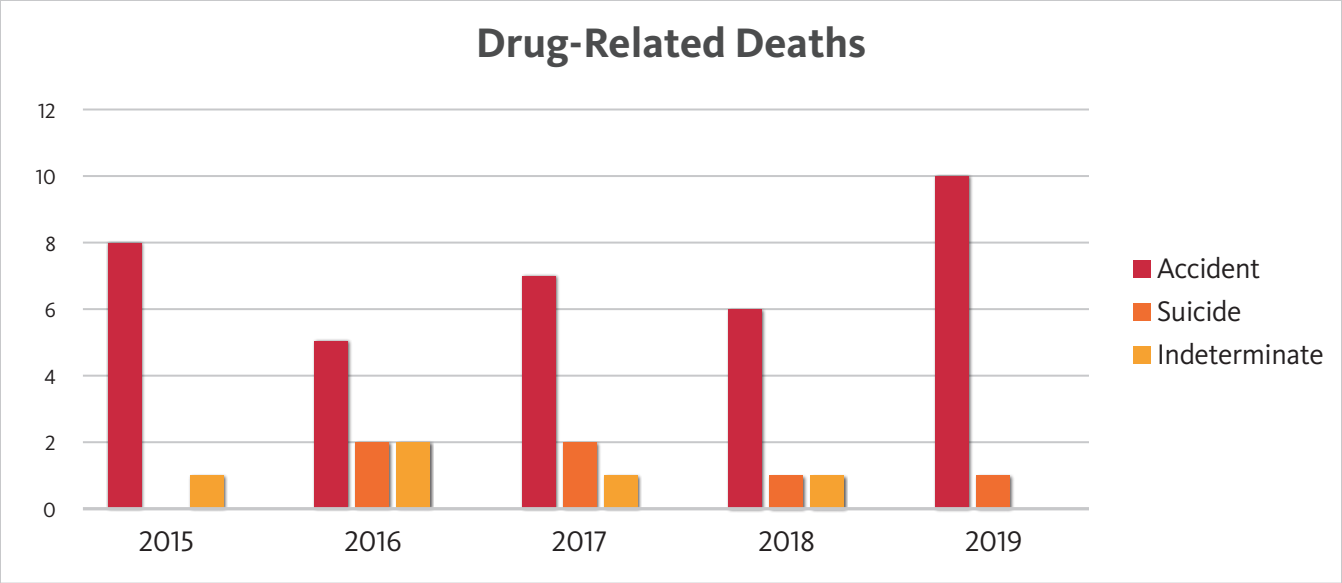
36 (1) motor vehicle related fatality in 2018 had drug intoxication listed as a contributing condition; as the death was not directly related to the toxic effects of the drug(s) it is not included as a drug fatality in this report.
37 (1) carbon monoxide

Ionia County

Drug-Related Deaths

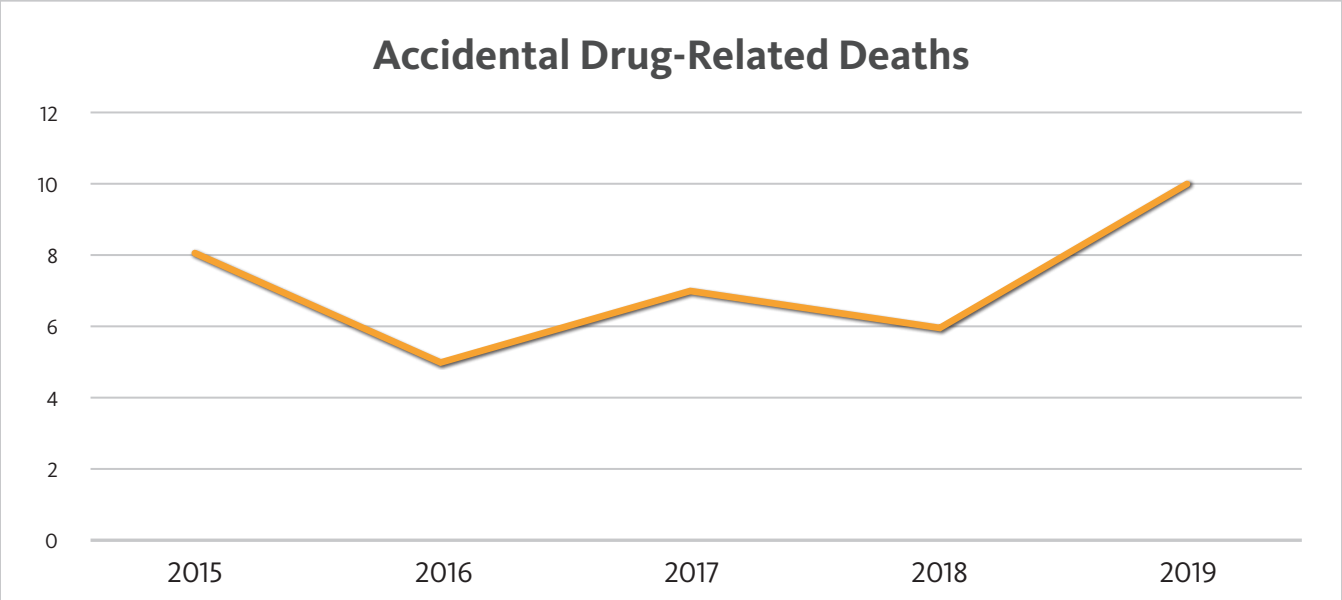
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
ACCIDENT	8	5	7	6	10
SUICIDE	0	2	2	1	1
INDETERMINATE	1	2	1	0	0



Ionia County
Drug-Related Deaths

2019 Drug-Related Deaths Summary	
TOTAL	11 cases
SEX	5 female, 6 male
RACE	8 white, 3 black
AGE RANGE	32-51 years
AVERAGE AGE	42.2 years
MEDIAN AGE	40 years
OPIOID-RELATED	10 cases involved an opiate or opioid (90.9%)
MANNER OF DEATH	10 accidents and 1 suicide



Ionia County
Suicides

Suicide Totals by Year	2015	2016	2017	2018	2019
SUICIDES	7	6	14	13	7

Suicide Methods	2015	2016	2017	2018	2019
FIREARM	2	4	3	9	4
HANGING	3	0	6	3	2
DRUG INTOXICATION	0	2	2	1	1
CARBON MONOXIDE	1	0	2	0	0
MOTOR VEHICLE	1	0	0	0	0
OTHER	0	0	1[38]	0	0

Suicides by Age	2015	2016	2017	2018	2019
0-17	0	0	0	0	0
18-25	1	0	2	0	2
26-44	4	4	4	5	3
45-64	2	0	5	6	1
65 +	0	2	3	2	1

38 (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 1 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).

Eaton County

Reported Deaths of Children

Deaths of Children by Age	*2015*	*2016*	*2017*	*2018*	*2019*
Stillborn	0	0	0	0	0
<1 year	0	0	1	1	0
1-5	0	0	0	0	0
6-10	0	0	0	0	0
11-17	0	0	2	0	0
TOTAL	0	0	3	1	0

Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
NATURAL	0	0	1	0	0
ACCIDENT	0	0	0	0	0
SUICIDE	0	0	0	0	0
HOMICIDE	0	0	1	0	0
INDETERMINATE	0	0	1	1	0

2019 Reported Deaths of Children Summary
NONE REPORTERD

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

Luke R. Vogelsberg, D-ABMDI

Medical Examiner Investigators

Taffy Beeg-Clark

Kari Duman

Gerardo Esquivel

Taylor Maylee Hoekwater

Christy Mead

Philip Nartker

Robert Schumacker

Shelly Travis

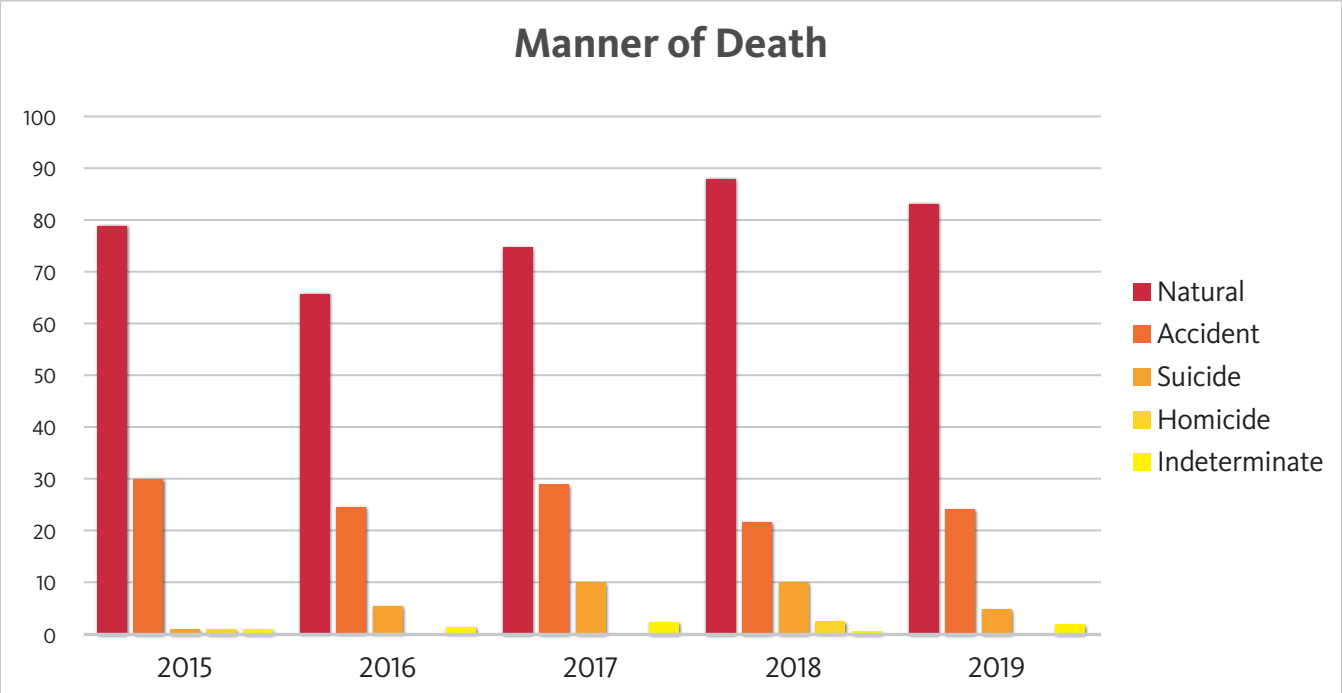
Isabella County
Summary of Cases

	2015	2016	2017	2018	2019
TOTAL DEATHS IN THE COUNTY	485	507	528	549	479
DEATHS REPORTED TO THE ME	113	100	118	125	106
CASES ACCEPTED FOR INVESTIGATION[39]	104	91	110	106	96
MEI SCENE INVESTIGATIONS	100	93	105	111	92
DEATH CERTIFICATES SIGNED BY ME	54	48	56	50	47
BODIES TRANSPORTED TO SPARROW	46	41	45	42	39
COMPLETE AUTOPSY	44	35	38	28	33
LIMITED AUTOPSY	1	1	2	4	2
EXTERNAL EXAMINATION	1	3	5	6	3
STORAGE ONLY	0	2	0	4	1
UNCLAIMED BODIES	4	2	1	1	1
REFERRALS TO GIFT OF LIFE	53	40	51	38	28
TISSUE/CORNEA DONORS	6	8	10	2	9
CREMATION PERMITS REVIEWED	277	267	315	352	310

39 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 18 cases that were reported to us in 2018.

Isabella County
Manner of Death

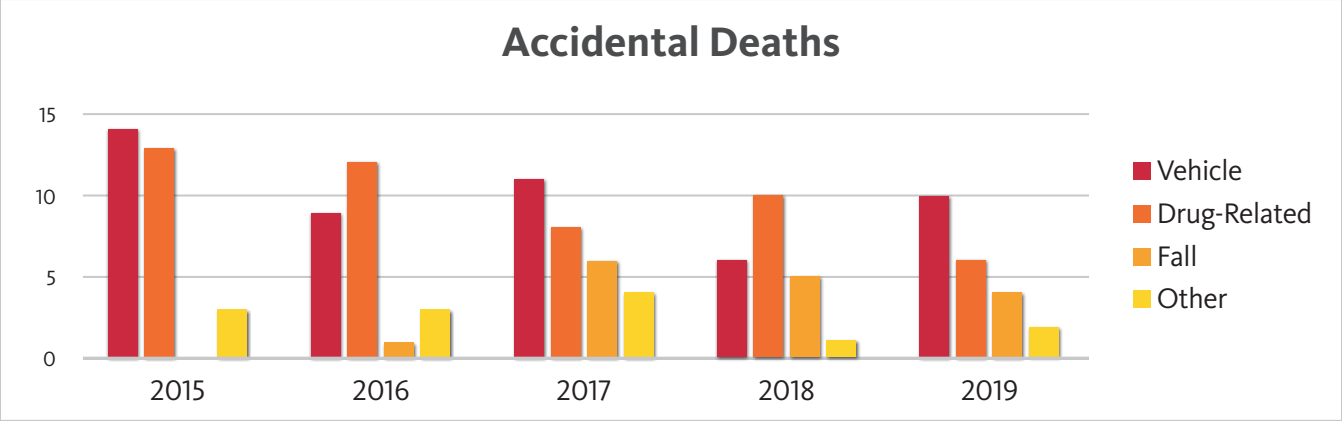
Manner of Death	2015	2016	2017	2018	2019
NATURAL	79	66	75	88	74
ACCIDENT	30	25	29	22	24
SUICIDE	1	6	10	10	5
HOMICIDE	1	0	0	3	0
INDETERMINATE	1	2	3	1	2
TOTAL	112[40]	100[41]	118[42]	124[43]	105[44]



40 Case with no manner of death: stillborn following motor vehicle crash
41 Case with no manner of death: stillbirth
42 Case with no manner of death: stillbirth
43 Case with no manner of death: stillbirth in another county; reported to office due to burial in county
44 Case with no manner of death: blood clot specimen-unknown if it is of human origin

Isabella County
Accidental Deaths

Accidental Deaths	2015	2016	2017	2018	2019
VEHICLE	14	9	11	6[45]	10
DRUG-RELATED	13	12	8	10[46]	6
DROWNING	1	0	2	1[47]	1
FALL	0	1	6	5	4
ASPHYXIA	1	0	2	0	1
HYPOTHERMIA	1	1	0	0	0
FIRE	0	0	0	0	1
FALLING TREE	0	1	0	0	0
PINNED IN MACHINERY	0	1	0	0	0
TOTAL	30	25	29	22	24[48]



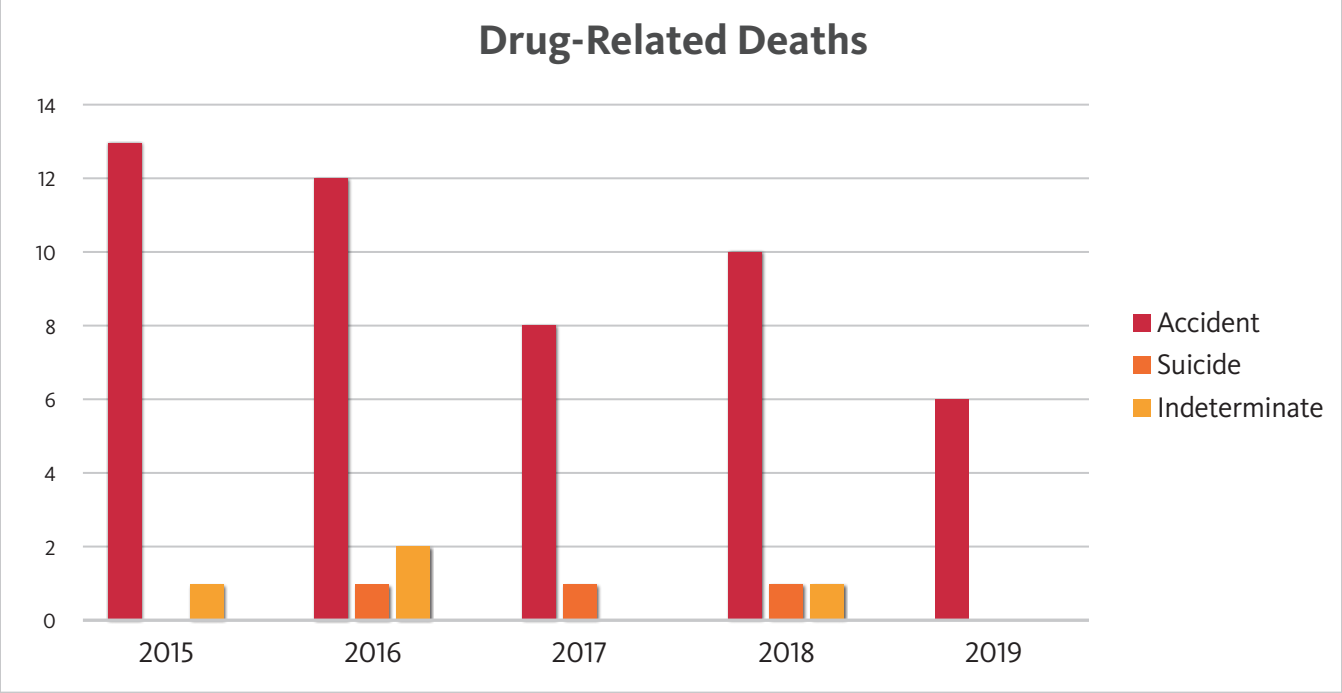
45 (1) motor vehicle death was due to a post-crash fire (included here as a vehicle fatality and not as a fire fatality)
46 (1) drowning while intoxicated with drugs (included here as a drowning fatality and not a drug intoxication death as the death was not directly related to the toxic effects of the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

Isabella County

Drug-Related Deaths

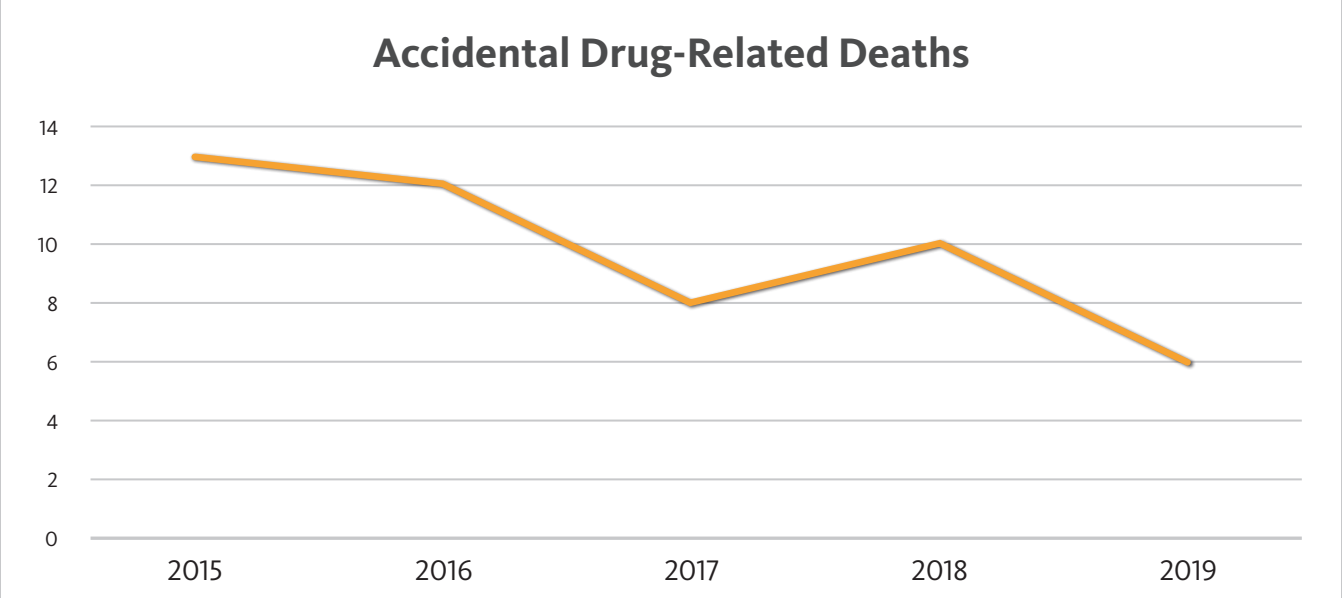
For purposes of this report, drug-related fatalities are deaths in which an overdose of a combination of drugs or a single drug caused or contributed to the death. These deaths do not include situations in which intoxication might have been a factor in an incident leading to death, such as motor vehicle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

Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
ACCIDENT	13	12	8	10	6
SUICIDE	0	1	1	1	0
INDETERMINATE	1	2	0	1	0



Isabella County
Drug-Related Deaths

2019 Drug-Related Deaths Summary	
TOTAL	6 cases
SEX	2 female, 4 male
RACE	2 white, 4 Native American
AGE RANGE	24-47 years
AVERAGE AGE	35 years
MEDIAN AGE	33.5 years
OPIOD-RELATED	4 cases involved an opiate or opioid (66.7%)
MANNER OF DEATH	6 accidents



Isabella County
Suicides

Suicide Totals by Year	2015	2016	2017	2018	2019
SUICIDES	1	6	10	10	5

Suicide Methods	2015	2016	2017	2018	2019
FIREARM	1	3	7	5	4
HANGING	0	1	2	3	1
ASPHYXIA	0	1	0	0	0
DRUG INTOXICATION	0	1[49]	1	1	0
MOTOR VEHICLE/FIRE	0[50]	0	0	1	0

Suicides by Age	2015	2016	2017	2018	2019
0-17	0	0	0	0	0
18-25	0	1	0	2	0
26-44	0	3	3	3	1
45-64	0	2	6	4	3
65 +	1	0	1	1	1

49 Reported in previous annual reports as 2 drug related suicides, only 1 has been certified for 2016
50 Reported in previous annual reports as motor vehicle/fire related suicide, none had been certified as such for for 2015

Isabella County

Reported Deaths of Children

Sudden Unexplained Infant Death (SUID) refers to the death of an infant less than 1 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	*2015*	*2016*	*2017*	*2018*	*2019*
Stillborn	2	1	1	0	0
<1 year	1	0	0	0	1
1-5	0	0	1	0	4
6-10	0	0	0	0	0
11-17	4	0	1	1	0
TOTAL	7	1	3	1	5

Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
NATURAL	1	0	0	0	0
ACCIDENT	4	0	2	1	4
SUICIDE	0	0	0	0	0
HOMICIDE	0	0	0	0	0
INDETERMINATE	0	0	0	0	1

2019 Reported Deaths of Children Summary			
Age	*Sex*	*Cause of Death*	*Manner*
1 month	M	Undetermined Cause (potential unsafe sleep)	Indeterminate
1 year	F	Asphyxia/Suffocation-Bedsharing	Accident
1 year	F	Drowning-Bathtub	Accident
2 years	M	Smoke Inhalation/Burns-House Fire	Accident
3 years	M	Injuries-Motor Vehicle Collision	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

Luke R. Vogelsberg, D-ABMDI

Medical Examiner Investigators

Mark Pendergraff, D-ABMDI

April Archer

Erica Betts, D.O., MPH

Dennis Campbell

Lynn Carpenter

Joy Dempsey, D-ABMDI

Amanda Dwyer

Lawrence Goff

Shane Grinnell

Laura Hammersley

Savannah Kryza

Alanna Pendergraff

Crystal Phinney

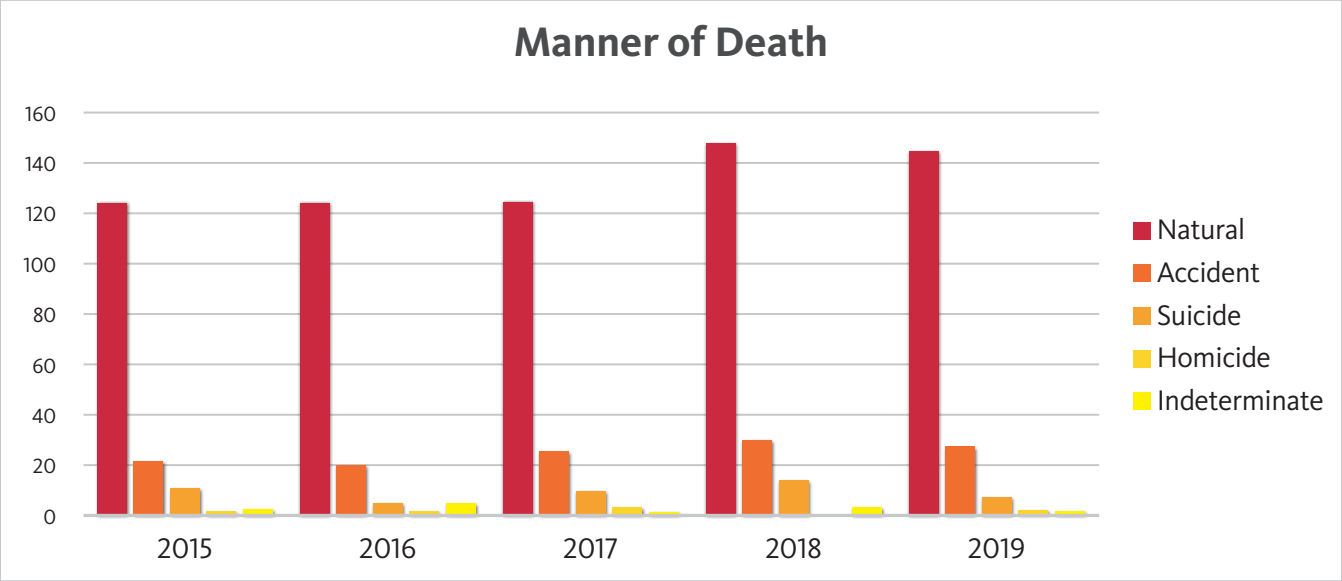
Shiawassee County
Summary of Cases

	2015	2016	2017	2018	2019
TOTAL DEATHS IN THE COUNTY	600	629	618	704	708
DEATHS REPORTED TO THE ME	162	158	168	200	185
CASES ACCEPTED - INVESTIGATION[51]	142	130	151	175	162
MEI SCENE INVESTIGATIONS	138	133	151	180	160
DEATH CERTIFICATES SIGNED BY ME	72	64	66	74	69
BODIES TRANSPORTED TO SPARROW	52	48	57	57	52
COMPLETE AUTOPSY	45	44	41	40	41
LIMITED AUTOPSY	1	1	7	8	6
EXTERNAL EXAMINATION	5	2	3	5	0
UNCLAIMED BODIES	0	1	0	1	1
STORAGE ONLY	1	1	6	4	5
REFERRALS TO GIFT OF LIFE	28	43	44	40	41
TISSUE/CORNEA DONORS	7	15	8	6	11
CREMATION PERMITS REVIEWED	298	375	356	436	439

51 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 2019.

Shiawassee County
Manner of Death

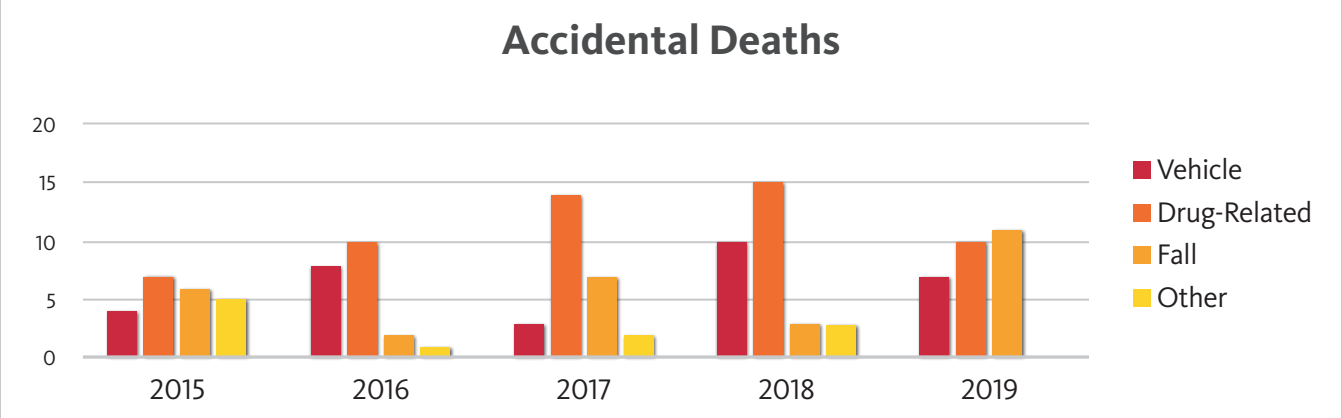
Manner of Death	2015	2016	2017	2018	2019
NATURAL	125	125	125	148	145
ACCIDENT	22	21	26	31	28
SUICIDE	12	6	11	15	8
HOMICIDE	1	1	3	0	2
INDETERMINATE	2	4	1	4	1
TOTAL	162	158[52]	168[53]	198[54]	184[55]



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

Shiawassee County
Accidental Deaths

Accidental Deaths	2015	2016	2017	2018	2019
VEHICLE	4	8	3	10	7
DRUG-RELATED	7	10	14	15	10
DROWNING	0	0	0	1	0
FALL	6	2	7	3	11
FIRE	0	1	1	0	0
ASPHYXIA	1	0	0	0	0
INSECT STING(S)	2	0	0	0	0
HYPOTHERMIA	0	0	0	1	0
OTHER	2[56]	0	1[57]	1[58]	0
TOTAL	22	21	26	31	28

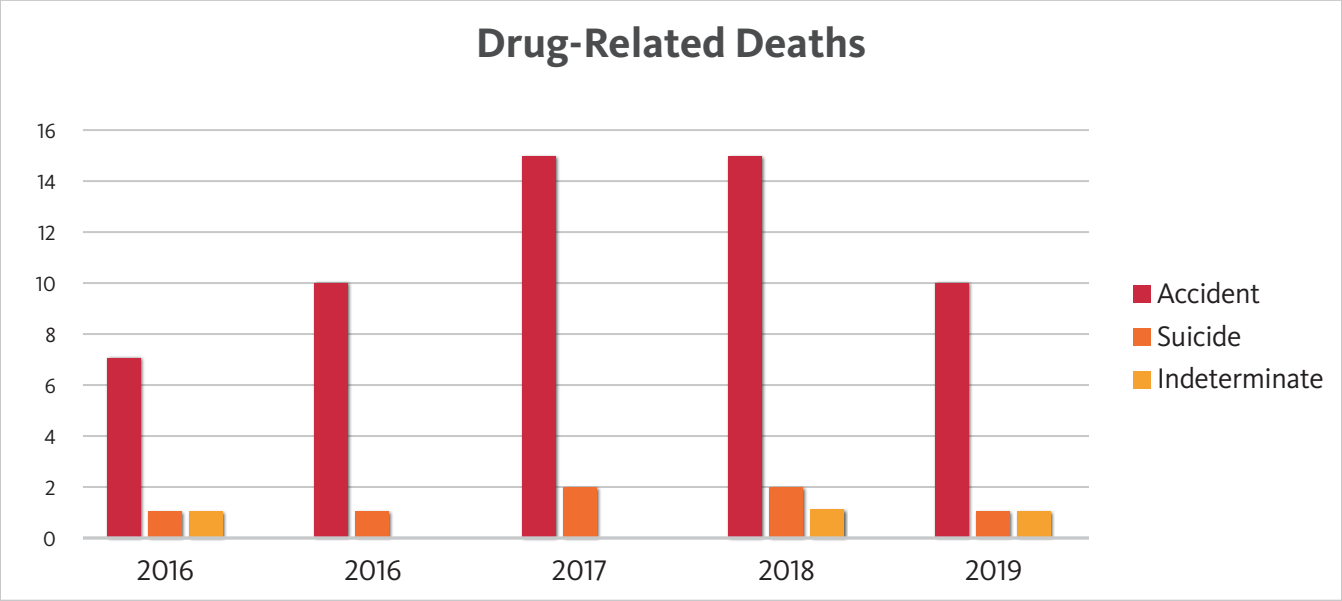


56 (1) perforated artery during attempt at catheter placement; (1) compressed by machinery
57 Hypothermia complicated by multiple drug intoxication, blunt head trauma, and cardiopulmonary disease
58 Blunt force head trauma-car fell from jack

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.

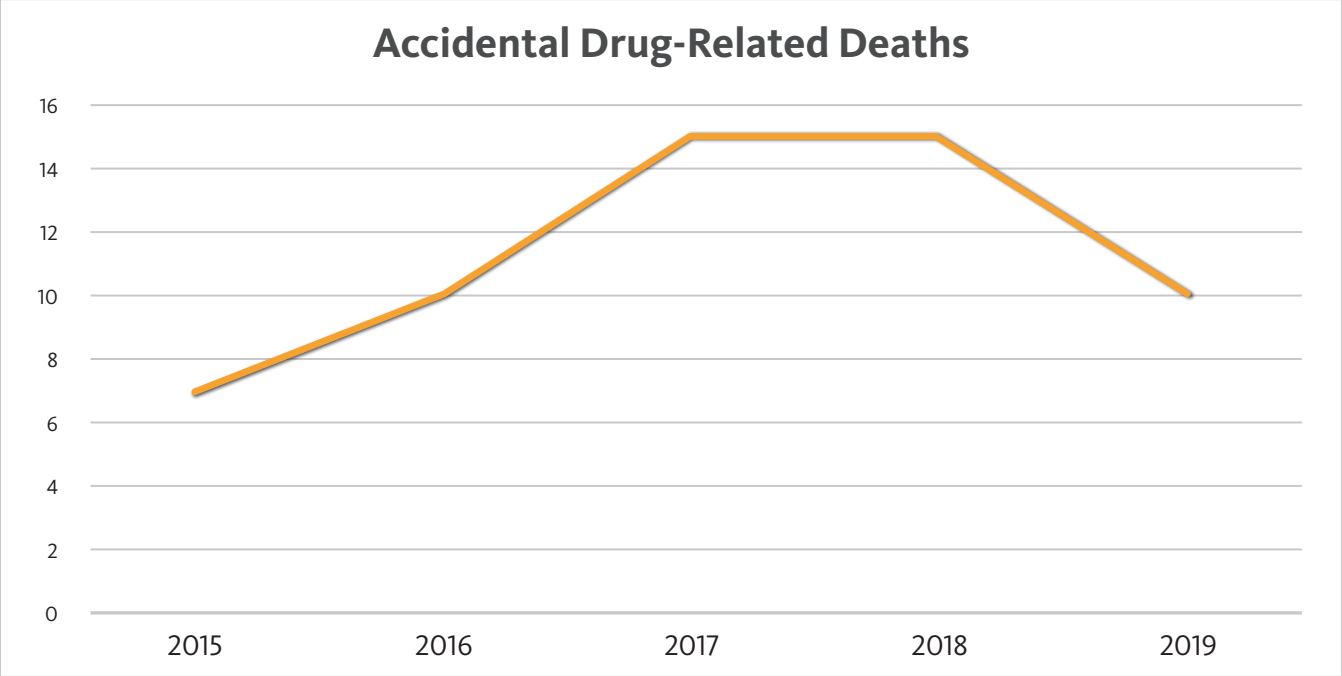
Manner of Death	*2015*	*2016*	*2017*	*2018*	*2019*
ACCIDENT	7	10	15[59]	15	10
SUICIDE	1	1	2	2	1
INDETERMINATE	1	0	0	1	1
TOTAL	9	11	17	18	12



59 (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

2019 Drug-Related Deaths Summary	
TOTAL	12 cases
SEX	7 female, 5 male
RACE	12 white
AGE RANGE	21-60 years
AVERAGE AGE	40.6 years
MEDIAN AGE	43 years
OPIOD-RELATED	12 cases involved an opiate or opioid (100%)
MANNER OF DEATH	10 accidents, 1 suicide, 1 indeterminate



Shiawassee County
Suicides

Suicide Totals by Year	2015	2016	2017	2018	2019
SUICIDES	12	6	11	15	8

Suicide Methods	2015	2016	2017	2018	2019
FIREARM	4	3	9	12	6
HANGING	6	1	0	1	0
DRUG INTOXICATION	1	1	2	2	1
CARBON MONOXIDE	0	0	0	0	1
MOTOR VEHICLE	0	0	0	0	0
STRUCK BY TRAIN	1	1[60]	0	0	0

Suicides by Age	2015	2016	2017	2018	2019
0-17	0	0	0	2	0
18-25	1	0	1	1	0
26-44	6	1	3	2	6
45-64	3	5	4	6	1
65 +	2	0	3	4	1

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

Shiawassee County
Reported Deaths of Children

Deaths of Children by Age	2015	2016	2017	2018	2019
Stillborn	0	1	1	2[61]	1
<1 year	1	2	1	0	0
1-5	0	0	0	0	0
6-10	0	1	0	0	0
11-17	0	0	0	4	1
TOTAL	1	4	2	8	2

Manner of Death	2015	2016	2017	2018	2019
NATURAL	0	0	0	1	0
ACCIDENT	0	1	0	1	1
SUICIDE	0	0	0	2	0
HOMICIDE	0	1	0	0	0
INDETERMINATE	1	1	1	2	0

2019 Reported Deaths of Children Summary			
Age	*Sex*	*Cause of Death*	*Manner*
0	F	Stillbirth-Intrauterine Fetal Demise	N/A (stillbirth)
14 years	F	Injuries-Pedestrian Struck by Motor Vehicle	Accident

61 (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[62]	107,759	280,895	63,905	70,311	70,648
TOTAL DEATHS	710	3066	333	479	708
DEATHS REPORTED TO THE ME (% OF TOTAL DEATHS)	184 (25.9%)	936 (30.5%)	111 (33.3%)	106 (22.1%)	185 (26.1%)
CASES ACCEPTED FOR INVESTIGATION	161	742	107	96	162
MEI SCENE INVESTIGATION	170	775	109	92	160
DEATH CERTIFICATES SIGNED ME	66	477	48	47	69
TOTAL EXAMS (% OF CASES ACCEPTED)	52 (32.3%)	333 (44.9%)	34 (31.7%)	38 (39.6%)	47 (29%)
NATURAL DEATHS (% OF DEATHS REPORTED)	136 (73.9%)	598 (64%)	83 (74.8%)	74 (69.8%)	145 (78.4%)
ACCIDENTAL DEATHS (% OF DEATHS REPORTED)	25 (13.6%)	251 (26.8%)	20 (18%)	24 (22.6%)	28 (15.1%)
SUICIDES (% OF DEATHS REPORTED)	18 (9.8%)	51 (5.4%)	7 (6.3%)	5 (4.7%)	8 (4.3%)
HOMICIDES (% OF DEATHS REPORTED)	3 (1.6%)	16 (1.7%)	1 (0.9%)	0 (0%)	2 (1.1%)
INDETERMINATE (% OF DEATHS REPORTED)	2 (1.1%)	18 (1.9%)	0 (0%)	2 (1.9%)	1 (0.5%)
DRUG-RELATED DEATHS (% OF DEATHS REPORTED)	9 (4.9%)	109 (11.6%)	11 (9.9%)	6 (5.7%)	12 (6.5%)
REFERRALS TO GIFT OF LIFE	75	264	32	28	41
TISSUE/CORNEA DONORS	17	51	12	9	11
UNCLAIMED BODIES	3	13	2	1	1

62 Population statistics provided by suburbanstats.org

Additional Information

In the five counties for which Sparrow Forensic Pathology served as the Office of the Medical Examiner in 2019:

- No bodies were exhumed for examination
- One case remained unidentified at the time a final disposition for the remains was determined (Tissue only-unknown if it is of human origin)
- Toxicology testing was performed in 490 of the 504 (97.2%) examinations performed[63]

63 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).

Sparrow

1.800.Sparrow | **Sparrow.org**

Sparrow complies with applicable federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex.

ATTENTION: If you speak a language other than English, language assistance services are free of charge and available to you. Call **1.517.364.2953**.

ATENCIÓN: Si habla un idioma distinto del inglés, hay servicios gratuitos de asistencia con el idioma, disponibles para usted. Llame al **1.517.364.2953**.

انتبه: إن كنت تتحدث لغة بخلاف الانجليزية، فإن خدمات المساعدة اللغوية مجانية ومتاحة لك. اتصل برقم **2953.364.517.1**.