

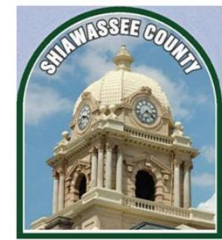


Department of Forensic Pathology
Office of the Medical Examiner

2018 Q4 (October 1 – December 31) Drug Report

Published March 1 2019





Introduction

Drug-Related Deaths - Defined

We define drug deaths as those which result entirely or partially from the physiologic effects of acute toxicity. Therefore, included here are deaths which resulted from a combination of natural disease and acute intoxication (e.g. lung disease complicated by opioid intoxication). Our definition does not include deaths by violence, in which the violent behavior may have been caused or contributed to by intoxication (e.g. death due to injury from motor vehicle crash in which the at-fault driver was intoxicated). We also do not include deaths related to the effects of chronic substance use (e.g. deaths due to alcoholic liver disease or heart disease which may have been contributed to by chronic cocaine use) if not combined with acute toxicity.

Methods

The majority of the drug deaths reported are due to more than one substance, as you will see in the detailed tables that follow. Often, decedents have even more substances present in their body at the time of death or overdose incident than just the substances listed as having caused or contributed to death. After autopsy and review of records, including toxicology report, the medical examiner assigned to the case determines which of the substances present played a causal role in the death. Thus, there may be substances present in a given case which are not included in the cause of death statement.

Occasionally, intoxicated decedents survive in the hospital for a time prior to death, following acute drug intoxication. In these cases, all efforts are made to obtain and test the earliest blood and urine available from their time in the hospital for the overdose incident, so that the toxicology results reflect what was in the body at the time the overdose occurred.

New information occasionally becomes available after a “final” cause and manner of death was determined, which sometimes, albeit rarely, results in a change to the “final” cause or manner of death. As such, the statistics contained herein may be subject to change at any time.

The extent of toxicology testing is determined by the medical examiner assigned to the case, based upon the circumstances of death. During the period reported, our office used Axis Forensic Toxicology for toxicology testing.¹

¹ If you have questions about what drugs we are currently capable of detecting, please visit www.axisfortox.com or email luke.vogelsberg@sparrow.org

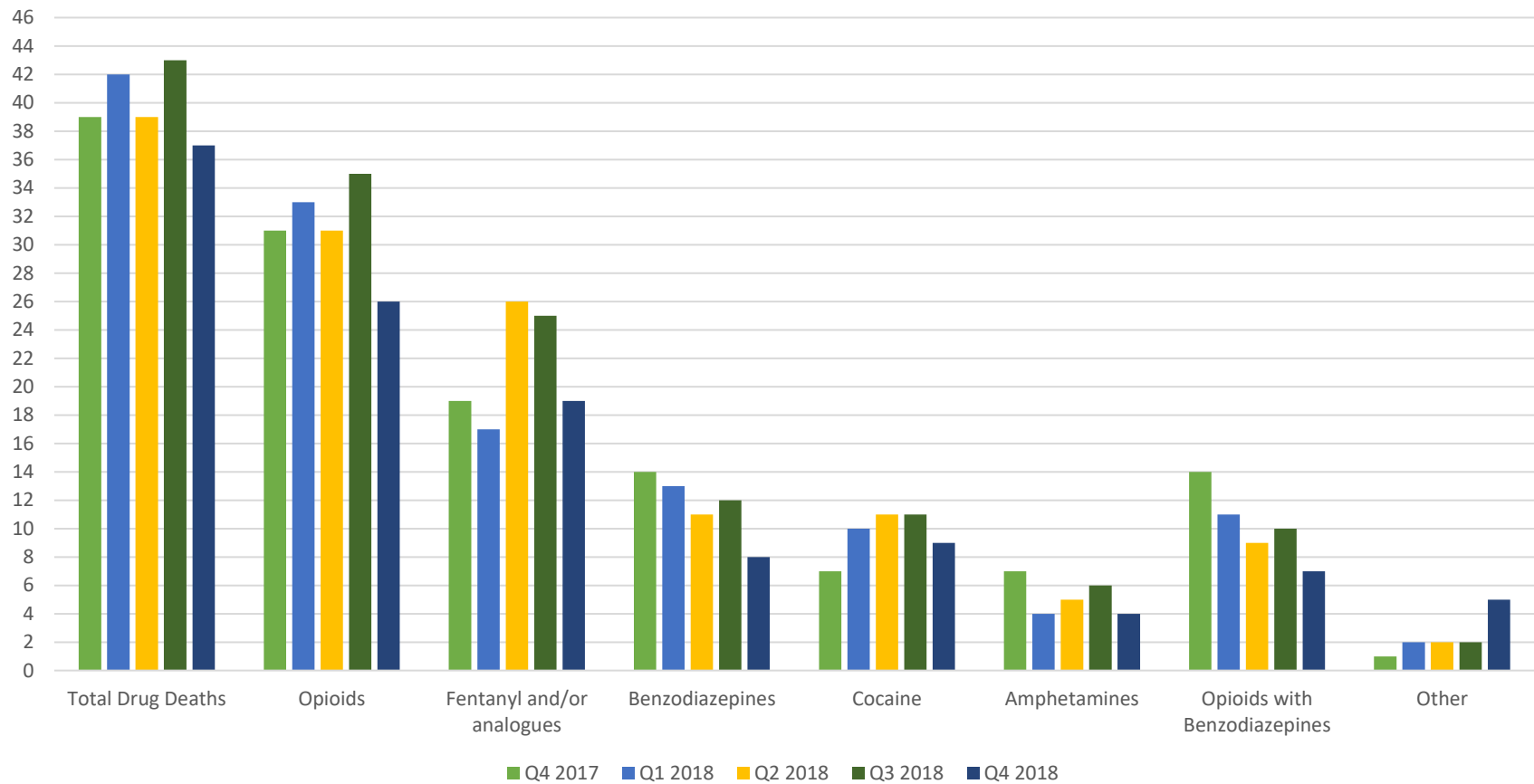
Highlights

Unless otherwise indicated, all comparisons on the Highlights page are made to the data from the previous quarter (Q3 2018). As stated above, most drug-related deaths are due to a combination of more than one substance. As such, numerous deaths fall into multiple of the below statistical categories (i.e. *all* heroin, fentanyl, methadone, and fentanyl analogue-related deaths are included in the opioid-related deaths category, and many deaths involved both heroin and fentanyl, and are included in both specific categories).

- Total drug-related deaths **decreased** by 6 (deaths) which is a decrease of **3%** from Q3 2018
- Opioid-related deaths **decreased** by 9 (deaths)
- Fentanyl and/or fentanyl analogue-related deaths **decreased** by 6 (death)
- Fentanyl and/or fentanyl analogue(s) were identified as substances causing death in **51%** of all drug-related deaths in Q4 2018, down **7%** from Q3
- Fentanyl analogues identified as having caused or contributed to death in Q4 2018 included: **acetylfentanyl**
- **Acetylfentanyl** deaths remained unchanged at 4 (deaths) from Q3 2018 to Q4 2018
- Benzodiazepine deaths **decreased** by 4 (deaths)
- Cocaine-related deaths **decreased** by 2 (deaths)
- Amphetamine/Methamphetamine-related² deaths **decreased** by 2 (deaths)
- **75.6%** of all drug-related deaths in Q4 2018 were due to two or more substances, down **8.1%** from Q3 2018
- Other drug related deaths **increased** by 3 (deaths) and included 3 accidental, 2 suicides, and 1 indeterminate in Q4 2018 compared to 1 suicide and 1 accidental death from Q3 2018

² Methamphetamine is metabolized to amphetamine in the body, thus, it is not always clear what the presence of amphetamine indicates (illicit methamphetamine use vs. prescription amphetamine use).

All-County Drug Class Occurrences in Drug-Related Deaths
Q3 2018 compared with Q1 & Q2 2018, and Q4 2017



This chart describes occurrences in one death of a given class of drug. As most drug-related deaths are due to two or more substances, the same death may fall into multiple categories (e.g. death due to fentanyl and alprazolam intoxication falls into the opioids, benzodiazepines, fentanyl and/or analogues, and opioids with benzodiazepines categories). Multiple of the same class of drug in the same death counts as only one occurrence of that class of drugs (e.g. death due to heroin and hydrocodone intoxication – both of these are opioids so this death falls only in the opioids category, as one occurrence). The “other” category is for occurrences of drug-related deaths due *solely* to drugs which do not fall into the other listed categories.

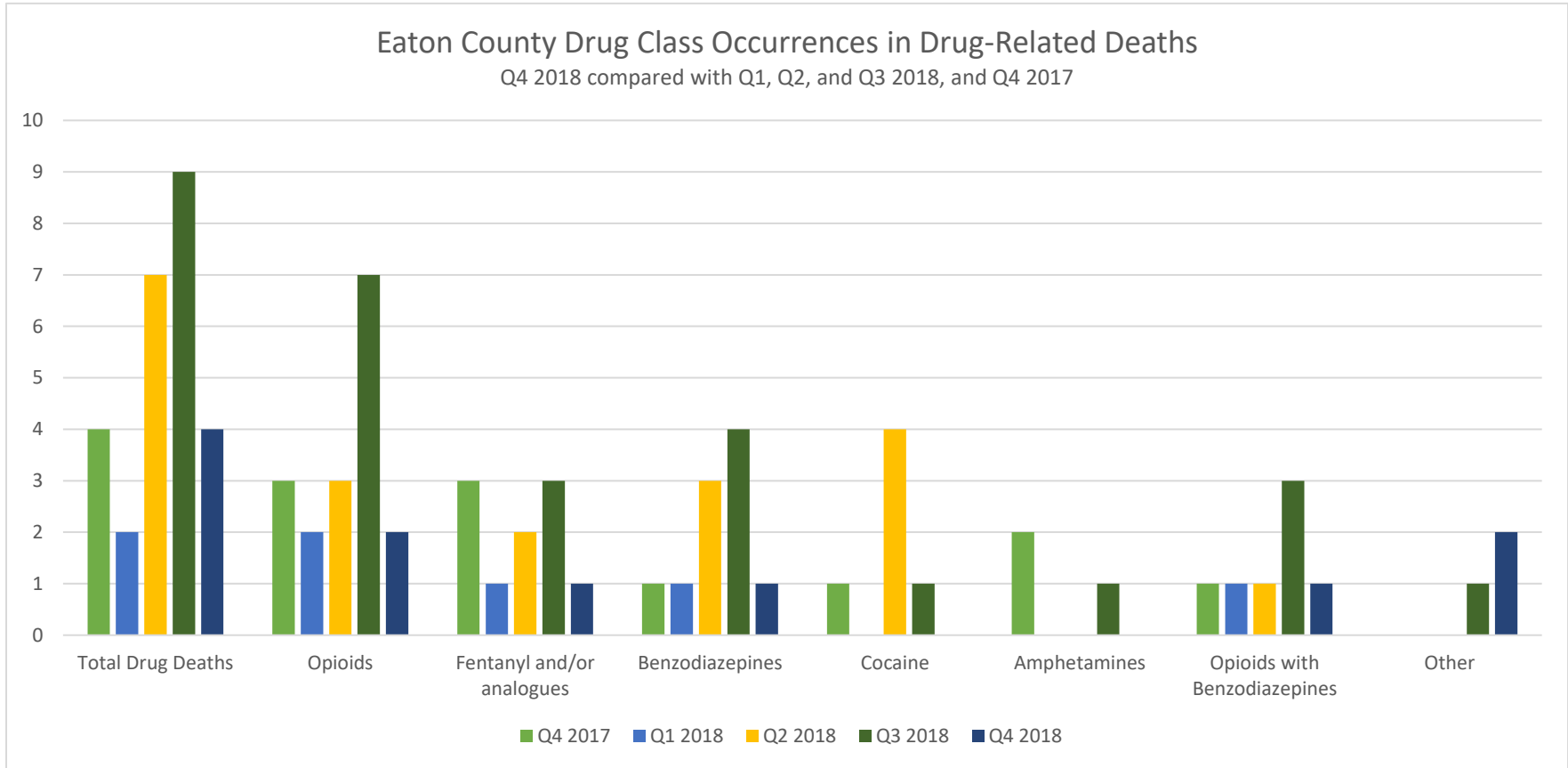
Eaton County

Drug-Related Deaths

2018 Q4 Eaton County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Male	38	Heroin, Alprazolam, Bupropion, Sertraline, Gabapentin	Indeterminate
Female	49	Levetiracetam, Dextromethorphan, Doxylamine	Indeterminate
Male	58	Fentanyl, Citalopram, Amitriptyline, Topiramate	Accident
Male	60	Ethanol	Accident

Eaton County

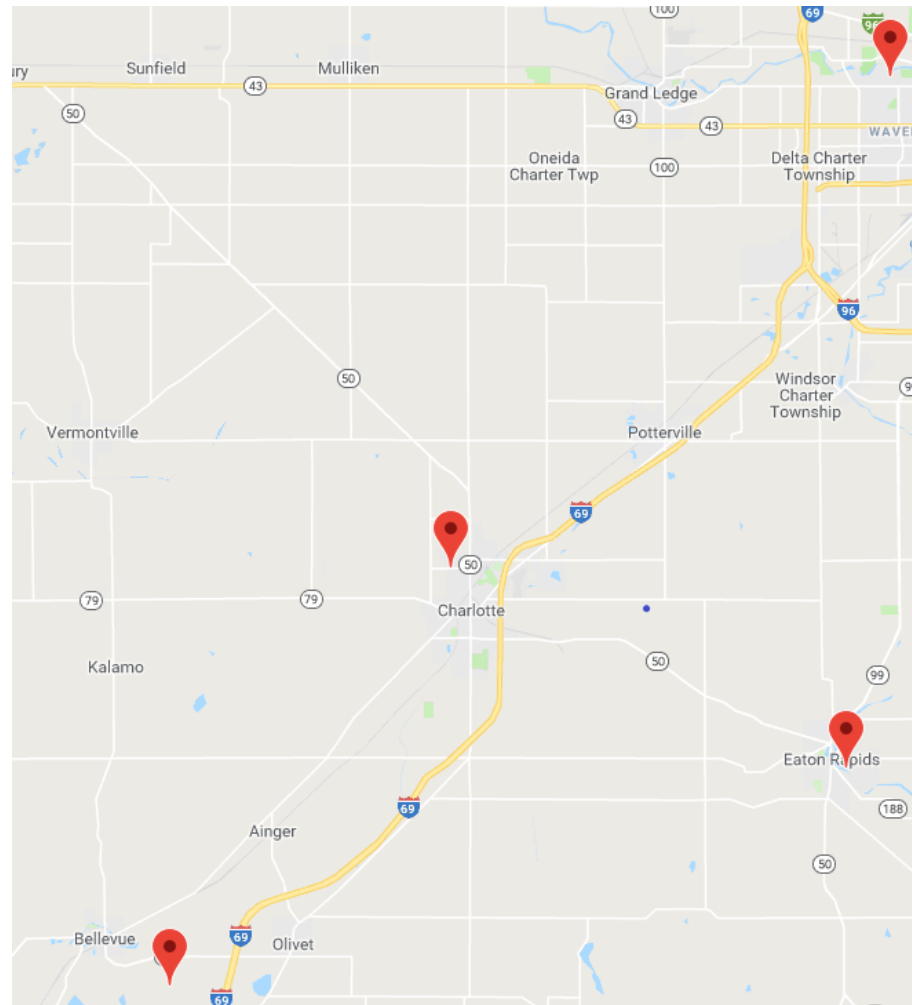
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Eaton County

Mapped Locations of Drug-Related Deaths within Eaton County, Q4 2018³



³ If more than one death occurred at the same location (e.g. a hospital), you will not see more than one distinct marker at that location.

Ingham County

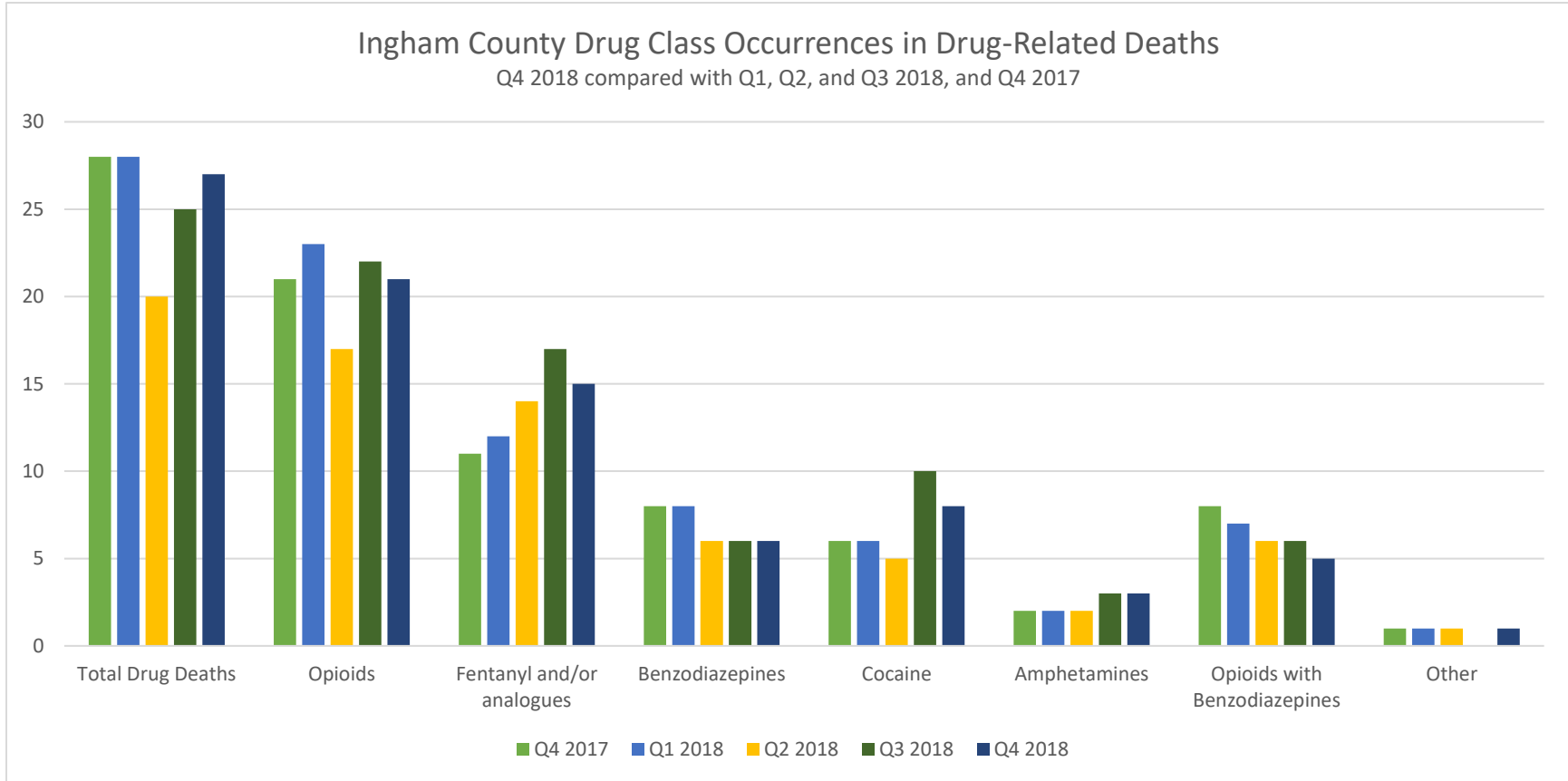
Drug-Related Deaths

2018 Q4 Ingham County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Male	21	alprazolam, oxycodone, promethazine	Accident
Female	25	diphenhydramine, fentanyl	Accident
Female	27	acetylfentanyl, cocaine, diphenhydramine, ethanol, fentanyl	Accident
Male	28	ethanol, fentanyl, heroin	Accident
Female	32	alprazolam, clonazepam, fentanyl, and heroin	Accident
Female	32	diphenhydramine, ethanol, fentanyl	Accident
Male	32	cocaine, ethanol	Accident
Male	34	acetylfentanyl, alprazolam, diphenhydramine, fentanyl, methamphetamine	Accident
Male	34	cocaine, fentanyl	Indeterminate
Male	34	fentanyl	Accident
Female	36	fentanyl, cocaine	Accident
Female	37	alprazolam, clonazepam, methadone	Accident
Female	38	fentanyl, morphine, heroin, diphenhydramine	Accident
Female	39	butalbital	Accident
Male	40	fentanyl, heroin, Cocaine	Accident
Female	40	methamphetamine	Accident
Male	42	fentanyl, diphenhydramine	Accident
Female	48	methamphetamine, oxycodone	Accident
Male	49	fentanyl, ethanol	Accident
Female	53	cocaine, methadone, pseudoephedrine	Accident
Female	54	cocaine	Accident
Male	54	acetylfentanyl, fentanyl	Accident
Male	56	fluoxetine, fluvoxamine, olanzapine, clonazepam, zolpidem, oxcarbazepine	Accident

Male	60	heroin, cocaine, ethanol	Accident
Male	60	hydrocodone, diazepam, gabapentin	Accident
Male	70	Cocaine	Accident
Male	71	Fentanyl	Accident

Ingham County

Drug-Related Deaths



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Ingham County

Mapped Locations of Drug-Related Deaths within Ingham County, Q4 2018⁴



⁴ If more than one death occurred at the same location (e.g. a hospital), you will not see more than one distinct marker at that location.

Ionia County

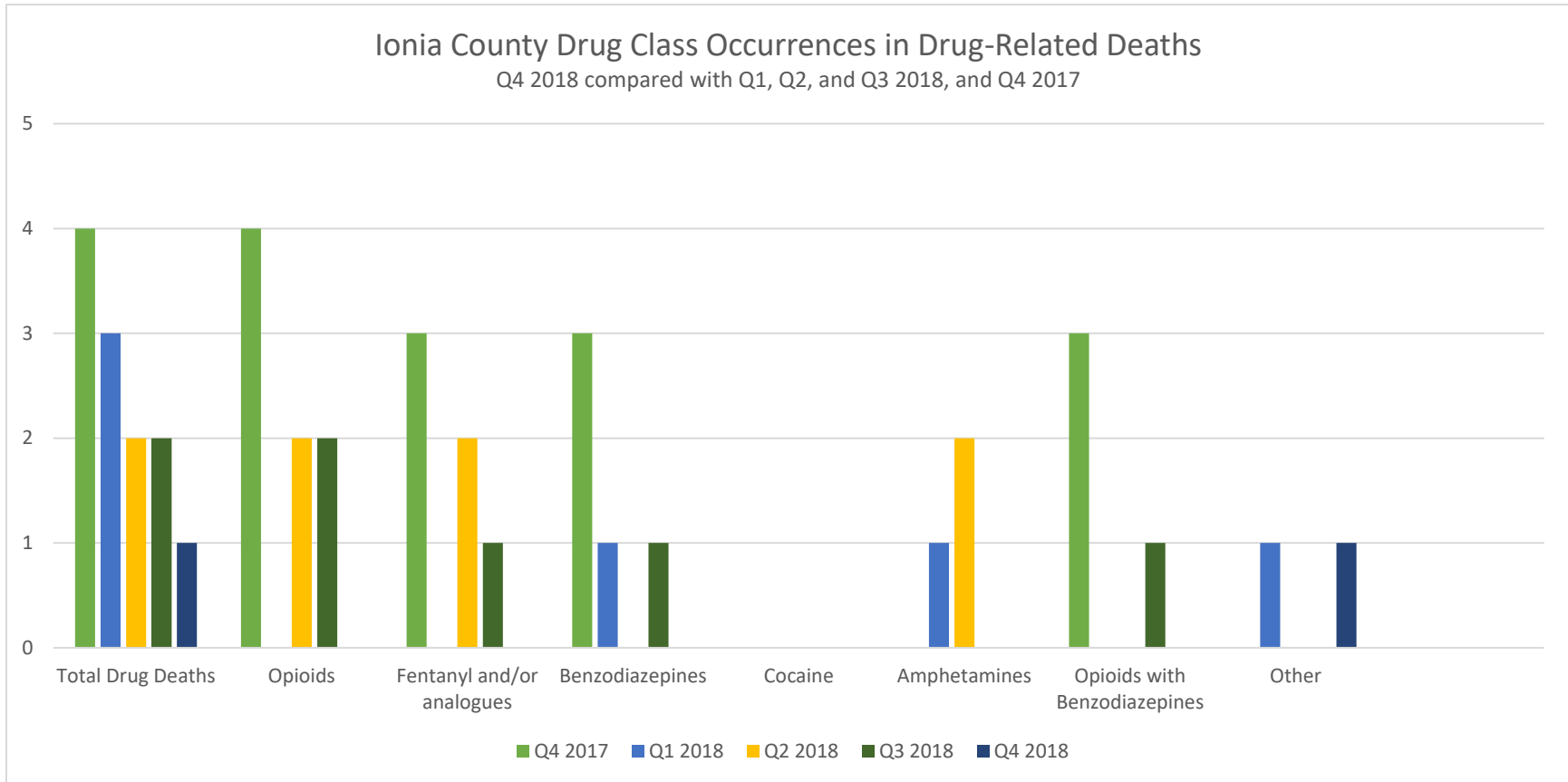
Drug-Related Deaths

2018 Q4 Ionia County Drug-Related Deaths

Sex	Age	Substance(s) Causing Death	Manner of death
Male	40	amitriptyline, duloxetine, paroxetine, sertraline	Suicide

Ionia County

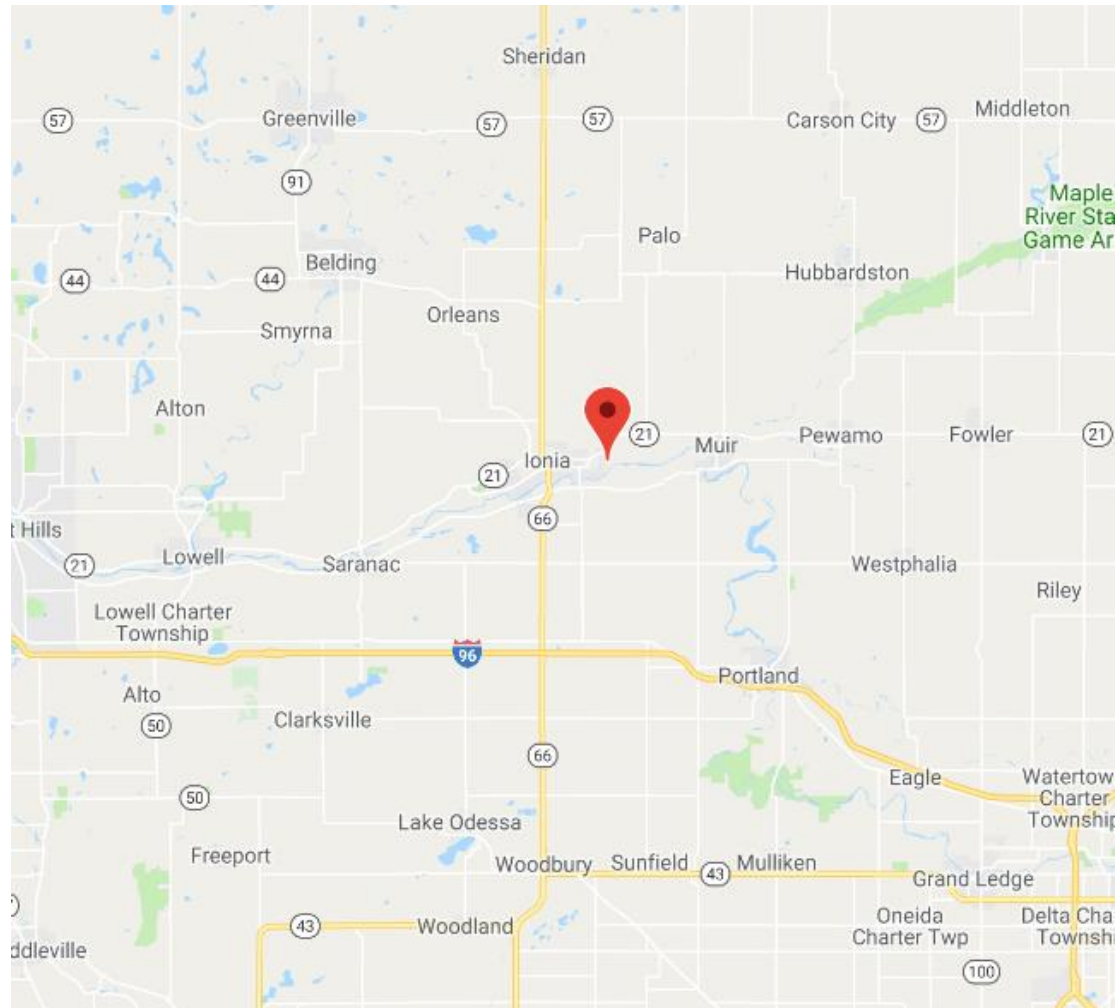
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Ionia County

Mapped Locations of Drug-Related Deaths within Ionia County, Q4 2018⁵



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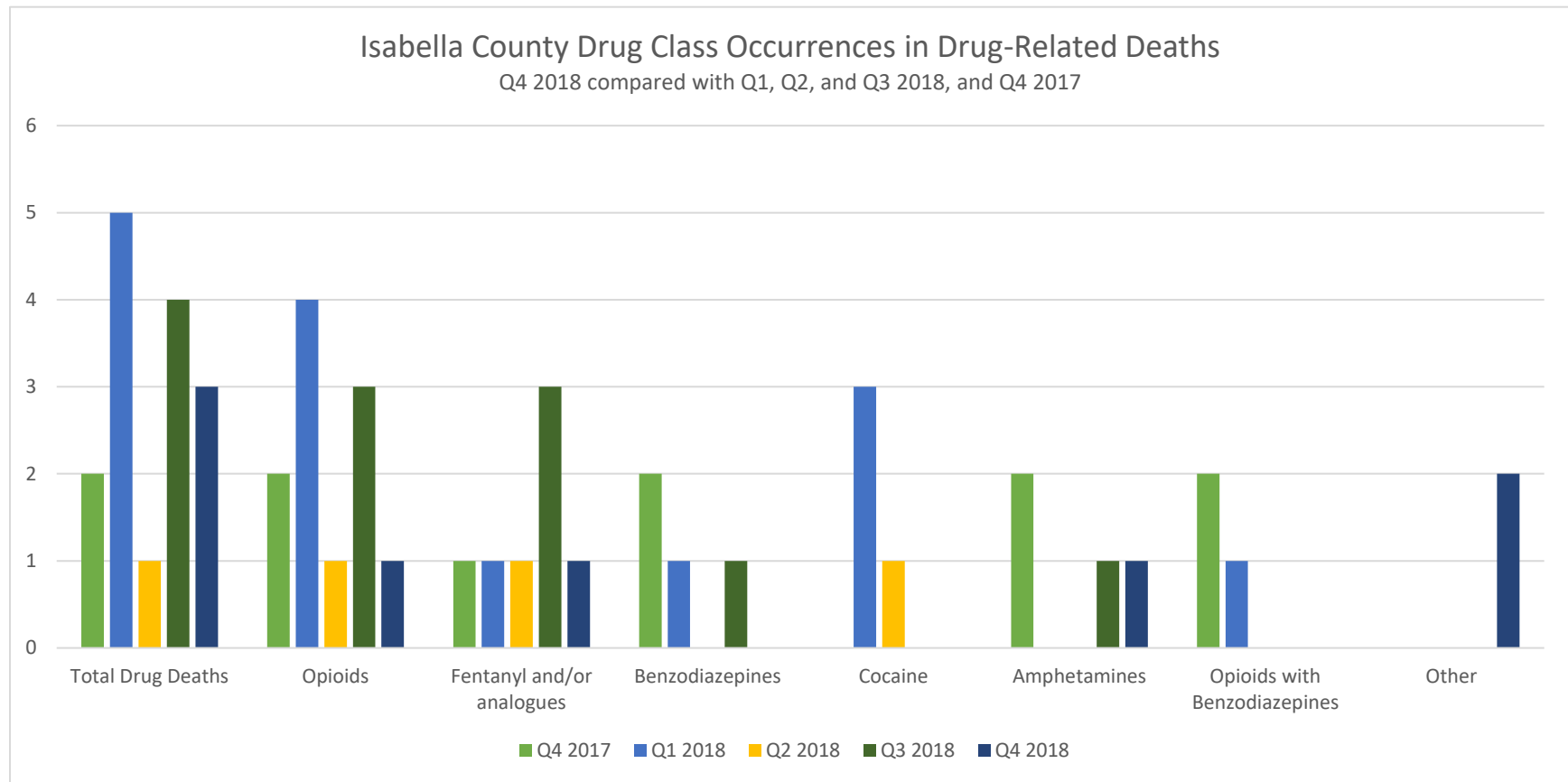
Isabella County

Drug-Related Deaths

2018 Q4 Isabella County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Female	23	bupropion	Suicide
Male	39	Fentanyl, Methamphetamine	Accident
Female	57	ethanol	Accident

Isabella County

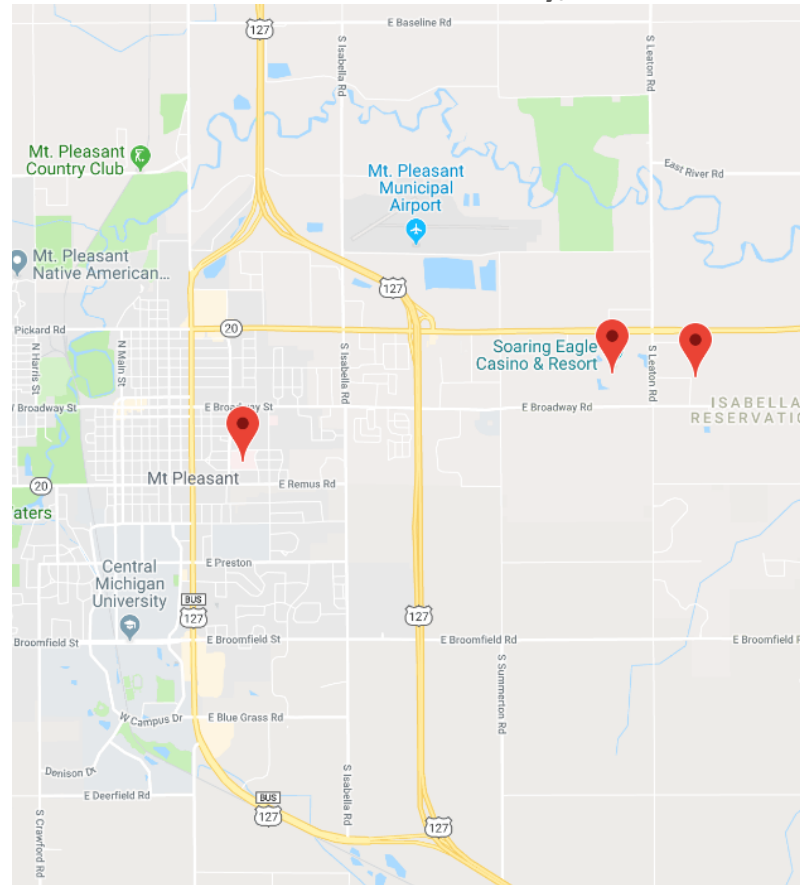
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Isabella County

Mapped Locations of Drug-Related Deaths within Isabella County, Q4 2018⁶



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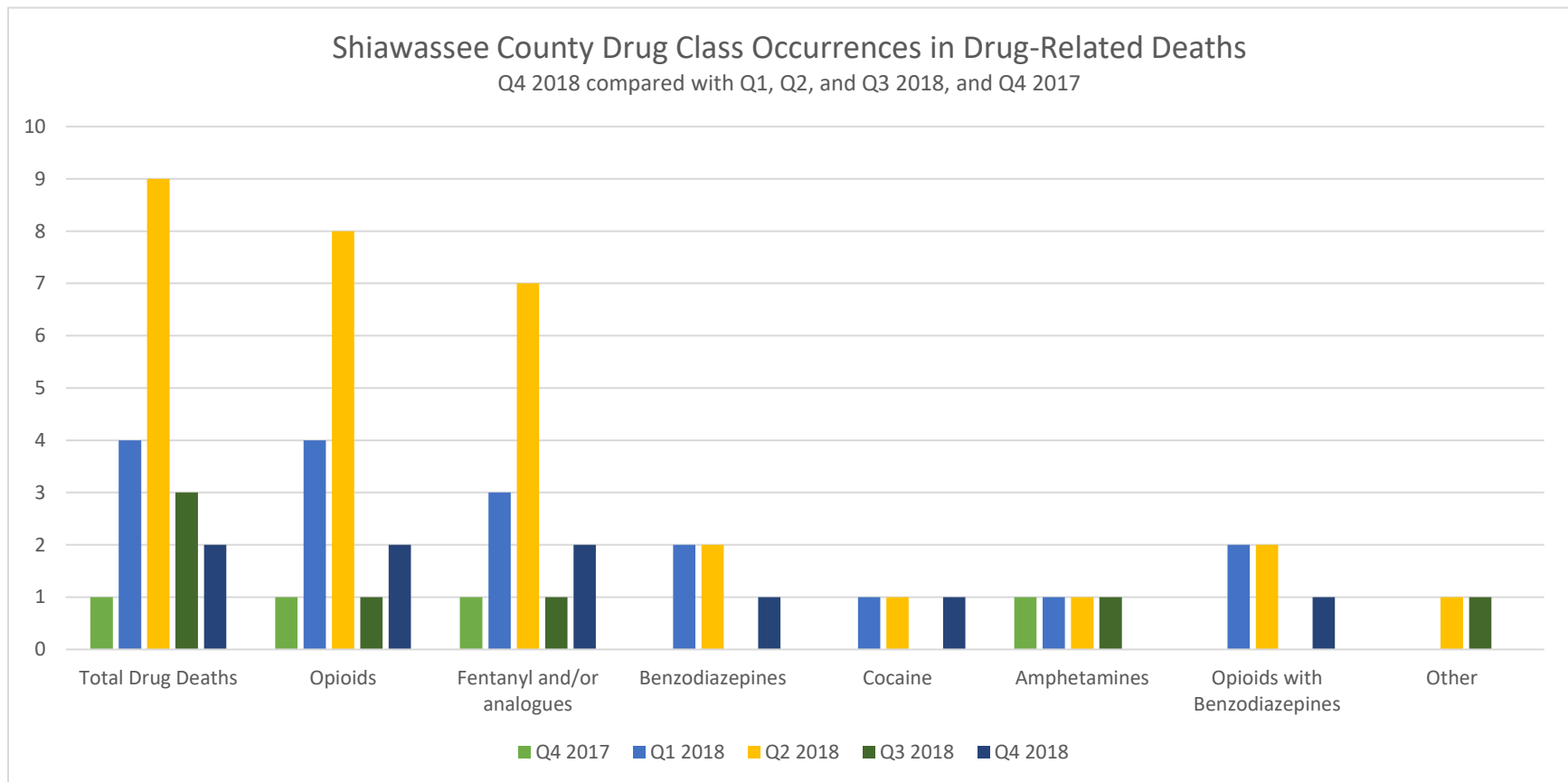
Shiawassee County

Drug-Related Deaths

2018 Q4 Shiawassee County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Male	38	fentanyl	Accident
Female	38	acetylfentanyl, clonazepam, cocaine, fentanyl	Indeterminate

Shiawassee County

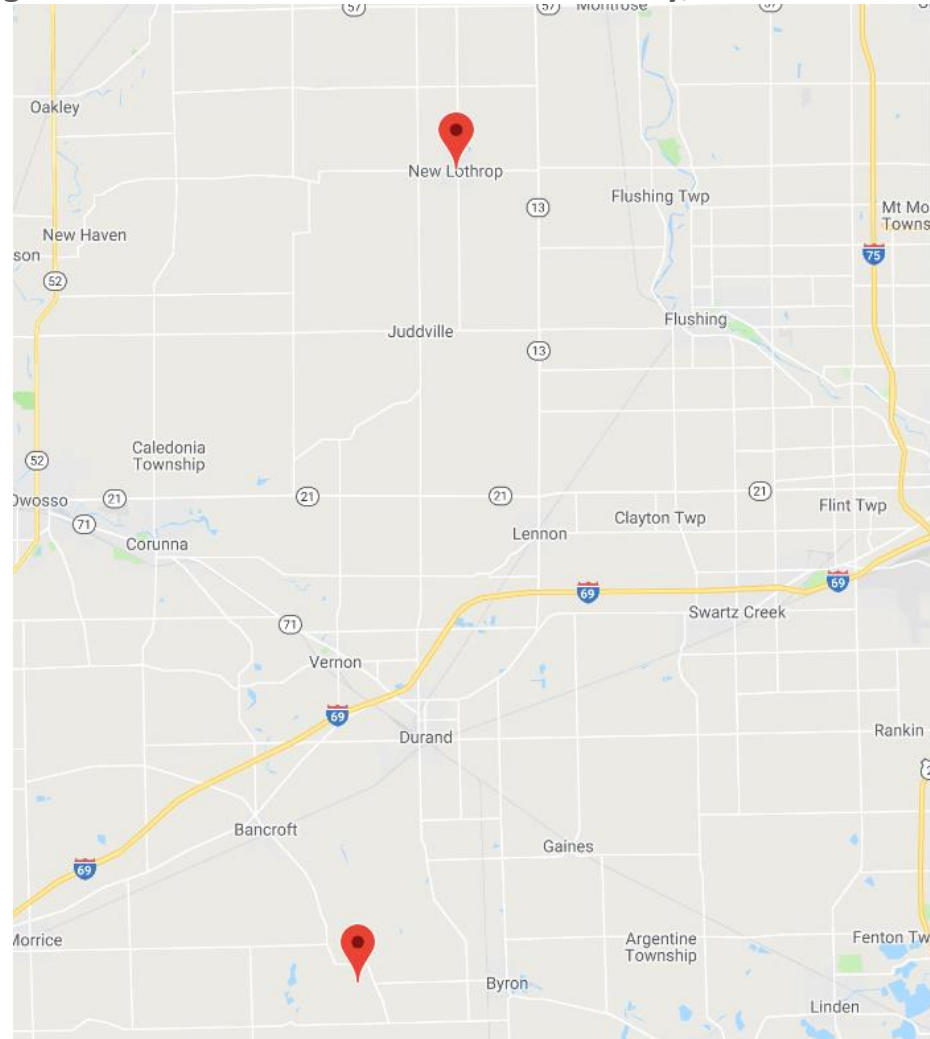
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Shiawassee County

Mapped Locations of Drug-Related Deaths within Shiawassee County, Q4 2018⁷



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