



Department of Forensic Pathology  
Office of the Medical Examiner

2018 Q3 (July 1-September 30) Drug Report

Published November 6, 2018





## 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.<sup>1</sup>

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<sup>1</sup> If you have questions about what drugs we are currently capable of detecting, please visit [www.axisfortox.com](http://www.axisfortox.com) or email [luke.vogelsberg@sparrow.org](mailto:luke.vogelsberg@sparrow.org)

## Highlights<sup>2</sup>

Unless otherwise indicated, all comparisons on the Highlights page are made to the data from the previous quarter (Q2 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).

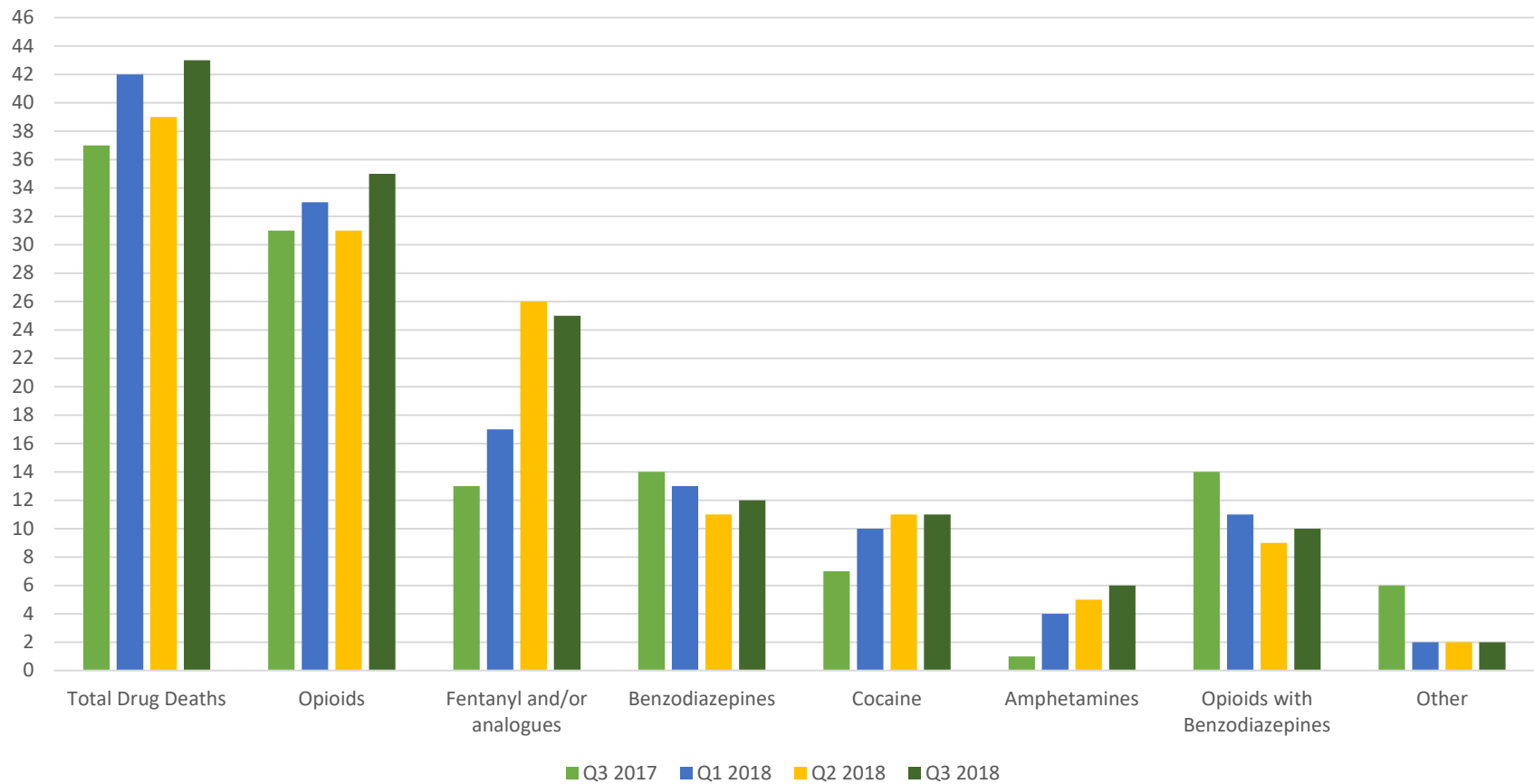
- Total drug-related deaths **increased** by 4 (deaths)
- Opioid-related deaths **increased** by 4 (deaths)
- Fentanyl and/or fentanyl analogue-related deaths **decreased** by 1 (death)
- Fentanyl and/or fentanyl analogue(s) were identified as substances causing death in **58%** of all drug-related deaths in Q3 2018
- Q3 2018 marked the first time we have seen the fentanyl analogue **valeryl fentanyl** in any of our counties (two occurrences)
- Fentanyl analogues identified as having caused or contributed to death in Q3 2018 included: **acetyl fentanyl** and **valeryl fentanyl**
- Benzodiazepine deaths **increased** by 1 (death)
- Cocaine-related deaths **remained constant** at 11 (deaths)
- Amphetamine/Methamphetamine-related<sup>3</sup> deaths **increased** by 1 (death)
- **83.7%** of all drug-related deaths in Q3 2018 were due to two or more substances
- Fentanyl was present and contributed to death in **8 of the 11 (72.7%)** cocaine-related deaths in Q3 2018

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<sup>2</sup> At date of this report, there is one case with “pending” cause and/or manner of death (Ingham County) from Q3 2018. The completion of this death investigation is unlikely to affect the data in this report.

<sup>3</sup> 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 Q3 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.

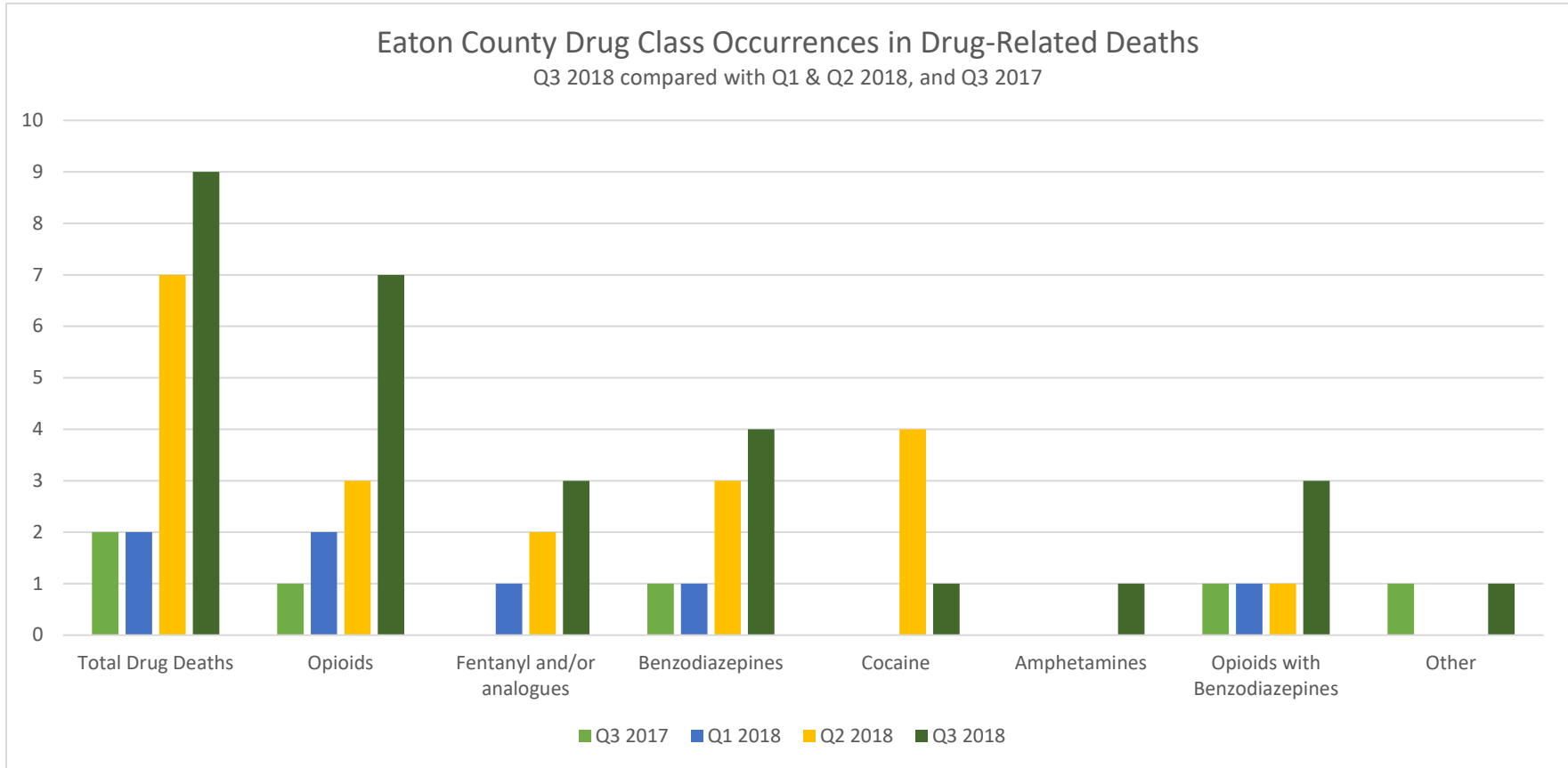
# Eaton County

## Drug-Related Deaths

2018 Q3 Eaton County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Female	23	fentanyl, flurazepam, hydroxyzine	Accident
Male	27	clonazepam, ethanol, fentanyl, fluoxetine	Accident
Female	36	methadone, alprazolam, cocaine	Accident
Male	44	alprazolam, ethanol	Accident
Male	50	ethanol	Accident
Female	53	oxycodone	Suicide
Male	62	amitriptyline, oxycodone	Accident
Male	63	acetylfentanyl, ethanol, fentanyl, methamphetamine	Accident
Female	70	cyclobenzaprine, hydrocodone, tramadol, trazodone, venlafaxine	Suicide

# Eaton County

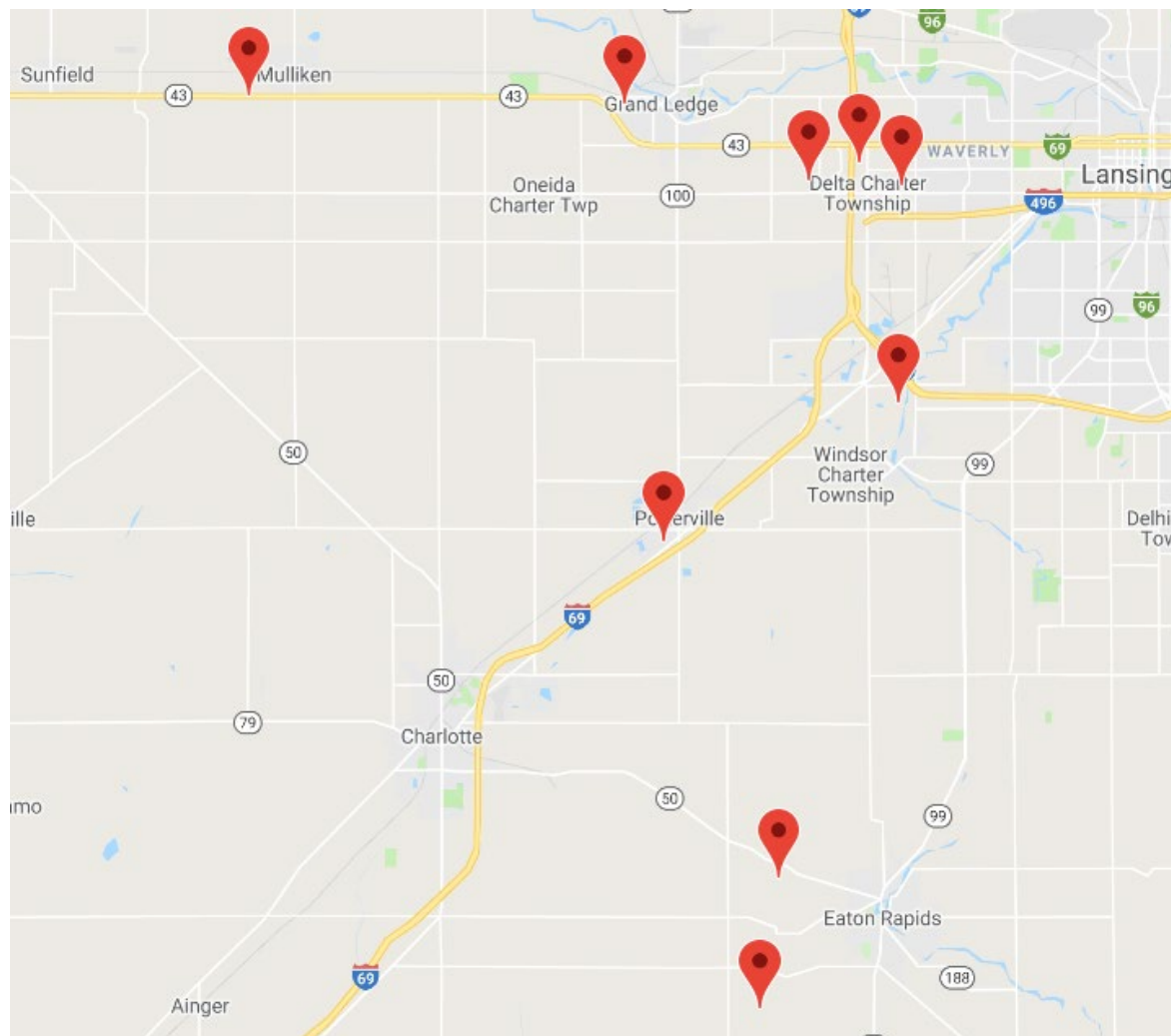
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# Eaton County

## Mapped Locations of Drug-Related Deaths within Eaton County, Q3 2018<sup>4</sup>



<sup>4</sup> 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<sup>5</sup>

2018 Q3 Ingham County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Male	21	opioids (fentanyl), benzodiazepines	Accident
Male	27	alprazolam, fentanyl, morphine (probable heroin)	Accident
Female	28	fentanyl, heroin, acetylfentanyl, valeryl fentanyl, cocaine, alprazolam, diphenhydramine	Accident
Male	28	fentanyl, morphine, hydrocodone, cocaine	Accident
Male	29	heroin, butane	Accident
Male	31	fentanyl, cocaine, ethanol	Accident
Male	34	fentanyl, cocaine	Accident
Male	35	diphenhydramine, fentanyl	Accident
Male	36	diazepam, ethanol, oxycodone	Accident
Male	38	acetylfentanyl, fentanyl	Accident
Male	41	heroin, ethanol	Accident
Female	41	fentanyl	Accident
Male	42	fentanyl, methamphetamine	Accident
Female	44	fentanyl, heroin, oxycodone	Accident
Male	44	fentanyl, methamphetamine	Accident
Male	44	fentanyl, methadone, cocaine	Accident
Female	45	methamphetamine	Accident
Male	46	cocaine	Accident
Male	48	alprazolam, cyclobenzaprine, diphenhydramine, fentanyl, pregabalin	Accident
Male	56	fentanyl, heroin, cocaine	Accident
Female	57	heroin, clonazepam, cyclobenzaprine, gabapentin, ethanol	Accident

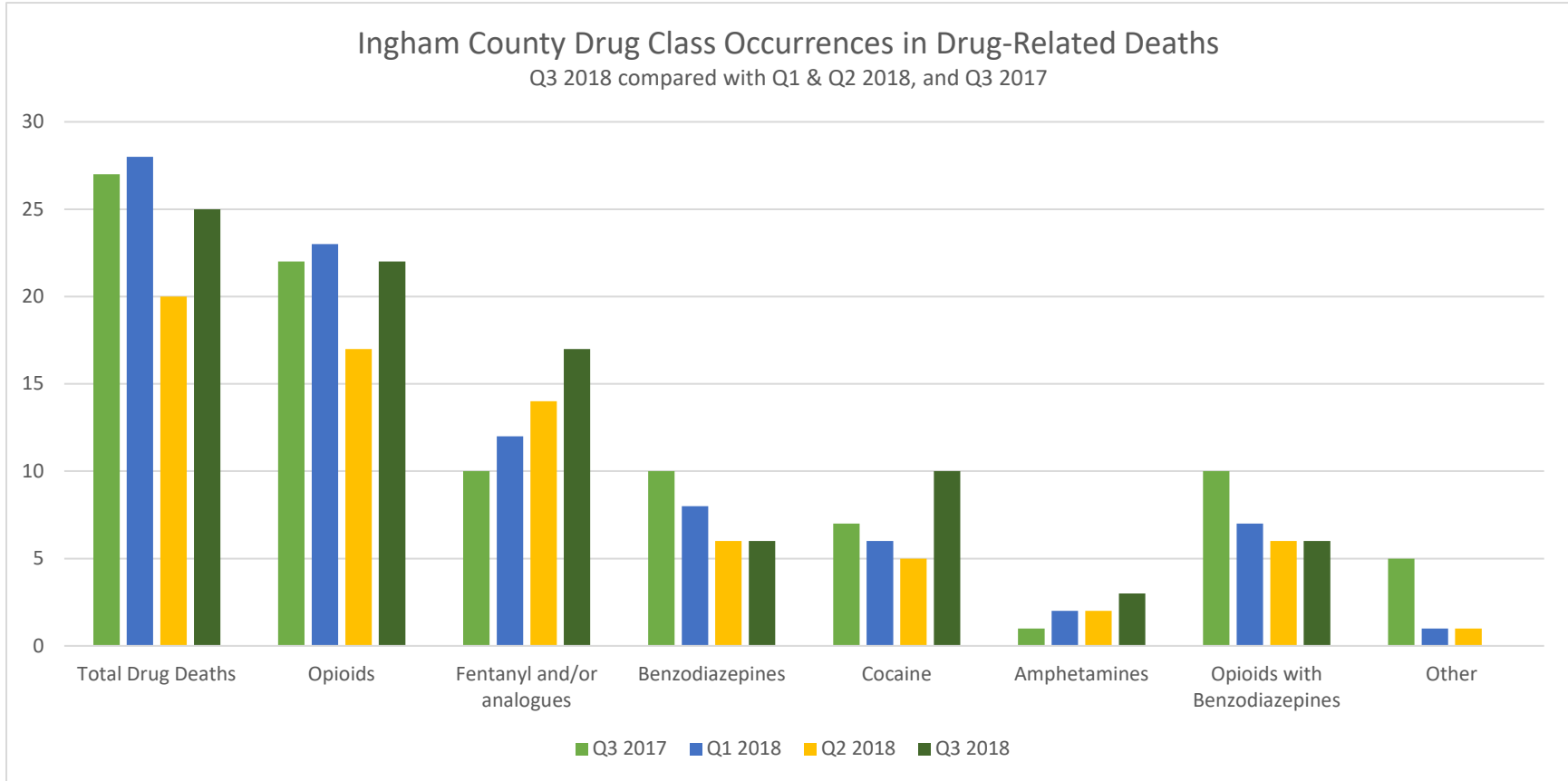
<sup>5</sup> At date of this report, there is one case in Ingham County with “pending” cause and/or manner of death from Q3 of 2018. The completion of this death investigation is unlikely to affect the data in this report.



Male	65	cocaine, fentanyl	Accident
Female	65	acetaminophen, codeine, ethanol, hydrocodone	Indeterminate
Male	71	cocaine	Accident
Male	72	heroin, fentanyl, cocaine, ethanol	Accident

# Ingham County

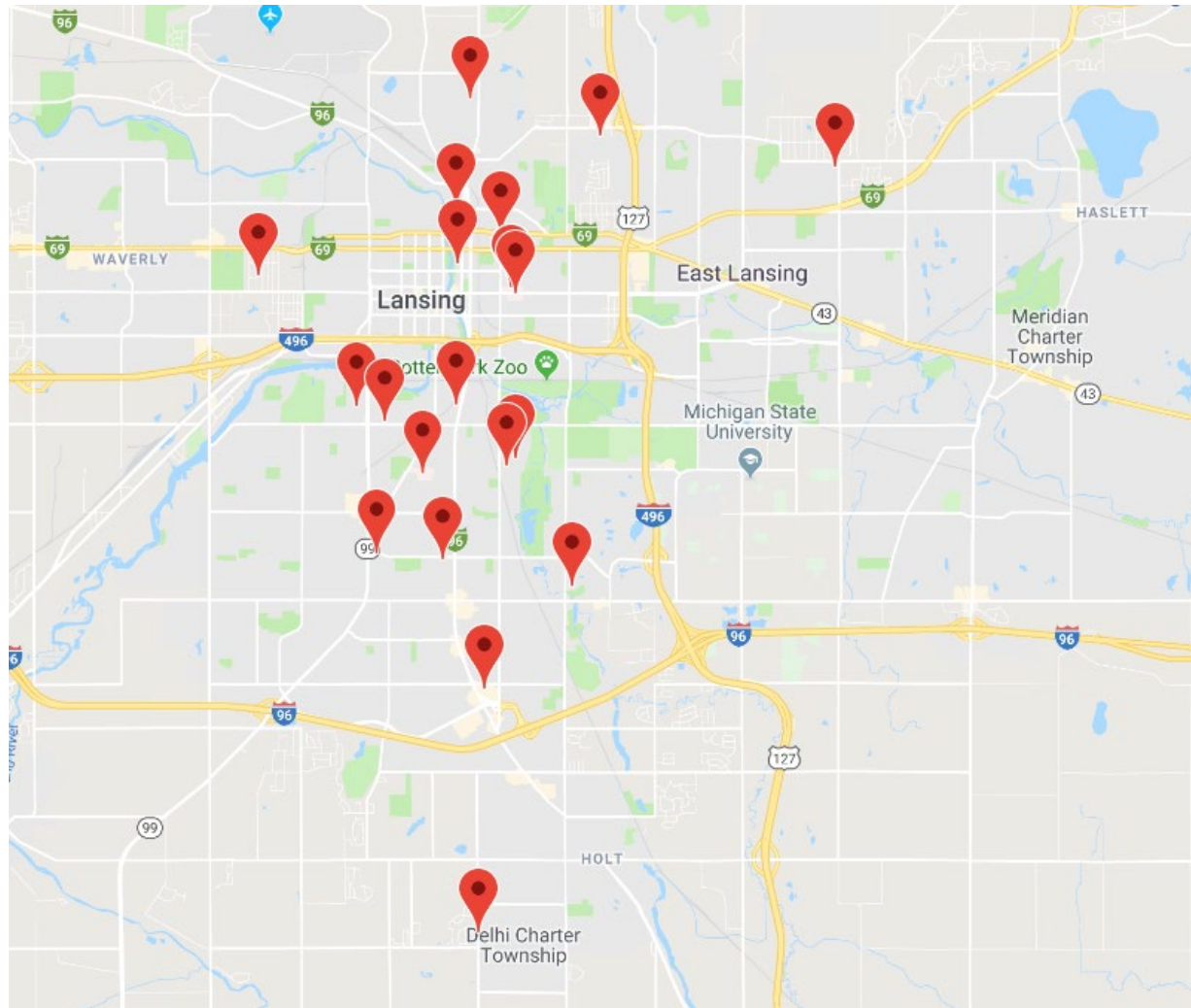
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# Ingham County

## Mapped Locations of Drug-Related Deaths within Ingham County, Q3 2018<sup>6</sup>



<sup>6</sup> 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.

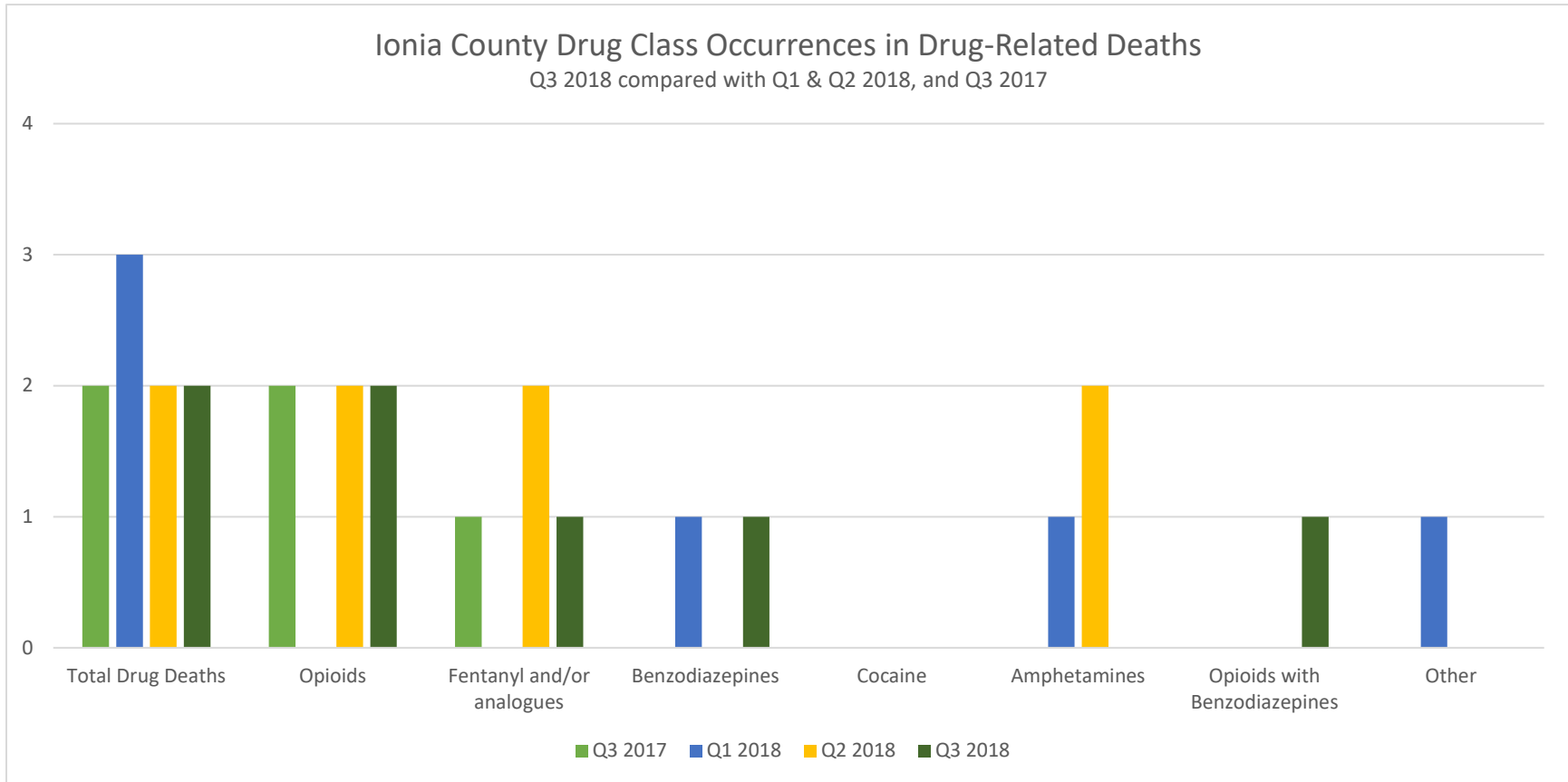
# Ionia County

## Drug-Related Deaths

2018 Q3 Ionia County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Female	25	fentanyl, valeryl fentanyl	Accident
Female	58	alprazolam, amitriptyline, diazepam, methadone	Accident

# Ionia County

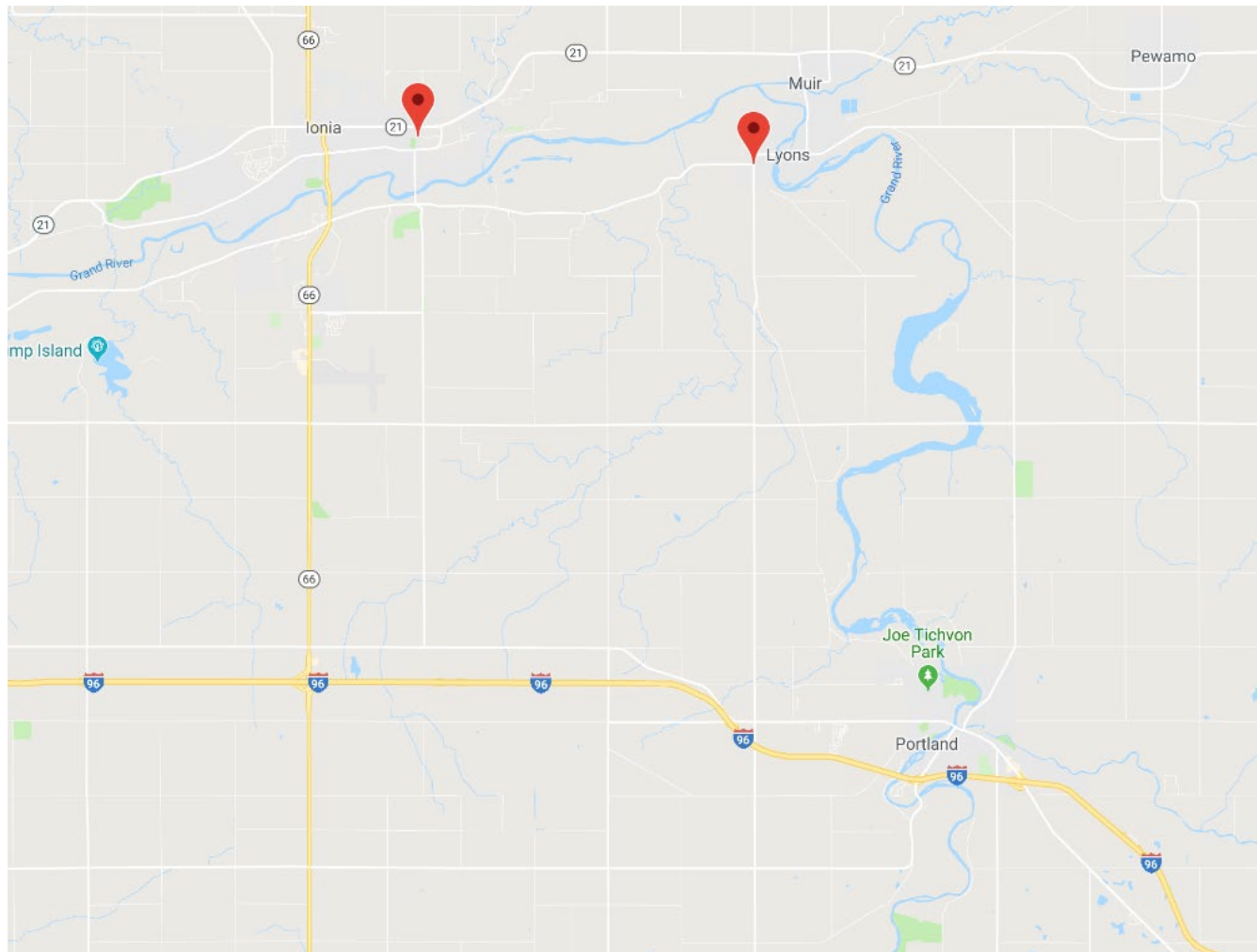
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# Ionia County

## Mapped Locations of Drug-Related Deaths within Ionia County, Q3 2018<sup>7</sup>



<sup>7</sup> 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.

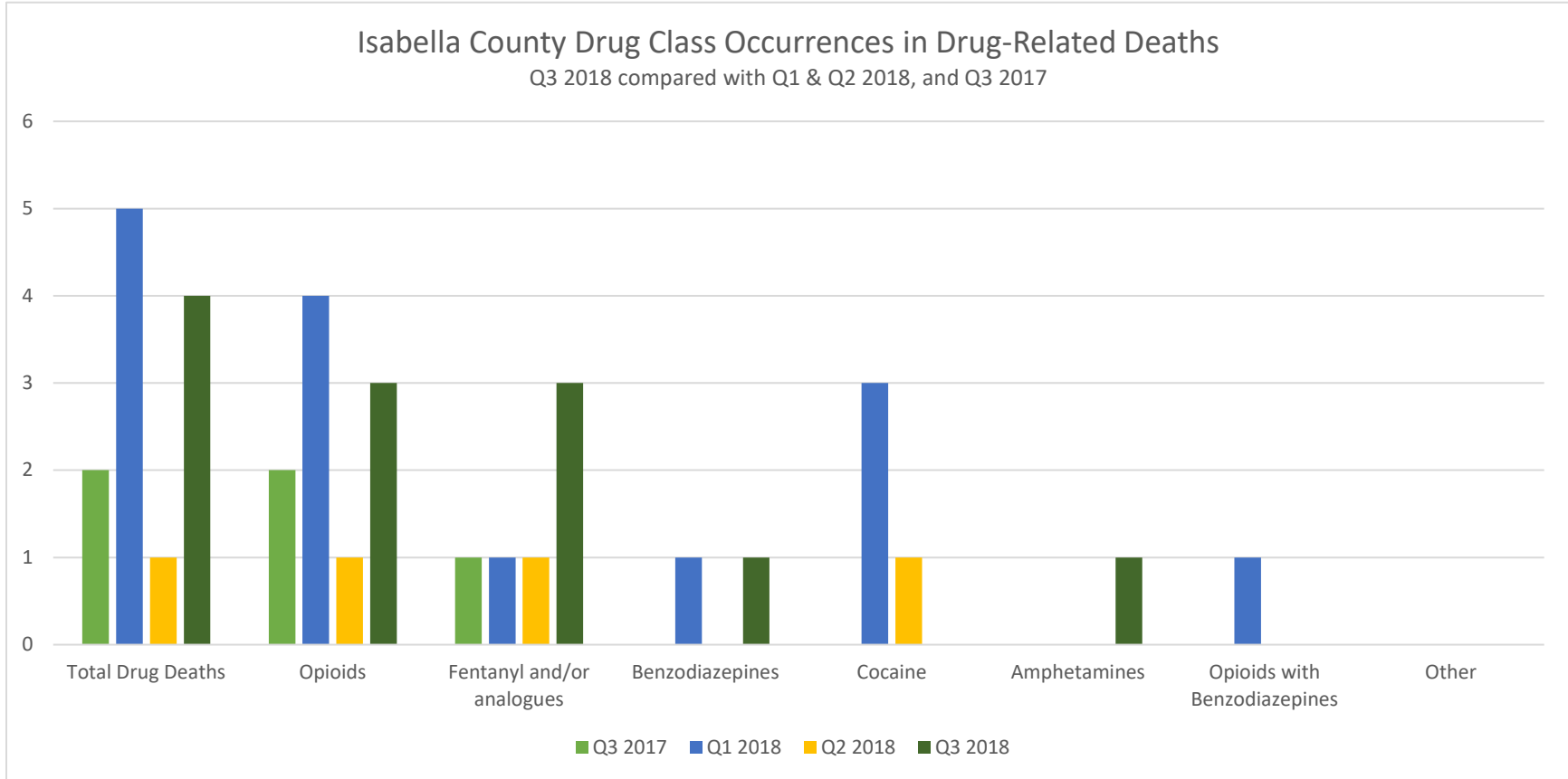
# Isabella County

## Drug-Related Deaths

2018 Q3 Isabella County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Female	27	fentanyl, methamphetamine	Accident
Male	21	clonazepam, cyclobenzaprine, gabapentin	Accident
Male	38	amitriptyline, diphenhydramine, fentanyl	Accident
Male	53	fentanyl, acetylfentanyl	Accident

# Isabella County

## Drug-Related Deaths

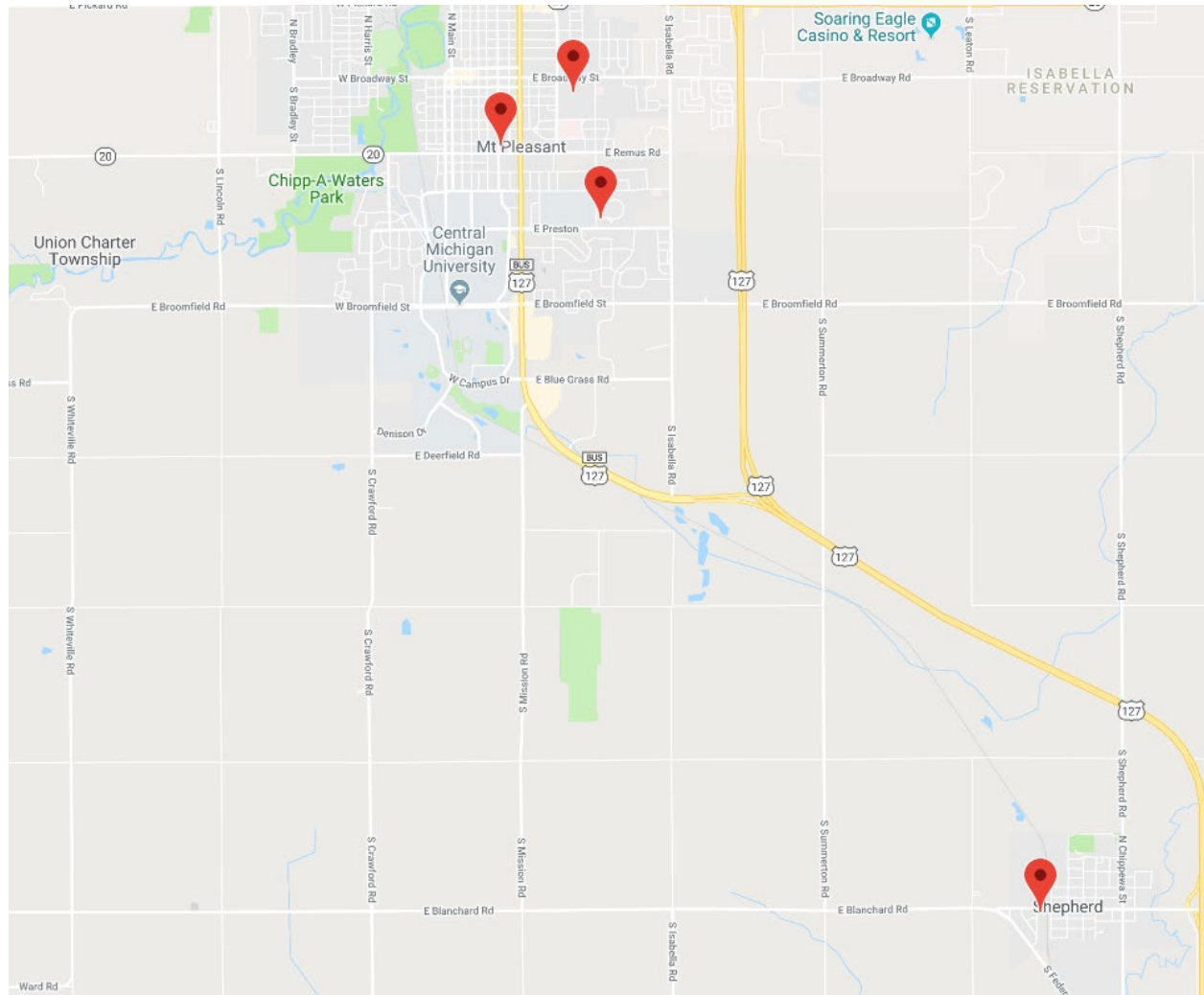


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# Isabella County

## Mapped Locations of Drug-Related Deaths within Isabella County, Q3 2018<sup>8</sup>



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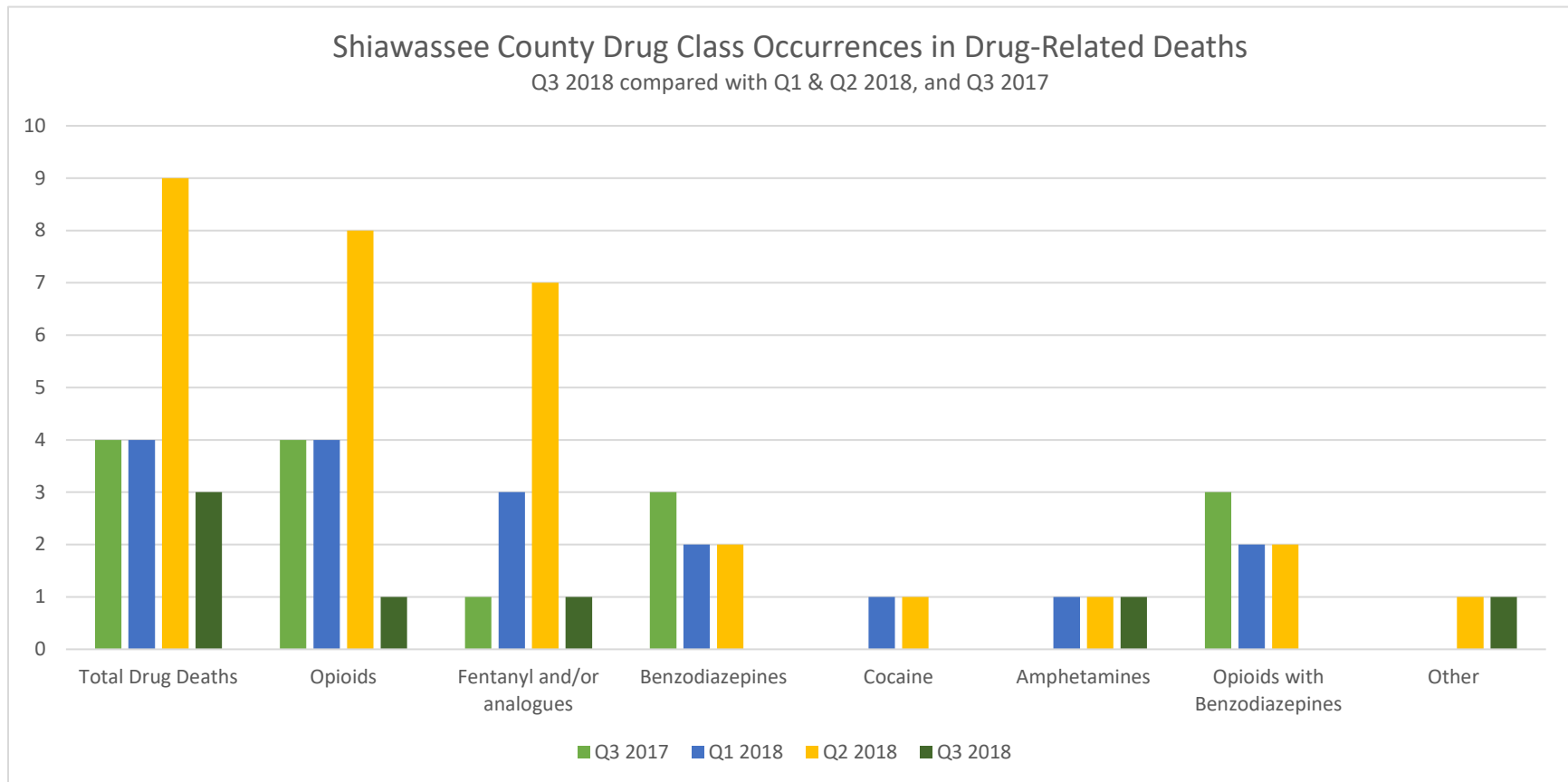
# Shiawassee County

## Drug-Related Deaths

2018 Q3 Shiawassee County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Male	37	amitriptyline, dihydrocodeine, ethanol, fentanyl, hydrocodone, pregabalin	Accident
Male	50	ethanol, methamphetamine	Accident
Female	62	gabapentin	Suicide

# Shiawassee County

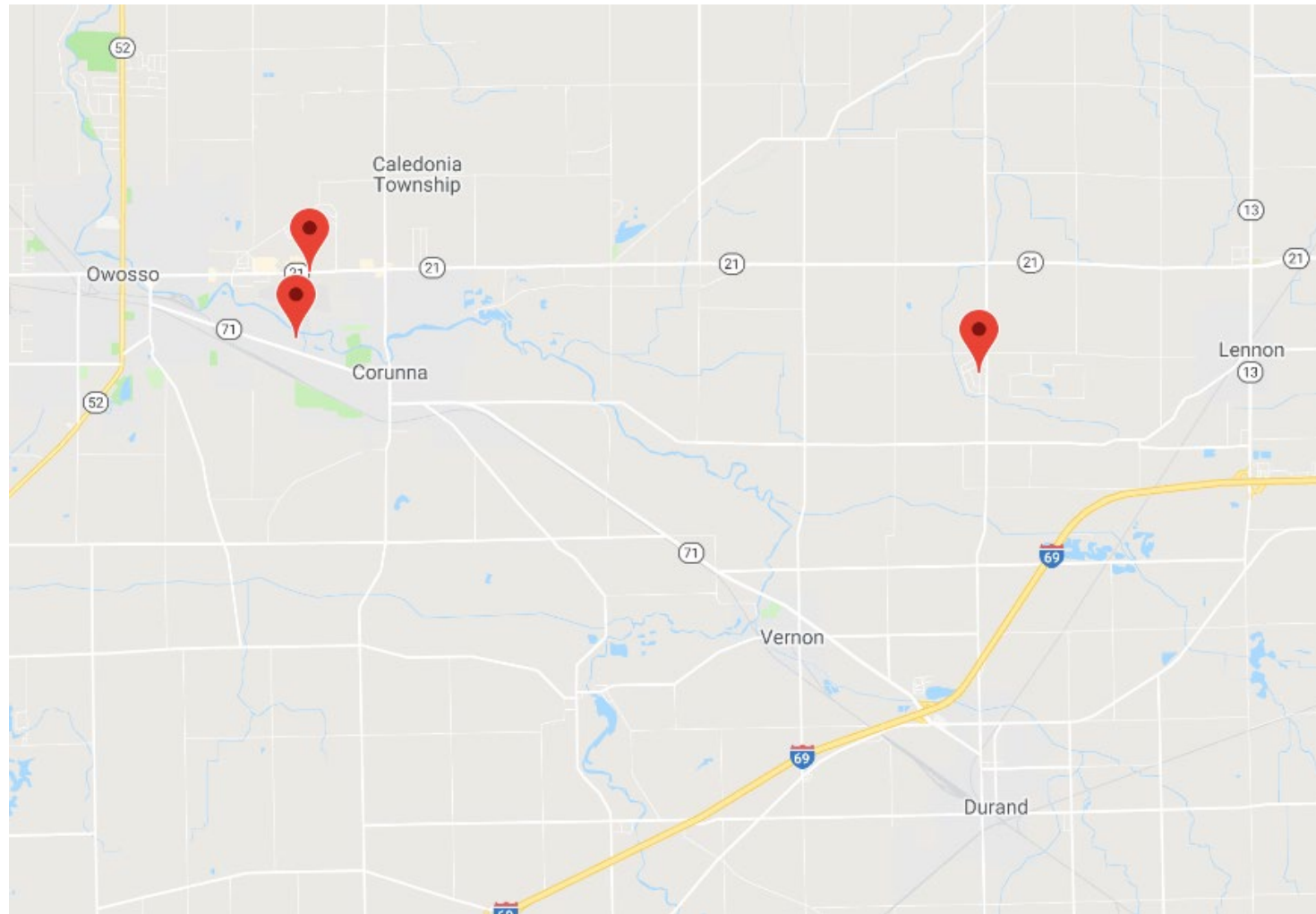
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# Shiawassee County

## Mapped Locations of Drug-Related Deaths within Shiawassee County, Q3 2018<sup>9</sup>



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