



Department of Forensic Pathology
Office of the Medical Examiner

2018 Q2 (April 1-June 30) Drug Report

Published July 29, 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 of death was determined, which sometimes, albeit rarely, results in a change to the “final” cause 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

Highlights²

Unless otherwise indicated, all comparisons on the Highlights page are made to the data from the previous quarter (Q1 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 3 (deaths)
- Opioid-related deaths **decreased** by 2 (deaths)
- Heroin-related³ deaths **decreased** by 9 (deaths)
- Fentanyl and/or fentanyl analogue-related deaths **increased** by 9 (deaths)
- Fentanyl and/or fentanyl analogue(s) were identified as substances causing death in **two thirds (66.7%)** of all drug-related deaths in Q2 2018
- Fentanyl and/or fentanyl analogue(s) were identified as having been the sole substance(s) causing death **7 times** in Q2 2018
- Fentanyl analogues identified as having caused or contributed to death in Q2 2018 included: **acetylfentanyl**
- Benzodiazepine deaths **decreased** by 2 (deaths)
- Cocaine-related deaths **increased** by 1 (death)
- Amphetamine/Methamphetamine-related⁴ deaths **increased** by 1 (death)
- **82.1%** of all drug-related deaths in Q2 2018 were due to two or more substances
- Fentanyl was also present and contributed to death in **8 of the 11 (72.7%)** cocaine-related deaths in Q2 2018

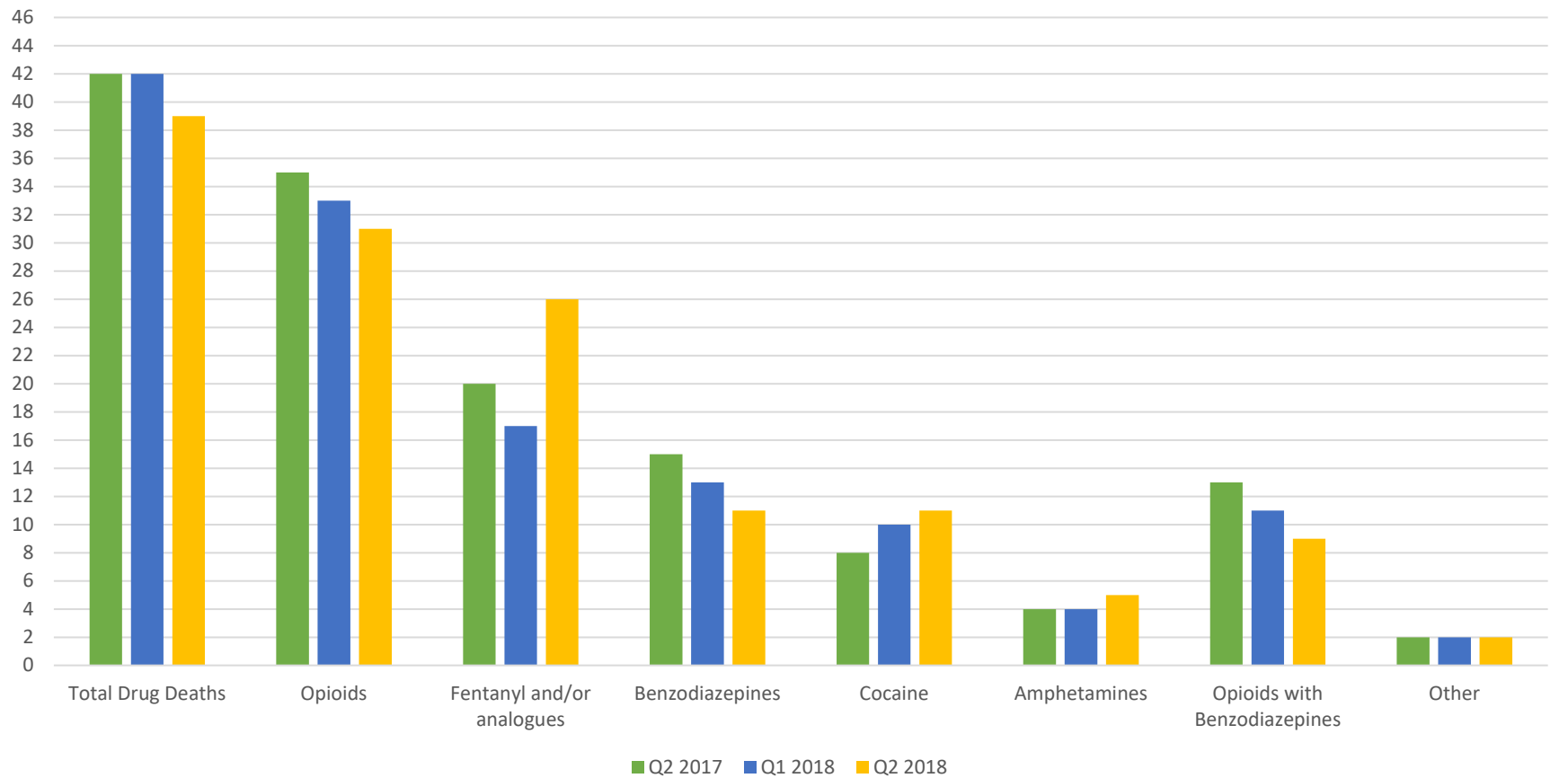
² At date of this report, there are five cases with “pending” cause and/or manner of death (4 Ingham cases, 1 Ionia case) from Q2 2018. The completion of these death investigations is unlikely to affect the numbers in this report.

³ Heroin is rapidly metabolized to morphine. As such, this may result in some under-reporting of heroin, and over-reporting of morphine

⁴ 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

Q2 2018 compared with previous quarter, and same quarter of previous year



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.

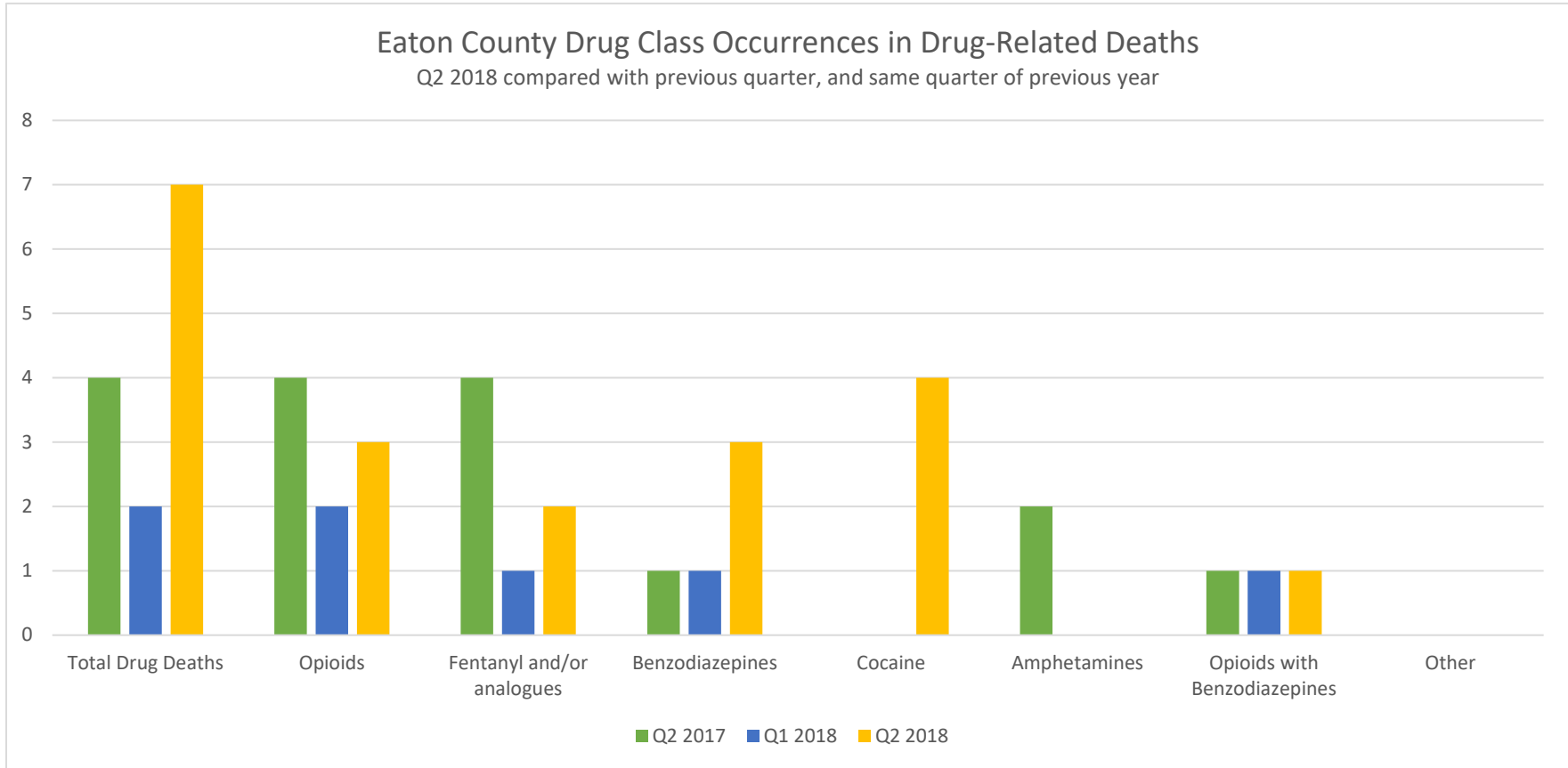
Eaton County

Drug-Related Deaths

2018 Q2 Eaton County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Female	33	fentanyl, heroin, cocaine	Accident
Male	34	fentanyl, cocaine	Accident
Female	45	alprazolam, diazepam, oxycodone, dextromethorphan, promethazine, fluoxetine	Indeterminate
Female	49	cocaine	Accident
Female	51	escitalopram, ethanol, gabapentin, lorazepam	Accident
Male	57	cocaine	Accident
Female	69	alprazolam, zolpidem, fluoxetine	Suicide

Eaton County

Drug-Related Deaths



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.

Ingham County

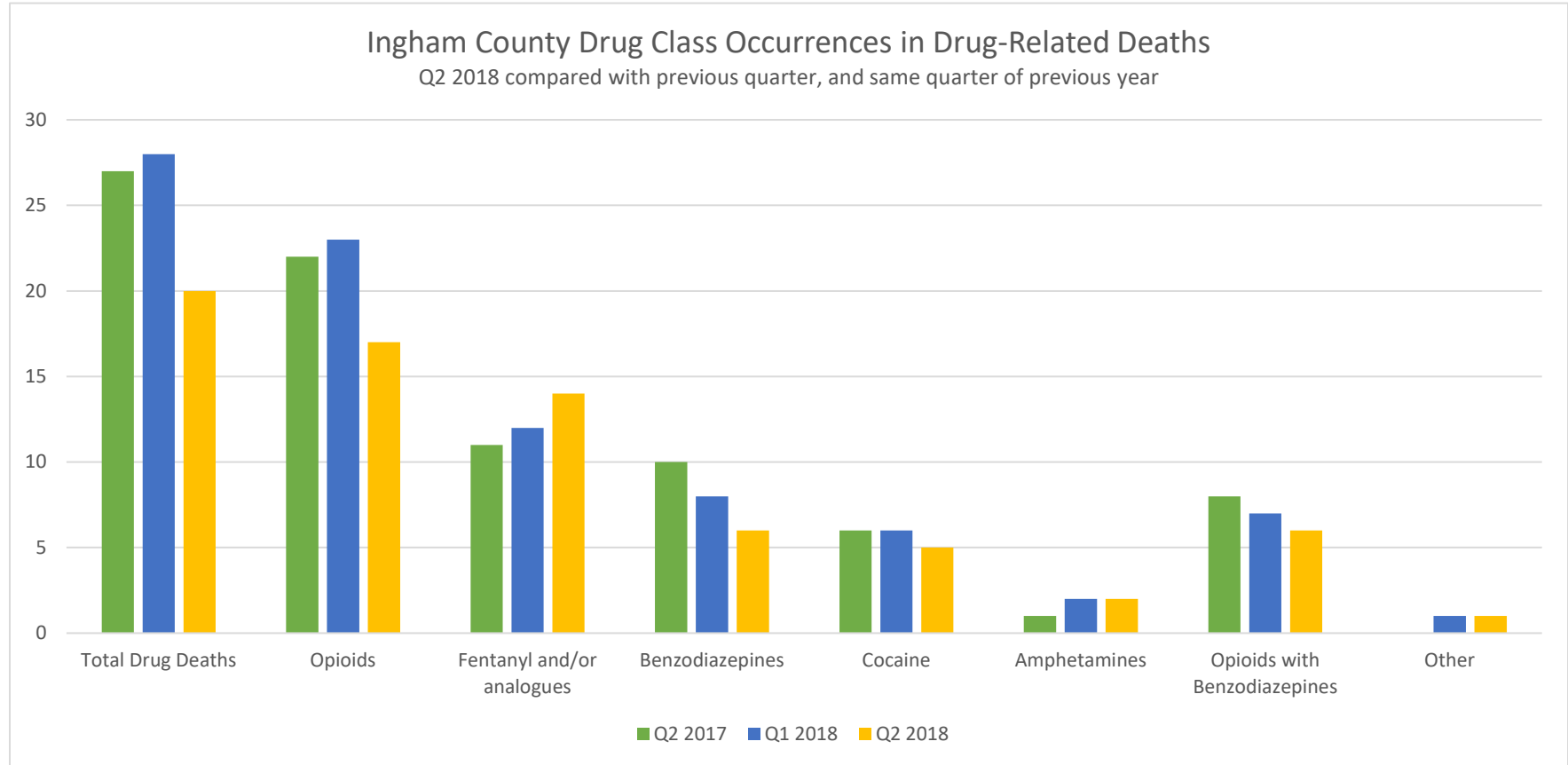
Drug-Related Deaths⁵

2018 Q2 Ingham County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Male	22	fentanyl, tapentadol, mitragynine, dextromethorphan	Accident
Male	25	fentanyl	Accident
Male	28	fentanyl	Accident
Male	28	fentanyl	Accident
Male	30	methamphetamine	Accident
Male	30	fentanyl	Accident
Female	31	fentanyl, methadone, diphenhydramine	Accident
Male	34	alprazolam, clonazepam, fentanyl, fluoxetine, gabapentin, heroin	Accident
Male	37	fentanyl, acetylfentanyl, morphine	Accident
Male	41	cocaine, fentanyl, dihydrocodeine	Accident
Male	41	fentanyl, methamphetamine, cocaine	Accident
Male	42	acetylfentanyl, fentanyl	Accident
Female	47	fluoxetine, hydroxyzine, trazodone	Indeterminate
Male	53	fentanyl, cocaine, ethanol	Accident
Female	54	alprazolam, cyclobenzaprine, diphenhydramine, fentanyl, fluoxetine, gabapentin, oxycodone	Accident
Male	54	cocaine, diphenhydramine	Accident
Female	54	tramadol, clonazepam, cyclobenzaprine, gabapentin, amitriptyline	Accident
Female	55	heroin, clonazepam, cyclobenzaprine, gabapentin, duloxetine	Accident
Female	57	clonazepam, alprazolam, methadone, gabapentin	Accident
Female	59	fentanyl, cocaine, diazepam, diphenhydramine, gabapentin	Accident

⁵ At date of this report, there are four cases in Ingham County with “pending” cause and/or manner of death from Q2 of 2018. The completion of these death investigations is unlikely to affect the numbers in this report.

Ingham County

Drug-Related Deaths



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.

Ionia County

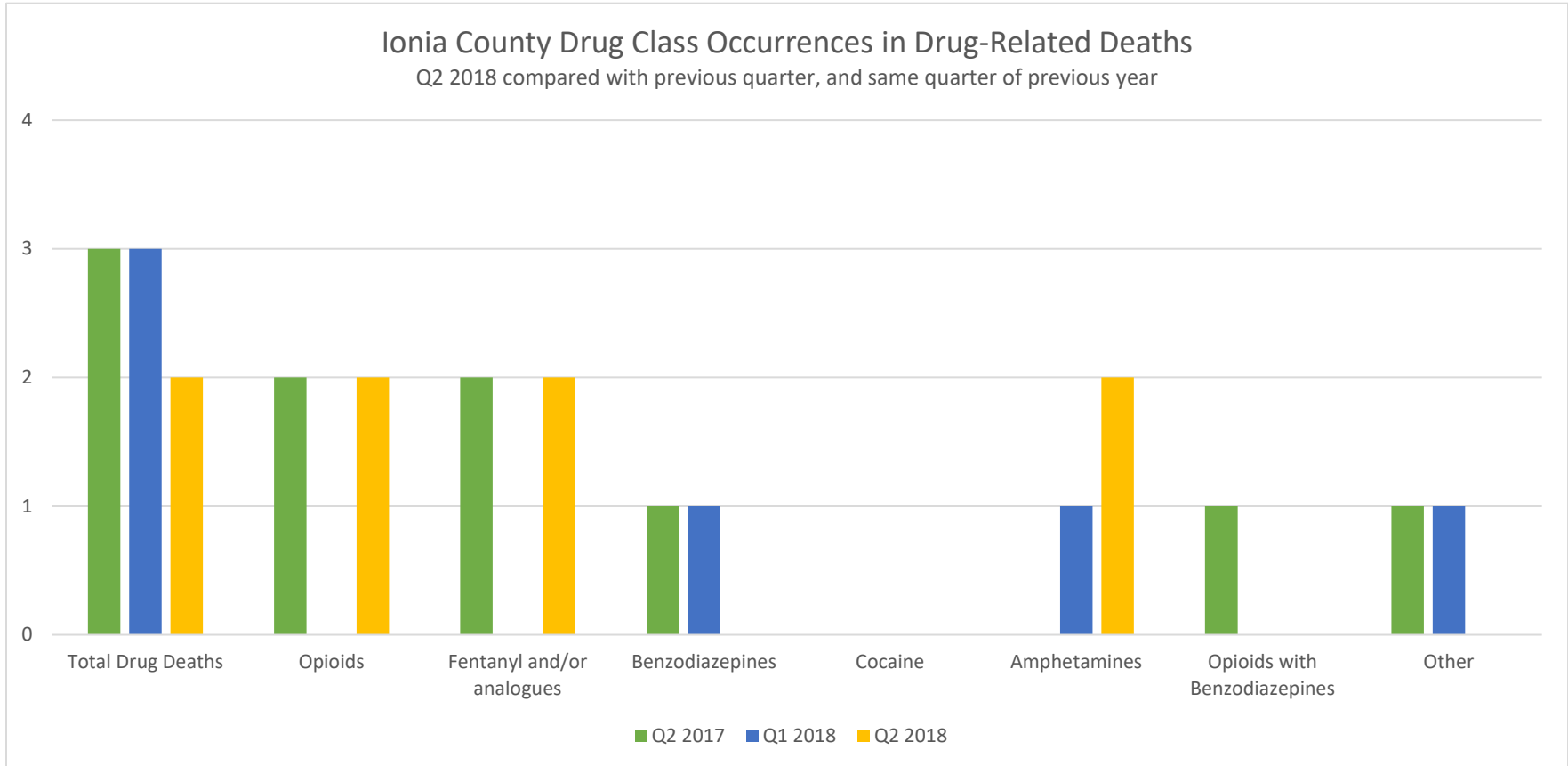
Drug-Related Deaths⁶

2018 Q2 Ionia County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Male	30	fentanyl, methamphetamine	Accident
Male	31	fentanyl, methamphetamine	Accident

⁶ At date of this report, there is one case in Ionia County with “pending” cause and/or manner of death from Q2 of 2018. The completion of this death investigation is unlikely to affect the numbers in this report.

Ionía County

Drug-Related Deaths



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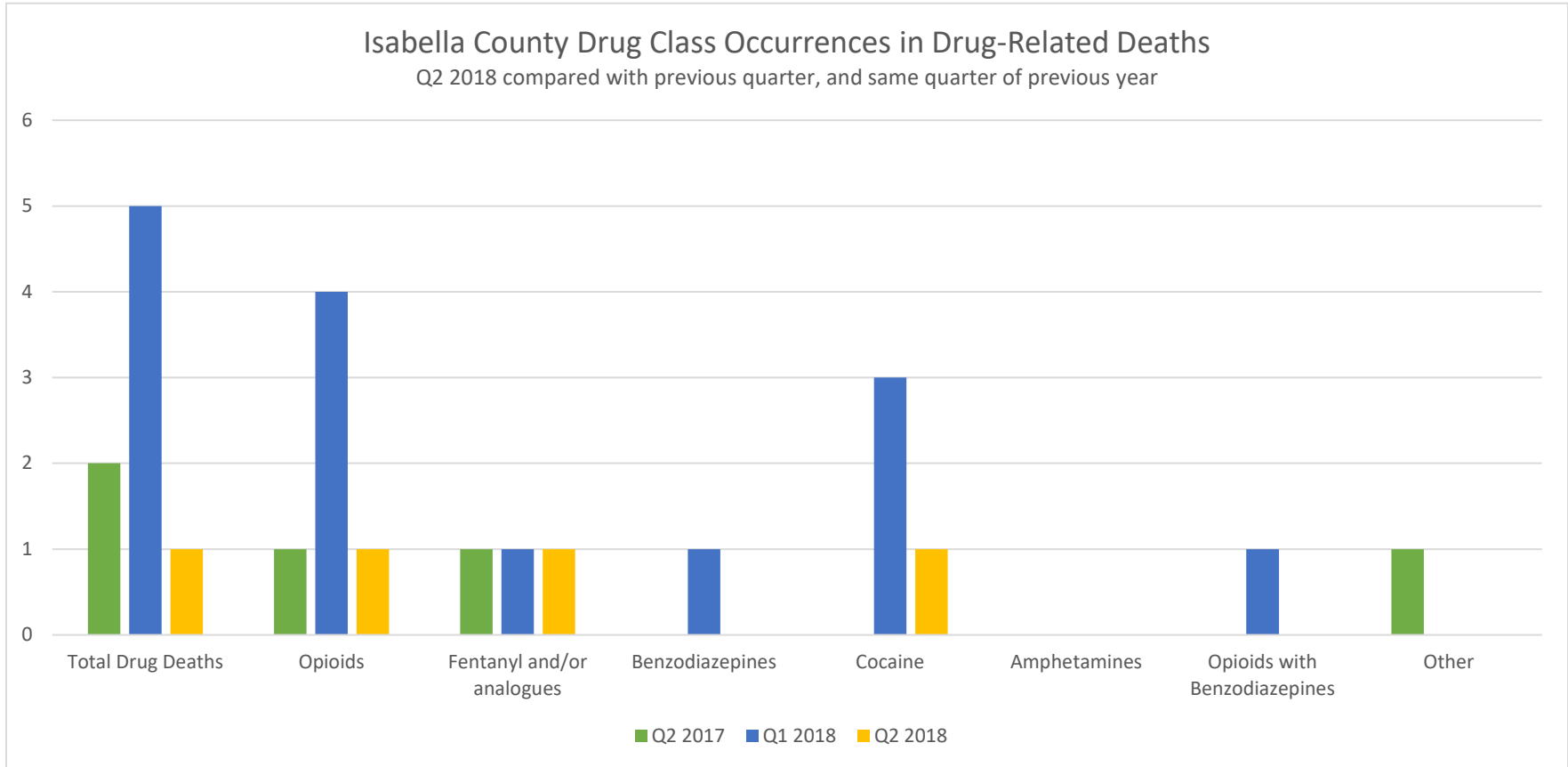
Isabella County

Drug-Related Deaths

2018 Q2 Isabella County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Female	22	fentanyl, cocaine	Accident

Isabella County

Drug-Related Deaths



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.

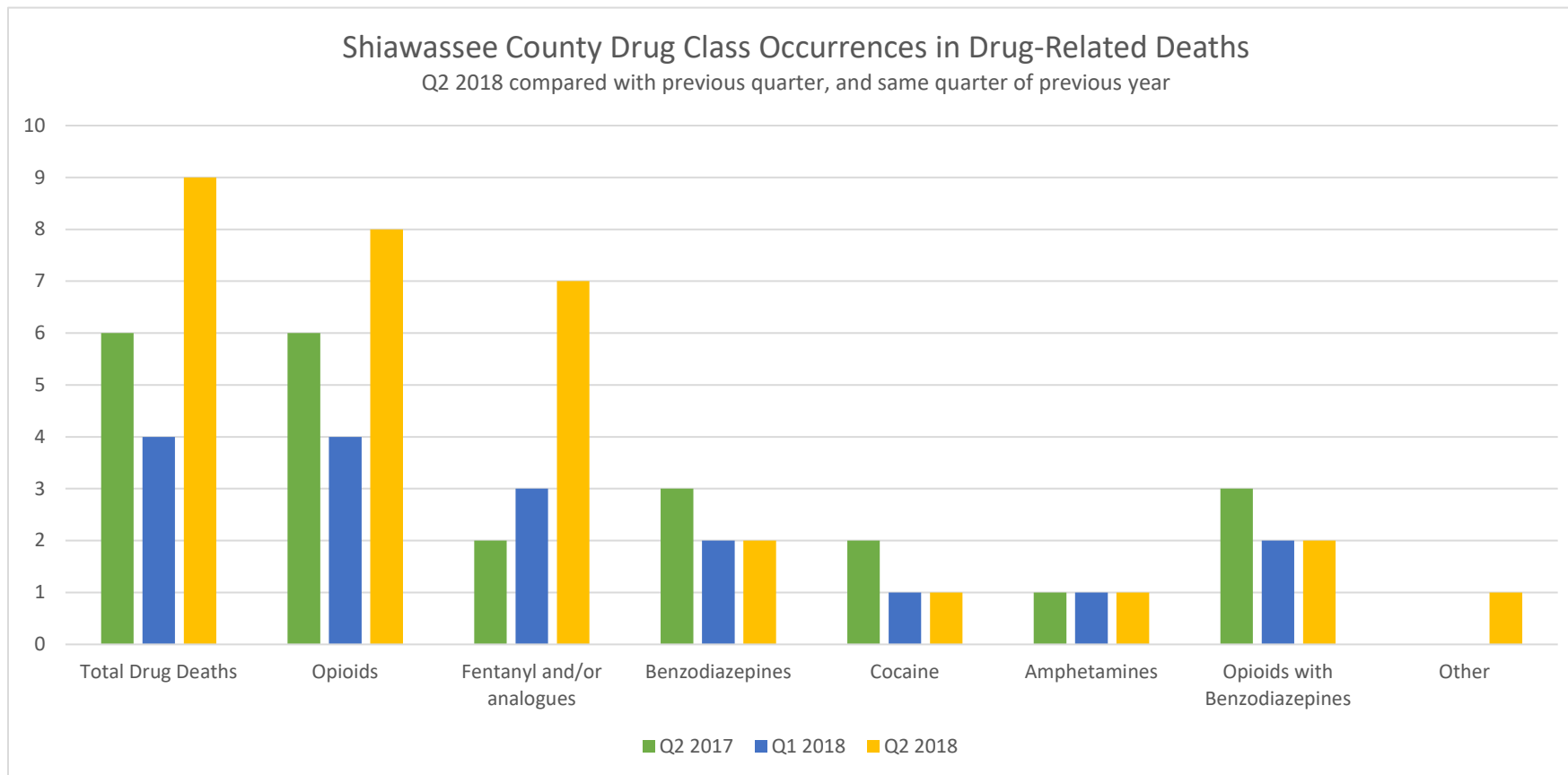
Shiawassee County

Drug-Related Deaths

2018 Q2 Shiawassee County Drug-Related Deaths			
Sex	Age	Substance(s) Causing Death	Manner of death
Female	27	acetylfentanyl, fentanyl	Accident
Male	33	fentanyl	Accident
Male	35	fentanyl, tramadol	Accident
Female	40	fentanyl, acetylfentanyl, alprazolam	Accident
Male	41	fentanyl, acetylfentanyl, alprazolam	Accident
Female	48	acetylfentanyl, fentanyl, heroin	Accident
Male	54	cocaine, fentanyl, amphetamine, probable heroin	Accident
Male	57	methadone, methamphetamine	Accident
Female	70	diphenhydramine, gabapentin, propranolol, venlafaxine	Suicide

Shiawassee County

Drug-Related Deaths



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