

Accidental Overdose Deaths in Allegheny County, January 2016 – June 2020



*Prepared by the Allegheny County Department of Human Services
and the Allegheny County Health Department*

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DEFINITIONS

Age-adjusted rate: A statistical process applied to rates of death or disease that enables comparisons between populations with different age structures.

Child welfare system involvement: Individuals who were listed as parents on an open case with child welfare. Includes individuals receiving home and community-based services, in an out-of-home placement, and/or being otherwise supported by an assigned child welfare caseworker.

Allegheny County Data Warehouse: Allegheny County's electronic repository of information pertaining to publicly funded human services utilization. The Data Warehouse contains approximately two billion records representing more than one million distinct clients and includes data from 35 sources representing human services program areas ranging from behavioral health and aging to public benefits, housing, criminal justice and public schools. These data can be used to describe the encounters or service history of individuals over time across both internal and external service providers and systems.

Fentanyl: A powerful synthetic opioid that has been used in medical settings but that is increasingly present in illicit opioids such as street heroin. Fentanyl is 80–100 times stronger than morphine.

Fentanyl analogs: Synthetic opioids similar in chemical structure to fentanyl that are increasingly present in street heroin, some estimated to be 400–6,000 times more potent than morphine.

Homelessness services: For the purposes of this analysis, homelessness services refer to prevention services, support services and/or housing for individuals and families who are homeless or at risk of becoming homeless. Services are provided by DHS and DHS-contracted providers and include housing assistance, case management, prevention and outreach.

Medication for opioid use disorder (MOUD): Medication used to treat opioid use disorder (OUD). There are three FDA-approved medications to treat OUD: methadone, buprenorphine and naltrexone. MOUD has largely replaced the term medication-assisted treatment (MAT) to reflect the research that medication is an effective form of treatment by itself.

Naloxone: A medication designed to rapidly reverse opioid overdose. Naloxone is an opioid antagonist and works by binding to opioid receptors and blocking the effects of opioids.

Opioids: Opioids are a class of drugs that includes heroin, synthetic opioids such as fentanyl, and pain relievers such as oxycodone (OxyContin), hydrocodone (Vicodin), codeine, morphine and many others.

Mental health services: In this report, mental health services refer to those that are publicly funded (by Allegheny County or Medicaid managed care/HealthChoices). Services include both clinical services, such as individual and group therapy, and non-clinical services, such as case management and peer support.

Substance use disorder services: In this report, substance use disorder (i.e., drug and alcohol) services are those that are paid for by the County or HealthChoices (i.e., Medicaid managed care). Services include both clinical services, such as individual and group therapy, and non-clinical services, such as case management and peer recovery support.

ACRONYMS

ACHD: Allegheny County Health Department

ACJ: Allegheny County Jail

ACOME: Allegheny County Office of the Medical Examiner

DHS: [Allegheny County] Department of Human Services

INTRODUCTION

This report, a joint effort of the Allegheny County Health Department (ACHD) and the Allegheny County Department of Human Services (DHS), provides data on accidental overdose deaths that occurred in the County between January 1, 2016, and June 30, 2020. The goals of the report are to:

- Provide data to the public on recent trends in fatal overdoses
- Describe the demographic characteristics of individuals who died by accidental overdose and identify differences by race, legal sex and age
- Explore substance types involved with accidental overdoses and changes in the frequency of these substances in recent years
- Identify neighborhoods and municipalities that have high counts and rates of accidental overdoses
- Summarize service usage (e.g., publicly funded substance use treatment, criminal justice system involvement and Medicaid eligibility) of individuals who died of a fatal overdose

Key Findings

- **Recent trends.** 2016 and 2017 had the two highest numbers of yearly accidental overdose deaths that the County has seen (733 and 834 people, respectively). Following those peaks, overdose deaths decreased by 41% from 2017 to 2018. Overdose deaths then increased by 16% from 2018 to 2019 and while 2020 numbers are still preliminary, there were 311 total deaths in the first quarter (Q1) and Q2 of 2020, which is a 44% increase compared to the same time period in the previous year.
 - There was an 83% increase in the number of accidental overdose deaths from Q2 2019 to Q3 2019. Following the increase in mid-2019, there were four quarters with concerning high numbers of overdose deaths (Q3 2019, Q4 2019, Q1 2020 and Q2 2020). Each of these quarters saw more than 140 overdose deaths, numbers not seen in one quarter since Q3 2017.
 - The full effects of the COVID-19 pandemic on fatal overdoses in Allegheny County are not yet clear due to typical delays in reporting; the total number of deaths in 2020 has not yet been finalized at the time of this report. However, national-level data released by the Centers for Disease Control and Prevention (CDC) in December 2020 suggest “a concerning acceleration of the increase in drug overdose deaths, with the largest increase recorded from March 2020 to May 2020,” primarily due to synthetic opioids such as illicit fentanyl.¹

1 <https://www.cdc.gov/media/releases/2020/p1218-overdose-deaths-covid-19.html>

- **Race.** Black residents experienced a disproportionately high rate of accidental overdose deaths in Q3 2018 through Q2 2020. The rate of overdose deaths of Black residents during Q3 2019, Q1 2020 and Q2 2020 was more than two times greater than that of White residents.
 - Cocaine was more likely to contribute to the deaths of Black residents, while heroin contributed more to deaths of White residents.
 - The average age of overdose death of Black residents (47.3 years in 2020) was higher than the average age of death of White residents (42.9 years in 2020).
- **Substance types.** Opioids, usually in combination with other drugs, were involved in 87% of accidental overdose deaths in 2019. Fentanyl, a powerful synthetic opioid, was present in 77% of cases. Since 2018, the percentage of deaths involving a combination of heroin and fentanyl has decreased, while the percentage of deaths involving fentanyl in combination with cocaine and methamphetamines has increased.
- **Individuals' involvement with other systems prior to death.** Approximately half of the individuals who died of an overdose received publicly funded mental health treatment or substance use disorder treatment during the year prior to their death. Thirty percent had involvement with adult probation, and 19% were booked in the Allegheny County Jail at some point in the year prior to death.

METHODOLOGY

This analysis describes accidental overdose deaths that occurred within Allegheny County from 2016 through the first six months of 2020. Overdose deaths are determined by the Allegheny County Office of the Medical Examiner (ACOME), which investigates cases of homicide, suicide, accidental deaths, or other deaths that are sudden, unexpected or medically unattended. For suspected overdose deaths, ACOME conducts toxicology analyses to determine which substances contributed to the cause of death. Because of the toxicology and autopsy processes, information about recent deaths is preliminary and subject to change.

In contrast to historical data about overdose deaths reported by the medical examiner, this report includes an additional death categorization called “We Will Issue” deaths. For these cases, there is no autopsy performed by ACOME, and the death certificate is issued based on medical history, toxicology results and any other information from another institution. Often, these deaths occur in the hospital after an overdose, so the hospital has toxicology information from the time of admission. Therefore, there is no need to perform an autopsy to determine the cause of death. Previously, ACOME reported only cases known as “Morgue” cases, or those for which an autopsy was performed and used to determine the cause of death. This report includes “We Will Issue” deaths, but detailed case-level data is available only for deaths that occurred in 2018 or later. For more information about the number of We Will Issue cases in recent years, see the **Appendix**.

Most of the analyses in this report pertain to deaths that occurred from January 2016 through June 2020. In some cases, data for years prior to 2016 are included to provide a view of longer-term trends. In order to explore trends within years and to allow for seasonal comparison, the data are presented quarterly in some charts. For those analyses, quarters are assigned as follows:

- Q1: January 1 through March 31
- Q2: April 1 through June 30
- Q3: July 1 through September 30
- Q4: October 1 through December 31

Data on the number of accidental overdose deaths in the Commonwealth of Pennsylvania and the United States come from the U.S. Centers for Disease Control and Prevention.²

Demographic information comes from the ACOME data. This data provides legal sex, based on the death certificate, and race. No information on gender identity or ethnicity is reported in this data.

Additionally, the Allegheny County Data Warehouse was used to match individuals whose death was determined to be an accidental overdose to available records from encounters with other services or systems reporting to DHS. The Data Warehouse is an electronic repository of information pertaining to publicly funded human services utilization in Allegheny County. The Data Warehouse includes data from more than 20 sources representing program areas (both internal and external to DHS) ranging from Medicaid- and County-funded behavioral health, aging, public benefits, housing, criminal justice and public schools. These data can be used to describe the encounters or service history of individuals over time across both internal and external service providers and systems.

Even though a significant amount of information was gathered about individuals and their encounters with publicly funded services and systems, the information is limited to the data sources included in the Data Warehouse. As a result, data about services such as mental health and substance use treatment include only services paid for by DHS or HealthChoices (the Medicaid managed care program). While these data are extensive, they are not necessarily descriptive of healthcare utilization patterns among all Allegheny County residents nor of those who are insured by commercial insurance plans.

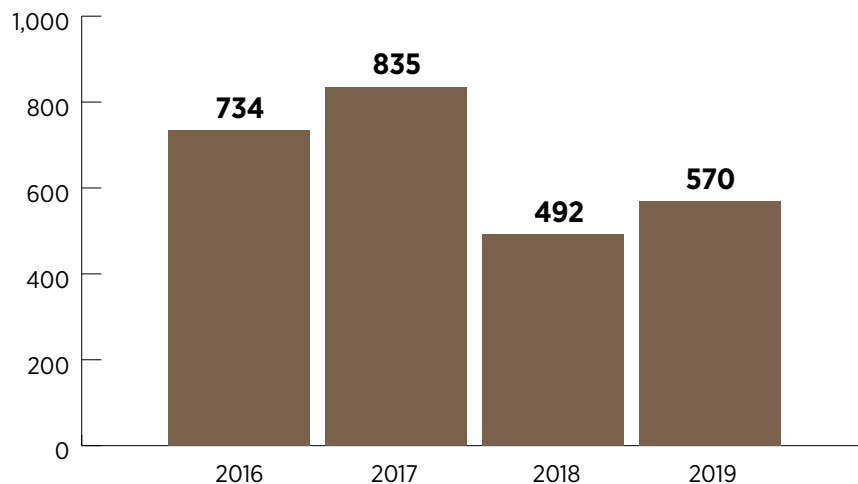
2 Hedegaard, H.; Miniño, A. M.; and Warner, M. Drug overdose deaths in the United States, 1999–2018. NCHS Data Brief, no 356. Hyattsville, Md.: National Center for Health Statistics. 2020. <https://www.cdc.gov/nchs/products/databriefs/db356.htm>

FINDINGS

Trends in Accidental Overdose Deaths, 2016–2019

From 2016 through 2019, 2,631 accidental overdose deaths occurred in Allegheny County as determined by ACOME (**Figure 1**). In 2019, the most recent year for which complete data are available, there were 570 fatal overdoses, compared to 492 in 2018, an increase of 16%. This increase in overdose deaths in Allegheny County is larger than the 5% increase across the United States in the same years.³

FIGURE 1: Yearly Accidental Overdose Deaths in Allegheny County, 2016 through 2019, N=2,631



Accidental Overdose Trends, First Half of 2020

Allegheny County experienced an increase in fatal overdoses beginning in the second half of 2019, which has continued through to June 2020.

From January 2020 through June 2020, there were 311 fatal overdoses in the County (although these data are preliminary and subject to change). This is a 44% increase over the same time period in 2019, when 216 fatal overdoses were recorded. This increase in deaths in the first half of 2020 is consistent with national trends; in the first half of 2020, U.S. accidental overdose deaths increased by 13% compared to the same months in 2019.⁴

3 Lee, L. "Allegheny County reports increase in opioid overdose deaths." Pittsburgh Post-Gazette. July 10, 2020. <https://www.post-gazette.com/news/health/2020/07/10/Pittsburgh-Opioid-overdose-Naxolone-Allegheny-County-Health-Department/stories/202007100127>

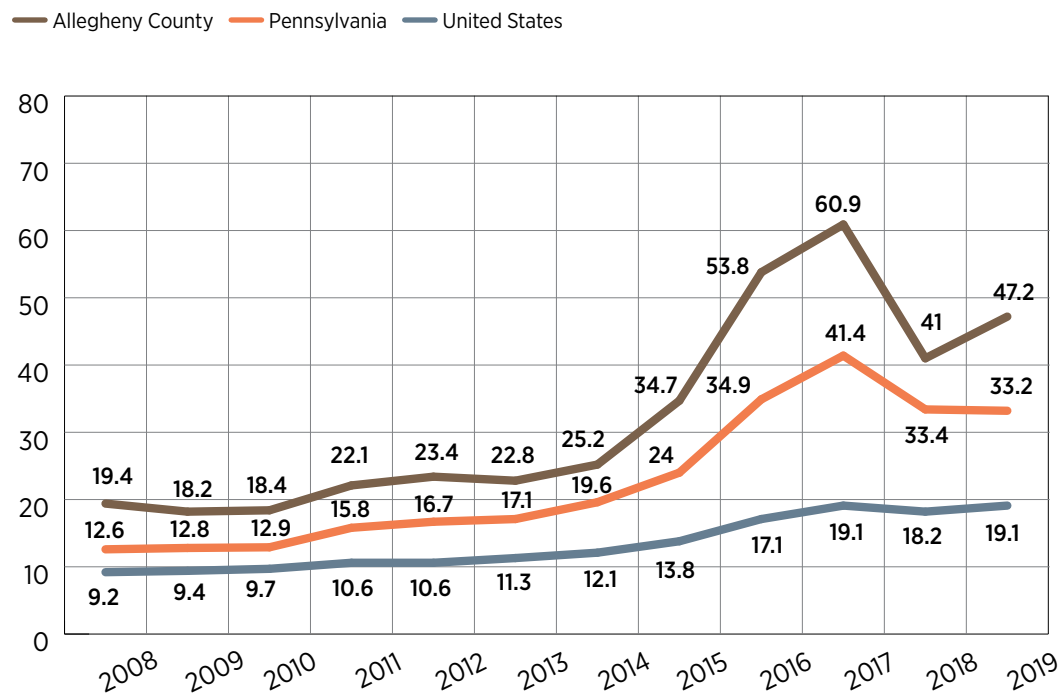
4 Katz, Josh; Goodnough, Abby; and Sanger-Katz, Margot. "In Shadow of Pandemic, U.S. Drug Overdose Deaths Resurge to Record." The New York Times. July 15, 2020. <https://www.nytimes.com/interactive/2020/07/15/upshot/drug-overdose-deaths.html>

Because of the lag in our data, it is too early to tell what the total impact of COVID-19 will be on the number of fatal overdoses; however, preliminary data show that the number of fatal overdoses increased from February through March of 2020.

Age-Adjusted State and National Rates in Comparison to Allegheny County

Figure 2 presents age-adjusted rates⁵ for accidental overdose deaths in Allegheny County, Pennsylvania and the United States for 2008 through 2019. The age-adjusted death rate in Allegheny County was higher than that of the Commonwealth of Pennsylvania and the United States over the entire time range from 2008 to 2018. The Allegheny County age-adjusted rate peaked in 2017 at 61 deaths per 100,000 population, a rate more than three times that of the United States as a whole. After the peak in Allegheny County in 2017, the age-adjusted rate decreased by 33% from 2017 to 2018; however, from 2018 to 2019, there was a 15% increase.

FIGURE 2: Age-Adjusted Rate of Overdose Deaths for Allegheny County, Pennsylvania and the United States, 2008–2019



⁵ Age-adjusted rate is the standard method of comparing death rates across populations with different age distributions, calculated by using the 2000 U.S. Census Standard Population.

Allegheny County Trends by Quarter and Month

Figure 3 presents the number of overdose deaths per quarter and the percent change from the previous quarter for Q1 2018 through Q2 2020. From Q2 2019 through Q3 2019, there was an 83% increase in overdose deaths, from 99 people to 181. While the 2020 numbers are still preliminary and additional deaths could still be reported, there were four consecutive quarters (Q3 2019, Q4 2019, Q1 2020 and Q2 2020) with relatively high numbers of fatal overdoses.

FIGURE 3: Quarterly Overdose Deaths and Percent Change, Allegheny County, Q1 2018 through Q2 2020, N=1,373

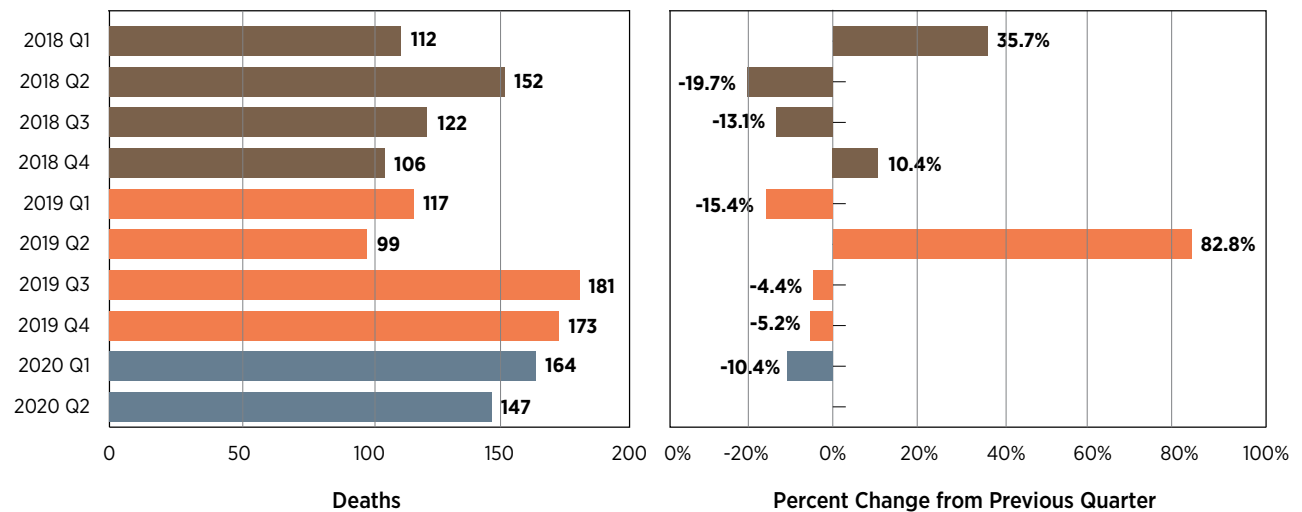
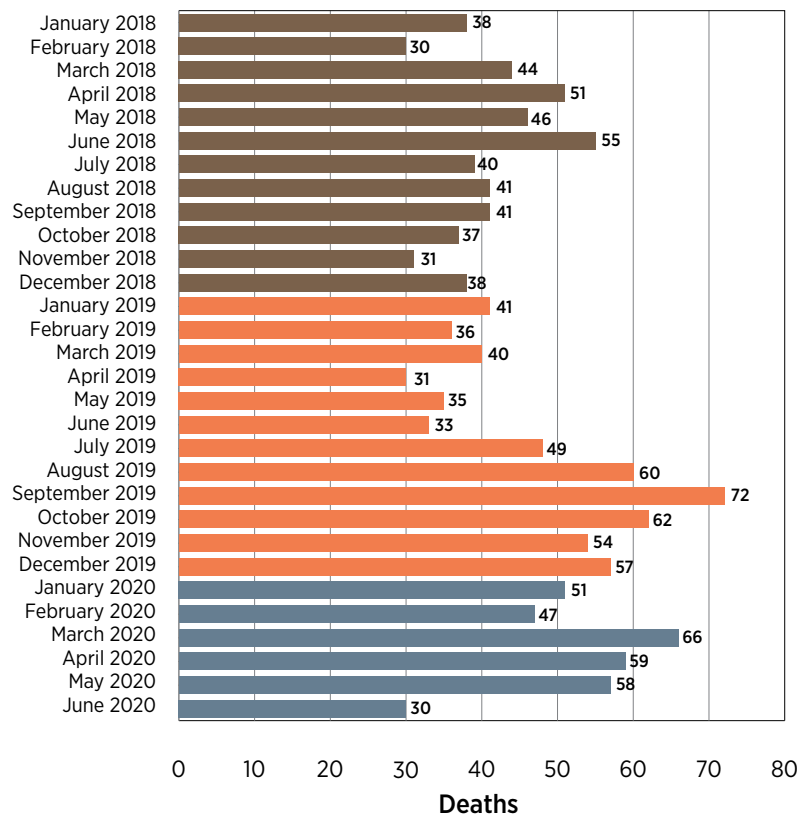


Figure 4 presents the number of accidental overdose deaths per month from January 2018 through June 2020. From July 2019 to September 2019 monthly overdose deaths increased. Then, from September 2019 until February 2020, monthly overdose deaths decreased. From February 2020 to March 2020, there was a 40% increase. While we cannot determine the cause of this increase, it is important to note that the first COVID-19 cases in the United States were identified in January 2020, with the subsequent stay-at-home orders (which began on March 23 in Allegheny County) leading to disruption in in-person substance use treatment and increased social isolation.⁶

FIGURE 4: Monthly Overdose Deaths, Allegheny County, January 2018 through June 2020, N=1,373



6 Kamp, J. and Campo-Flores, A.
 "The Opioid Crisis, Already Serious, Has Intensified During Coronavirus Pandemic."
 The Wall Street Journal. September 8, 2020.
<https://www.wsj.com/articles/the-opioid-crisis-already-serious-has-intensified-during-coronavirus-pandemic-11599557401>.

Demographic Characteristics of People Who Experienced a Fatal Overdose

Table 1, below, shows the number of deaths per year by legal sex and race (see **Figure 5**, below, for analysis on death rate, which takes into account racial demographics in the County). Looking at case counts, in every year from 2016 through mid-2020, a larger number of White residents died of accidental overdose than Black residents or residents of another race.

During the first half of 2020, males made up a larger percentage of the people who died by accidental overdose than in the past; in the first half of 2020, 70% of people who died by accidental overdose were male compared to 66% in 2019. In 2019, people who were Black made up 17% of those who died by accidental overdose, while the percentage in 2020 (through June) was 25%.

Examining the intersection of race and legal sex, in the first half of 2020, 161 White males and 64 White females died of accidental overdose, and 49 Black males and 28 Black females died of accidental overdose.

TABLE 1: Number of Accidental Overdose Deaths by Legal Sex and Race, January 2016 – June 2020, N=2,760

		MALE		FEMALE		TOTAL	
2016	Total	454	70%	195	30%	649	100%
	White	376	58%	171	26%	547	84%
	Black	74	11%	24	4%	98	15%
	Other*	4	<1%	0	0%	4	<1%
2017	Total	520	70%	218	30%	738	100%
	White	445	60%	189	26%	634	86%
	Black	68	9%	27	4%	95	13%
	Other*	7	<1%	2	<1%	9	1%
2018	Total	327	66%	165	34%	492	100%
	White	275	56%	127	26%	402	82%
	Black	47	10%	37	8%	84	18%
	Other*	5	1%	1	<1%	6	1%
2019	Total	375	66%	195	34%	570	100%
	White	295	52%	164	29%	459	81%
	Black	70	12%	30	5%	100	17%
	Other*	10	2%	1	<1%	11	2%
2020 (January through June)	Total	215	69%	95	31%	311	100%
	White	161	52%	64	21%	225	72%
	Black	49	16%	28	9%	77	25%
	Other*	6	2%	3	1%	9	3%

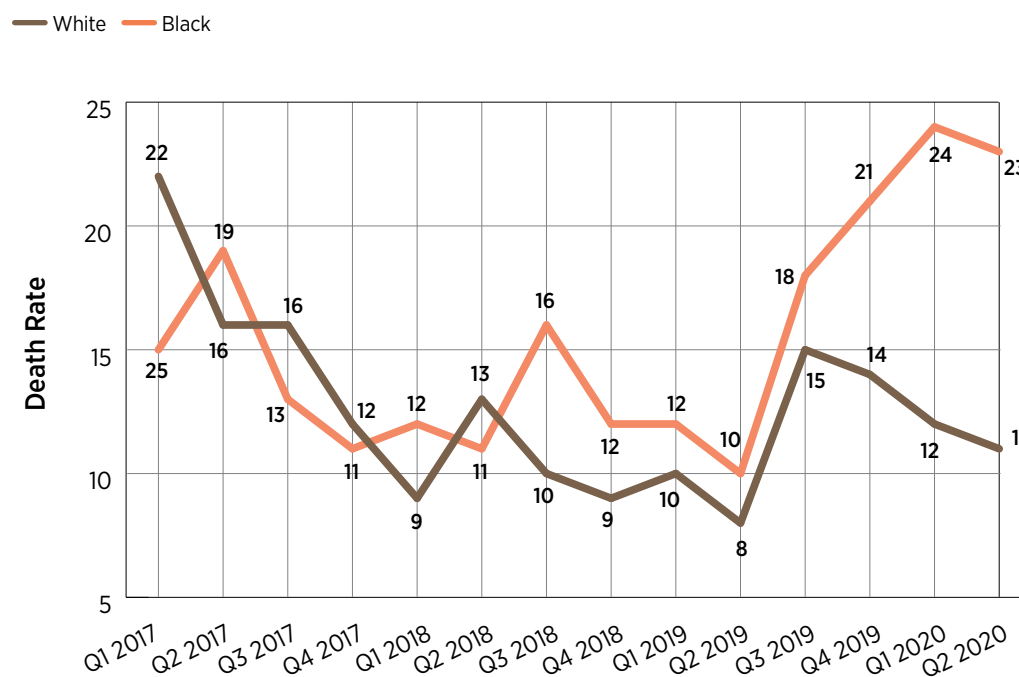
*"Other" includes Asian, Hispanic, Indian, Middle Eastern, other race or unknown race.

Note: Due to rounding, percentages may not equal 100%.

Overdose death counts do not take into account the racial composition of Allegheny County, which is 82% White.⁷ Therefore, it is also important to explore death rate per 100,000 people to examine racial disproportionality⁸ in overdose deaths (**Figure 5**).

Beginning in Q3 2018, the death rate of Black residents was consistently higher than that of White residents. From Q3 2019 through Q2 2020, the death rates of White and Black residents diverged even further. During that time period, the death rate for Black residents increased from 18 per 100,000 to 23 per 100,000. Over the same time period, the death rate for White residents decreased from 15 per 100,000 to 11 per 100,000. Consequently, in Q2 2020, the death rate for Black residents was 2.09 times that of White residents.

FIGURE 5: Quarterly Death Rate per 100,000 by Race, Q1 2017 through Q2 2020



7 <http://censusviewer.com/county/PA/Allegheny>

8 In this case, racial disproportionality refers to the uneven representation of a racial group in the population of people who died of an accidental overdose in comparison to that group's representation in the County as a whole.

There was a more pronounced difference when looking at race and legal sex together (**Figure 6**, below). Comparing the most recent four quarters (Q3 2019 – Q2 2020) to the previous four quarters (Q3 2018 – Q2 2019), the death rate per 100,000 increased for all demographic groups. The most pronounced increase in death rate between those two periods was for Black males, whose rate of accidental overdose increased from 30 per 100,000 to 59 per 100,000, an increase of almost 200%.

FIGURE 6: Death Rate per 100,000 by Race and Legal Sex, Q3 2018 through Q2 2020

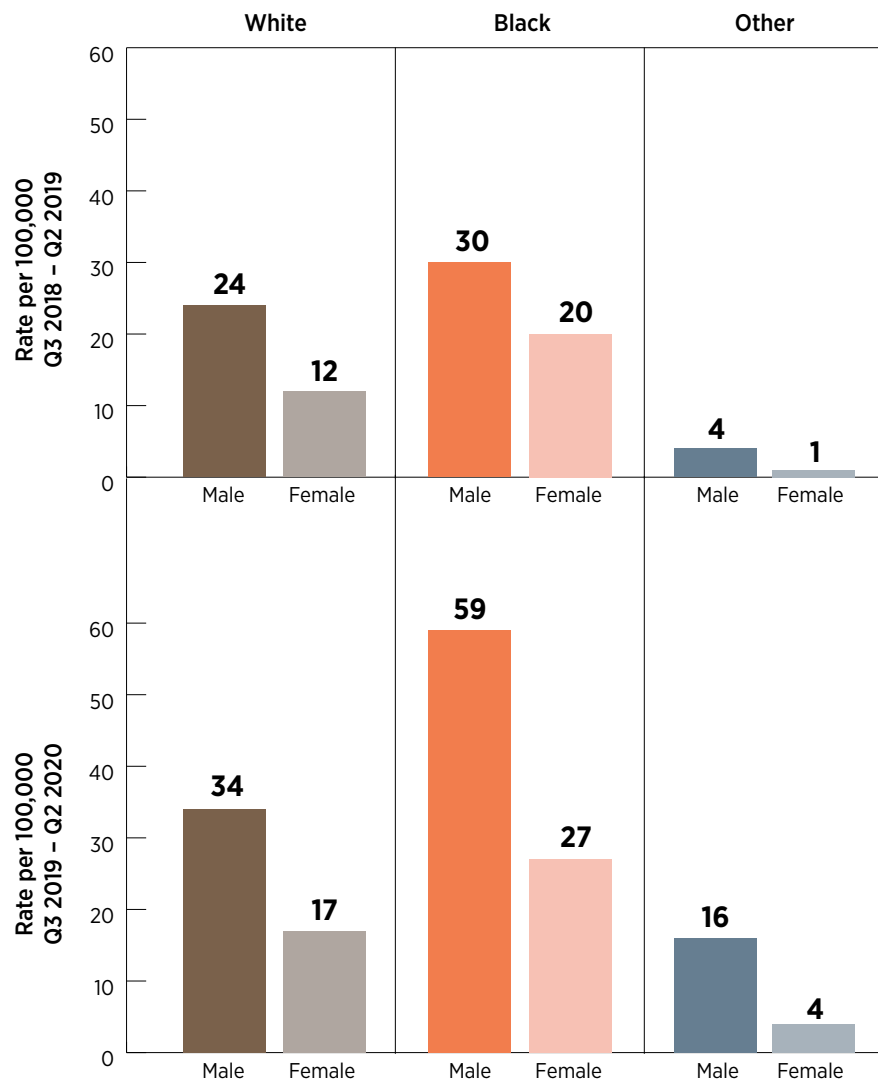
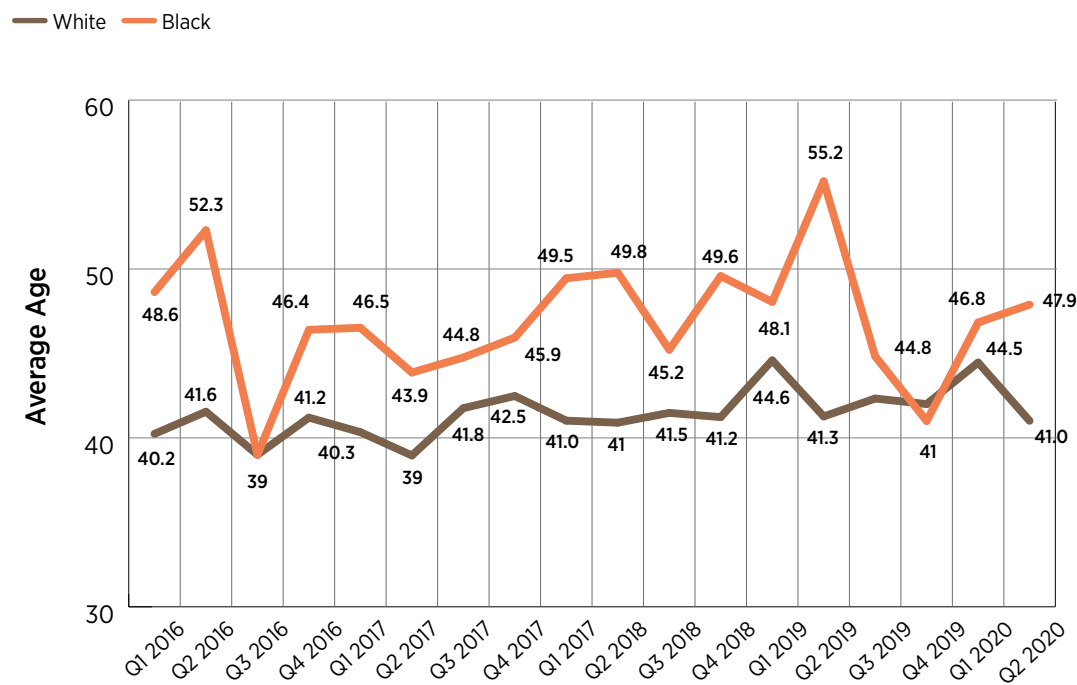


Figure 7 presents the average age of overdose death from Q1 2016 to Q2 2020 based on race. For all but two quarters during this time range, the average age of death for Black residents was higher than that of White residents. In 2019, the average age of death for Black residents was 45.8 years compared to 42.5 years for White residents. In Q1 and Q2 2020, the average age of death for Black residents of Allegheny County was 47.3 versus 42.9 for White residents.

The older age of Black people experiencing fatal overdose is also apparent in national data. The CDC reported that in the U.S. from 2015 to 2017, Black people ages 45–54 and 55–64 saw significant increases in opioid-related and synthetic-opioid-related overdose deaths. In the same time period, White people saw the most significant increase in opioid-related overdose deaths in ages 25–34.⁹

FIGURE 7: Average Age of Accidental Overdose Deaths by Race, Q1 2016 through Q2 2020

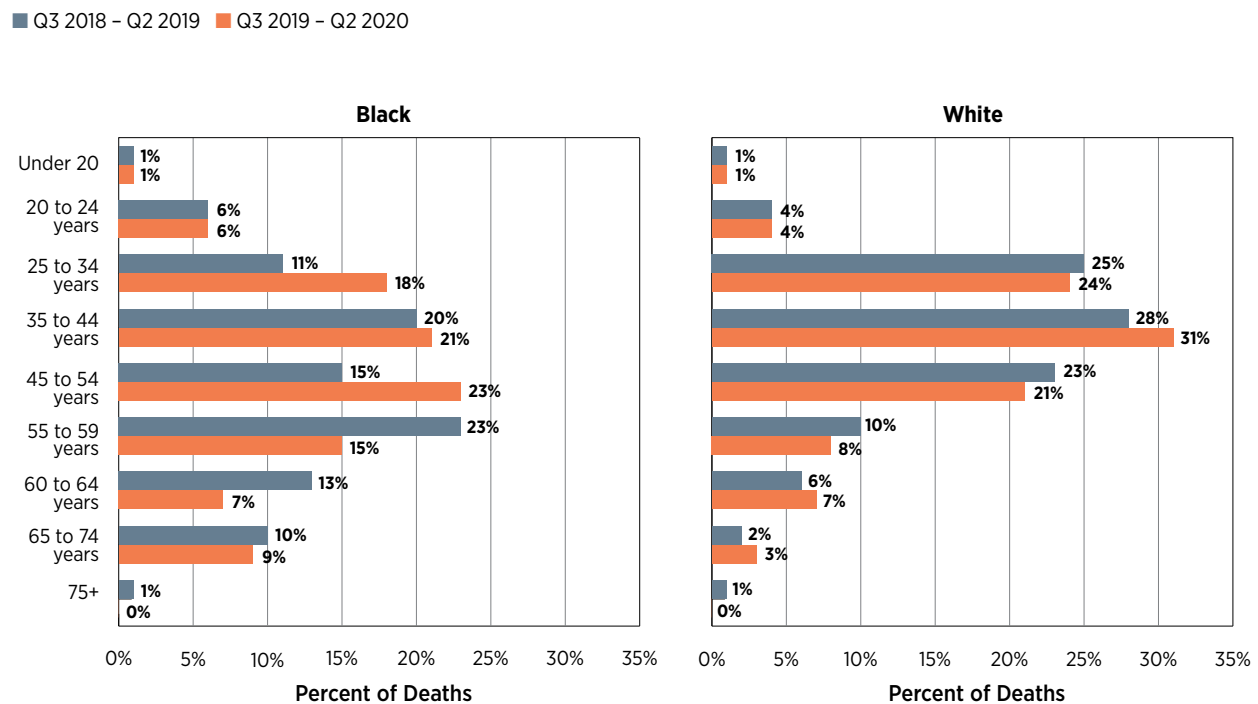


9 Lippold, K. M.; Jones, C. M.; Olsen, E. O.; and Giroir, B. P. Racial/Ethnic and Age Group Differences in Opioid and Synthetic Opioid-Involved Overdose Deaths Among Adults Aged ≥ 18 Years in Metropolitan Areas — United States, 2015–2017. *MMWR Morb Mortal Wkly Rep* 2019;68:967–973. DOI: <http://dx.doi.org/10.15585/mmwr.mm6843a3>

Figure 8 compares the age distribution of accidental overdose deaths by race and by time period. Specifically, it compares Q3 2018 – Q2 2019 and Q3 2019 – Q2 2020. The 34–44 age range was the most common age of death for White residents in both time periods. From the first time period to the second, the percentage of White residents who died at ages 34–44 increased from 28% to 32%. The percentage of deaths involving White residents ages 45–54 and 55–59 years decreased from the first time period of Q3 2018 – Q2 2019 to the second time period of Q3 2019 – Q2 2020.

For deaths of Black residents, there was a shift from an older age distribution during Q3 2018 – Q2 2019 to a younger age distribution during Q3 2019 – Q2 2020. Specifically, from Q3 2018 through Q2 2019, the most common age group for Black deaths was 55–59 years. From Q3 2019 through Q2 2020, 45–54 years was the most common age group for Black deaths. Across these time periods, there was an increase in the percentage of deaths involving Black residents ages 45–54 years, 35–44 years and 25–34 years. There was a decrease in the percentage of deaths involving Black residents ages 55–59, 60–64 and 65–74 years. This overall shift in the age distribution of Black deaths trends toward Black residents dying at a younger age.

FIGURE 8: Percent of Deaths per Age Group and Race, Q3 2018 – Q2 2019 vs. Q3 2019 – Q2 2020



Substances Contributing to Overdose Deaths

For suspected overdose deaths, ACOME conducts toxicology analyses to determine which substances contributed to the cause of death. When ACOME issues a death certificate for an accidental overdose death, they list substances that contributed to the cause of death. Most deaths involve multiple substances, so it is possible and likely that an individual death could be included in multiple substance categories. For example, if ACOME determined the cause of death to be “combined drug intoxication of fentanyl, cocaine and heroin,” this death would be included in the following categories: Any Opioid, Fentanyl & Analogs, Heroin, and Cocaine. In 2019, out of 570 total accidental overdose deaths, only 68 (12%) had only one substance listed as the cause of death.

Opioid: A class of drugs that include heroin, fentanyl and analogs, and pain relievers such as oxycodone (OxyContin), hydrocodone (Vicodin), codeine, morphine and many others.

Fentanyl & fentanyl analogs: Fentanyl is a powerful opioid substance with medical applications that is increasingly produced synthetically and present in illicit street drugs. Analogs are synthetic opioids similar in chemical structure to fentanyl that are increasingly present in street drugs. Some analogs are estimated to be 400–6,000 times more potent than morphine.

Heroin: An illegal drug processed from morphine, a naturally occurring substance extracted from the seed pod of certain varieties of poppy plants.

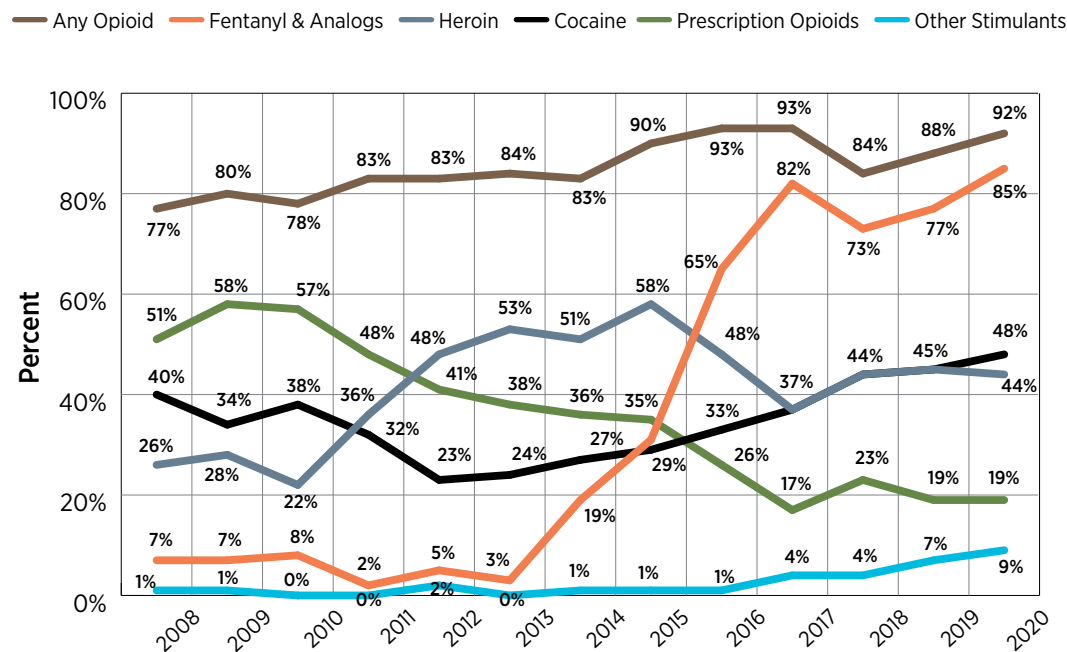
Cocaine: A drug derived from coca or prepared synthetically, used as an illegal stimulant and sometimes medicinally as a local anesthetic.

Other stimulants: A class of drugs that speed up the messages between the brain and the body. Stimulants include amphetamines such as methamphetamine.

Figure 9 shows the percent of overdose deaths involving various substances from 2008 through 2020. A large percentage of overdose deaths during that time period involved at least one type of opioid; 77% to 93% of accidental overdoses involved opioids during each of those years. From 2018 through June 2020, there was an increase in the percentage of deaths involving fentanyl from 72% to 79%. The percentage of deaths involving fentanyl is greater in Allegheny County than in the nation; data from January through June 2019 show that 62% of overdose deaths nationwide involved fentanyl.¹⁰ The percentage of deaths involving heroin decreased substantially from 58% in 2015 to 37% in 2017. In the first half of 2020, 41% of deaths involved heroin, a decrease since 2019.

Since 2012, there has been a steady increase in the percentage of deaths involving cocaine. In the first half of 2020, 45% of deaths involved cocaine. Other stimulants, such as methamphetamine, were involved in an increasing percentage of deaths in Allegheny County. This concurs with national reporting that methamphetamine availability and involvement in overdose deaths increased from 2015 to 2018.¹¹

FIGURE 9: Percent of Overdose Deaths Involving Different Substance Categories by Year, 2008–2020

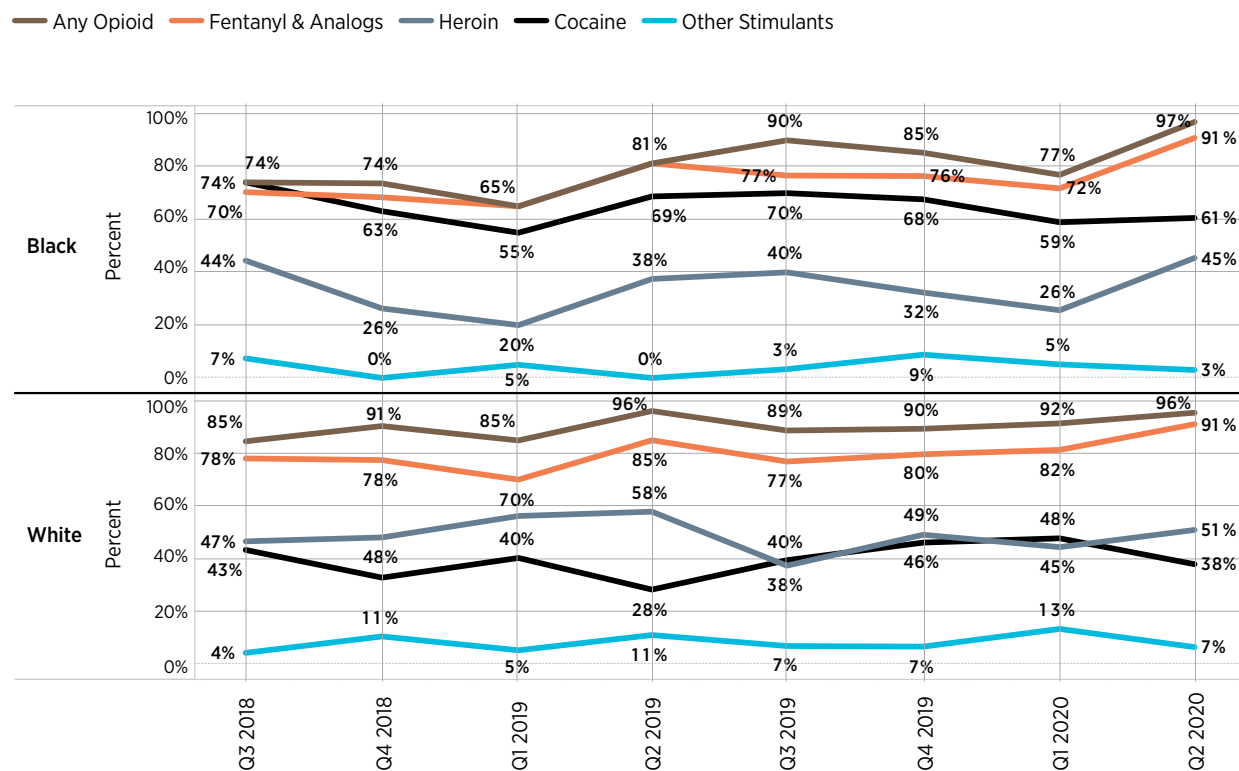


10 O'Donnell, J.; Gladden, R. M.; Mattson, C. L.; Hunter, C. T.; and Davis, N. L. Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants — 24 States and the District of Columbia, January–June 2019. *MMWR Morb Mortal Wkly Rep* 2020;69:1189–1197. DOI: <http://dx.doi.org/10.15585/mmwr.mm6935a1>

11 Jones, C. M.; Compton, W. M.; and Mustaquim, D. Patterns and Characteristics of Methamphetamine Use Among Adults — United States, 2015–2018. *MMWR Morb Mortal Wkly Rep* 2020;69:317–323. DOI: <http://dx.doi.org/10.15585/mmwr.mm6912a1>

Figure 10 shows the percentage of deaths associated with specific categories of substances for Black and White residents. Across all quarters from Q1 2017 to Q2 2020, cocaine was involved in a greater percentage of accidental overdose deaths of Black residents than of White residents. In 2019, 66% of overdose deaths of Black residents involved cocaine compared to 39% of deaths of White residents. In data currently available for Q1 and Q2 of 2020, cocaine was involved in 56% of deaths in Black residents versus 41% of deaths of White residents. Across all quarters from Q1 2017 to Q2 2020, heroin was involved in a greater percentage of deaths of White residents. In Q1 and Q2 of 2020, heroin was involved in 44% of accidental drug overdose deaths of White residents as compared to 32% of deaths of Black residents.

FIGURE 10: Substances involved in Accidental Overdose Deaths by Quarter, Q1 2017 – Q2 2020, and by Race



As described above, almost 90% of accidental overdose deaths involved more than one type of substance.

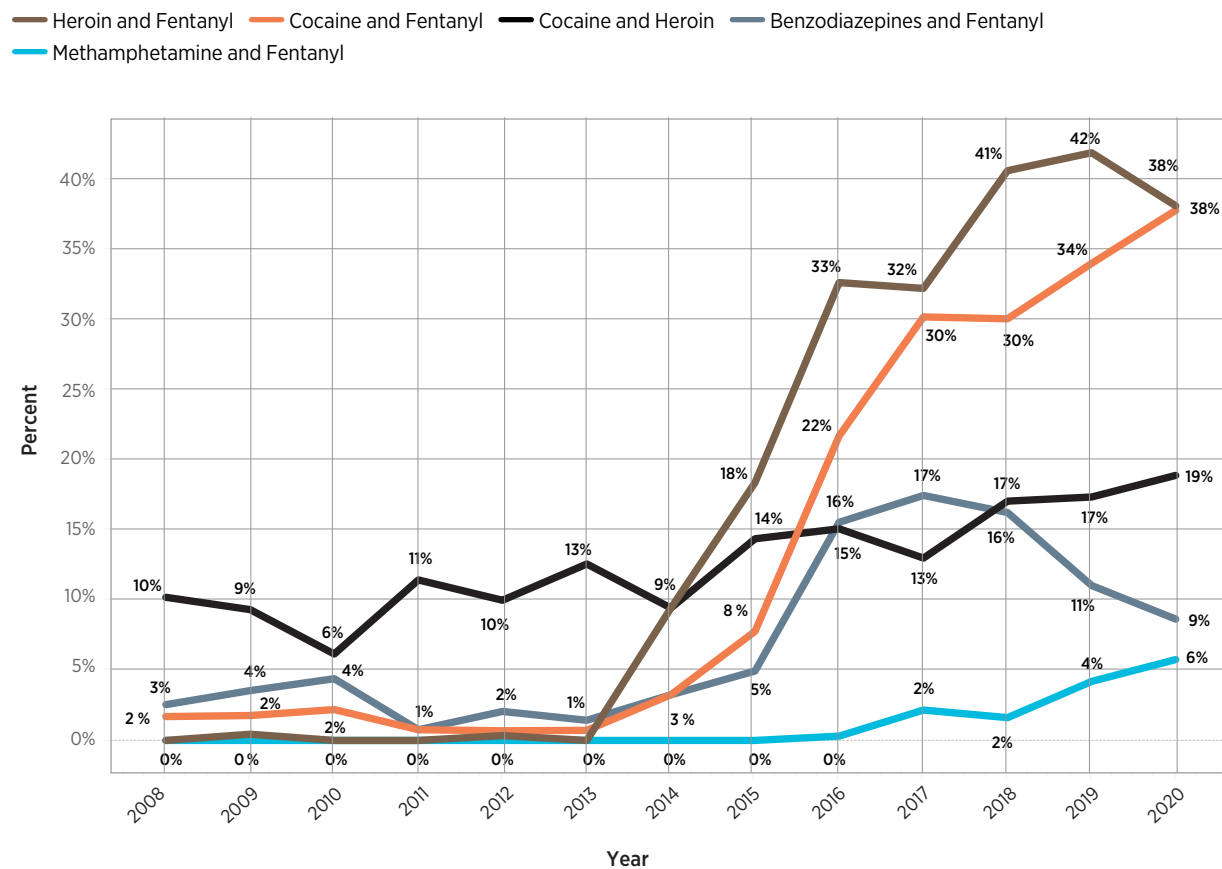
Figure 11 presents the number of accidental overdose deaths by year involving common combinations of substances (heroin & fentanyl, heroin & cocaine, other stimulants & fentanyl, benzodiazepines¹² & fentanyl, and cocaine & fentanyl).

Starting in 2013, there was a dramatic increase in the number of deaths involving the combination of heroin and fentanyl. From 2018 to the first half of 2020, there was a slight decrease in deaths involving the combination of heroin and fentanyl, from 42% in 2018 to 38% in the first half of 2020. This decrease reflects the trend of decreasing deaths involving heroin since 2015. However, deaths involving fentanyl continue to increase, mostly as a result of fentanyl in combination with substances other than heroin.

Deaths involving cocaine and fentanyl increased slightly beginning in 2013, and there continued to be an increase in deaths involving those two substances through the first half of 2020. This combination of drugs is more prevalent in Allegheny County than in the nation as a whole; in 2019, 34% of overdose deaths in Allegheny County involved cocaine and fentanyl versus 10.5% nationwide.¹³

From 2017 through Q2 2020, the percentage of deaths involving benzodiazepines and fentanyl decreased from 17% in 2017 to 9% in 2020. Deaths involving methamphetamine and fentanyl increased slightly from 2016 to 2020.

FIGURE 11: Percentage of Accidental Overdose Deaths Involving Drug Combinations, 2008–2020



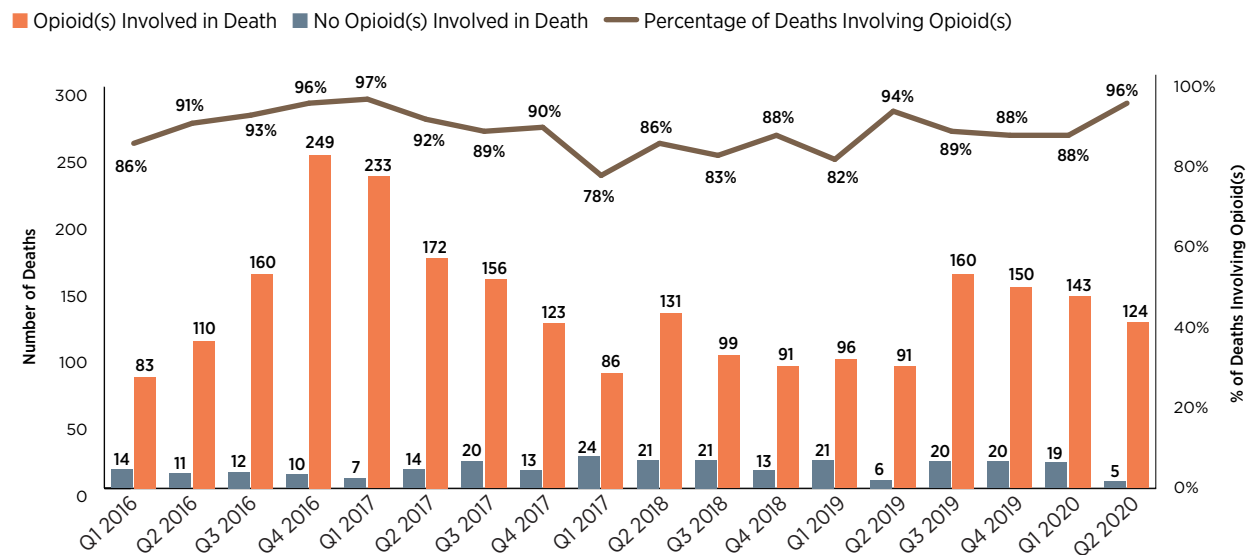
Note: Individuals whose overdose death was found to include more than two substances may be duplicated on this chart. For example, someone whose autopsy showed use of fentanyl, cocaine and heroin would be counted twice (in the heroin and fentanyl category, and in the cocaine and fentanyl category).

12 A benzodiazepine is a type of prescription sedative commonly prescribed for anxiety or to help with insomnia.

13 O'Donnell, J.; Gladden, R. M.; Mattson, C. L.; Hunter, C. T.; and Davis, N. L. Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants — 24 States and the District of Columbia, January–June 2019. MMWR Morb Mortal Wkly Rep 2020;69:1189–1197. DOI: <http://dx.doi.org/10.15585/mmwr.mm6935a1>

Figure 12 shows the number of accidental overdose deaths involving any opioid (orange bars) and no opioid (blue bars). The *percentage* of deaths involving any opioid is included as a line at the top of the figure. This was calculated using the substances listed as contributing to the cause of death on the death certificate. In Q4 2016, 96% of all accidental overdose deaths involved any opioid. From Q2 2019 through Q2 2020, there was a decrease in the percentage of deaths involving any opioid from 94% in Q2 2019 to 89% in Q2 2020. Nationally, opioids were involved in approximately 80% of overdose deaths from January through June 2019.¹⁴

FIGURE 12: Accidental Overdose Deaths Involving Any Opioid by Quarter, Q1 2016 through Q2 2020



Geographic Locations of Fatal Overdoses

In order to provide more information on the location of fatal overdoses, the following figures display the neighborhoods (within Pittsburgh) and the municipalities (outside of Pittsburgh) as both counts, and rate per 100,000 people, which takes into account the total population of a neighborhood or municipality. During the time period observed (2016 through Q2 2020), neighborhoods in the south of Pittsburgh (Brookline/Carrick/Mt. Washington/South Side Flats/Beechview/Knoxville/Allentown) represented the majority of city neighborhoods with relatively high numbers of deaths. Outside the City, the municipalities of Penn Hills, McKeesport and McKees Rocks had the highest number of total deaths, with McKees Rocks also being the municipality with the highest death rate.

14 O'Donnell, J.; Gladden, R. M.; Mattson, C. L.; Hunter, C. T.; and Davis, N. L.. Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants — 24 States and the District of Columbia, January–June 2019. MMWR Morb Mortal Wkly Rep 2020;69:1189–1197. DOI: <http://dx.doi.org/10.15585/mmwr.mm6935a1>

TABLE 2: Top 10 Pittsburgh Neighborhoods and Allegheny County Municipalities with the Highest Number and Rate of Accidental Overdose, 2016–2020

	PITTSBURGH NEIGHBORHOODS		ALLEGHENY COUNTY MUNICIPALITIES	
	NAME	DEATHS	NAME	DEATHS
NUMBER OF DEATHS	Brookline	50	Penn Hills	109
	Carrick	49	McKeesport	73
	Mount Washington	44	McKees Rocks	55
	South Side Flats	39	Wilkinsburg	50
	Central Business District	35	West Mifflin	48
	Beechview	32	Monroeville	42
	Knoxville	31	Stowe	40
	Bloomfield	26	Baldwin	38
	Sheraden	21	Munhall	36
	Allentown	21	Brentwood	33
RATE PER 1,000 POPULATION, EXCLUDING POPULATIONS LESS THAN 500	NAME	RATE	NAME	RATE
	Mt. Oliver	11.8	McKees Rocks	9.0
	Middle Hill	11.7	Mt. Oliver	8.5
	Central Business District	9.6	Sharpsburg	6.7
	Fineview	9.3	Neville	6.5
	East Allegheny	8.4	Stowe	6.3
	Allentown	8.4	Millvale	6.1
	Knoxville	8.3	Pitcairn	5.8
	Bedford Dwellings	7.5	Braddock	5.6
	Homewood South	7.3	Wilmerding	5.5
	California-Kirkbride	6.6	Wall	5.2

FIGURE 13A: Q1 2016 – Q2 2020 Overdose Deaths, City of Pittsburgh

≤ 90.9
 ≤ 15.75
 ≤ 7.5
 ≤ 4.52
 0

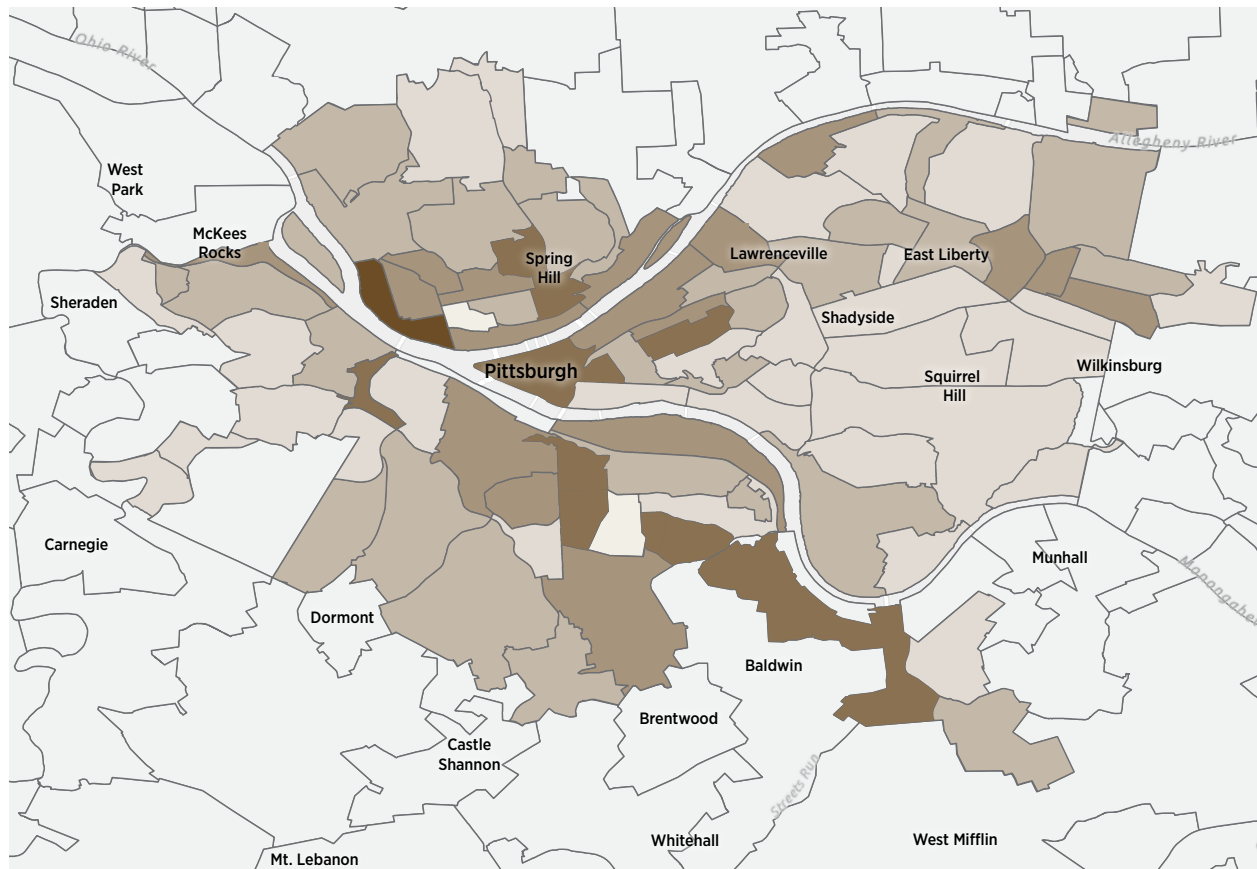
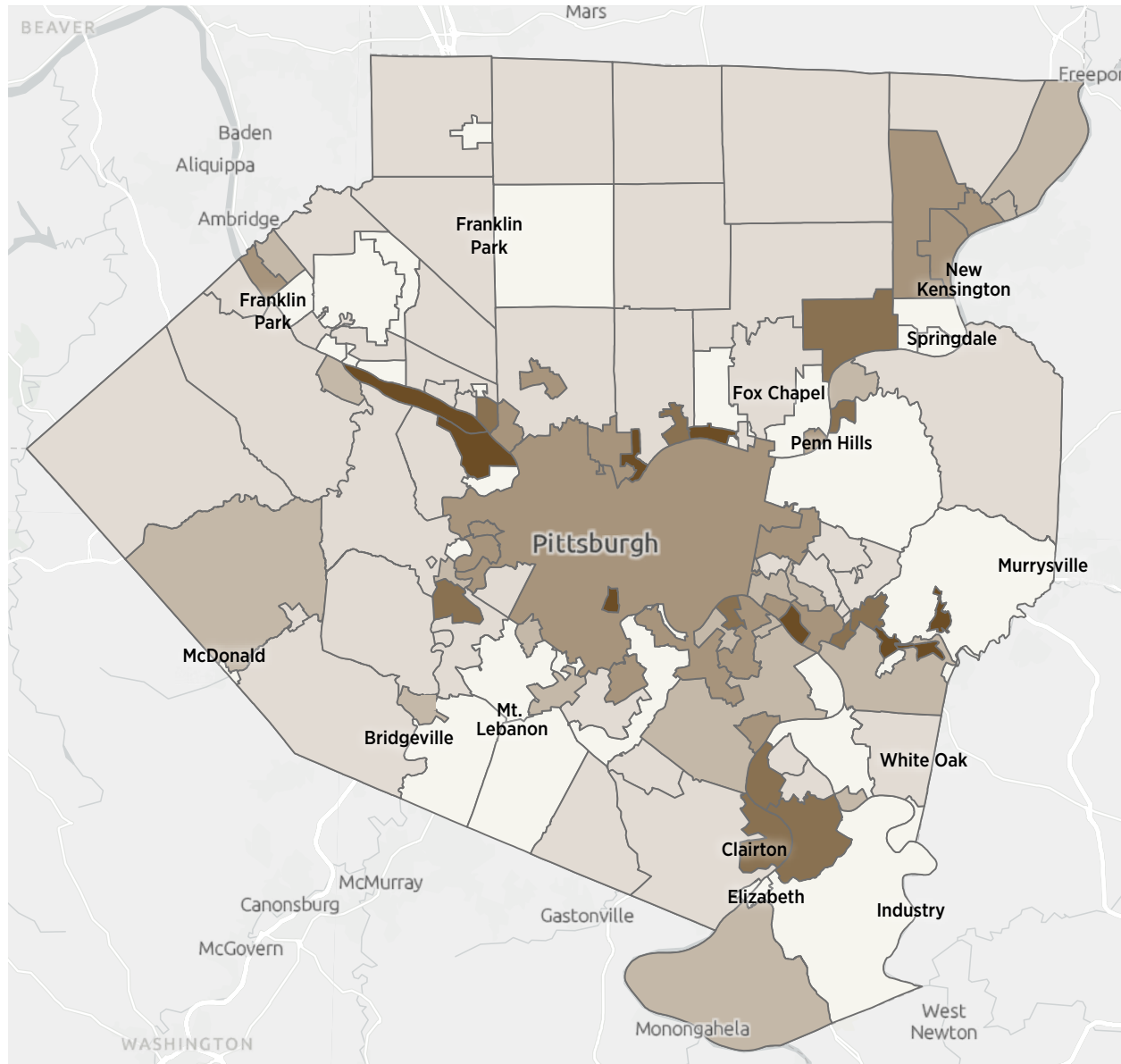


FIGURE 13B: Q1 2016 – Q2 2020 Overdose Deaths, Allegheny County

≤ 90.9
 ≤ 15.75
 ≤ 7.5
 ≤ 4.52
 0



The neighborhoods that showed the greatest increases during these time periods were the neighborhoods within Downtown Pittsburgh and directly south of the city. Outside the city, recent overdoses sharply rose in the municipalities of Penn Hills, McKeesport and Stowe.

TABLE 3: Top 10 Pittsburgh Neighborhoods and Allegheny County Municipalities with the Largest Numbers and Rates of Accidental Overdose, Q3 2018 – Q2 2019 through Q3 2019 – Q2 2020

	PITTSBURGH NEIGHBORHOODS				ALLEGHENY COUNTY MUNICIPALITIES			
	Q3 2018 – Q2 2019		Q3 2019 – Q2 2020		Q3 2018 – Q2 2019		Q3 2019 – Q2 2020	
	NAME	DEATHS	NAME	DEATHS	NAME	DEATHS	NAME	DEATHS
NUMBER OF DEATHS	Mount Washington	10	Knoxville	14	McKeesport	13	Penn Hills	33
	Carrick	9	Central Business District	13	Wilkinsburg	12	McKeesport	18
	Brookline	8	Carrick	13	Penn Hills	12	Stowe	16
	South Side Flats	7	Brookline	12	Munhall	7	West Mifflin	14
	Perry South	5	Homewood South	9	Bellevue	7	Plum	14
	Knoxville	5	South Side Flats	8	Turtle Creek	6	Shaler	12
	Troy Hill	4	Middle Hill	8	North Fayette	6	Wilkinsburg	11
	Terrace Village	4	Bluff	7	Mount Oliver	6	Carnegie	11
	Squirrel Hill South	4	Central Northside	6	Mount Lebanon	6	Clairton	10
	Shadyside, Fineview, Beechview	4	Upper Lawrenceville, Sheraden, Mount Washington	5	McKees Rocks, Baldwin	6	Duquesne, Brentwood	9
RATE PER 1,000 POPULATION, EXCLUDING POPULATIONS LESS THAN 500	NAME	RATE	NAME	RATE	NAME	RATE	NAME	RATE
	Fineview	3.1	Middle Hill	4.7	Lincoln	1.9	Stowe	2.5
	Allegheny Center	2.1	Homewood South	3.8	Neville	1.8	Mount Oliver	2.4
	Mt. Oliver	2.0	Knoxville	3.7	Mount Oliver	1.8	Wall	1.7
	Mille Hill	1.8	Homewood West	3.7	Leetsdale	1.6	Leetsdale	1.6
	Bedford Dwellings	1.7	Central Business District	3.6	Homestead	1.6	Duquesne	1.6
	Troy Hill	1.5	California-Kirkbride	2.6	Pennsbury	1.5	Whitaker	1.6
	Glen Hazel	1.4	Bedford Dwellings	2.5	Sharpsburg	1.5	Clairton	1.5
	Knoxville	1.3	Larimer	2.3	Braddock	1.4	Blawnox	1.4
	Homewood South	1.2	West Oakland	2.3	East Deer	1.3	Carnegie	1.4
	Duquesne Heights	1.2	Beltzhoover	2.1	Turtle Creek	1.1	Wilmerding	1.4

Prior System Involvement of People Who Died of an Accidental Fatal Overdose

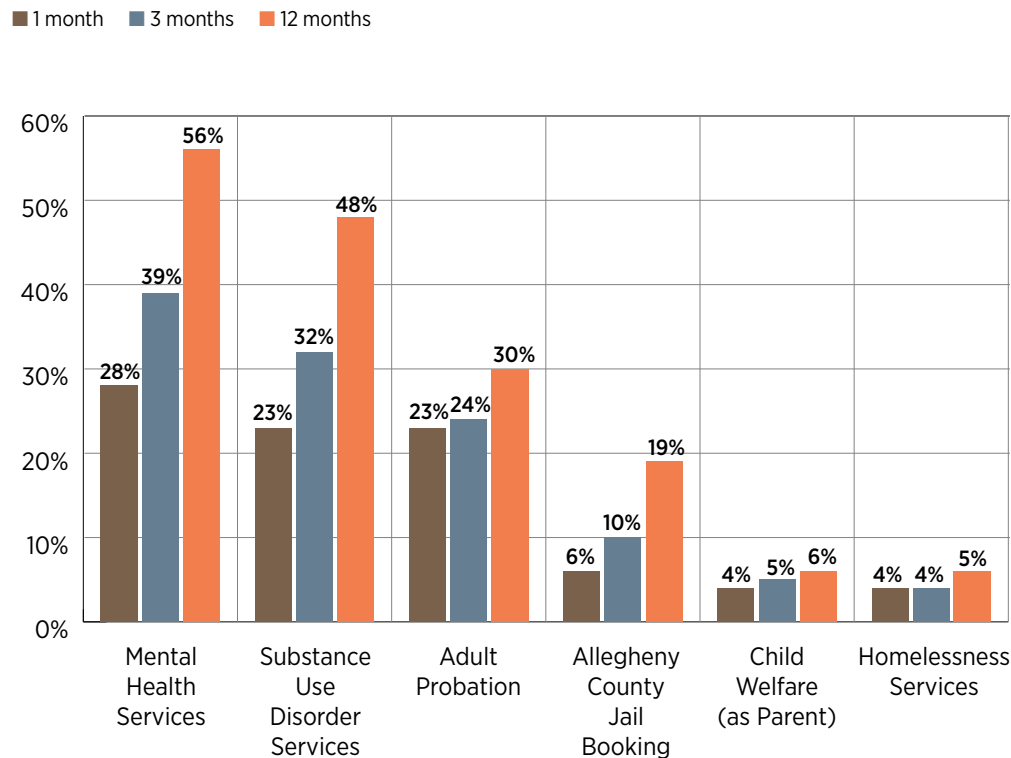
Data from the Allegheny County Data Warehouse were used to examine past encounters with public systems for those people who died of an accidental fatal overdose in order to identify gaps in services and opportunities for future intervention. For this part of the analysis, we examined system involvement during three time periods: one year prior to an individual's death, three months prior to death, and one month prior to death.

In the year prior to their fatal overdose, over half (56%) of individuals who were eligible for Medicaid services received a mental health service paid for by public funds and nearly half (48%) received a service related to a substance use disorder (**Figure 14**). A substantial number of individuals were also involved with the criminal justice system; 30% of individuals had involvement with adult probation, and 19% had been booked in the Allegheny County Jail. A smaller proportion of individuals was involved with our child welfare system (6%) and our homelessness system (6%) in the year prior to death.

In the month prior to death, 28% of fatal overdose victims who were eligible for Medicaid services received a publicly funded mental health service, and 23% received service related to substance use. In other words, at least one in five people who died of an accidental overdose were involved with the behavioral health system within a month of their death. Twenty-three percent of individuals who died of overdose had contact with adult probation in the month prior to death.

Additionally, many of these individuals were involved with multiple systems in Allegheny County. Of the 2,684 fatal overdoses during 2016 through Q2 2020, 993 (37%) were involved in two or more of the programs we analyzed within 12 months of their fatal overdose, specifically:

- 594 people (22%) received both mental health and substance use disorder services
- 549 (20%) were involved with Probation Services and either mental health OR substance use disorder services
- 420 (16%) people were booked in the jail and received either mental health OR substance use disorder services

FIGURE 14: System Involvement Prior to Death for Individuals Who Died of an Accidental Overdose, Q1 2016 through Q2 2020

DISCUSSION

Allegheny County experienced a recent increase in the number of accidental fatal overdoses after a period of decrease. These recent overdoses affected Black residents of Allegheny County at a higher rate than White residents. It is unclear if the COVID-19 pandemic affected overdose rates, but early indications show elevated numbers of deaths since March of 2020. The County will continue to monitor these trends; this [interactive dashboard](#) allows users to see up-to-date data and compare time periods and demographics.

The County is working with partners to prevent overdoses, increase access to evidence-based treatment, and provide harm reduction services to reduce negative health impacts and other negative consequences for people with substance use disorder.

Ongoing and Future County Efforts to Reduce Fatal Overdose

- Naloxone distribution.**¹⁵ In 2017, ACHD became the Centralized Coordinating Entity for naloxone distribution through the Pennsylvania Commission on Crime and Delinquency’s Naloxone for First Responders program. Since 2017, through this program and other efforts, ACHD has distributed more than 28,500 kits of naloxone.¹⁶ Naloxone distribution is strategically coordinated to ensure that this life-saving medication is getting into the hands of individuals most likely to witness and respond to an opioid overdose. These populations include those at increased risk of overdose — people who are actively using drugs, people recently released from incarceration, and people leaving inpatient treatment or detoxification after a period of abstinence — and populations identified through analysis of geographic areas and demographics as experiencing high rates of overdose. Therefore, in response to the trends represented in **Figures 5 through 9** of this report, much of the outreach for naloxone distribution has prioritized partnerships and events with organizations that serve Black individuals or are based in predominantly Black neighborhoods.
- Partnerships for research.** A grant from the Hillman Foundation enabled ACHD to collaborate with Magee-Womens Research Institute and other partners to conduct a community-focused assessment of opioid overdose perceptions (see “[A rapid-cycle assessment strategy for understanding the Opioid epidemic in local communities](#)”). From 2018 through 2019, 130 qualitative interviews were conducted with community members in disproportionately impacted communities, and 29 community meetings were attended to gain insight on treatment, stigma, prevention, naloxone and communication for collaborative response. Findings provided insight on strategies and targets for funding, and ACHD subsequently released 15 Hillman Foundation mini-grants during 2019–2021, totaling \$125,000 to local community groups and organizations that were uniquely positioned to reduce the number of overdose deaths through outreach and education. See the next bullet point for more details about these grants.
- Local partnerships focused on prevention and disparities in overdose.** At the intersection of issues related to overdose are multiple public health crises — racism, the COVID-19 pandemic, Hepatitis C and HIV — that disproportionately harm communities of color and reduce the opportunity for individuals to attain their full health potential. The history of punitive measures shaped by drug crime policies has also disproportionately impacted communities of color. The County focuses on addressing racial inequality in the region by funding historically disenfranchised communities of color to implement strategies to prevent overdose and help people access evidence-based care in approaches that are responsive to local needs. ACHD has funded 20 groups and organizations over the past few years to reach communities disproportionately impacted by overdose.

15 Naloxone is the generic name for a life-saving medication (i.e., Narcan) that can reverse the effects of an overdose caused by an opioid.

16 To request naloxone or naloxone training for your organization, visit: tinyurl.com/achdtraining

Through the Hillman Foundation grant mentioned above, ACHD released 15 mini-grants. Grant recipients included organizations that support people experiencing homelessness and/or displacement, including Bridge to the Mountains, Operation Safety Net and Team PSBG; social services organizations, including Steel Valley Family Center and Families Turning; organizations that empower and serve communities throughout Allegheny County and are run by Black Women, including Message Carriers of Pennsylvania, Liberation Ukombozi, Royally Fit and Kindred C.U.L.T.U.R.E.; Phi Beta Sigma, a historically African American fraternity; Casa San Jose, an organization that serves the Latinx community; Prevention Point Pittsburgh, the sole syringe service program in Allegheny County and a harm reduction agency; and Ross-Westview EMS, an emergency services agency.

In February 2021, ACHD announced five awardees of Overdose Data to Action subgrants totaling \$400,000–\$800,000 over a two-year period to help prevent overdoses and promote access to care in local communities. These grants provide additional support to community partners to connect people who use drugs or have a substance use disorder to evidence-based harm reduction, recovery, and treatment services. These awardees will be implementing projects in communities that are disproportionately impacted by overdoses. The five awardees are: Allegheny-Singer Research Institute; Focus on Renewal; Holy Family Institute; North Side Christian Health Center; and Reimagine Reentry Program. An overview of the organizations' strategies and approaches can be found [here](#). ACHD will partner with additional organizations as funding becomes available to continue to respond to current trends and address racial disparities in overdose and structural inequities in access to evidence-based care.

- **Federal grant opportunities.** In the last couple of years, ACHD has expanded efforts to prevent overdose and increase access to harm reduction, treatment and recovery supports through the receipt of two federal grants from the U.S. Substance Use and Mental Health Services Administration (SAMHSA) and the Centers for Disease Control and Prevention (CDC). In 2018, ACHD was awarded SAMHSA First Responder – Comprehensive Addiction and Recovery Act grant funds, supporting the overdose education and naloxone distribution program outreach, overdose prevention and response trainings, and case management services in priority communities around the County. A hotspot analysis of fatal overdoses, EMS naloxone administrations and opioid-related ED admissions during 2017–2019 identified communities for partnership.
- **Using data to identify challenges and improve access.** ACHD received [Overdose Data to Action](#) funding from the CDC in 2019 and launched programming with more than 15 partners across the County. The program enhances and utilizes data and analyses for coordinated response that promotes harm reduction services, strengthens the prescription drug monitoring program, improves evidence-based treatment access, enhances linkages to care for individuals who seek it, improves provider and health system support, and improves public awareness around issues related to substance use.
- **Case management for at-risk clients.** Case management allows clients to have one-on-one assistance working on non-treatment needs of the client, including education, housing, etc. The ability of case managers to meet individuals in the community or at their homes allows for a level of comfort that can be an asset when addressing substance use needs. Using case management services in addition to other substance use services gives the consumers more avenues for support, increasing the likelihood of improved health and quality-of-life outcomes.

- **Increasing the availability of Medication for Opioid Use Disorder (MOUD).** MOUD services are an effective tool for individuals suffering from Opioid Use Disorder (OUD) who are choosing to reduce or stop their opioid use. The FDA has approved three medications for the treatment of OUD: methadone and buprenorphine, which activate opioid receptors in the brain, preventing painful opioid withdrawal symptoms, and naltrexone, which blocks the effects of opioids.¹⁷ At the state and County levels, we are working to make MOUD options available to everyone facing OUD and to bridge systems of care to ensure that access is available to all residents.
- **Continuing focus on data-driven services.** The County recently secured a request for proposals (RFP) for drug and alcohol intervention services using evidence-based and/or evidence-informed modalities. To target services toward those who need them most, data were used to identify the communities that have high rates of substance-related needs. Services implemented as part of this RFP can take many forms, including getting clients into treatment or providing intervention groups, outreach and recovery support services.
- **Working with SUD providers to make timely assessments and referrals to treatment.** The Allegheny County Centers of Excellence (COE) provide intake assessment/evaluations to clients, make appropriate level-of-care recommendations, and ensure that consumers have individualized support plans and get into a treatment facility within 14 calendar days from initiation of COE service. COEs also work in concert with various emergency departments (ED) around the County to provide services for clients entering an ED after a potential overdose.
- **Creation of Certified Assessment Centers for rapid evaluation and referral.** DHS is working to increase access to SUD treatment. DHS worked with its provider network to make changes to the way that individuals receive SUD treatment, creating Certified Assessment Centers for Allegheny County. The goal was to make it easier for people who are seeking treatment to obtain a comprehensive substance use assessment, receive referrals to appropriate and desired levels of care, and start treatment without delay. Individuals can access SUD treatment by calling 1-800-662-HELP to be connected to a provider.
- **Development of an engagement center for around-the-clock access to in-person support.** In collaboration with partners, DHS worked to procure a brick-and-mortar facility, which was established at the end of 2020. Pathway to Care and Recovery, located in downtown Pittsburgh (326 Third Avenue, 412-325-7550), is designed to provide access to substance use screenings, level-of-care assessments, peer recovery supports, recovery services referrals, evaluations, treatment transition support, access to MOUD providers and physician consultation, harm reduction education, and recovery resources to individuals seeking services, as well as to family members and loved ones.

17 <https://www.cdc.gov/drugoverdose/pubs/featured-topics/evidence-based-strategies.html>

ANALYSIS

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APPENDIX A

**APPENDIX: “WE WILL ISSUE” CASES FROM THE ALLEGHENY COUNTY
OFFICE OF THE MEDICAL EXAMINER**

Figure 15 shows the breakdown of deaths by the case disposition (Morgue or We Will Issue). In 2018, 12% of all accidental overdose cases were We Will Issue cases, and, in 2019, 11% were We Will Issue cases. So far in 2020, 16% of all overdose deaths have been We Will Issue cases.

FIGURE 15: ACOME Case Disposition of Accidental Overdose Deaths by Year

