SUMMIT COUNTY PUBLIC HEALTH

Population Health Vital Statistics Brief:
VOLUME 3: DRUG OVERDOSES, Oct. 1 - Oct. 30, 2018

Drug Overdose Visits to Hospital Emergency Rooms

From January 1, 2018 to October 31, 2018, emergency rooms serving Summit County residents have treated an estimated 1,166 drug overdoses (OD).* Overdoses began a long, fluctuating decline in the first half of September, when overdoses were averaging about 5 per day. The decline bottomed out at about 2.5 overdoses per day, then began growing again through the end of the month. Currently, Summit County is averaging about 3.0 overdoses per day as of October 31.

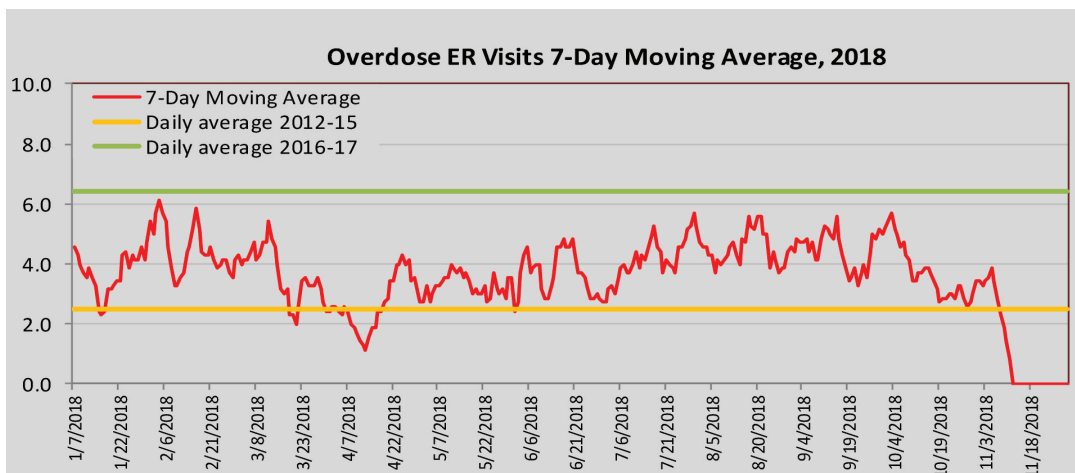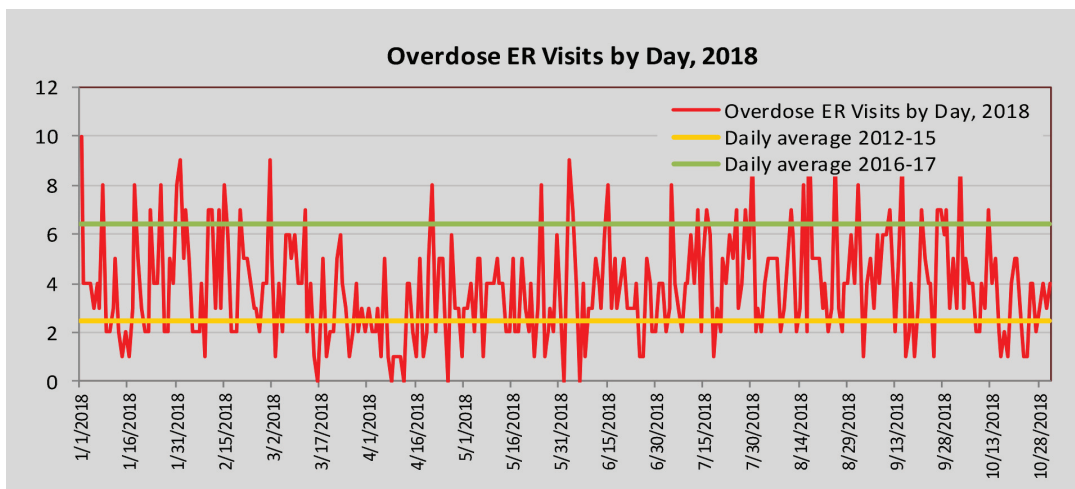Total overdoses declined from the mid-130s from July through September to just 109 in October.

Figure 1a and 1b: Visits to the ER Due To Drug Overdoses By Day (top figure) and By Seven-Day Moving Average (bottom figure) -- Note: Because day-to-day total ER visits tend to fluctuate, a seven-day simple moving average chart is included to more clearly examine trends in the data. *Source: EpiCenter*

* *Drug overdose data is retrieved from the state's EpiCenter surveillance tool. "Overdose" cases include all emergency visits by a Summit County resident to any medical provider in which drugs were identified as the cause of traumatic injury. Overdose cases were further refined by selecting only those cases where the case notes included the terms "OD" or "overdose." Traumatic injuries due to drugs caused by suicide attempts, allergic reactions to normal medications, or accidental overdoses of everyday drugs (such as Tylenol or Ibuprofin) were removed where identified. Zip codes refer to the zip code of residence of the patient visiting the ER. Data cited in this report represents the full-day totals from the day before the report's release.*

It is important to note that these are estimated figures rather than a full and final count because initial diagnoses and/or details of a particular case may change from a patient's initial examination to his or her final outcomes, and because the limited case notes field in EpiCenter may not include all details necessary to firmly classify a case as an overdose.

It is also important to note that case notes available through EpiCenter rarely identify the specific drug or drugs involved in an overdose. Therefore the figures here can be associated with any drug, not just heroin and/or fentanyl.

Day of Week "Heat Map" - YTD 2018

	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
Sunday	7%	4%	3%	4%	1%	2%	1%	2%	2%	1%	2%	4%	2%	5%	5%	7%	8%	5%	8%	4%	7%	4%	8%	5%
Monday	6%	3%	4%	3%	1%	0%	2%	1%	2%	2%	6%	7%	5%	4%	6%	6%	6%	9%	6%	3%	1%	6%	8%	5%
Tuesday	7%	5%	2%	2%	1%	1%	1%	1%	2%	1%	2%	3%	5%	3%	5%	4%	5%	8%	8%	5%	8%	8%	9%	5%
Wednesday	5%	2%	1%	4%	2%	2%	1%	2%	3%	2%	4%	4%	5%	4%	5%	5%	8%	4%	7%	2%	6%	10%	5%	5%
Thursday	3%	5%	2%	1%	3%	3%	1%	4%	3%	4%	5%	7%	7%	4%	5%	4%	5%	3%	5%	4%	5%	8%	7%	2%
Friday	3%	2%	4%	3%	1%	1%	1%	3%	2%	1%	3%	5%	7%	6%	6%	9%	5%	7%	5%	4%	10%	5%	6%	6%
Saturday	5%	2%	4%	5%	1%	3%	1%	2%	2%	5%	3%	3%	3%	3%	5%	7%	4%	7%	5%	5%	7%	8%	3%	6%

Figure 2: ER Visits by Time of Day and Day of Week -- The chart above presents total Summit County ER visits for each hour of each day. The chart is read left to right, and presents the percentage of each day's ER visits due to drug overdoses that occur in each hour of the day for all days from January 1, 2018 to October 31, 2018. The cells are also color coded to show a "heat map" effect of busier and slower times throughout each of the seven days of the week. *Source: EpiCenter and SCPH calculations.*

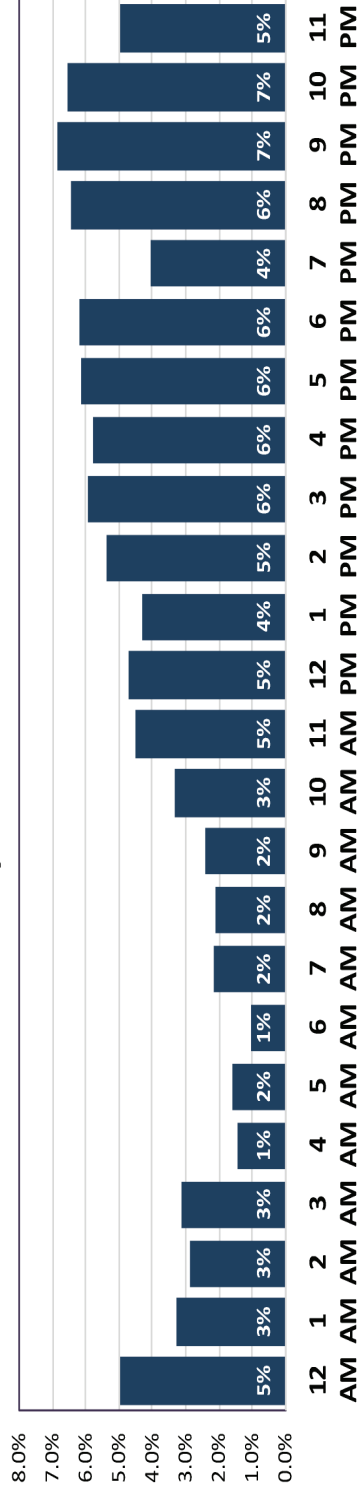### Percent of ER Visits By Hour - OD / Overdose-Related - YTD 2018

Percent of ER Visits By Day - OD / Overdose-Related - YTD 2018

Sunday 14.1%, Monday 13.4%, Tuesday 12.7%, Wednesday 13.9%, Thursday 13.9%, Friday 16.7%, Saturday 15.3%

Demographic and Geographic Profile of Overdoses, YTD 2018

Age - People in the 25-34 and 35-49 age categories (31% and 28%, respectively) still have the highest percentage of overdoses. Another 18% were in the 18-24 category, while people age 50-64 accounted for 16%. People in the under 18 and over 65 categories accounted for a combined 8%.

Gender - Males made up 58% of overdoses so far in 2018; females 42%.

Geography* - Overdoses have happened throughout the county , with zip codes 44203 and 44312 having the highest number of overdoses at 123 and 106, respectively (20% of all cases combined). Zip Codes 44306 and 44310 had 83 and 79 overdoses, respectively. Combined, Akron currently makes up 58% of all overdoses in 2018, while suburban communities make up the remaining 42%. Eight zip codes experienced increases in overdoses from September to October.

Number and Percent of Overdoses by Zip Code, January 1 - December 31, 2018

Row Labels	Count	Percent	Monthly trend
44203	123	11%	
44312	106	9%	
44306	83	7%	
44310	79	7%	
44221	70	6%	
44314	69	6%	
44305	60	5%	
44301	49	4%	
44313	39	3%	
44311	39	3%	
44319	37	3%	
44320	34	3%	
44685	34	3%	
44224	31	3%	
44278	29	2%	
44307	27	2%	
44067	26	2%	
44302	26	2%	
44223	25	2%	
44333	21	2%	
44056	20	2%	
44304	20	2%	
44303	20	2%	
44309	19	2%	
44321	17	1%	
44087	14	1%	
44216	12	1%	
44308	10	1%	
44236	10	1%	
44286	9	1%	
44262	4	0%	
44250	4	0%	
44222	2	0%	
44264	1	0%	
44315	1	0%	
Grand Total	**1,170**	**100%**	

Emergency Room Visits Due to Drug Overdose, Summit County by Home Zip Code of Patient, All Summit County Provider Types, As Of 10/31/2018

Location	#	%
Akron	680	58.2%
Suburb	488	41.8%
Total	**1,168**	**100.0%**

Hospitals in Summit County
Summit County
City of Akron

Zip Code of Patient
84 - 123
50 - 83
22 - 49
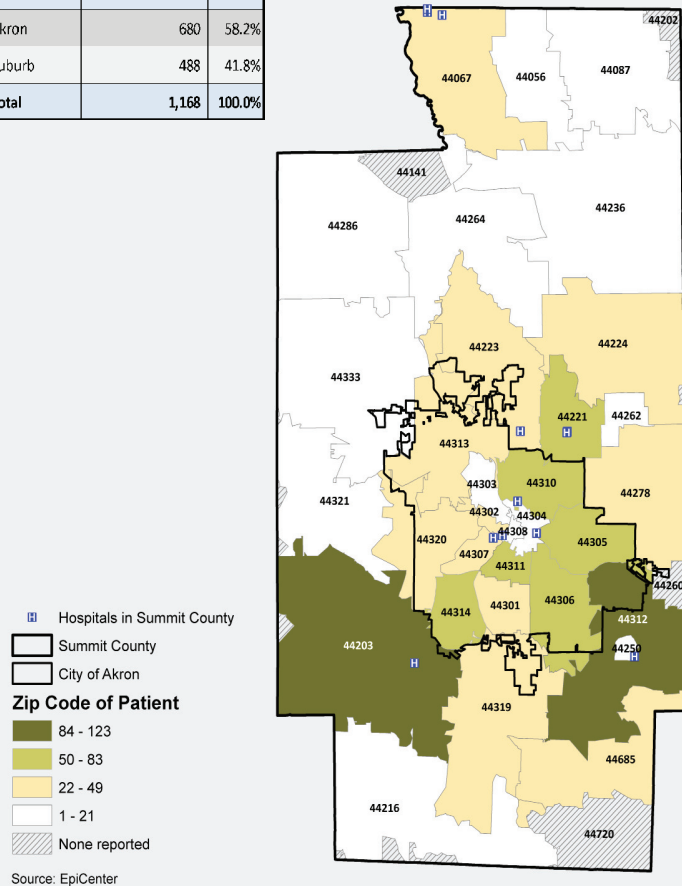1 - 21
None reported

Source: EpiCenter

Figure 5a: Number and Percent of ER Visits Due to Drug Overdoses, YTD 2018
Source: EpiCenter and SCPH. Note: Figures for zip codes with fewer than 10 overdoses are not shown to preserve confidentiality.

* - Overdoses for the 44250 zip code area (Lakemore) may have been reported by EpiCenter as being in 44312.

Race - In April 2018, EpiCenter added overdose data by race. Just over 89% of overdoses since July 2016 have been white, while nearly 7% have been black. The remaining 2% includes people of Asian, other, or unknown races. Whites make up 89% of overdoses but only 79% of the population (making them over-represented), while blacks make up 7% of overdoses but 14% of the population (making them under-represented).
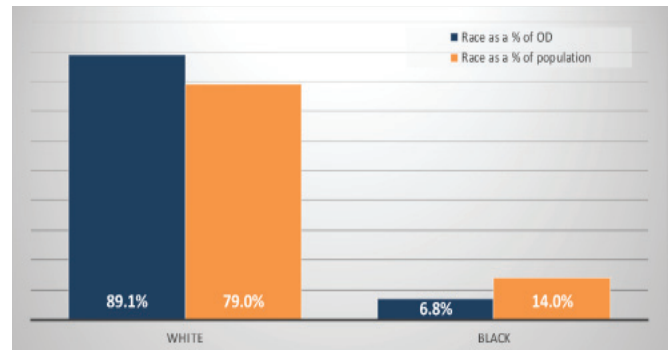

Figure 5b: Overdoses by Race and Population by Race, Whites and Blacks only, *Source: EpiCenter, American Community Survey, 2016*

Overdoses Per 1,000 by Zip Code (through October 30) - Figure 5a shows the raw number of overdoses by patient zip code. Figure 6a shows the number of overdoses per 1,000 population by zip code. In 2018, the heaviest concentration of overdoses per 1,000 population come from zip codes in the central and southeast portions of the county.

Change In Overdoses by Zip Code - Figure 6b shows the change in overdoses by patient zip code on a year-over-year basis, comparing totals for Year-To-Date 2017 with totals for Year-To-Date 2018. Only four zip codes have shown year-over-year increases as of October 2018, while most have shown decreases. It should be noted that gains have been relatively modest (increases of 8 or less relative to 2017). Declines in overdoses have continued throughout the year, with zip codes 44203, 44314, 44305, and 44312, and 44306 leading the way. These zip codes have seen a net decrease of 70 or more overdoses relative to the first ten months of 2017. Another 14 zip codes saw a net decrease of between 10 and 50 overdoses.
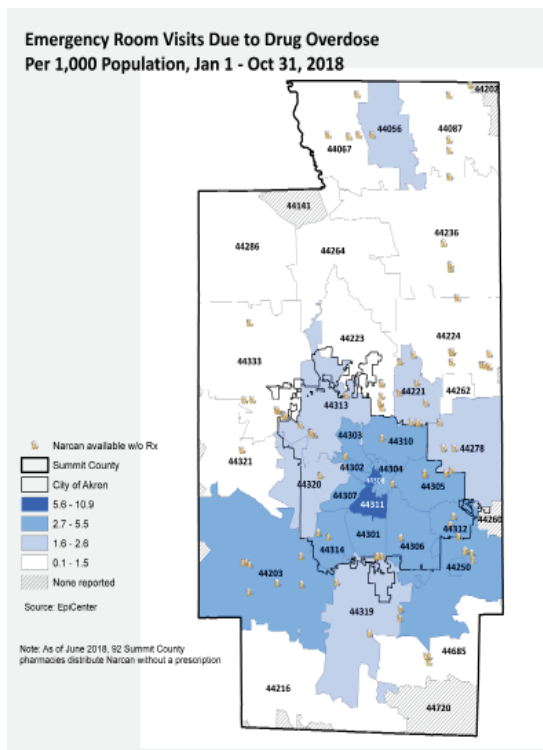

Figure 6a: Drug Overdoses Per 1,000 Population, YTD 2018
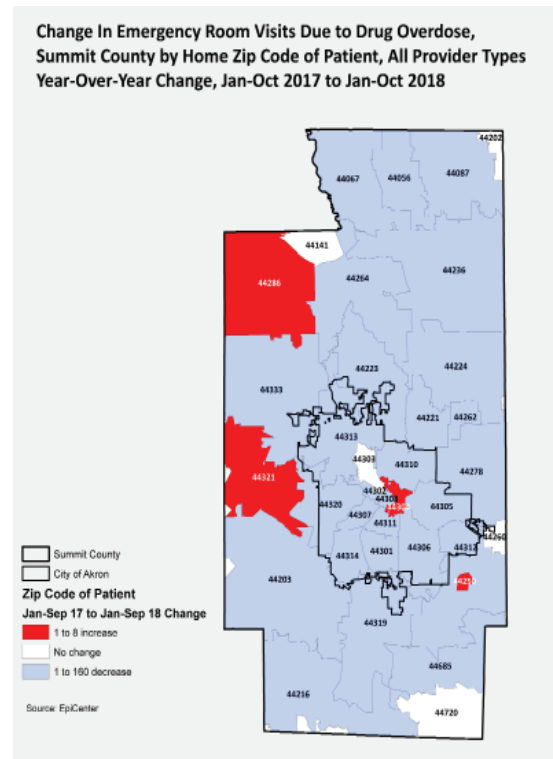*Source: EpiCenter, U.S. Census Bureau, Ohio Pharmacy Board (Narcan)*

Figure 6b: Change in Number of Overdoses, Jan-Oct 2017 to Jan-Oct 2018 *Source: EpiCenter*

Overdose Death Hot Spots

Figures 7 and 8 at right show how drug overdose fatalities have spread over time in Summit County. So-called "hot spots" on these maps show areas of the county where the number of drug overdose fatalities are more heavily clustered than other parts of the county. In the same way, cold spots are those areas where fatalities are less clustered than other parts of the county. Each area of the maps are shaded to show how much confidence there is that each area is either a hot spot (shades of red), a cold spot (shades of blue), or neither (yellow).

Figure 7, above right, shows the calculated hot spots for drug overdose fatalities between 2007 and 2012. Hot spots with 90% and 95% confidence levels can be found in Barberton in the west and running from the Akron Central and Southeast clusters through parts of the Springfield / Lakemore cluster. Cold spots were also found in both the Akron Northwest and Cuyahoga Falls clusters.

Figure 8, below right, shows the calculated hot spots for drug overdose fatalities between 2013 and 2017. As the map shows, the hot spots now run from northern Barberton and eastern Norton in the west up through the Akron Southwest, South, Southeast, Central, and North clusters and on into western portions of the Munroe / Tallmadge cluster. These hot spots are also more intense and more tightly clustered than in the previous five year period. Unlike 2007-2012, most hot spots in the current five-year period are at the 99% confidence level, with only a handful of locations showing lower levels of confidence. Cold spots can also be found in several locations including significant portions of the Twinsburg, Hudson, Copley / Bath / Fairlawn, and Akron Northwest clusters.

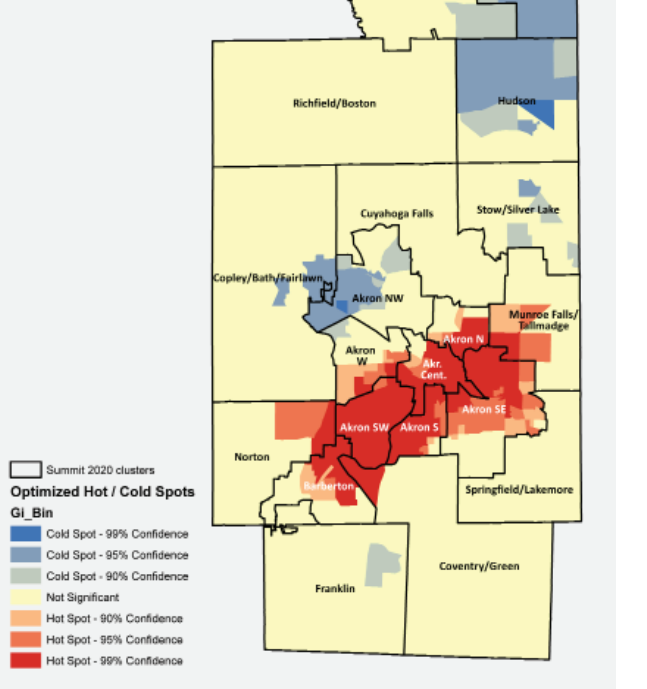Figure 7: Drug Death Hotspot Map, 2007-2012

Figure 8: Drug Death Hotspot Map, 2013-2017

Trends In Substance Abuse, Akron-Canton Region

The table below presents data from "Surveillance of Drug Abuse Trends in the State of Ohio, June 2017 - January 2018" published by the *Ohio Substance Abuse Monitoring Network (OSAM).* The data in this report highlights emerging trends in the previous six month period and provides some insight on how those trends impact today's overdose picture. The report relies primarily on input by focus groups made up of drug users, community professionals, service providers, and law enforcement.

One of the findings of the report was that the availability of heroin was growing while quality was declining. According to the report, "heroin" in this region has morphed into pure fentanyl often cut with other substances (including heroin itself) to reduce its potency. By early 2017, users reported that dealers were deliberately reducing potency, both to increase profit and to reduce the odds of their users dying of an overdose (which helps the dealers avoid murder / manslaughter charges).

A second finding is that users were beginning to switch to meth to reduce the risk of dying from a heroin overdose and, for users taking Vivatrol, to replace the high lost when Vivatrol shuts off the brain's opiate receptors. All parties reported rapidly growing availability of meth throughout the region. Additional details by specific type of drug can be found in the table and notes below.

Ohio Substance Abuse Monitoring Network (OSAM) Drug Assessment Summary, June 2017 - January 2018, Akron-Canton Region (Summit, Portage, Stark, Tuscarawas, and Carroll Counties)

Akron-Canton Region	Current Availability[2]			Quality[3]	Change in Availability		
	Users	Law Enforcement	Treatment Providers	Users	Users	Law Enforcement	Treatment Providers
Powdered cocaine	10	7	5-10	5	↓	No change	No change
Crack cocaine	10	9	6-7	7	No change	No consensus	↑
Heroin[1]	10	10	8	0[4]	↓	No consensus	No change
Fentanyl	10	10	9	10	↑	↑	↑
Prescription opioids	5	9	6	--[5]	↓	No change	↓
Suboxone	10	9	10	--[5]	No consensus	No change	No consensus
Sedative-Hypnotics	10	9	10	--[5]	No consensus	No change	No consensus
Marijuana	10	10	10	--[6]	↑	↑	↑
Methamphetamine	10	10	10	10	↑	↑	↑
Prescription stimulants	10	8	3	--[5]	↓	↑	No change
Ecstasy / Molly	5	4-5	7-8	10 (Molly) / 8 (Ecstasy)	↓	No comment	No comment
Synthetic marijuana	10	5 (Summit) / 10 (Tusc.)	7-8	NA	NA	NA	NA

[1] Users report that just heroin is rarely seen in the region; "heroin" is composed of mostly or entirely fentanyl or one of its analogs. In fact, heroin is often used to reduce the potency of fentanyl.

[2] *Current availability* is rated by users on a 0 to 10 scale, where 0 means "impossible to get" and 10 means "easy to get"

[3] *Quality* is rated by users on a 0 to 10 scale, where 0 means "poor quality" and 10 means "high quality"

[4] Participants (drug users and former users) report that quality was going down even though what's being sold is mostly fentanyl. According to those in OSAM focus groups, dealers were deliberately reducing quality both to make more money and to reduce the chances of being charged with murder if users die. Some dealers are reported to be mixing meth into heroin to reduce the odds of an overdose. Evidence suggests that users are also switching from heroin to meth to reduce the chances of dying of an overdose.

[5] The quality of prescription medications remain the same as when they were dispensed in the case of dealers simply selling legitimate products illegally. However, participants in Tuscarawas County reported that some dealers were crushing Xanax pills and re-pressing them with fentanyl, which could significantly increase the potency. Ultimately, users of illegally-obtained prescription medications have no idea what substances they might contain.

[6] Quality varies by type of product (i.e., marijuana vs. an extract or concentrate) However, like sedatives, participants in Tuscarawas County reported that some dealers were mixing marijuana with fentanyl, which could significantly increase the potency.

Long-Term Trends in Overdose Deaths

Deaths due to accidental poisoning and exposure to various types of drugs held fairly steady for most of the decade of the 2000s, fluctuating between nine and 12 deaths per 100,000 from 2002 to 2009. However, deaths due to drug overdoses rose sharply in five of the next seven years. In fact, overdose death rates were nearly five times higher in 2016 than 2010, rising from 12 per 100,000 in 2010 to just over 56 per 100,000 by 2016. Deaths due to poisoning by narcotics and hallucinogens led the way, making up nearly 54% of all drug poisoning deaths since 2000 (761 total deaths); a much larger number and percentage than in any other single category. In addition, narcotic and hallucinogen poisoni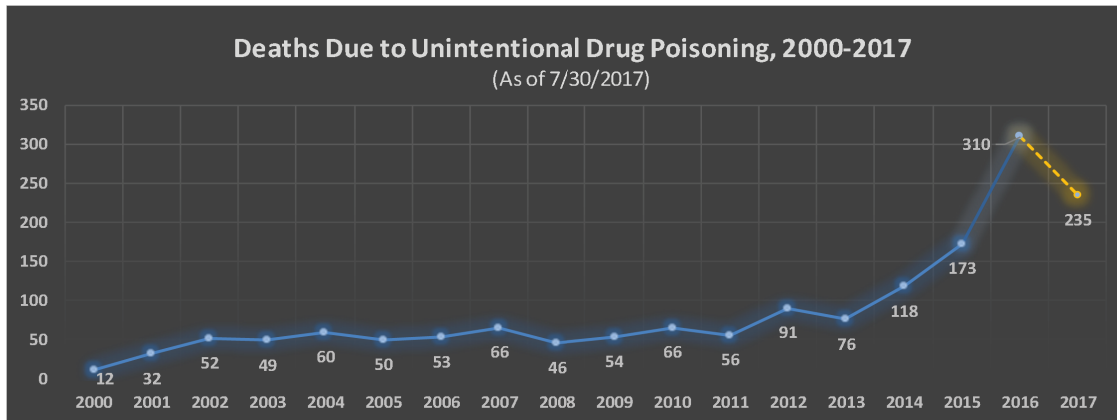ngs have been growing as a percentage of all drug poisoning deaths, rising from 46% of all drug poisoning deaths between 2000 and 2009 to 69% of all drug poisoning deaths by 2016.

Figure 11: Drug Poisoning Deaths, 2000-2017 (primary underlying cause of death X40 - X44), *Source: Ohio Department of Health Death Records, SCPH*

Taken together, 1,003 people died of drug overdoses from 2012-2017; 1.7 times the 596 that died in the 11 years from 2000-2011.

Drug poisoning deaths rose both in raw numbers and per 100,000 population. Figure 9 below shows that drug poisoning deaths rose from 17.2 per 100,000 between 2012 and 2014, to 43.4 per 100,000 between 2015 and 2016, and again to 44.8 per 100,000 in 2017; more than two-and-a-half times higher.

Drug-related death rates by race have evolved over time. Both black and white rates experienced a significant rise between the 2012-2014 and 2015-2016 periods. However, with final death totals for 2017 now available, it can be seen that the gap between black and white rates has been closing. From 2012-2014, the black drug-related death rate was just 58% as high as the white rate. By 2015-2016, the black rate was nearly 66% of the white rate. By 2017, the black rate was nearly 91% of the white rate. Between 2016 and 2017, the white
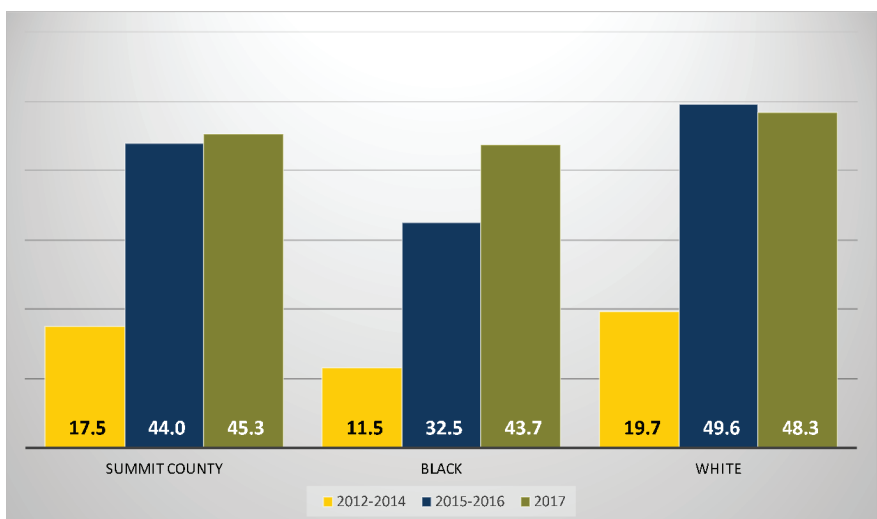

Figure 12: Age-Adjusted Drug Poisoning Deaths Per 1,000 Population, Total And By Race, 2000-2017 (primary underlying cause of death X40 - X44), *Source: Ohio Department of Health Death Records, SCPH.*

death rate began to level off and decline slightly, while the black rate continued to increase (though more slowly than the year before).

What these figures make clear is that the overdose epidemic is a community-wide crisis. The epidemic is striking all parts of the community; city and suburban, white and black, male and female, young and old.

Figures 13 to 16 present some basic demographic information about drug poisoning deaths in 2016 vs. 2017 for which detailed death certificate data is currently available (2016, 298 deaths; 2017, 141 deaths).

- In both years, the biggest single age group is 25-34, which accounted for 27% - 29% of total drug poisoning deaths, closely followed by those in the 35-44 age group (21% - 27%).

- Male deaths were higher to date in 2017 than 2016 (68% and 77%, respectively).

- The vast majority of drug poisoning deaths were to those with an educational attainment level of some college or less in both 2016 and 2017.

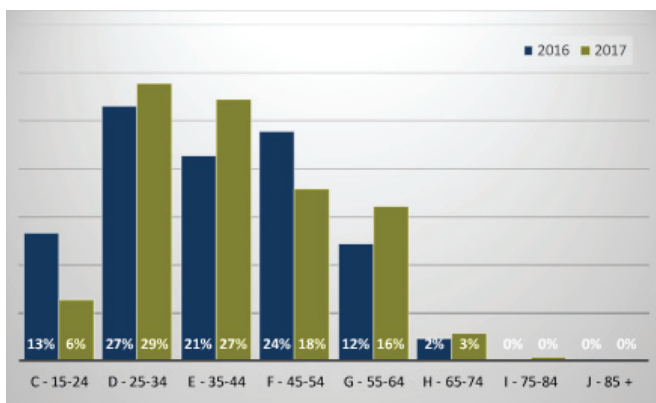- In both years, the vast majority of deaths were white.

Figure 13: Age At Death of Persons Dying of Accidental Drug Poisoning, 2016-2017, *Source: Ohio Department of Health Death Records, SCPH*
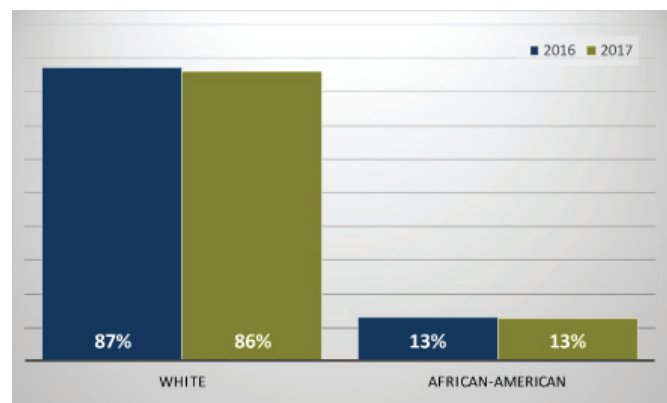

Figure 14: Race of Persons Dying of Accidental Drug Poisoning, 2016-2017, *Source: Ohio Department of Health Death Records, SCPH*
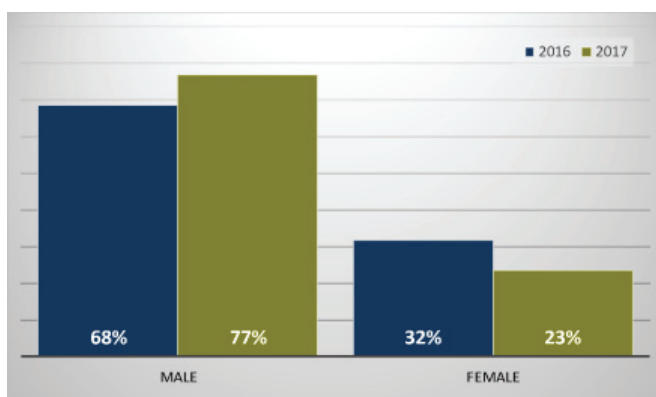

Figure 15: Sex of Persons Dying of Accidental Drug Poisoning, 2016-2017, *Source: Ohio Department of Health Death Records, SCPH*
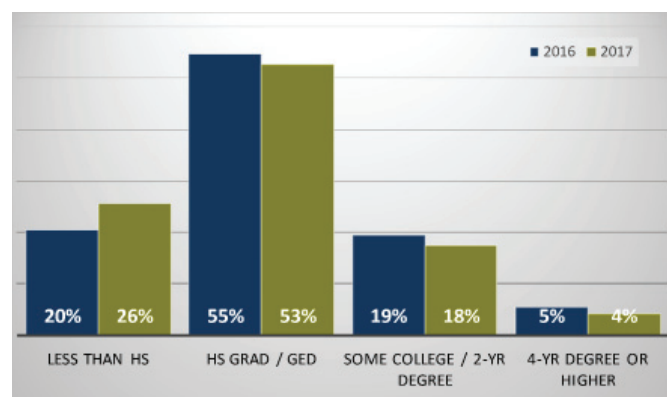

Figure 16: Educational Attainment of Persons Dying of Accidental Drug Poisoning, 2016-2017, *Source: Ohio Department of Health Death Records, SCPH*