Population Health Vital Statistics Brief:

Drug Overdoses, April 1 - April 30, 2019

The *Population Health Vital Statistics Data Brief* series was created to provide regular updates to the 2016 Community Health Assessment and to provide the community with additional important information about population health. For more information on the Community Health Assessment and to access other reports in the *Vital Statistics Data Brief* series, please visit scph.org/assessments-reports

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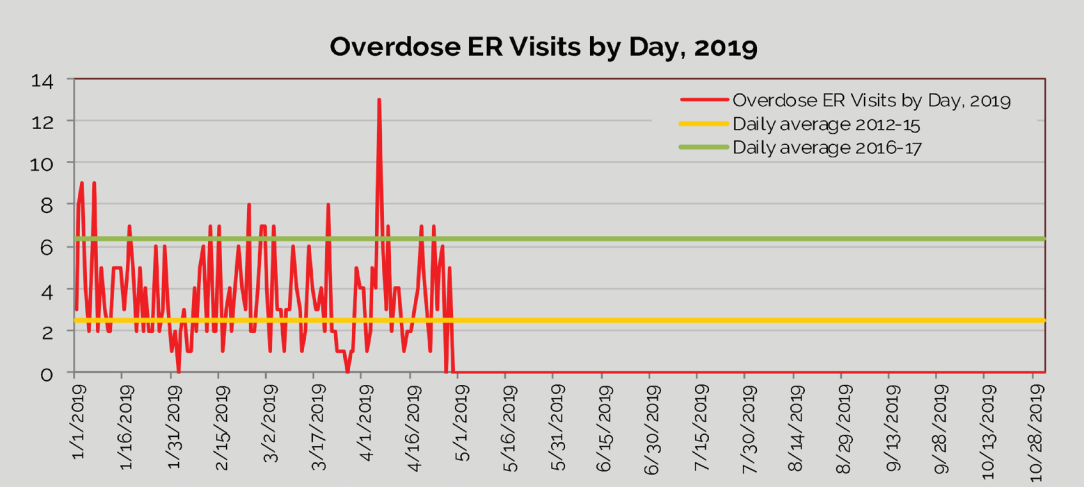
Drug Overdose Visits to Hospital Emergency Rooms

From January 1, 2019 to April 30, 2019, emergency rooms serving Summit County residents have treated an estimated 449 drug overdoses (OD); an average of 3.7 overdoses per day.* Overdoses have been fairly volitle over the past month; spiking briefly in early April, then bottoming out by the middle of the month and then returning to the yearly average of about 4 per day.

Multiple OD visits (more than one visit to an ER in the same hospital system) -- So far in 2019, 24 of the 449 people visiting an ER for an overdose have made more than one visit (5.3% of the total). Four of these cases have three visits each since January 1st, while one person had five.



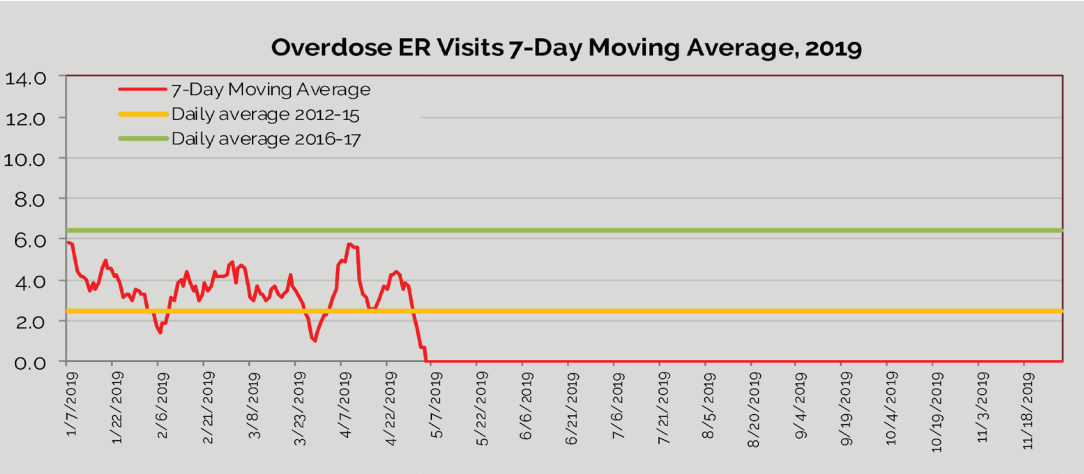


Figure 1a and 1b: Visits to the ER Due To Drug Overdoses By Day (top figure) and By Seven-Day Moving Average (bottom figure) -- Note: Because day-to-day total ER visits tend to fluctuate, a seven-day simple moving average chart is included to more clearly examine trends in the data. *Source: EpiCenter*

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	6%	4%	0%	1%	3%	1%	0%	0%	3%	7%	3%	4%	1%	1%	3%	3%	9%	7%	11%	7%	3%	6%	7%	9%
Monday	5%	2%	2%	2%	3%	2%	2%	2%	0%	0%	0%	10%	5%	3%	6%	5%	10%	8%	8%	5%	5%	8%	6%	3%
Tuesday	6%	5%	2%	9%	2%	5%	3%	2%	2%	0%	0%	8%	6%	5%	2%	6%	8%	8%	5%	2%	8%	3%	5%	2%
Wednesday	3%	0%	5%	2%	0%	0%	0%	0%	0%	2%	3%	3%	3%	10%	2%	9%	7%	7%	10%	9%	7%	10%	3%	3%
Thursday	2%	2%	2%	7%	3%	2%	5%	0%	0%	0%	2%	3%	2%	7%	5%	3%	9%	12%	5%	12%	5%	7%	2%	3%
Friday	4%	4%	2%	4%	0%	0%	0%	4%	6%	0%	2%	0%	6%	2%	8%	2%	6%	2%	2%	12%	2%	8%	14%	10%
Saturday	3%	3%	3%	6%	3%	1%	0%	0%	1%	1%	9%	0%	1%	1%	6%	1%	12%	7%	7%	3%	6%	13%	7%	4%
Total	4%	3%	2%	4%	2%	2%	1%	1%	2%	2%	3%	4%	3%	4%	4%	4%	9%	7%	7%	7%	5%	8%	6%	5%

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, 2019 to December 31, 2019. 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.*

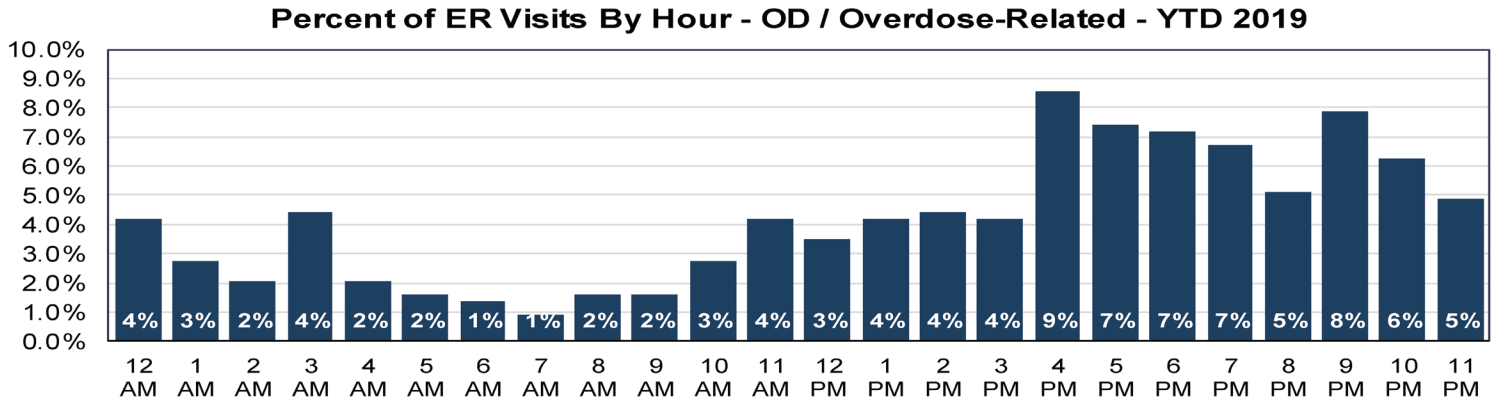


Figure 3: Summary Chart of ER Visits by Hour of the Day, Jan 1, 2019 to Dec. 31, 2019 *Source: EpiCenter / SCPH*

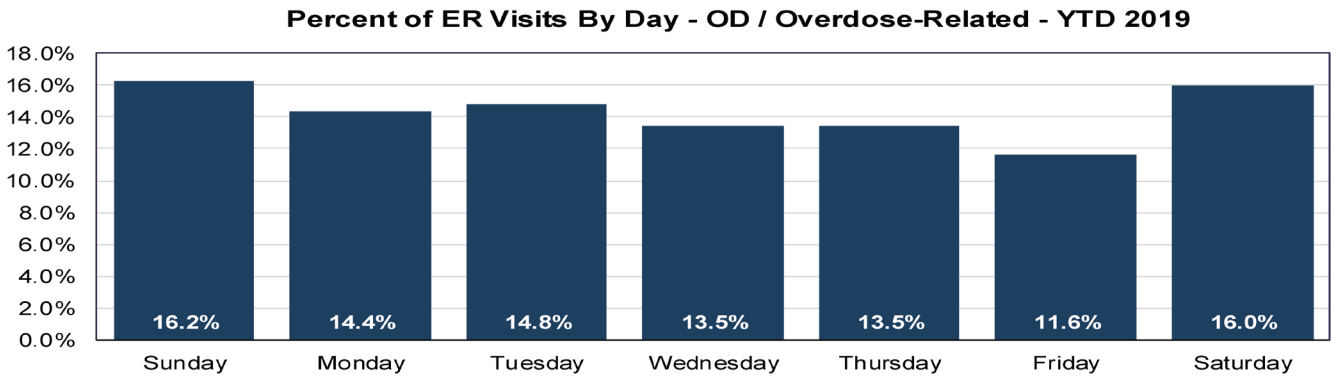


Figure 4: Summary Chart of ER Visits by Day of the Week, Jan. 1, 2019 to Dec. 31, 2019, *Source: EpiCenter / SCPH*

Demographic and Geographic Profile of Overdoses, YTD 2018

Age - People in the 25-34 and 35-49 age categories (37% and 32%, respectively) have the highest percentage of overdoses. Another 12% were in the 18-24 category, while people age 50-64 accounted for 14%. People in the under 18 and over 65 categories accounted for a combined 6%.

Gender - Males made up 63% of overdoses so far in 2018; females 37%.

Geography* - Overdoses have happened throughout the county, with zip codes 44203 and 44310 having the highest number of overdoses at 48 and 42, respectively (21% of all cases combined). Zip Codes 44305 and 44320 had 39 and 30, respectively. Combined, Akron currently makes up 61% of all overdoses in 2018, while suburban communities make up the remaining 39%.

Number and Percent of Overdoses by Zip Code, January 1 - December 31, 2019

Row Labels	Count	Percent	Monthly trend
44203	48	11%	
44310	42	10%	
44305	39	9%	
44312	30	7%	
44306	30	7%	
44314	28	7%	
44221	27	6%	
44320	23	5%	
44224	18	4%	
44301	16	4%	
44311	15	3%	
44313	13	3%	
44223	12	3%	
44307	12	3%	
44685	11	3%	
44319	9	2%	
44309	7	2%	
44236	7	2%	
44067	7	2%	
44278	7	2%	
44087	5	1%	
44056	4	1%	
44321	3	1%	
44333	3	1%	
44216	3	1%	
44302	2	0%	
44286	2	0%	
44303	2	0%	
44308	2	0%	
44264	1	0%	
44262	1	0%	
44250	1	100%	
Grand Total	**430**	**100%**	

Emergency Room Visits Due to Drug Overdose, Summit County by Home Zip Code of Patient, All Summit County Provider Types, As Of 4/30/2019

Location	#	%
Akron	261	60.7%
Suburb	169	39.3%
Total	**430**	**100.0%**

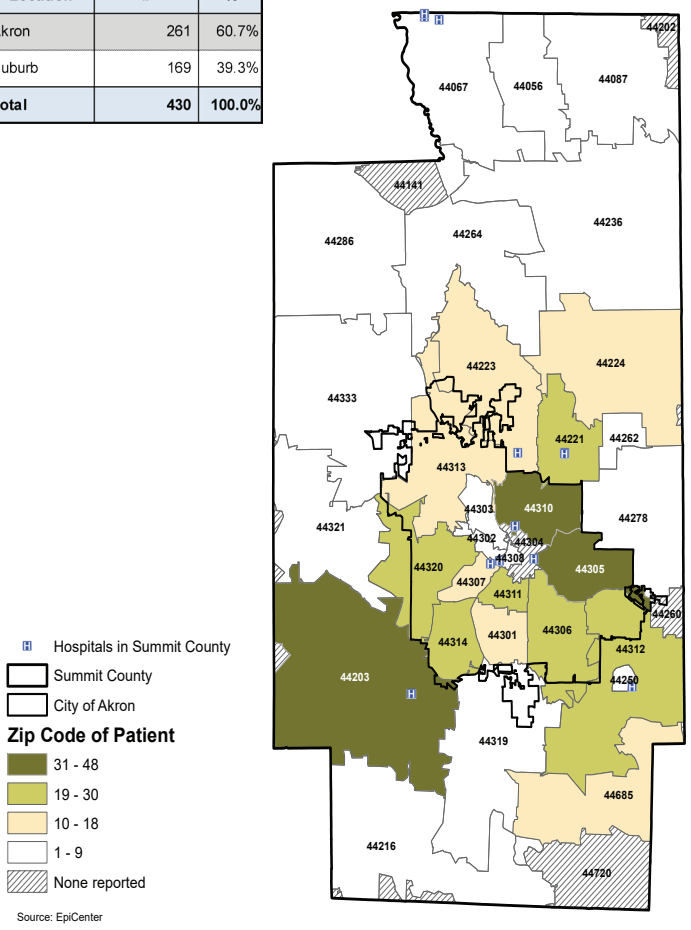


Figure 5a: Number and Percent of ER Visits Due to Drug Overdoses, YTD 2018

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) are sometimes reported by EpiCenter as being in 44312.*

Race - Over 90% of overdoses in 2019 have been white, while nearly 8% have been black. The remaining 2% includes people of Asian, other, or unknown races. Whites make up 90% of overdoses but only 79% of the population (making them over-represented), while blacks make up 8% of overdoses but 15% of the population (making them under-represented).

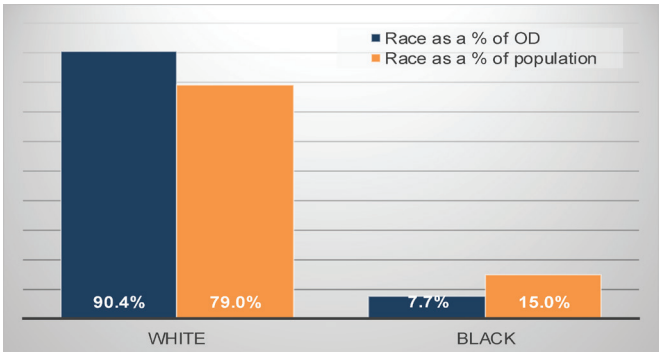


Figure 5b: Overdoses by Race and Population by Race, Whites and Blacks only, *Source: EpiCenter, American Community Survey, 2016*

Overdoses Per 1,000 by Zip Code - Figure 6a shows the number of overdoses per 1,000 population by zip code. So far in 2019, the heaviest concentration of overdoses per 1,000 population are in zip codes in the central 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 2018 with totals for Year-To-Date 2019. Thirteen zip codes have shown year-over-year increases as of April 2019, while most have shown decreases.

Emergency Room Visits Due to Drug Overdose Per 1,000 Population, Jan 1 - Apr 30, 2019

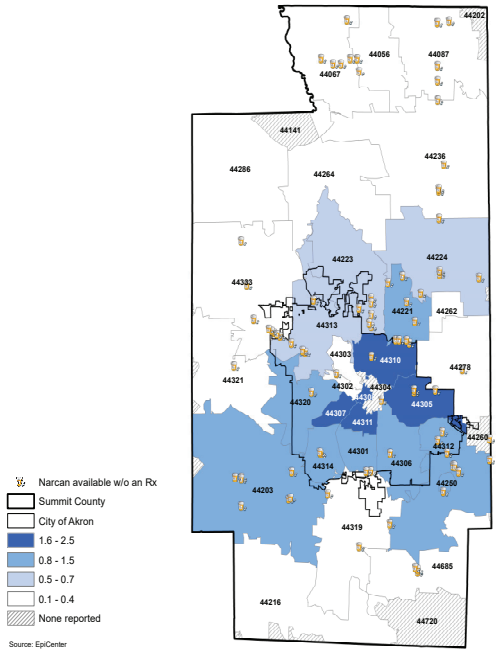


Figure 6a: Drug Overdoses Per 1,000 Population, YTD 2019
Source: EpiCenter, U.S. Census Bureau, Ohio Pharmacy Board (Narcan)

Change In Emergency Room Visits Due to Drug Overdose, Summit County by Home Zip Code of Patient, All Provider Types, Year-Over-Year Change, Jan-Dec 2018 to Jan-Dec 2019

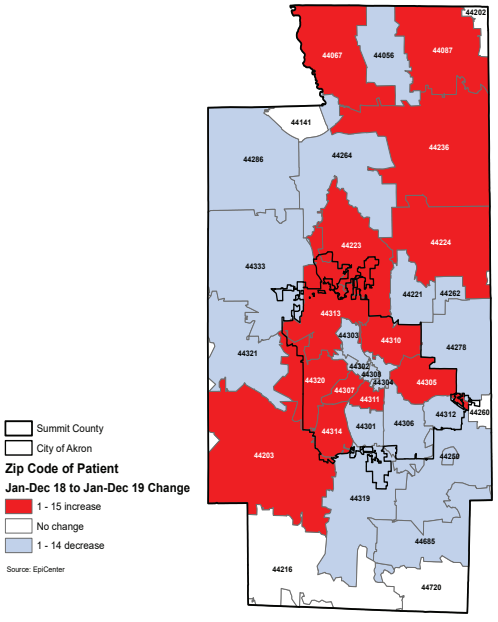


Figure 6b: Change in Number of Overdoses, Jan-Apr 2018 to Jan-Apr 2019 *Source: EpiCenter*

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 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, and Akron Northwest clusters.

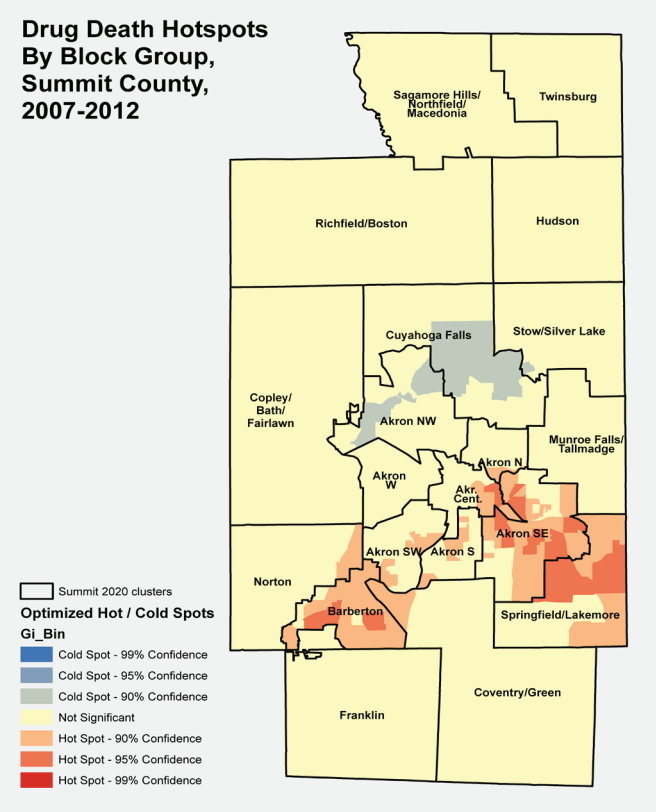


Figure 7: Drug Death Hotspot Map, 2007-2012

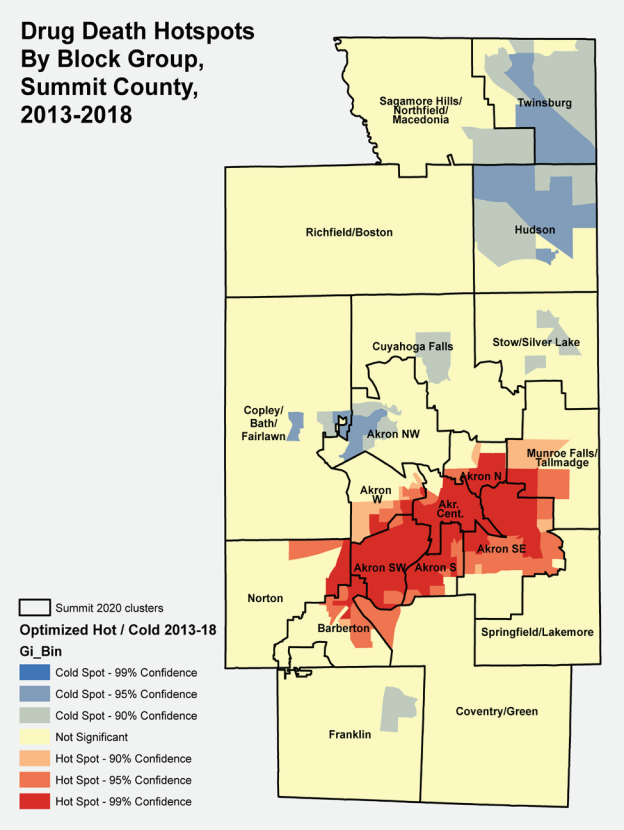


Figure 8: Drug Death Hotspot Map, 2013-2018

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.

Trends In Overdose Deaths

Total overdose deaths rose sharply from 2013 to 2016, then began a rapid decline, and are now back to 2014 levels (see Figure 11a). Opiates such as heroin, fentanyl, and carfentanil drove the sharp increases over the past 3 years. However, the mix of drugs driving overdoses today appears to be changing.

Figures 11b and 11c show selected drugs that have been included on the death certificates of drug poisoning victims over the past several years. From 2014-2018, 785 people who died of drug poisoning had an opiate mentioned on their death certificate. More than 650 had either fentanyl or a fentanyl analog mentioned, while 239 mentioned carfentanil from 2016 to 2018.

Figure 11c shows trends in the drugs contributing to the overdose epidemic. As a percentage of total overdoses, all but one drug peaked or leveled off in 2017 or before; prescription opiates and fentanyl peaked in 2016; carfentanil and cocaine peaked in 2017. Heroin peaked in 2013 (included on 48% of death certificates) then dropped to only 5% by 2018.

The one drug that has shown a sustained increase as a percentage of the total since 2014 is methamphetamine. In 2014, methamphetamine only appeared on one death certificate. By 2017, methamphetamine appeared on 54 death certificates. As a percentage of all drug poisoning deaths, methamphetamine was mentioned on 25% of all death certificates in 2018; a higher rate than either heroin or carfentanil.

Drug-Related Deaths by Race

Drug-related death rates by race have evolved over time. Both black and white rates experienced a significant rise between the 2012-2014 and 2015-2017 periods. In 2018, the rate for whites declined significantly, but only declined slightly for blacks.

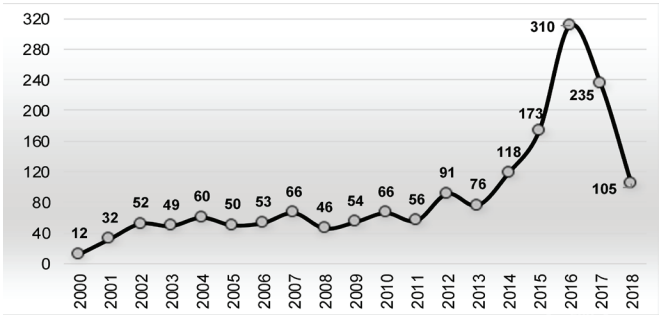


Figure 11a: **Drug Overdoses 2000-2018,** *Source: ODH Death Records, SCPH*

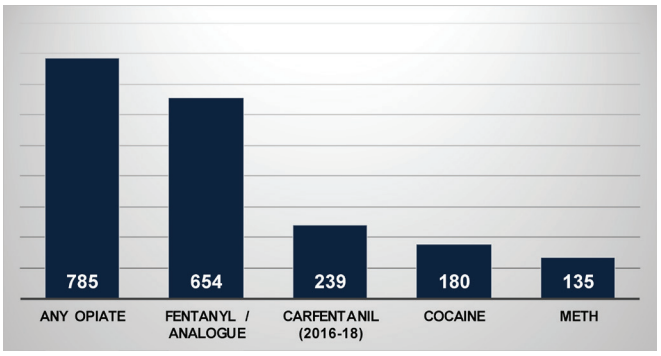


Figure 11b: **Overdoses Involving Selected Drugs, 2014-2018**
Source: ODH Death Records, SCPH

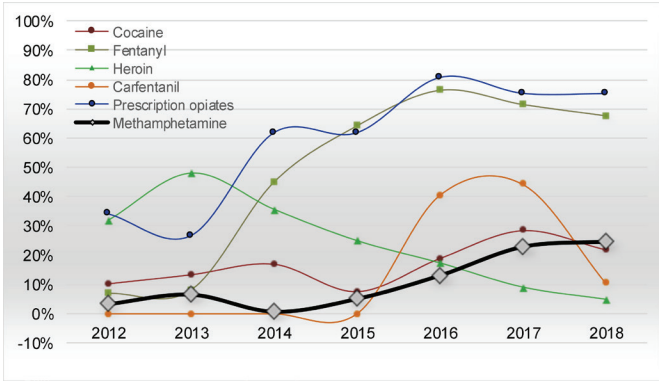


Figure 11c: **Specific Drugs Mentioned On Death Certificates As A Percent of All Poisoning Deaths, 2012-2018** *Source: ODH Death Records, SCPH* (Note: Since many overdose fatalities involve multiple drugs, totals will not add up to 100%).

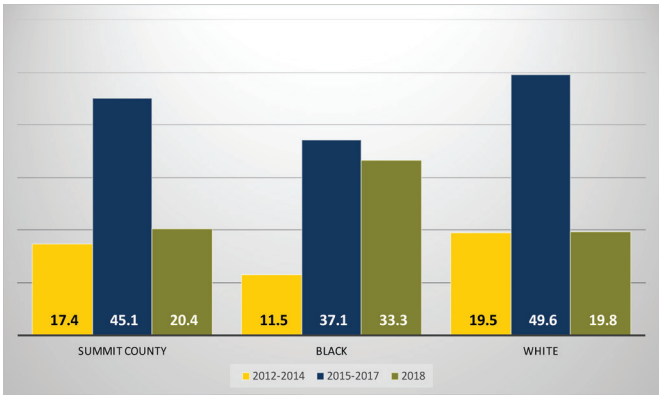


Figure 12: Age-Adjusted Drug Poisoning Deaths Per 1,000 Population, Total And By Race, 2012-2018 (primary underlying cause of death X40 - X44), *Source: ODH Death Records, SCPH.*

From 2012-2014, the black drug-related death rate was just 58% as high as the white rate. By 2015-2017, the black rate was nearly 75% of the white rate. By 2018, the black rate was nearly 168% of the white rate.

What these figures make clear is that the overdose epidemic remains 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, 235 deaths; 2018; 105 deaths).

- In 2016 and 2017, the biggest age group was 25-34, which accounted for 26% and 29% of deaths, respectively. In 2018, the 35-44 age group was the highest at 30%.
- Male deaths were higher than female deaths in all three years, and by a wide margin.
- The vast majority of drug poisoning deaths were to those with an educational attainment level of high school graduate or GED in all three years.
- Though the vast majority of deaths were white in all years, African-American deaths as a percent of the total rose sharply between 2017 and 2018 (13% to 23%).

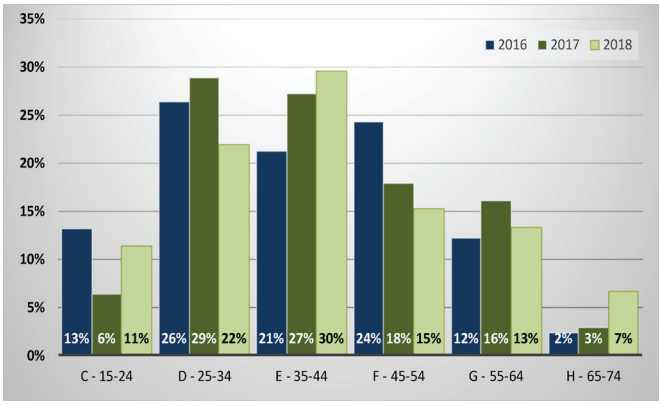


Figure 13: Age At Death of Persons Dying of Accidental Drug Poisoning, 2016-2018, *Source: Ohio Department of Health Death Records, SCPH*

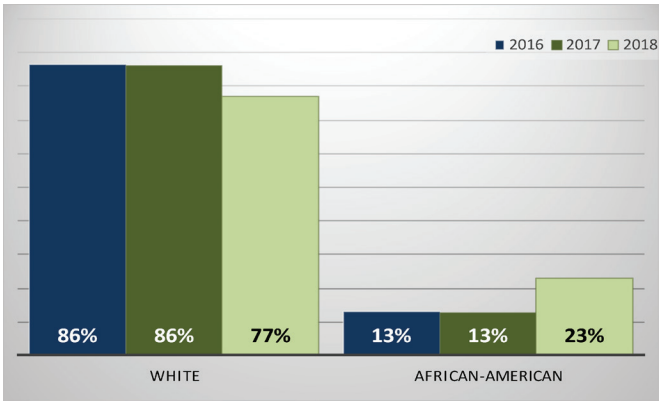


Figure 14: Race of Persons Dying of Accidental Drug Poisoning, 2016-2018, *Source: Ohio Department of Health Death Records, SCPH*

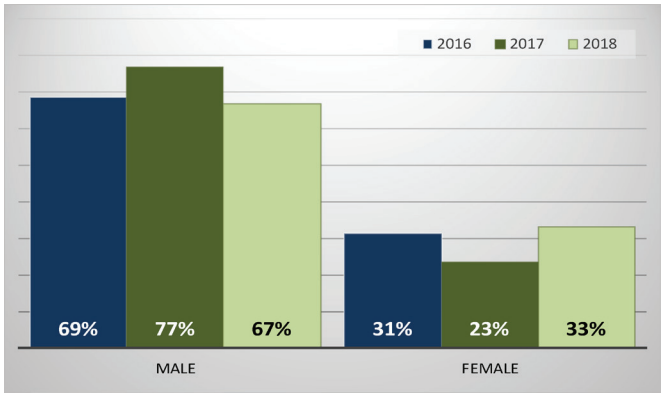


Figure 15: Sex of Persons Dying of Accidental Drug Poisoning, 2016-2018, *Source: Ohio Department of Health Death Records, SCPH*

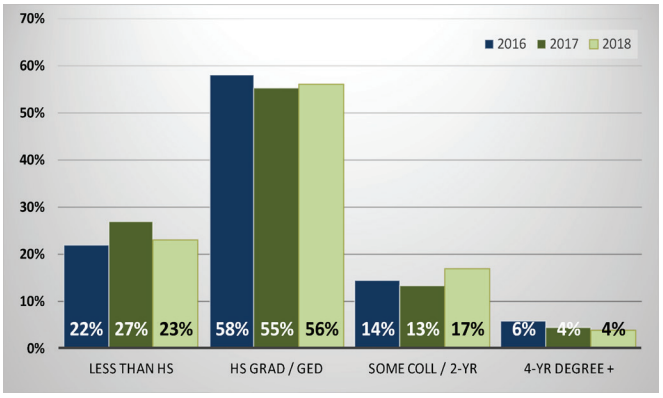


Figure 16: Educational Attainment of Persons Dying of Accidental Drug Poisoning, 2016-2018, *Source: Ohio Department of Health Death Records, SCPH*