



# HAMILTON COUNTY OVERDOSE REPORT JANUARY 2018

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Hamilton County Public Health  
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**Figure 1. Monthly counts of emergency department visits<sup>1</sup>, 911 dispatches<sup>2</sup>, and deaths due to overdose<sup>3</sup>; Hamilton County, January 2017 - January 2018<sup>4</sup>**

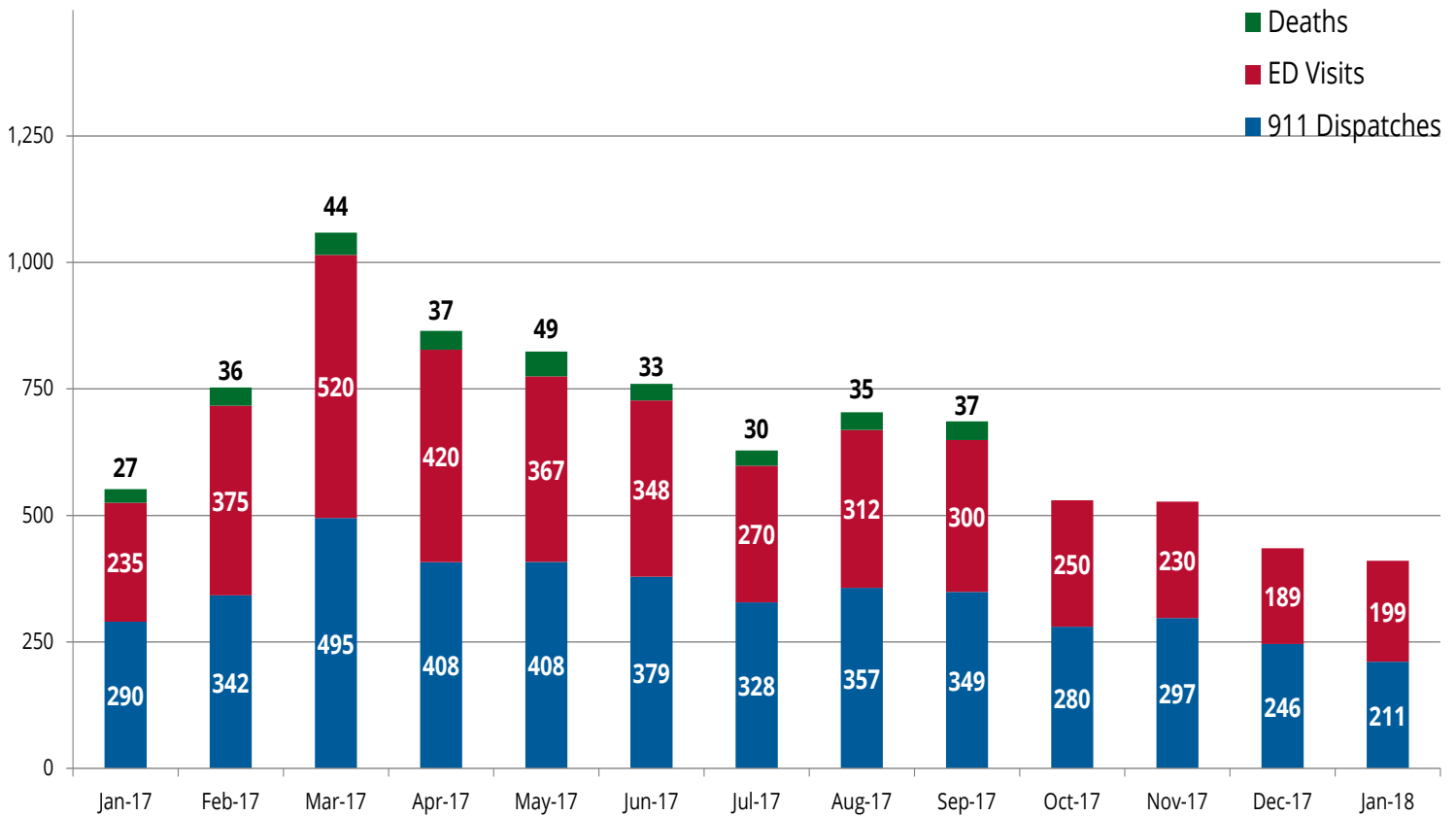


Figure 1 presents an overview of the major data sources for unintentional overdose that are explored in detail throughout this report. Estimates for emergency department (ED) visits and 911 dispatches include data through January 30 and are pro-rated to the length of the full month. Historical analysis and descriptive statistics for the daily counts of overdoses can be found on pages three and four for ED visits, page five for 911 dispatches, and page seven for Hamilton County resident deaths. These measures are defined as follows:

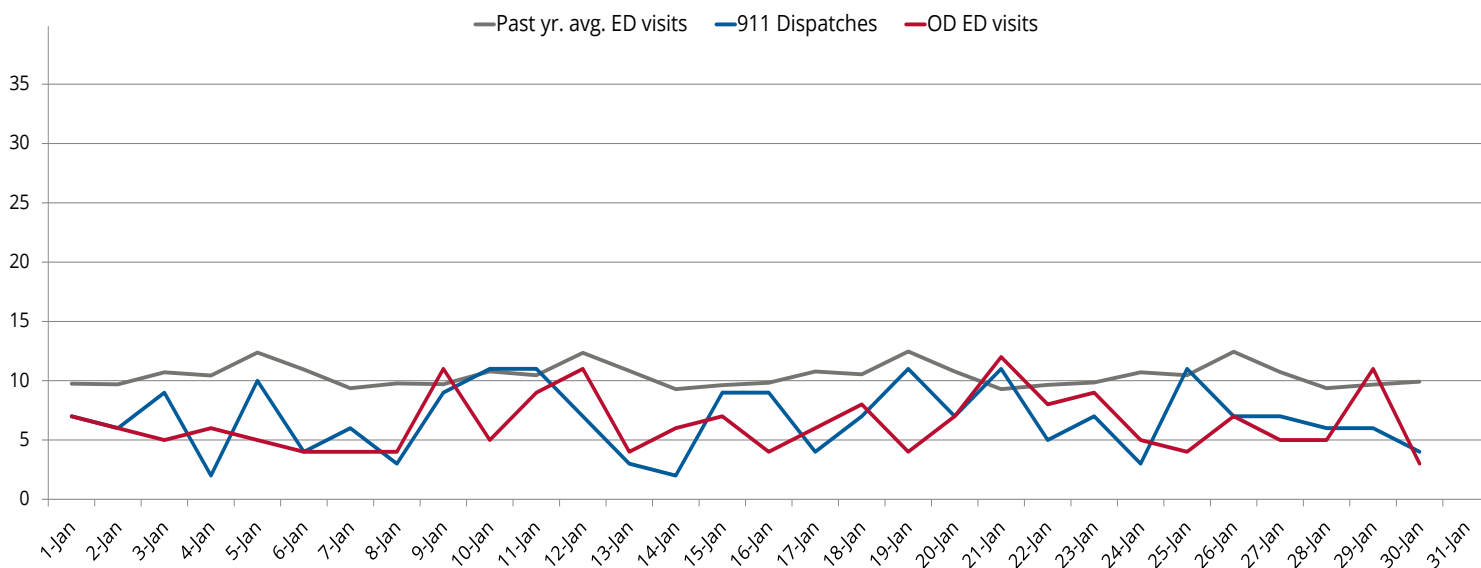
- **ED visits:** The number of overdose hospital visits, regardless of patient's residence, reported by all hospital EDs located within Hamilton County.
- **911 dispatches:** The number of 911 dispatches responding to overdose that occurred within the jurisdiction of City of Cincinnati, Hamilton County, and Norwood 911 dispatch centers.
- **Deaths:** The number of deaths to residents of Hamilton County due to unintentional overdose of drugs of abuse.

Death data is reported as it becomes available from the Ohio Department of Health (ODH) Bureau of Vital Statistics. The 2017 death estimates provided here are preliminary, and as more 2017 overdose deaths are identified, it is possible that monthly estimates will change, especially for the most recent months. Currently, death data for 2017 includes deaths partially into October (pictured through September).



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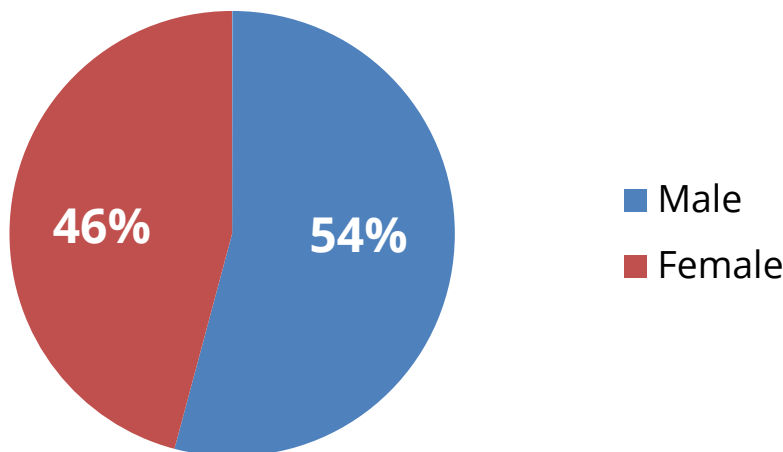
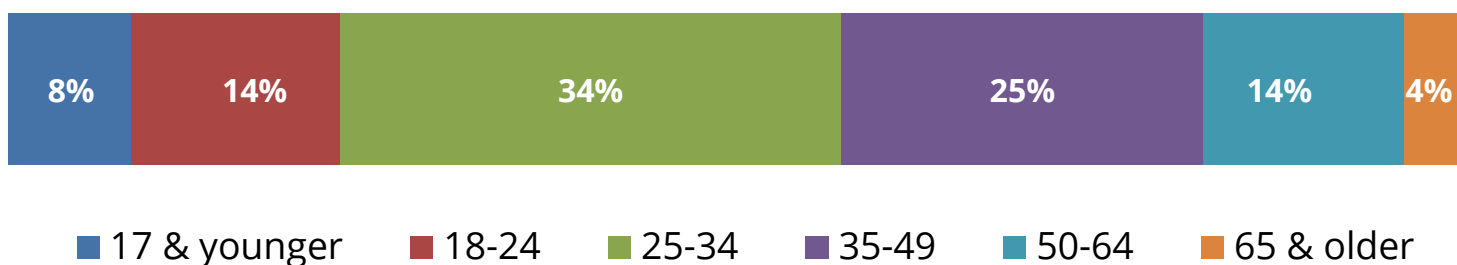
**Figure 2. Daily counts of emergency department visits and 911 dispatches due to overdose; Hamilton County, January 2018<sup>4</sup>**



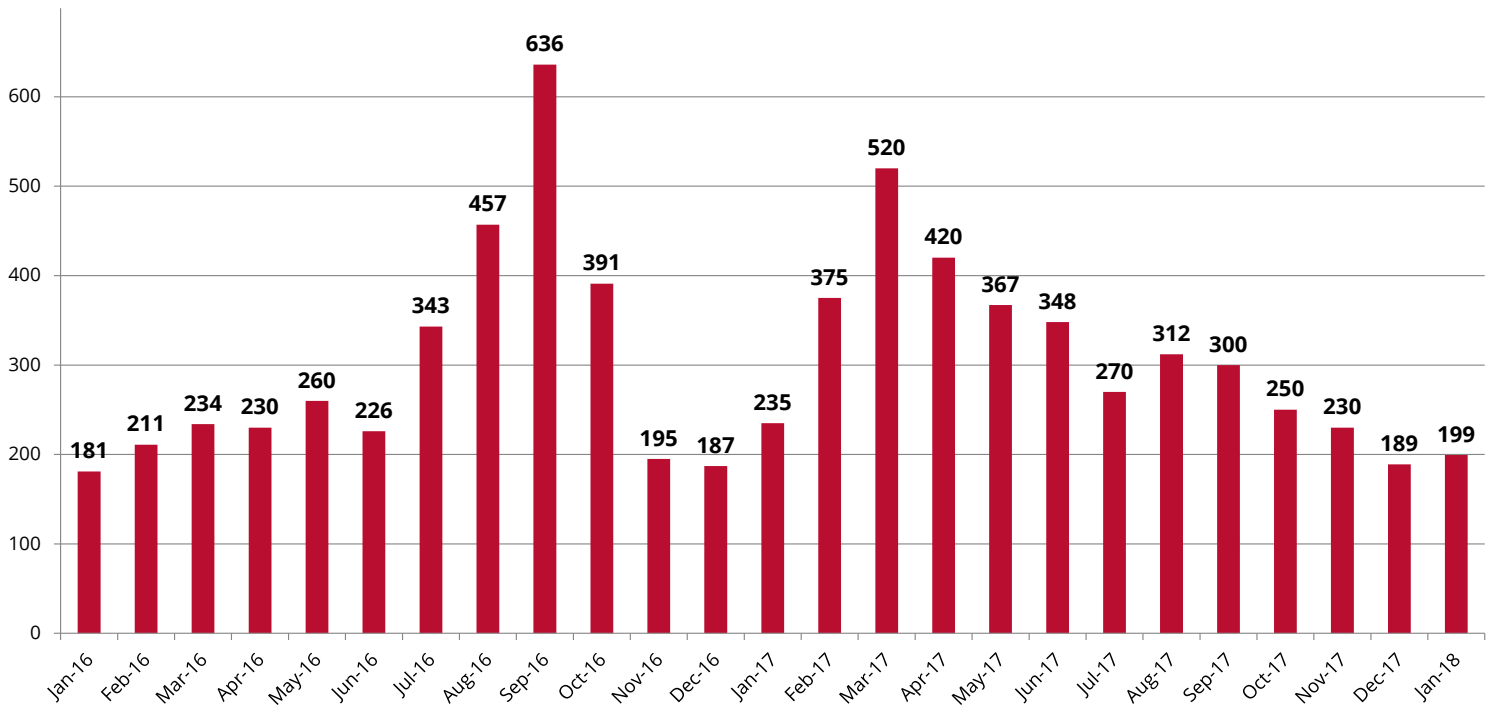
Hamilton County overdose activity during January, 2018 as characterized by ED visits and 911 dispatches due to overdose is summarized in Figure 2. ED visits due to overdose spiked on two days, with eleven visits on January 9 and twelve visits on January 21. These spikes were not corroborated by other data sources (911 dispatches and deaths preliminarily attributed to overdose did not exceed statistical thresholds during the month); therefore no public health overdose alerts were issued during January, 2018. Overdose activity has generally been very low during this month compared to previous months.

The age and sex breakdown of ED visit patients during the reporting month is presented in Figure 3 below. About 59% of individuals fell between the ages of 25 and 49, and slightly more men than women were seen at EDs for overdose. Over the past year there has been a slight shift towards a higher share of females visiting EDs due to overdose. For 2017, the percent of ED visits that were female for quarters 1-4 rose consistently; 37.2% for Q1, 37.6% for Q2, 38.1% for Q3, and 39.6% for Q4. That trend continued this month and will be monitored closely going forward.

**Figure 3. Age and sex distribution of overdose-related emergency department patients; Hamilton County, January 2018**



**Figure 4. Monthly counts of emergency department visits due to overdose; Hamilton County, January 2016 - January 2018<sup>4</sup>**



**Table 1. Descriptive per day statistics of emergency department visits**

ED Visits	Daily Average	Daily Median	Single Day Minimum	Single Day Maximum	T-test for two sample means (comparing to January 2018)
January 2018	6.4	6.0	2	11	-
Past month (Dec 2017)	6.1	6.0	2	13	p>0.05
Past year (Jan 2017 - Dec 2017)	10.5	10.0	1	36	p<0.01

Monthly counts of ED visits due to unintentional overdose of drugs of abuse over the past two years are presented in Figure 4. These counts incorporate the reporting of all hospital EDs located within Hamilton County. January's estimate includes data through January 30 and is pro-rated to the length of the full month. During January, 2018, there were an average of 6.4 ED visits due to overdose each day (Table 1); this is much lower than the median of 10 ED visits per day observed during 2017. The average for the reporting month was statistically significantly lower than the average observed during the preceding year. ED visits due to overdose were under 200 both last month and in the present month.

Table 2 presents the breakdown of home residence among overdose patients seen at Hamilton County EDs with a known residence location; most (74%) January patients resided in Hamilton County.

**Table 2. Home residence of patients to Hamilton County emergency departments; January, 2018**

Home Residence	N (%)
Hamilton County, OH	139 (74%)
Butler County, OH	4 (2%)
Clermont County, OH	13 (7%)
Northern Kentucky*	12 (6%)
Other	21 (13%)
Total	189

\*Boone, Campbell, Grant, and Kenton Counties, KY

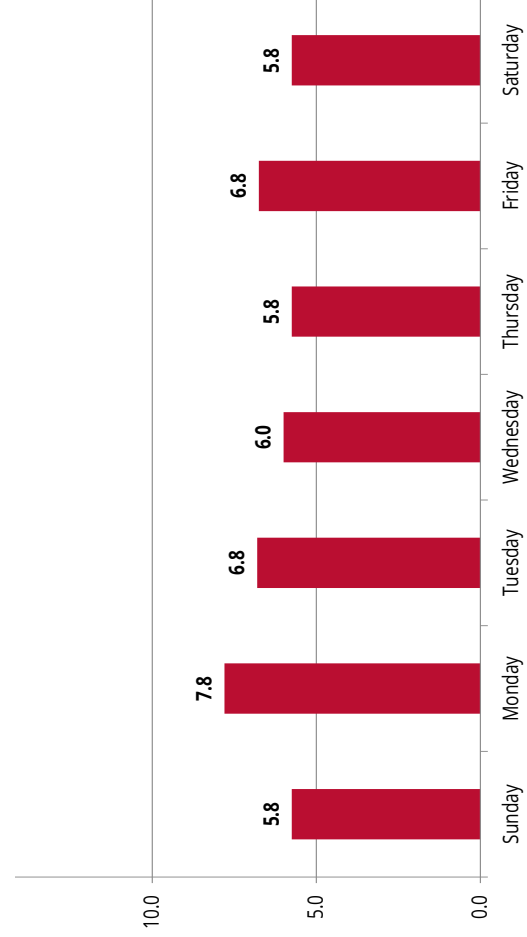
Analysis of the time of day and day-of-week for ED visits is provided below (Figure 5). These figures will be updated monthly to reflect year-to-date statistics. Through the first month of 2018, the majority of overdoses occurred in the evening, with 54% of overdoses occurring from 4 p.m. up to midnight (Figure 5). 7-8 p.m. are the most common hours during which overdose patients are seen at Hamilton County EDs. Average number of overdoses by day of week are presented in Figure 6. In 2017, Sunday-Tuesday had fewer daily overdose ED visits and Thursday-Saturday had greater counts.

**Figure 5. Time of day of emergency department visits due to overdose\*;  
Hamilton County, 2018 YTD**

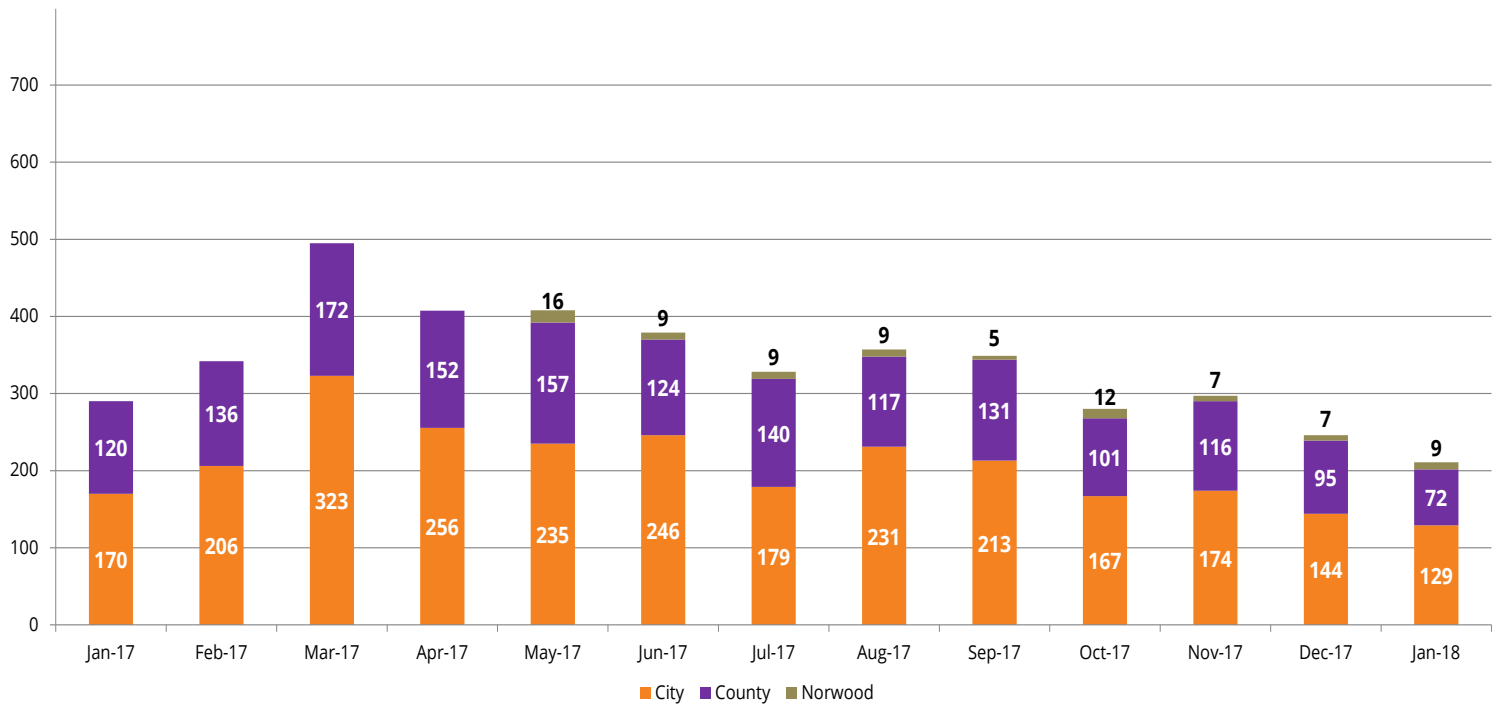
	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total	
Sunday	0%	0%	0%	4%	4%	4%	0%	0%	0%	9%	0%	9%	9%	4%	4%	0%	4%	4%	13%	0%	9%	4%	13%	4%	4%	100%
Monday	5%	3%	0%	5%	3%	5%	0%	0%	0%	0%	8%	0%	8%	0%	0%	5%	10%	5%	8%	8%	8%	10%	3%	8%	8%	100%
Tuesday	6%	3%	0%	0%	9%	0%	0%	0%	0%	0%	3%	3%	6%	6%	12%	3%	6%	3%	3%	6%	6%	12%	6%	9%	9%	100%
Wednesday	4%	8%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	4%	4%	8%	4%	4%	0%	8%	17%	13%	0%	13%	4%	4%	100%
Thursday	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	4%	4%	9%	4%	4%	0%	9%	4%	13%	13%	0%	13%	4%	9%	9%	100%
Friday	7%	4%	0%	0%	4%	7%	4%	4%	4%	4%	0%	0%	0%	7%	4%	4%	0%	7%	7%	7%	11%	7%	4%	4%	4%	100%
Saturday	9%	0%	4%	4%	4%	4%	0%	0%	0%	0%	0%	4%	4%	9%	4%	4%	0%	0%	0%	9%	13%	4%	17%	0%	0%	100%
<b>Total</b>	<b>5%</b>	<b>3%</b>	<b>1%</b>	<b>3%</b>	<b>4%</b>	<b>4%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>2%</b>	<b>3%</b>	<b>3%</b>	<b>6%</b>	<b>5%</b>	<b>5%</b>	<b>3%</b>	<b>5%</b>	<b>4%</b>	<b>7%</b>	<b>8%</b>	<b>8%</b>	<b>8%</b>	<b>17%</b>	<b>6%</b>	<b>100%</b>	

\* Row percentages display the percent of cases within that day of the week; the total row on the bottom shows the overall distribution of time of day, regardless of day of week.

**Figure 6. Average number of overdose emergency department visits by day of the week; Hamilton County, 2018 YTD**



**Figure 7. Monthly counts of 911 dispatches due to unintentional overdose of drugs of abuse; Hamilton County, January 2017 - January 2018<sup>4</sup>**



**Table 3. Descriptive per day statistics of 911 dispatches from Hamilton County and City of Cincinnati 911 dispatch centers**

Hamilton County	Daily Average	Daily Median	Single Day Minimum	Single Day Maximum	T-test for two sample means (comparing to January 2018)
January 2018	2.3	2.0	0	6	-
Past month (Dec 2017)	3.1	3.0	0	8	p>0.05
Past year (Jan 2017-Dec 2017)	4.3	4.0	0	12	p<0.01

City of Cincinnati	Daily Average	Daily Median	Single Day Minimum	Single Day Maximum	T-test for two sample means (comparing to January 2018)
January 2018	4.2	4.0	0	8	-
Past month (Dec 2017)	4.6	4.0	1	12	p>0.05
Past year (Jan 2017-Dec 2017)	7.0	6.0	0	25	p<0.01

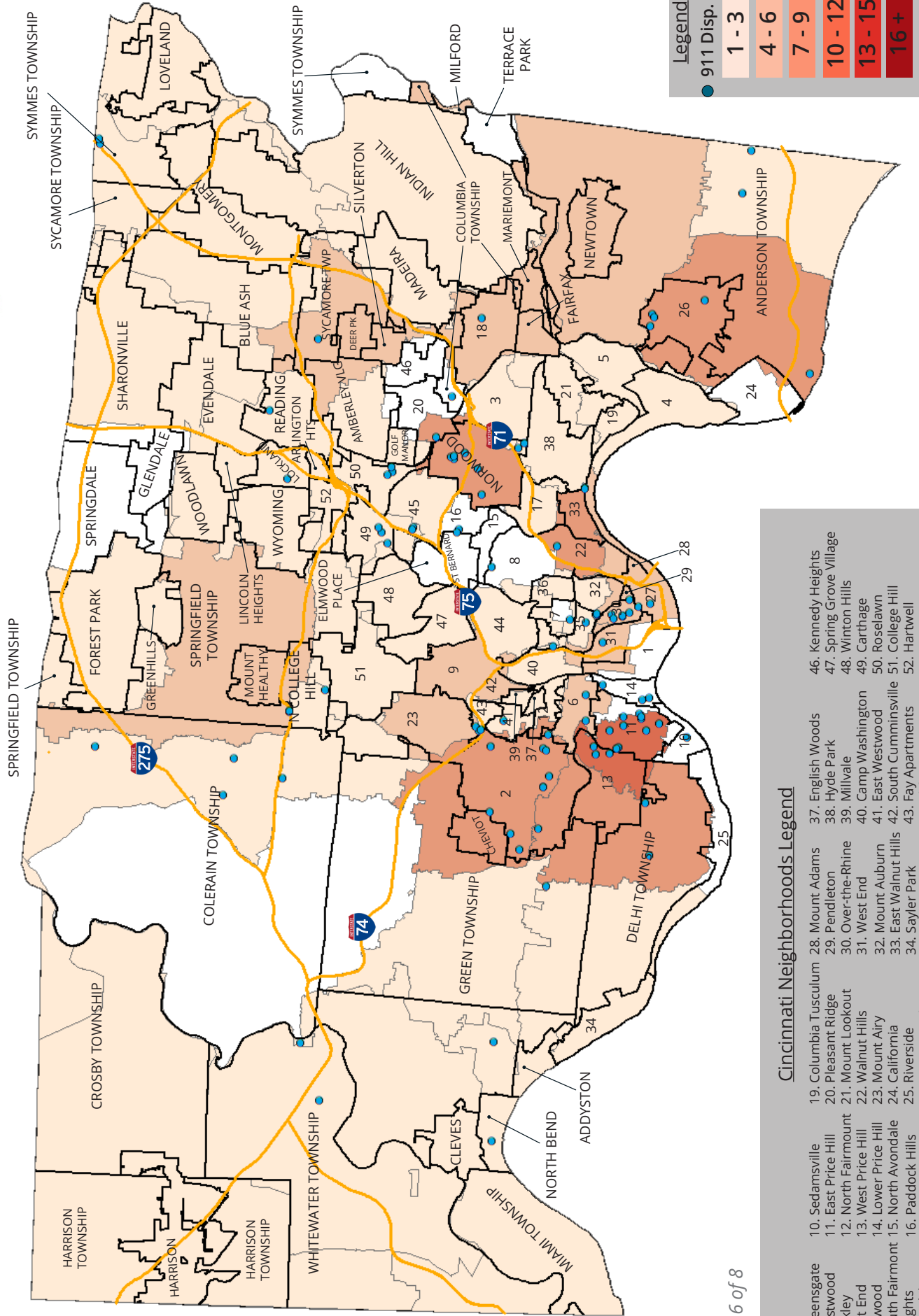
Total 911 dispatches due to unintentional overdose of drugs of abuse for January 2017-18 are presented in Figure 7. These counts incorporate 911 dispatches that occurred within the jurisdictions of Hamilton County and City of Cincinnati 911 dispatch centers. January's estimates include data through January 30 and are pro-rated to the length of the full month. During 2017, there were a daily median of seven 911 overdose responses from City of Cincinnati agencies and four from county response centers (Table 3). HCPH began collecting and reporting overdose dispatch runs for the city of Norwood in May, 2017.

Daily Hamilton County dispatches decreased from December to January. There were, on average, 2.3 911 dispatches due to overdose recorded by Hamilton County emergency response, down 26% from 3.1 runs per day during December. The January average was significantly lower than the average observed during 2017.

Daily Cincinnati dispatches decreased 9% in January from an average of 4.6 dispatches per day during December down to 4.2, on average, over the course of the reporting month. The December average was significantly lower than the 2017 average number of City of Cincinnati 911 dispatches due to overdose.

**Figure 8. Home ZIP code of drug overdose ED patients & 911 dispatch locations due to overdose; Hamilton County, January 2018**

The map presents the reporting month's home ZIP codes for drug overdose associated ED patients (red shades) overlaid with 911 dispatch locations due to overdose occurring in Hamilton County, as provided by the Greater Cincinnati Fusion Center (GCFC). 911 dispatch locations are offset slightly to protect confidentiality.



**Legend**

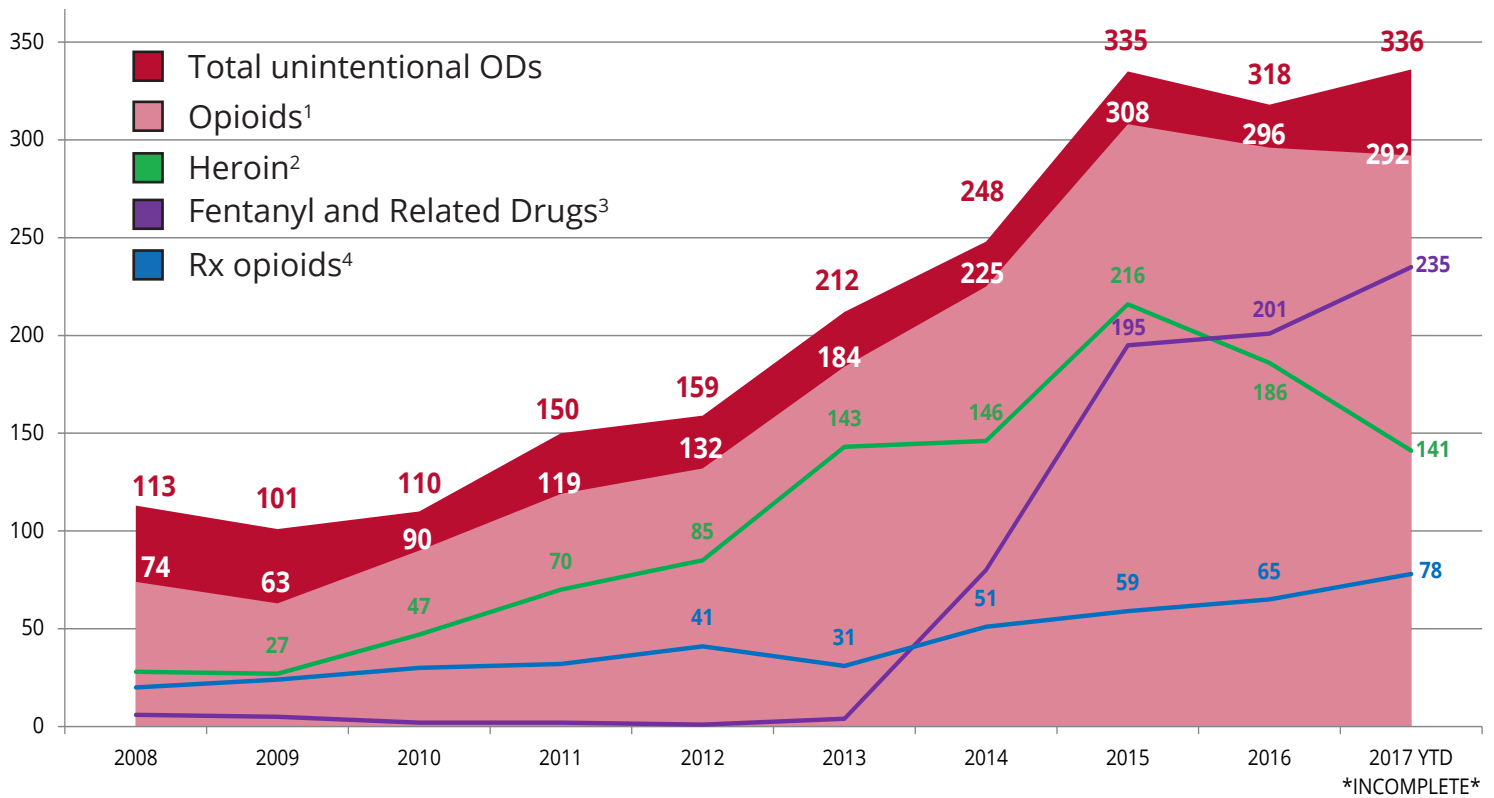
- 911 Disp. Loc.

1 - 3
4 - 6
7 - 9
10 - 12
13 - 15
16 +

**Cincinnati Neighborhoods Legend**

1. Queensgate	10. Sedamsville	19. Columbia Tusculum	28. Mount Adams	37. English Woods	46. Kennedy Heights
2. Westwood	11. East Price Hill	20. Pleasant Ridge	29. Pendleton	38. Hyde Park	47. Spring Grove Village
3. Oakley	12. North Fairmount	21. Mount Lookout	30. Over-the-Rhine	39. Millvale	48. Winton Hills
4. East End	13. West Price Hill	22. Walnut Hills	31. West End	40. Camp Washington	49. Carthage
5. Linwood	14. Lower Price Hill	23. Mount Airy	32. Mount Auburn	41. East Westwood	50. Roselawn
6. South Fairmont	15. North Avondale	24. California	33. Mount Auburn Hills	42. South Cumminsville	51. College Hill
7. Heights	16. Paddock Hills	25. Riverside	34. Saylor Park	43. Fay Apartments	52. Hartwell
8. Avondale	17. Evanston	26. Mount Washington	35. CUF	44. Clifton	
9. Northside	18. Madisonville	27. CBD/Riverfront	36. Corryville	45. Bond Hill	

**Figure 9. Hamilton County resident deaths due to unintentional overdose by drug\*; 2008 - 2017**



\* Deaths may involve multiple drugs and therefore drug subcategories may sum to more than total number of overdoses.

1. Include ICD-10 codes T40.0-T40.4, T40.6

2. Include ICD-10 code T40.1

3. Identified as Unintentional OD deaths involving fentanyl or its analogs by Ohio Department of Health review of death certificate death fields

4. Include ICD-10 code T40.2

Annual Hamilton County resident deaths due to unintentional overdose of drugs of abuse over the past decade as reported by the ODH Bureau of Vital Statistics are presented in Figure 9. Nearly all 2016 overdose deaths involved some kind of opioid. The 2016 deaths were extremely high, but did represent a decrease from the number of overdose deaths observed in 2015 (n=335). This decrease is especially promising in the context of the state as a whole, wherein overdose deaths increased by 33% and the vast majority of counties had an increased number of overdose deaths as the state continues to battle the opioid epidemic.

There were 318 overdose deaths to Hamilton County residents in 2016, and 93% of those deaths involved an opioid of some kind, approximately equal to the 2015 value of 92%. Among 2016 deaths, about 63% involved fentanyl or its analogs, and 58% involved heroin. Both narcotic drugs continued the trend of far surpassing prescription opioids as the primary causes of overdose death among county residents.

There have been 336 overdose deaths to Hamilton County residents preliminarily identified by the ODH Bureau of Vital Statistics for 2017; that estimate is likely to increase, meaning that 2017 would have the highest number of overdose deaths for Hamilton County residents on record. Preliminary statewide estimates indicate that the rest of Ohio is also facing continued unprecedented overdose death totals into 2017.

87% of the 2017 overdose deaths on record have involved opioids, which is lower than 2015 (92%) and 2016 (93%). Among 2017 deaths, about 70% have involved fentanyl or its analogs, and about 42% involved heroin. This differs substantially from recent years wherein the proportion of deaths involving fentanyl and related drugs and the proportion involving heroin were roughly equal. 2017 is currently on pace to have a higher proportion of deaths involving pharmaceutical prescription opioids (23%) than in recent years.

**Table 4. HCPH Distribution of Naloxone**

Agency	Doses Dist. (2015)	Doses Dist. (2016)	Doses Dist. (2017)	Doses Dist. (YTD 2018)	TOTAL
Community	-	-	176 (2.7%)	90 (4.6%)	266 (2.0%)
Correctional Facilities	-	-	416 (6.5%)	222 (11.5%)	638 (4.8%)
Fire / EMS	994 (29.5%)	542 (36.9%)	1,830 (28.5%)	-	3,366 (25.5%)
Federally Qualified Health Center	-	-	72 (1.1%)	-	72 (0.5%)
Harm Reduction	-	100 (6.8%)	636 (9.9%)	700 (36.1%)	1,436 (10.9%)
Hospitals	-	-	300 (4.7%)	12 (0.6%)	312 (2.4%)
Independent Pharmacy	-	-	-	120 (6.2%)	120 (0.9%)
Law Enforcement	1,193 (35.4%)	580 (39.5%)	1,617 (25.2%)	-	3,390 (25.7%)
Nonprofits	-	-	76 (1.2%)	44 (2.3%)	120 (0.9%)
Public Health	-	-	58 (0.9%)	62 (3.2%)	120 (0.9%)
Project DAWN	-	190 (12.9%)	-	-	190 (1.4%)
Quick Response Team	-	-	42 (0.7%)	24 (1.2%)	66 (0.5%)
Social Service Agencies	-	-	48 (0.7%)	134 (6.9%)	182 (1.4%)
Treatment Centers	1,180 (35.0%)	56 (3.8%)	1,114 (17.4%)	530 (27.3%)	2,910 (22.1%)
<b>TOTAL</b>	<b>3,367</b>	<b>1,468</b>	<b>6,415</b>	<b>1,938</b>	<b>13,188</b>

Naloxone distribution by HCPH to different types of agencies are summarized in Table 4. These numbers reflect July 2015, when HCPH first began distributing Naloxone, to the reporting month.

HCPH distributed 1,938 doses of Naloxone during January, 2018. Most were distributed to harm reduction (36.1%), treatment centers (27.3%), and correctional facilities (11.5%); a full breakdown is provided in Table 4.

In the last three months (November 2017 - January 2018), HCPH has distributed nearly 5,000 doses of Naloxone.

### Data Notes

1. Drug overdose data are retrieved from the state's EpiCenter surveillance tool. "Overdose" cases include all ED visits to Hamilton County hospitals in which drugs were indicated as reason for visit. Cases were included in analysis if the case notes for the patient included the term "overdose" or "OD." Where specified, traumatic injuries due to drugs caused by suicide attempts, adverse reactions to normal medications, or accidental overdose of over-the-counter or common drugs such as Tylenol or insulin were excluded from analysis. ZIP codes refer to the ZIP code of residence of the patient visiting the emergency department (ED). Dates are defined as 6 a.m. of a day to 6 a.m. of the following day, which more accurately reflects drug use patterns than standard day intervals. For example, January 1st refers to the period of 6 a.m. on January 1st to 6 a.m. on January 2nd.

Data from the EpiCenter surveillance tool is subject to at least 2 limitations. First, case notes in the EpiCenter tool are limited and often do not include full details of ED visit, such as drug used or intent of use. As such, overdose estimates will include not just opioids, but potentially any drug. Second, case notes are recorded at patient intake and may change from a patient's initial examination to their final diagnosis.

2. Emergency dispatches refer to fire/EMS and law enforcement responses to 911 emergency calls related to drug overdose, in which a unit was dispatched. Call notes are reviewed and included/excluded using the same criteria as EpiCenter, adapted for the format of 911 dispatch call logs.

3. Unless otherwise specified, 'overdose' on this report refers to unintentional overdose of drugs of abuse. This excludes instances where alcohol and/or marijuana are the sole drugs referenced.

4. For the purpose of estimating monthly counts, days for which ED Visits or 911 dispatches have missing information are estimated using the average for that measure over the rest of the month, i.e. the estimated is "pro-rated" to the number of days in the month.