Data Unit 6-Month Report

Community Overdose Action Team (COAT)

Period: January 1, 2017 through June 30, 2017

Montgomery County, Ohio

Community Overdose Action Team

Working Together To Combat Opioid Overdoses

Our goals are to stabilize the number of people dying from drug overdoses; then reduce the number of fatal overdoses.

COAT Data Sharing Committee Members:

Dr. Robert Carlson - Wright State University's Center for Interventions, Treatment, and Addictions Research (CITAR)

Lt. Matthew Dickey - Dayton Police Department

Shawn Dunlavy - Montgomery County

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Table of Contents:

First Quarter Drug Overdose Deaths 4
- Monthly 4
- Demographics 5
- Drug Types 6
- Criminal Data (JusticeWeb) 8
- Map of Overdose Locations 9

Drug Overdose Emergency Department Visits 10
- County Comparison 10
- Monthly 11
- Exponential Moving Average (EMA) 12
- Heat Map 13
- Time/Day of Week 14
- Hospital Burden 15
- Demographics 16
- Zip Codes 17
- Map of Visits by Home Zip Code 18

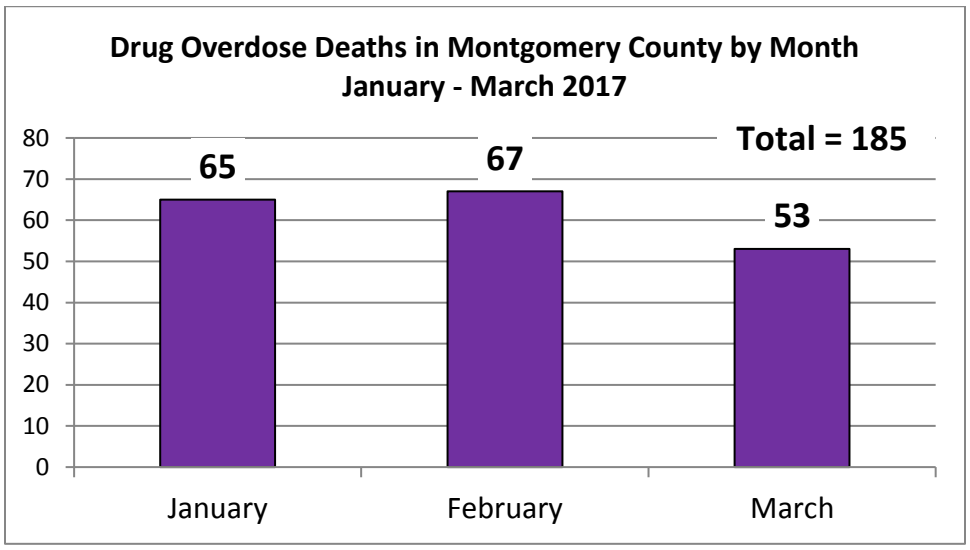
Syringe Services (CarePoint) 20
- Exchanges and Distributions 20
- Map of Encounters by Zip Code 21
- Map of Encounters by County 22

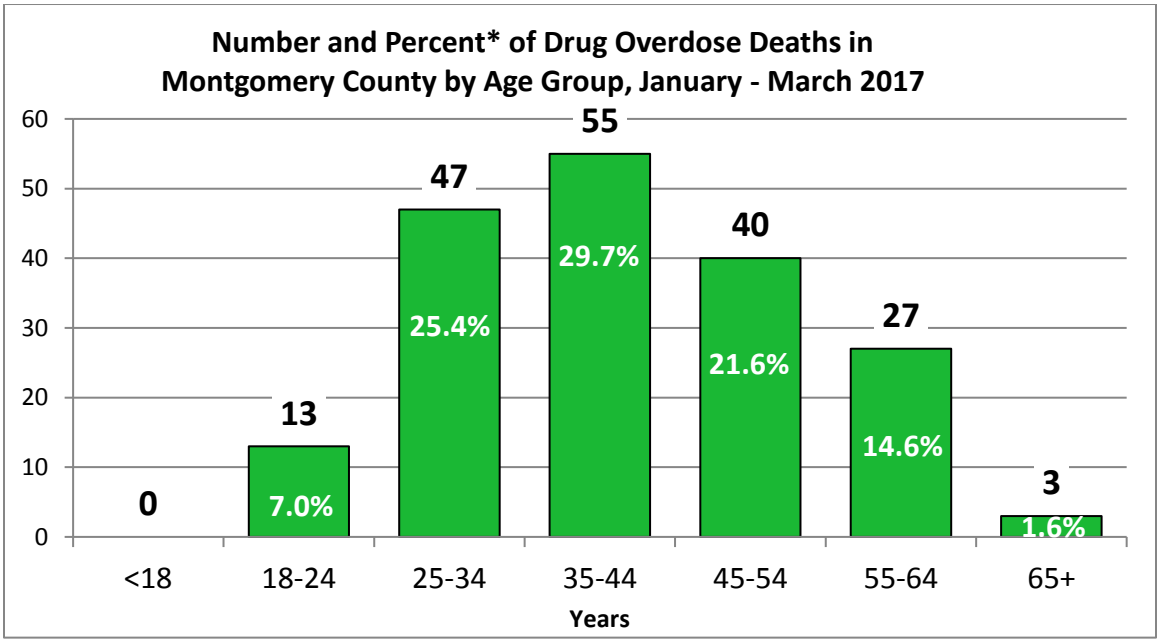
Project DAWN Distribution 23

Neonatal Abstinence Syndrome 24
- Ranking of Top Ten Counties 24
- Ranking of Top Ten Most Populous Counties 25

First Quarter Drug Overdose Deaths that Occurred in Montgomery County, OH (Montgomery County Coroner):

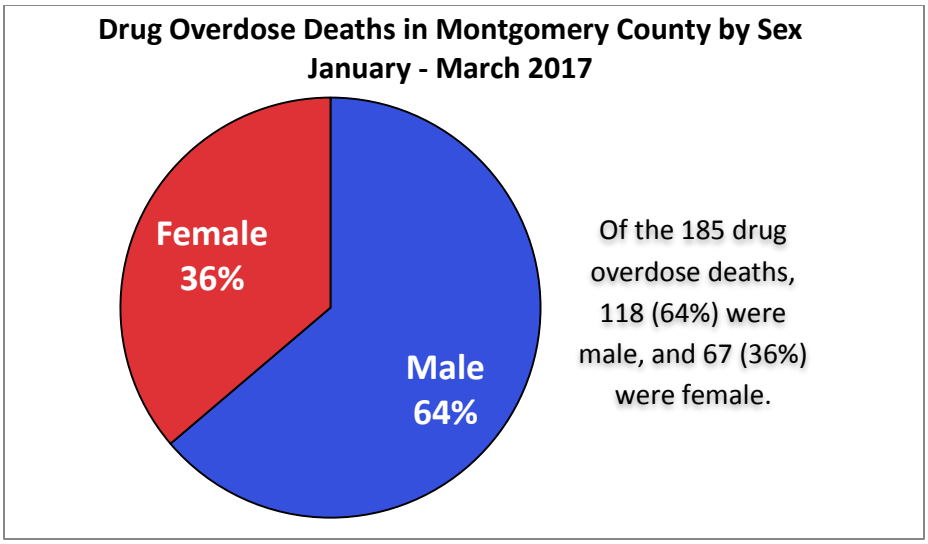
Drug overdose deaths included in this report occurred in Montgomery County (including overdose deaths of non-Montgomery County residents and excluding overdose deaths of Montgomery residents who died outside of the county). Overdose deaths that occurred after the first quarter are considered preliminary and are not incorporated in this report.





*Due to rounding, percentages do not sum to 100%.

A total of 185 drug overdose deaths were recorded in Montgomery County during the first quarter of 2017. The highest percentage of drug overdose deaths occurred in the age group 35 to 44 years (29.7%). Seventy-seven (76.7%) percent of 2017 quarter 1 drug overdose deaths occurred in individuals aged 25 to 54 years.



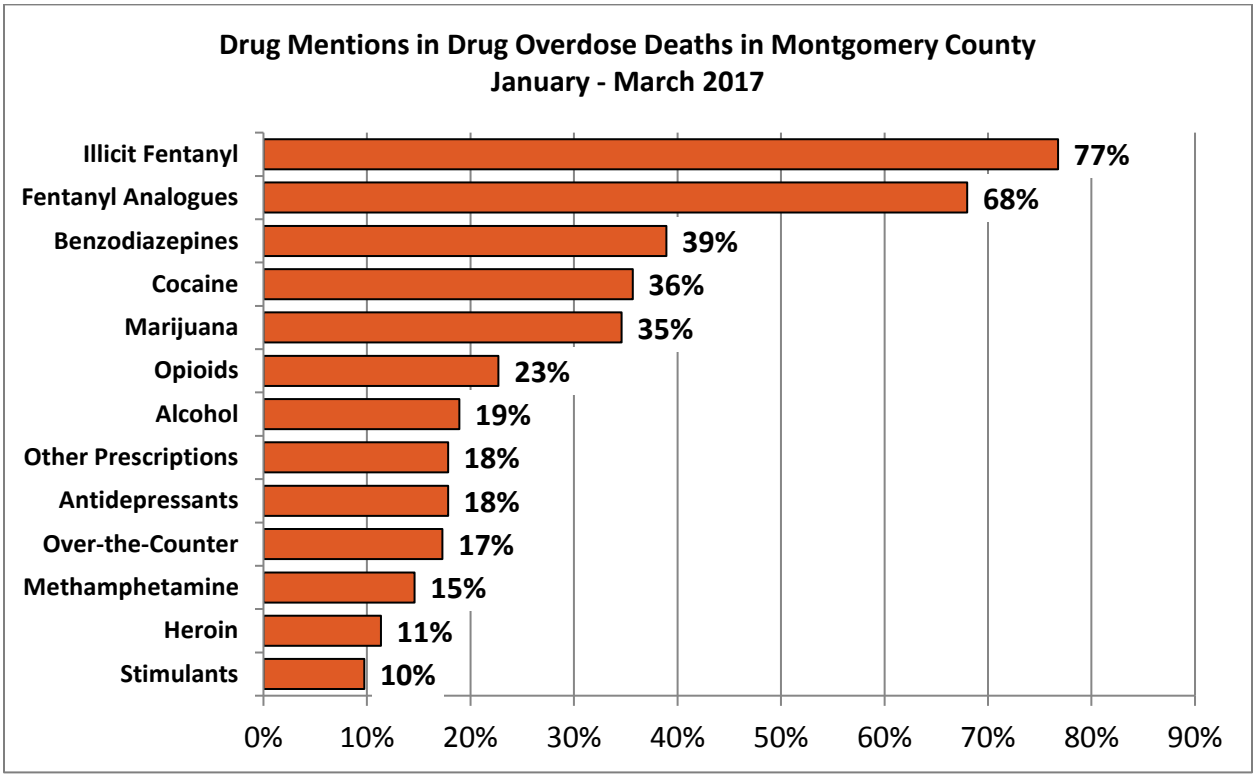
Number and Percent of Drug Overdose Deaths in Montgomery County by Race, January – March 2017

Race	Number	Percent*
White	166	89.7%
Black	16	8.6%
Native American	1	0.5%
Asian American	1	0.5%
Other	1	0.5%

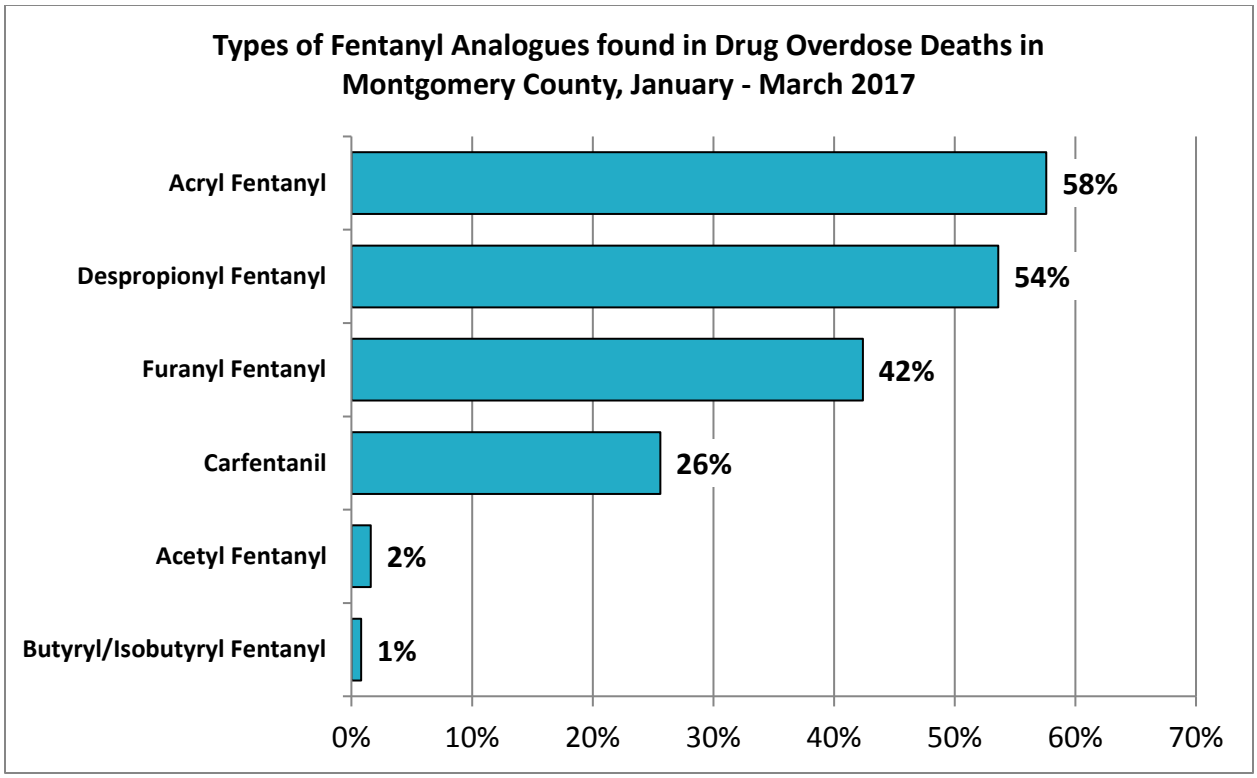
*Due to rounding, percentages do not sum to 100%.

Whites accounted for ninety (89.7%) percent of the first quarter drug overdose deaths. Sixteen (16) of the 185 drug overdose deaths were Black (8.6% of the total). The ratio of White to Black drug overdose deaths is 10.4, meaning for every Black person who died of a drug overdose, there were 10.4 White people who died of a drug overdose.

Definition of a Drug Mention
A drug “mention” means a specific drug was found in a bodily system of an individual who died, but the particular drug was not necessarily the sole cause of death. The presence of multiple drugs in a person's system can result in more than one mention for that individual.



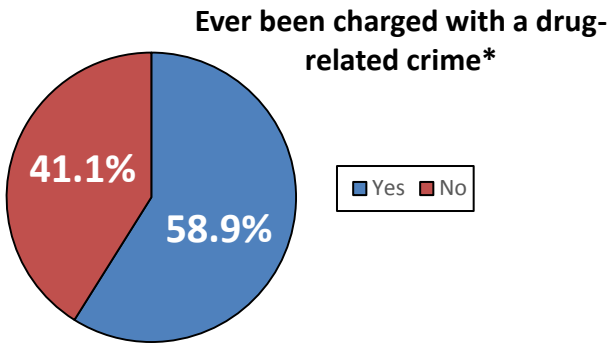
Of those who died from a drug overdose, 77% had illicit fentanyl in their system (the most common drug mention). Fentanyl analogues, drugs with a similar chemical structure as fentanyl, were the second most common type of drug mention during autopsies of overdose death victims. Sixty-eight (68%) percent of those dying from an overdose had a fentanyl analogue in their system.



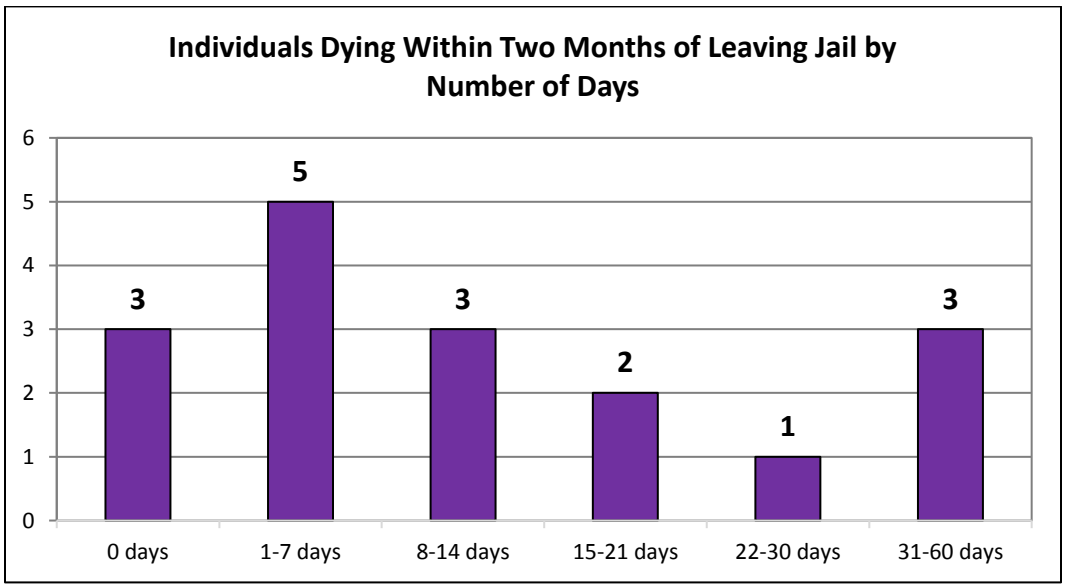
Acryl fentanyl (found in 58% of the deaths containing a fentanyl analogue) was the most common fentanyl analogue found during drug overdose autopsies. Despropionyl fentanyl was found in 54% of the autopsies that contained a fentanyl analogue.

Criminal History - Montgomery County (JusticeWeb)**:**

This section presents law enforcement data on the individuals who died of a drug overdose in Montgomery County during the first quarter of 2017.

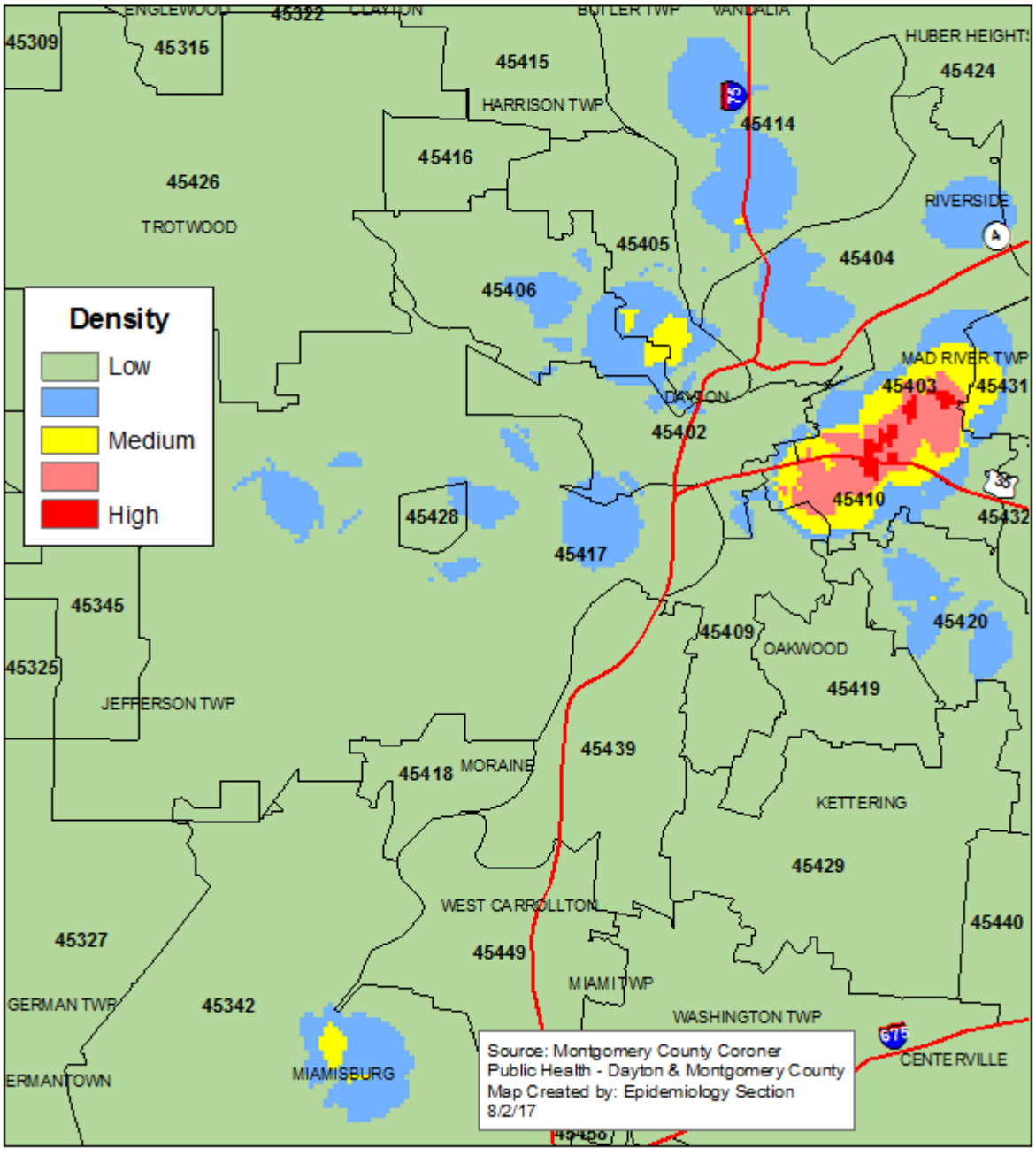


* Not all agencies report data to JusticeWeb



Over half (58.9%) of those who died from a drug overdose had previously been charged with a drug-related crime. Of those charged with a drug related crime, 53.2% had more than one charge. Seventeen (17) individuals died within 60 days of being discharged from jail. Of those who died within 60 days of leaving jail, 47.1% (8) died within one week.

Density of Drug Overdose Deaths by Incident Location
January - March 2017



Drug Overdose Emergency Department Visits (EpiCenter):

Data on drug overdose emergency department visits are from EpiCenter, Ohio's syndromic surveillance system. Drug-related visit descriptions that specifically state the terms "OD" or "overdose" were considered overdose visits. Visits were excluded if they referenced suicidal ideations or intentional self-harm, or if they were due to everyday drugs such as Tylenol or insulin. These numbers are considered an estimate because they are based on descriptions and not ICD codes.

Top 10 Ohio Counties with the Highest Number of Overdose Emergency Department visits by Home Location January – June 2017

Rank	County	Number of Visits
	All of Ohio	19,128
1	Montgomery	2,565
2	Cuyahoga	2,204
3	Franklin	1,834
4	Summit	1,488
5	Butler	1,221
6	Hamilton	1,027
7	Stark	642
8	Clark	606
9	Greene	509
10	Lucas	509

Top 10 Ohio Counties with the Highest Rates of Overdose Emergency Department visits by Home Location January – June 2017

Rank	County	Rate (per 100,000)
	All of Ohio	164.7
1	Fayette	516.1
2	**Montgomery**	481.9
3	**Clark**	445.7
4	**Preble**	370.2
5	Ross	343.4
6	Gallia	341.7
7	Highland	332.4
8	Butler	324.4
9	**Greene**	309.6
10	**Miami**	279.2

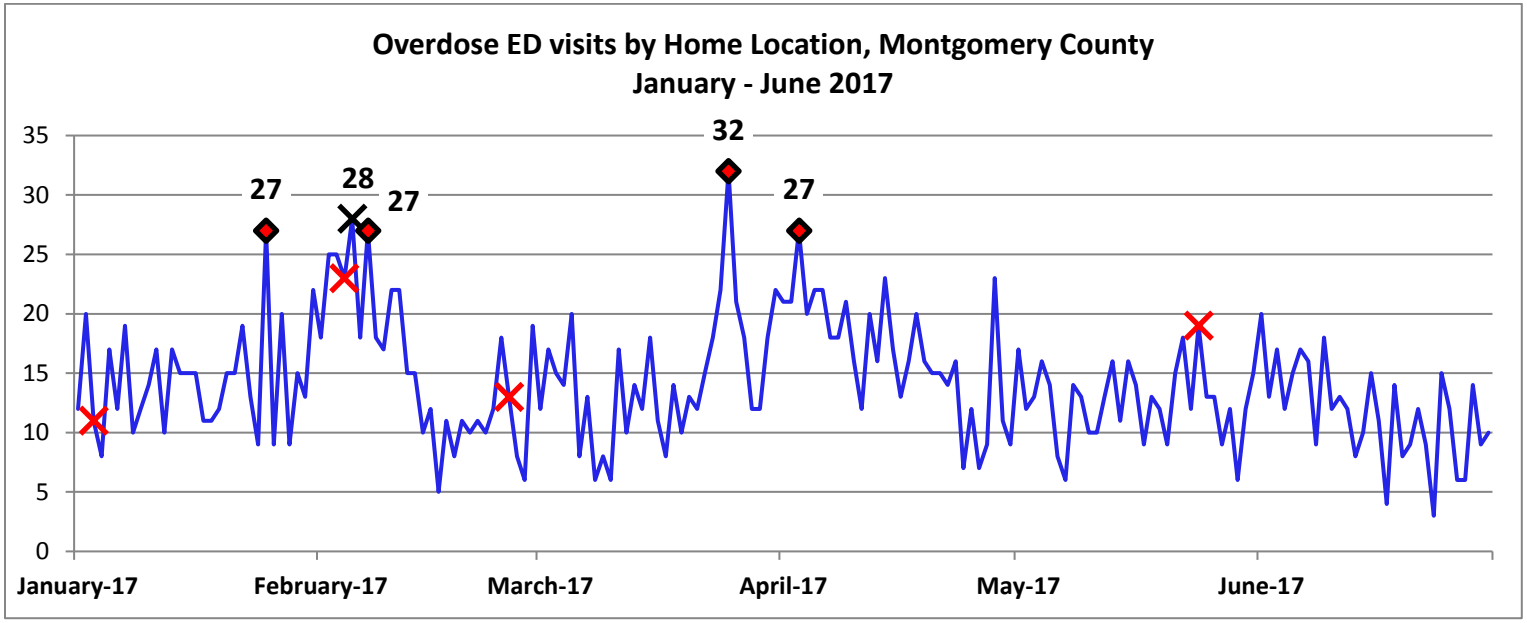
Montgomery County ranks 2nd for the highest rate of drug overdose (OD) visits to emergency departments (ED). Five of the top ten counties with the highest rates of OD ED visits are located in West Central Ohio (Montgomery, Clark, Preble, Greene and Miami Counties).

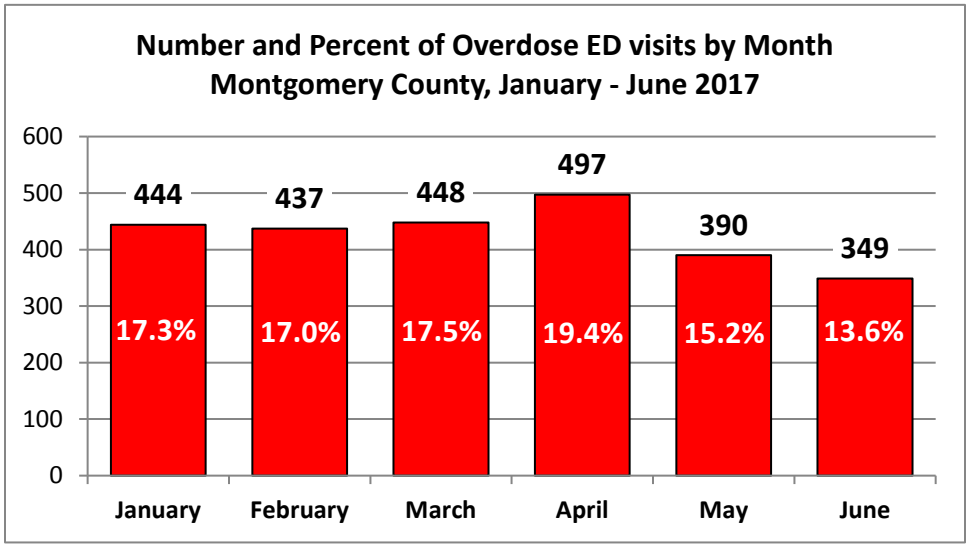
◆=Top 3 peak for # of visits in 1 day

X=EpiCenter anomaly

X=EpiCenter anomaly & peak

An **anomaly** is an alert generated by the system when the number of visits exceeds the threshold. The **threshold** is a value determined by the system based on historical data, above which is considered unusually high.



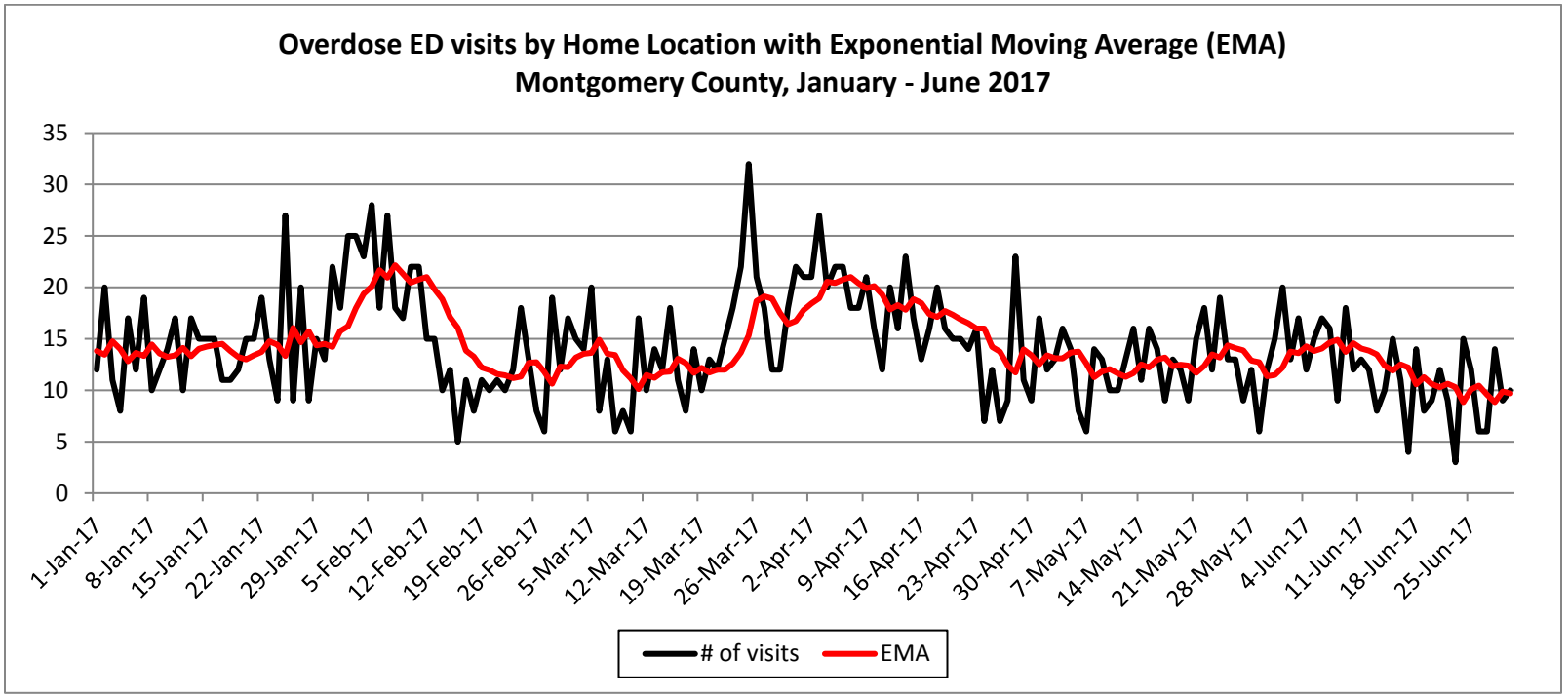


From January 2017 through June 2017, there were 2,565 overdose ED visits made by Montgomery County residents.

This is an average of 14.2 visits per day.

In the first half of 2017, there were 5 occasions in which the predicted and threshold values for the number of drug-related ED visits were breached (indicated by 'X' mark in the figure above), triggering an anomaly by the system. An anomaly was issued another 8 times when looking at visits by facility location (not shown in charts).

The number of visits remained relatively constant from January through March, peaking in April at 497 visits (19.4% of visits in first six months), and dropping to a low of 349 for the month of June.



An exponential moving average (EMA) is similar to a simple moving average, but with more weight given to the most recent data. An EMA is a method used to average a range of values in a way that eliminates fluctuations in the data by creating a smoothed model.

There were no directional trends observed for the number of overdose ED visits from January 2017 through June 2017.

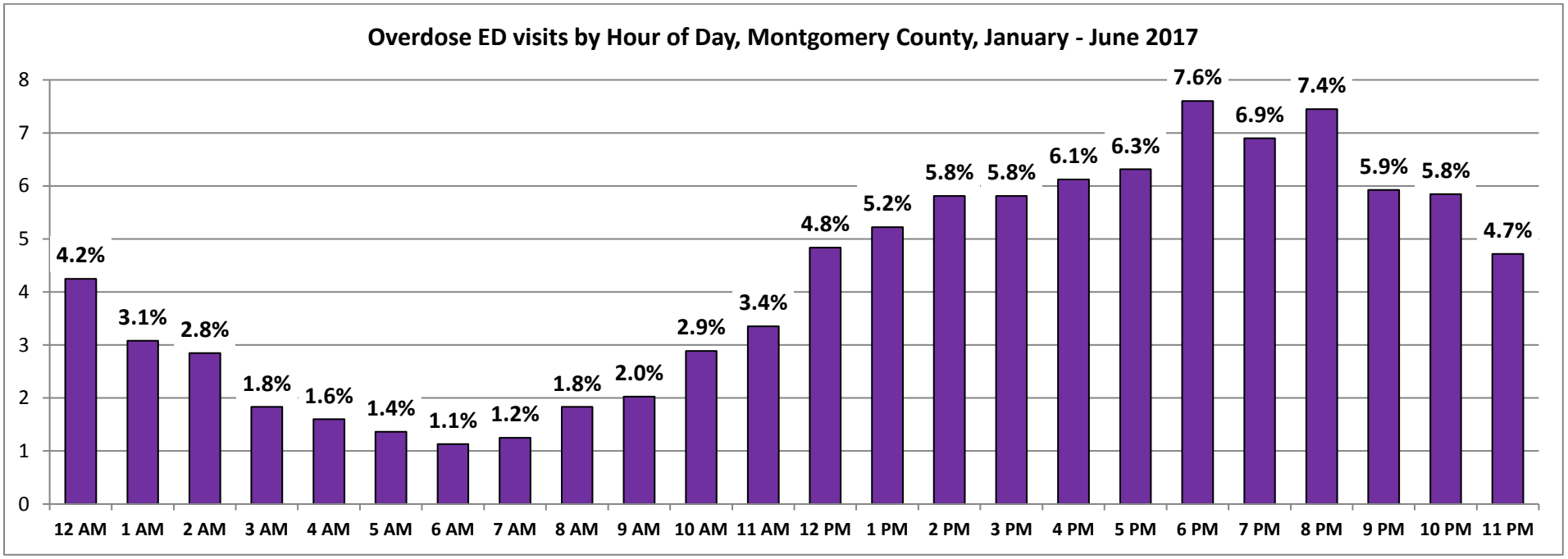
The heat maps show that the highest percentage of drug overdose ED visits occurs in the evening, starting at 4 pm and ending around 10 pm (40.2% of visits). More visits occurred from 6 pm to 7 pm (7.6% of visits) than any other hour of the day (left heat map). Tuesdays from 6 pm to 7 pm had the peak time for overdose visits to the ED. More visits occurred on Fridays (399 visits) than any other day (right heat map).

Heat Map—Percent of Overdose ED visits by Time of Day & Day of Week
Montgomery County, January – June 2017

	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Total
12 AM	0.6%	0.5%	0.4%	0.9%	0.6%	0.8%	0.5%	4.2%
1 AM	0.9%	0.4%	0.4%	0.1%	0.4%	0.3%	0.6%	3.1%
2 AM	0.6%	0.3%	0.4%	0.4%	0.2%	0.4%	0.5%	2.8%
3 AM	0.5%	0.1%	0.2%	0.2%	0.5%	0.2%	0.3%	1.8%
4 AM	0.4%	0.1%	0.3%	0.3%	0.2%	0.2%	0.1%	1.6%
5 AM	0.2%	0.1%	0.2%	0.1%	0.3%	0.1%	0.3%	1.4%
6 AM	0.2%	0.1%	0.2%	0.1%	0.4%	0.1%	0.1%	1.1%
7 AM	0.2%	0.0%	0.2%	0.1%	0.3%	0.2%	0.3%	1.2%
8 AM	0.2%	0.2%	0.3%	0.2%	0.3%	0.3%	0.4%	1.8%
9 AM	0.2%	0.2%	0.4%	0.4%	0.2%	0.5%	0.3%	2.0%
10 AM	0.4%	0.5%	0.5%	0.2%	0.5%	0.4%	0.4%	2.9%
11 AM	0.4%	0.5%	0.4%	0.3%	0.6%	0.5%	0.6%	3.4%
12 PM	0.7%	0.9%	0.5%	0.9%	0.3%	0.6%	0.9%	4.8%
1 PM	0.6%	1.0%	0.8%	0.7%	0.7%	0.8%	0.6%	5.2%
2 PM	0.9%	0.9%	0.8%	0.7%	0.9%	1.0%	0.7%	5.8%
3 PM	0.9%	0.6%	0.9%	0.9%	1.0%	0.9%	0.7%	5.8%
4 PM	0.9%	1.1%	0.5%	1.1%	0.8%	0.6%	1.1%	6.1%
5 PM	0.7%	1.2%	0.5%	1.0%	0.7%	1.4%	0.8%	6.3%
6 PM	1.0%	0.9%	1.4%	1.1%	1.1%	1.0%	1.1%	7.6%
7 PM	1.1%	0.7%	0.9%	1.1%	1.0%	1.1%	1.0%	6.9%
8 PM	0.8%	1.1%	1.0%	1.2%	1.1%	1.2%	1.0%	7.4%
9 PM	0.8%	0.7%	1.1%	0.9%	0.6%	0.8%	0.9%	5.9%
10 PM	0.8%	0.9%	0.7%	0.9%	0.5%	1.0%	1.0%	5.8%
11 PM	0.4%	0.7%	0.6%	0.6%	0.8%	1.1%	0.5%	4.7%
Total	14.4%	13.8%	13.6%	14.3%	13.8%	15.6%	14.5%	100%

Heat Map—Number of Overdose ED visits by Time of Day & Day of Week
Montgomery County, January – June 2017

	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Total
12 AM	15	12	10	22	16	21	13	109
1 AM	24	11	9	3	9	8	15	79
2 AM	15	7	11	10	6	10	14	73
3 AM	12	2	4	4	12	5	8	47
4 AM	9	3	7	8	6	5	3	41
5 AM	6	3	6	3	7	3	7	35
6 AM	5	3	5	2	9	3	2	29
7 AM	5	1	4	2	7	6	7	32
8 AM	5	5	7	6	8	7	9	47
9 AM	4	5	10	9	5	12	7	52
10 AM	11	14	13	5	12	10	9	74
11 AM	10	13	10	8	15	14	16	86
12 PM	19	22	12	24	7	16	24	124
1 PM	16	26	20	18	19	20	15	134
2 PM	23	23	21	18	22	25	17	149
3 PM	22	15	23	24	25	23	17	149
4 PM	22	27	14	29	21	16	28	157
5 PM	19	32	13	25	17	35	21	162
6 PM	26	22	37	28	29	25	28	195
7 PM	28	17	24	28	25	29	26	177
8 PM	21	28	26	30	29	32	25	191
9 PM	21	19	29	23	15	21	24	152
10 PM	20	24	19	23	14	25	25	150
11 PM	11	19	16	15	20	28	12	121
Total	369	353	350	367	355	399	372	2,565


Overdose ED visits by Hour of Day, Montgomery County, January - June 2017
0
1
2
3
4
5
6
7
8
4.2%
3.1%
2.8%
1.8%
1.6%
1.4%
1.1%
1.2%
1.8%
2.0%
2.9%
3.4%
4.8%
5.2%
5.8%
5.8%
6.1%
6.3%
7.6%
6.9%
7.4%
5.9%
5.8%
4.7%
12 AM
1 AM
2 AM
3 AM
4 AM
5 AM
6 AM
7 AM
8 AM
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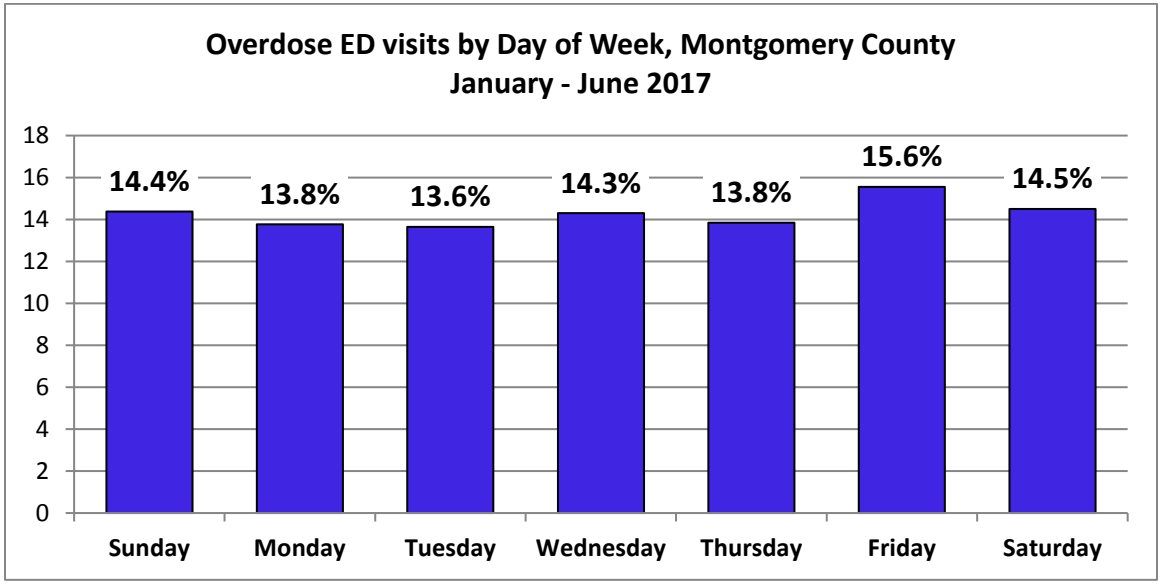

Overdose ED visits by Day of Week, Montgomery County
January - June 2017
0
2
4
6
8
10
12
14
16
18
14.4%
13.8%
13.6%
14.3%
13.8%
15.6%
14.5%
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

Hospital and County of Overdose ED visits made by Montgomery County Residents
January – June 2017

Hospital	Count	Percent	County
Miami Valley Hospital	1,037	40.4%	Montgomery
Good Samaritan Hospital	565	22.0%	Montgomery
Grandview Medical Center	371	14.5%	Montgomery
Kettering Medical Center	189	7.4%	Montgomery
Sycamore Medical Center	140	5.5%	Montgomery
Indu and Raj Soin Medical Center	68	2.7%	Greene
Huber Health Center Urgent Care	53	2.1%	Montgomery
Southview Medical Center	43	1.7%	Montgomery
Miami Valley Hospital South	35	1.4%	Montgomery
Atrium Medical Center	14	0.5%	Butler
Kettering Health Network Emergency - Franklin	14	0.5%	Warren
Upper Valley Medical Center	12	0.5%	Miami
Springfield Regional Medical Center	7	0.3%	Clark
Greene Memorial Hospital	4	0.2%	Greene
Kettering Health Network Emergency - Preble County	2	0.1%	Preble
University of Cincinnati Medical Center	2	0.1%	Hamilton
West Chester Hospital	2	0.1%	Butler
Fort Hamilton Hospital	1	0.0%	Butler
Grant Medical Center	1	0.0%	Franklin
McCullough-Hyde Memorial Hospital	1	0.0%	Butler
Mercy Health - Mt. Orab Medical Center	1	0.0%	Brown
O'Bleness Hospital	1	0.0%	Athens
Riverside Methodist Hospital	1	0.0%	Franklin
UC Health Addiction Services	1	0.0%	Hamilton

Overdose ED visits per patient
Montgomery County, January – June 2017

Number of Visits	Number of Patients	Percent
1	1,654	81.9%
2	259	12.8%
3	68	3.4%
4	21	1.0%
5	9	0.4%
6	4	0.2%
7	4	0.2%
8	1	0.1%
Total	**2,020**	**100%**

Miami Valley Hospital had the highest percentage of Montgomery County resident overdose visits to their ED (40.4% of all visits).

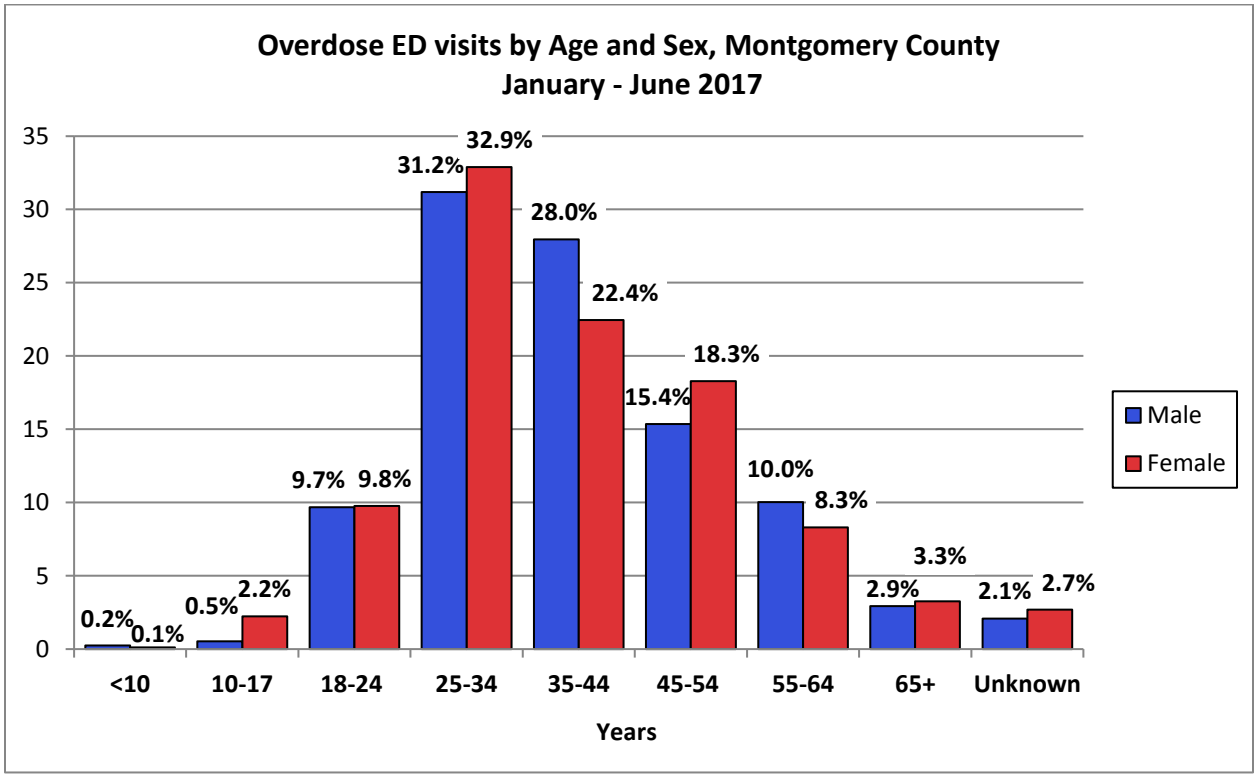
Five (5.1% or 132 visits) percent of Montgomery County resident overdose ED visits were made to hospitals outside of Montgomery County.

There were 2,020 Montgomery County residents who visited an ED for a drug overdose during the first six months of 2017. Of the 2,020 residents, 366 (18.1%) visited an ED for an overdose more than once.

Overdose ED visits by Age and Sex, Montgomery County, January – June 2017

	Male		Female		Total	
Age Group	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
<5 years	4	0.2%	0	0.0%	4	0.2%
5-9 years	0	0.0%	1	0.1%	1	0.1%
10-17 years	9	0.5%	20	2.2%	29	1.1%
18-24 years	162	9.7%	87	9.8%	249	9.7%
25-34 years	522	31.2%	293	32.9%	815	31.8%
35-44 years	468	28.0%	200	22.4%	668	26.0%
45-54 years	257	15.4%	163	18.3%	420	16.4%
55-64 years	168	10.0%	74	8.3%	242	9.4%
65+ years	49	2.9%	29	3.3%	78	3.0%
Unknown	35	2.1%	24	2.7%	59	2.3%
Total	**1,674**	**100%**	**891**	**100%**	**2,565**	**100%**

Sixty-five (65.3%) percent of overdose ED visits were male, and 34.7% were female. Seventy-four (74.2%) percent of overdose ED visits were made by patients aged 25 to 54 years.



Top 10 Montgomery County Zip Codes for Overdose ED visits by percent of visits, January – June 2017

Rank*	Zip Code	City	Number of Visits	Percent of Visits
1	45417	Dayton	335	13.1%
2	45403	Dayton	257	10.0%
3	45410	Dayton	177	6.9%
4	45404	Dayton	153	6.0%
5	45420	Dayton	138	5.4%
6	45424	Huber Heights	136	5.3%
7	45405	Dayton	134	5.2%
8	45342	Miamisburg	125	4.9%
9	45402	Dayton	119	4.6%
10	45414	Dayton/Northridge	111	4.3%

*Ranking based on number/percent of ED visits.

Zip code 45417 had the highest number (335 visits or 13.1% of all Montgomery County resident visits) of overdose ED visits.

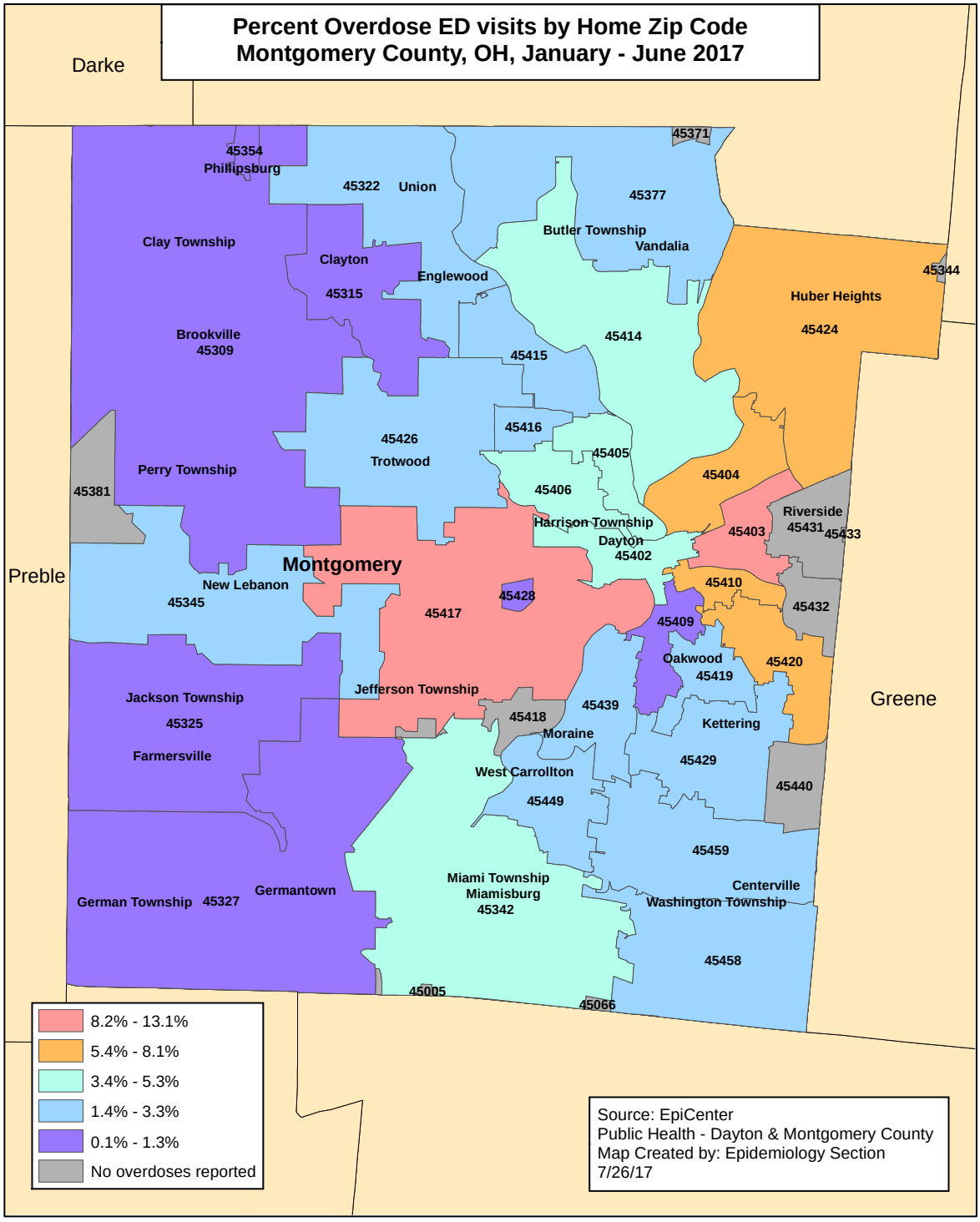
Top 10 Montgomery County Zip Codes for Overdose ED visits by rate of visits, January – June 2017

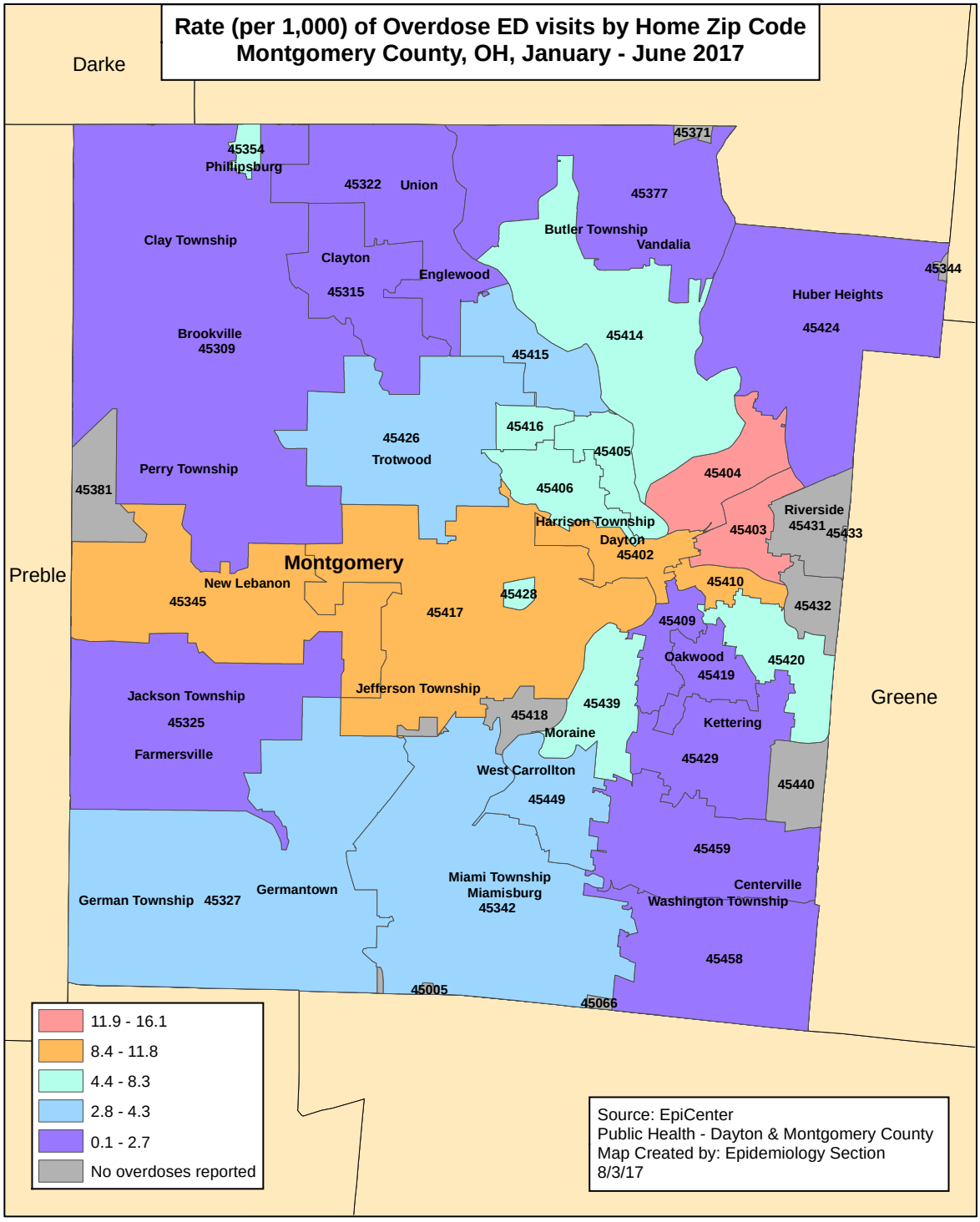
Rank*	Zip Code	City	Number of Visits	Rate†
1	45403	Dayton	257	16.1
2	45404	Dayton	153	15.1
3	45402	Dayton	119	11.8
4	45410	Dayton	177	11.4
5	45345	New Lebanon	69	10.7
6	45417	Dayton	335	10.7
7	45439	Moraine	82	8.3
8	45405	Dayton	134	7.5
9	45416	Dayton	35	5.9
10	45420	Dayton	138	5.5

*Ranking based on rate of ED visits.

†Rate per 1,000 population.

Zip code 45403 had the highest rate (16.1 per 1,000) of overdose ED visits. Zip code 45417 falls to 6th when taking its population into account.


Percent Overdose ED visits by Home Zip Code
Montgomery County, OH, January - June 2017
Darke
Preble
Greene
45354
Phillipsburg
45322
Union
45371
45377
Butler Township
Vandalia
Clay Township
Clayton
Englewood
45315
45344
Huber Heights
45424
Brookville
45309
45414
45415
45416
45426
Trotwood
45405
Perry Township
45404
45381
45406
Riverside
45431
45433
Harrison Township
Dayton
45402
45403
Montgomery
New Lebanon
45345
45428
45417
45410
45432
45409
Oakwood
45420
45419
Jefferson Township
Jackson Township
45325
45439
45418
Moraine
Kettering
Farmersville
45429
West Carrollton
45440
45449
45459
Miami Township
Miamisburg
45342
Centerville
Washington Township
Germantown
German Township
45327
45458
45005
45066
8.2% - 13.1%
5.4% - 8.1%
3.4% - 5.3%
1.4% - 3.3%
0.1% - 1.3%
No overdoses reported
Source: EpiCenter
Public Health - Dayton & Montgomery County
Map Created by: Epidemiology Section
7/26/17


Rate (per 1,000) of Overdose ED visits by Home Zip Code
Montgomery County, OH, January - June 2017
Darke
Preble
Greene
45354
Phillipsburg
45322
Union
45371
45377
Butler Township
Vandalia
Clay Township
Clayton
Englewood
45315
45344
Huber Heights
45424
Brookville
45309
45414
45415
45416
45426
Trotwood
45405
Perry Township
45381
45406
45404
Riverside
45431
45433
Harrison Township
45403
Dayton
45402
Montgomery
New Lebanon
45345
45428
45417
45410
45432
45409
Oakwood
45420
45419
Jefferson Township
Jackson Township
45325
45418
45439
Kettering
Moraine
Farmersville
45429
West Carrollton
45440
45449
45459
Miami Township
Miamisburg
45342
Centerville
Washington Township
Germantown
German Township
45327
45458
45005
45066
11.9 - 16.1
8.4 - 11.8
4.4 - 8.3
2.8 - 4.3
0.1 - 2.7
No overdoses reported
Source: EpiCenter
Public Health - Dayton & Montgomery County
Map Created by: Epidemiology Section
8/3/17

Syringe Services (CarePoint):

Encounters by Type and Location, January - June 2017				
Type of Encounter	**Total**	**LEC***	**Mt. Olive**	**Vogel**
New Client	309	195	12	102
Repeat Client	2,121	1,653	19	449
Exchange for Other	13	8	0	5
Total Encounters (%)	**2,443 (100%)**	**1,856 (76.0%)**	**31 (1.3%)**	**556 (22.7%)**

* Life Enrichment Center

Exchanges and Distributions by Location, January – June 2017				
Exchange/Distribution	**Total**	**LEC***	**Mt. Olive**	**Vogel**
Syringes Exchanged	60,073	49,301	237	10,535
Condoms Distributed	7,027	5,088	14	1,925
Lube Distributed	2,098	1,529	2	567
Alcohol Pads Distributed	16,678	12,262	10	4,406
Cotton Balls Distributed	1,738	1,312	1	425
Ointment Distributed	7,864	5,792	2	2,070
Cookers Distributed	7,753	5,933	7	1,813
Tourniquets Distributed	2,690	2,003	1	686

* Life Enrichment Center

Number of Narcan Kits Distributed by Location, January – June 2017	
Location	**Total**
*LEC**	377
Vogel	140
Addiction Services	34
Public Health	6
Total	**557**

* Life Enrichment Center

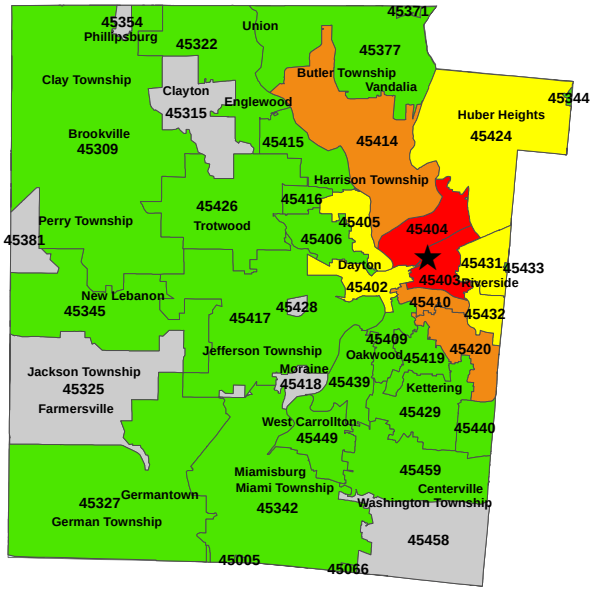
Number of Narcan Refills by Location, January – June 2017	
Location	**Total**
*LEC**	188
Vogel	84
Total	**272**

* Life Enrichment Center

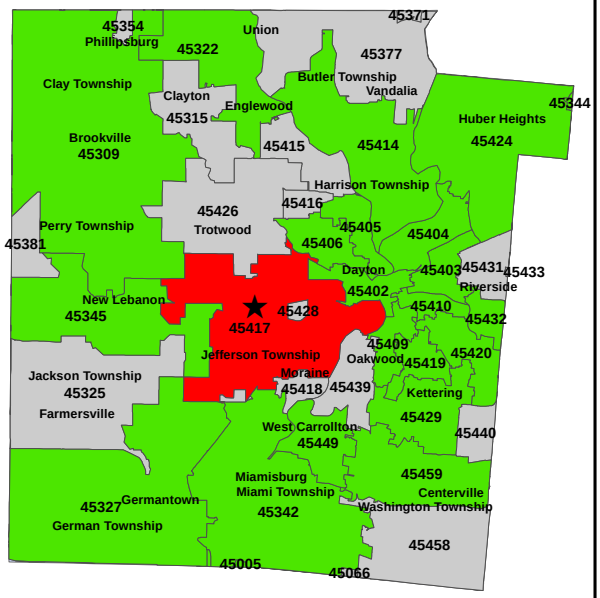
CarePoint seeks to reduce the number of overdose deaths through the provision of overdose prevention education and distribution of overdose reversal kits. These kits contain Narcan Nasal Spray (Naloxone) and are issued to individuals who complete the authorized training. In the first half of 2017, 557 Narcan kits were distributed and 272 kits have been refilled.

Visits to Syringe Services Program by Location
January - June 2017

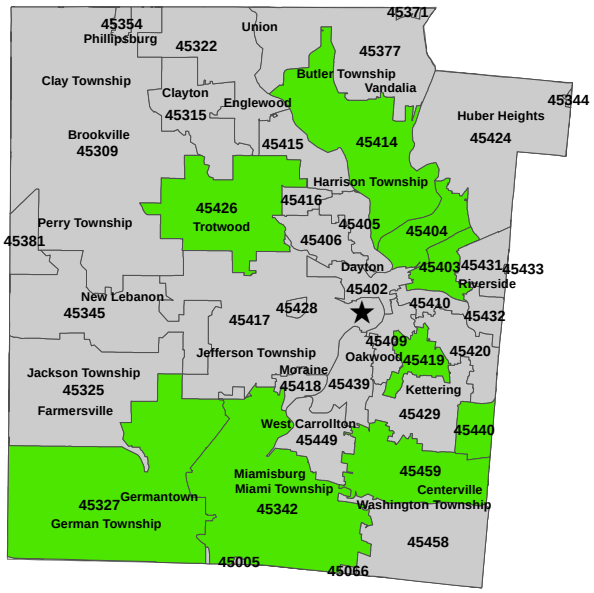
Life Enrichment Center



Vogel Health Center



Mt. Olive Baptist Church



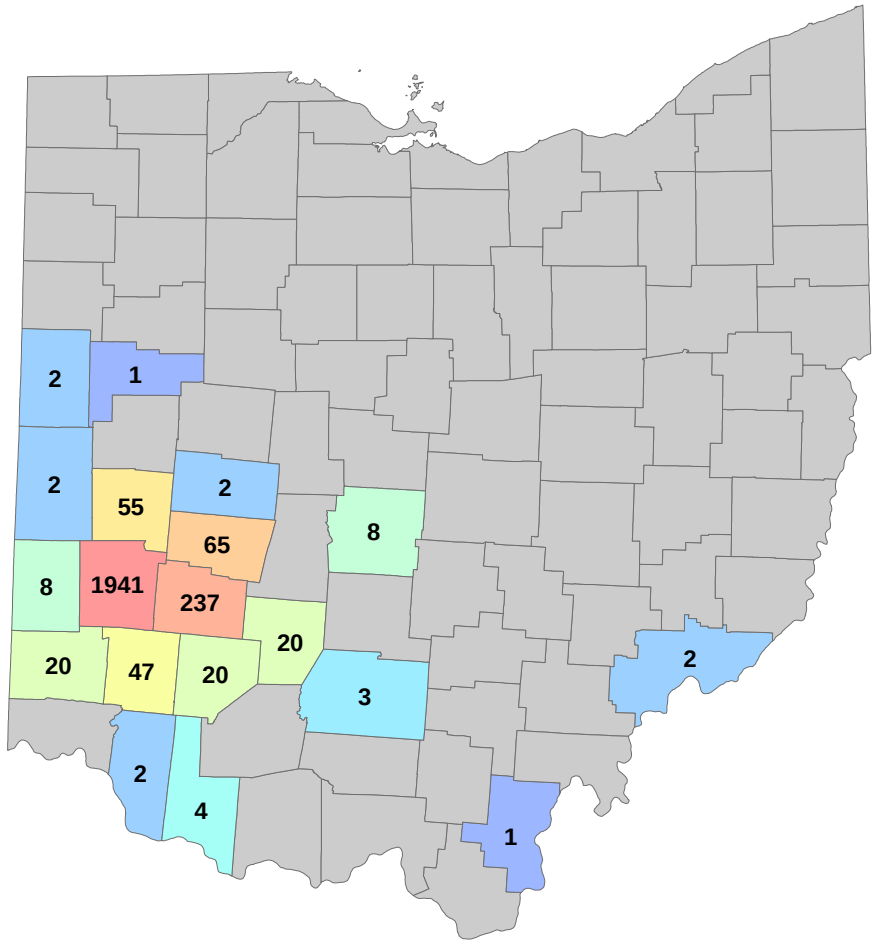
Number of Visits

- 0
- 1 - 30
- 31 - 100
- 101 - 250
- 251 - 416

Counts include visits by repeat clients.

Due to missing or inaccurate zip code data, some visits are not represented.

Visits to Syringe Services Program by County
January - June 2017



* Due to missing or inaccurate zip code data, some visits are not represented.

Project DAWN (Deaths Avoided with Naloxone) Monthly Distribution Log:

Location:
Samaritan Behavioral Health
601 S. Edwin C. Moses Blvd.
Dayton, OH 45417

Project DAWN Distribution Log, January – June 2017

Project DAWN Distributions	January	February	March	April	May	June	Total
# of ODH-funded Project DAWN kits	0	0	0	203	0	0	**203**
# of ***non*** ODH-funded Project DAWN kits	95	129	383	79	155	421	**1,262**
Total Number of Project DAWN kits per month	**95**	**129**	**383**	**282**	**155**	**421**	**1,465**
Narcan Trainings/Reversals							
# of persons trained	83	183	397	288	165	452	**1,568**
# of (known) reversals	12	8	29	32	26	40	**147**

From January 2017 through June 2017, 1,465 Project DAWN kits have been distributed, 1,568 people have received training on how to administer Narcan in the event of an overdose, and a reported 147 drug overdoses were reversed.

Neonatal Abstinence Syndrome (NAS):

5-Year Aggregate Rate, Ohio, 2011-2015

Infants born to mothers who use opioids or other drugs during pregnancy may experience neonatal abstinence syndrome (NAS). NAS is a set of symptoms, ranging from mild to severe, brought on by the abrupt withdrawal of these substances.

Top 10 Ohio Counties with the Highest Rates of Neonatal Abstinence Syndrome (NAS)
5-Year Aggregate, 2011-2015*

Rank	County	Hospitalizations	NAS Rate (per 1,000 live births)
	All of Ohio	8,675	12.3
1	**Scioto**	558	117.0
2	**Pike**	155	95.0
3	**Lawrence**	152	49.8
4	**Jefferson**	103	48.5
5	**Athens**	112	37.7
6	**Vinton**	25	37.3
7	**Meigs**	35	35.5
8	**Adams**	47	33.5
9	**Ross**	147	33.0
10	**Gallia**	49	31.3
37	**Montgomery**	416	13.1

*Inpatient hospitalizations of an Ohio resident less than 1 year of age with a diagnosis of NAS: ICD-9-CM code: 779.5 or ICD-10-CM codes: P96.1.

Source: Ohio Hospital Association; Ohio Department of Health—Violence and Injury Prevention Program.

Montgomery County ranked 37th for the highest rate of NAS among all 88 counties in Ohio (2011-2015).

Top 10 Most Populous Ohio Counties: Neonatal Abstinence Syndrome (NAS) Rate
5-Year Aggregate, Ohio, 2011-2015*

Rank	County	Hospitalizations	NAS Rate (per 1,000 live births)
	All of Ohio	8,675	12.3
1	**Mahoning**	218	17.0
2	**Franklin**	1,412	14.2
3	**Summit**	427	13.6
4	**Montgomery**	416	13.1
5	**Lucas**	328	11.5
6	**Butler**	262	11.4
7	**Hamilton**	489	8.9
8	**Lorain**	130	7.5
9	**Cuyahoga**	484	6.1
10	**Stark**	97	4.5

*Inpatient hospitalizations of an Ohio resident less than 1 year of age with a diagnosis of NAS: ICD-9-CM code: 779.5 or ICD-10-CM codes: P96.1.

Source: Ohio Hospital Association; Ohio Department of Health—Violence and Injury Prevention Program.

Among the ten most populous counties in Ohio, Montgomery County had the fourth highest neonatal abstinence syndrome (NAS) rate of 13.1 infants per 1,000 live births from 2011-2015.