

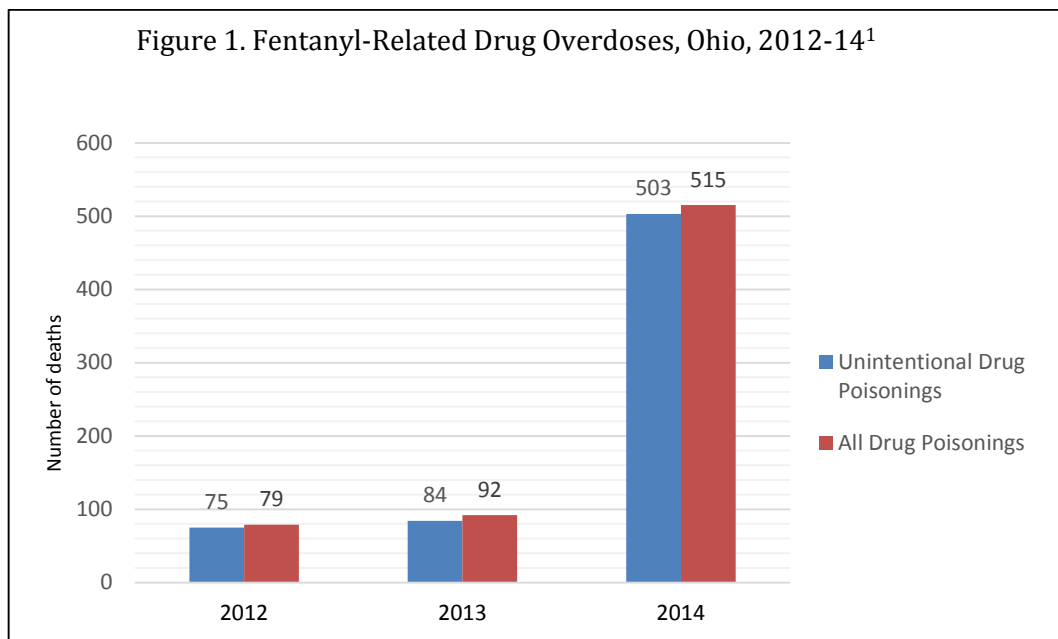
# 2014 OHIO DRUG OVERDOSE DATA: GENERAL FINDINGS

## OVERVIEW

Unintentional drug overdose continued to be the leading cause of injury-related death in Ohio in 2014, ahead of motor vehicle traffic crashes – a trend which began in 2007.

Unintentional drug overdoses caused the deaths of 2,531 Ohio residents in 2014.<sup>1</sup> This is the highest number of deaths on record from drug overdose and reflects a 20 percent increase compared to 2013 when there were 2,110 drug overdose deaths. The increased illicit use of a powerful opioid called fentanyl was a significant contributor to this rise in drug overdose deaths.

- Fentanyl has been observed being mixed with other commonly abused drugs, such as heroin, resulting in increased deaths between 2005 and 2007, and it seems to be reemerging in the U.S.<sup>2</sup>
- Fentanyl drug reports<sup>3</sup> based on law enforcement drug seizures increased by 300 percent in the U.S. from the second half of 2013 to the first half of 2014. This increase was especially pronounced in the South, Northeast and Midwest.<sup>4</sup>
- Most often used to treat patients with severe pain, fentanyl is a Schedule II synthetic narcotic that in its prescription form is estimated to be 30 to 50 times more potent than heroin and 50 to 100 times more potent than morphine.<sup>5</sup>



Source: Ohio Department of Health, Office of Vital Statistics; Analysis Conducted by Injury Prevention Program

<sup>1</sup> 2014 drug overdose data is based on information listed on death certificates, including for Ohioans who died in other states.

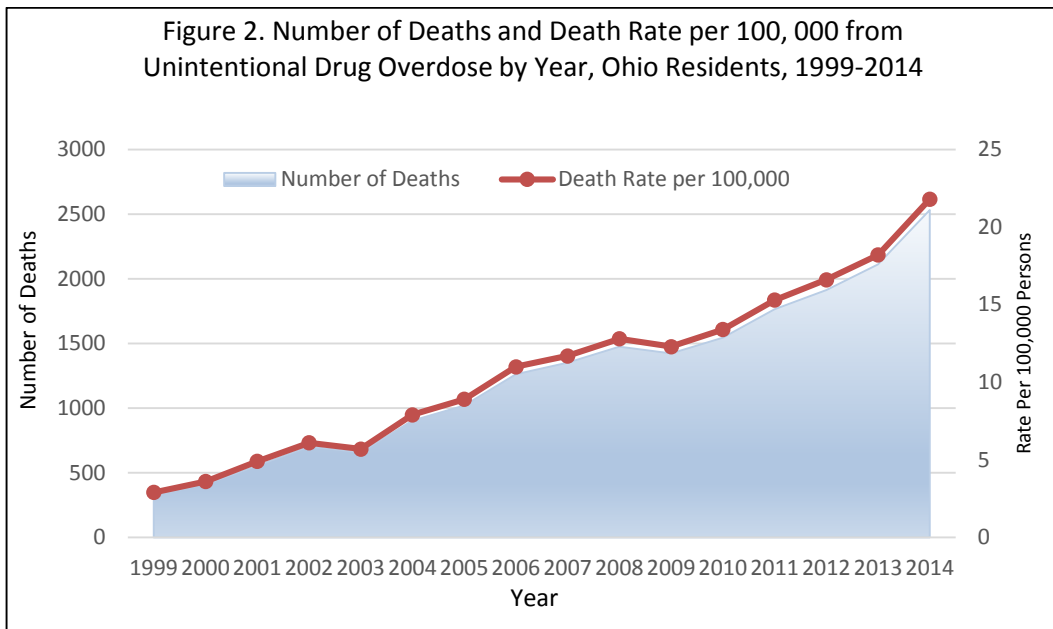
<sup>2</sup> U.S. Drug Enforcement Administration, Office of Diversion Control. 2015. *National Forensic Laboratory Information System Report: Opiates and Related Drugs Reported in NFLIS, 2009-2014*. Springfield, VA: U.S. Drug Enforcement Administration.

<sup>3</sup> The National Forensic Laboratory Information System (NFLIS) is a U.S. Drug Enforcement Administration program that collects drug chemistry analysis results from cases analyzed by state, local and federal forensic laboratories. These laboratories analyze substances secured in law enforcement operations across the country.

<sup>4</sup> U.S. Drug Enforcement Administration, Office of Diversion Control. 2015. *National Forensic Laboratory Information System Report: Opiates and Related Drugs Reported in NFLIS, 2009-2014*. Springfield, VA: U.S. Drug Enforcement Administration.

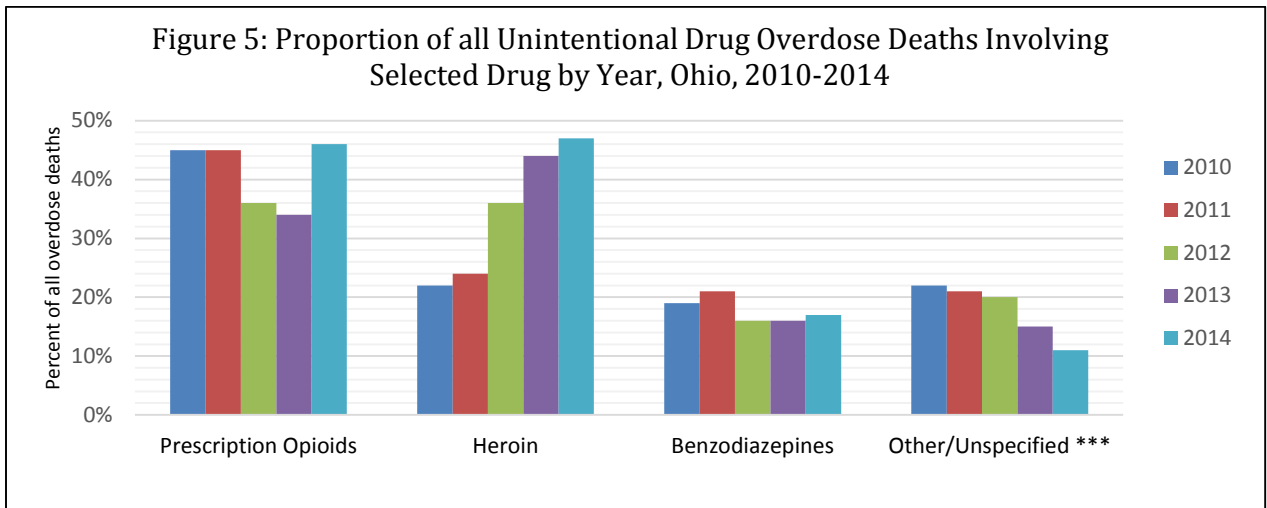
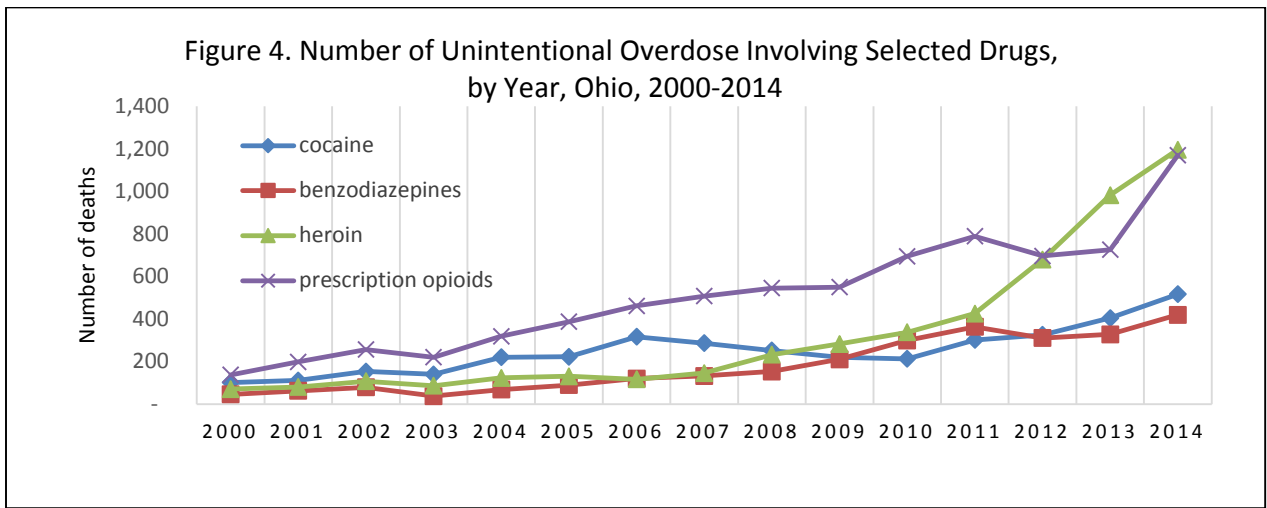
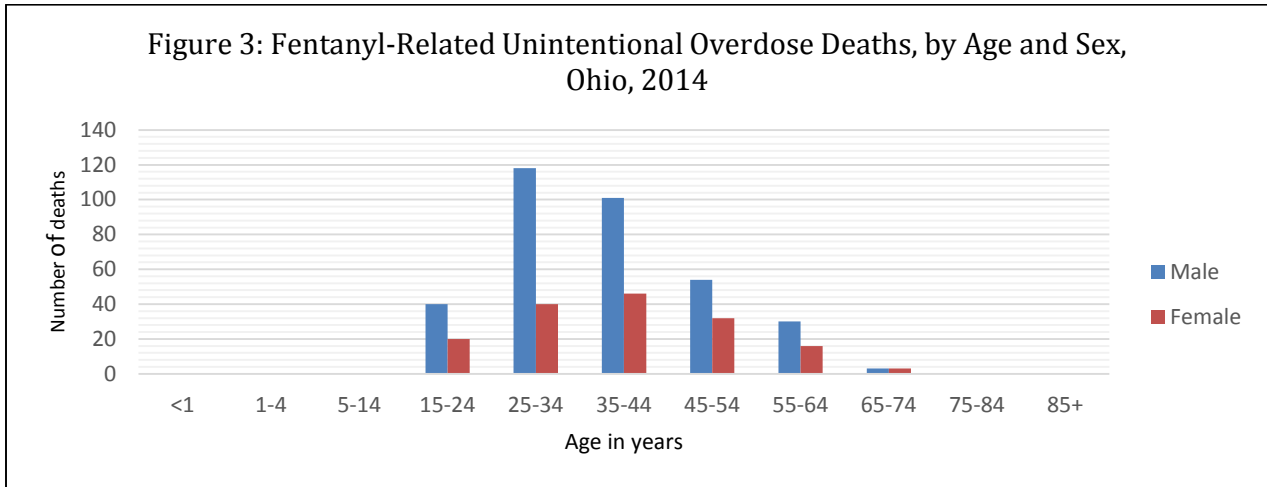
<sup>5</sup> U.S. Drug Enforcement Administration. 21 CFR part 1310. *Control of a Chemical Precursor Used in the Illicit Manufacture of Fentanyl as a List 1 Chemical*. Federal Register 2007; 72: 20039-47.

- Fentanyl-related unintentional drug overdose deaths in Ohio increased from 84 in 2013, involving fewer than 4 percent of such deaths, to 503 in 2014, involving 19.9 percent of such deaths (Figure 1).
- Counties with the most fentanyl-related unintentional overdose deaths were Hamilton (80), Montgomery (70), Summit (53), Butler (49), Cuyahoga (32), Stark (21), Clermont (22), and Lucas (20).
- Drug users may not know when illicit fentanyl has been combined with other commonly abused drugs, such as heroin, which may have contributed to the rise in unintentional drug overdose deaths.
- Opioids (prescription, fentanyl and heroin) remained the driving factor behind unintentional drug overdoses in Ohio. In 2014, 2,020 (79.8 percent) of drug overdoses involved any opioid, compared to 1,539 (72.9 percent) in 2013 (Table 1).
- Heroin-related deaths accounted for 1,196 (47.3 percent) of unintentional drug overdose deaths in 2014, compared to 983 (46.6 percent) in 2013 (Table 1).
- Prescription opioid-related deaths accounted for 1,170 (46.2 percent) of unintentional drug overdose deaths in 2014, compared to 726 (34.4 percent) in 2013 (Table 1). Fentanyl-related drug overdose deaths are categorized as prescription opiate deaths, a contributing factor to the increase.<sup>6</sup>
- Multiple drug use was the single-largest contributor to unintentional drug overdoses (Table 1). In 2014, 59 percent of overdose deaths (where the number of drugs was specified) involved more than one drug.
- Ohio’s death rate from unintentional drug overdoses in 2014 was 21.8 per 100,000 persons, compared to 18.2 in 2013 (Figure 2).



Source: Ohio Department of Health, Office of Vital Statistics; Analysis Conducted by Injury Prevention Program

<sup>6</sup> According to ICD-10 coding, fentanyl-related poisonings are classified under the T40.4 drug grouping “Other Synthetic Narcotics.” Fentanyl-related drug deaths in this report were identified based on the literal cause of death mentions on the death certificate. A drug “mention” means that a specific drug was found in a bodily system or fluid of a decedent, not that the drug was necessarily the sole cause of death. The presence of more than one drug can result in more than one mention from a single decedent.



Source: Ohio Department of Health; Office of Vital Statistics, Analysis Conducted by Injury Prevention Program

Multiple drugs are usually involved in overdose deaths. Individual deaths may be reported in more than one category.  
 \*\*\*No specific drug was identified.

In more than one-tenth (11 percent) of the cases, no specific drug is identified in the death certificate data. As such, reported drugs are likely under-estimates of their true contribution to the burden of fatal drug overdoses in Ohio.

**Table 1. Unintentional Drug Overdose Deaths of Ohio Residents Involving Specific Drug(s), as Mentioned on Death Certificate, by Year, 2003-2014<sup>1-4</sup>**

Drug Category <sup>4</sup>	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	% of 2014 deaths
<b>all opioids*</b>	296	429	489	551	631	735	783	979	1,163	<b>1,272</b>	<b>1,539</b>	<b>2,020</b>	<b>79.8%</b>
<b>prescription opioids**</b>	221	319	388	462	508	546	550	694	795	<b>697</b>	<b>726</b>	<b>1,170</b>	<b>46.2%</b>
<b>heroin</b>	87	124	131	117	146	233	283	338	431	<b>680</b>	<b>983</b>	<b>1,196</b>	<b>47.3%</b>
<b>benzodiazepines</b>	38	69	90	121	133	154	211	300	376	<b>311</b>	<b>328</b>	<b>420</b>	<b>16.6%</b>
<b>cocaine</b>	140	221	223	317	287	252	220	213	309	<b>326</b>	<b>405</b>	<b>517</b>	<b>20.4%</b>
<b>alcohol</b>	40	38	58	89	135	181	173	195	226	<b>282</b>	<b>304</b>	<b>383</b>	<b>15.1%</b>
<b>methadone</b>	55	116	144	161	176	170	169	155	156	<b>123</b>	<b>112</b>	<b>103</b>	<b>4.1%</b>
<b>hallucinogens</b>	7	8	8	10	13	14	9	26	31	<b>31</b>	<b>43</b>	<b>49</b>	<b>1.9%</b>
<b>barbiturates</b>	5	3	5	3	7	3	5	13	11	<b>6</b>	<b>10</b>	<b>6</b>	<b>0.2%</b>
<b>other/unspecified drugs only***</b>	154	256	289	378	453	475	396	343	376	<b>389</b>	<b>319</b>	<b>274</b>	<b>11%</b>
<b>Multiple Drug Involvement</b>								<b>888<sup>5</sup></b>	<b>980<sup>6</sup></b>	<b>1,016<sup>7</sup></b>	<b>1,014<sup>8</sup></b>	<b>1,321<sup>9</sup></b>	
<b>Total unintentional poisoning deaths</b>	<b>658</b>	<b>904</b>	<b>1,020</b>	<b>1,261</b>	<b>1,351</b>	<b>1,475</b>	<b>1,423</b>	<b>1,544</b>	<b>1,772</b>	<b>1,914</b>	<b>2,110</b>	<b>2,531</b>	
<b>Crude annual death rate per 100,000</b>	<b>5.7</b>	<b>7.9</b>	<b>8.9</b>	<b>11.0</b>	<b>11.7</b>	<b>12.8</b>	<b>12.3</b>	<b>13.4</b>	<b>15.3</b>	<b>16.6</b>	<b>18.2</b>	<b>21.8</b>	

1. Source: Ohio Department of Health, Bureau of Vital Statistics; Analysis by Injury Prevention Program.

2. Total includes out of state deaths of Ohio residents for all years.

3. Individual drugs do not add up to totals as more than one drug may be listed on the death certificate for one death.

4. Data completeness varies from year to year for residents who died out of state; approximately 2 percent of the fatal overdoses on average each year.

5. 343 deaths in 2010 involved an unknown number of drugs.

6. 376 deaths in 2011 involved an unknown number of drugs; multiple drug involvement count is based on 1,389 deaths with known number of drugs included on death certificate.

7. 382 deaths in 2012 involved an unknown number of drugs; multiple drug involvement count is based on 1,525 deaths with known number of drugs included on death certificate.

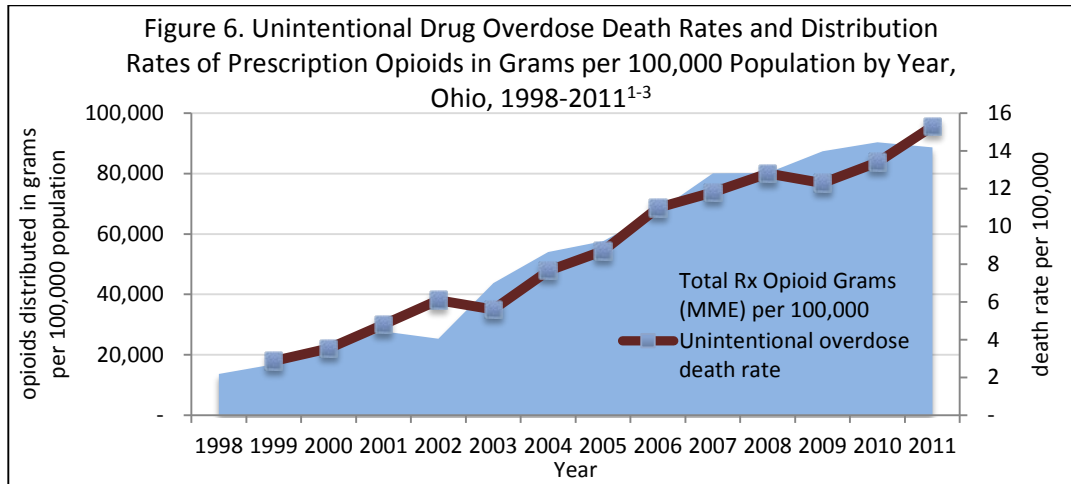
8. 319 deaths in 2013 involved an unknown number of drugs; multiple drug involvement count is based on 1,791 deaths with known number of drugs included on death certificate.

9. 274 deaths in 2014 involved an unknown number of drugs; multiple drug involvement count is based on 2,257 deaths with known number of drugs included on death certificate.

\* Includes prescription opioids and heroin; \*\*Includes opioid analgesics (pharmaceutical) and non-pharmaceutical synthetic opioids; \*\*\*Includes only those instances where no other drug than T50.9 (other/unspecified) is included as contributing to death.

## CONTRIBUTING FACTORS TO THE OPIOID OVERDOSE EPIDEMIC

- Key factors leading to this epidemic include: 1) Changes in clinical pain management guidelines in the late 1990s, i.e., Federation of State Medical Boards released *Model Guidelines for the Use of Controlled Substances for the Treatment of Pain*, and Ohio Revised Code 4731.21 regarding drug treatment of intractable pain, 2) Aggressive marketing by pharmaceutical companies of new, extended-release prescription opioids to physicians, and 3) Lifecycle of addiction.<sup>7</sup> These factors initially led to rapidly increasing use of prescription opioids.
- From 1998 to 2011, there was a 643 percent increase in the amount of prescription opioid grams per 100,000 population distributed to retail pharmacies in Ohio.<sup>8</sup>



**Sources:** 1. Ohio Vital Statistics; 2. DEA, ARCOS Reports, Retail Drug Summary Reports by State, Cumulative Distribution Reports (Report 4) Ohio, 1997-2007 [http://www.deadiversion.usdoj.gov/arcos/retail\\_drug\\_summary/index.html](http://www.deadiversion.usdoj.gov/arcos/retail_drug_summary/index.html); 3. Calculation of oral morphine equivalents used the following assumptions: a) All drugs other than fentanyl are taken orally; fentanyl is applied transdermally. b) These doses are approximately equianalgesic: morphine: 30 mg; codeine: 200 mg; oxycodone and hydrocodone: 30 mg; hydromorphone: 7.5 mg; methadone: 4 mg; fentanyl: 0.4 mg; meperidine: 300 mg.

- Trends that have contributed to this complex problem include marketing of medications directly to consumers; over-prescribing; widespread diversion of medications; deception of providers by users, including doctor-shopping and prescription fraud; illegal online “pharmacies;” unscrupulous providers (e.g., “pill mills”); overmedication and mixing medications; improper storage and disposal of excess medications; increasing quantity and purity of heroin; and decreasing cost of heroin compared to prescription opioids.

## NATIONAL DATA

- According to the most recent national data available, 47,055 people died from a drug overdose in the U.S. in 2014. Since 2000, the age-adjusted drug overdose death rate has more than doubled, from 6.2 per 100,000 in 2000 to 14.7 per 100,000 in 2014.<sup>9</sup>
- The 2013 National Survey on Drug Use and Health showed that 4.5 million Americans used opiates and related substances non-medically in 2013.<sup>10</sup>
- Although pharmaceutical fentanyl is diverted for abuse in the U.S., the majority of fentanyl drug reports and fentanyl reported with other drugs result from clandestinely produced and trafficked fentanyl, not diverted pharmaceutical fentanyl.<sup>11</sup>

<sup>7</sup> U.S. Food and Drug Administration Warning Letters.

<sup>8</sup> U.S. Drug Enforcement Administration, Automation of Reports and Consolidated Orders System (ARCOS).

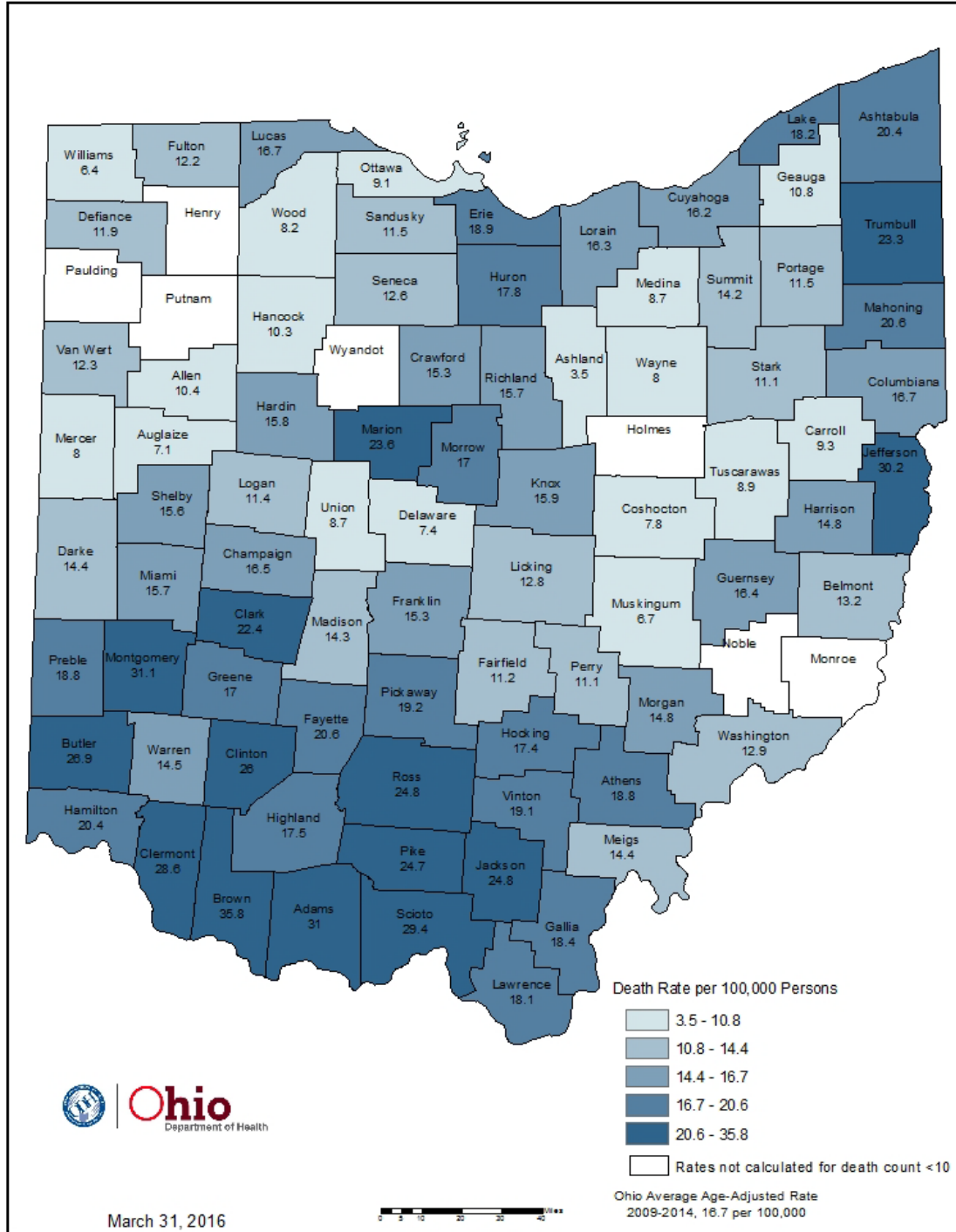
<sup>9</sup> Rudd R, Aleshire N, Zibbell J, Gladden R. Increases in Drug and Opioid Overdose Deaths-United States 2000-2014. 2016; 64(50):1378-82.

<sup>10</sup> U.S. Drug Enforcement Administration, Office of Diversion Control. 2015. *National Forensic Laboratory Information System Report: Opiates and Related Drugs Reported in NFLIS, 2009-2014*. Springfield, VA: U.S. Drug Enforcement Administration.

<sup>11</sup> U.S. Drug Enforcement Administration, Office of Diversion Control. 2015. *National Forensic Laboratory Information System Report: Opiates and Related Drugs Reported in NFLIS, 2009-2014*. Springfield, VA: U.S. Drug Enforcement Administration.

# OHIO DRUG OVERDOSE DATA BY COUNTY

**Figure 7. Average Age-Adjusted Unintentional Drug Overdose Death Rate Per 100,000 Population, by County, Ohio Residents, 2009-2014<sup>1,2</sup>**



<sup>1</sup>Sources: Ohio Department of Health, Bureau of Vital Statistics; Analysis by Injury Prevention Program; U.S. Census Bureau (population estimates).  
<sup>2</sup>Includes Ohio residents who died due to unintentional drug poisoning (primary underlying cause of death ICD-10 codes X40-X44).  
 \* Rate suppressed if < 10 total deaths for 2009-2014.

**Table 2. Number of Unintentional Drug Overdose Deaths of Ohio Residents and Average Crude and Age-Adjusted Annual Death Rates Per 100,000 Population, by County, 2009-2014<sup>1,2</sup>**

County	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2009-2014 Total	Crude Rate	Age Adjusted Rate	Ratio County to State
BROWN	2	8	5	5	10	12	13	17	11	14	17	17	89	33.4	35.8	2.1
MONTGOMERY	55	127	116	125	130	145	121	113	119	150	199	251	953	29.7	31.1	1.9
ADAMS	3	1	6	6	5	6	10	6	6	10	6	10	48	28.3	31	1.9
JEFFERSON	10	9	12	12	9	15	23	13	25	14	17	21	113	27.5	30.2	1.8
SCIOTO	10	14	17	15	19	20	24	22	25	17	18	23	129	27.5	29.4	1.8
CLERMONT	14	25	22	31	36	38	32	49	49	56	65	80	331	27.8	28.6	1.7
BUTLER	23	21	31	47	45	55	68	59	80	92	120	151	570	25.7	26.9	1.6
CLINTON	7	12	4	6	8	10	11	3	6	13	16	13	62	24.6	26	1.6
JACKSON	2	4	4	14	7	8	5	7	8	9	12	8	49	24.7	24.8	1.5
ROSS	6	7	14	11	19	20	24	17	18	12	15	29	115	24.8	24.8	1.5
PIKE	5	0	3	2	6	4	9	4	13	3	6	5	40	23.5	24.7	1.5
MARION	3	5	7	3	8	9	9	8	13	19	18	27	94	23.7	23.6	1.4
TRUMBULL	23	38	29	30	58	41	43	43	57	34	37	54	268	21.5	23.3	1.4
CLARK	11	25	15	18	20	19	19	19	34	36	28	38	174	21.1	22.4	1.3
FAYETTE	1	4	3	5	5	2	4	3	5	5	4	12	33	19.1	20.6	1.2
MAHONING	17	16	29	25	25	42	38	48	47	48	41	48	270	19.1	20.6	1.2
ASHTABULA	3	8	6	5	7	10	11	18	18	26	15	27	115	19.1	20.4	1.2
HAMILTON	62	72	86	98	96	113	101	110	150	159	212	248	980	20.1	20.4	1.2
PICKAWAY	0	3	3	5	5	5	9	9	14	12	10	8	62	18.5	19.2	1.1
VINTON	0	2	4	3	4	2	2	1	1	5	2	3	14	17.5	19.1	1.1
ERIE	2	2	3	4	5	6	6	18	12	12	16	17	81	17.6	18.9	1.1
ATHENS	4	3	7	9	13	8	10	6	12	10	8	8	54	13.9	18.8	1.1

PREBLE	1	1	4	3	7	11	9	7	5	11	6	8	46	18.3	18.8	1.1
County	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2009-2014 Total	Crude Rate	Age Adjusted Rate	Ratio County to State
GALLIA	3	3	4	6	2	4	5	3	6	3	7	6	30	16.3	18.4	1.1
LAKE	6	13	18	29	26	15	20	39	42	48	43	53	245	17.7	18.2	1.1
LAWRENCE	5	7	5	7	8	13	11	9	17	10	9	8	64	17.1	18.1	1.1
HURON	4	1	5	5	6	5	8	4	8	8	14	17	59	16.6	17.8	1.1
HIGHLAND	2	2	6	4	4	4	5	6	7	3	8	12	41	15.9	17.5	1.0
HOCKING	1	2	1	1	9	8	4	4	7	4	8	4	31	17.8	17.4	1.0
GREENE	15	16	19	21	16	31	21	27	23	23	21	40	155	15.9	17	1.0
MORROW	1	1	3	5	2	2	5	8	5	2	9	6	35	16.7	17	1.0
COLUMBIANA	4	4	1	7	7	8	9	8	18	17	27	19	98	15.3	16.7	1.0
LUCAS	21	21	49	44	75	73	49	54	57	88	72	115	435	16.4	16.7	1.0
<b>OHIO TOTAL</b>	<b>658</b>	<b>904</b>	<b>1,020</b>	<b>1,261</b>	<b>1,351</b>	<b>1,473</b>	<b>1,423</b>	<b>1,544</b>	<b>1,772</b>	<b>1,914</b>	<b>2,110</b>	<b>2,531</b>	<b>11,294</b>	<b>16.3</b>	<b>16.7</b>	<b>1.0</b>
CHAMPAIGN	1	2	0	4	1	4	1	7	6	6	4	11	35	14.7	16.5	1.0
GUERNSEY	2	2	2	0	3	2	4	12	3	3	7	9	38	15.9	16.4	1.0
LORAIN	13	12	13	18	16	18	25	21	25	70	69	71	281	15.5	16.3	1.0
CUYAHOGA	87	114	115	168	134	144	144	159	212	230	255	255	1,255	16.5	16.2	1.0
KNOX	1	4	3	4	5	7	10	7	9	7	12	8	53	14.5	15.9	1.0
HARDIN	3	4	2	10	6	6	3	6	6	1	10	1	27	14.1	15.8	0.9
MIAMI	6	8	11	8	10	20	15	14	12	16	12	19	88	14.3	15.7	0.9
RICHLAND	6	8	13	16	10	12	18	14	15	11	22	31	111	15	15.7	0.9
SHELBY	2	4	2	3	7	12	8	5	8	5	9	7	42	14.2	15.6	0.9
CRAWFORD	2	4	10	9	12	10	7	7	5	5	2	9	35	13.5	15.3	0.9
FRANKLIN	63	72	102	154	187	179	139	192	209	191	196	196	1,123	15.7	15.3	0.9
HARRISON	1	2	0	0	1	0	1	1	4	0	3	2	11	11.7	14.8	0.9
MORGAN	0	0	1	1	1	0	3	1	1	0	4	4	13	14.6	14.8	0.9
WARREN	14	11	21	17	17	33	34	25	26	32	27	40	184	14.2	14.5	0.9
DARKE	1	6	4	1	7	9	3	5	5	9	9	11	42	13.4	14.4	0.9
MEIGS	1	0	2	5	3	1	2	3	5	2	4	4	20	14.2	14.4	0.9



MADISON	2	0	1	2	5	4	5	10	3	7	7	7	39	15	14.3	0.9
SUMMIT	49	60	50	53	66	46	54	66	56	91	76	118	461	14.2	14.2	0.9
County	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2009-2014 Total	Crude Rate	Age Adjusted Rate	Ratio County to State
BELMONT	3	7	6	5	3	8	8	5	5	10	8	14	50	12	13.2	0.8
WASHINGTON	5	1	5	9	4	5	8	4	6	7	7	12	44	11.9	12.9	0.8
LICKING	12	13	10	13	15	27	20	24	22	13	23	23	125	12.5	12.8	0.8
SENECA	3	1	3	3	2	1	7	0	8	6	7	11	39	11.6	12.6	0.8
VAN WERT	2	0	1	4	1	4	1	3	6	1	4	4	19	11.1	12.3	0.7
FULTON	0	1	1	1	2	1	2	6	5	9	3	5	30	11.8	12.2	0.7
DEFIANCE	0	1	2	1	5	1	2	3	5	3	5	7	25	10.8	11.9	0.7
PORTAGE	9	9	7	12	8	5	16	14	6	16	22	30	104	10.8	11.5	0.7
SANDUSKY	2	5	1	7	8	9	2	4	11	4	5	13	39	10.8	11.5	0.7
LOGAN	4	5	3	6	6	5	5	6	0	5	9	4	29	10.6	11.4	0.7
FAIRFIELD	5	12	8	7	13	7	17	15	12	19	17	15	95	10.7	11.2	0.7
PERRY	0	2	2	2	4	3	2	4	4	7	0	4	21	9.8	11.1	0.7
STARK	10	15	16	25	25	30	21	39	40	35	42	59	236	10.5	11.1	0.7
GEAUGA	1	3	3	5	2	5	2	7	11	8	11	11	50	8.8	10.8	0.6
ALLEN	0	5	4	6	6	9	5	5	9	14	15	12	60	9.5	10.4	0.6
HANCOCK	3	4	3	1	2	4	8	7	10	5	4	11	45	10	10.3	0.6
CARROLL	0	1	2	2	1	3	2	3	0	4	2	3	14	8.2	9.3	0.6
OTTAWA	2	0	2	2	5	2	6	2	4	3	4	3	22	8.9	9.1	0.5
TUSCARAWAS	1	0	3	8	1	3	4	7	13	8	11	6	49	8.8	8.9	0.5
MEDINA	2	3	8	7	8	9	13	7	13	17	14	17	81	7.8	8.7	0.5
UNION	2	3	4	5	1	6	4	10	3	3	3	6	29	9.2	8.7	0.5
WOOD	1	3	4	10	5	9	14	9	7	10	4	16	60	7.8	8.2	0.5
MERCER	0	1	1	2	3	1	2	2	4	1	5	5	19	7.8	8	0.5
WAYNE	1	3	6	7	0	11	7	6	13	7	4	13	50	7.3	8	0.5
COSHOCTON	0	2	5	2	2	4	1	2	4	3	4	2	16	7.3	7.8	0.5
DELAWARE	2	3	5	7	13	11	12	12	10	16	15	12	77	7.1	7.4	0.4

AUGLAIZE	0	0	2	1	2	3	3	3	3	5	3	2	19	6.9	7.1	0.4
MUSKINGUM	3	6	1	6	4	5	4	5	2	7	10	5	33	6.4	6.7	0.4
WILLIAMS	0	0	1	1	1	2	2	3	1	1	5	2	14	6.2	6.4	0.4
County	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2009-2014 Total	Crude Rate	Age Adjusted Rate	Ratio County to State
ASHLAND	1	2	3	4	1	1	1	2	4	0	1	3	11	3.4	3.5	0.2
MONROE*	1	0	0	1	0	0	2	0	0	1	0	4	7			0.0
PAULDING*	0	0	2	1	0	3	2	2	0	2	0	3	9			0.0
WYANDOT*	1	0	0	1	1	1	1	2	2	1	1	0	7			0.0
NOBLE*	1	0	0	1	2	2	1	1	0	0	1	0	3			0.0
PUTNAM*	0	0	0	1	1	2	2	1	0	1	2	3	9			0.0
HENRY*	1	2	3	1	0	0	0	1	0	2	1	2	6			0.0
HOLMES*	0	1	0	0	1	0	0	1	1	0	1	0	3			0.0

<sup>1</sup>Table includes Ohio residents who died due to unintentional drug poisoning (primary underlying cause of death X40-X44).

<sup>2</sup>Sources: Ohio Department of Health, Bureau of Vital Statistics; analysis by Injury Prevention Program; U.S. Census Bureau (population estimates).

\*Rate suppressed if < 10 total deaths for 2009-2014.

Additional data, resources and background information are available at:  
<http://www.healthy.ohio.gov/vipp/data/rxdata.aspx>