Ohio Department of Health

2014 Ohio Drug Overdose Preliminary Data: General Findings

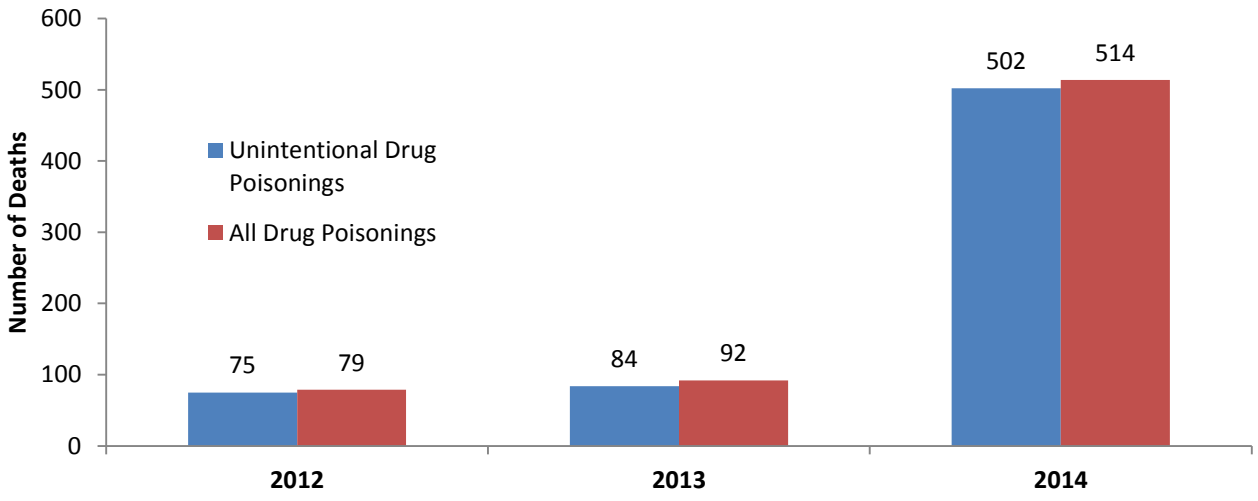
Overview

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 2,482 Ohio residents in 2014 based on preliminary data.[1] This is the highest number of deaths on record from drug overdose and reflects a 17.6 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.[2]
- Fentanyl drug reports[3] 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.[4]
- 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.[5]

Figure 1. Fentanyl-Related Drug Overdoses, Ohio, 2012-14[1]

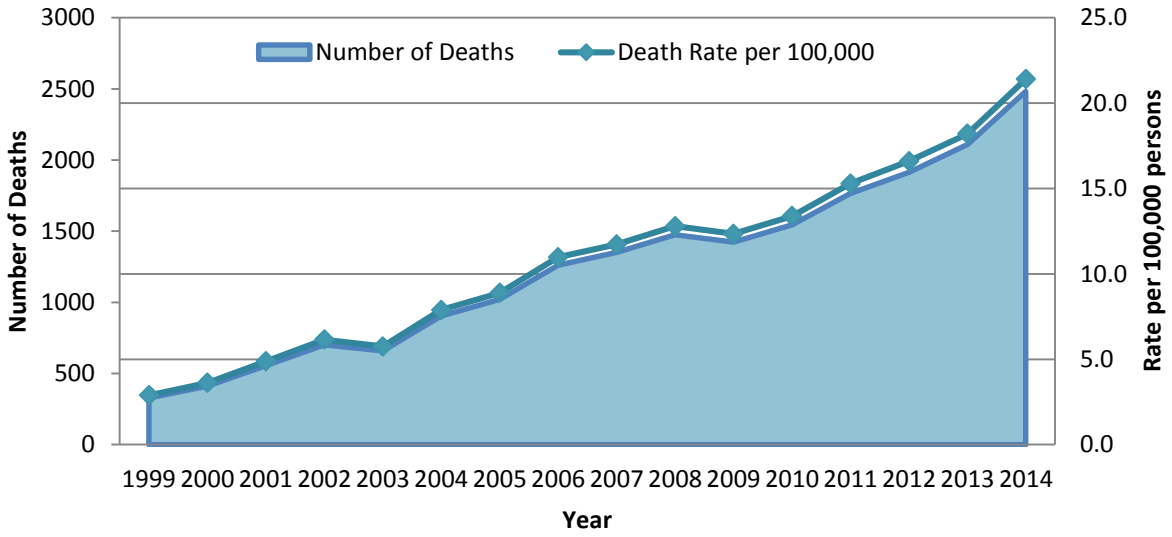


Source: Ohio Department of Health, Office of Vital Statistics; Analysis Conducted by Injury Prevention Program

[1] 2014 drug overdose data is based on information listed on death certificates, including for Ohioans who died in other states. 2014 drug overdose data will be officially finalized once all out-of-state death certificates are submitted by other states to the ODH Bureau of Vital Statistics.
[2] 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.
[3] 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.
[4] 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.
[5] 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 502 in 2014, involving 20.2 percent of such deaths (Figure 1).
- Counties with the most fentanyl-related 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, 1,988 (80.1 percent) of drug overdoses involved any opioid, compared to 1,539 (72.9 percent) in 2013 (Table 1).
- Heroin-related deaths accounted for 1,177 (47.4 percent) of unintentional drug overdose deaths in 2014, compared to 983 (46.6 percent) in 2013 (Table 1).
- Prescription opioid-related deaths accounted for 1,155 (46.5 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.[6]
- 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 21.4 per 100,000 persons, compared to 18.2 in 2013 (Figure 2).

Figure 2. Number of Deaths and Death Rate per 100,000 from Unintentional Drug Overdose by Year, Ohio Residents, 1999-2014



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

[6] 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.

Figure 3. Fentanyl-Related Unintentional Overdose Deaths, by age and sex, Ohio, 2014

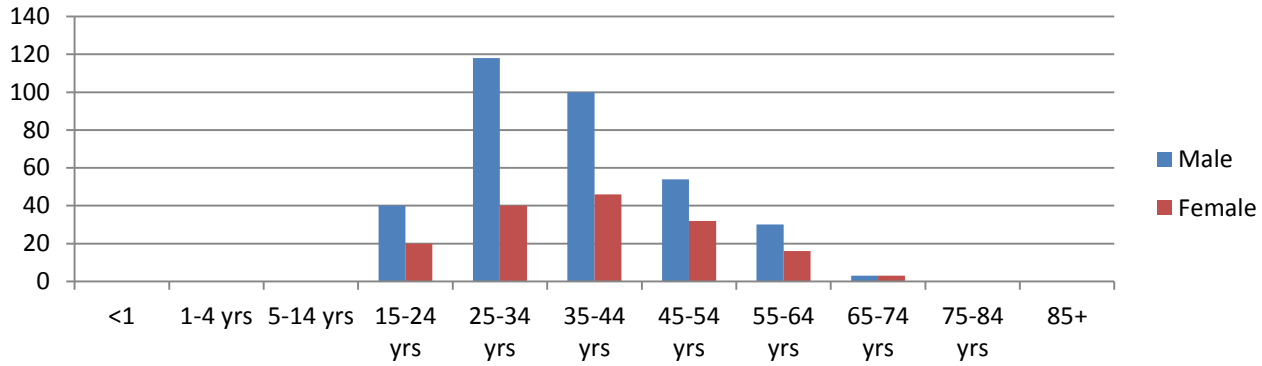


Figure 4. Number of Unintentional Overdoses Involving Selected Drugs, by year, Ohio, 2000-2014

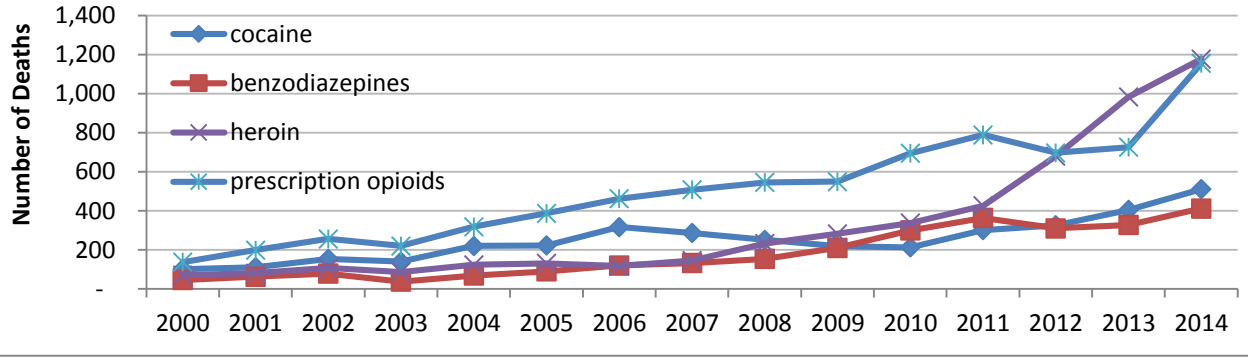
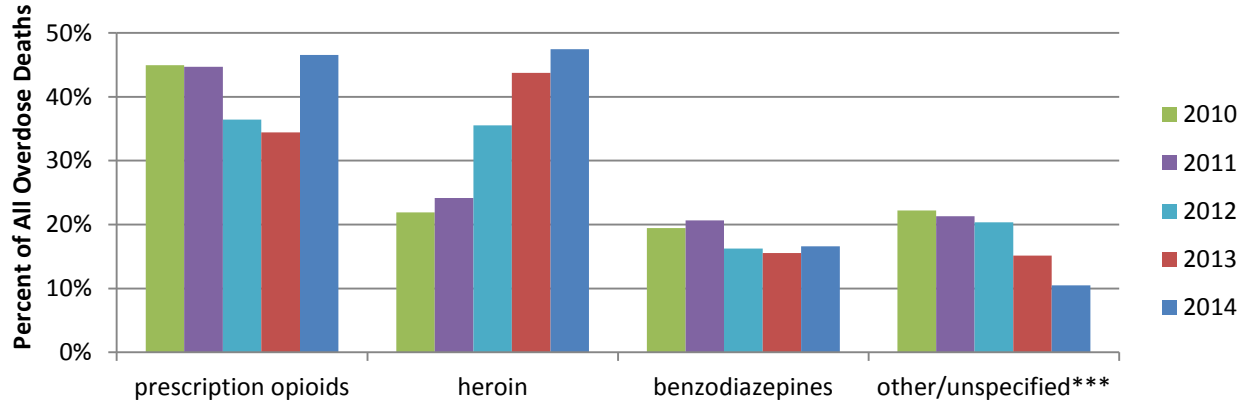


Figure 5. Proportion of all Unintentional Drug Overdose Deaths Involving Selected Drug by Year, Ohio, 2010-2014



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[1-4]

Drug Category[4]	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	% of 2014 deaths
all opioids*	296	429	489	551	631	735	783	979	1,154	1,272	1,539	1,988	80.1%
prescription opioids**	221	319	388	462	508	546	550	694	789	697	726	1,155	46.5%
heroin	87	124	131	117	146	233	283	338	426	680	983	1,177	47.4%
benzodiazepines	38	69	90	121	133	154	211	300	364	311	328	412	16.6%
cocaine	140	221	223	317	287	252	220	213	302	326	405	511	20.6%
alcohol	40	38	58	89	135	181	173	195	221	282	304	376	15.1%
methadone	55	116	144	161	176	170	169	155	157	123	112	101	4.1%
hallucinogens	7	8	8	10	13	14	9	26	30	31	43	49	2.0%
barbiturates	5	3	5	3	7	3	5	13	11	6	10	6	0.2%
other/unspecified drugs only***	154	256	289	378	453	475	396	343	376	389	319	260	10.5%
Multiple Drug Involvement								888[5]	980[6]	1,016[7]	1,014[8]	1,316[9]	
Total unintentional poisoning deaths	658	904	1,020	1,261	1,351	1,475	1,423	1,544	1,765	1,914	2,110	2,482	
Crude annual death rate per 100,000	5.7	7.9	8.9	11.0	11.7	12.8	12.3	13.4	15.3	16.6	18.2	21.4	

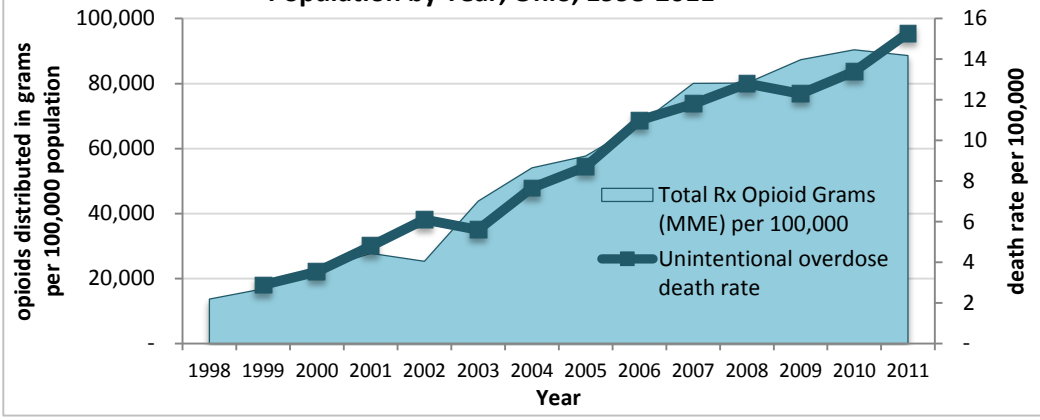
1. Source: Ohio Department of Health, Bureau of Vital Statistics; Analysis by Injury Prevention Program.
2. Total includes out of state deaths of Ohio residents for all years.
3. Individual drugs do not add up to totals as more than one drug may be listed on the death certificate for one death.
4. Data 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. 260 deaths in 2014 involved an unknown number of drugs; multiple drug involvement count is based on 2,222 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.[7] 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.[8]

Figure 6. Unintentional Drug Overdose Death Rates and Distribution Rates of Prescription Opioids in Grams per 100,000 Population by Year, Ohio, 1998-2011[1-3]



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; 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.

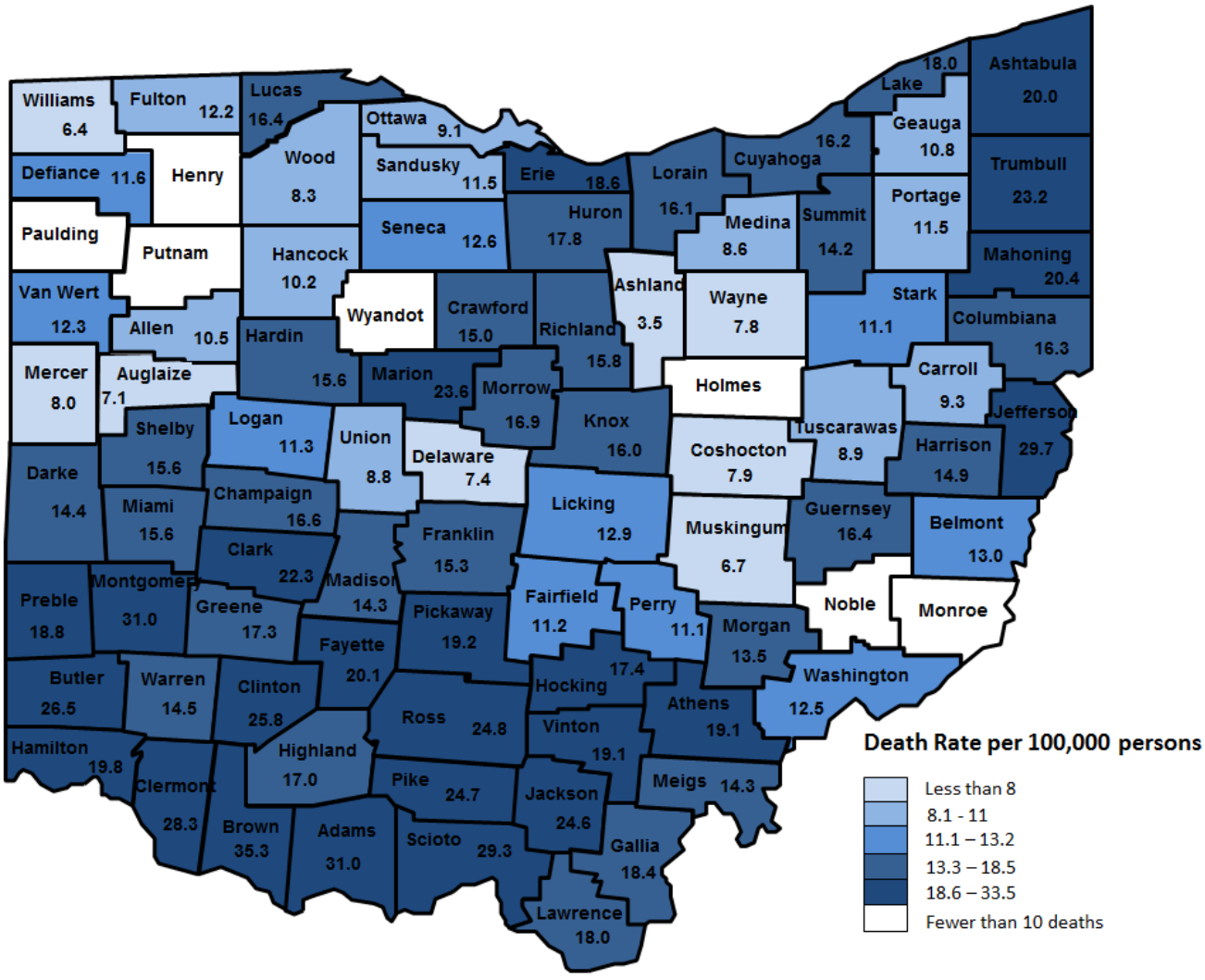
NATIONAL DATA

- According to the most recent national data available, 43,982 people died from a drug overdose in the U.S. in 2013, an increase from the 37,004 deaths in 2009.[9]
- The 2013 National Survey on Drug Use and Health showed that 4.5 million Americans used opiates and related substances non-medically in 2013.[10]
- 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.[11]

[7] U.S. Food and Drug Administration Warning Letters.
[8] U.S. Drug Enforcement Administration, Automation of Reports and Consolidated Orders System (**ARCOS**).
[9] Jones C, Mack K, Paulozzi L. Pharmaceutical Overdose Deaths, United States, 2010. JAMA. 2013;309(7):657-659.
[10] 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[1,2]



Ohio Average Age-Adjusted Rate 2009-14: 16.6 per 100,000

[1]Sources: Ohio Department of Health, Bureau of Vital Statistics; Analysis by Injury Prevention Program; U.S. Census Bureau (population estimates).
[2]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 2008-2014; May be unreliable.

[11] 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.

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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[1,2]

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	12	14	17	16	89	33.5	35.3	2.1
ADAMS	3	1	6	6	5	6	10	6	6	10	6	10	48	28.4	31.0	1.9
MONTGOMERY	55	127	116	125	130	145	121	113	121	150	199	247	951	29.7	31.0	1.9
JEFFERSON	10	9	12	12	9	15	23	13	24	14	17	19	110	26.9	29.7	1.8
SCIOTO	10	14	17	15	19	20	24	22	25	17	18	22	128	27.5	29.3	1.8
CLERMONT	14	25	22	31	36	38	32	49	49	56	65	78	329	27.6	28.3	1.7
BUTLER	23	21	31	47	45	55	68	59	80	92	118	148	565	25.5	26.5	1.6
CLINTON	7	12	4	6	8	12	11	3	6	13	16	13	62	24.5	25.8	1.6
ROSS	6	7	14	11	19	20	24	17	17	12	15	29	114	24.6	24.8	1.5
PIKE	5	0	3	2	6	4	9	4	12	3	6	5	39	23.1	24.7	1.5
JACKSON	2	4	4	14	7	8	5	7	8	9	12	8	49	24.7	24.6	1.5
MARION	3	5	7	3	8	9	9	8	13	19	18	27	94	23.8	23.6	1.4
TRUMBULL	23	38	29	30	58	41	43	43	59	34	36	53	268	21.5	23.2	1.4
CLARK	11	25	15	18	20	19	19	19	33	36	28	38	173	20.9	22.3	1.3
MAHONING	17	16	29	25	25	42	38	48	46	48	41	45	266	18.9	20.4	1.2
FAYETTE	1	4	3	5	5	2	4	3	5	5	4	11	32	18.6	20.1	1.2
HAMILTON	62	72	86	98	96	113	101	110	149	159	212	242	973	19.8	20.0	1.2
ASHTABULA	3	8	6	5	7	10	11	18	18	26	15	25	113	18.8	20.0	1.2
PICKAWAY	0	3	3	5	5	5	9	9	14	12	11	8	63	18.8	19.2	1.2
ATHENS	4	3	7	9	13	8	10	6	12	10	8	8	54	14.0	19.1	1.2
VINTON	0	2	4	3	4	2	2	1	2	5	2	3	15	18.9	19.1	1.2

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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
PREBLE	1	1	4	3	7	11	9	7	5	11	8	8	48	19.2	18.8	1.1
ERIE	2	2	3	4	5	6	6	18	12	12	16	16	80	17.4	18.6	1.1
GALLIA	3	3	4	6	2	4	5	3	6	3	7	6	30	16.3	18.4	1.1
LAWRENCE	5	7	5	7	8	13	11	9	17	10	9	8	64	17.1	18.0	1.1
LAKE	6	13	18	29	26	15	20	39	43	48	43	52	245	17.6	18.0	1.1
HURON	4	1	5	5	6	5	8	4	8	8	14	17	59	16.6	17.8	1.1
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	22	23	21	40	154	15.8	17.3	1.0
HIGHLAND	2	2	6	4	4	4	5	6	7	3	8	11	40	15.6	17.0	1.0
OHIO TOTAL	**658**	**904**	**1,020**	**1,261**	**1,351**	**1,475**	**1,423**	**1,544**	**1,765**	**1,914**	**2,110**	**2,482**	11,245	16.2	16.9	1.0
MORROW	1	1	3	5	2	2	5	8	5	2	9	6	35	16.7	16.9	1.0
CHAMPAIGN	1	2	0	4	1	4	1	7	6	6	4	11	35	14.8	16.6	1.0
LUCAS	21	21	49	44	75	73	49	54	57	88	72	112	432	16.1	16.4	1.0
GUERNSEY	2	2	2	0	3	2	4	12	3	3	7	9	38	15.9	16.4	1.0
COLUMBIANA	4	4	1	7	7	8	9	8	18	17	27	17	96	15.0	16.3	1.0
CUYAHOGA	87	114	115	168	134	144	144	159	211	230	255	254	1,253	16.5	16.2	1.0
LORAIN	13	12	13	18	16	18	25	21	24	70	69	70	279	15.3	16.1	1.0
KNOX	1	4	3	4	5	7	10	7	8	7	12	8	52	14.3	16.0	1.0
RICHLAND	6	8	13	16	10	12	18	14	15	11	22	31	111	15.0	15.8	0.9
SHELBY	2	4	2	3	7	12	8	5	8	5	9	7	42	14.2	15.6	0.9
HARDIN	3	4	2	10	6	6	3	6	6	1	10	1	27	14.2	15.6	0.9
MIAMI	6	8	11	8	10	20	15	14	12	16	12	18	87	14.1	15.6	0.9
FRANKLIN	63	72	102	154	187	179	139	192	209	191	197	193	1,121	15.7	15.3	0.9
CRAWFORD	2	4	10	9	12	10	7	7	4	5	2	8	33	12.8	15.0	0.9
HARRISON	1	2	0	0	1	0	1	1	4	0	3	2	11	11.8	14.9	0.9
WARREN	14	11	21	17	17	33	34	25	27	32	27	40	185	14.3	14.5	0.9
DARKE	1	6	4	1	7	9	3	5	5	9	9	11	42	13.4	14.4	0.9

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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
MEIGS	1	0	2	5	3	1	2	3	5	2	4	4	20	14.3	14.3	0.9
MADISON	2	0	1	2	5	4	5	10	3	7	7	7	39	15.1	14.3	0.9
SUMMIT	49	60	50	53	66	46	54	66	53	91	76	118	458	14.1	14.2	0.9
MORGAN	0	0	1	1	1	0	3	1	1	0	4	3	12	13.6	13.5	0.8
BELMONT	3	7	6	5	3	8	8	5	5	10	8	13	49	11.8	13.0	0.8
LICKING	12	13	10	13	15	27	20	24	22	13	23	23	125	12.6	12.9	0.8
SENECA	3	1	3	3	2	1	7	0	8	6	7	11	39	11.6	12.6	0.8
WASHINGTON	5	1	5	9	4	5	8	4	6	7	7	10	42	11.4	12.5	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	6	24	10.4	11.6	0.7
SANDUSKY	2	5	1	7	8	9	2	4	11	4	5	13	39	10.8	11.5	0.7
PORTAGE	9	9	7	12	8	5	16	14	6	16	23	29	104	10.8	11.5	0.7
LOGAN	4	5	3	6	6	5	5	6	0	5	9	4	29	10.5	11.3	0.7
FAIRFIELD	5	12	8	7	13	7	17	15	12	19	16	15	94	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	10	8	11	11	49	8.5	10.8	0.6
ALLEN	0	5	4	6	6	9	5	5	9	14	15	12	60	9.5	10.5	0.6
HANCOCK	3	4	3	1	2	4	8	7	10	5	4	11	45	10.0	10.2	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	0.6
TUSCARAWAS	1	0	3	8	1	3	4	7	13	8	11	6	49	8.9	8.9	0.5
UNION	2	3	4	5	1	6	4	10	3	3	3	6	29	9.3	8.8	0.5
MEDINA	2	3	8	7	8	9	13	7	14	17	14	16	81	7.7	8.6	0.5
WOOD	1	3	4	10	5	9	14	9	7	10	4	16	60	7.9	8.3	0.5
MERCER	0	1	1	2	3	1	2	2	4	1	5	5	19	7.8	8.0	0.5
COSHOCTON	0	2	5	2	2	4	1	2	4	3	4	2	16	7.3	7.9	0.5

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
WAYNE	1	3	6	7	0	11	7	6	13	7	4	12	49	7.1	7.8	0.5
DELAWARE	2	3	5	7	13	11	12	12	9	16	14	12	75	7.0	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
ASHLAND	1	2	3	4	1	1	1	2	4	0	1	3	11	3.4	3.5	0.2
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
MONROE	1	0	0	1	0	0	2	0	0	1	0	4	7			0.0
NOBLE	1	0	0	1	2	2	1	1	0	0	1	0	3			0.0
PAULDING	0	0	2	1	0	3	2	2	0	2	0	3	9			0.0
PUTNAM	0	0	0	1	1	2	2	1	0	1	2	3	9			0.0
WYANDOT	1	0	0	1	1	1	1	2	2	1	1	0	7			0.0

[1]Table includes Ohio residents who died due to unintentional drug poisoning (primary underlying cause of death X40-X44).

[2]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 2008-2013; may be unreliable.

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