

## Montgomery County Poisoning Death Review – 2012

### Overview

In 2012, 162 unintentional drug overdose deaths, the highest number on record, occurred in Montgomery County, Ohio. This finding comes from the Poisoning Death Review (PDR), a process involving the compilation and interpretation of multiple data sets from the Montgomery County Coroner's Office. The PDR is carried out by faculty and staff at the Wright State University Boonshoft School of Medicine in collaboration with the Montgomery County Coroner's Office. The designation of deaths being either unintentional (accident) or intentional (suicide) is made by the Montgomery County Coroner. This is the third year the PDR has been conducted. In 2011, 130 unintentional drug overdose deaths occurred in Montgomery County; 127 in 2010.

### Demographics and Health of Decedents

Of the 162 decedents, 145 were Montgomery County residents, 15 were residents of other Ohio counties (5 Greene; 2 each from Miami, Clark, Preble; and 1 each from Darke, Hamilton, Wood, and Highland); and 2 were out-of-state residents (KY and NC).

As in previous years, a majority of the decedents were white (85%), male (60%), and had a high school education or less (96%).

The three age groups with the highest proportion of deaths were 45-54 year olds (33%), 25-34 year olds (28%), and 35-44 year olds (19%), together accounting for 80% of the 2012 decedents, unchanged from 2011. However, there were noteworthy changes in the proportions among these groups: the 35-44 year old group decreased 7% from 2011 and the 25-34 year old group increased 6% (see Table).

Autopsy results revealed most decedents had a history of physical illness or disability (81%), with heart disease common (58%). A majority (78%) had a history of substance abuse. About one-fifth of decedents had a history of mental illness.

Most of the deaths occurred in the decedents' or decedents friends' homes (61%).

### Drug "Mentions"

A drug "mention" means that a specific drug was found in a bodily system or fluid of a decedent, not that that 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.

Prescription opioids (drugs used to treat pain and/or "get high") were mentioned in 45% of the cases in 2012, down from 62% in 2011 and 74% in 2010. These are consequential and significant decreases. Nevertheless, prescription opioids remain a major factor in unintentional drug overdose deaths. The prescription opioids mentioned most frequently in toxicology reports were: oxycodone (15%); methadone (12%); and hydrocodone (9%). The number of methadone mentions is down significantly from previous years. (Note: the methadone identified in toxicological analyses had almost certainly been prescribed for pain, *not* diverted from drug abuse treatment programs.)

Heroin was present in 59% the decedents. This is a large and significant increase from 2011 when heroin was found in the bodily systems or fluids of 35% the decedents. It is notable that the increase in heroin mentions was initially seen in the last quarter of 2011. In addition, 23% of all decedents with heroin mentions also had prescription opioids in their systems.

Sedatives (drugs used to treat anxiety and/or “get high”) were mentioned in 54% of the cases, a significant decrease from the 74% in 2011. Still, sedatives are a major factor in unintentional drug overdose deaths. Benzodiazepines accounted for 80% of the sedative drug mentions in toxicology reports.

Other drugs found in decedents’ bodily system or fluids include: cocaine (30%); alcohol (28%); and anti-depressants (26%).

#### *Multiple and Powerful Drugs.*

Two-thirds of the decedents had two or more central nervous system (CNS) depressant drugs in their systems at the time of death. It is well-established that the concurrent or simultaneous use of drugs that depress the CNS, such as opioids, benzodiazepines and alcohol, can be extremely hazardous and result in death from profound respiratory depression. Nevertheless, some drugs, like the opioids, are capable of causing death by respiratory depression in the absence of other CNS depressants. In 2012, 19% of the drug overdose decedents had heroin and no other CNS depressants in their systems. This is a significant increase over previous years.

#### **Conclusion**

Data from the 2012 PDR reveal remarkable and significant decreases in unintentional drug overdose deaths involving prescription opioids (e.g., Vicodin, Percocet, Oxycontin, methadone) and benzodiazepines (e.g., Xanax, Klonopin, Ativan), alone and in combination. Still, it is clear that the indiscriminate, non-compliant and/or non-medical use of these agents remains a serious public health problem in Montgomery County (*and the region, state and country as well*). Equally remarkable is the dramatic increase in the number of deaths involving heroin. Thus, there has been no noticeable change in the proportion of cases in which opioids are involved. The figure has hovered at 90% for the past 3 years. It appears the prescription drug epidemic which has recently generated so much concern, while still present, is morphing into a heroin epidemic. Other communities around the state and across the country are witnessing similar changes.

## POISONING DEATH REVIEW SUMMARY REPORT, 2012

		162		2011 Cases: 130	2010 Cases: 127
DEMOGRAPHICS					
Characteristic					
	Category	Freq	Percent	2011 Percent	2010 Percent
Age Group	<15 years	0	0%	0%	0%
	15-24 years	6	4%	5%	14%
	25-34 years	46	28%	22%	22%
	35-44 years	31	19%	26%	28%
	45-54 years	53	33%	32%	18%
	55-64 years	22	14%	14%	16%
	65-74 years	4	2%	1%	2%
	75+ years	0	0%	0%	0%
Gender	Male	98	60%	59%	57%
	Female	64	40%	41%	43%
Race	White	137	85%	87%	90%
	Black	24	15%	13%	10%
	Other	1	1%	0%	0%
Hispanic	Hispanic/Latino	1	1%	0%	0%
Education	<High School	44	27%	28%	20%
	HS graduate	111	69%	69%	76%
	College graduate	4	2%	2%	2%
	Post-graduate	1	1%	1%	1%
	Unknown	2	1%		
Marital Status	Single	76	47%	39%	41%
	Married	25	15%	31%	29%
	Divorced	49	30%	25%	26%
	Separated	0	0%	3%	2%
	Widowed	12	7%	2%	2%
Military	Ever in US Armed Forces	14	9%	4%	13%

<b>HEALTH</b>					
<b>Characteristic</b>					
		<b>Freq</b>	<b>Percent</b>	<b>2011 Percent</b>	<b>2010 Percent</b>
Physical Disability/Illness		132	81%	74%	79%
Heart Disease		94	58%	56%	65%
Mental Disability/Illness		34	21%	23%	27%
<b>HISTORY OF SUBSTANCE ABUSE</b>					
	<b>Total Cases Jan 1-Dec 31, 2012</b>	<b>162</b>		<b>2011 Cases: 130</b>	<b>2010 Cases: 127</b>
<b>Substance Abuse</b>					
		<b>Freq</b>	<b>Percent</b>	<b>2011 Percent</b>	<b>2010 Percent</b>
Any history		127	78%	82%	75%
Alcohol		27	17%	18%	13%
Cocaine		19	12%	17%	12%
Marijuana		4	2%	2%	5%
Heroin		51	31%	26%	26%
Prescription opioids		10	12%	27%	27%
Benzodiazepines		11	7%	16%	15%
Other Prescription Medications		1	1%	5%	3%
Over-the-Counter Medications		0	0%	0%	0%
<b>DEATH INVESTIGATION</b>					
<b>Characteristic</b>	<b>Category</b>				
		<b>Freq</b>	<b>Percent</b>	<b>2011 Percent</b>	<b>2010 Percent</b>
Location of death	Decedent's home	81	50%	53%	68%
	Relative's home	2	1%	0%	2%
	Friend's home	18	11%	16%	14%
	Place of work	0	0%	1%	0%
	School	0	0%	0%	0%
	Hospital	48	30%	22%	9%
	Drug tx facility	1	1%	0%	0%
	Jail/detention area	1	1%	0%	0%
	Public area	4	2%	2%	2%
	Other	7	4%	6%	4%
911 called	Yes	152	94%	98%	96%

Person reporting death	Coroner	0	0%	0%	1%
	Hospital physician	53	33%	23%	17%
	Mortician	0	0%	0%	0%
	EMS/Police	109	67%	75%	82%
Possible prevention by use of opioid antagonist?		41	25%	14%	11%
<b>TOXICOLOGY REPORT</b>					
	<b>Total Cases Jan 1-Dec 31, 2012</b>	<b>162</b>		<b>2011 Cases: 130</b>	<b>2010 Cases: 127</b>
<b>Characteristic</b>	<b>Category</b>	<b>Freq</b>	<b>Percent</b>	<b>2011 Percent</b>	<b>2010 Percent</b>
	Alcohol	46	28%	23%	23%
	Cocaine	49	30%	41%	30%
	Methamphetamine	4	2%	2%	1%
	Heroin	95	59%	35%	31%
<b>Prescription Opioids</b>	<b>Any</b>	73	45%	62%	74%
	Oxycodone	25	15%	19%	23%
	Hydrocodone	15	9%	15%	24%
	Methadone	20	12%	33%	32%
	Fentanyl	9	6%	6%	7%
	Tramadol	9	6%	4%	6%
	Hydromorphone	0	0%	0%	1%
	Morphine	10	6%	8%	9%
	Other	2	1%	3%	4%
<b>Anti-Depressants</b>	<b>Any</b>	42	26%	32%	38%
<b>Sedatives (Including Benzodiazepines)</b>	<b>Any</b>	88	54%	74%	76%
<b>Benzodiazepines</b>	<b>Any</b>	70	43%	65%	70%
<b>Any Prescription Opioid + Any Benzodiazepine</b>		43	27%	49%	57%
<b>Two or more of the following CNS depressants: alcohol, heroin, prescription opioids, sedatives</b>		107	66%	82%	85%
<b>Heroin + Any Other CNS Depressant</b>		65	40%	31%	27%
<b>Heroin without Any Other CNS Depressant</b>		30	19%	5%	4%
<b>Heroin + Any Prescription Opioid</b>		22	14%	10%	13%
<b>Any Opiate</b>		146	90%	88%	92%
<b>Other Prescription</b>	Any	49	30%	37%	39%

<b>Over-The-Counter</b>	Any	32	20%	19%	20%
<b>Verifiable Valid Prescription for Controlled Drugs in Toxicology Report</b>		109	36%	37%	33%
<b>Indication of IV Drug Use + Presence of Heroin in Tox Report</b>		41	25%		
<b>PRESCRIPTION OPIOIDS</b>		<b>Cases with Prescription Opioids Jan 1-Dec 31, 2012</b>		<b>2011 Cases with Prescription Opioids</b>	<b>2010 Cases with Prescription Opioids</b>
<b>Decedents with Postmortem Prescription Opioids:</b>		<b>73</b>	<b>45%</b>	<b>62%</b>	<b>74%</b>
<b>Age</b>	<b>&lt;15 years</b>	0	0%	0%	0%
	<b>15-24 years</b>	3	4%	7%	13%
	<b>25-34 years</b>	18	25%	21%	23%
	<b>35-44 years</b>	14	19%	22%	27%
	<b>45-54 years</b>	26	36%	35%	19%
	<b>55-64 years</b>	11	15%	15%	17%
	<b>65-74 years</b>	1	1%	0%	1%
	<b>75+ years</b>	0	0%	0%	0%
<b>Gender</b>	<b>Male</b>	38	52%	49%	53%
	<b>Female</b>	35	48%	51%	47%
<b>Race</b>	<b>White</b>	65	89%	90%	93%
	<b>Black</b>	8	11%	10%	7%
<b>Hispanic</b>	<b>Hispanic/Latino</b>	0	0%	0%	0%
<b>Education</b>	<b>&lt;High School</b>	17	24%	29%	22%
	<b>HS graduate</b>	50	69%	69%	74%
	<b>College graduate</b>	4	6%	0%	3%
	<b>Post-graduate</b>	1	1%	1%	1%
	<b>Unknown</b>	1	1%		
<b>Marital Status</b>	<b>Single</b>	28	38%	32%	39%
	<b>Married</b>	13	18%	37%	34%
	<b>Divorced</b>	24	33%	26%	23%
	<b>Separated</b>	0	0%	2%	1%
	<b>Widowed</b>	8	11%	2%	2%
<b>Military</b>	<b>Ever in US Armed Forces</b>	6	8%	2%	11%
<b>Verifiable Physical Illness</b>	<b>Any</b>	65	89%	74%	83%
<b>Heart Disease</b>		43	59%	56%	67%
<b>Verifiable Valid Prescription</b>			36%	37%	33%

**Number of Unintentional Drug Overdose Deaths and Average Crude Death Rate  
per 100,000 by Zip Code of Residence**

Montgomery County	Population	2010-2012 Average Rate	2012 Total	2012 Rate	2011 Total	2011 Rate	2010 Total	2010 Rate	2010-2012 Total
County	535,153	23.23	145	27.10	112	20.93	116	21.68	373
45404	9,935	80.52	12	120.79	9	90.59	3	30.20	24
45410	14,585	73.13	12	82.28	8	54.85	12	82.28	32
45403	13,486	69.21	12	88.98	5	37.08	11	81.57	28
45325	2,361	42.35	0	0.00	1	42.35	2	84.71	3
45449	17,317	36.57	6	34.65	6	34.65	7	40.42	19
45420	24,090	31.83	4	16.60	10	41.51	9	37.36	23
45405	19,227	31.21	7	36.41	6	31.21	5	26.01	18
45402	11,668	28.57	3	25.71	3	25.71	4	34.28	10
45416	5,922	28.14	4	67.54	1	16.89	0	0.00	5
45414	21,300	26.60	7	32.86	5	23.47	5	23.47	17
45342	34,596	24.09	11	31.80	7	20.23	7	20.23	25
45418	1,413	23.59	0	0.00	1	70.77	0	0.00	1
45424	45,021	22.21	12	26.65	8	17.77	10	22.21	30
45345	6,196	21.52	4	64.56	0	0.00	0	0.00	4
45431	25,039	21.30	5	19.97	5	19.97	6	23.96	16
45377	14,441	20.77	1	6.92	3	20.77	5	34.62	9
45327	8,718	19.12	2	22.94	1	11.47	2	22.94	5
45322	21,778	18.37	3	13.78	3	13.78	6	27.55	12
45406	22,682	17.64	4	17.64	5	22.04	3	13.23	12
45417	32,260	15.50	8	24.80	6	18.60	1	3.10	15
45415	11,556	14.42	1	8.65	3	25.96	1	8.65	5
45432	15,152	13.20	2	13.20	3	19.80	1	6.60	6
45426	15,639	12.79	2	12.79	1	6.39	3	19.18	6
45439	10,630	12.54	4	37.63	0	0.00	0	0.00	4
45429	26,978	11.12	2	7.41	4	14.83	3	11.12	9
45459	28,868	9.24	3	10.39	3	10.39	2	6.93	8
45408	11,026	9.07	2	18.14	1	9.07	0	0.00	3
45440	22,360	8.94	3	13.42	2	8.94	1	4.47	6
45419	15,657	8.52	0	0.00	1	6.39	3	19.16	4
45427	24,844	5.37	1	4.03	0	0.00	3	12.08	4
45309	12,888	5.17	2	15.52	0	0.00	0	0.00	2
45409	13,399	4.98	2	14.93	0	0.00	0	0.00	2
45458	33,153	4.02	3	9.05	0	0.00	1	3.02	4
45344	16,974	1.96	0	0.00	1	5.89	0	0.00	1
45428*	355	93.90	1	281.69	0	0.00	0	0.00	1

\*Dayton VA Hospital

*The PDR is conducted by the WSU Boonshoft School of Medicine Center for Interventions, Treatment & Addictions Research, in collaboration with the Montgomery County Coroner's Office, under contract with Public Health – Dayton & Montgomery County (PHDMC), with support from the Ohio Department of Health (ODH). The PDR is part of the Preventing Unintentional Drug Poisoning Project, which is funded by PHDMC and the ODH with injury prevention block funds from the U.S. Centers for Disease Control.*