

# DHSC Statsheet

Delaware Health Statistics Center

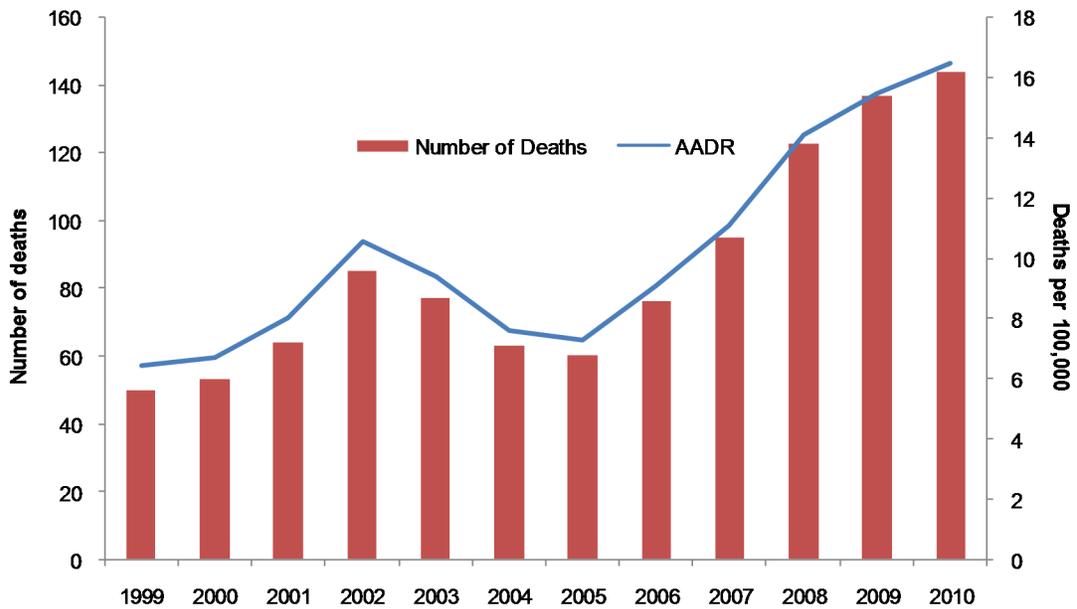
Division of Public Health  
Department of Health  
and Social Services

## Drug Overdose Mortality in Delaware — 2010

As noted in previous DHSC publications<sup>5,6,7</sup>, deaths due to drug overdoses, or poisonings, have continued to rise in Delaware. Drug overdose mortality includes deaths from poisonings by and exposure to drugs, regardless of intent (e.g. suicide, unintentional, homicide, undetermined) or type of drug. Drug overdoses exclude deaths from adverse events caused by drugs in therapeutic use, deaths indirectly related to drug use (e.g., motor vehicle crashes), and newborn deaths associated with the mother's drug use.

Between 1999 and 2010, the number of deaths due to drug overdoses experienced an almost threefold increase, rising from 50 deaths in 1999 to 144 deaths in 2010. As a result, more Delawareans died from drug overdoses than any other cause of injury in 2010.

**Figure 1. Number of Deaths and Age-adjusted Death Rate due to Drug Overdoses Delaware, 1999-2010**



**Note:**  
Age-adjusted Death Rates (AADR) are adjusted to the 2000 US Standard Population.  
**Source:** Delaware Health Statistics Center

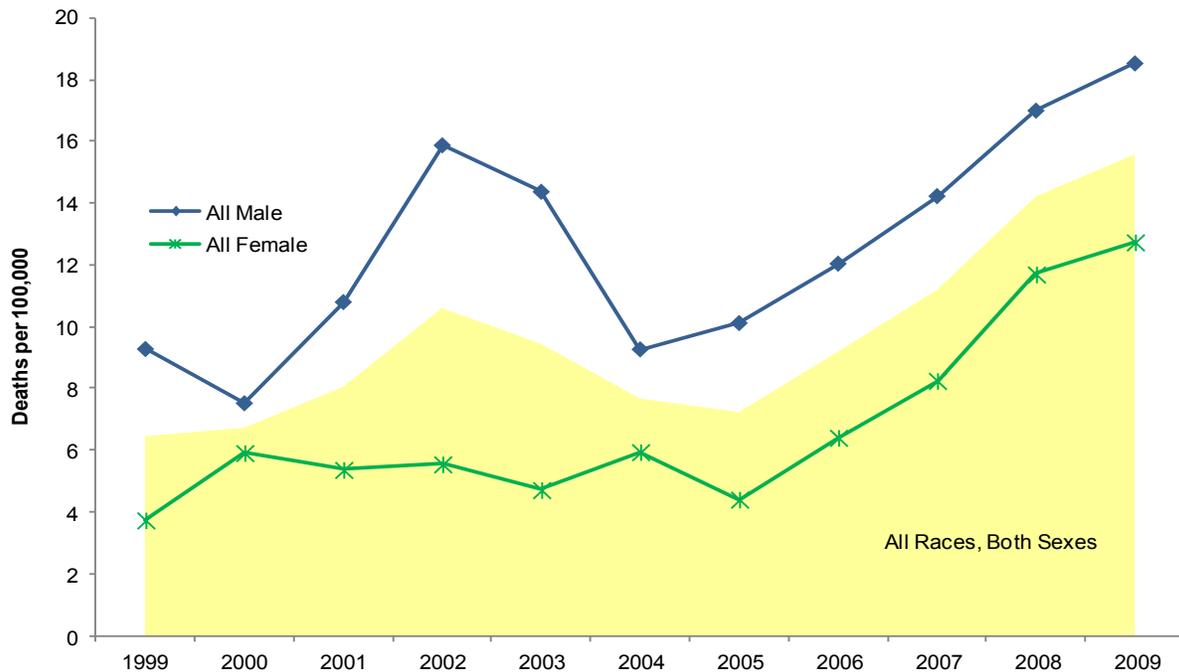
Higher numbers of drug overdoses translated into higher mortality rates as well, proving that the trend was real and not the consequence of a growing population.

*In 2010, more Delawareans died from unintentional drug overdoses than from motor vehicle accidents.*

*Over three-quarters of drug overdose deaths were unintentional, 12 percent were self-inflicted (suicide), and 8 percent were undetermined.*

Between 1999 and 2010, annual age-adjusted drug overdose mortality rates rose 156 percent, from 6.5 in 1999 to 16.5 in 2010. The increasing trend in drug overdose mortality appeared in both male and female rates, with the female rate more than tripling and the male rate doubling in the 10 year span. Despite the larger proportional increase in the female rate, males had a 2010 mortality rate 45 percent higher than the female rate (19.6 vs. 13.5 deaths per 100,000).

**Figure 2. Annual Age-adjusted Drug Overdose Mortality Rates by Sex, Delaware, 1999-2009**

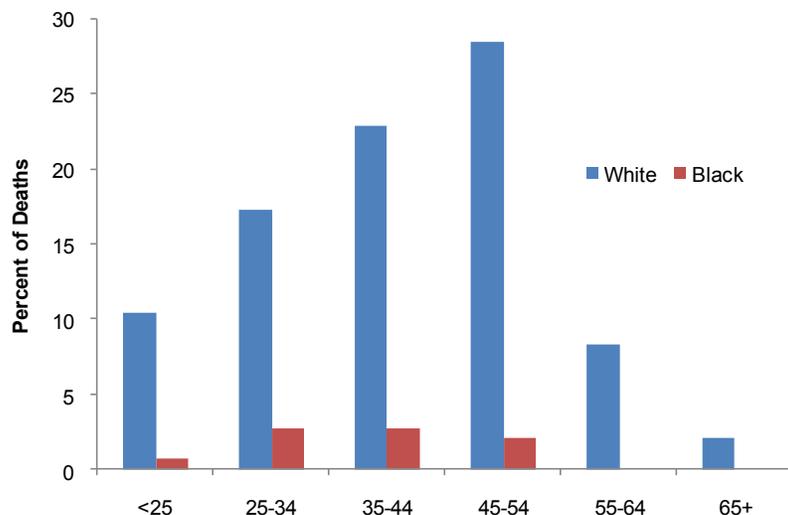


**Note:** Mortality rates are adjusted to the 2000 U.S. standard population.  
**Source:** Delaware Health Statistics Center

The increase in drug overdose mortality rates was limited to white decedents, who accounted for 90 percent of all drug overdose deaths in 2010. Black decedents accounted for relatively few drug overdose deaths and their rates did not demonstrate a similar increase.

Whites, ages 45-54, accounted for the single largest percent of drug overdose deaths in 2010. Within that age group, white males accounted for 44 percent of deaths and white females accounted for 47 percent of deaths.

**Figure 3. Distribution of Drug Overdose Deaths by Race and Age Group Delaware, 2010**



**Source:** Delaware Health Statistics Center

In some ways, characteristics of decedents who died due to drug overdoses changed little in the ten years between 1999 and 2010:

Whites still accounted for the bulk of drug overdoses; the majority of drug overdoses were unintentional; a larger proportion of decedents were male; and decedents aged 45-54 years still had the highest mortality rate.

However, there were notable changes:

The male/female ratio changed, with more female and fewer male decedents, thereby reducing the disparity; the distribution of intent shifted so fewer were unintentional and more were undetermined; but most significant were the increases in mortality rates across all age groups, both races, and both sexes.

**Table 1. Characteristics of 1999 & 2010 Drug Overdose Deaths**

	1999			2010			% Change in Rate since 1999
	Number	Percent	AADR <sup>*</sup>	Number	Percent	AADR <sup>*</sup>	
<b>Gender</b>							
<i>Male</i>	35	70.0	9.3	83	57.6	19.6	110.9
<i>Female</i>	15	30.0	—	61	42.4	13.5	NA
<b>Race</b>							
<i>White</i>	43	86.0	7.3	129	89.6	20.9	186.5
<i>Black</i>	7	14.0	—	12	8.3	—	NA
<b>Intent</b>							
<i>Unintentional</i>	42	84.0	5.4	116	80.6	13.4	145.9
<i>Suicide</i>	6	12.0	—	17	11.8	—	NA
<i>Assault</i>	0	0.0	—	0	0.0	—	NA
<i>Undetermined</i>	2	4.0	—	11	7.6	—	NA
<b>All Races, Both Sexes</b>	<b>50</b>	<b>100</b>	<b>6.5</b>	<b>144</b>	<b>100</b>	<b>16.5</b>	<b>155.8</b>
<b>Age</b>	<i>Number</i>	<i>Percent</i>	<i>Crude Rate</i>	<i>Number</i>	<i>Percent</i>	<i>Crude Rate</i>	
<15	1	2.0	—	0	0.0	—	NA
15-24	6	12.0	—	16	11.1	—	NA
25-34	10	20.0	—	30	20.8	26.0	NA
35-44	15	30.0	—	38	26.4	32.8	NA
45-54	13	26.0	—	45	31.3	33.6	NA
55-64	3	6.0	—	12	8.3	—	NA
65+	2	4.0	—	3	2.1	—	NA
<b>All Ages</b>	<b>50</b>	<b>100.0</b>	<b>6.5</b>	<b>144</b>	<b>100.0</b>	<b>16.0</b>	<b>148.1</b>

**Notes:**

\*AADR (Age-adjusted Death Rates) are age-adjusted per 100,000, using the 2000 U.S. standard population.

"—" Rate does not meet standards of reliability or precision; less than 20 deaths in the numerator.

NA indicates percent change not calculated due to one or both rates being unreliable.

**Source:** Delaware Health Statistics Center

Whites of both sexes accounted for 90 percent of all drug overdose deaths; white males made up half of the total drug overdose deaths, and white females accounted for another 40 percent. When drug overdose deaths were classified by intent, whites accounted for all the self-inflicted deaths and 87 percent of the unintentional deaths. The male/female distribution varied by intent. White women accounted for more self-inflicted overdose deaths, while white men accounted for more unintentional drug overdose deaths.

**Table 2A. 2010 All Drug Overdose Deaths by Race and Sex**

Race of decedent	Sex of decedent				Total	
	Male		Female			
	#	%	#	%	#	%
White	71	49.3%	58	40.3%	129	89.6%
Black	9	6.3%	3	2.1%	12	8.3%
Other	2	1.4%	0	0.0%	2	1.4%
Unknown	1	0.7%	0	0.0%	1	0.7%
<b>Total</b>	<b>83</b>	<b>57.6%</b>	<b>61</b>	<b>42.4%</b>	<b>144</b>	<b>100.0%</b>

**Table 2B. 2010 Self-inflicted Drug Overdose Deaths by Race and Sex**

Race of decedent	Sex of decedent				Total	
	Male		Female			
	#	%	#	%	#	%
White	8	47.1%	9	52.9%	17	100.0%
Black	0	0.0%	0	0.0%	0	0.0%
Other	0	0.0%	0	0.0%	0	0.0%
Unknown	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>	<b>8</b>	<b>47.1%</b>	<b>9</b>	<b>52.9%</b>	<b>17</b>	<b>100.0%</b>

**Table 2C. 2010 Unintentional Drug Overdose Deaths by Race and Sex**

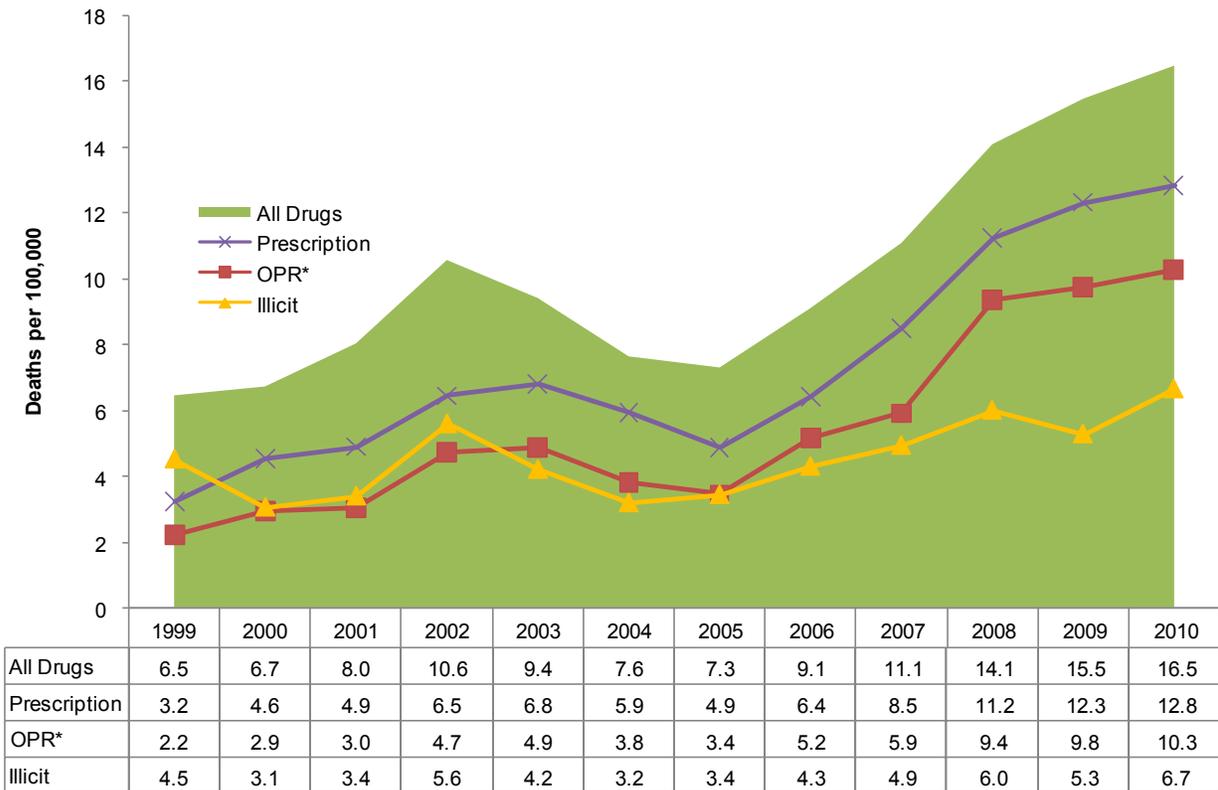
Race of decedent	Sex of decedent				Total	
	Male		Female			
	#	%	#	%	#	%
White	59	50.9%	42	36.2%	101	87.1%
Black	9	7.8%	3	2.6%	12	10.3%
Other	2	1.7%	0	0.0%	2	1.7%
Unknown	1	0.9%	0	0.0%	1	0.9%
<b>Total</b>	<b>71</b>	<b>61.2%</b>	<b>45</b>	<b>38.8%</b>	<b>116</b>	<b>100.0%</b>

Source: Delaware Health Statistics Center

While basic demographic characteristics are fairly easy to identify, determining the drugs, or type of drugs, implicated in such deaths is more complex. This report expands on the methodology of a recent MMWR document<sup>1</sup> that grouped drug overdose deaths into categories of opioid pain relievers (OPR), prescription drugs, and illicit drugs in order to estimate the extent to which each category of drugs was implicated in such deaths.

The results showed that mortality rates based on deaths where prescription drugs were implicated increased fourfold between 1999 and 2010; OPR-associated death rates were 4.6 times higher in 2010 than in 1999, and illicit drug-associated deaths showed a much smaller increase of 47 percent (see Figure 4).

**Figure 4. Annual Age-adjusted Drug Overdose Mortality Rates by Type of Drug Using both T-Codes and Cause of Injury Field, Delaware, 1999-2010**



**Note:**  
 \*OPR refers to Opioid Pain Relievers, which are included in the Prescription drug category.  
 Mortality rates are adjusted to the 2000 US Standard Population.  
 Source: Delaware Health Statistics Center

Of the 144 drug overdose deaths in 2010, 77 percent involved one or more prescription drugs, 62 percent involved a specific group of prescription drugs known as OPR, and 40 percent involved at least one illicit drug.

Because a death may have multiple drugs listed, these percentages are not additive or exclusive. In other words, a death due to an overdose of multiple drugs could result in it being included in all three drug classification types. An example of this would be a drug overdose death with cocaine and oxycodone listed on the death certificate; cocaine would be in the illicit drug category and oxycodone would be in both the prescription drug and OPR categories.

In 2010, 82 percent of the total drug overdose deaths involved multiple substances, either multiple drugs, one drug along with alcohol, or some combination of multiple drugs and alcohol. Alcohol was involved in 8 percent of drug overdose deaths.

Within the illicit drug deaths, cocaine was the most commonly listed drug, followed by heroin. Within the prescription drug deaths, opioids and cns depressants (these include barbiturates and benzodiazepines prescribed for anxiety and/or sleep problems) were the most commonly listed substances. Within the OPR deaths, methadone and oxycodone were the most commonly listed drugs.

### Technical Notes:

1. Drug overdose deaths were defined by ICD-10 codes: X40-X44, X60-X64, X85, and Y10-Y14.
2. ICD-10 codes T36-T50 were used to identify specific drug types.
3. While T-codes located in the secondary cause of death fields are normally the way specific drugs are identified, an examination of the data revealed that not all drugs mentioned were coded in this way. To gain as much detail as possible, specific drugs or substances were identified by querying the secondary cause of death T-codes and text descriptions located in the 'how the injury occurred' field. Even with this multi-tiered approach, there were some drug overdose deaths with no detailed information about the specific substances involved.
4. Opioid pain relievers (OPR) are a subset of prescription drugs; deaths involving OPR were included in both the OPR and prescription drug categories.

### References:

1. CDC. [Vital Signs: Overdoses of Prescription Opioid Pain Relievers ---United States, 1999—2008](#). MMWR 2011; 60(43);1487-1492.
2. NIDA Prescription Drug Abuse Chart. Available at: <http://www.drugabuse.gov/DrugPages/PrescripDrugsChart.html>.
3. Paulozzi, LJ, Budnitz, DS, and Xi, Y. *Increasing deaths from Opioid analgesics in the United States*. Pharmacoeconomics and Drug Safety. 2006; 15: 618-627.
4. World Health Organization. *International Classification of Diseases, 10th Revision*. 2010. Available at: <http://apps.who.int/classifications/icd10/browse/2010/en>.
5. Gladders, B. *Poisoning Deaths in Delaware*. Delaware Health Statistics Center, Division of Public Health, Delaware Health and Social Services. 2009. Available at: <http://www.dhss.delaware.gov/dph/hp/files/poison.pdf>.
6. Gladders, B. *Unintentional Drug Poisonings in Delaware*. Delaware Health Statistics Center, Division of Public Health, Delaware Health and Social Services. 2010. Available at: <http://www.dhss.delaware.gov/dph/hp/files/unpoison.pdf>.
7. Gladders, B. *Drug Overdose Mortality in Delaware*. Delaware Health Statistics Center, Division of Public Health, Delaware Health and Social Services. Jan 2012. Available at: <http://www.dhss.delaware.gov/dhss/dph/hp/files/drugoverdose.pdf>.

### General reference websites:

- <http://www.drugabuse.gov/NIDAHome.html> - National Institute on Drug Abuse home page  
<http://www.nlm.nih.gov/medlineplus/druginformation.html> - Drugs, Supplements, and Herbal Information from the U.S. National Library of Medicine and National Institutes of Health  
<http://www.samhsa.gov/data/DAWN.aspx> - Drug Abuse Warning Network  
<http://www.samhsa.gov/> - Substance Abuse and Mental Health Services Administration  
<http://www.justice.gov/dea/> - Drug Enforcement Administration home page



**DELAWARE HEALTH AND SOCIAL SERVICES**

Division of Public Health

If you have comments, suggestions, and/or questions, please contact the Delaware Health Statistics Center at (302) 744-4541.

Reported by Barbara Gladders

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<http://www.nlm.nih.gov/medlineplus/druginformation.html> - Drugs, Supplements, and Herbal Information from the U.S. National Library of Medicine and National Institutes of Health

<http://www.samhsa.gov/data/DAWN.aspx> - Drug Abuse Warning Network

<http://www.samhsa.gov/> - Substance Abuse and Mental Health Services Administration

<http://www.justice.gov/dea/> - Drug Enforcement Administration home page



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