

# DHSC Statsheet

Delaware Health Statistics Center

Division of Public Health  
Department of Health  
and Social Services

*In 2009, more Delawareans died from drug overdoses than from flu and pneumonia combined.*

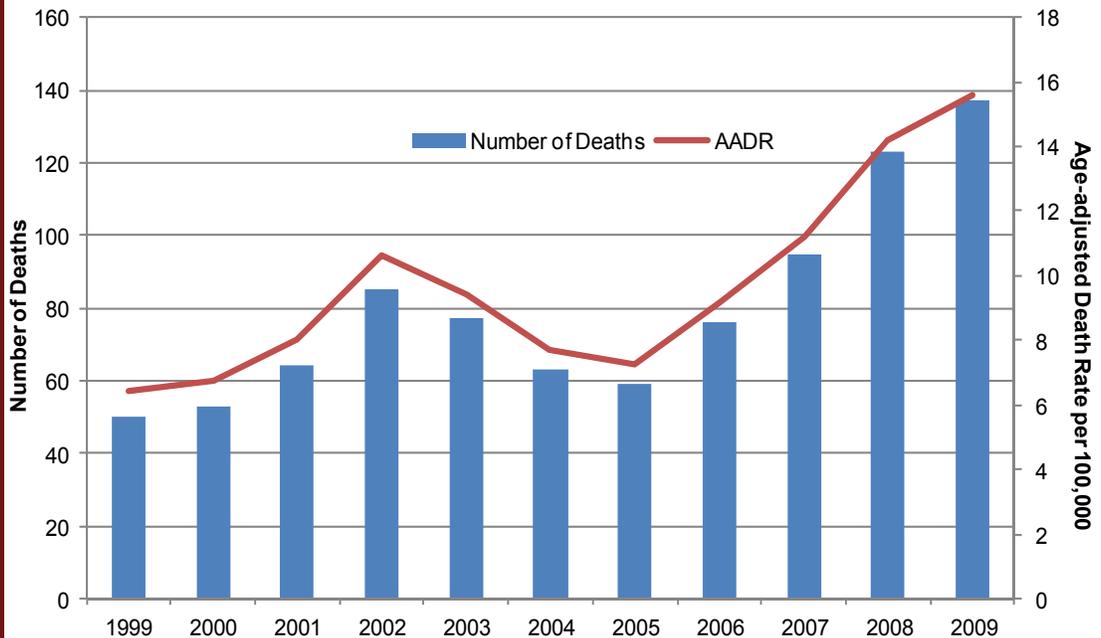
*Three-quarters of drug overdose deaths were unintentional, with the remaining 25 percent split between self-inflicted (suicide) and undetermined poisonings.*

## Drug Overdose Mortality in Delaware

As noted in previous DHSC publications<sup>5,6</sup>, deaths due to drug overdoses, or poisonings, are on the 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 2009, the number of deaths due to drug overdoses experienced an almost threefold increase, rising from 50 deaths in 1999 to 137 deaths in 2009. The number of deaths that involved prescription drugs and the subset of opioid pain relievers (OPR) also rose. By 2009, 80 percent of drug overdose deaths involved one or more prescription drugs; of those prescription drug-related overdose deaths, 78 percent included OPR.

**Figure 1. Number of Deaths and Age-adjusted Death Rate due to Drug Overdoses Delaware, 1999-2009**

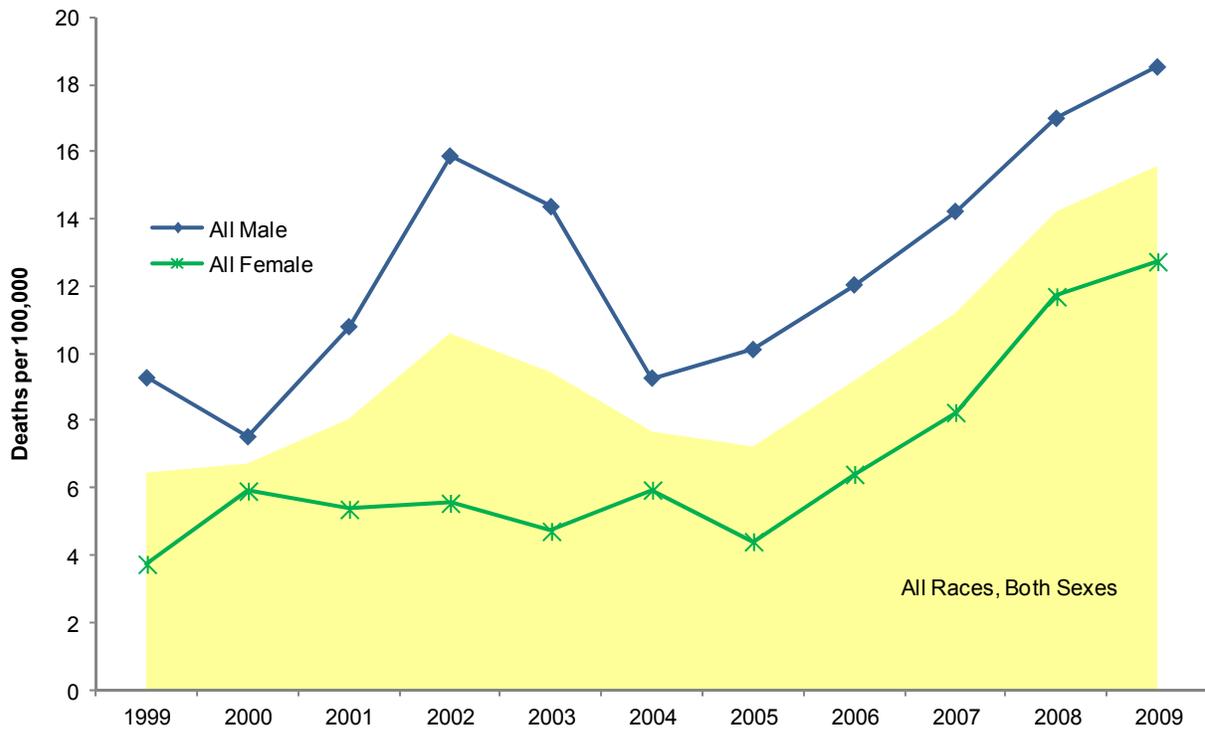


**Note:**  
Age-adjusted Death Rates (AADR) are adjusted to the 2000 US Standard Population.  
**Source:** Delaware Health Statistics Center

As shown in Figure 1, these increases were reflected in higher overall rates, though that increase was limited to white decedents; black decedents accounted for relatively few drug overdose deaths and their rates did not demonstrate an increase.

Between 1999 and 2009, annual age-adjusted drug overdose mortality rates rose 142%, from 6.5 in 1999 to 15.6 in 2009. The increasing trend in drug overdose mortality appeared in both male and female rates. Though female mortality rates rose faster, more than tripling in the 10 year span, male rates nearly doubled, resulting in a 2009 mortality rate 45% higher than the female rate (18.5 vs. 12.7 deaths per 100,000).

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

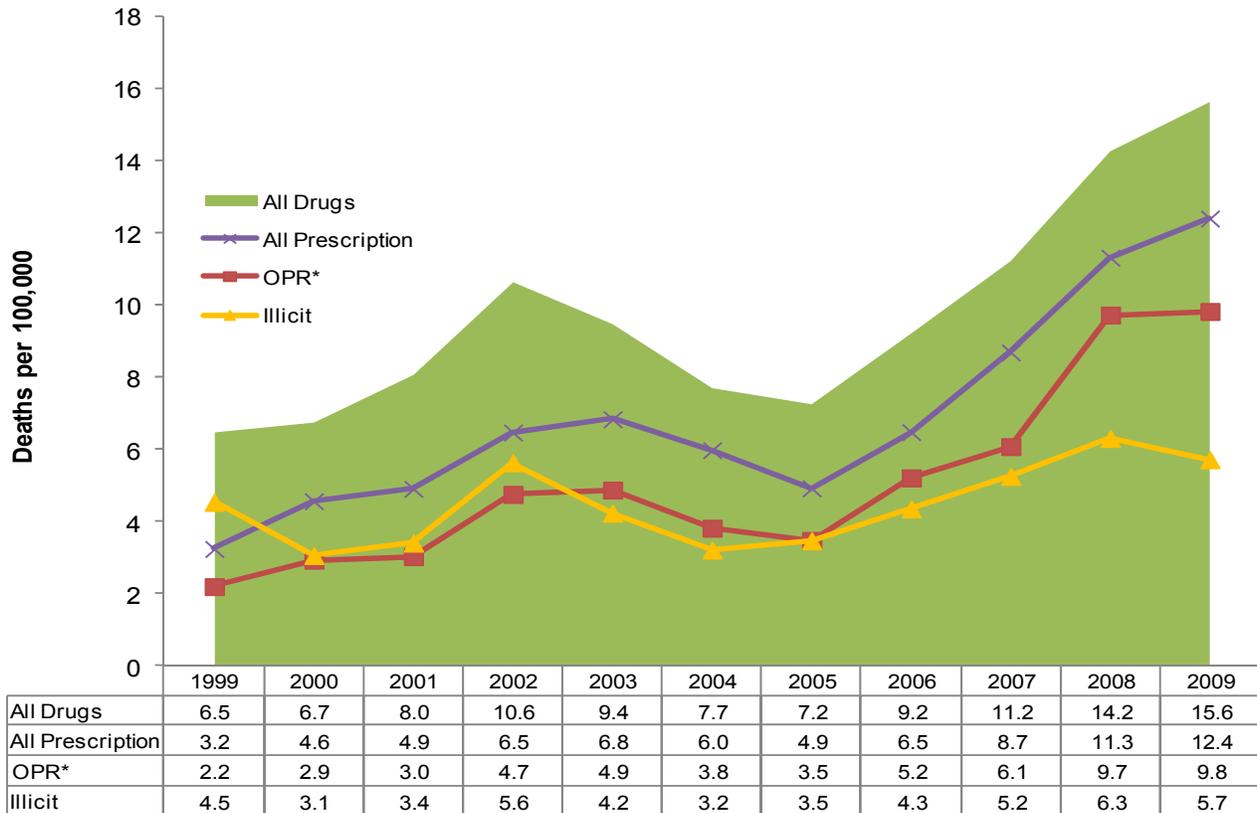


**Note:** Mortality rates are adjusted to the 2000 U.S. standard population.  
**Source:** Delaware Health Statistics Center

While basic demographic characteristics are fairly easy to identify, determining what drugs, or what type of drugs, are 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 nearly fourfold between 1999 and 2009; OPR-associated death rates were 4.5 times higher in 2009 than in 1999; illicit drug-associated deaths showed a much smaller increase of 26% (see Figure 3).

**Figure 3. Annual Age-adjusted Drug Overdose Mortality Rates by Type of Drug Using both T-Codes and Cause of Injury Field, Delaware, 1999-2009**



**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 137 drug overdose deaths in 2009, 80% involved prescription drugs, 63% involved a specific group of prescription drugs known as OPR (Opioid Pain Relievers), and 36% 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 decedent may be classified as a drug overdose death due to multiple drugs, which could classify him in all three drug 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.

Seventy-two percent of the total drug overdose deaths involved multiple substances, either multiple drugs, a drug and alcohol, or some combination of multiple drugs and alcohol. Alcohol was involved in 22% 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, oxycodone, methadone, and fentanyl were the most commonly listed drugs.

In some ways, characteristics of decedents who died due to drug overdoses changed little in the ten years between 1999 and 2009:

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 self-inflicted and undetermined; but most significant were the increases in mortality rates across all age groups, both races, and both sexes.

**Table 1. Characteristics of 1999 & 2009 Drug Overdose Deaths**

	1999			2009			% Change in Rate since 1999
	Number	Percent	AADR*	Number	Percent	AADR*	
Gender							
<i>Male</i>	35	70.0	9.3	78	56.9	18.5	99.7
<i>Female</i>	15	30.0	---	59	43.1	12.7	NA
Race							
<i>White</i>	43	86.0	7.3	121	88.3	18.8	157.6
<i>Black</i>	7	14.0	---	15	10.9	---	NA
Intent							
<i>Unintentional</i>	42	84.0	5.4	103	75.2	12.0	119.8
<i>Suicide</i>	6	12.0	---	23	16.8	2.3	NA
<i>Assault</i>	0	0.0	---	0	0.0	---	NA
<i>Undetermined</i>	2	4.0	---	11	8.0	---	NA
All Races, Both Sexes	50	100	6.5	137	100	15.6	141.6
Age	<i>Number</i>	<i>Percent</i>	<i>Crude Rate</i>	<i>Number</i>	<i>Percent</i>	<i>Crude Rate</i>	
<15	1	2.0	---	1	0.7	---	NA
15-24	6	12.0	---	18	13.1	---	NA
25-34	10	20.0	---	29	21.2	25.9	NA
35-44	15	30.0	---	30	21.9	25.5	NA
45-54	13	26.0	---	38	27.7	28.4	NA
55-64	3	6.0	---	14	10.2	---	NA
65+	2	4.0	---	7	5.1	---	NA
All Ages	50	100.0	6.5	137	100.0	15.5	139.9

**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 % change not calculated due to one or both rates being unreliable.

**Source:** Delaware Health Statistics Center

Whites accounted for 88% of all drug overdose deaths; white males made up half of the total drug overdose deaths, white females accounted for another 39%. When drug overdose deaths were classified by intent, whites still made up the vast majority of deaths regardless of intent, though the male/female distribution changed according to the intent. White women accounted for more self-inflicted overdose deaths, while white men accounted for more unintentional drug overdose deaths.

**Table 2A. 2009 All Drug Overdose Deaths by Race and Sex**

Race of decedent	Sex of decedent				Total	
	Male		Female			
	#	%	#	%	#	%
White	68	49.6	53	38.7	121	88.3
Black	9	6.6	6	4.4	15	10.9
Other	0	0.0	0	0.0	0	0.0
Unknown	1	0.7	0	0.0	1	0.7
Total	78	56.9	59	43.1	137	100.0

**Table 2B. 2009 Self-inflicted Drug Overdose Deaths by Race and Sex**

Race of decedent	Sex of decedent				Total	
	Male		Female			
	#	%	#	%	#	%
White	8	34.8	13	56.5	21	91.3
Black	2	8.7	0	0.0	2	8.7
Other	0	0.0	0	0.0	0	0.0
Unknown	0	0.0	0	0.0	0	0.0
Total	10	43.5	13	56.5	23	100.0

**Table 2C. 2009 Unintentional Drug Overdose Deaths by Race and Sex**

Race of decedent	Sex of decedent				Total	
	Male		Female			
	#	%	#	%	#	%
White	56	54.4	35	34.0	91	88.3
Black	7	6.8	4	3.9	11	10.7
Other	0	0.0	0	0.0	0	0.0
Unknown	1	1.0	0	0.0	1	1.0
Total	64	62.1	39	37.9	103	100.0

Source: Delaware Health Statistics Center

**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, as well as the 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. OPR are a subset of prescription drugs; deaths involving OPR would be 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*. Pharmacoepidemiology 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>.

### 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.

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