

# The DAWN Report

May 27, 2010

## Emergency Department Visits for Drug-related Suicide Attempts by Adults Aged 25 or Older: 2008

### In Brief

- During 2008, 4.3 percent of drug-related emergency department (ED) visits made by adults aged 25 or older involved suicide attempts
- Pharmaceuticals were involved in 94.9 percent of ED visits for drug-related suicide attempts among adults aged 25 or older
- Anti-anxiety drugs and antidepressants were more likely to be involved in ED visits for drug-related suicide attempts among adult females, while illicit drugs and alcohol in combination with other drugs were more likely to be involved in such visits among adult males
- Anti-anxiety drugs were involved in nearly 6 in 10 ED visits for drug-related suicide attempts among patients aged 55 to 64 and 65 or older (58.4 and 62.0 percent, respectively)

In response to the devastating impact that suicide has on families and communities, the U.S. Surgeon General issued a public health call to action for suicide prevention in 1999.<sup>1</sup> However, research that examined suicides between 1986 and 2005 showed that the overall suicide rate declined an average of 1.2 percent each year between 1986 and 1999 and then increased an average of 0.7 percent between 1999 and 2005.<sup>2</sup> The increase between 1999 and 2005 was caused primarily by the increased suicide rates among white persons aged 40 to 64, a demographic not commonly perceived as high risk. Specifically, suicide rates during this time period increased in this age group by 2.7 percent annually for white men and 3.9 percent annually for white women.

Completed suicides represent only part of this public health problem. Suicide attempts remain one of the most important risk factors for completed suicides.<sup>3</sup> Emergency department (ED) data provide a window into

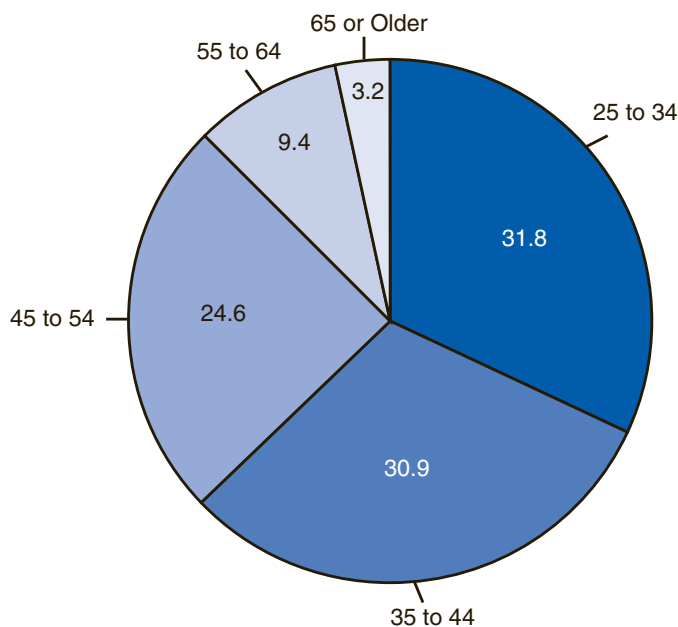
recent trends for suicide attempts that were serious enough to necessitate emergency treatment. Between 1992 and 2001, there was a 47 percent increase in all suicide attempts.<sup>4</sup> More recent data from the Drug Abuse Warning Network (DAWN) show that the number of ED visits for drug-related suicide attempts increased 21 percent from 2005 to 2006, with the most recent estimates leveling off in 2007 and 2008.<sup>5</sup>

The DAWN data provide a way to monitor drug-related ED visits in the United States.<sup>6,7</sup> To be a DAWN case, the ED visit must have involved a drug, either as the direct cause of the visit or as a contributing factor. DAWN data can be used to examine ED visits for drug-related suicide attempts. Although DAWN includes only suicide attempts that involve drugs or alcohol in combination with drugs, these attempts are not limited to drug overdoses. If there is drug involvement in a suicide attempt by other means (e.g., cut wrists while smoking marijuana), the case is included as drug related. Excluded are suicide attempts with no drug involvement and suicide-related behaviors other than actual attempts (e.g., suicidal ideation or suicidal thoughts); also excluded are suicide attempts involving alcohol only for patients aged 21 or older. This issue of *The DAWN Report* focuses on ED visits resulting from drug-related suicide attempts by adults aged 25 or older; other reports in this series focus on visits involving suicide attempts among other age groups.

## Overview

During 2008, an estimated 3,224,014 drug-related ED visits were made by patients aged 25 or older, of which 4.3 percent (138,108 visits) involved a suicide attempt. Many of the ED visits for drug-

**Figure 1. Percentage of Emergency Department (ED) Visits for Drug-related Suicide Attempts by Adults Aged 25 or Older, by Age Group: 2008**



Source: 2008 (08/2009 update) SAMHSA Drug Abuse Warning Network (DAWN).

related suicide attempts involved multiple drugs, with an overall average of 2.4 drugs per ED visit for both males and females. More than half (57.7 percent) of the ED visits for drug-related suicide attempts were made by females.

Almost two thirds of the ED visits for drug-related suicide attempts by adults aged 25 or older were made by patients in the 25 to 34 and 35 to 44 age groups (31.8 and 30.9 percent, respectively), and one quarter of the visits were made by patients aged 45 to 54 (24.6 percent) (Figure 1). About one in eight visits (12.6 percent) were made by patients aged 55 or older.

## Drugs Involved in Suicide-related ED Visits

Pharmaceuticals were involved in 94.9 percent of ED visits for drug-related suicide attempts among adults aged 25 or older (Table 1). Alcohol in combination with other drugs was involved in one

**Table 1. Selected Substances\* Involved in Emergency Department (ED) Visits for Drug-related Suicide Attempts by Adults Aged 25 or Older: 2008**

Drug Category	Estimated Number of ED Visits**	Percent of Visits**
<b>Total ED Visits</b>	<b>138,108</b>	<b>100.0</b>
Alcohol Combined with Other Drugs	45,300	32.8
Illicit Drugs	26,337	19.1
Cocaine	17,032	12.3
Marijuana	9,999	7.2
<b>Pharmaceuticals</b>	<b>131,106</b>	<b>94.9</b>
Anti-anxiety Drugs (e.g., Anxiolytics, Sedatives, and Hypnotics)	62,522	45.3
Benzodiazepines (e.g., Alprazolam)	46,472	33.6
Antidepressants	28,972	21.0
Antipsychotics (e.g., Quetiapine)	18,844	13.6
Narcotic Painkillers (e.g., Oxycodone)	21,302	15.4
Acetaminophen Products	14,775	10.7
Anticonvulsants	10,348	7.5
Cardiovascular Agents	11,024	8.0

\* Other drugs involved in suicide attempts were typically found at levels of less than 5 percent, and often less than 1 percent; therefore, data are not shown.

\*\* Because multiple drugs may be involved in each visit, estimates of visits by drug may add to more than the total, and percentages may add to more than 100 percent.

Source: 2008 (08/2009 update) SAMHSA Drug Abuse Warning Network (DAWN).

third (32.8 percent) of all visits. Illicit drugs were involved in about one fifth (19.1 percent) of these visits, with 12.3 percent involving cocaine and 7.2 percent involving marijuana.<sup>8</sup>

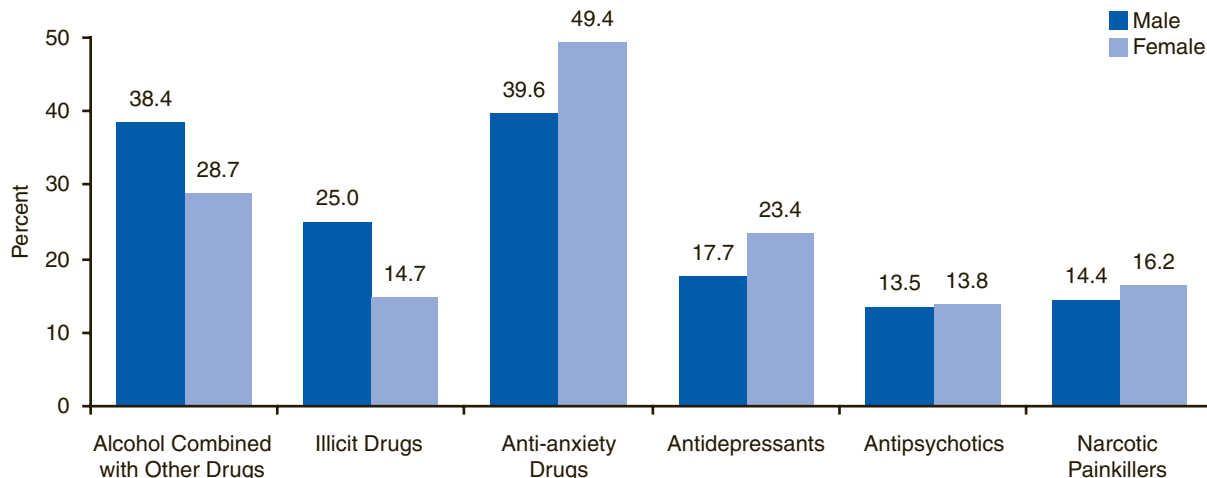
Anti-anxiety drugs were involved in 45.3 percent of ED visits for drug-related suicide attempts, the majority of which could be attributed to benzodiazepines (33.6 percent). Antidepressants were involved in 21.0 percent of these visits, while antipsychotics accounted for 13.6 percent. Narcotic painkillers accounted for 15.4 percent of such visits, while pain medications containing acetaminophen as their main ingredient were involved in 10.7 percent, and anticonvulsants accounted for 7.5 percent of these ED visits. Cardiovascular agents were involved in 8.0 percent of these ED visits. Other prescription and over-the-counter (OTC)

pharmaceuticals, including gastrointestinal agents (e.g., laxatives) and respiratory agents (e.g., antihistamines), involved in ED visits for drug-related suicide attempts among adults aged 25 or older were typically found at rates of less than 5 percent (data not shown).

### Drugs Involved in Suicide-related ED Visits by Gender

The drugs involved in ED visits for drug-related suicide attempts varied by gender. Anti-anxiety drugs were more likely to be involved in visits made by females than those made by males (49.4 vs. 39.6 percent), as were antidepressants (23.4 vs. 17.7 percent) (Figure 2). Conversely, ED visits involving drug-related suicide attempts by males were more

**Figure 2. Selected Substances Involved in Emergency Department (ED) Visits for Drug-related Suicide Attempts by Adults Aged 25 or Older, by Gender: 2008**



Source: 2008 (08/2009 update) SAMHSA Drug Abuse Warning Network (DAWN).

likely than those by females to involve alcohol in combination with other drugs (38.4 vs. 28.7 percent) and illicit drugs (25.0 vs. 14.7 percent). Antipsychotics and narcotic painkillers each were involved in more than 1 in 10 ED visits made by males (13.5 and 14.4 percent, respectively) and females (13.8 and 16.2 percent, respectively).

### Drugs Involved in Suicide-related ED Visits by Age

The drugs involved in ED visits for drug-related suicide attempts also varied by age group (Table 2). Anti-anxiety drugs accounted for the largest proportions of substances involved with these visits across all age groups (ranging from 41.7 to 62.0 percent). Anti-anxiety drugs were involved in approximately 6 in 10 of such visits among patients aged 55 to 64 and 65 or older (58.4 and 62.0 percent, respectively). Of these, benzodiazepines

were involved in more than one third (37.3 percent) of such visits made by patients aged 55 to 64 and in more than half (50.7 percent) made by patients aged 65 or older. About one third of visits among patients in the 25 to 34, 35 to 44, and 45 to 54 age groups involved alcohol in combination with other drugs (31.8, 36.4, and 34.0 percent, respectively), compared with about one quarter (25.9 percent) of visits among patients aged 55 to 64 and about one fifth (19.9 percent) of those for patients aged 65 or older. Nearly one quarter (24.2 percent) of visits among patients aged 35 to 44 involved illicit drugs, with smaller percentages for other age groups. Antipsychotic drugs accounted for more than one in five visits among patients aged 65 or older (21.5 percent). Smaller percentages of visits involved narcotic painkillers (e.g., hydrocodone and oxycodone products), ranging from 13.2 percent among patients aged 65 or older to 16.9 percent among patients aged 55 to 64.

**Table 2. Emergency Department (ED) Visits Involving Drug-related Suicide Attempts by Adults Aged 25 or Older, by Selected Type of Drug Involved and Age Group: 2008**

Drug Category	Percent Aged 25 to 34	Percent Aged 35 to 44	Percent Aged 45 to 54	Percent Aged 55 to 64	Percent Aged 65 or Older
Alcohol Combined with Other Drugs	31.8	36.4	34.0	25.9	19.9
Illicit Drugs	21.7	24.2	16.0	7.6	*
Anti-anxiety Drugs	42.7	41.7	45.9	58.4	62.0
Benzodiazepines	30.6	31.1	37.1	37.3	50.7
Antidepressants	21.9	19.3	23.9	14.5	24.3
Antipsychotics	16.1	10.8	15.5	7.0	21.5
Narcotic Painkillers	16.3	15.6	13.8	16.9	13.2
Hydrocodone Products	5.5	8.9	5.3	7.1	7.3
Oxycodone Products	5.3	4.2	4.6	6.2	1.5

\* The percentage of illicit drugs among ED visits by adults aged 65 or older was suppressed because of small sample size.  
Source: 2008 (08/2009 update) SAMHSA Drug Abuse Warning Network (DAWN).

## Discussion

While suicide prevention efforts have historically targeted youths, young adults, and elderly men, the findings in this report suggest that adults aged 25 to 54 may also be appropriate targets for drug-related suicide prevention campaigns. The patterns of drug involvement for persons of different ages and genders suggest that interventions might be most effective if they are tailored to match the behaviors and needs of specific groups. Moreover, given the high involvement of prescription drugs in ED visits for drug-related suicide attempts made by patients aged 25 or older, doctors and families need to be educated about the potential use of prescription drugs as a method of or influence on suicide attempts.

- <sup>2</sup> Hu, G., Wilcox, H. C., Wissow, L., & Baker, S. P. (2008). Mid-life suicide: An increasing problem in U.S. whites, 1999-2005. *American Journal of Preventive Medicine*, 35(6), 589-593.
- <sup>3</sup> Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2009). *Understanding suicide: Fact sheet*. Retrieved March 24, 2010, from <http://www.cdc.gov/violenceprevention/pdf/Suicide-FactSheet-a.pdf>
- <sup>4</sup> Larkin, G. L., & Smith, R. P. (2008). Trends in U.S. emergency department visits for suicide attempts, 1992-2001. *Crisis*, 29(2), 73-80.
- <sup>5</sup> Office of Applied Studies. (2008). *Drug Abuse Warning Network, 2006: National estimates of drug-related emergency department visits* (DAWN Series D-30, DHHS Publication No. SMA 08-4339). Rockville, MD: Substance Abuse and Mental Health Services Administration.
- <sup>6</sup> Data are collected from a nationally representative sample of short-term, general, non-Federal hospitals across the Nation.
- <sup>7</sup> Drugs reported on by DAWN include illicit drugs, alcohol, prescription drugs, over-the-counter medications, and any other substances prescribed or taken for therapeutic purposes (e.g., nutritional supplements, alternative medications, smoking cessation aids).
- <sup>8</sup> Illicit drugs include (a) illegal drugs such as cocaine, heroin, and marijuana; (b) alcohol, when consumed by a minor; (c) pharmaceuticals known to be frequently abused, such as amphetamines and methamphetamines; and (d) any substance inhaled for its psychoactive effect.

## End Notes

<sup>1</sup> U.S. Public Health Service. (1999). *The Surgeon General's call to action to prevent suicide*. Retrieved April 7, 2010, from <http://www.surgeongeneral.gov/library/calltoaction/calltoaction.pdf>

## Suggested Citation

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Findings from SAMHSA's 2008 (08/2009 update) Drug Abuse Warning Network (DAWN)

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The Drug Abuse Warning Network (DAWN) is a public health surveillance system that monitors drug-related morbidity and mortality. DAWN uses a probability sample of hospitals to produce estimates of drug-related emergency department (ED) visits for the United States and selected metropolitan areas annually. DAWN also produces annual profiles of drug-related deaths reviewed by medical examiners or coroners in selected metropolitan areas and States.

Any ED visit related to recent drug use is included in DAWN. All types of drugs—licit and illicit—are covered. Alcohol is included for adults when it occurs with another drug. Alcohol is always reported for minors even if no other drug is present. DAWN's method of classifying drugs was derived from the Multum *Lexicon*, Copyright 2008, Multum Information Services, Inc. The Multum Licensing Agreement can be found in DAWN annual publications at <http://www.multum.com/license.htm>.

DAWN is one of three major surveys conducted by the Substance Abuse and Mental Health Services Administration's Office of Applied Studies (SAMHSA/OAS). For more information on other OAS surveys, go to <http://oas.samhsa.gov>. SAMHSA has contracts with Westat (Rockville, MD) and RTI International (Research Triangle Park, NC) to operate the DAWN system and produce publications.

For publications and additional information about DAWN, go to <http://DAWNinfo.samhsa.gov/>.



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