

# The DAWN Report

May 25, 2010

## Emergency Department Visits for Drug-related Suicide Attempts by Young Adults Aged 18 to 24: 2008

Suicide is a major public health problem in the United States that impacts thousands of young adults and their families and friends each year. With about 3,500 completed suicides among young adults aged 18 to 24 in 2006, suicide ranks as the third leading cause of death in this age

group.<sup>1</sup> The data on completed suicides present only part of this public health problem. Suicide attempts are a recognized risk factor for subsequent completed suicides, and there are between 100 and 200 attempted suicides for every completed suicide among young adults.<sup>2,3</sup> The 2008 National Survey on Drug Use and Health (NSDUH) found that 1.2 percent of young adults aged 18 to 25 had attempted suicide; these rates were 3 times higher than those of adults in other age groups.<sup>4</sup> Young adults also had the highest rates of suicidal thoughts (6.7 percent) and suicide planning (1.9 percent) of any age group.

The Drug Abuse Warning Network (DAWN) is a public health surveillance system that monitors drug-related emergency department (ED) visits in the United States.<sup>5,6</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, 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 drinking alcohol), the case is included as drug related. Excluded are suicide attempts with no drug involvement and

### In Brief

- During 2008, 6.3 percent of drug-related emergency department (ED) visits made by young adults aged 18 to 24 involved suicide attempts
- Almost three of every five (57.6 percent) ED visits for drug-related suicide attempts among young adults were made by females
- Pharmaceuticals were involved in 92.8 percent of drug-related suicide attempts among young adults
- Slightly less than three fourths (72.1 percent) of the ED visits for drug-related suicide attempts among young adults ended with evidence of follow-up care

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

Drug Category	Estimated Number of ED Visits**	Percent of Visits**
<b>Total ED Visits</b>	<b>38,036</b>	<b>100.0</b>
<b>Major Substances of Abuse</b>	<b>15,605</b>	<b>41.0</b>
Alcohol***	11,523	30.3
Alcohol Combined with Drugs	11,390	29.9
Illicit Drugs	8,347	21.9
Marijuana	5,576	14.7
Cocaine	2,370	6.2
<b>Pharmaceuticals</b>	<b>35,283</b>	<b>92.8</b>
Anti-anxiety Drugs (e.g., Anxiolytics, Sedatives, and Hypnotics)	10,237	26.9
Benzodiazepines (e.g., Alprazolam)	6,363	16.7
Antidepressants	6,700	17.6
Selective Serotonin Reuptake Inhibitors	4,466	11.7
Antipsychotics (e.g., Quetiapine)	4,891	12.9
Narcotic Painkillers (e.g., Oxycodone)	4,324	11.4
Acetaminophen Products	5,761	15.1
Ibuprofen Products	4,314	11.3
Anticonvulsants	3,539	9.3

\* Other drugs involved in suicide attempts were all found at levels of less than 5 percent, and usually 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.

\*\*\* The alcohol category includes visits involving alcohol taken in combination with other drugs for all patients and visits involving just alcohol for patients aged 18 to 20. DAWN does not track alcohol-only visits for patients aged 21 or older.

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

suicide-related behaviors other than actual attempts (e.g., suicidal ideation or suicidal thoughts); also excluded are suicide attempts involving just alcohol for patients aged 21 or older. This issue of *The DAWN Report* focuses on ED visits resulting from drug-related suicide attempts by young adults aged 18 to 24; other reports focus on visits involving suicide attempts among other age groups.

## Overview

During 2008, an estimated 604,808 drug-related ED visits were made by young adults aged 18 to 24, of which 6.3 percent (38,036 visits) involved a suicide attempt. Many of the ED visits for drug-related suicide attempts involved multiple drugs, with an overall average of 2.2 drugs (including alcohol) per ED visit (2.4 for males; 2.0 for females). Almost three

of every five (57.6 percent) of the ED visits for drug-related suicide attempts were made by females.

## Drugs Involved in ED Visits

Pharmaceuticals were involved in 92.8 percent of ED visits for drug-related suicide attempts among young adults (Table 1). Alcohol, sometimes combined with other drugs, was involved in 3 out of 10 (30.3 percent) visits. Illicit drugs were involved in more than one fifth of these visits (21.9 percent), with marijuana (14.7 percent) and cocaine (6.2 percent) accounting for the largest proportions of these substances.<sup>7</sup>

Anti-anxiety drugs were involved in 26.9 percent of the visits, the majority of which were related to use of benzodiazepines (16.7 percent). Antidepressants were involved in 17.6 percent of visits; 11.7 percent were accounted for by selective serotonin reuptake inhibitors (SSRIs), such as fluoxetine. Antipsychotics, narcotic painkillers, and anticonvulsants each were involved in about 1 out of 10 visits (12.9, 11.4, and 9.3 percent, respectively). Pain medications containing acetaminophen or ibuprofen as their main ingredient were involved in 15.1 percent and 11.3 percent of ED visits for drug-related suicide attempts among young adults, respectively. Other prescription and over-the-counter (OTC) pharmaceuticals involved in suicide attempts among young adults typically were found at levels less than 5 percent, including respiratory agents, gastrointestinal agents (e.g., laxatives), and cardiovascular agents (data not shown).

The drugs involved in ED visits for drug-related suicide attempts varied by gender (Figure 1). For example, in comparison with females, males had significantly higher proportions of visits involving illicit drugs (29.6 vs. 14.8 percent) and antipsychotics (18.1 vs. 9.2 percent). Although not statistically significant, a higher percentage of visits made by males involved alcohol in comparison with visits made by females (38.5 vs. 23.0 percent). Antidepressants were indicated in 19.4 percent of visits by females compared with 15.6 percent of ED visits by males.

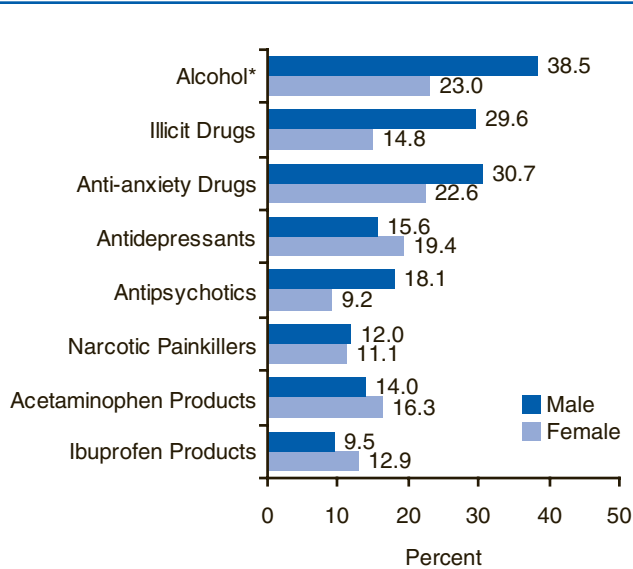
## Discharge from the ED

Follow-up care in DAWN is defined as admission to an inpatient unit in the hospital, transfer to another health care facility, or referral to detoxification. Slightly less than three fourths (72.1 percent) of the ED visits for drug-related suicide attempts among young adults ended with evidence of follow-up care. More than 75 percent of visits involving acetaminophen products, anti-anxiety drugs, ibuprofen products, and antidepressants resulted in evidence of follow-up care compared with about 65 percent of visits involving narcotic painkillers and about 60 percent of visits involving alcohol and illicit drugs (Figure 2).

## Discussion

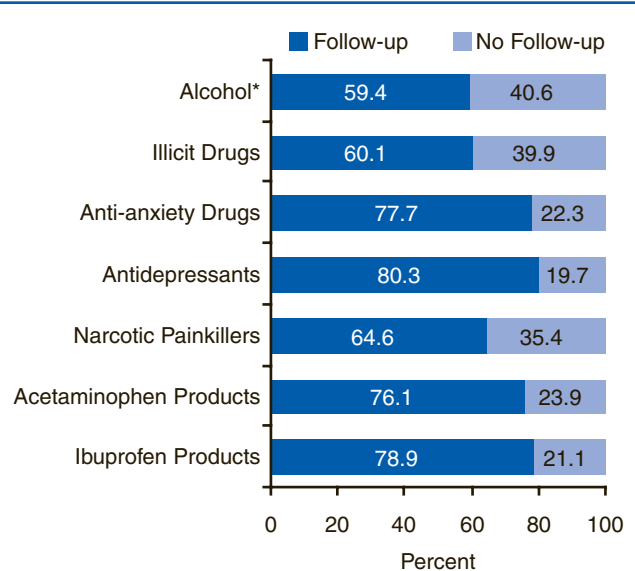
EDs are a key access point to the health care system for people who have attempted suicide and are a strategic location for providing timely intervention.<sup>8</sup> Although most

**Figure 1. Selected Substances Involved in Emergency Department (ED) Visits for Drug-related Suicide Attempts by Young Adults, by Gender: 2008**



\* The alcohol category includes visits involving alcohol taken in combination with other drugs for all patients and visits involving just alcohol for patients aged 18 to 20. DAWN does not track alcohol-only visits for patients aged 21 or older.  
Source: 2008 (08/2009 update) SAMHSA Drug Abuse Warning Network (DAWN).

**Figure 2. Disposition of Emergency Department (ED) Visits Involving Drug-related Suicide Attempts by Young Adults, by Selected Type of Drug Involved: 2008**



\* The alcohol category includes visits involving alcohol taken in combination with other drugs for all patients and visits involving just alcohol for patients aged 18 to 20. DAWN does not track alcohol-only visits for patients aged 21 or older.  
Source: 2008 (08/2009 update) SAMHSA Drug Abuse Warning Network (DAWN).

drug-related ED visits involving suicide attempts among young adults had evidence of follow-up care, a significant minority proportion (nearly 30 percent) did not. Additionally, about 4 in 10 visits associated with alcohol and illicit drugs ended with no evidence of follow-up. These findings may point to the need for increased education and awareness among ED staff about the importance of follow-up care for involvement with these particular substances.

Among young adults, females constituted a larger proportion of ED visits for drug-related suicide attempts than males, and the drugs involved with these attempts differed by gender. Thus, it may be important for health care professionals to consider these gender differences as they triage, assess, and intervene with patients and plan for aftercare. Continuing research is needed to examine how assessments, treatment interventions, and prevention programs can be tailored to account for demographic characteristics (e.g., age, gender, race) and other critical factors (e.g., mental health problems, alcohol and drug use, employment status) associated with this population.

**End Notes**

<sup>1</sup> Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2009). *Injury prevention & control: Data & statistics (WISQARS)*. Retrieved March 24, 2010, from <http://www.cdc.gov/injury/wisqars/index.html>

<sup>2</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>3</sup> Goldsmith, S. K., Pellmar, T. C., Kleinman, A. M., & Bunney, W. E. (Eds). (2002). *Reducing suicide: A national imperative*. Washington, DC: National Academies Press.

<sup>4</sup> Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (September 17, 2009). *The NSDUH report: Suicidal thoughts and behaviors among adults*. Rockville, MD.

<sup>5</sup> Data are collected from a nationally representative sample of short-term, general, non-Federal hospitals across the Nation. Specialty hospitals, including children's hospitals, are not included in the DAWN sample.

<sup>6</sup> Drugs reported on 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>7</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 abused frequently, such as amphetamines and methamphetamines; and (d) any substance inhaled for its psychoactive effect.

<sup>8</sup> Doshi, A., Boudreaux, E. D., Wang, N., Pelletier, A. J., & Camargo, C. A. (2005). National study of U.S. emergency department visits for attempted suicide and self-inflicted injury, 1997-2001. *Annals of Emergency Medicine*, 46(4), 369-375.

**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 always is 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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