

# The DAWN Report

March 24, 2011

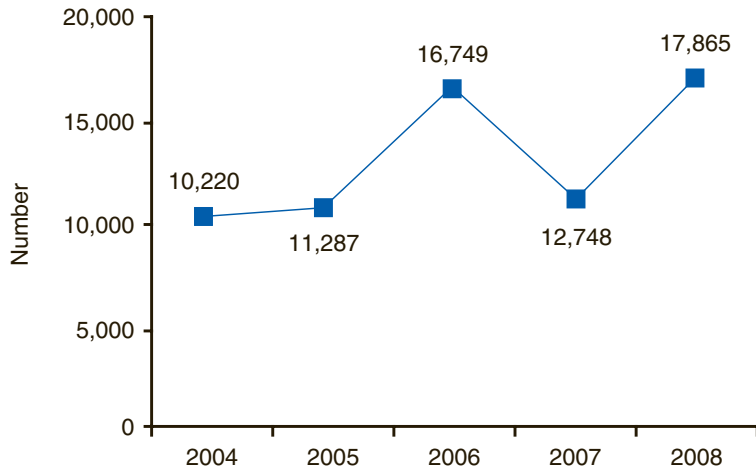
## Emergency Department Visits Involving Ecstasy

### In Brief

- The number of drug-related emergency department (ED) visits involving 3,4-methylenedioxymethamphetamine (MDMA), commonly known as “Ecstasy,” increased significantly from 10,220 visits in 2004 to 17,865 visits in 2008, representing a 74.8 percent increase
- Most ED visits involving Ecstasy in 2008 (69.3 percent) were made by patients aged 18 to 29
- An estimated 77.8 percent of these ED visits involved Ecstasy in combination with alcohol or other drugs (including pharmaceuticals or illicit drugs); in fact, 31.3 percent involved one other drug, 15.0 percent involved two other drugs, 14.0 percent involved three other drugs, and 17.5 percent involved four or more other drugs
- Ecstasy-related ED visits among patients aged 21 or older were more likely than those made by patients aged 20 or younger also to involve alcohol (50.1 vs. 20.4 percent) or cocaine (43.4 vs. 14.7 percent)

The drug 3,4-methylenedioxy-methamphetamine (MDMA) more commonly is referred to by its party or street names, such as “Ecstasy” (as it will be referred to hereafter), “X,” or “XTC.” Trend data show that Ecstasy use appears to be increasing among younger populations. Specifically, data from the National Survey on Drug Use and Health (NSDUH) show that, between 2005 and 2008, past year use of Ecstasy increased among adolescents (from 1.0 to 1.4 percent) and young adults (from 3.1 to 3.9 percent).<sup>1</sup> Because it provides psychedelic and stimulant side effects, Ecstasy is associated with dynamic social environments, such as parties or raves, where there is loud music and dancing.<sup>2</sup> Yet the benign nicknames and the lively social environments in which the drug often is used belie the serious health and mental consequences that can result from casual to heavy Ecstasy use.

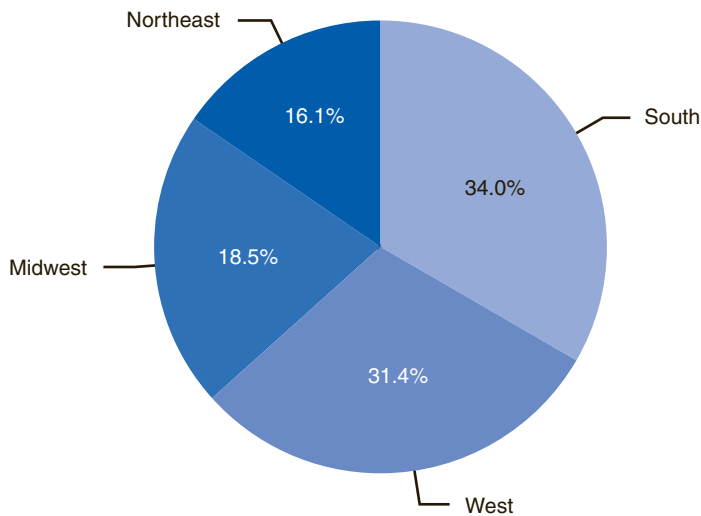
**Figure 1. Number of Drug-Related Emergency Department (ED) Visits Involving Ecstasy: 2004 to 2008\***



\*A significant increase was found at the .05 level between 2004 and 2008.

Source: 2004 to 2008 estimates from the 2008 SAMHSA Drug Abuse Warning Network (DAWN).

**Figure 2. Drug-Related Emergency Department (ED) Visits Involving Ecstasy, by Region\*: 2008**



\*The Northeast includes CT, ME, MA, NH, NJ, NY, PA, RI, and VT; the Midwest includes IN, IA, IL, KS, MI, MN, MO, NE, ND, OH, SD, and WI; the South includes AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, and WV; the West includes AK, AZ, CA, CO, HI, ID, NM, MT, OR, UT, NV, WA, and WY.

Source: 2008 SAMHSA Drug Abuse Warning Network (DAWN).

Aside from addiction, Ecstasy use can cause anxiety, agitation, recklessness, increased blood pressure, dehydration, heat stroke, muscle cramping, blurred vision, hyperthermia, heart failure, and kidney failure.<sup>2</sup> The social and environmental contexts in which Ecstasy often is used—prolonged vigorous activity in warm environments, such as dancing at crowded parties—can amplify associated cardiovascular health risks.<sup>3</sup> Because it also compromises metabolic functioning, Ecstasy taken in combination with other drugs may place users at increased risk for additional and life-threatening drug interactions.<sup>3</sup>

Medical emergencies associated with Ecstasy use may be tracked through the Drug Abuse Warning Network (DAWN). DAWN is a public health surveillance system that monitors drug-related emergency department (ED) visits in the United States. To be a DAWN case, an ED visit must involve a drug, either as the direct cause of the visit or as a contributing factor. This issue of *The DAWN Report* provides data on trends in ED visits involving Ecstasy from 2004 through 2008 and highlights the demographic characteristics of such visits in 2008.

## Overview

The number of Ecstasy-related ED visits increased by 74.8 percent from 2004 to 2008.

Specifically, the number of drug-related ED visits involving Ecstasy increased significantly from 10,220 visits in 2004 to 17,865 visits in 2008 (Figure 1).

In 2008, Ecstasy-related ED visits represented 1.8 percent of all visits involving illicit drugs. Ecstasy was the seventh most commonly involved illicit drug in ED visits, behind cocaine (48.5 percent), marijuana (37.7 percent), heroin (20.2 percent), methamphetamine (6.7 percent), phencyclidine (PCP; 3.8 percent), and amphetamines (3.2 percent).

### ED Visits by Demographic Characteristics

Most ED visits involving Ecstasy in 2008 (69.3 percent) were made by patients aged 18 to 29. Smaller proportions of visits were made by adolescents aged 12 to 17 (17.9 percent) and adults aged 30 or older (12.8 percent). Males accounted for slightly more than half (52.8 percent) of the ED visits involving Ecstasy.

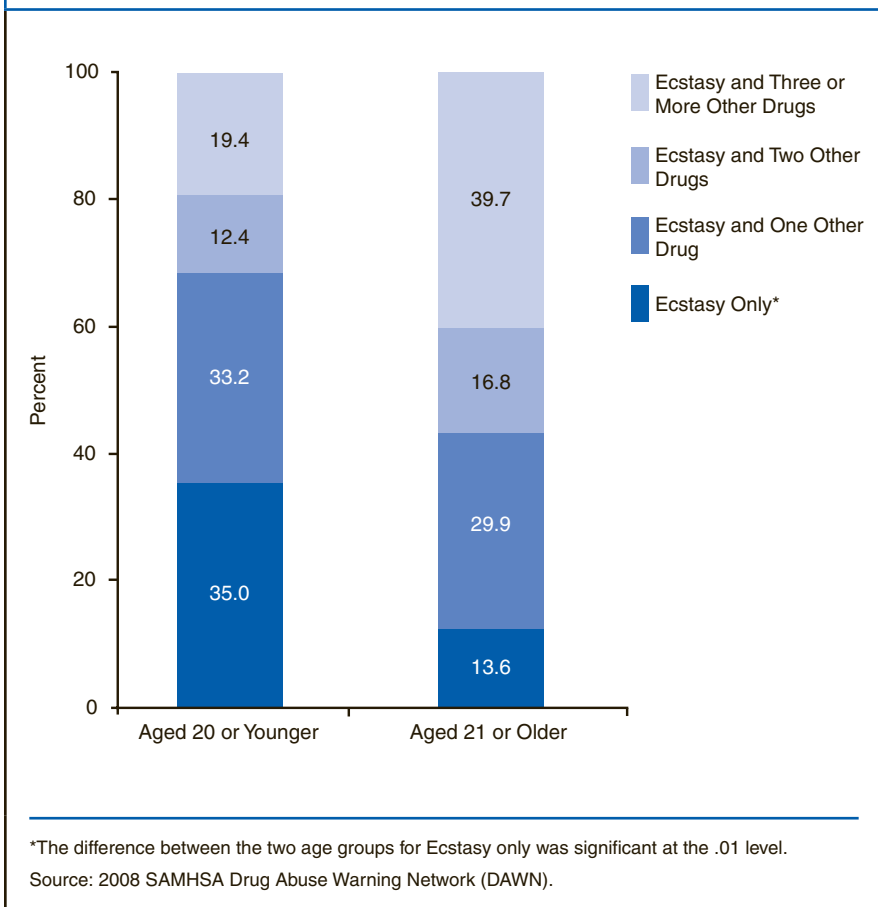
More than one third of Ecstasy-related visits were made in the South (34.0 percent), nearly one third were made in the West (31.4 percent), nearly one fifth were made in the Midwest (18.5 percent), and nearly one sixth were made in the Northeast (16.1 percent) (Figure 2).

**Table 1. Drugs Involved in Emergency Department (ED) Visits Involving Ecstasy: 2008**

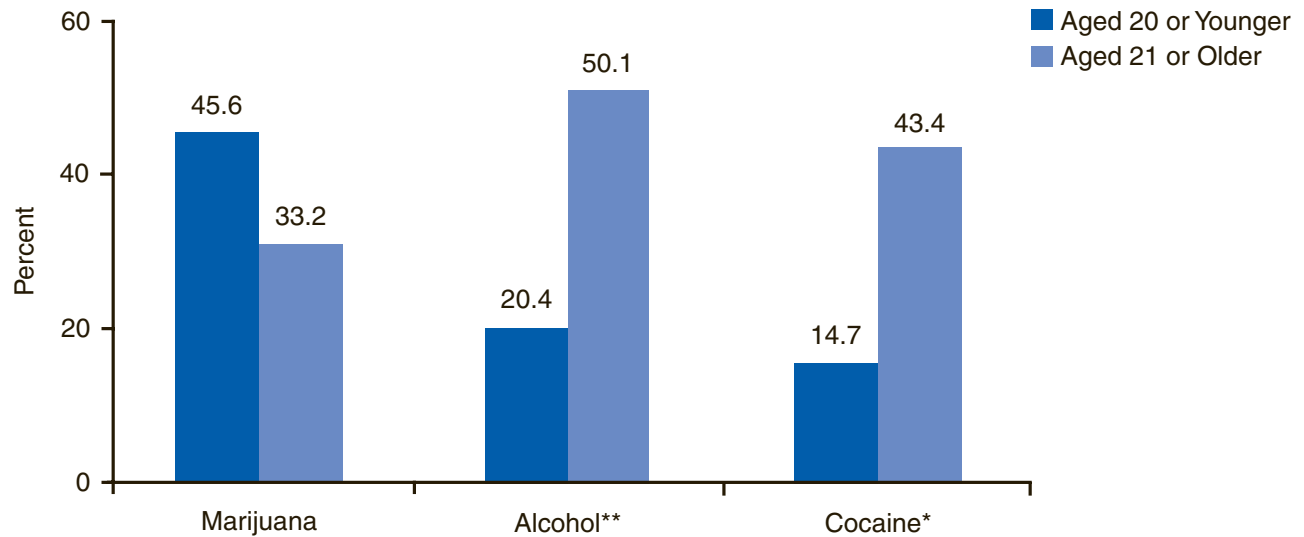
Number of Drugs	Number	Percent
Ecstasy Only	3,968	22.2
Ecstasy in Combination with Other Drugs	13,897	77.8
One Other Drug	5,584	31.3
Two Other Drugs	2,682	15.0
Three Other Drugs	2,502	14.0
Four or More Other Drugs	3,129	17.5
<b>Total Ecstasy-Related ED Visits</b>	<b>17,865</b>	<b>100.0</b>

Source: 2008 SAMHSA Drug Abuse Warning Network (DAWN).

**Figure 3. Other Drugs Involved in Emergency Department (ED) Visits Involving Ecstasy, by Age Group: 2008**



**Figure 4. Emergency Department (ED) Visits Involving Alcohol, Marijuana, and Cocaine among ED Visits Involving Ecstasy, by Age Group: 2008**



\*The difference between the two age groups for cocaine was significant at the .05 level.

\*\*The difference between the two age groups for alcohol was significant at the .01 level.

Source: 2008 SAMHSA Drug Abuse Warning Network (DAWN).

## ED Visits Involving Ecstasy with Other Drugs

On average, there were 2.8 drugs involved per Ecstasy-related ED visit in 2008. An estimated 77.8 percent of Ecstasy-related ED visits also involved alcohol or other drugs (including pharmaceuticals or illicit drugs, hereafter referred to as “other drugs”); in fact, 31.3 percent involved one other drug, 15.0 percent involved two other drugs, 14.0 percent involved three other drugs, and 17.5 percent involved four or more other drugs (Table 1).

Marijuana, alcohol, and cocaine were the drugs most commonly used in combination with Ecstasy. Each of these drugs in combination with Ecstasy was involved at a similar level: marijuana was involved in 38.2 percent of Ecstasy-related ED visits, alcohol in 38.1 percent, and cocaine in 31.8 percent.

## ED Visits Involving Ecstasy in Combination by Gender and Age

There were no significant differences by gender for ED visits involving Ecstasy in combination with other drugs. When examined by age group, Ecstasy-related ED visits made by patients aged 20 or younger were more than twice as likely as visits made by patients aged 21 or older to involve only Ecstasy (35.0 vs. 13.6 percent) (Figure 3).

In terms of specific drugs, Ecstasy-related ED visits among patients aged 21 or older were more likely than visits made by patients aged 20 or younger also to involve alcohol (50.1 vs. 20.4 percent) or cocaine (43.4 vs. 14.7 percent) (Figure 4). There was no significant difference between the two age groups for visits involving Ecstasy in combination with marijuana.

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## Discussion

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Ecstasy continues to be a public health concern because it is addictive, produces adverse health consequences, and often is used in combination with alcohol or other drugs. With the number of Ecstasy-related ED visits increasing since 2004, these data highlight the importance of prevention efforts that target adolescents and young adults who make up the majority of Ecstasy users.<sup>4</sup> Although the use of Ecstasy alone can result in serious medical complications, its use in combination with other drugs may exacerbate these dangers. In this report, almost 8 in 10 Ecstasy-related visits to the ED involved Ecstasy in combination with alcohol or other drugs, suggesting that Ecstasy users need to be educated about the dangers of not only Ecstasy but also these drug combinations.

Prevention efforts targeted at the two age groups noted above may need to be tailored in both the messages and the medium presented. First, the high rate of Ecstasy used in combination with other drugs suggests that a focus on the potentially dangerous consequences not only of Ecstasy alone but also of Ecstasy in combination with other drugs may be most compelling. Second, for the age cohorts most affected, the medium of the message, particularly the use of social networking sites, may be the most effective mechanism for both reaching and persuading potential users to abstain from use of Ecstasy and other illicit drugs. Illicit drug prevention activities also can promote the recognition and reporting of the signs of drug overdose. If partygoers are made aware of the negative symptoms associated with Ecstasy use in particular, they may be less inclined to use the drug itself and may also better be able to recognize overdoses so that they can help those individuals gain access to on-site medical personnel or to call 911. Moreover, a heightened awareness of Ecstasy overdose symptoms (e.g., anxiety, tachycardia, hypertension, and hyperthermia) among health care providers—especially those on the front lines of emergency care on weekends—can help to ensure that

patients who come into medical facilities receive immediate and appropriate care.

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## End Notes

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- <sup>1</sup> Office of Applied Studies. (2009). *Results from the 2008 National Survey on Drug Use and Health: National findings* (NSDUH Series H-36, HHS Publication No. SMA 09-4434). Rockville, MD: Substance Abuse and Mental Health Services Administration.
- <sup>2</sup> National Institute on Drug Abuse. (2006). *Research Report Series: MDMA (Ecstasy) abuse* (NIH Publication Number 06-4728). Washington, DC: National Institutes of Health. [Available as a PDF at <http://drugabuse.gov/PDF/RRmdma.pdf>]
- <sup>3</sup> Devlin, R. J., & Henry, J. A. (2008). Clinical review: Major consequences of illicit drug consumption. *Critical Care*, 12, 202. [Available as a PDF at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2374627/pdf/cc6166.pdf>]
- <sup>4</sup> Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (February 14, 2008). *The NSDUH Report: Use of specific hallucinogens: 2006*. Rockville, MD.

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## Suggested Citation

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Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (March 24, 2011). *The DAWN Report: Emergency Department Visits Involving Ecstasy*. Rockville, MD.

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Findings from SAMHSA's 2008 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. The classification of drugs used in DAWN is derived from the Multum *Lexicon*, copyright 2009, Multum Information Services, Inc. The Multum Licensing Agreement governing use of the *Lexicon* can be found at [http://dawninfo.samhsa.gov/drug\\_vocab](http://dawninfo.samhsa.gov/drug_vocab).

DAWN is one of three major surveys conducted by the Substance Abuse and Mental Health Services Administration's Center for Behavioral Health Statistics and Quality (SAMHSA/CBHSQ). For more information on other CBHSQ 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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