

# The DAWN Report

JULY 2004

## Oxycodone, Hydrocodone, and Polydrug Use, 2002

### In Brief

In recent years, the abuse of opioid pain relievers<sup>1</sup> has been recognized as a serious and growing public health problem.<sup>2,3</sup> Recent estimates from the Drug Abuse Warning Network (DAWN) showed that drug abuse-related emergency department (ED) visits involving opioid pain relievers have been increasing since 1994. Two of these pain relievers, oxycodone and hydrocodone,<sup>4</sup> account for a substantial proportion of the increase (Figure 1).

- In 2002, opioid pain relievers accounted for more than 119,000 ED mentions, or 10 percent of all the drug mentions in drug abuse-related ED visits. Oxycodone and hydrocodone were the most frequently named pain relievers, accounting for 40 percent (47,594 mentions) of the opioid pain relievers involved in these ED visits.
- Approximately three-quarters of ED visits involving oxycodone and hydrocodone involved additional drugs (71% and 78%, respectively), while only 54 percent of all drug abuse-related visits involved multiple drugs.

- The most frequent substances found in combination with oxycodone and hydrocodone in drug abuse-related ED visits were alcohol, benzodiazepines, other opioid pain relievers, and cocaine.

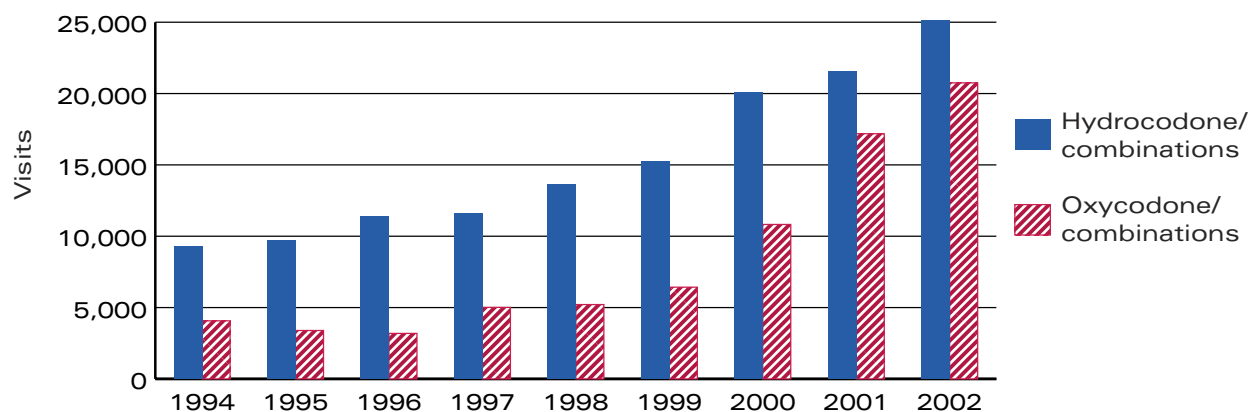
### Introduction

In recent years, the abuse of opioid pain relievers has been recognized as a serious and growing public health problem.<sup>5</sup>

DAWN is a national public health surveillance system that monitors drug abuse-related ED visits. It collects data on all drugs involved in such visits and is useful for tracking trends in the consequences of drug abuse involving drugs such as opioid pain relievers.

This report focuses on drug abuse-related ED visits involving 2 frequently reported opioid pain relievers—oxycodone and hydrocodone. These drugs are marketed under many brand names, including Vicodin®, OxyContin®, and Percocet®. Some formulations contain a single active ingredient (e.g., OxyContin®

**FIGURE 1**  
Trends in drug abuse-related ED visits involving hydrocodone and oxycodone, coterminous U.S., 1994-2002



SOURCE: Office of Applied Studies, SAMHSA, Drug Abuse Warning Network, 2002 (03/2003 update).

contains only oxycodone), while others contain the opioid in combination with acetaminophen, aspirin, or ibuprofen (e.g., Vicodin® contains both hydrocodone and acetaminophen). ED visits involving both single-ingredient and combination formulations are included in this analysis.

### Opioid Pain Relievers in ED Visits Related to Drug Abuse

In 2002, opioid pain relievers accounted for more than 119,000 ED mentions,<sup>6</sup> or 10 percent of all drug mentions in drug abuse-related ED visits. Opioid pain relievers were as frequent as heroin or marijuana in ED visits related to drug abuse, but less frequent than cocaine or alcohol.

More than one-third (35%) of ED mentions of opioid pain relievers were not identified by name (Figure 2). Of those that were named, oxycodone (19% of opioid pain reliever mentions) and hydrocodone (21%) were the most frequent. Other opioid pain relievers, such as morphine, occurred much less frequently.

### Trends in Oxycodone and Hydrocodone in ED Visits: 1994-2002

Between 1994 and 2002, mentions of oxycodone and hydrocodone increased in ED visits related to drug abuse (Figure 1).

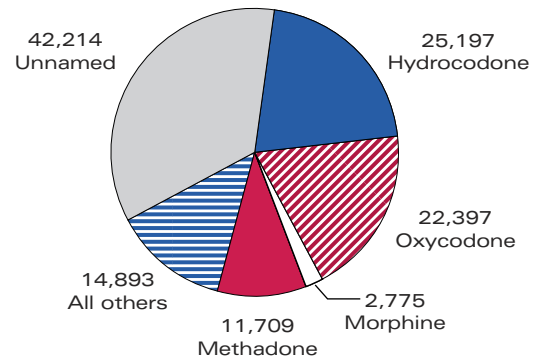
In 1994, ED mentions of oxycodone numbered about 4,000 nationally. By 2002, ED mentions of oxycodone had increased to more than 22,000 mentions—an increase of 450 percent.

In 1994, ED mentions of hydrocodone were more than twice as frequent as oxycodone, but that gap has narrowed. By 2002, ED mentions of hydrocodone had risen by 170 percent, from about 9,300 in 1994 to more than 25,000 in 2002.

### Polydrug Use

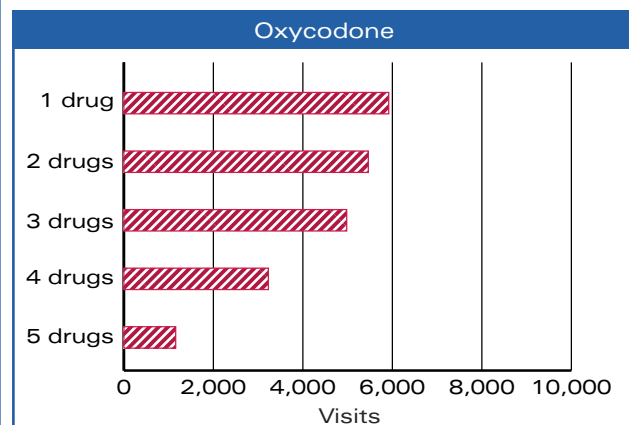
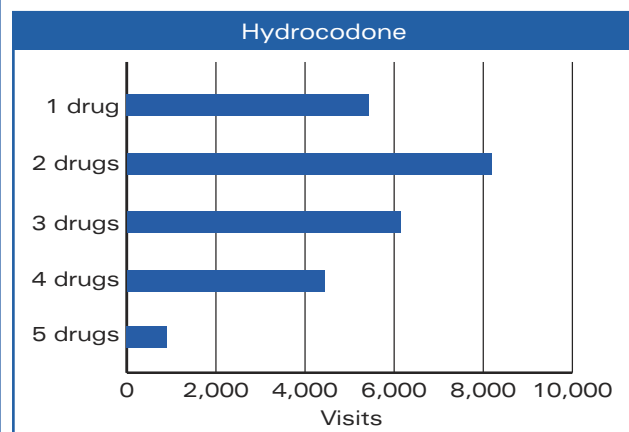
In 2002, more than half (54%) of drug abuse-related ED visits involved multiple drugs. Over a third (36%) involved 2 drugs; 13 percent involved 3 drugs; and the remaining 6 percent involved 4 or 5 drugs. Alcohol was involved in nearly a third (31%) of drug abuse-related ED visits.

**FIGURE 2**  
Mentions of opioid pain relievers, by specific drug, 2002



SOURCE: Office of Applied Studies, SAMHSA, Drug Abuse Warning Network, 2002 (03/2003 update).

**FIGURE 3**  
Number of drugs involved in oxycodone- and hydrocodone-related ED visits: 2002



SOURCE: Office of Applied Studies, SAMHSA, Drug Abuse Warning Network, 2002 (03/2003 update).

Polydrug use was even more prevalent among the ED visits involving oxycodone and hydrocodone. In 2002, 71 percent of oxycodone-related ED visits and 78 percent of hydrocodone-related ED visits involved multiple drugs.

However, oxycodone and hydrocodone appeared to have different polydrug patterns (Figure 3). For oxycodone, single-drug visits were the most frequent (29% of 20,748 visits), with 2- or 3-drug visits occurring in similar numbers (between 5,000 and 6,000 visits). For hydrocodone, 2-drug visits were most frequent (33% of 25,109 visits), with fewer visits involving 3 or 4 drugs. The numbers of 5-drug visits were similar for oxycodone and hydrocodone (6% and 4%, respectively).

### Drugs Used in Combination With Oxycodone and Hydrocodone

More than 200 different drugs were reported to DAWN in combination with oxycodone and hydrocodone. Major substances of abuse, benzodiazepines,<sup>7</sup> other opioid pain relievers, and a muscle relaxant were the most frequent co-occurring drugs in oxycodone- and hydrocodone-related ED visits (Table 1).

More than 40 percent of oxycodone- and hydrocodone-related ED visits also involved a major substance of abuse. Alcohol was the most frequent of these, followed by cocaine, heroin, and marijuana. About one-fifth of oxycodone visits and a quarter of hydrocodone visits also involved a benzodiazepine. The most frequent benzodiazepines were alprazolam, diazepam, and clonazepam.

More than 3,500 ED visits involving oxycodone or hydrocodone also

involved another opioid pain reliever. About 3,000 of these visits involved both oxycodone and hydrocodone. Among the other opioid pain relievers, methadone appeared in about 5 percent of visits involving oxycodone.

Carisoprodol, which is used therapeutically as a muscle relaxant, was present in 4 percent of ED visits involving oxycodone and in 8 percent of ED visits involving hydrocodone.

**TABLE 1**  
**Drugs in combination with oxycodone and hydrocodone, drug abuse-related ED visits, 2002**

	Oxycodone		Hydrocodone	
<b>Total visits</b>	20,748	(100%)	25,109	(100%)
<b>Number of drugs in visit</b>				
Single-drug visits	5,918	(29%)	5,438	(22%)
Multiple-drug visits	14,830	(71%)	19,671	(78%)
2 drugs	5,462	(26%)	8,191	(33%)
3 drugs	4,980	(24%)	6,147	(24%)
4 drugs	3,229	(16%)	4,432	(18%)
5 drugs	1,158	(6%)	901	(4%)
<b>Drugs in combinations</b>				
Other opioid analgesic	3,785	(18%)	3,562	(14%)
oxycodone			3,049	(12%)
hydrocodone	3,049	(15%)		
Major substances of abuse	9,128	(44%)	10,735	(43%)
alcohol	6,893	(33%)	7,864	(31%)
cocaine	2,393	(12%)	2,269	(9%)
heroin	1,614	(8%)	961	(4%)
marijuana	1,545	(7%)	1,290	(5%)
Benzodiazepines	4,296	(21%)	6,424	(26%)
alprazolam	1,516	(7%)	3,041	(12%)
diazepam	1,277	(6%)	1,628	(7%)
clonazepam	880	(4%)	941	(4%)
unnamed benzodiazepine	486	(2%)	559	(2%)
lorazepam	450	(2%)	605	(2%)

SOURCE: Office of Applied Studies, SAMHSA, Drug Abuse Warning Network, 2002 (03/2003 update).

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## End Notes

- <sup>1</sup> Opioid pain relievers are synthetic medications with effects similar to substances derived from opium. This publication focuses on 2: oxycodone and hydrocodone.
- <sup>2</sup> The Substance Abuse and Mental Health Services Administration (SAMHSA) has launched an educational campaign to combat prescription drug misuse and abuse. For more information, go to <http://www.rx.samhsa.gov/>.
- <sup>3</sup> For information on the prevalence of prescription drug misuse nationally, see Substance Abuse and Mental Health Services Administration, Office of Applied Studies. *The NHSDA Report: Nonmedical Use of Prescription-Type Drugs among Youths and Young Adults*. Rockville, MD. January 16, 2003. <http://www.oas.samhsa.gov/2k3/prescription/prescription.cfm>.
- <sup>4</sup> DAWN refers to each drug in terms of its generic name, as drugs are available under many different brand names.
- <sup>5</sup> On August 6, 2003, the 108th Congress convened a hearing before the Senate Committee on Governmental Affairs on the subject of "Legal Drugs, Illegal Purposes: The Escalating Abuse of Prescription Medications." For a transcript of the hearing see <http://www.gpoaccess.gov/chearings/index.html>.
- <sup>6</sup> A "mention" is the unit of measurement for individual drug reports. For example, an ED visit that involved the use of both hydrocodone and oxycodone would have 2 "drug mentions." In DAWN, up to 4 drugs plus alcohol can be reported for a single ED visit.
- <sup>7</sup> Benzodiazepines are prescription drugs used to treat anxiety, insomnia, and seizures.

## About DAWN

The **Drug Abuse Warning Network (DAWN)** is a national surveillance system that collects data on drug abuse-related visits to emergency departments (EDs) and drug abuse-related deaths reviewed by medical examiners and coroners. Data on ED visits are collected from a national probability sample of non-Federal, short-stay hospitals, with oversampling in 21 major metropolitan areas. Data from the sample are used to generate estimates for the coterminous U.S. and the 21 metropolitan areas.

ED visits are reportable to DAWN if a patient between the ages of 6 and 97 was treated for a condition associated with intentional drug abuse, including recreational use, dependence, or suicide attempt. Visits involving chronic health conditions resulting from drug abuse are reportable. Abuse of prescription and over-the-counter medications is reportable. Adverse reactions associated with appropriate use of these drugs and accidental ingestion or inhalation of any drug are not reportable.



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