

Trends in the Abuse of Prescription Drugs

by Jane Carlisle Maxwell, Ph.D.

The sale of narcotic analgesic pills is increasing, as is diversion and the non-medical use of prescription drugs. These drugs are easy to obtain and they are viewed as “safer” than street drugs. Young adults have the highest rates of lifetime use of these drugs and fewer teenagers in 2005 thought that there was great risk in using these drugs, as compared to 2004. Emergency department visits involving non-medical use of pharmaceuticals usually involve multiple drugs as well as alcohol. And individuals who enter substance abuse treatment with problems with narcotic analgesics or benzodiazepines differ from heroin users in their characteristics and their drug use patterns.

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A growing problem is the non-medical use of prescription drugs such as pain killers or narcotic analgesics, benzodiazepines, and muscle relaxants. Non-medical use is defined as use of prescription-type drugs that were not prescribed for the individual by a physician or the drugs were used only for the experience or feeling they caused. Prescription psychotherapeutic drugs include pain relievers, tranquilizers, stimulants, and sedatives. Pain-relievers of concern include hydrocodone (Vicodin[®], Lortab[®], Lorcet[®]), oxycodone (OxyContin[®], Percocet[®], Percodan[®], or Tylox[®]), and methadone, as well as a number of other drugs. Benzodiazepines of concern include clonazepam (Klonopin[®]), alprazolam (Xanax[®], Ativan[®], or lorazepam), and diazepam (Valium[®]). Muscle relaxants which are abused include carisoprodol (Soma[®]) and cyclobenzaprine (Flexeril[®]).

Extent of the Prescription Drug Abuse Problem

Community Epidemiology Work Group

The Community Epidemiology Work Group (CEWG) is sponsored by the National Institute on Drug Abuse (NIDA). It is a group of 21 researchers from across the nation who meet twice a year to report on drug abuse patterns and trends and emerging problems in their local areas. Members use quantitative statistics and qualitative techniques such as focus groups and key informant interviews to monitor drug trends. The full reports of the CEWG can be accessed at <http://www.nida.nih.gov/about/organization/cewg/Reports.html>.

The following describes the variations in the growing prescription drug abuse problem across the nation as summarized in the abstracts and presentations of CEWG members at their June, 2006 CEWG meeting.

ATLANTA: Prescription benzodiazepines are second only to cocaine in the number of substance-related deaths across Georgia. Excluding alcohol, narcotic analgesics accounted for nearly one-half of drug-related deaths in 2005. Multiple indicators show that hydrocodone is the most commonly abused narcotic analgesic in Atlanta, followed by oxycodone.

BALTIMORE: Tranquilizers were also used by 11% of persons admitted to treatment with a primary problem with opiates.

BOSTON: Mixed opiate indicators suggest that historically high levels of oxycodone abuse may be stabilizing after years of growth. Benzodiazepine misuse and abuse levels remain fairly stable at relatively high levels as reported in death, emergency department, and help-line data.

CHICAGO: The top three benzodiazepines in Chicago are alprazolam, diazepam, and clonazepam, while the top three opiates are hydrocodone, methadone, and codeine.

DENVER: More than half of treatment providers in Colorado recently reported an increase in the abuse of opioid prescription drugs, especially of OxyContin®.

DETROIT: There is concern about other opiates due to increases in prescriptions, emergency department reports, and deaths. Oxycodone is not showing a large presence in emergency department reports but it is still a problem in law enforcement reports. Hydrocodone is viewed as “legal” by users and is seen as a problem by law enforcement. Codeine and methadone are also problems.

HAWAII: Opiate use (oxycodone and hydrocodone) is increasing with higher numbers of deaths and treatment admissions.

LOS ANGELES: Among prescription and over-the-counter medication-related exposure calls, opiates/analgesics were the most frequently mentioned, followed by Coricidin HBP® and benzodiazepines. Hydrocodone is more abused than oxycodone.

MINNEAPOLIS: Reports continue of adolescent abuse of prescription medications and over-the-counter products containing dextromethorphan.

NEW YORK CITY: The most salient feature of the present drug scene is the general tendency of drug users, regardless of primary drug, to mix and combine multiple drugs for simultaneous use. Many kinds of prescription drugs continue to be available on the street and they seem to be growing in popularity based on indicator data and street observations. The top five pain drugs are Xanax®, Elavil®, Klonopin®, Percocet®, and Catapres®. Most users buy their drugs from street sellers, as patients seem less willing to sell their pain medications than their other non-pain medications. Pain drugs are bought for personal use; 90% of the users buy to get high and very few buy to reduce withdrawal or for relief of pain.

NEWARK: A variety of pharmaceuticals were mentioned in drug-related deaths reported by the Essex County Medical Examiner and the 66 mentions of pharmaceuticals surpass alcohol mentions and equal half of cocaine mentions.

PHILADELPHIA: The two most frequently abused benzodiazepines continue to be alprazolam and diazepam, although others are abused or misused.

PHOENIX and ARIZONA: Prescription and over-the-counter medications are second only to marijuana in reported use, according to survey data.

SAN DIEGO: The number of treatment admissions for all drugs of abuse has been steadily declining since 2002 with the exception of non-heroin opiates, for which admissions increased 26.1%. (Overall decline in treatment admissions is partially due to decreased funding for treatment). Hydrocodone leads oxycodone in emergency department reports and toxicology laboratory reports.

SAN FRANCISCO: Hydrocodone and oxycodone emergency department reports increased significantly between 2004 and 2005.

SEATTLE: Benzodiazepines and muscle relaxant indicators are fairly low, with continued slight increases; use of these substances appears to be mostly secondary to other drugs.

SOUTH FLORIDA: Prescription opiate use is escalating and alprazolam is “out of control.” The abuse of these medications has caused the greatest number of drug-induced and drug-related deaths locally and across Florida. Oxycodone is the prescription opiate most frequently mentioned by treatment clients. For benzodiazepines and, particularly alprazolam, consequences are higher in Broward and Palm Beach Counties than in the rest of Florida. Carisoprodol is called “Ds”, “Dance”, “Las Vegas Cocktail” (with Vicodin[®]), and “Soma Coma” (with codeine).

ST. LOUIS: Treatment admissions for abuse of other opiates increased 61.5% in one year. Some of the most popular drugs are benzodiazepines and over-the-counter drugs such as cough medicine.

TEXAS: Abuse of alprazolam and carisoprodol is increasing. Of the 87 deaths with a mention of carisoprodol in 2004, only 3 just involved that drug; hydrocodone and alprazolam were substances that were most often mentioned along with carisoprodol in the other 84 deaths. Hydrocodone is a larger problem than oxycodone but oxycodone abuse is growing. Codeine cough syrup is commonly abused and Coricidin HBP[®], which is known as “Triple C’s” or “Skittles,” is popular, especially among youth.

WASHINGTON, DC: Students report that mixing Xanax[®] with cola drinks will make them feel very drunk and that others are taking Vicodin[®] before they start drinking to get drunker faster.

National Survey on Drug Use and Health

The National Survey on Drug Use and Health (NSDUH) is conducted by the Office of Applied Studies of the Substance Abuse and Mental Health Services Administration. It collects information on the prevalence, patterns, and consequences of alcohol, tobacco, and illegal drug use and abuse in the general U.S. civilian non-institutionalized population, ages 12 and older. The survey reports can be found at <http://www.oas.samhsa.gov/nsduh.htm>.

In 2002, the NSDUH reported that an estimated 29.6 million Americans had used pain relievers non-medically in their lifetimes; by 2005, the number had increased to 32.7 million. Table 1 shows the increases in the percentage of persons reporting use of these drugs. Non-medical use of prescription pain relievers was second only to marijuana use in terms of past-year use: 11.3 million were non-medical users of pain relievers as compared with 25.5 million past-year users of marijuana, according to combined data from the 2002 through 2004 surveys. Of special concern is that persons between the ages of 18 and 25 reported higher lifetime non-medical use of pain relievers, benzodiazepines, and muscle relaxants than did other age groups. Between 2004 and 2005, there was a significant increase in the number of persons in this group who used hydrocodone, oxycodone, methadone, clonazepam, or alprazolam.

Males had higher rates of misuse of pain relievers, but among youths aged 12 to 17, the rates of non-medical use of any prescription psychotherapeutic drug were higher for females (9.9% versus 8.2%). Past-year use of any psychotherapeutic drug was higher in the West than in the rest of the country but misuse of tranquilizers were higher in the South.⁽¹⁾

Table 1. National Survey on Drug Use and Health, Lifetime Non-Medical Use of Selected Prescription Drugs, Percentages, 2002-2005

	2002	2003	2004	2005
Vicodin, Lortab, Lorcet	5.6 **	6.6	6.9	7.2
OxyContin	0.8 **	1.2	1.3	1.4
Methadone	0.4	0.5	0.5	0.7
Xanax, Alprazolam, Ativan, or Lorazepam	3.5 **	4.0	3.9	4.2
Clonazepam	1.0 *	1.2	1.1	1.0
Diazepam	6.1	6.2	6.1	6.1
Soma	1.0	1.1	1.1	1.0

*Difference between 2002 and 2003 estimate, $p < 0.05$

**Difference between 2002 and 2003 estimate, $p < 0.01$

Respondents who used prescription pain relievers non-medically were asked when they first used them. In 2005, 2.2 million initiated non-medical use of prescription pain relievers within the past year. This is more than the estimated numbers of

initiates for marijuana (2.1 million) or cocaine (872,000). Youths aged 12 to 17 and young adults aged 18 to 25 were the most likely to initiate non-medical use of prescription psychotherapeutic drugs. In 2005, there were 526,000 new non-medical users of OxyContin[®]. Sixty percent of those new users of pain pills reported that they got the drugs from a friend or relative for free the last time they used them. Another 17% got the drug from one doctor, 4% reported buying from a drug dealer or stranger, and 1% bought the drug on the Internet.⁽²⁾

Monitoring the Future Survey

The Monitoring the Future Survey (MTF), conducted by the University of Michigan’s Institute for Social Research, is funded by NIDA. It tracks illicit drug use and attitudes towards drugs by eighth, tenth, and twelfth graders as well as college students and young adults. The MTF reports can be accessed at <http://monitoringthefuture.org>.

	2002	2003	2004	2005
Vicodin				
8th Grade	2.5	2.8	2.5	2.6
10th Grade	6.9	7.2	6.2	5.9
12th Grade	9.6	10.5	9.3	9.3
College Students	6.9	7.5	7.4	9.6
Young Adults	8.2	8.6	8.9	9.3
OxyContin				
8th Grade	1.3	1.7	1.7	1.8
10th Grade	3.0	3.6	3.5	3.2
12th Grade	4.0	4.5	5.0	5.5
College Students	1.5	2.2	2.5	2.1
Young Adults	1.9	2.6	3.1	3.1
Tranquilizers				
8th Grade	2.6	2.7	2.5	2.8
10th Grade	6.3	5.3	5.1	4.8
12th Grade	7.7	6.7	7.3	6.8
College Students	6.7	6.9	6.7	6.4
Young Adults	7.0	6.8	7.4	6.7

The 2005 MTF reported that Vicodin and OxyContin are the two drugs that account for the increase in the use of prescription pain pills. Although lower rates were found for OxyContin[®] than Vicodin[®] across all age groups, the use of OxyContin[®] by 12th graders and young adults had increased significantly since 2002 (Table 2). Most of the reported tranquilizer use in recent years has involved Valium[®] and Xanax[®].⁽³⁾

Partnership Attitude Tracking Survey

The Partnership Attitude Tracking Survey (PATS): Teens in Grades 7 through 12, 2005. This survey by the Partnership for a Drug-Free America involved 7,218 adolescents who took the self-administered survey in the spring of 2005. The report is available at http://www.drugfree.org/Files/Full_Teen_Report

The 2005 PATS survey reported that 37% of teenagers had ever used marijuana, 20% had ever used inhalants, 19% had ever used prescription medicine not prescribed for them, and 10% each had ever used cough medicine or cocaine/crack. Between 2004 and 2005, the proportion of teens who thought there was great risk in trying prescription pain relievers that were not prescribed for them dropped from 48% to 44%. Table 3 shows that the primary reasons for abusing prescription pain relievers is their widespread availability and easy access.

**Table 3. Reason for Using Prescription Pain Relievers:
PATS Attitude Tracking Study: 2005**

Easy to get from parents' medicine cabinets	62%
Are available everywhere	52%
They are not illegal drugs	51%
Easy to get through other people's prescriptions	50%
Teens can claim to have a prescription if caught	9%
They are cheap	43%
Safer to use than illegal drugs	35%
Less shame attached to using	33%
Easy to purchase over the Internet	32%
Fewer side effects than street drugs	32%
Can be used as study aids	25%
Parents don't care as much if you get caught	21%

Drug Abuse Warning Network

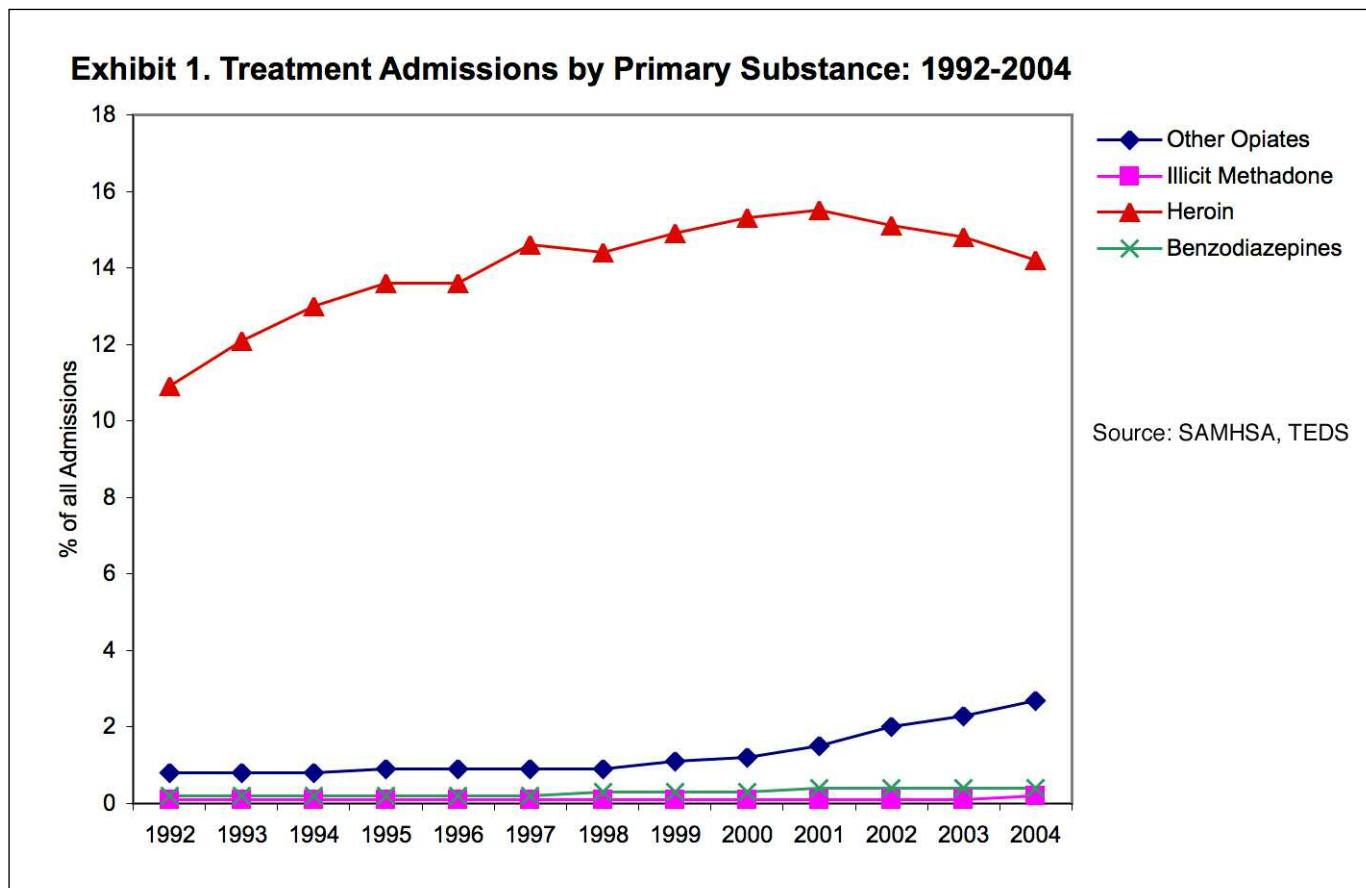
The Drug Abuse Warning Network (DAWN ED) collects data on drug-related visits to a sample of the Nation's emergency departments (EDs). Visits can include drug abuse and misuse, adverse reactions, accidental ingestion, overmedication, malicious poisoning, suicide attempts, underage drinking, and patients seeking detoxification or drug abuse treatment. DAWN is conducted by the Substance Abuse and Mental Health Services Administration. The reports are at <https://dawninfo.samhsa.gov/pubs/shortreports/default.asp>

In 2004, DAWN reported that there were nearly 1.3 million emergency department visits associated with drug misuse or abuse, and nearly half a million involved non-medical use of pharmaceuticals (Table 4). These visits typically involved multiple drugs. Only 33% of the opiates/opioids, 23% of the benzodiazepines, and 16% of the muscle relaxants involved a single drug. Alcohol was also involved in 20% of all opiate/opioid visits, 29% of benzodiazepine visits, and 24% of muscle relaxant visits. Patients aged 21 to 54 had the highest rates of emergency department visits for these drugs.⁽⁴⁾

	Number	%
Opiates/opioids	158,281	31.9
Hydrocodone/combinations	42,491	
Oxycodone/combinations	36,559	
Methadone	31,874	
Benzodiazepines	144,385	29.1
Alprazolam	49,842	
Clonazepam	26,238	
Muscle relaxants	28,338	5.7
Carisoprodol	17,366	
Cyclobenzaprine	5,932	
All ED visits involving nonmedical use of pharmaceuticals	495,732	100

Treatment Episode Data Set

Treatment Episode Data Set (TEDS). TEDS is an admission-based data collection system of the Substance Abuse and Mental Health Services Administration (SAMHSA) that includes admissions to facilities that are licensed or certified by the State substance abuse agency to provide substance abuse treatment. The reports are at <http://www.oas.samhsa.gov/dasis.htm#teds2>



From 1994 to 2004, the number of persons who were admitted to treatment programs across the US with a primary problem with opiates other than heroin increased from 14,191 (0.8% of all admissions in 1994) to 60,017 (3.2% of all admissions in 2004) (Exhibit 1). In comparison, the number of persons with a primary problem with heroin increased from 216,452 (13.0%) in 1994 to 265,895 (14.2%) in 2004. The number of clients admitted with a primary problem with illicit methadone has remained low, at 1,414 (0.1%) in 1994 and 3,226 (0.2%) in 2004. Admissions for benzodiazepines have increased from 3,257 (0.2%) in 1994 to 7,827 (0.4%) of all admissions in 2004.⁽⁵⁾

As Table 5 shows, in comparison to individuals entering treatment with a problem with heroin, individuals with problems with prescription drugs were less likely to be male or persons of color. Although there was little difference in average age at admission, prescription drug abusers were more likely to have begun their opiate use at an older age and to be first admissions to treatment. They were also less likely to use daily and they were more likely to be referred by other health care

Table 5. Characteristics of U.S. Clients Entering Treatment as Reported on TEDS: 2004

	Heroin	Methadone	Other Opiates*	Benzodiazepines
% Male	68	56	53	47
% White	50	80	89	86
% Black	24	10	4	5
% Hispanic	23	8	3	7
Average Age	36	35	34	36
% Began Use at Age 30+	14	32	25	29
% Used Daily	78	14	19	18
% Used Orally	2	81	73	94
% Injected	63	7	12	1
% Inhaled	32	4	13	3
% First Admissions	22	37	40	43
% Receiving Opioid Treatment**	31	28	18	2
% Referred by CJ System	15	15	16	18
% Self Referred	58	50	50	41
% Referred by Health Care Provider	5	11	10	14
% Employed	17	26	29	21
% GED or Year 12 Completed	17	24	31	28

*Includes codeine, hydrocodone, hydromorphone, meperidine, morphine, opium, oxycodone, pentazocine, propoxyphene, tramadol, and other drugs with morphine-like effects. Non-prescription methadone excluded.

**Received methadone or buprenorphine

TEDS data run 9/25/2006.

professionals (who may have recognized the abuse or dependence problems of these individuals).

DAWN Medical Examiner Reports

The DAWN Medical Examiner Reports (DAWN ME) include deaths directly caused by drug use, misuse, or abuse, as well as deaths where the drug use, misuse, or abuse contributed to the death but did not cause it. The numbers are representative only of the locales for which they are reported and cannot be extrapolated nationwide. The DAWN ME reports are available at

<https://dawninfo.samhsa.gov/pubs/shortreports/default.asp>

In 2003, six states participated in the DAWN mortality component. The rates of opiate deaths per 100,000 ranged from 7.2 in New Hampshire, 7.8 in Maine, 8.7 in Vermont, 10.8 in Maryland, 11.5 in Utah, to 11.6 in New Mexico. These deaths involved prescription pain medications as well as heroin (whose metabolite cannot be distinguished from the metabolites of other opiates). In each state, between 66% and 93% of these deaths involved more than one drug. Males outnumbered females in opiate-related deaths and the highest rates involved those under ages 21-54.⁽⁶⁾

National Center for Health Statistics

Data from the **National Center for Health Statistics** (NCHS) showed that opioid analgesics such as hydrocodone, oxycodone, and methadone were more likely than cocaine or heroin to be the cause of unintentional drug poisoning deaths in the US between 1999 and 2002. Opioid analgesic deaths increased by 91% in that time period, while cocaine deaths increased 23% and heroin deaths increased 12%.⁽⁷⁾ Between 1999 and 2003, the number of methadone-related unintentional poisoning deaths increased 213%, and this increase tracked the increase in methadone used as an analgesic rather than methadone used in narcotic treatment programs.⁽⁸⁾

National Forensic Laboratory Information System

The National Forensic Laboratory Information System (NFLIS), sponsored by the Drug Enforcement Administration (DEA), is a program that systematically collects results from toxicological analyses conducted by state and local forensic laboratories on substances seized in law enforcement operations. As of **June 2006**, 42 state forensic laboratory systems and 89 local or municipal forensic laboratories, representing a total of 259 individual labs, were participating in NFLIS. The NFLIS reports are at <http://www.deadiversion.usdoj.gov/nflis>.

Between 2001 and 2005, narcotic analgesics and benzodiazepines represented nearly 5% of all drugs analyzed (Table 6). In comparison, in 2005, 33% of all exhibits were cannabis and 32% were cocaine. Alprazolam, hydrocodone, and oxycodone were the most commonly reported controlled prescription drugs, accounting for nearly 63% of all narcotic analgesics and benzodiazepines reported. Among narcotic analgesics, hydrocodone increased nearly 125% between 2001 and 2005. Oxycodone increased from 2001 to 2004 but leveled off between 2004 and 2005, while methadone nearly tripled between 2001 and 2005. Alprazolam increased over 75% between 2001 and 2005 and clonazepam nearly doubled, while diazepam decreased about 20%.⁽⁹⁾

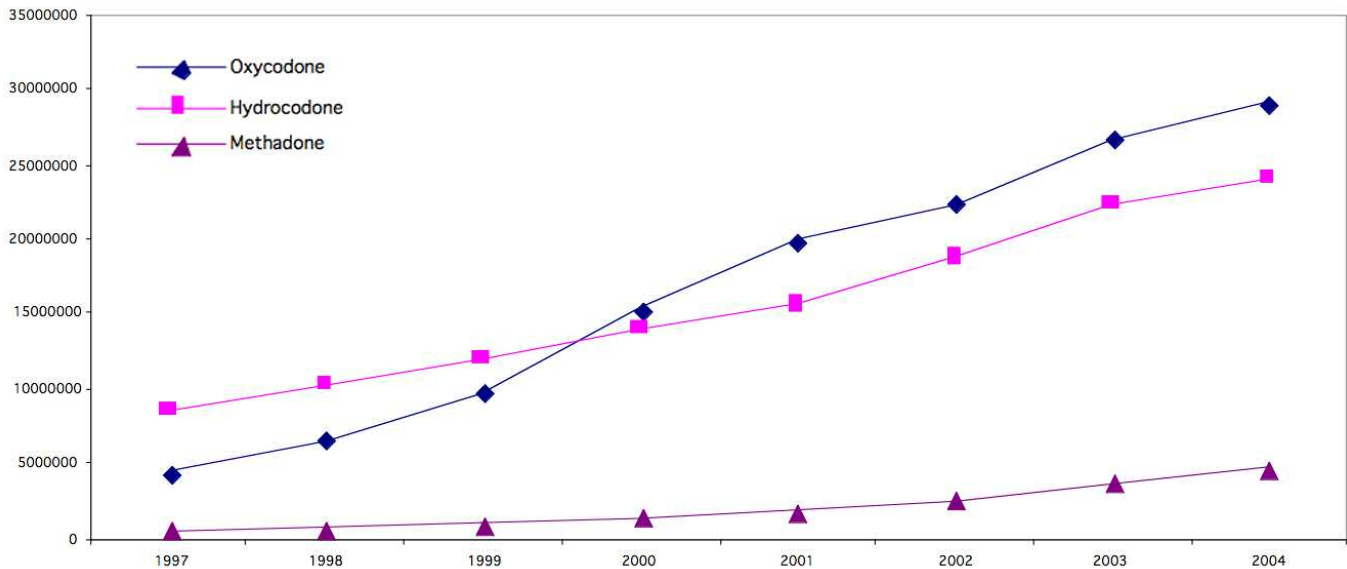
Table 6. Percent of Total Identified Drugs That Were Narcotic Analgesics, Benzodiazepines, or Muscle Relaxants, NFLIS: 2000-2005

	2000	2001	2002	2003	2004	2005
% Hydrocodone/ combinations	0.64	0.78	0.98	1.19	1.40	1.56
% Oxycodone/ combinations	0.43	0.70	0.85	0.95	1.20	1.16
% Methadone	0.00	0.00	0.23	0.31	0.39	0.40
% Alprazolam	0.66	0.90	1.11	1.19	1.40	1.56
% Clonazepam	0.22	0.26	0.32	0.33	0.39	0.41
% Carisoprodol	0.00	0.00	0.15	0.19	0.17	0.19

Automation of Reports and Consolidated Orders System

DEA's Automation of Reports and Consolidated Orders System (ARCOS) reports sales of prescription drugs. Since 2000, sales of oxycodone have surpassed hydrocodone. Methadone sales have increased at a much slower rate (Exhibit 2).

Exhibit 2. ARCOS Retail Drug Distribution by Drug Code for the U.S.: 1997-2004



The increase in methadone sales reflects increased use of methadone pills for analgesia.

There are three formulations of methadone: liquid, diskettes, and pills. Since 2000, distribution of methadone tablets has increased by 237%, while distribution of diskettes has increased by 98% and liquid methadone has increased by 18%. Some 97% of the liquid methadone is purchased by narcotic treatment programs and 89% of the 5 and 10 mg. pills which are used for analgesia are purchased by pharmacies. Fifty percent of the 40 mg. diskettes are purchased by pharmacies and 46% are purchased by narcotic treatment programs.

Conclusions

The growing abuse of prescription drugs and the patterns of their use are documented in multiple data sources reviewed in this publication:

The sale of narcotic analgesic pills is increasing, as is diversion and the non-medical use of prescription drugs (ARCOS, NFLIS, and NCHS). The sales of hydrocodone and oxycodone increased at faster rates than did methadone, with the largest increases in methadone sales being pills and diskettes which are distributed through pharmacies for analgesia, rather than the liquid form used in narcotic treatment programs (ARCOS).

Vicodin and OxyContin are the two drugs that are most likely to account for the increase in the use of prescription pain pills (MTF, CEWG) and abuse of alprazolam and carisoprodol is also increasing (CEWG, NFLIS).

Individuals ages 19-25 have the highest rates of lifetime use of these drugs and the rates are increasing (NSDUH). The use of OxyContin[®] by 12th graders and young adults had increased significantly since 2002 (MTF). At the same time, fewer teenagers in 2005 thought that there was great risk in using these drugs, as compared to 2004 (PATS).

Prescription drugs are easy to obtain, especially from family or friends, and they are viewed as “legal,” less shameful to use, and safer than illegal drugs which are more likely to be purchased from street dealers (PATS, CEWG).

Abuse of prescription drugs is often in combination with other prescription drugs and alcohol, usually “to get high” (CEWG, DAWN ED) and adverse events such as emergency department visits and deaths where there has been non-medical use of opiates, opioids, benzodiazepines, and muscle relaxants usually involve multiple drugs and alcohol (DAWN ED, DAWN ME).

Admissions to treatment for use of other opiates are increasing, and these users of narcotic analgesics not only differ from heroin users in terms of socio-demographic characteristics, but they began their use at a later age, are more likely to be first admissions to treatment, and to not use on a daily basis. They also are more likely to come to substance abuse treatment because of a referral from another health care provider

- (1) Colliver, J. D., Kroutil, L. A., Dai, L., & Gfroerer, J. C. (2006). *Misuse of prescription drugs: Data from the 2002, 2003, and 2004 National Surveys on Drug Use and Health* (DHHS Publication No. SMA 06-4192, Analytic Series A-28). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.
 - (2) Substance Abuse and Mental Health Services Administration (2006). *Results from the 2005 National Survey on Drug Use and Health: National Findings* (Office of Applied Studies, NSDUH Series H-30, DHHS Publication No. SMA 06-4194). Rockville, MD.
 - (3) Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2006). *Monitoring the Future national survey results on drug use, 1975-2005. Volume I: Secondary school students* (NIH Publication No. 06-5883). Bethesda, MD: National Institute on Drug Abuse; Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2006). *Monitoring the Future national survey results on drug use, 1975-2005. Volume II: College students and adults ages 19-45* (NIH Publication No. 06-5884). Bethesda, MD: National Institute on Drug Abuse.
 - (4) Substance Abuse and Mental Health Services Administration, Office of Applied Studies (2006). Emergency department visits involving nonmedical use of selected pharmaceuticals, *The New DAWN Report*, Issue 23.
 - (5) Substance Abuse and Mental Health Services Administration, Office of Applied Studies (2006). *Treatment Episode Data Set (TEDS). Highlights - 2004. National Admissions to Substance Abuse Treatment Services*, DASIS Series: S-31, DHHS Publication No. (SMA) 06-4140, Rockville, MD.
 - (6) Substance Abuse and Mental Health Services Administration, Office of Applied Studies (2006). Opiate-related drug misuse deaths in six states: 2003. *The New DAWN Report*, issue 19.
 - (7) Paulozzi, L. J., Budnitz, D. S., & Yongli, X. (2006). Increasing deaths from opioid analgesics in the United States. *Pharmacoepidemiology and Drug Safety* 15(9): 613-617.
 - (8) National Center for Health Statistics, National Vital Statistics System. Methadone-related unintentional poisoning deaths 1999-2003 and rates for 1999 and 2003, data run April 24, 2006.
 - (9) Strom, K.J., Wong, L., Weimer, B.J., Ancheta, J., & Rachal, V. (2006). *NFLIS Special Report: Controlled Prescription Drugs, 2001-2005*. Washington DC: U.S. Drug Enforcement Administration.
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