

Drug Enforcement Administration
Office of Diversion Control



YEAR 2007 ANNUAL REPORT

NELIS

NATIONAL FORENSIC LABORATORY INFORMATION SYSTEM



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Foreword

The Drug Enforcement Administration (DEA) Office of Diversion Control is pleased to present the *National Forensic Laboratory Information System (NFLIS) Year 2007 Annual Report*. Through a partnership that includes 276 federal, state, and local forensic laboratories, the information collected through NFLIS supports DEA's mission to enforce the controlled substances laws and regulations of the United States and serves as an important resource for state and local drug control agencies.

The *NFLIS 2007 Annual Report* presents national and regional findings on drug cases analyzed during the past year, including drug seizure information by location. The *NFLIS 2007 Annual Report* includes several key findings:

- An estimated 1.8 million drug items were analyzed by state and local laboratories in the United States in 2007. This represents a 7% decrease compared with 2006. In 2007, cocaine was the most frequently identified drug (606,882 items), followed by cannabis/THC (595,775 items), methamphetamine (165,225 items), and heroin (93,327 items).
- Overall, there was a decrease in total analyzed items for the top four drugs between 2006 and 2007, from 1,555,249 items to 1,461,209 items. Nationally, exhibits containing methamphetamine decreased 21% from 2006 to 2007, from 208,262 items to 165,225 items.
- Regionally, exhibits containing methamphetamine decreased in the South from 68.0 items in 2006 to 53.3 items in 2007 per 100,000 people, a 22% decrease. Cocaine exhibits decreased in the Midwest between 2006 and 2007, from 128,297 items to 105,418 items, an 18% decrease.
- In addition to the top four drugs, hydrocodone and oxycodone increased in all regions between 2001 and 2007. Reports of alprazolam increased in the Midwest, South, and Northeast, while MDMA increased in the Midwest.

As can be seen from these results, NFLIS provides a unique source of information on the nation's drug problem by providing detailed and timely information on drug evidence secured in law enforcement operations across the country. DEA would like to thank the laboratories that have joined NFLIS and encourage those laboratories that are not currently participating in NFLIS to contact us about joining this important program.

Thank you again for your ongoing support.



Joseph T. Rannazzisi
Deputy Assistant Administrator
Office of Diversion Control
U.S. Drug Enforcement Administration

INTRODUCTION

The National Forensic Laboratory Information System (NFLIS) is a program of the Drug Enforcement Administration (DEA), Office of Diversion Control, that systematically collects drug identification results and associated information from drug cases analyzed by federal, state, and local forensic laboratories. These laboratories analyze controlled and noncontrolled substances secured in law enforcement operations across the country. NFLIS represents an important resource in monitoring illicit drug abuse and trafficking, including the diversion of legally manufactured pharmaceuticals into illegal markets. NFLIS data are used to support drug scheduling decisions and to inform drug policy and drug enforcement initiatives both nationally and in local communities around the country.

NFLIS is a comprehensive information system that currently includes data from forensic laboratories that handle over 88% of the nation's estimated 1.2 million annual state and local drug analysis cases. As of April 2008, NFLIS included 45 state systems, 95 local or municipal laboratories, and 1 territorial laboratory, representing a total of 276 individual laboratories. The NFLIS database also includes federal data from the DEA's System To Retrieve Information from Drug Evidence II (STRIDE), which reflects the results of drug evidence analyzed at DEA laboratories across the country.

This 2007 Annual Report presents the results of drug cases analyzed by forensic laboratories between January 1, 2007, and December 31, 2007. Section 1 presents national and regional estimates for the 25 most frequently identified drugs, as well as national and regional trends from 2001 through 2007. National and regional estimates are based on the NFLIS national sample of laboratories (see Appendix A for a list of NFLIS laboratories, including those in the national sample). Federal laboratory data reported in STRIDE are also presented. Sections 2 and 3 present drug analysis results for all state and local laboratories that reported at least 6 months of data to NFLIS during 2007.



This report also highlights areas of enhancement made to NFLIS over the past several years. Section 4 presents drugs reported for selected cities across the country, and Section 5 presents a Geographic Information System (GIS) analysis on drug seizures of alprazolam, hydrocodone, methadone, and oxycodone by state and by county for selected states. Section 6 describes heroin, cocaine, and methamphetamine purity analyses reported by state and local laboratories. The benefits and limitations of NFLIS are presented in Appendix B. Another key area of improvement to NFLIS includes ongoing enhancements to the NFLIS Interactive Data Site (IDS); Appendix C summarizes these IDS enhancement activities.



- Reporting State Lab System
- Participating State Lab System (Not Yet Reporting)
- No Participating State Lab System
- No State Lab System
- Individual State Lab
- Reporting Local Lab
- Participating Local Lab (Not Yet Reporting)

NATIONAL AND RE

Since 2001, NFLIS has produced estimates of the number of drug items and drug cases analyzed by state and local laboratories from a nationally representative sample of laboratories.

The following section describes national and regional estimates for drug items analyzed by state and local laboratories in 2007. Trends are presented for selected drugs from 2001 through 2007. The methods used in preparing these estimates are described in Appendix D.

1.1 DRUG ITEMS ANALYZED

In 2007, a total of 1,807,810 drug items were analyzed by state and local forensic laboratories in the United States. This estimate is a decrease of 7% from the 1,935,788 drug items analyzed during 2006. Table 1.1 presents the 25 most frequently identified drugs for the nation and for the census regions.

The top 25 drugs accounted for 92% of all drugs analyzed in 2007. As in previous years, the majority of all drugs reported in NFLIS were identified as the top 4 drugs, with cocaine, cannabis/THC, methamphetamine, and heroin representing 81% of all drugs analyzed. Nationally, 606,882 items were identified as cocaine (34%), 595,775 as cannabis/THC (33%), 165,225 as methamphetamine (9%), and 93,327 as heroin (5%).

There were 7 narcotic analgesics in the top 25 drugs: hydrocodone (36,803 items), oxycodone (29,487 items), methadone (10,361 items), morphine (5,343 items), codeine (3,691 items), buprenorphine (3,108 items), and hydromorphone (1,735 items). Also included were four benzodiazepines: alprazolam (34,139 items), clonazepam (8,536 items), diazepam (7,209 items), and lorazepam (1,751 items). Other controlled pharmaceutical drugs were phencyclidine (PCP) (3,985 items) and methylphenidate (1,995 items). Carisoprodol (4,420 items), a noncontrolled pharmaceutical, and pseudoephedrine (3,361 items), a listed chemical, were also included in the top 25 most frequently identified drugs.



REGIONAL ESTIMATES

Table 1.1 NATIONAL AND REGIONAL ESTIMATES FOR THE 25 MOST FREQUENTLY IDENTIFIED DRUGS*
Estimated number and percentage of total analyzed drug items, 2007.

Drug	National		West		Midwest		Northeast		South	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cocaine	606,882	33.57%	66,107	20.34%	105,418	26.39%	125,145	39.83%	310,213	40.33%
Cannabis/THC	595,775	32.96%	86,995	26.77%	194,385	48.66%	98,356	31.30%	216,038	28.09%
Methamphetamine	165,225	9.14%	101,116	31.12%	20,111	5.03%	1,935	0.62%	42,063	5.47%
Heroin	93,327	5.16%	11,841	3.64%	19,870	4.97%	30,314	9.65%	31,301	4.07%
Hydrocodone	36,803	2.04%	3,936	1.21%	5,475	1.37%	4,897	1.56%	22,496	2.92%
Alprazolam	34,139	1.89%	**	**	5,724	1.43%	4,402	1.40%	22,170	2.88%
Oxycodone	29,487	1.63%	3,600	1.11%	5,345	1.34%	8,752	2.79%	11,790	1.53%
MDMA	23,077	1.28%	5,264	1.62%	5,197	1.30%	1,941	0.62%	10,676	1.39%
Noncontrolled, non-narcotic drug	13,872	0.77%	2,583	0.79%	3,734	0.93%	2,991	0.95%	4,564	0.59%
Methadone	10,361	0.57%	1,611	0.50%	1,656	0.41%	2,241	0.71%	4,852	0.63%
Clonazepam	8,536	0.47%	806	0.25%	1,742	0.44%	2,712	0.86%	3,276	0.43%
Diazepam	7,209	0.40%	1,201	0.37%	1,924	0.48%	926	0.29%	3,157	0.41%
Morphine	5,343	0.30%	1,135	0.35%	1,246	0.31%	811	0.26%	2,151	0.28%
Amphetamine	4,500	0.25%	598	0.18%	1,112	0.28%	661	0.21%	2,128	0.28%
Carisoprodol	4,420	0.24%	**	**	273	0.07%	150	0.05%	3,175	0.41%
Phencyclidine (PCP)	3,985	0.22%	830	0.26%	250	0.06%	1,779	0.57%	1,125	0.15%
Codeine	3,691	0.20%	496	0.15%	512	0.13%	470	0.15%	2,213	0.29%
Pseudoephedrine ***	3,361	0.19%	230	0.07%	1,568	0.39%	36	0.01%	1,527	0.20%
Psilocin	3,352	0.19%	1,078	0.33%	839	0.21%	762	0.24%	672	0.09%
Buprenorphine	3,108	0.17%	163	0.05%	282	0.07%	1,746	0.56%	917	0.12%
MDA	2,108	0.12%	72	0.02%	196	0.05%	1,063	0.34%	777	0.10%
Methylphenidate	1,995	0.11%	185	0.06%	481	0.12%	622	0.20%	708	0.09%
Ketamine	1,968	0.11%	319	0.10%	521	0.13%	386	0.12%	742	0.10%
Lorazepam	1,751	0.10%	281	0.09%	500	0.13%	371	0.12%	600	0.08%
Hydromorphone	1,735	0.10%	226	0.07%	259	0.06%	220	0.07%	1,031	0.13%
<i>Top 25 Total</i>	1,666,011	92.16%	293,339	90.28%	378,621	94.79%	293,689	93.47%	700,362	91.05%
<i>All Other Analyzed Items</i>	141,799	7.84%	31,596	9.72%	20,829	5.21%	20,511	6.53%	68,863	8.95%
<i>Total Analyzed Items****</i>	1,807,810	100.00%	324,935	100.00%	399,450	100.00%	314,200	100.00%	769,225	100.00%

MDMA=3,4-Methylenedioxymethamphetamine

MDA=3,4-Methylenedioxyamphetamine

* Sample n's and 95% confidence intervals for all estimates are available upon request.

** The estimate for this drug does not meet standards of precision and reliability because too few laboratories reported this specific drug.

*** Includes items from a small number of laboratories that do not specify between pseudoephedrine and ephedrine.

**** Numbers and percentages may not sum to totals due to suppression and rounding.

1.2 DRUG CASES ANALYZED

Drug analysis results are also reported to NFLIS at the case level. These case-level data typically describe all drugs identified within a drug-related incident, although a small proportion of laboratories may assign a single case number to all drug submissions related to an entire investigation. Table 1.2 presents national estimates of cases containing the 25 most commonly identified drugs. This table illustrates the number of cases that contained one or more items of the specified drug. In 2007,

Table 1.2

NATIONAL CASE ESTIMATES

Number and percentage of cases containing the 25 most frequently identified drugs, 2007.

Drug	Number	Percent
Cocaine	471,127	39.95%
Cannabis/THC	449,780	38.14%
Methamphetamine	120,185	10.19%
Heroin	71,934	6.10%
Hydrocodone	30,254	2.57%
Alprazolam	28,785	2.44%
Oxycodone	23,297	1.98%
MDMA	16,478	1.40%
Noncontrolled, non-narcotic drug	11,190	0.95%
Methadone	8,859	0.75%
Clonazepam	7,507	0.64%
Diazepam	6,381	0.54%
Morphine	4,422	0.37%
Amphetamine	3,810	0.32%
Carisoprodol	4,103	0.35%
Phencyclidine (PCP)	3,588	0.30%
Codeine	3,114	0.26%
Pseudoephedrine*	2,466	0.21%
Psilocin	2,949	0.25%
Buprenorphine	2,764	0.23%
MDA	1,733	0.15%
Methylphenidate	1,546	0.13%
Ketamine	1,543	0.13%
Lorazepam	1,613	0.14%
Hydromorphone	1,560	0.13%
<i>Top 25 Total</i>	<i>1,280,991</i>	<i>108.62%</i>
<i>All Other Drugs</i>	<i>113,500</i>	<i>9.62%</i>
<i>Total All Drugs</i>	<i>1,394,490**</i>	<i>118.24%***</i>

* Includes cases from a small number of laboratories that do not specify between pseudoephedrine and ephedrine.

** Numbers may not sum to totals due to rounding.

*** Multiple drugs can be reported within a single case, so the cumulative percentage exceeds 100%. The estimated national total of distinct case percentages is based on 1,179,339 distinct cases analyzed during 2007.

there were an estimated 1,394,490 drug cases analyzed by state and local forensic laboratories, representing a 6% decrease from 1,488,963 cases in 2006.

Among cases, cocaine was the most common drug reported during 2007. Nationally, an estimated 40% of analyzed drug cases contained one or more cocaine items, followed by cannabis/THC, which was identified in 38% of all drug cases. About 10% of drug cases were estimated to have contained one or more methamphetamine items, and 6% of cases contained one or more heroin items. Hydrocodone was reported in about 3% of cases, alprazolam and oxycodone were each reported in about 2% of cases, and MDMA was reported in about 1% of drug cases.

System To Retrieve Information from Drug Evidence II (STRIDE)

The DEA's System To Retrieve Information from Drug Evidence II (STRIDE) collects the results of drug evidence analyzed at DEA laboratories across the country. STRIDE reflects evidence submitted by the DEA, other federal law enforcement agencies, and some local police agencies that was obtained during drug seizures, undercover drug buys, and other activities. STRIDE captures data on both domestic and international drug cases; however, the following results describe only those drugs seized by law enforcement in the United States.

During 2007, a total of 53,320 drug exhibits or items were reported in STRIDE, about 3% of the estimated 1.8 million drug exhibits analyzed by state and local laboratories during this period. This is a decrease of 5% from the 55,861 exhibits reported in STRIDE in 2006. In 2007, three quarters of the drugs in STRIDE were identified as cocaine (30%), cannabis/THC (25%), methamphetamine (12%), or heroin (8%). Another 5% were identified as MDMA.

MOST FREQUENTLY IDENTIFIED DRUGS IN STRIDE, 2007

Drug	Number	Percent
Cocaine	16,178	30.34%
Cannabis/THC	13,386	25.11%
Methamphetamine	6,635	12.44%
Heroin	4,210	7.90%
MDMA	2,637	4.95%
Noncontrolled, non-narcotic drug	1,033	1.94%
Oxycodone	743	1.39%
Hydrocodone	725	1.36%
Testosterone	674	1.26%
Alprazolam	400	0.75%
<i>All Other Drugs</i>	<i>6,699</i>	<i>12.56%</i>
<i>Total Analyzed Exhibits</i>	<i>53,320</i>	<i>100.00%</i>

1.3 NATIONAL AND REGIONAL DRUG TRENDS

National drug trends

Figure 1.1 presents national trends for the estimated number of cannabis/THC, cocaine, methamphetamine, and heroin items analyzed by state and local laboratories from 2001 through 2007. Overall, there was a decrease in the total analyzed items for the top four drugs between 2006 and 2007, from an estimated 1,555,249 items to 1,461,209 items. Nationally, methamphetamine decreased significantly from 2006 through 2007, from 208,262 items to 165,225 items, representing a 21% decrease ($\alpha = .10$).

Figure 1.2 describes national trends for MDMA, alprazolam, oxycodone, and hydrocodone. Among these drugs, reports of hydrocodone, oxycodone, and alprazolam experienced significant increases from 2001 through 2007 ($\alpha = .10$). Hydrocodone and oxycodone reports more than doubled during this time. Hydrocodone items increased 169%, from 13,659 in 2001 to 36,803 in 2007, and oxycodone items increased 127% from 13,004 in 2001 to 29,487 in 2007. Alprazolam increased from 17,926 items to 34,139 items, a 90% increase. From 2001 through 2004, MDMA continued to decline, then more than doubled from 9,540 items in 2004 to 23,078 items in 2007.

Figure 1.1 National trend estimates for the top four drugs, by year, 2001–2007.

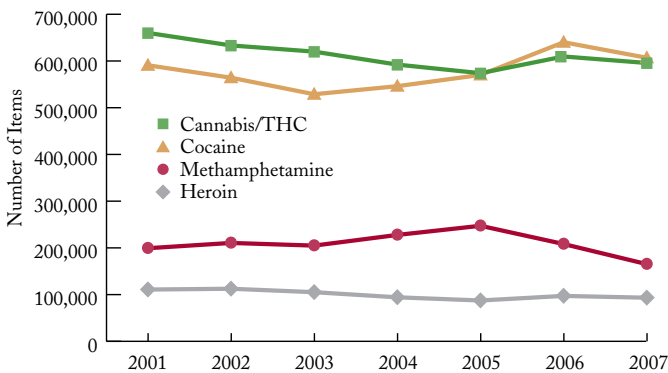
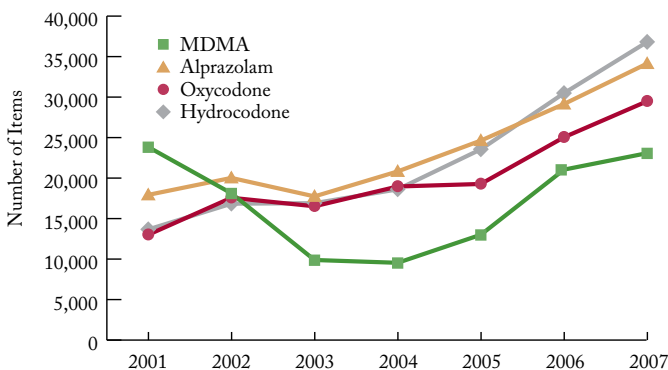


Figure 1.2 National trend estimates for other selected drugs, by year, 2001–2007.



Regional drug trends

Figure 1.3 presents regional trends per 100,000 persons aged 15 or older for the top four reported drugs. This figure illustrates changes in drugs reported over time, taking into account the population of each region.

Overall, methamphetamine reporting significantly increased from 2001 through 2007 in the Northeast and the South ($\alpha = .10$). However, methamphetamine reporting significantly decreased in the South from 2006 to 2007, from 68.0 items per 100,000 in 2006 to 53.3 items in 2007, a 22% decrease. Heroin reporting also decreased significantly in the Northeast and South between 2001 and 2007. Reports of cocaine increased significantly from 2001 to 2007 in the Northeast, where the number of items increased from 244.5 items per 100,000 persons in 2001 to 293.1 items in 2007 (a 20% increase). However, in the Midwest, reports of cocaine decreased significantly from 2006 to 2007, where the number of items decreased from 253.6 items to 208.4 items per 100,000 persons (an 18% decrease).

Figure 1.4 shows regional trends per 100,000 persons aged 15 or older for hydrocodone, oxycodone, MDMA, and alprazolam from 2001 through 2007. Reports of hydrocodone and oxycodone increased significantly in all census regions from 2001 through 2007 ($\alpha = .10$). In the Northeast, the rate of hydrocodone reports increased 468% from 863 items in 2001 through 4,897 items in 2007 (2.0 to 11.5 items per 100,000 persons). In the West, the reported rate of oxycodone items increased by more than 576%, from 1.1 to 7.4 items per 100,000 (533 to 3,600 items).

From 2001 through 2007, reports of MDMA increased significantly in the Midwest from 4.3 to 10.3 items per 100,000 persons ($\alpha = .10$). Although MDMA increased significantly in the Northeast from 2005 through 2006 (a 75% increase), it decreased significantly overall from 2001 through 2007 from 12.7 to 4.5 items per 100,000 persons (a 64% decrease). Overall, reports of alprazolam increased significantly from 2001 through 2007 in the Midwest, South, and Northeast. In the South, reports increased from 15.3 items per 100,000 in 2001 to 28.1 items in 2007 (an 83% increase). In the Northeast, reports increased from 5.2 items per 100,000 in 2001 to 10.3 items in 2007 (an 98% increase), and in the Midwest alprazolam reports increased from 6.4 to 11.3 items per 100,000 (a 77% increase).

Figure 1.3 Trends in the top four drugs reported per 100,000 persons aged 15 or older, 2001–2007.

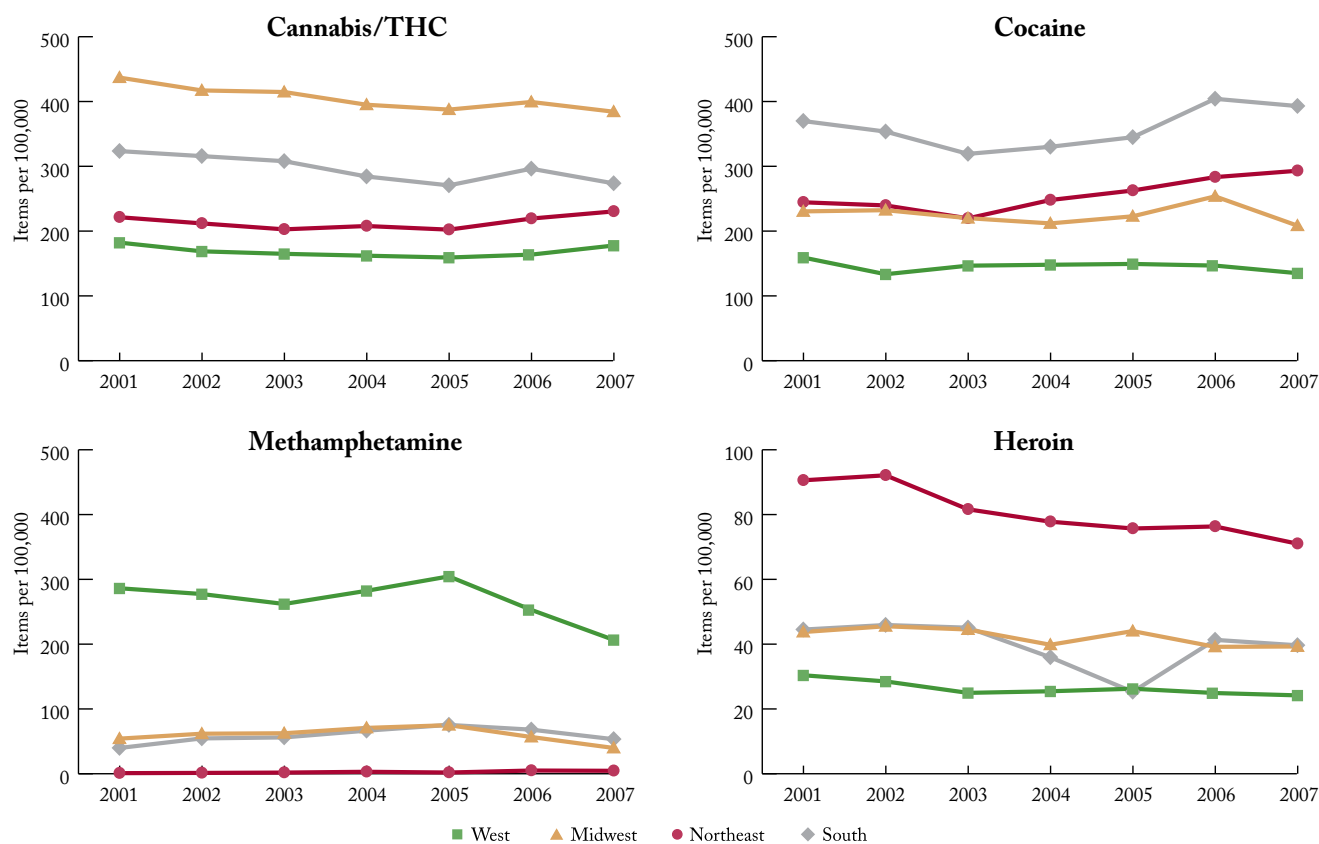
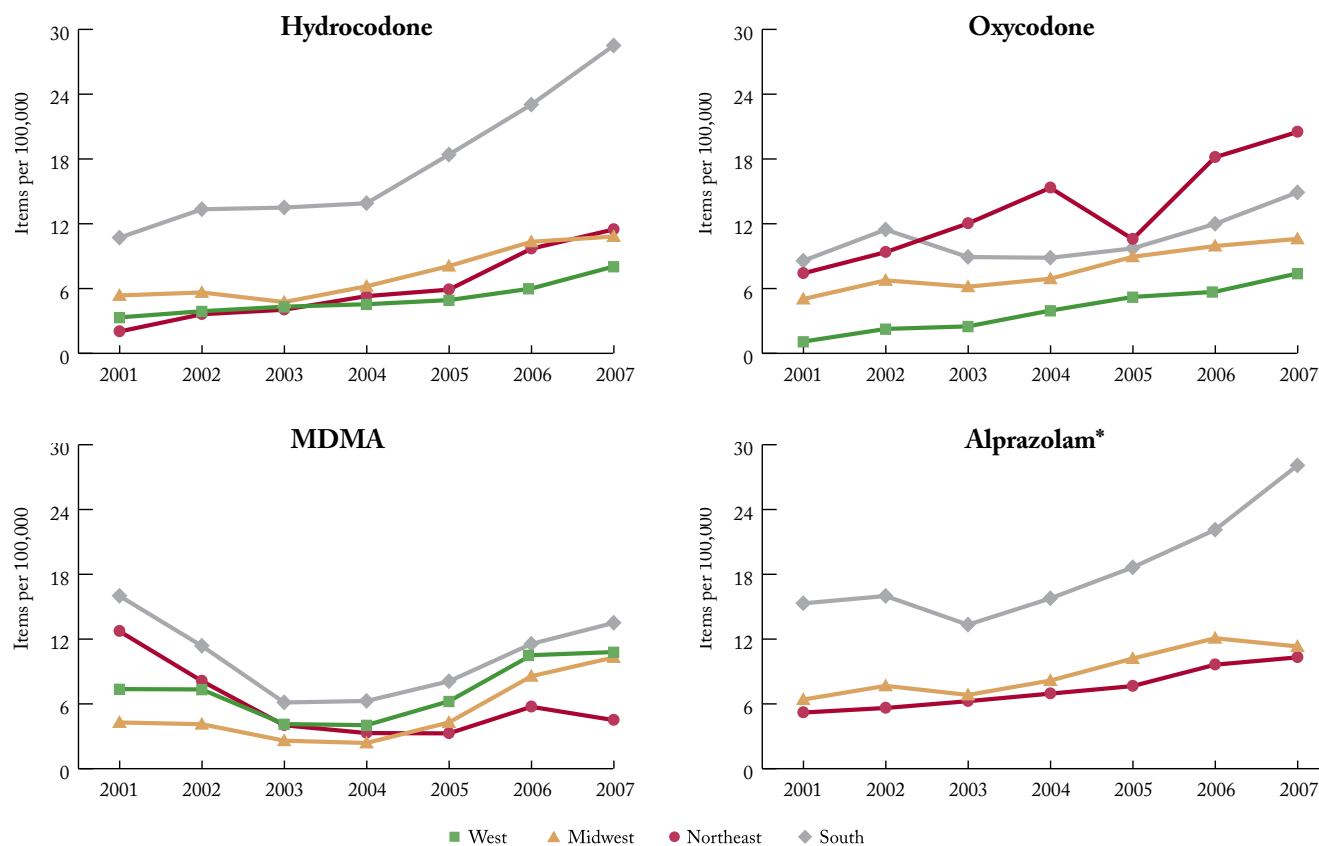


Figure 1.4 Trends in other selected drugs reported per 100,000 persons aged 15 or older, 2001–2007.



*The absence of a trend line implies unstable estimates due to small sample sizes.

MAJOR DRUG CATEGORIES

Section 2 presents results for major drug categories reported by NFLIS laboratories during 2007. It is important to note differences between the results presented in this section and the national and regional estimates presented in Section 1. The estimates presented in Section 1 are based on data reported by the NFLIS national sample of laboratories. Section 2 and subsequent sections include data from all NFLIS laboratories that reported 6 or more months of data in 2007. NFLIS laboratories analyzed a total of 1,473,625 drug items during 2007.

¹ Office of Applied Studies. (2007, September). *Results from the 2006 National Survey on Drug Use and Health: Detailed tables*. Rockville, MD: Substance Abuse and Mental Health Services Administration. [Available at <http://oas.samhsa.gov/WebOnly.htm#NSDUHtabs>]



2.1 NARCOTIC ANALGESICS

According to the 2006 National Survey on Drug Use and Health (NSDUH), approximately 14% of persons aged 12 or older used narcotic analgesics, or prescription pain relievers, for nonmedical reasons during their lifetime, and 5% used them in the past year. Moreover, during the past year, 6% of persons aged 12 or older used propoxyphene or codeine products, 5% used hydrocodone products, and 3% used oxycodone products for nonmedical reasons.¹

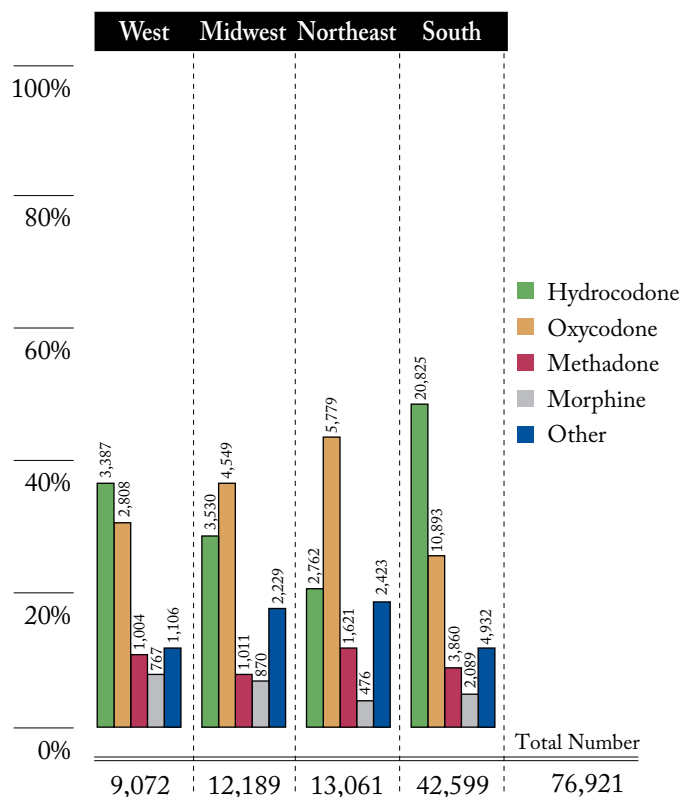
A total of 76,921 narcotic analgesics were identified by NFLIS laboratories in 2007, representing 5% of all items analyzed (Table 2.1). Hydrocodone (40%) and oxycodone (31%) accounted for the majority of all narcotic analgesics reported. The remaining narcotic analgesics reported included methadone (10%), morphine (5%), codeine (3%), buprenorphine (3%), hydromorphone (2%), propoxyphene (2%), dihydrocodeine (1%), tramadol (1%), and fentanyl (1%).

Table 2.1 NARCOTIC ANALGESICS
Number and percentage of identified narcotic analgesics, 2007.

Analgesic	Number	Percent
Hydrocodone	30,504	39.66%
Oxycodone	24,029	31.24%
Methadone	7,496	9.75%
Morphine	4,202	5.46%
Codeine	2,674	3.48%
Buprenorphine	2,094	2.72%
Hydromorphone	1,559	2.03%
Propoxyphene	1,306	1.70%
Dihydrocodeine	957	1.24%
Tramadol*	751	0.98%
Fentanyl	732	0.95%
Meperidine	316	0.41%
Opium	162	0.21%
Pentazocine	88	0.11%
Oxymorphone	34	0.04%
Butorphanol	10	0.01%
Nalbuphine*	7	0.01%
<i>Total Narcotic Analgesics</i>	76,921	100.00%
<i>Total Items Analyzed</i>	1,473,625	

*Noncontrolled narcotic analgesics.

Figure 2.1 Distribution of narcotic analgesics within region, 2007.



The types of narcotic analgesics reported varied considerably by region (Figure 2.1). The highest percentages of hydrocodone were reported in the South (49%) and West (37%), while the Northeast (44%) and Midwest (37%) reported the highest percentages of oxycodone. The Northeast reported the highest percentages of methadone (12%), while the West reported the highest percentage of morphine (8%).

2.2 BENZODIAZEPINES

Benzodiazepines are prescribed for many reasons, including to produce sedation, induce sleep, relieve anxiety and muscle spasms, and to prevent seizures. However, long-term use or use of high doses of benzodiazepines can lead to dependence.² According to the 2006 NSDUH, 8% of persons aged 12 or older used benzodiazepines for nonmedical reasons in their lifetime. Among persons aged 12 or older, 6% used Valium (diazepam) and 4% used Xanax (alprazolam) or Atavan (lorazepam) for nonmedical reasons at least once in their lifetime.³

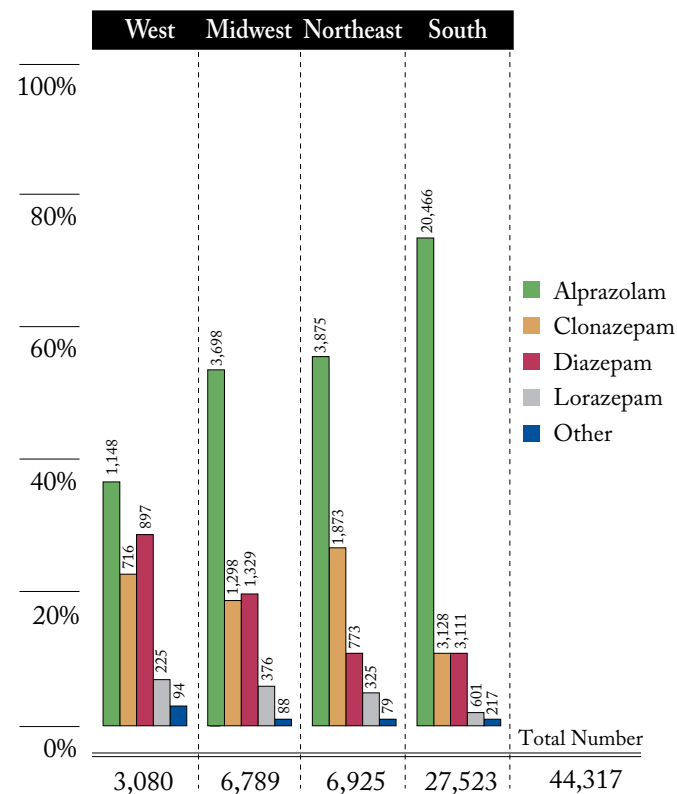
During 2007, approximately 3% of all analyzed drugs, or 44,317 items, were identified by NFLIS laboratories as benzodiazepines (Table 2.2). Alprazolam accounted for two thirds of reported benzodiazepines. Approximately 16% of benzodiazepines were identified as clonazepam, 14% were identified as diazepam, and 3% were identified as lorazepam.

More than half of benzodiazepines reported in the South (74%), Northeast (56%), and Midwest (54%) were identified as alprazolam (Figure 2.2). Clonazepam accounted for approximately one quarter of benzodiazepines identified in the Northeast and in the West. Diazepam accounted for more than one quarter of the benzodiazepines identified in the West and one fifth of those identified in the Midwest.

Table 2.2 BENZODIAZEPINES
Number and percentage of identified benzodiazepines, 2007.

Benzodiazepine	Number	Percent
Alprazolam	29,187	65.86%
Clonazepam	7,015	15.83%
Diazepam	6,110	13.79%
Lorazepam	1,527	3.45%
Temazepam	307	0.69%
Chlordiazepoxide	88	0.20%
Triazolam	50	0.11%
Flunitrazepam	24	0.05%
Midazolam	9	0.02%
Total Benzodiazepines	44,317	100.00%
Total Analyzed Items	1,473,625	

Figure 2.2 Distribution of benzodiazepines within region, 2007.



2.3 CLUB DRUGS

According to the Monitoring the Future study, MDMA, or Ecstasy, was the only drug in 2007 to show signs of an increase in use. Among 10th graders, MDMA use increased from a low of 2% in 2004 to 3.5% in 2007; among 12th graders, MDMA use increased from a low of 3% in 2005 to 4.5% in 2007.⁴

NFLIS laboratories identified 22,186 items as club drugs in 2007 (Table 2.3). Of these, 83% were identified as MDMA. Among the other club drugs reported, 8% were identified as MDA, 7% as ketamine, and 1% as GHB/GBL.

As shown in Figure 2.3, MDMA was the most commonly reported club drug for each region, representing 89% of club drugs in the West, 87% in the Midwest, 85% in the South, and 59% in the Northeast. More than one quarter of drugs reported in the Northeast were MDA, and 11% were ketamine.

² Drug Enforcement Administration. (n.d.). *Benzodiazepines*. Retrieved May 1, 2008, from <http://www.dea.gov/concern/benzodiazepines.html>

³ See footnote 1.

⁴ Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2008). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2007* (NIH Publication No. 08-6418). Bethesda, MD: National Institute on Drug Abuse. [Available at <http://www.monitoringthefuture.org/pubs.html>]

Figure 2.3 Distribution of club drugs within region, 2007.

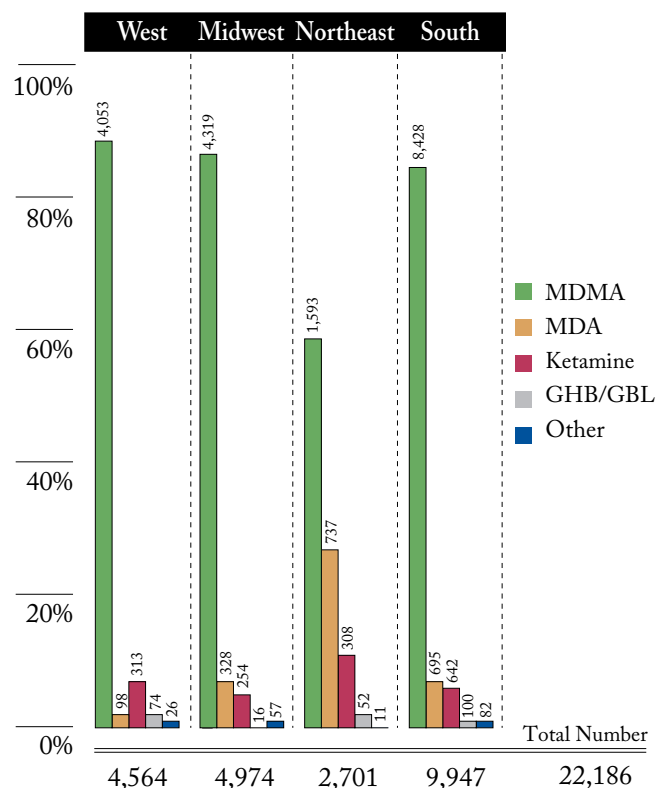


Table 2.3 CLUB DRUGS

Number and percentage of identified club drugs, 2007.

Club Drug	Number	Percent
MDMA	18,393	82.90%
MDA	1,858	8.38%
Ketamine	1,517	6.84%
GHB/GBL	242	1.09%
BZP	74	0.33%
TFMPP*	38	0.17%
5-MeO-DIPT	36	0.16%
MDEA	26	0.12%
AMT	2	0.01%
Total Club Drugs	22,186	100.00%
Total Analyzed Items	1,473,625	

MDMA=3,4-Methylenedioxyamphetamine

MDA=3,4-Methylenedioxyamphetamine

GHB/GBL=Gamma-hydroxybutyrate or Gamma-butyrolactone

BZP=1-Benzylpiperazine

TFMPP=1-(3-Trifluoromethylphenyl)piperazine

5-MeO-DIPT=5-Methoxy-N,N-diisopropyltryptamine

MDEA=3,4-Methylenedioxyethylamphetamine

AMT=Alpha-methyltryptamine

* Noncontrolled club drug.



2.4 ANABOLIC STEROIDS

More than 100 different types of anabolic steroids are available by prescription in the United States. However, many users obtain steroids illegally for the purpose of changing their appearance and physical performance. From 2002 through 2007, past year steroid use declined from 2.5% to 1% among 12th graders, from 2% to 1% among 10th graders, and from 1.5% to 1% among 8th graders.⁵

During 2007, a total of 2,141 items were identified as anabolic steroids (Table 2.4). The most commonly identified anabolic steroid was testosterone (43%), followed by nandrolone (12%), methandrostenolone (11%), and stanozolol (11%). Approximately 51% of anabolic steroids in the West, 47% in the South, 39% in the Midwest, and 33% in the Northeast were identified as testosterone (Figure 2.4). The South reported the highest percentage of nandrolone (13%), and the Midwest reported the highest percentage of methandrostenolone (16%).

⁵ See footnote 4.

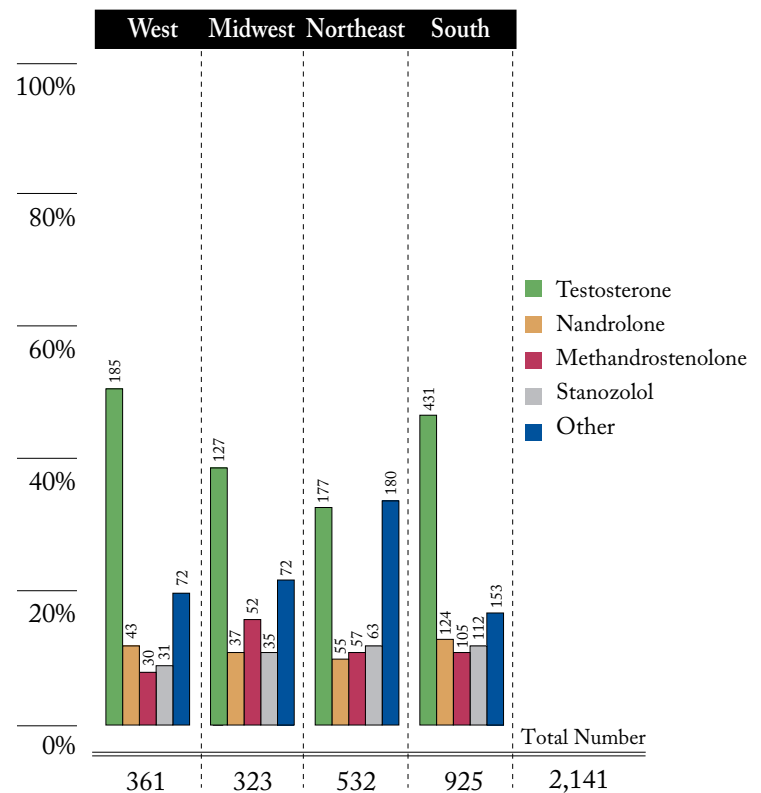
Table 2.4 ANABOLIC STEROIDS
Number and percentage of identified anabolic steroids, 2007.

Steroid	Number	Percent
Testosterone	920	42.97%
Nandrolone	259	12.10%
Methandrostenolone	244	11.40%
Stanozolol	241	11.25%
Anabolic steroids, not specified	155	7.24%
Oxymetholone	124	5.79%
Boldenone	101	4.72%
Oxandrolone	49	2.29%
Methyltestosterone	16	0.75%
Mesterolone	12	0.56%
Methenolone	11	0.51%
Drostanolone	5	0.23%
Fluoxymesterone	4	0.19%
Total Anabolic Steroids	2,141	100.00%
Total Analyzed Items	1,473,625	

Testosterone



Figure 2.4 Distribution of anabolic steroids within region, 2007.



2.5 STIMULANTS

Some stimulants, such as caffeine, are legal and found in products such as soda and energy drinks, while others, such as methylphenidate, are prescribed to treat a variety of disorders, including attention deficit hyperactivity disorder (ADHD). Unlike other stimulants, most methamphetamine in the United States is produced illegally. Since the mid-1990s, substance abuse treatment admissions involving primary stimulant abuse have tripled, from 3% in 1996 to 9% in 2006.⁶

A total of 164,049 stimulant items were analyzed during 2007, accounting for about 11% of all items reported (Table 2.5). Methamphetamine accounted for 96% of stimulants, or 157,074 items, identified in 2007. An additional 3,520 items were identified as amphetamine and 1,275 items as methylphenidate.

Methamphetamine accounted for 99% of stimulants reported in the West, 93% in the Midwest, and 92% in the South (Figure 2.5). In the Northeast, 29% of stimulants were reported as amphetamine and 14% as methylphenidate.

⁶ Office of Applied Studies. (2008). *Treatment Episode Data Set (TEDS) highlights - 2006: National admissions to substance abuse treatment services* (DHHS Publication No. SMA 08-4313, Drug and Alcohol Services Information System Series S-40). Rockville, MD: Substance Abuse and Mental Health Services Administration. [Available at <http://oas.samhsa.gov/TEDS2k6highlights/toc.cfm>]

Figure 2.5 Distribution of stimulants within region, 2007.

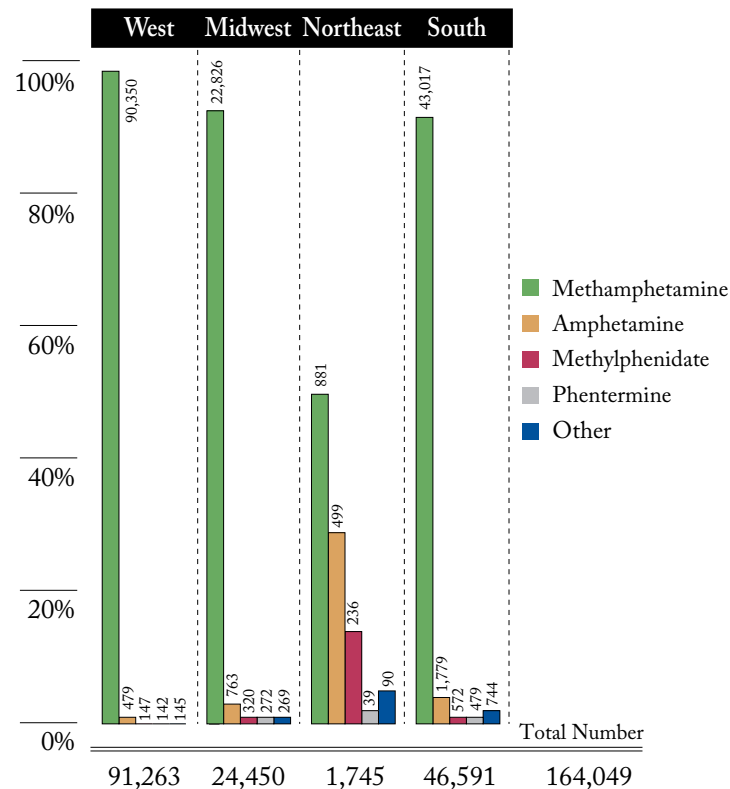


Table 2.5 STIMULANTS
Number and percentage of identified stimulants, 2007.

Stimulant	Number	Percent
Methamphetamine	157,074	95.75%
Amphetamine	3,520	2.15%
Methylphenidate	1,275	0.78%
Caffeine*	932	0.57%
Phentermine	460	0.28%
Ephedrine**	317	0.19%
Cathinone	144	0.09%
N,N-dimethylamphetamine	98	0.06%
Phendimetrazine	50	0.03%
Benzphetamine	47	0.03%
Modafinil	34	0.02%
Cathine	28	0.02%
Diethylpropion	19	0.01%
Sibutramine	11	0.01%
Phenylpropanolamine**	10	0.01%
Fenproporex	6	0.00%
Clobenzorex***	5	0.00%
Mazindol	4	0.00%
Propylhexedrine***	4	0.00%
Phenmetrazine	3	0.00%
Fenfluramine	2	0.00%
Mephentermine***	2	0.00%
Pemoline	2	0.00%
Methcathinone	1	0.00%
N-ethylamphetamine	1	0.00%
Total Stimulants	164,049	100.00%
Total Analyzed Items	1,473,625	

* Substance is an ingredient of many controlled pharmaceutical products and is often used as a cutting agent.

** Listed chemicals.

*** Noncontrolled stimulants.

DRUG COMBINATIONS

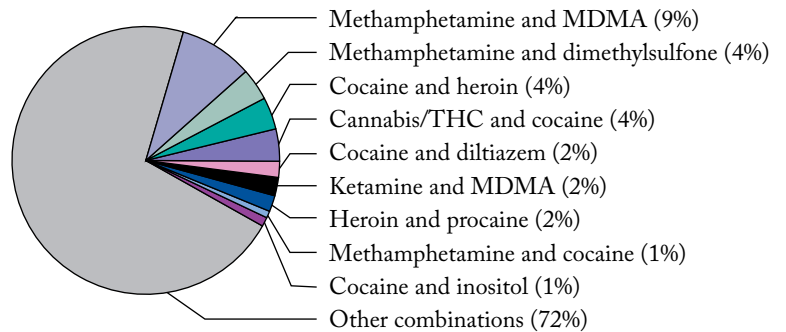
In addition to tracking the types of substances identified by state and local forensic laboratories, another important function of NFLIS is the system's ability to capture information on drug combinations. For the purposes of NFLIS, drug combinations are defined as multiple substances reported within a single drug item. Combinations reported in NFLIS can represent either mixtures of substances or separately packaged substances within the same item or exhibit.

Polydrug use can be dangerous and deadly. For example, in recent years there have been numerous deaths and drug overdoses associated with the use of illicit fentanyl in combination with heroin or cocaine.⁷

In NFLIS, 36,034 items analyzed by state and local laboratories contained two or more substances in 2007, representing 2% of all reported items (Figure 3.1). The most common combinations involving illicit drugs included methamphetamine and MDMA (9%), cocaine and heroin (4%), and cannabis/THC and cocaine (4%).

⁷ National Drug Intelligence Center, U.S. Department of Justice. (2006, June 5). *Fentanyl: Situation report* (SR-000001). Retrieved May 1, 2008, from <http://www.usdoj.gov/ndic/srs/20469/index.htm>

Figure 3.1 Distribution of drug combinations, 2007.



Drug combinations reported in STRIDE, 2007

A total of 24,646 drug combinations, or 46% of all exhibits, were reported in STRIDE during 2007. Methamphetamine and MDMA (5%) was the most commonly identified illicit drug combination reported in STRIDE. Many of the other most frequently reported combinations included excipients used to dilute or adulterate methamphetamine, cocaine, or heroin. The most common combination identified was methamphetamine and dimethylsulfone (34%). Some other frequently reported combinations were cocaine and sodium bicarbonate (5%), cocaine and hydroxyzine (4%), cocaine and procaine (4%), heroin and procaine (2%), heroin and caffeine (2%), cocaine and caffeine (2%), MDMA and caffeine (2%), cocaine and quinine (2%), and cocaine and benzocaine (2%).

3.1 COCAINE COMBINATIONS

In NFLIS, cocaine (including powder and crack cocaine) was present in 19% of all drug combinations reported during 2007 (Table 3.1). The most common cocaine combinations contained heroin (4%) and cannabis/THC (4%). Many of the other substances reported in combination with cocaine were excipients used to dilute cocaine. These included two controlled substances, diltiazem and hydroxyzine, as well as numerous noncontrolled substances, including inositol, procaine (a local anesthetic), caffeine, benzocaine, and lactose.

3.2 HEROIN COMBINATIONS

Heroin was present in 11% of all drug combinations, or in 4,068 items, reported in 2007 (Table 3.2). Nearly one third of the heroin combinations were reported as heroin and cocaine. Among the other substances combined with heroin, many were excipients designed to dilute or adulterate heroin, including procaine, caffeine, lidocaine, mannitol, and lactose.

3.3 METHAMPHETAMINE COMBINATIONS

Methamphetamine combinations were present in a total of 8,102 items, or 22% of all drug combinations (Table 3.3). MDMA was the drug most commonly reported in combination with methamphetamine (9%), followed by dimethylsulfone (4%), cocaine (1%), and cannabis/THC (1%).



Table 3.1 COCAINE COMBINATIONS
Number and percentage of items identified as cocaine combinations, 2007.

Substance One	Substance Two	Number	Percent
Cocaine	Heroin	1,317	3.65%
Cocaine	Cannabis/THC	1,291	3.58%
Cocaine	Diltiazem	825	2.29%
Cocaine	Methamphetamine	493	1.37%
Cocaine	Inositol	479	1.33%
Cocaine	Procaine	331	0.92%
Cocaine	Caffeine	228	0.63%
Cocaine	Benzocaine	159	0.44%
Cocaine	Hydroxyzine	143	0.40%
Cocaine	Lactose	118	0.33%
Other cocaine combinations		1,349	3.74%
<i>Total Cocaine Combinations</i>		6,733	18.69%
<i>All Combinations</i>		36,034	100.00%

Table 3.2 HEROIN COMBINATIONS
Number and percentage of items identified as heroin combinations, 2007.

Substance One	Substance Two	Number	Percent
Heroin	Cocaine	1,317	3.65%
Heroin	Procaine	560	1.55%
Heroin	Caffeine	349	0.97%
Heroin	Fentanyl	247	0.69%
Heroin	Lidocaine	147	0.41%
Heroin	Mannitol	132	0.37%
Heroin	Methamphetamine	87	0.24%
Heroin	Lactose	76	0.21%
Heroin	Diltiazem	65	0.18%
Heroin	Morphine	59	0.16%
Other heroin combinations		1,029	2.86%
<i>Total Heroin Combinations</i>		4,068	11.29%
<i>All Combinations</i>		36,034	100.00%

Table 3.3 METHAMPHETAMINE COMBINATIONS
Number and percentage of items identified as methamphetamine combinations, 2007.

Substance One	Substance Two	Number	Percent
Methamphetamine	MDMA	3,266	9.06%
Methamphetamine	Dimethylsulfone	1,377	3.82%
Methamphetamine	Cocaine	493	1.37%
Methamphetamine	Cannabis/THC	444	1.23%
Methamphetamine	Caffeine	344	0.95%
Methamphetamine	Ketamine	325	0.90%
Methamphetamine	Amphetamine	238	0.66%
Methamphetamine	Ephedrine/Pseudoephedrine	234	0.65%
Methamphetamine	MDA	196	0.54%
Methamphetamine	Phosphorous	110	0.31%
Other methamphetamine combinations		1,075	2.98%
<i>Total Methamphetamine Combinations</i>		8,102	22.48%
<i>All Combinations</i>		36,034	100.00%

DRUGS IDENTIFIED IN SELECTED U.S. CITIES

NFLIS can be used to monitor drugs reported by forensic laboratories across the country, including large U.S. cities. The drug analysis results presented in this section were reported during 2007 by NFLIS laboratories in selected large cities.

This section presents 2007 data for the four most common drugs reported by NFLIS laboratories in selected cities. The following results highlight geographic differences in the types of drugs abused and trafficked, such as the higher levels of methamphetamine reporting on the West Coast and cocaine reporting on the East Coast.

Nationally, 34% of all drugs in NFLIS were identified as cocaine (see Table 1.1). East Coast cities that reported the highest levels of cocaine included Miami (56%), Atlanta (51%), New York City (49%), Newark (47%), and Orlando (45%). Among other cities, McAllen (63%), Denver (42%), and Cincinnati (40%) also reported a high percentage of drugs identified as cocaine.

The highest percentages of methamphetamine were reported in cities located in the West and Midwest, such as Fresno (40%), Minneapolis (37%), Spokane (35%), Portland (31%), Salt Lake City (31%), and Sacramento (30%). Nationally, 9% of drugs in NFLIS were identified as methamphetamine.

High percentages of heroin were reported in Northeastern cities, such as Newark (28%), Pittsburgh (21%), and Baltimore (18%),



Note: Based on the total number of drugs reported, drugs that were reported 2% or less are not presented even if they were one of the top four drugs for a selected location.

BY LABORATORIES IN

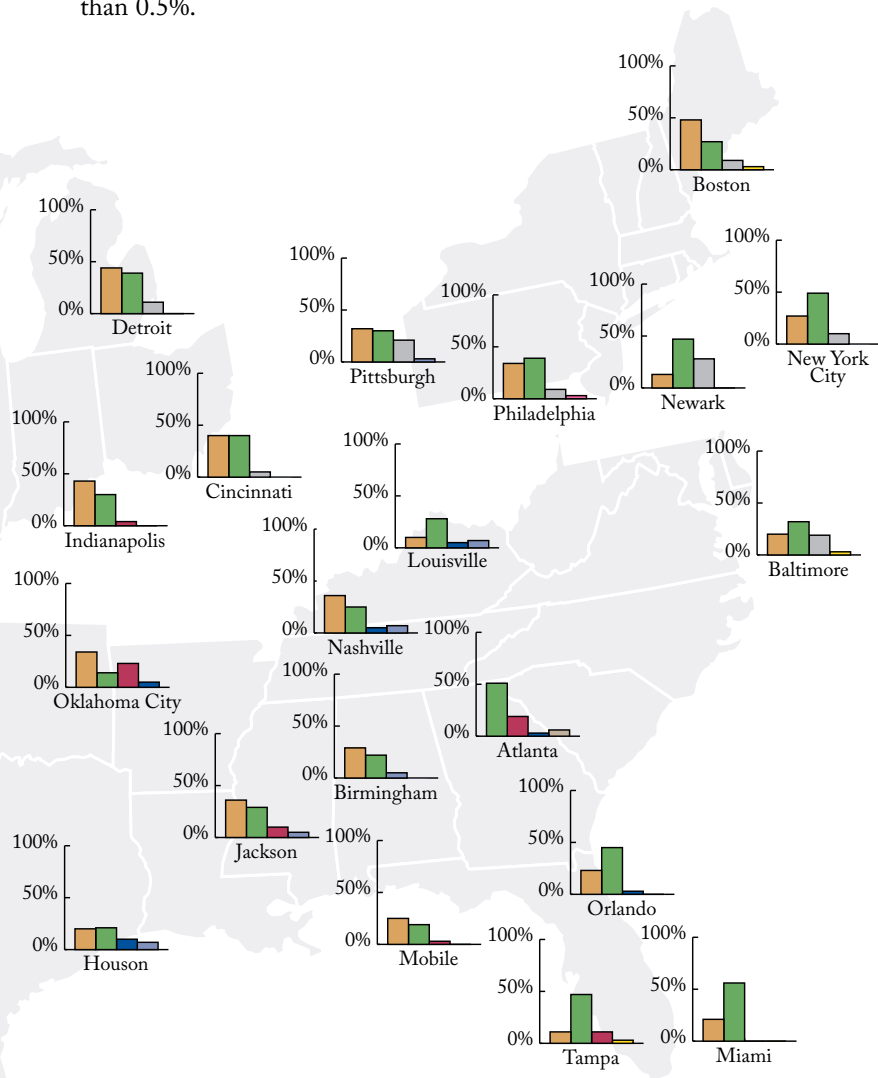
although Chicago (14%), Detroit (11%), St. Louis (11%), Salt Lake City (10%), New York City (10%), Boston (9%), Philadelphia (9%), and San Francisco (7%) also reported heroin at a rate higher than the 5% reported nationally in NFLIS.

Among controlled prescription drugs, high percentages of hydrocodone were reported in Southern cities, such as Houston (7%), Louisville (7%), Nashville (7%), Birmingham (5%), and Jackson (5%), although Salt Lake City (4%), Pittsburgh (3%), and Spokane (3%) also reported hydrocodone at a higher percentage than the NFLIS national estimate of 2%.

In addition, Southern cities also reported higher percentages of alprazolam, including Houston (10%), Dallas (7%), Louisville (5%), Nashville (5%), Oklahoma City (5%), and Orlando (3%), although Las Vegas (6%) also reported alprazolam at a higher percentage than the NFLIS national estimate of 2%.

Baltimore, Boston, and Tampa identified 3% of analyzed items as oxycodone compared with the NFLIS national estimate of 2%. McAllen (6%) also reported one of the highest percentages of clonazepam compared with the NFLIS national estimate of less than 0.5%.

Selected Laboratories
Atlanta (Georgia State Bureau of Investigation—Decatur Laboratory)
Baltimore (Baltimore City Police Department)
Birmingham (Alabama Department of Forensic Sciences—Birmingham Laboratory)
Boston (Massachusetts Department of Public Health—Boston Laboratory)
Chicago (Illinois State Police—Chicago Laboratory)
Cincinnati (Hamilton County Coroner’s Office)
Dallas (Texas Department of Public Safety—Garland Laboratory)
Denver (Denver Police Department Crime Laboratory)
Detroit (Detroit Police Department)
El Paso (Texas Department of Public Safety—El Paso Laboratory)
Fresno (Fresno County Sheriff’s Forensic Laboratory)
Houston (Harris County Medical Examiner’s Office)
Indianapolis (Indiana State Police Laboratory—Indianapolis)
Jackson (Mississippi Department of Public Safety—Jackson Laboratory and Jackson Police Department Crime Laboratory)
Las Vegas (Las Vegas Police Department)
Los Angeles (Los Angeles Police Department and Los Angeles County Sheriff’s Department)
Louisville (Kentucky State Police—Louisville Laboratory)
McAllen (Texas Department of Public Safety—McAllen Laboratory)
Miami (Miami-Dade Police Department Crime Laboratory)
Minneapolis (Minnesota Bureau of Criminal Apprehension—Minneapolis Laboratory)
Mobile (Alabama Department of Forensic Sciences—Mobile Laboratory)
Nashville (Tennessee Bureau of Investigation—Nashville Laboratory)
Newark (Newark Police Department)
New York City (New York Police Department Crime Laboratory)
Oklahoma City (Oklahoma State Bureau of Investigation—Oklahoma City Laboratory)
Orlando (Florida Department of Law Enforcement—Orlando Laboratory)
Philadelphia (Philadelphia Police Department Forensic Science Laboratory)
Phoenix (Phoenix Police Department)
Pittsburgh (Allegheny County Coroner’s Office)
Portland (Oregon State Police—Portland Laboratory)
Sacramento (Sacramento County District Attorney’s Office)
Salt Lake City (Utah State Crime Laboratory—Salt Lake City Laboratory)
San Diego (San Diego Police Department)
San Francisco (San Francisco Police Department)
Seattle (Washington State Patrol Crime Laboratory—Seattle Laboratory)
Spokane (Washington State Patrol—Spokane Laboratory)
St. Louis (St. Louis Police Department Crime Laboratory)
Tampa (Florida Department of Law Enforcement—Tampa Laboratory)
Topeka (Kansas Bureau of Investigation—Topeka Laboratory)



GIS ANALYSIS: TOP FOUR DRUGS, BY

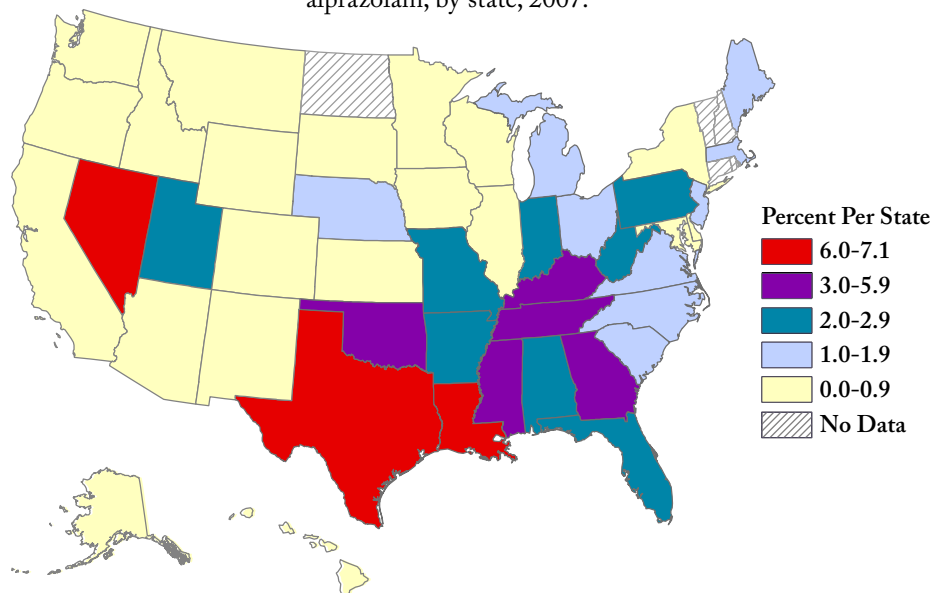
One of the unique features of NFLIS is the ability to analyze and monitor variation in drugs reported by laboratories by the county of origin. By using Geographic Information System (GIS) analyses, NFLIS can provide detailed geographic information on drug seizure locations.

This section presents 2007 data at the state and county levels for the percentage of analyzed drug items identified as alprazolam, hydrocodone, methadone, and oxycodone. In 2007, each of these 4 pharmaceuticals was in the NFLIS top 25 most frequently identified drugs.

The GIS data presented here are based on information provided to the forensic laboratories by the submitting law enforcement agencies. The information submitted by law enforcement includes the ZIP Code or county of origin associated with the drug seizure incident or the name of the submitting law enforcement agency. When a ZIP Code or county of origin is not available, the drug seizure or incident is assigned to the same county as the submitting law enforcement agency. If the submitting agency is unknown, the seizure or incident is assigned to the county in which the laboratory completing the analyses is located.

It is important to note that these data may not include all drug items seized at the state and county levels. Instead, these data represent only those items that were submitted and analyzed by forensic laboratories. In addition, some laboratories within several states are not currently reporting data to NFLIS, and their absence may affect the relative distribution of drugs seized and analyzed. Nevertheless, these data can serve as an important source for identifying abuse and trafficking trends and patterns across and within states.

Figure 5.1 Percentage of analyzed drug items identified as alprazolam, by state, 2007.



LOCATION

Figure 5.2 Percentage of analyzed drug items identified as hydrocodone, by state, 2007.

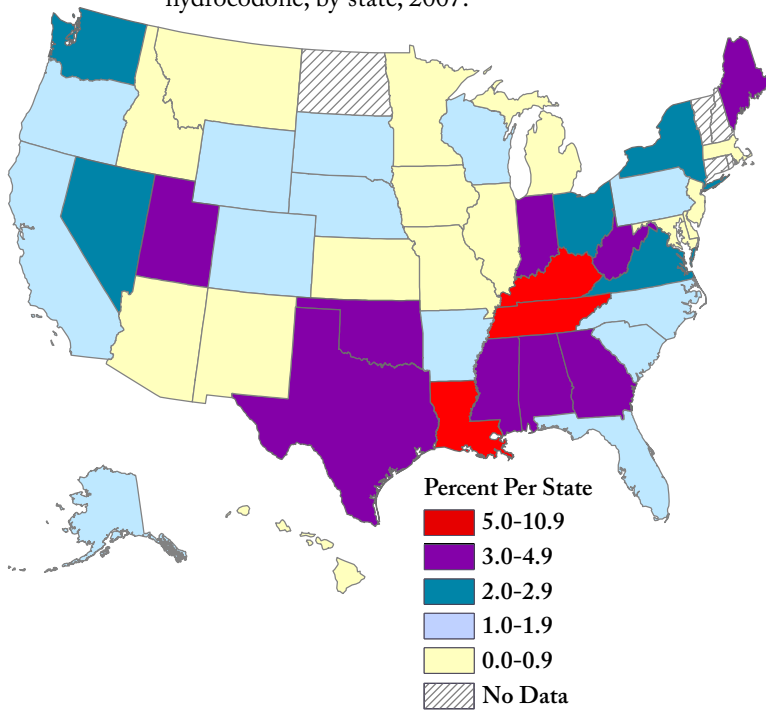


Figure 5.3 Percentage of analyzed drug items identified as methadone, by state, 2007.

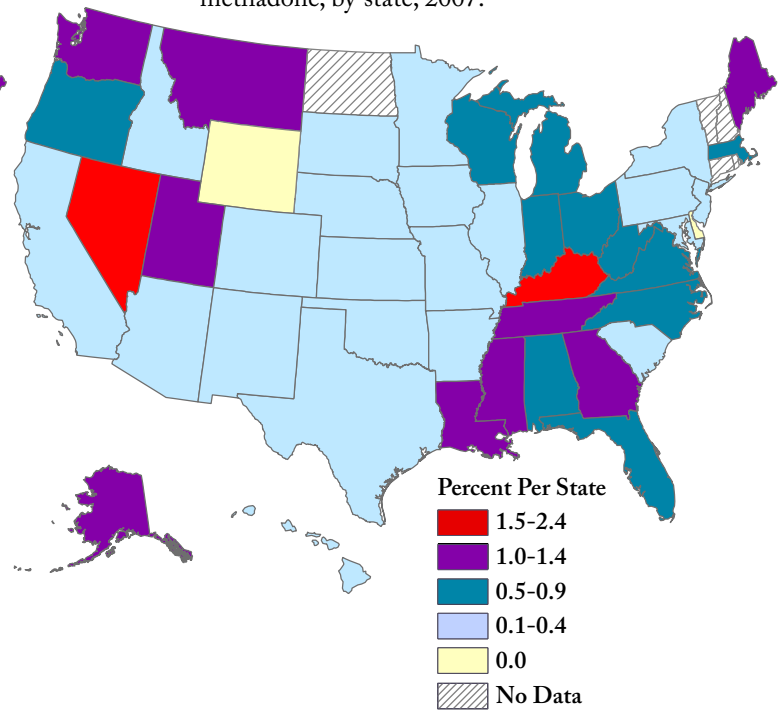


Figure 5.4 Percentage of analyzed drug items identified as oxycodone, by state, 2007.

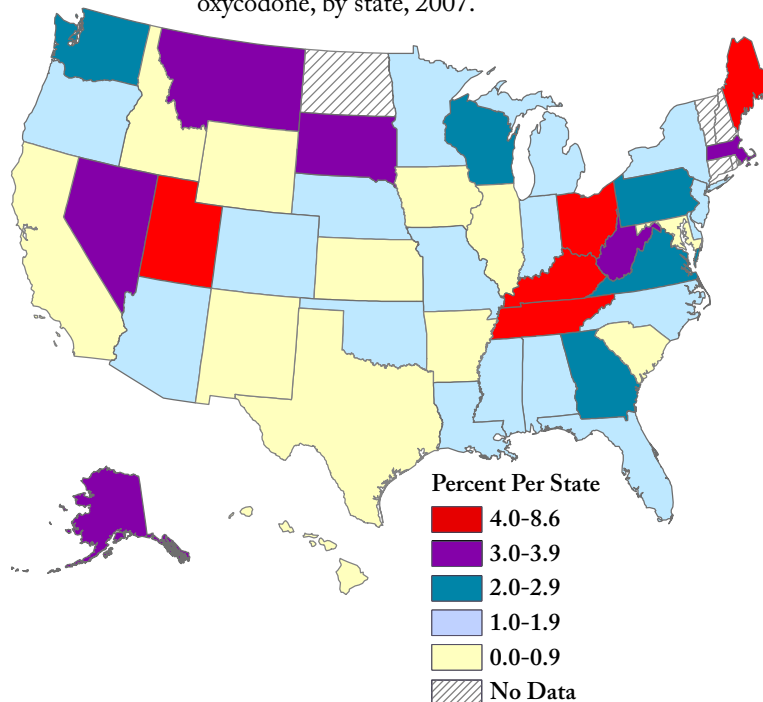


Figure 5.5 Percentage of analyzed drug items identified as alprazolam in Texas, by county, 2007.

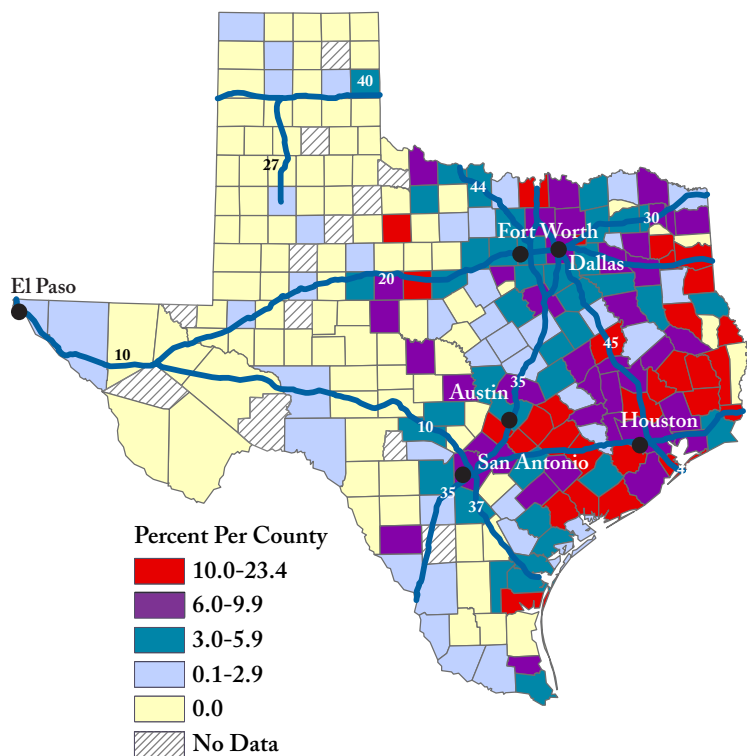


Figure 5.6 Percentage of analyzed drug items identified as hydrocodone in California, by county, 2007.

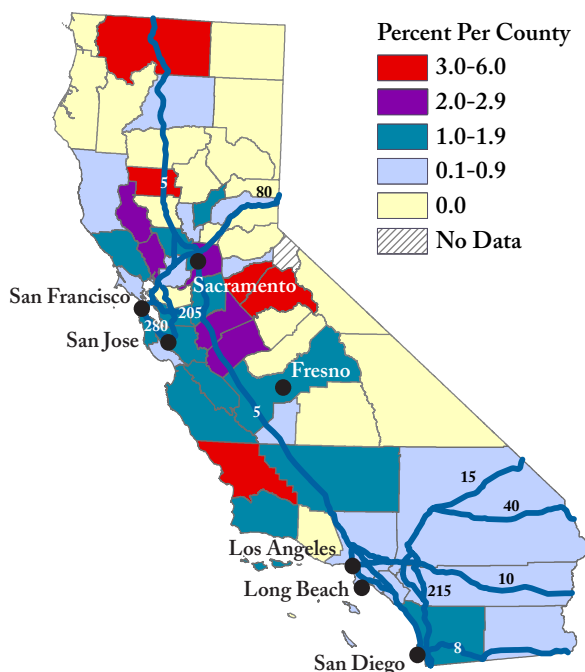


Figure 5.7 Percentage of analyzed drug items identified as methadone in Michigan, by county, 2007.

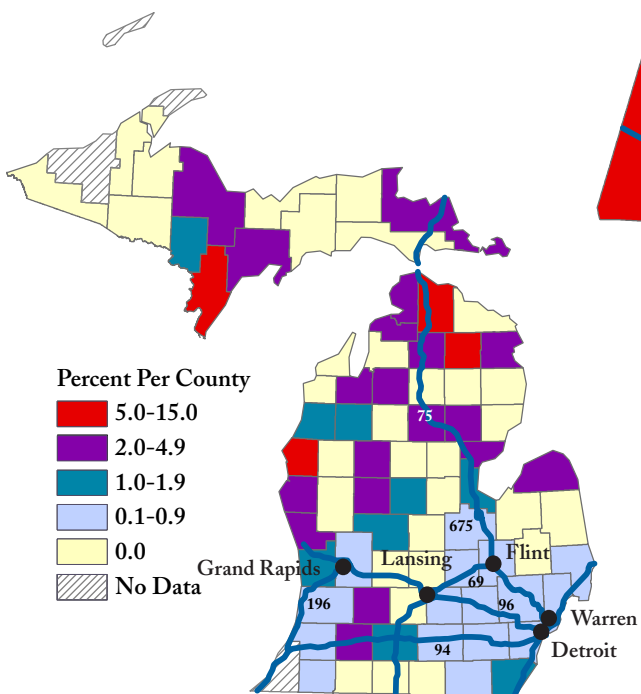
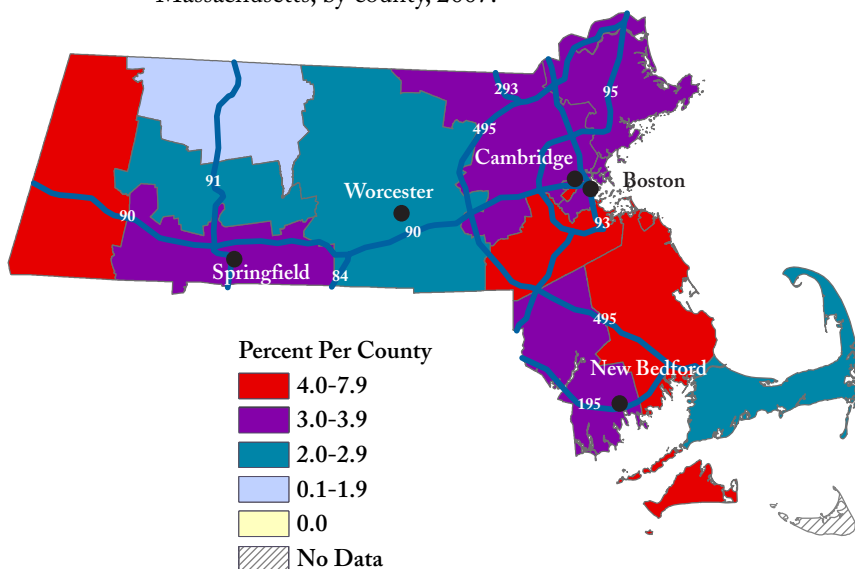


Figure 5.8 Percentage of analyzed drug items identified as oxycodone in Massachusetts, by county, 2007.



DRUG PURITY

One of the functions of NFLIS is the system's ability to monitor and analyze drug purity data. NFLIS drug purity data reflect results verified by chemical analysis and therefore have a high degree of validity. In addition, the NFLIS purity data are timely, allowing for recent fluctuations in purity to be monitored and assessed.

Some state and local forensic laboratories perform quantitative (or purity) analyses, but the majority do so only under special circumstances, such as a special request from law enforcement or from the prosecutor. A smaller number of laboratories perform quantitative analysis on a more routine basis due to state laws that require the amount of "pure" heroin or cocaine in an item to be determined. During 2007, a total of 18 individual laboratories from five state or local laboratories or laboratory systems reported purity data to NFLIS.

It is important to consider the laboratory policies for conducting quantitative analysis when comparing purity data across laboratories because these factors can have an impact on the results presented. For example, some laboratories typically limit quantitative analysis to larger seizures (e.g., powders over 200 grams or 1 kilogram). Other laboratories perform quantitative analyses on a more routine basis, including smaller cocaine and heroin seizures.

6.1 HEROIN PURITY

This section describes heroin purity analyses reported by the Massachusetts State Police Crime Laboratory and the Austin Police Department Crime Laboratory. The Massachusetts laboratory expresses purity in terms of free base and has a policy of routinely performing quantitative analyses for heroin and cocaine submissions (Figure 6.1).

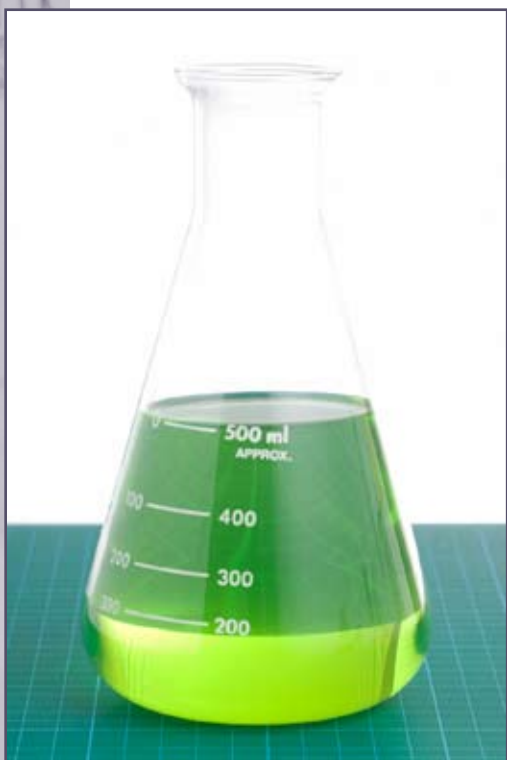
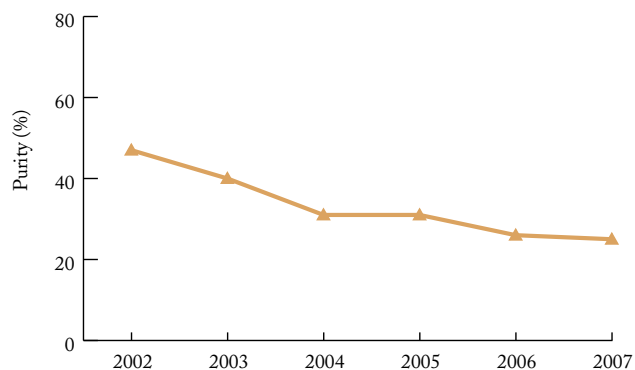


Figure 6.1 Heroin purity, 2002–2007: The Massachusetts State Police Crime Laboratory.



The Austin Police Department Crime Laboratory conducts quantitative analysis to include residue and has reported heroin purity. Overall, the average purity of heroin, as reported by the Massachusetts State Police laboratory, has declined since 2002. The Massachusetts State Police reported heroin purity results for 710 items in 2007. The average purity of heroin was 25% in 2007 compared with 26% in 2006, 31% in 2005, 40% in 2003, and 47% in 2002.

The Austin Police Department Crime Laboratory reported heroin purity for 15 items in 2007. The average heroin purity reported by the Austin laboratory in 2007 was 30%. This represented the first year that the Austin laboratory reported purity data to NFLIS.

6.2 COCAINE PURITY

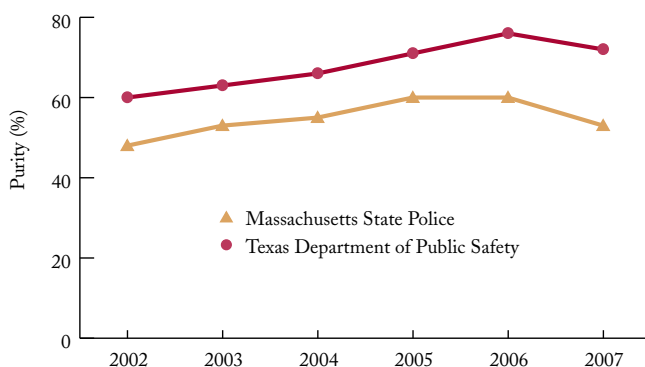
Cocaine purity is presented for three NFLIS laboratories—the Massachusetts State Police Crime Laboratory, the Texas Department of Public Safety (DPS), and the Austin Police Department Crime Laboratory.

The average cocaine purity reported by Massachusetts ($n = 2,638$ items) steadily increased from 2002 to 2005, but decreased in 2007. The average cocaine purity reported by Massachusetts was 53% in 2007 compared with 60% in 2006 and 2005, 55% in 2004, 53% in 2003, and 48% in 2002 (Figure 6.2).

The Texas DPS laboratory system, which typically conducts quantitative analyses for powders of 200 grams or more, reported purity data for 172 cocaine items during 2007. The average cocaine purity reported by Texas increased steadily from 60% in 2002 to 63% in 2003 to 76% in 2006, but it decreased in 2007 to 72% (Figure 6.2).

The Austin Police Department Crime Laboratory reported cocaine purity for 64 items in 2007. The average cocaine purity reported by the Austin laboratory in 2007 was 71%.

Figure 6.2 Cocaine purity, 2002–2007: The Massachusetts State Police Crime Laboratory and the Texas Department of Public Safety.



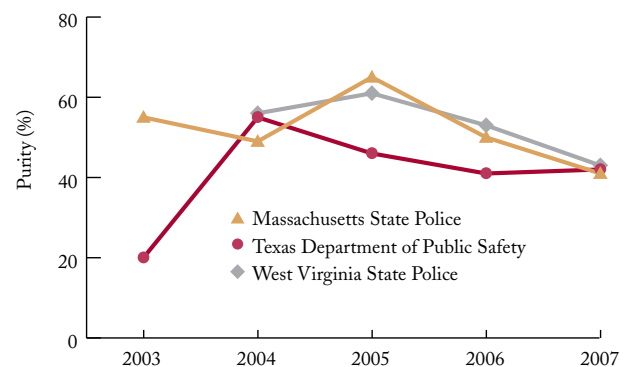
6.3 METHAMPHETAMINE PURITY

Methamphetamine purity is presented for the Texas DPS, the Massachusetts State Police Crime Laboratory, and the West Virginia State Police (Figure 6.3). The Texas DPS reported purity data for 70 methamphetamine items during 2007. The average methamphetamine purity increased sharply from 20% in 2003 to 55% in 2004 and then steadily declined to 42% in 2007.

The Massachusetts State Police reported methamphetamine purity for 33 items in 2007. The average methamphetamine purity reported by Massachusetts was 41% in 2007 compared with 50% in 2006, 65% in 2005, and 49% in 2004.

The West Virginia State Police reported methamphetamine purity for 18 items in 2007. The average methamphetamine purity reported by West Virginia in 2007 was 43% compared with 53% in 2006, 61% in 2005, and 56% in 2004.

Figure 6.3 Methamphetamine purity, 2003–2007: The Massachusetts State Police Crime Laboratory, the Texas Department of Public Safety, and the West Virginia State Police.



DEA Update

Benzylamines—Request for Information

N-substituted benzylamines have been identified in numerous samples testing positive in field kits for amphetamines. The samples were white, crystalline powders or crystals and presumed to be methamphetamine. Exhibits have been submitted to Drug Enforcement Administration (DEA) laboratories from across the western United States and the southwest border. In addition, two small east coast seizures were submitted. The *N*-substituted benzylamines were found to be present in samples uncut, cut with dimethylsulfone, or mixed with methamphetamine.

N-substituted benzylamines consist of a phenyl ring separated from nitrogen by a methylene unit. Bound to the nitrogen is a methyl group in *N*-methylbenzylamine, an ethyl group in *N*-ethylbenzylamine, or an isopropyl group in *N*-isopropylbenzylamine. There is limited information on reported seizures and cases involving benzylamines. Seizures are not frequently reported, and forensic laboratories do not routinely analyze seizures of benzylamines. According to DEA's System To Retrieve Information from Drug Evidence II (STRIDE), 42 exhibits of *N*-methylbenzylamine (6 exhibits), *N*-ethylbenzylamine (5 exhibits), and *N*-isopropylbenzylamine (31 exhibits) were seized in 2007. None of these substances were reported in 2006. In addition, none of these substances has been reported to NFLIS from a state, local, or regional laboratory.

None of these substances is regulated or listed under the Controlled Substances Act (CSA) (see <http://www.usdoj.gov/dea/pubs/csa.html>). Benzylamines are also used as alternatives to methylamine or ammonia in the use of phenyl-2-propanone (P2P) to manufacture methamphetamine. The DEA has reviewed the relevant data and will request a scientific and medical evaluation and scheduling recommendation for these substances from the U.S. Department of Health and Human Services. The DEA's Drug and Chemical Evaluation Section (ODE), Office of Diversion Control, continues to gather information on abuse, diversion, and trafficking of *N*-methylbenzylamine, *N*-ethylbenzylamine, and *N*-isopropylbenzylamine. The ODE would appreciate receiving any information related to federal, state, and local law enforcement encounters, drug identification, diversion, and abuse of *N*-methylbenzylamine, *N*-ethylbenzylamine, and *N*-isopropylbenzylamine.

Contact Us

DEA Headquarters
Attn: Dr. Terrence Boos (ODE)
8701 Morrisette Drive
Springfield, VA 22152
Phone: 202-307-7183
Fax: 202-353-1283
E-mail: terrence.l.boos@usdoj.gov

Recent Control of Drugs and Chemicals

In 2007, the Drug Enforcement Administration (DEA) published three rules under the Controlled Substances Act (CSA) (see <http://www.usdoj.gov/dea/pubs/csa.html>). These new regulations were in response to the large number of clandestine laboratories and abuse of amphetamine-like substances throughout the United States.

The distribution of illicitly manufactured fentanyl, a Schedule II controlled substance, caused an unprecedented outbreak of hundreds of suspected fentanyl-related overdoses and over 1,000 confirmed illicit fentanyl-related deaths. *N*-phenethyl-4-piperidone (NPP) has been identified as the starting material in several seized fentanyl clandestine laboratories. In addition to DEA's concern regarding the deaths associated with illicitly manufactured fentanyl, DEA is extremely concerned about the safety of law enforcement officers encountering these clandestine laboratories. Therefore, DEA regulated NPP as a List I chemical under the CSA through an interim rule that was published in the *Federal Register* (DOCID: fr09apr07-11) on April 15, 2007.

DEA published a final rule in the *Federal Register* (DOCID: fr03my07-3) on May 3, 2007, placing lisdexamfetamine—including its salts, isomers, and salts of isomers—into Schedule II of the CSA. Lisdexamfetamine is a central nervous system stimulant drug. On February 23, 2007, the Food and Drug Administration (FDA) approved lisdexamfetamine for marketing under the trade name Vyvanse™. It is marketed as a prescription drug product for the treatment of attention deficit hyperactivity disorder

(ADHD). Lisdexamfetamine per se is pharmacologically inactive, and its effects are due to its in vivo metabolic conversion to d-amphetamine. As a result of this rule, the regulatory controls and criminal sanctions of Schedule II will be applicable to the manufacture, distribution, dispensing, importation, and exportation of lisdexamfetamine and products containing lisdexamfetamine.

Since 1996, iodine has been regulated as a List II chemical under the chemical regulatory provisions of the CSA. On July 7, 2007, DEA published a final rule in the *Federal Register* (DOCID: fr02jy07-6) changing the regulation of iodine from List II to List I under the CSA. DEA believes that this action was necessary to remove deficiencies in the existing regulatory controls, which have been exploited by drug traffickers who divert iodine (in the form of iodine crystals and iodine tincture) for the illicit production of methamphetamine in clandestine drug laboratories. In addition to moving iodine to List I, this rulemaking reduces the iodine threshold from 0.4 to 0.0 kilograms, adds import and export regulatory controls, and controls chemical mixtures containing >2.2% iodine. This regulation therefore controls iodine crystals and strong iodine tinctures/solutions (e.g., 7% iodine) that do not have common household uses and instead have limited application in livestock, horses, and for disinfection of equipment. Household products, such as 2% iodine tincture/solution and household disinfectants containing iodine complexes, are not adversely impacted by this regulation. Additionally, the final rule exempts transactions of up to 1 fluid ounce (30 milliliters) of Lugol iodine solution.

PARTICIPATING AND REPORTING FORENSIC LABORATORIES

State	Lab Type	Laboratory Name	Reporting	State	Lab Type	Laboratory Name	Reporting
AK	State	Alaska Department of Public Safety	✓	MS	State	Mississippi Department of Public Safety (4 sites)	✓
AL	State	Alabama Department of Forensic Sciences (10 sites)	✓	Local	Local	Jackson Police Department Crime Laboratory	✓
AR	State	Arkansas State Crime Laboratory	✓	Local	Local	Tupelo Police Department	✓
AZ	Local	Mesa Police Department	✓	MT	State	Montana Forensic Science Division	✓
	Local	Phoenix Police Department	✓	NC	State	North Carolina State Bureau of Investigation (2 sites)	✓
	Local	Scottsdale Police Department	✓	Local	Local	Charlotte-Mecklenburg Police Department	✓
CA	State	California Department of Justice (10 sites)	✓	ND	State	North Dakota Crime Laboratory Division	✓
Local	Local	Contra Costa County Sheriff's Office (Martinez)	✓	NE	State	Nebraska State Patrol Criminalistics Laboratory (2 sites)	✓
Local	Local	Fresno County Sheriff's Forensic Laboratory	✓	NJ	State	New Jersey State Police (4 sites)	✓
Local	Local	Kern County District Attorney's Office (Bakersfield)	✓	Local	Local	Burlington County Forensic Laboratory (Mt. Holly)	✓
Local	Local	Long Beach Police Department	✓	Local	Local	Cape May County Prosecutor's Office	✓
Local	Local	Los Angeles Police Department (2 sites)	✓	Local	Local	Hudson County Prosecutor's Office (Jersey City)	✓
Local	Local	Los Angeles County Sheriff's Department (4 sites)	✓	Local	Local	Newark Police Department	✓
Local	Local	Orange County Sheriff's Department (Santa Ana)	✓	Local	Local	Ocean County Sheriff's Department (Toms River)	✓
Local	Local	Sacramento County District Attorney's Office	✓	Local	Local	Union County Prosecutor's Office (Westfield)	✓
Local	Local	San Bernardino Sheriff's Office (2 sites)	✓	NM	State	New Mexico Department of Public Safety	✓
Local	Local	San Diego County Sheriff's Department	✓	Local	Local	Albuquerque Police Department	✓
Local	Local	San Diego Police Department	✓	NV	Local	Las Vegas Police Department	✓
Local	Local	San Francisco Police Department	✓	NY	State	New York State Police (4 sites)	✓
Local	Local	San Mateo County Sheriff's Office (San Mateo)	✓	Local	Local	Erie County Central Police Services Laboratory (Buffalo)	✓
Local	Local	Santa Clara District Attorney's Office (San Jose)	✓	Local	Local	Monroe County Department of Public Safety (Rochester)	✓
Local	Local	Ventura County Sheriff's Department	✓	Local	Local	Nassau County Police Department (Mineola)	✓
CO	State	Colorado Bureau of Investigation (3 sites)	✓	Local	Local	New York City Police Department Crime Laboratory*	✓
Local	Local	Aurora Police Department	✓	Local	Local	Niagara County Police Department (Lockport)	✓
Local	Local	Colorado Springs Police Department	✓	Local	Local	Onondaga County Center for Forensic Sciences (Syracuse)	✓
Local	Local	Denver Police Department Crime Laboratory	✓	Local	Local	Suffolk County Crime Laboratory (Hauppauge)	✓
Local	Local	Grand Junction Police Department	✓	Local	Local	Westchester County Forensic Sciences Laboratory (Valhalla)	✓
Local	Local	Jefferson County Sheriff's Office (Golden)	✓	Local	Local	Yonkers Police Department Forensic Science Laboratory	✓
CT	State	Connecticut Department of Public Safety	✓	OH	State	Ohio Bureau of Criminal Identification & Investigation (3 sites)	✓
DE	State	Chief Medical Examiner's Office	✓	State	State	Ohio State Highway Patrol	✓
FL	State	Florida Department of Law Enforcement (8 sites)	✓	Local	Local	Canton-Stark County Crime Laboratory (Canton)	✓
Local	Local	Broward County Sheriff's Office (Fort Lauderdale)	✓	Local	Local	Columbus Police Department	✓
Local	Local	Miami-Dade Police Department Crime Laboratory	✓	Local	Local	Hamilton County Coroner's Office (Cincinnati)	✓
Local	Local	Indian River Crime Laboratory (Fort Pierce)	✓	Local	Local	Lake County Regional Forensic Laboratory (Painesville)	✓
Local	Local	Pinellas County Forensic Laboratory (Largo)	✓	Local	Local	Mansfield Police Department	✓
Local	Local	Sarasota County Sheriff's Office	✓	Local	Local	Miami Valley Regional Crime Laboratory (Dayton)	✓
GA	State	Georgia State Bureau of Investigation (7 sites)	✓	Local	Local	Newark Police Department Forensic Services	✓
HI	Local	Honolulu Police Department	✓	Local	Local	Toledo Police Forensic Laboratory	✓
IA	State	Iowa Division of Criminal Investigations	✓	OK	State	Oklahoma State Bureau of Investigation (5 sites)	✓
ID	State	Idaho State Police (3 sites)	✓	OR	State	Oregon State Police Forensic Services Division (8 sites)	✓
IL	State	Illinois State Police (8 sites)	✓	PA	State	Pennsylvania State Police Crime Laboratory (6 sites)	✓
Local	Local	DuPage County Sheriff's Office (Wheaton)	✓	Local	Local	Allegheny County Coroner's Office (Pittsburgh)	✓
Local	Local	Northern Illinois Police Crime Laboratory (Chicago)	✓	Local	Local	Philadelphia Police Department Forensic Science Laboratory	✓
IN	State	Indiana State Police Laboratory (4 sites)	✓	RI	State	Rhode Island Forensic Sciences Laboratory	✓
Local	Local	Indianapolis-Marion County Forensic Laboratory (Indianapolis)	✓	SC	State	South Carolina Law Enforcement Division	✓
KS	State	Kansas Bureau of Investigation (3 sites)	✓	Local	Local	Charleston Police Department	✓
Local	Local	Johnson County Sheriff's Office (Mission)	✓	Local	Local	Spartanburg Police Department	✓
Local	Local	Sedgwick County Regional Forensic Science Center (Wichita)	✓	SD	Local	Rapid City Police Department	✓
KY	State	Kentucky State Police (6 sites)	✓	TN	State	Tennessee Bureau of Investigation (3 sites)	✓
LA	State	Louisiana State Police	✓	TX	State	Texas Department of Public Safety (13 sites)	✓
Local	Local	Acadiana Criminalistics Laboratory (New Iberia)	✓	Local	Local	Austin Police Department	✓
Local	Local	Jefferson Parish Sheriff's Office (Metairie)	✓	Local	Local	Bexar County Criminal Investigations Laboratory (San Antonio)	✓
Local	Local	New Orleans Police Department Crime Laboratory	✓	Local	Local	Brazoria County Crime Laboratory (Angleton)	✓
Local	Local	North Louisiana Criminalistics Laboratory System (3 sites)	✓	Local	Local	Harris County Medical Examiner's Office (Houston)	✓
Local	Local	Southwest Louisiana Regional Laboratory (Lake Charles)	✓	Local	Local	Jefferson County Sheriff's Regional Crime Laboratory (Beaumont)	✓
MA	State	Massachusetts Department of Public Health (2 sites)	✓	Local	Local	Pasadena Police Department	✓
State	State	Massachusetts State Police	✓	Local	Local	Fort Worth Police Department Criminalistics Laboratory	✓
Local	Local	University of Massachusetts Medical Center (Worcester)	✓	UT	State	Utah State Crime Laboratory (4 sites)	✓
MD	Local	Anne Arundel County Police Department (Millersville)	✓	VA	State	Virginia Division Forensic Science (4 sites)	✓
Local	Local	Baltimore City Police Department	✓	WA	State	Washington State Patrol (6 sites)	✓
Local	Local	Baltimore County Police Department (Towson)	✓	WI	State	Wisconsin Department of Justice (3 sites)	✓
Local	Local	Montgomery County Crime Laboratory (Rockville)	✓	WV	State	West Virginia State Police	✓
ME	State	Maine Department of Human Services	✓	WY	State	Wyoming State Crime Laboratory	✓
MI	State	Michigan State Police (7 sites)	✓	PR	Territory	Puerto Rico Crime Laboratory	✓
Local	Local	Detroit Police Department	✓				
MN	State	Minnesota Bureau of Criminal Apprehension (2 sites)	✓				
Local	Local	St. Paul Police Department	✓				
MO	State	Missouri State Highway Patrol (6 sites)	✓				
Local	Local	Independence Police Department	✓				
Local	Local	KCMO Regional Crime Laboratory (Kansas City)	✓				
Local	Local	MSSU Regional Crime Laboratory (Joplin)	✓				
Local	Local	St. Charles County Criminalistics Laboratory (O'Fallon)	✓				
Local	Local	St. Louis County Crime Laboratory (Clayton)	✓				
Local	Local	St. Louis Police Department	✓				
Local	Local	South East Missouri Regional Crime Laboratory (Cape Girardeau)	✓				

This list identifies participating and reporting laboratories as of July 2008.

Laboratories in bold are part of the national sample.

*The New York City Police Department Crime Laboratory currently reports summary data.

NFLIS BENEFITS AND LIMITATIONS

BENEFITS

The systematic collection and analysis of drug analysis data can improve our understanding of the nation's illegal drug problem. NFLIS serves as a critical resource for supporting drug scheduling policy and drug enforcement initiatives both nationally and in specific communities around the country.

Specifically, NFLIS helps the drug control community achieve its mission by

- providing detailed information on the prevalence and types of controlled substances secured in law enforcement operations;
- identifying variations in controlled and noncontrolled substances at the national, state, and local levels;
- identifying emerging drug problems and changes in drug availability in a timely fashion;
- monitoring the diversion of legitimately marketed drugs into illicit channels;
- providing information on the characteristics of drugs, including quantity, purity, and drug combinations; and
- supplementing information from other drug sources, including the DEA's STRIDE, the Drug Abuse Warning Network (DAWN), the National Survey on Drug Use and Health (NSDUH), and the Monitoring the Future (MTF) study.

NFLIS is an opportunity for state and local laboratories to participate in a useful and high-visibility initiative. Participating laboratories regularly receive reports that summarize national and regional data. In addition, the Interactive Data Site (IDS) is a secure Web site that allows NFLIS participants—including state and local laboratories, the DEA, other federal drug control agencies, and researchers—to run customized queries on the NFLIS data. Enhancements to the IDS will also provide a new interagency exchange forum that will allow the DEA, forensic laboratories, and other members of the drug control community to post and respond to current information.

LIMITATIONS

NFLIS has limitations that must be considered when interpreting findings generated from the database.

- Currently, NFLIS includes data from state and local forensic laboratories, as well as data from DEA's STRIDE. STRIDE includes data from DEA's laboratories across the country. The STRIDE data are shown separately in this report. Efforts are under way to enroll additional federal laboratories during 2008.
- NFLIS includes drug chemistry results from completed analyses only. Drug evidence secured by law enforcement but not analyzed by laboratories is not included in the database.
- National and regional estimates may be subject to variation associated with sample estimates, including nonresponse bias.
- For results presented in Sections 2 through 6, the absolute and relative frequency of analyzed results for individual drugs can, in part, be a function of laboratories' participating in NFLIS.
- State and local policies related to the enforcement and prosecution of specific drugs may affect drug evidence submissions to laboratories for analysis.
- Laboratory policies and procedures for handling drug evidence vary. Some laboratories analyze all evidence submitted to them, while others analyze only selected items. Many laboratories do not analyze drug evidence if the criminal case was dismissed from court or if no defendant could be linked to the case.
- Laboratories vary with respect to the records they maintain. For example, some laboratories' automated records include the weight of the sample selected for analysis (e.g., the weight of one of five bags of powder), while others record total weight.

NFLIS INTERACTIVE DATA SITE

Available since September 2001, the NFLIS Interactive Data Site (IDS) allows NFLIS laboratories to run queries on their own case-level data and on aggregated regional and national data.

The IDS operates as a secure section of the NFLIS Web site located on a restricted server. To access the IDS, each NFLIS laboratory is assigned a laboratory-specific username and password.

Over the past several years, a number of enhancements have been made to the IDS, including providing World Wide Web access to the IDS. This provides more secure and confidential IDS access, as well as improved system performance for laboratories with high-speed/broadband Web access. Laboratories without Internet access can still use a modem to make a direct dial-up connection to the IDS. As part of the

enhanced IDS, different access levels are assigned to satisfy the specific NFLIS data needs of various users. Information about NFLIS, published reports, links to agencies, information relevant to drug control efforts, and NFLIS contact information are available to the general public. Participating NFLIS laboratories have access to their own case- and item-level data, as well as to aggregated state- and metropolitan-level data. Nonparticipating laboratories have access to aggregated state- and metropolitan-level data. Users have the ability to conduct analyses using preset queries. Additional laboratory-specific queries are developed as needed. New usernames and passwords are required to access restricted areas of the NFLIS Web site, including the IDS. To participate, please visit the NFLIS Web site at <https://www.nflis.deadiversion.usdoj.gov/>.

NFLIS Home

The National Forensic Laboratory Information System (NFLIS) is a Drug Enforcement Administration (DEA) program that systematically collects drug chemistry analysis results, as well as other related information, from cases analyzed by state, local and federal forensic laboratories. These laboratories analyze substances secured in law enforcement operations across the country. NFLIS offers a valuable resource for monitoring illegal drug abuse and trafficking, including the diversion of legally manufactured pharmaceutical drugs into illegal markets. NFLIS data are used to support drug scheduling efforts as well as to inform drug policy and drug enforcement initiatives both nationally and in local communities. Data in the NFLIS database consists of case and item/exhibit level information.

Since its inception in September 1997, NFLIS has become an operational information system that includes data from forensic laboratories that conduct analyses of about 90% of the nation's estimated 1.2 million annual drug cases. As of January 2008, 45 state forensic laboratory systems and 94 local or municipal forensic laboratories, representing a total of 276 individual labs, were participating in NFLIS. Of these, 133 laboratory systems, comprising 261 individual laboratories, were regularly reporting data to NFLIS; the remaining participating labs were in the process of initiating data reporting.

DEA continues to recruit state and local forensic laboratories, while also integrating federal forensic laboratories into the system. Currently, all DEA laboratories are included in the NFLIS program. The ultimate goal is to include in NFLIS all laboratories that regularly perform drug chemistry analyses.

NFLIS NEWS

The [2007 Midyear Report](#) is now available.

To view or download this report, or any other NFLIS report, click Reports on the menu on the left.

National Forensic Laboratory Information System (NFLIS) 2007 Update: Analysis of Controlled Pharmaceuticals and Other Seized Drug Evidence by Crime Laboratories in the U.S. in 2006; a poster presented by the NFLIS program staff from DEA's Office of Diversion Control and RTI International. Presented at the 35th Annual ASCLD Workshop and Symposium in Orlando, October 3, 2007 from 11:30 AM to 1:30 PM.

NATIONAL ESTIMATES METHODOLOGY

Since 2001, NFLIS reports have included national and regional estimates for the number of drug items and drug cases analyzed by state and local forensic laboratories in the United States. This appendix discusses the methods used for producing these estimates, including sample selection, weighting, and imputation and adjustment procedures. RTI International, under contract to the DEA, began implementing NFLIS in September 1997. Results from a 1998 survey provided laboratory-specific information, including annual caseload figures, used to establish a national sampling frame of all state and local forensic laboratories that routinely perform drug analyses. A representative probability proportional to size sample was drawn on the basis of annual cases analyzed per laboratory, resulting in a NFLIS national sample of 29 state laboratory systems and 31 local or municipal laboratories, a total of 165 individual laboratories (see Appendix A for a list of sampled and nonsampled NFLIS laboratories). Only the data for those laboratories in the sample that reported drug analysis data for 6 or more months during 2007 were included in the national estimates.

WEIGHTING PROCEDURES

Data were weighted with respect to both the original sampling design and nonresponse in order to compute design-consistent, nonresponse-adjusted estimates. Weighted prevalence estimates were produced for drug cases and drug items analyzed by state and local forensic laboratories from January 2007 through December 2007.

A separate item-level and case-level weight was computed for each sample laboratory or laboratory system using caseload information obtained from an updated laboratory survey administered in 2004. These survey results allowed for the case- and item-level weights to be poststratified to reflect current levels of laboratory activity. Item-level prevalence estimates were computed using the item-level weights, and case-level estimates were computed using the case-level weights.

DRUG REPORT CUTOFF

Not all drugs are reported by laboratories with sufficient frequency to allow reliable estimates to be computed. For some drugs, such as cannabis/THC and cocaine, thousands of items are reported annually, allowing for reliable national prevalence estimates to be computed. Many other substances have 100 or fewer annual observations for the entire sample. A prevalence

estimate based upon such few observations is not likely to be reliable and thus was not included in the national estimates.

The method for evaluating the cutoff point was established using the coefficient of variation, or CV, which is the ratio between the standard error of an estimate and the estimate itself. As a rule, drug estimates with a CV greater than 0.5 were suppressed and not shown in the tables.

IMPUTATIONS AND ADJUSTMENTS

Due to technical and other reporting issues, several laboratories did not report data for every month during 2007. This resulted in missing monthly data, which is a concern in calculating national estimates of drug prevalence. Imputations were performed separately by drug for laboratories missing monthly data, using drug-specific proportions generated from laboratories reporting a full year of data.

Although most forensic laboratories report case-level analyses in a consistent manner, a small number of laboratories do not produce item-level counts that are comparable with those submitted by the vast majority of laboratories. Most laboratories report items in terms of the number of vials of the particular pill, yet a few laboratories report the count of the individual pills themselves as items. Because the case-level counts across laboratories are comparable, they were used to develop item-level counts for the few laboratories that count items differently. For those laboratories, it was assumed that drug-specific ratios of cases to items should be similar to laboratories serving similarly sized areas. Item-to-case ratios for each drug were produced for the similarly sized laboratories, and these drug-specific ratios were then used to adjust the drug item counts for the relevant laboratories.

STATISTICAL TECHNIQUES FOR TREND ANALYSIS

A trend analysis was performed on the January 2001 through December 2007 national and regional estimates. Typically, models test for mean differences; however, the national and regional estimates are totals. To work around this challenge, a bootstrapping technique was employed. (Bootstrapping is an iterative technique used to estimate variances when standard variance estimation procedures cannot be used.⁸) All statistical tests were performed at the 90% confidence level ($\alpha = .10$). In other words, if a linear trend was found to be statistically different, then the probability of observing a linear trend (under the assumption that no linear trend existed) was less than 5%.

⁸ For more information on this technique, see Chernick, M.R. (1999). *Bootstrap methods: A practitioner's guide*. New York: Wiley.

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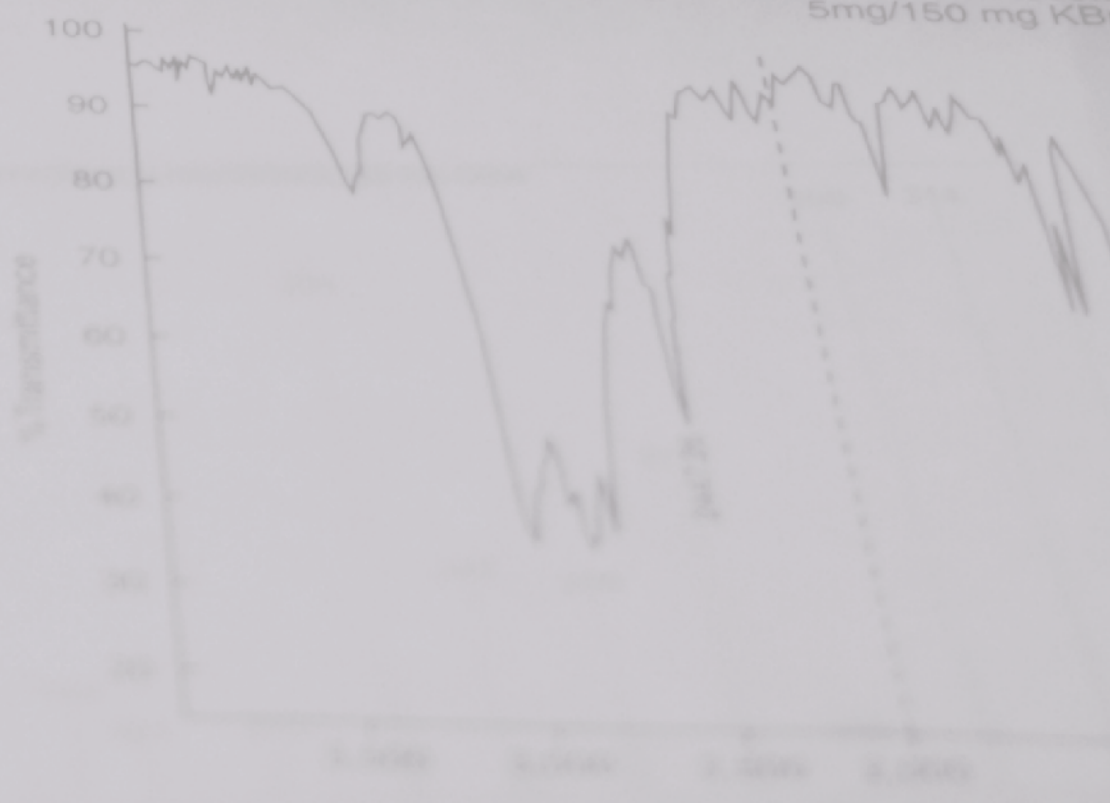
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FT-IR
Heroin Ba
50 scans, 1nm re
2.2 mg/150 mg



FT-IR
3,4-Methylenedioxyamphetamine
50 scans, 1nm resolu
5mg/150 mg KBr



Drug Enforcement Administration
Office of Diversion Control
8701 Morrisette Drive
Springfield, VA 22152