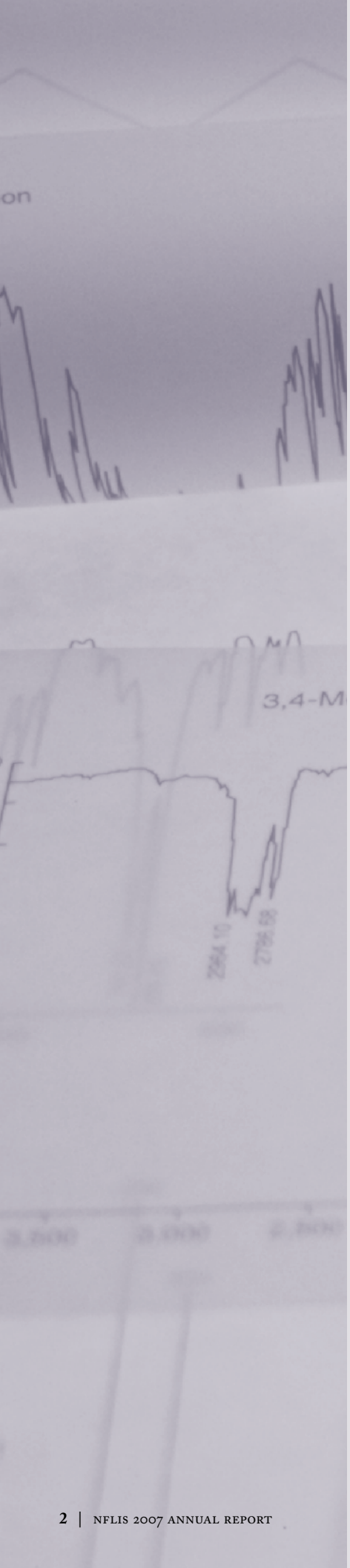
Drug Enforcement Administration

Office of Diversion Control

YEAR 2007 ANNUAL REPORT

NFLIS

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.

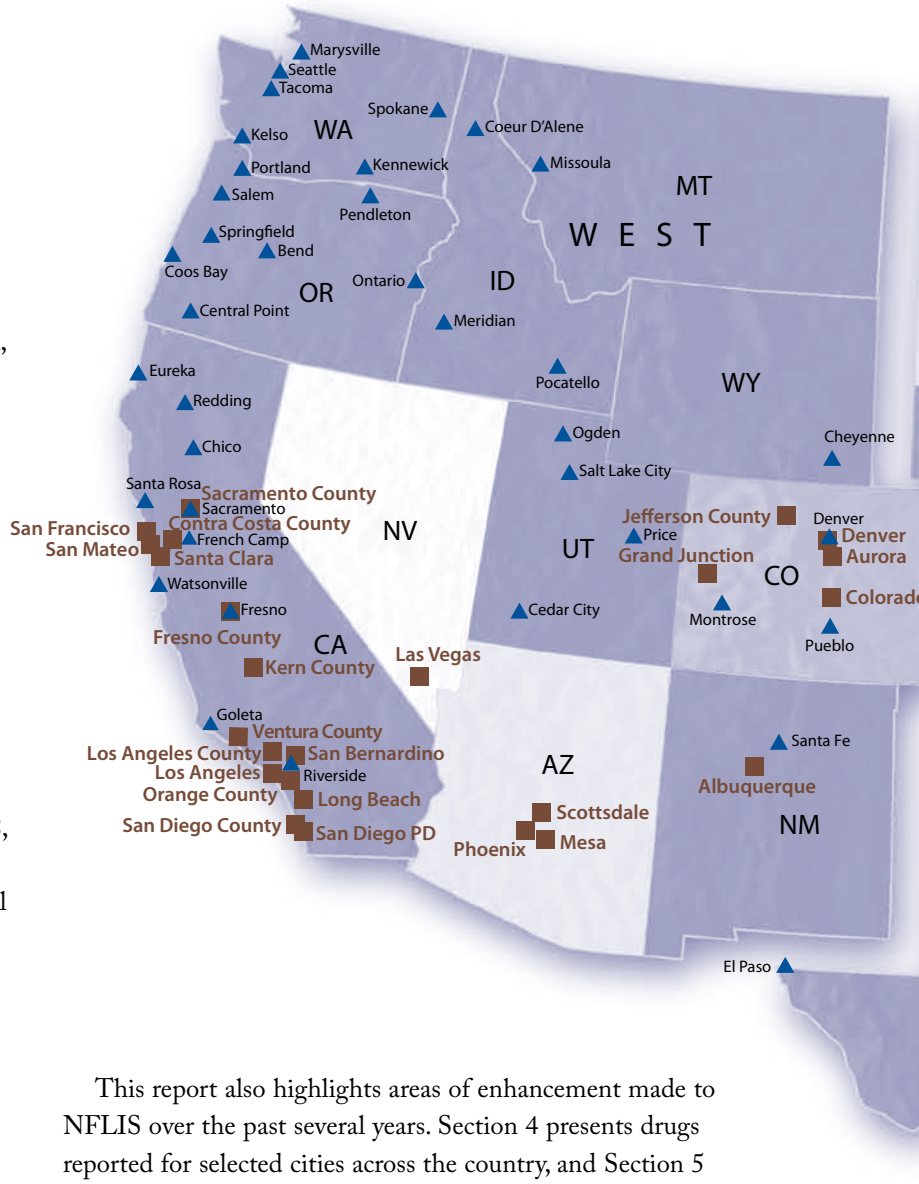
Joseph T. Rannazzisi
Deputy Assistant Administrator
Office of Diversion Control
U.S. Drug Enforcement Administration

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.

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Providence
Hartford
Wyoming
Erie
Bethlehem
Harrisburg
Greensburg
Fairfax
Richmond
Norfolk
Roanoke
Raleigh
Asheville
Knoxville
Nashville
Cleveland
Columbia
Augusta
Savannah
Macon
Moultrie
Jacksonville
Tallahassee
Daytona Beach
Orlando
Tampa
Fort Myers
Key West
Anchorage
Honolulu
Bemidji
Marquette
Wausau
Grayling
Bridgeport
Milwaukee
Grand Rapids
Madison
East Lansing
Sterling Heights
Northville
Rockford
Westchester
Chicago
Joliet
Lowell
Fort Wayne
Des Moines
Morton
Indianapolis
Springfield
Macon
Fairview Heights
Evansville
Carbondale
Louisville
Highland Heights
Ashland
Frankfort
South Charleston
Hillsboro
Pittsburg
Springfield
Willow Springs
Madisonville
London
Memphis
Florence
Huntsville
Trion
Decatur
Birmingham
Tuscaloosa
Auburn
Montgomery
Midland
Dothan
Mobile
Pensacola
Gulfport
Baton Rouge
Jackson
Meridian
Little Rock
Tupelo
Batesville
Jacksonville
Durant Region
Southwest Region
Oklahoma City
Tahlequah Region
Northwest Region
Amarillo
Lubbock
Midland
Abilene
Garland
Tyler
Waco
Austin
Houston
Bexar County
Harris County
Pasadena
Brazoria County
Laredo
Corpus Christi
McAllen
Rapid City
St. Paul
St. Paul
Lincoln
North Platte
St. Joseph
Johnson County
Topeka
Independence
KCMO Regional
Great Bend
Sedgwick County
Jefferson City
St. Louis
St. Louis County
SEMO Regional
MSSU Regional
Northern Illinois
DuPage County
Indianapolis-Marion County
St. Charles County
Columbus PD
Columbus
Miami Valley
Hamilton County
Newark PD
Canton-Stark County
Toledo
Mansfield PD
Detroit
Lake County
Allegheny County
Erie County
Niagara County
Monroe County
Onondaga County
Westchester County
Yonkers
Newark
Union County
Philadelphia
Baltimore City
Baltimore County
Montgomery County
Anne Arundel County
Cape May
Hammonton
Sea Girt
Burlington County
Ocean County
Hudson County
Nassau County
Suffolk County
New York City
University of MA Medical Center, Worcester
Charlotte-Mecklenburg PD
Spartanburg
Charleston
Jackson PD
North LA
Southwest LA Lab
Jefferson County
Acadiana
New Orleans
Jefferson Parish
Pinellas County
Sarasota County
Indian River
Broward County
Miami-Dade PD
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)

Section 1

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.

PCP Foil Packets

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.

GIONAL 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.

	National		West		Midwest		Northeast		South	
Drug	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%
Top 25 Total	1,666,011	92.16%	293,339	90.28%	378,621	94.79%	293,689	93.47%	700,362	91.05%
All Other Analyzed Items	141,799	7.84%	31,596	9.72%	20,829	5.21%	20,511	6.53%	68,863	8.95%
*Total Analyzed Items****	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, 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.

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%
Top 25 Total	1,280,991	108.62%
All Other Drugs	113,500	9.62%
Total All Drugs	1,394,490**	118.24%***

* *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.*

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%
All Other Drugs	6,699	12.56%
Total Analyzed Exhibits	53,320	100.00%

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 (α = .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 (α = .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.

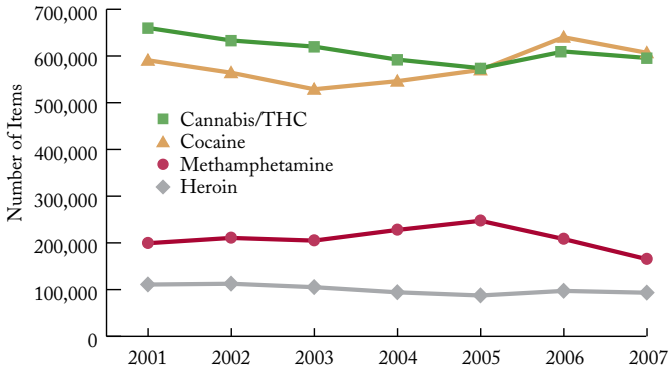
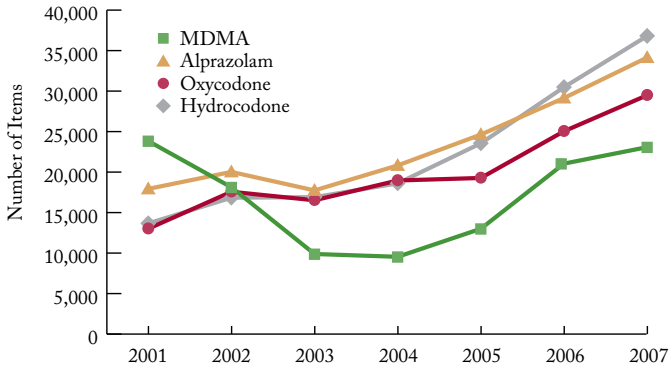


Figure 1.2 National trend estimates for other selected drugs, by year, 2001–2007.



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 (α = .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 100,00 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 (α = .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 (α = .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.

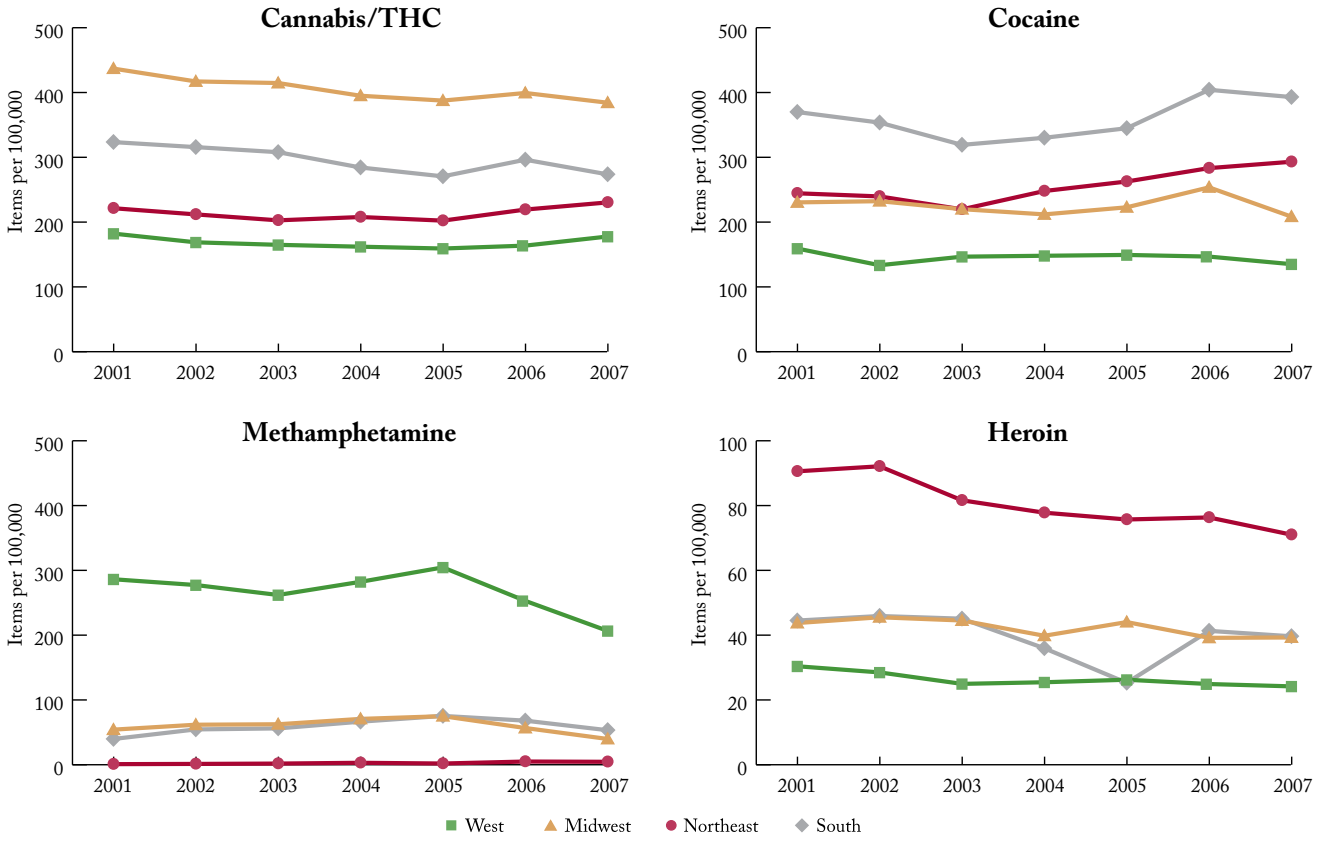
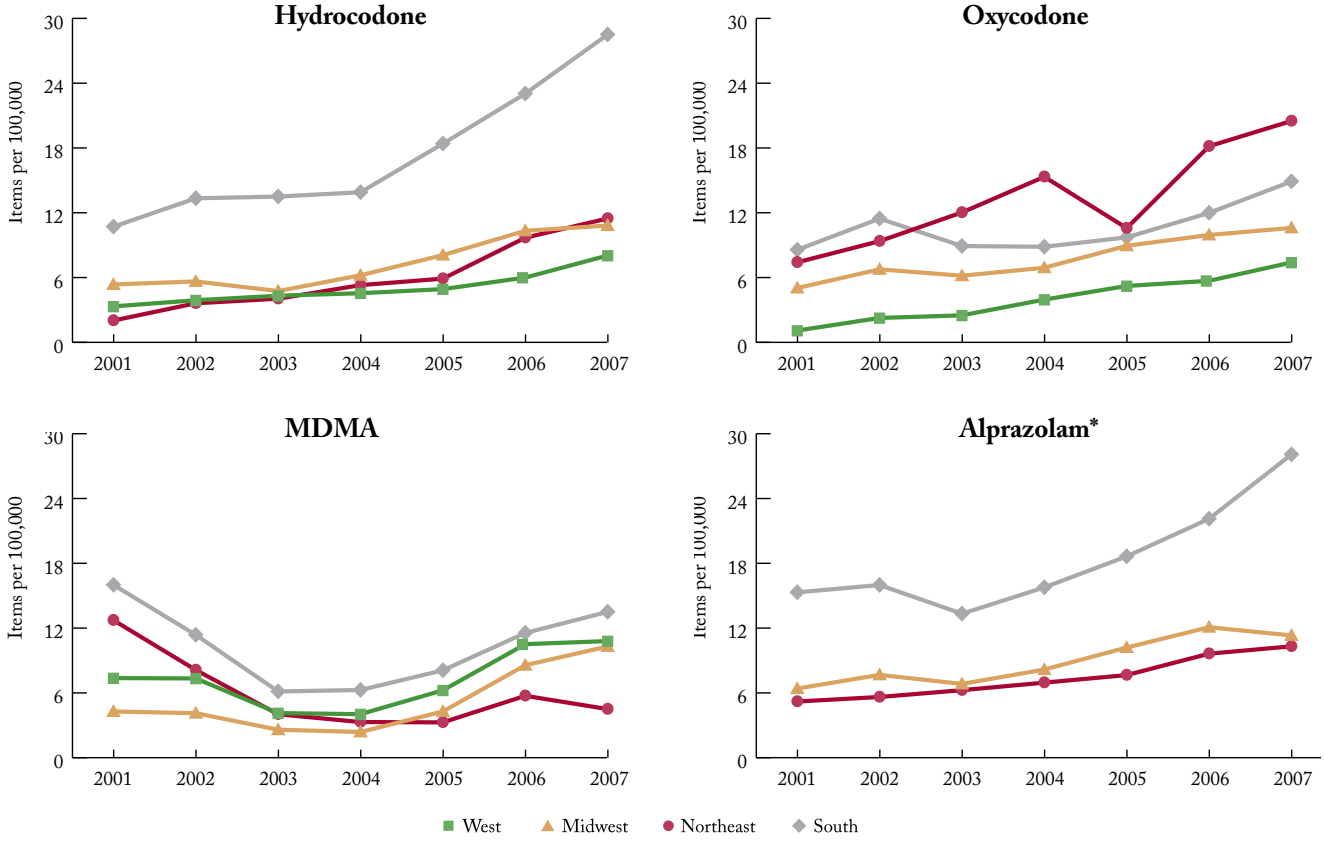


Figure 1.4 Trends in other selected drugs reported per 100,000 persons aged 15 or older, 2001–2007.



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

Section 2

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.

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.

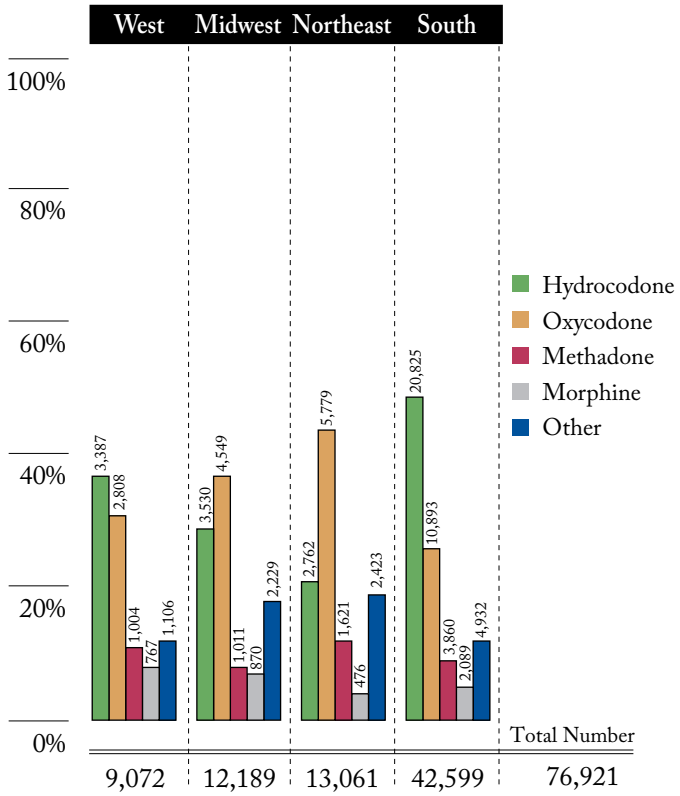
Analgesic	Number	Percent
Hydrocodone	30,504	39.66%
Oxycodone	24,029	31.24%
Methadone	7,496	9.75%
Morphine	4,202	5.46%
Codeine	2,674	3.48%
Buprenorphine	2,094	2.72%
Hydromorphone	1,559	2.03%
Propoxyphene	1,306	1.70%
Dihydrocodeine	957	1.24%
Tramadol*	751	0.98%
Fentanyl	732	0.95%
Meperidine	316	0.41%
Opium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

**Noncontrolled narcotic analgesics.*

[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]

Fentanyl

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]

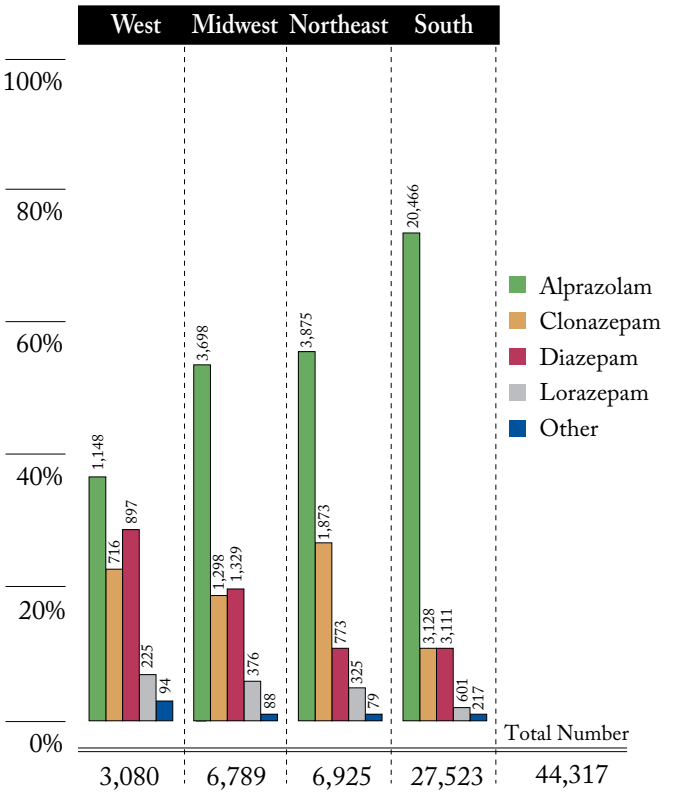
During 2007, approximately 3% of all analyzed drugs, or 44,317 items, were identified by NFLIS laboratories as benzodiazepines (Table 2.2). Alprazolam accounted for two thirds of reported benzodiazepines. Approximately 16% of benzodiazepines were identified as clonazepam, 14% were identified as diazepam,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

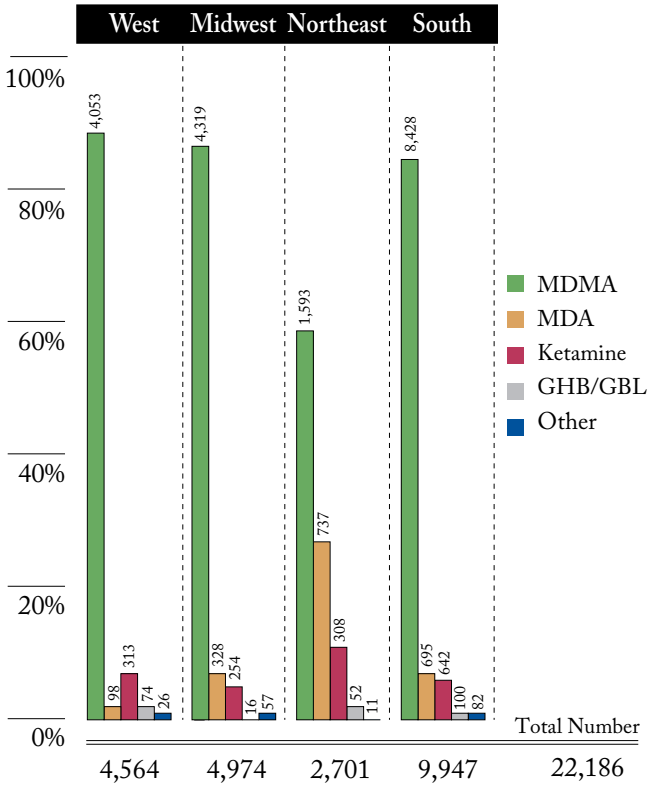
Table 2.3 **Club Drugs**
Number and percentage of identified club drugs, 2007.

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-Methylenedioxymethamphetamine
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.*

Figure 2.3 Distribution of club drugs within region, 2007.



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]

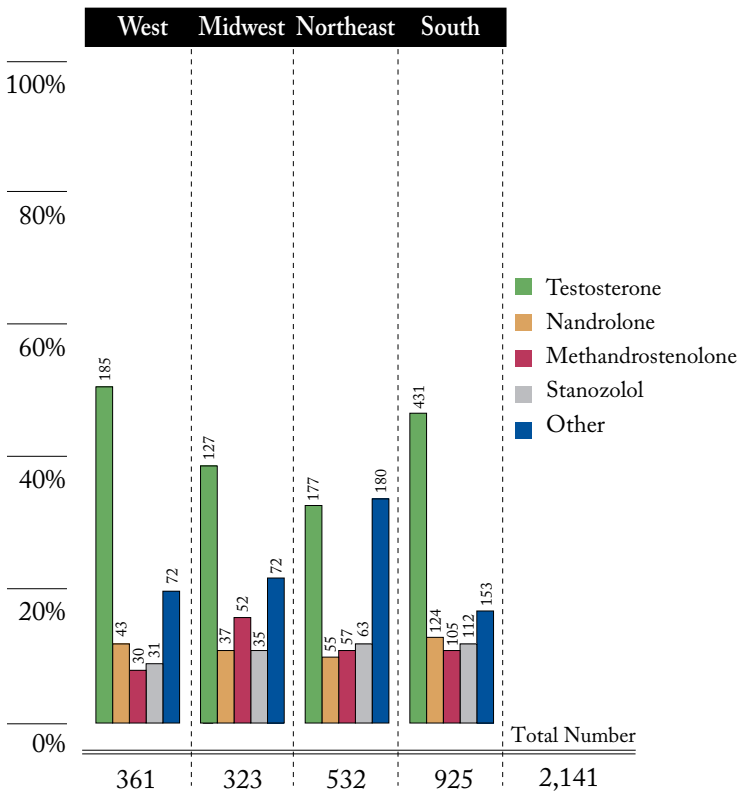
During 2007, a total of 2,141 items were identified as anabolic steroids (Table 2.4). The most commonly identified anabolic steroid was testosterone (43%), followed by nandrolone (12%), methandrostenolone (11%), and stanozolol (11%). Approximately 51% of anabolic steroids in the West, 47% in the South,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

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.

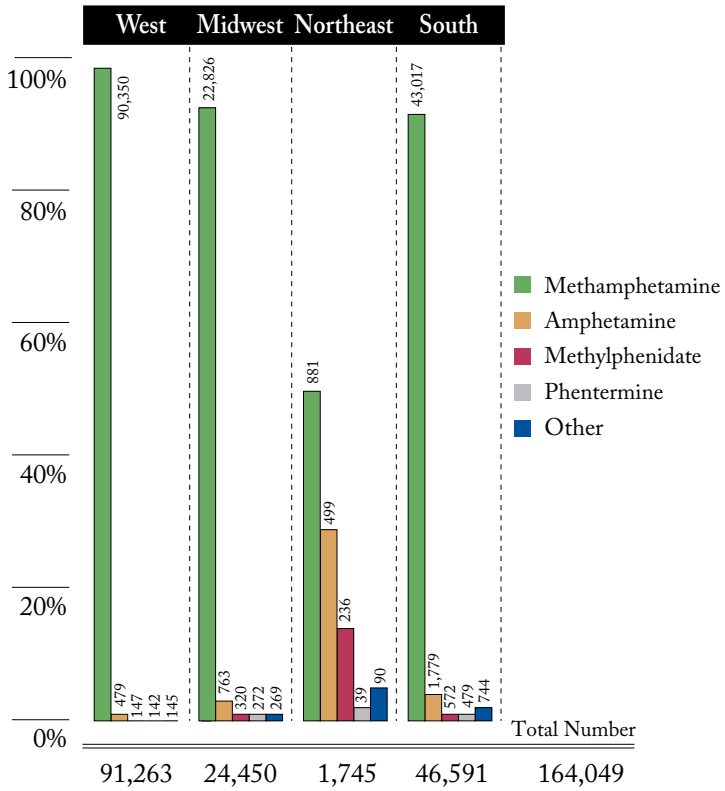


Table 2.5 STIMULANTS
Number and percentage of identified stimulants, 2007.

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.*

Section 3

DRUG COMBINATIONS

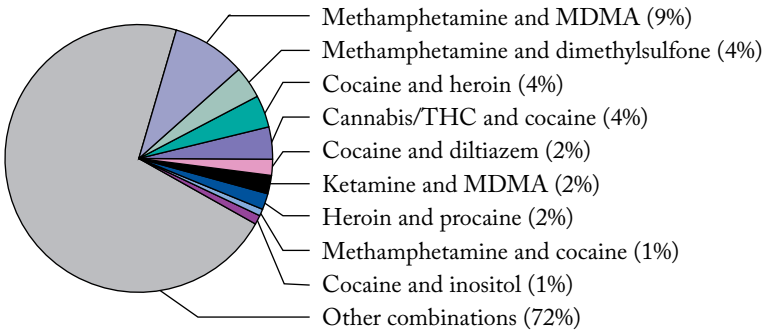
In addition to tracking the types of substances identified by state and local forensic laboratories, another important function of NFLIS is the system's ability to capture information on drug combinations. For the purposes of NFLIS, drug combinations are defined as multiple substances reported within 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%).

Ketamine

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%
Total Cocaine Combinations		6,733	18.69%
All Combinations		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%
Total Heroin Combinations		4,068	11.29%
All Combinations		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%
Total Methamphetamine Combinations		8,102	22.48%
All Combinations		36,034	100.00%

Section 4

DRUGS IDENTIFIED SELECTED U.S. CITIES

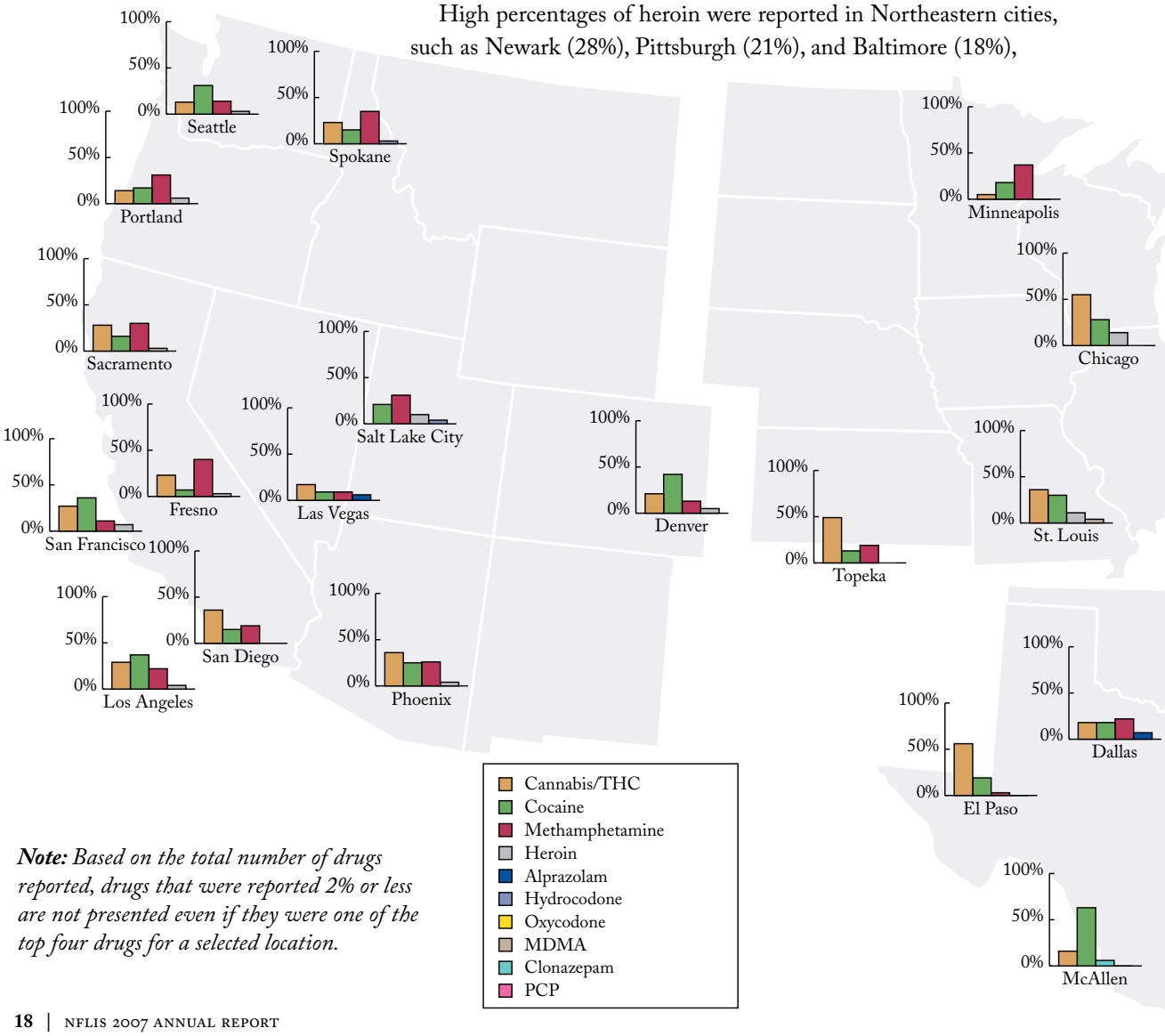
NFLIS can be used to monitor drugs reported by forensic laboratories across the country, including large U.S. cities. The drug analysis results presented in this section were reported during 2007 by NFLIS laboratories in selected large cities.

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.*

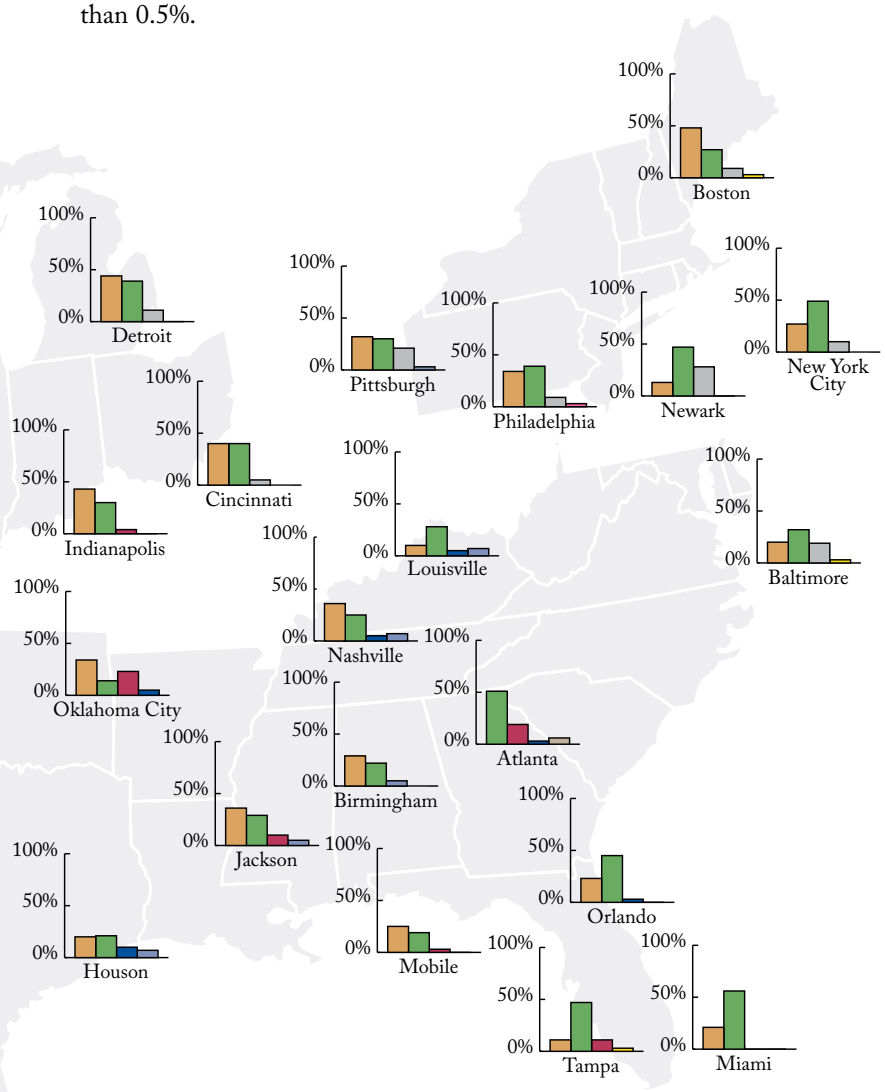
BY LABORATORIES IN

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)

Section 5

GIS ANALYSIS: TOP FOUR DRUGS, BY

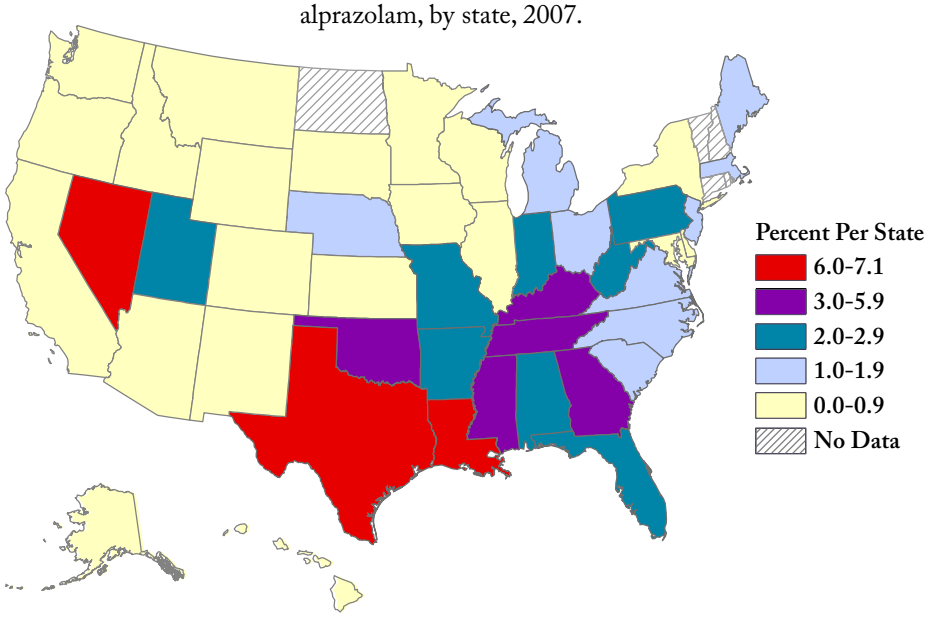
One of the unique features of NFLIS is the ability to analyze and monitor variation in drugs reported by laboratories by the county of origin. By using Geographic Information System (GIS) analyses, NFLIS can provide detailed geographic information on drug seizure locations.

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.

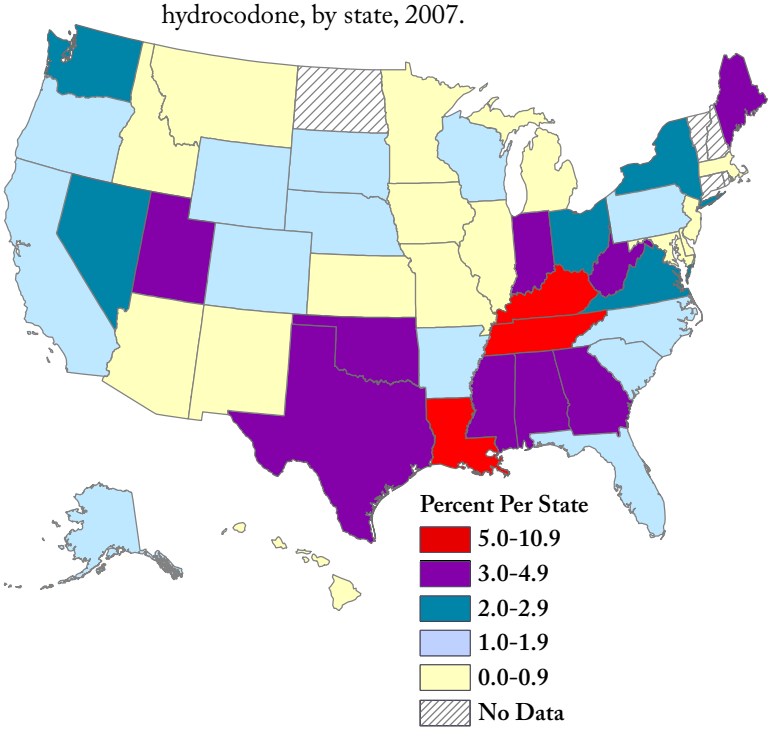


Figure 5.3 Percentage of analyzed drug items identified as methadone, by state, 2007.

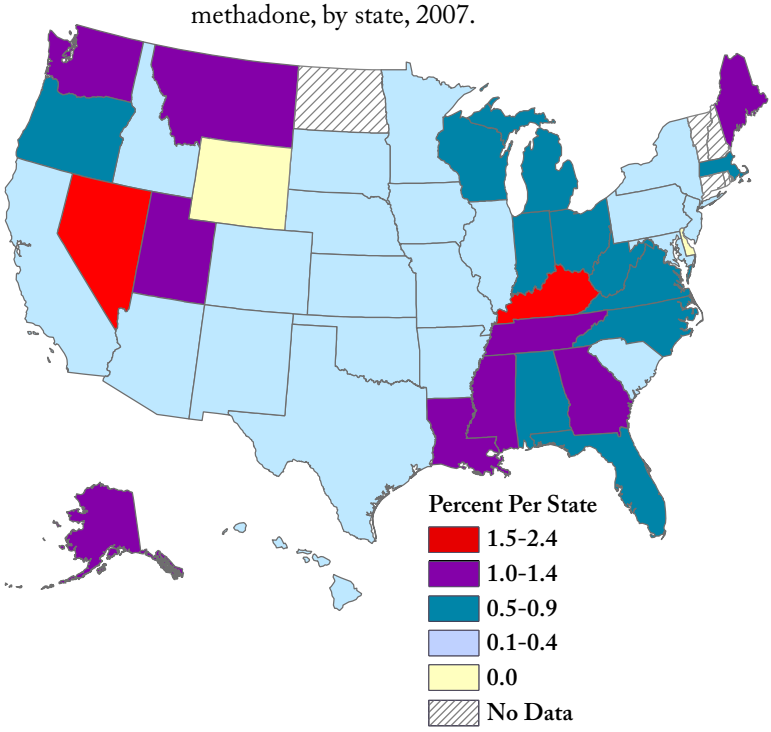


Figure 5.4 Percentage of analyzed drug items identified as oxycodone, by state, 2007.

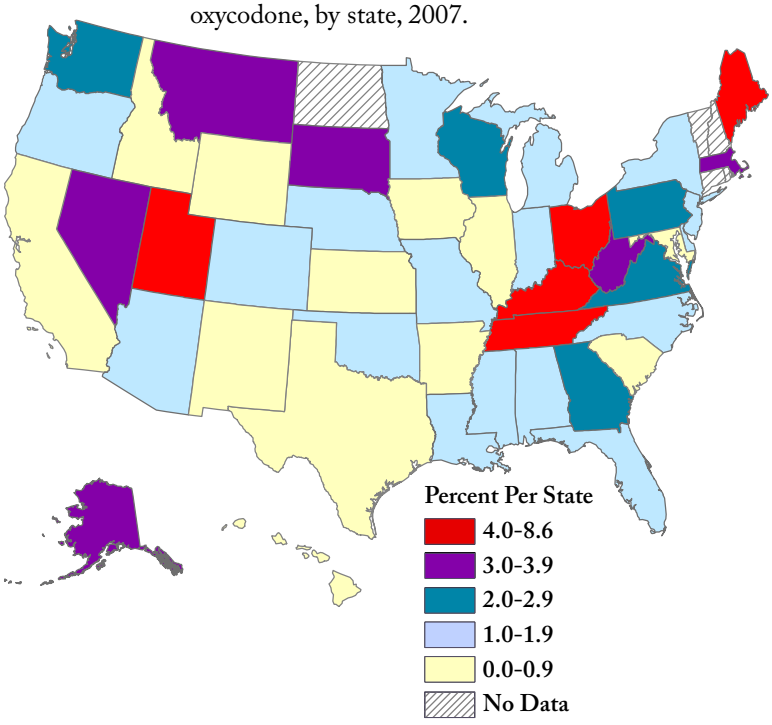


Figure 5.5 Percentage of analyzed drug items identified as alprazolam in Texas, by county, 2007.

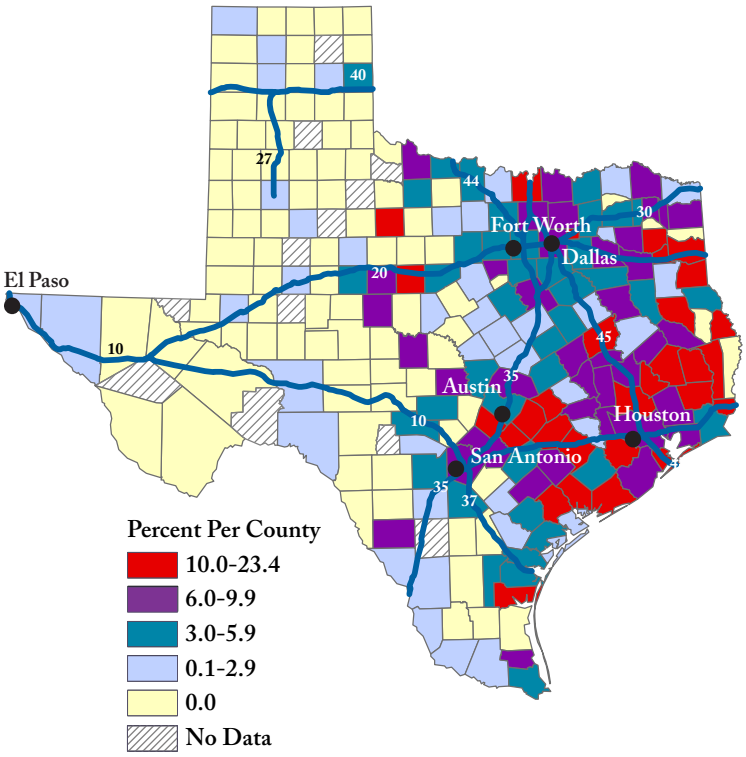


Figure 5.6 Percentage of analyzed drug items identified as hydrocodone in California, by county, 2007.

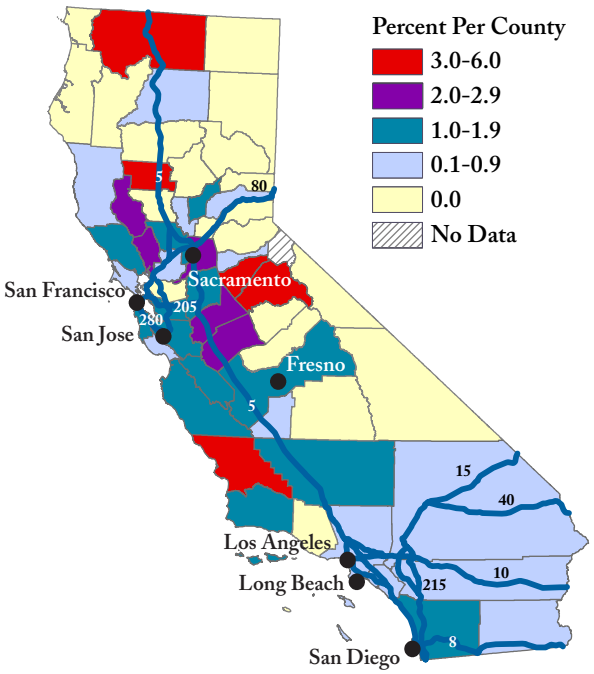


Figure 5.7 Percentage of analyzed drug items identified as methadone in Michigan, by county, 2007.

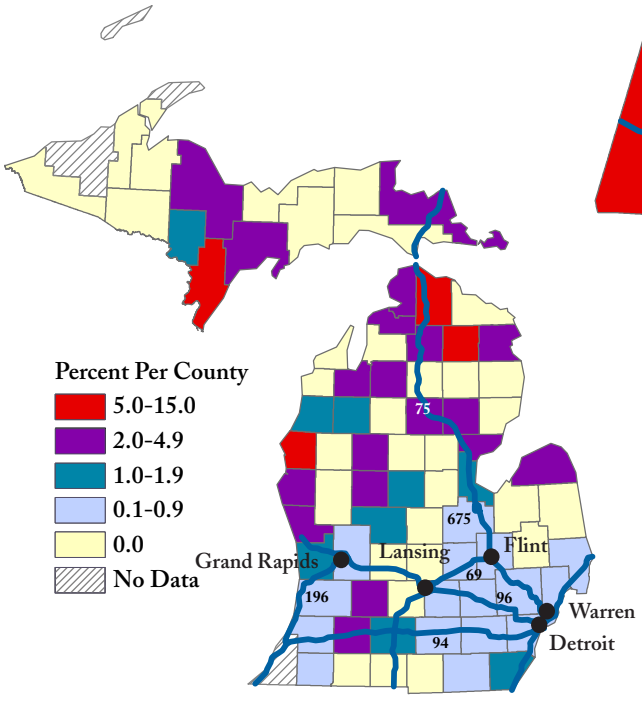
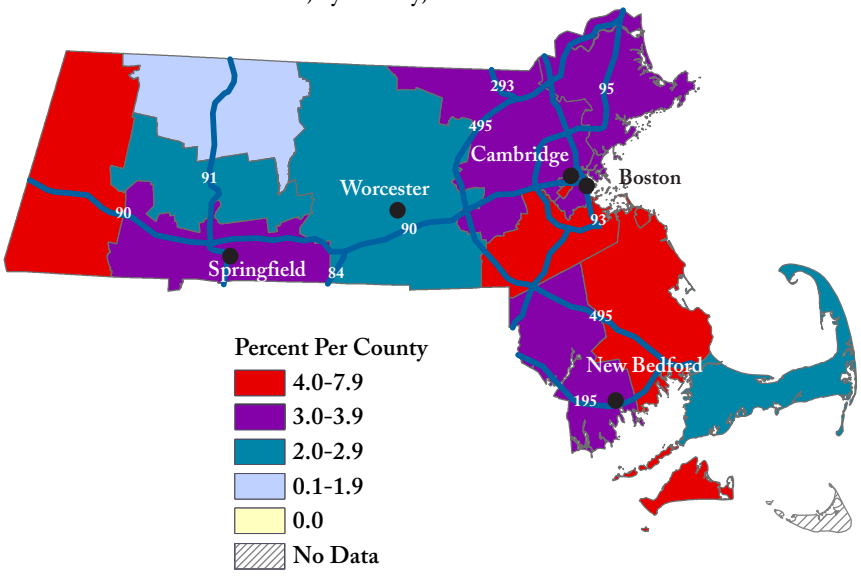


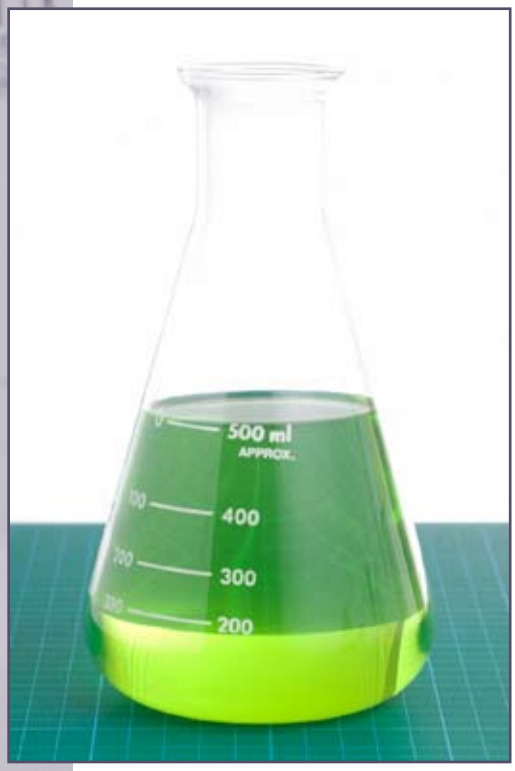
Figure 5.8 Percentage of analyzed drug items identified as oxycodone in Massachusetts, by county, 2007.



Section 6

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.



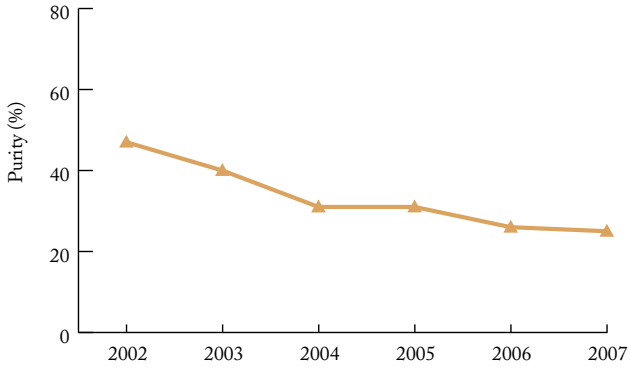
Some state and local forensic laboratories perform quantitative (or purity) analyses, but the majority do so only under special circumstances, such as a special request from law enforcement or from the prosecutor. A smaller number of laboratories perform quantitative analysis on a more routine basis 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

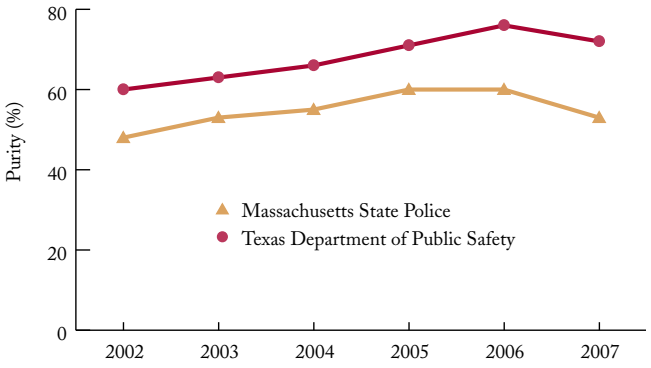
Cocaine purity is presented for three NFLIS laboratories—the Massachusetts State Police Crime Laboratory, the Texas Department of Public Safety (DPS), and the Austin Police Department Crime Laboratory.

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.



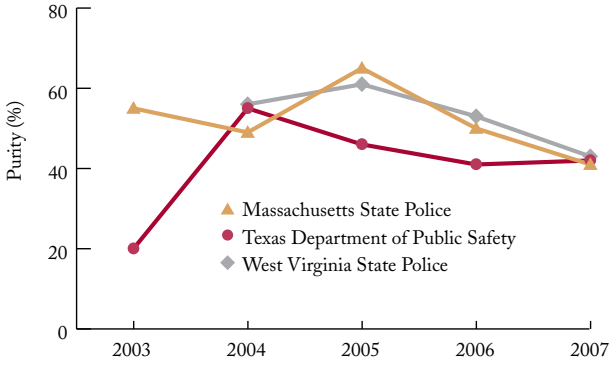
6.3 Methamphetamine Purity

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.

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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.

Appendix A PARTICIPATING AND REPORTING FORENSIC LABORATORIES

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

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.

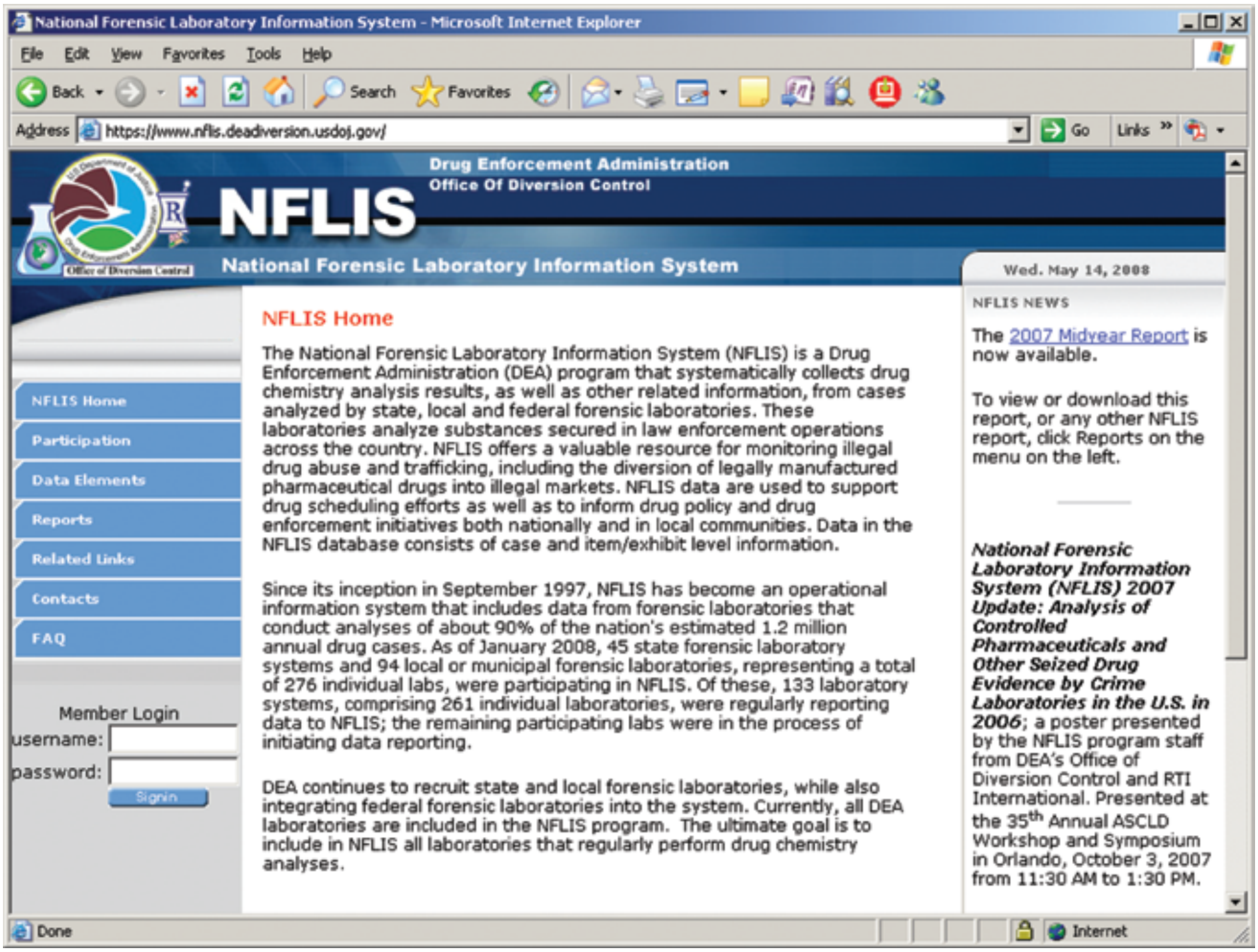
Appendix C

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/.



Appendix D

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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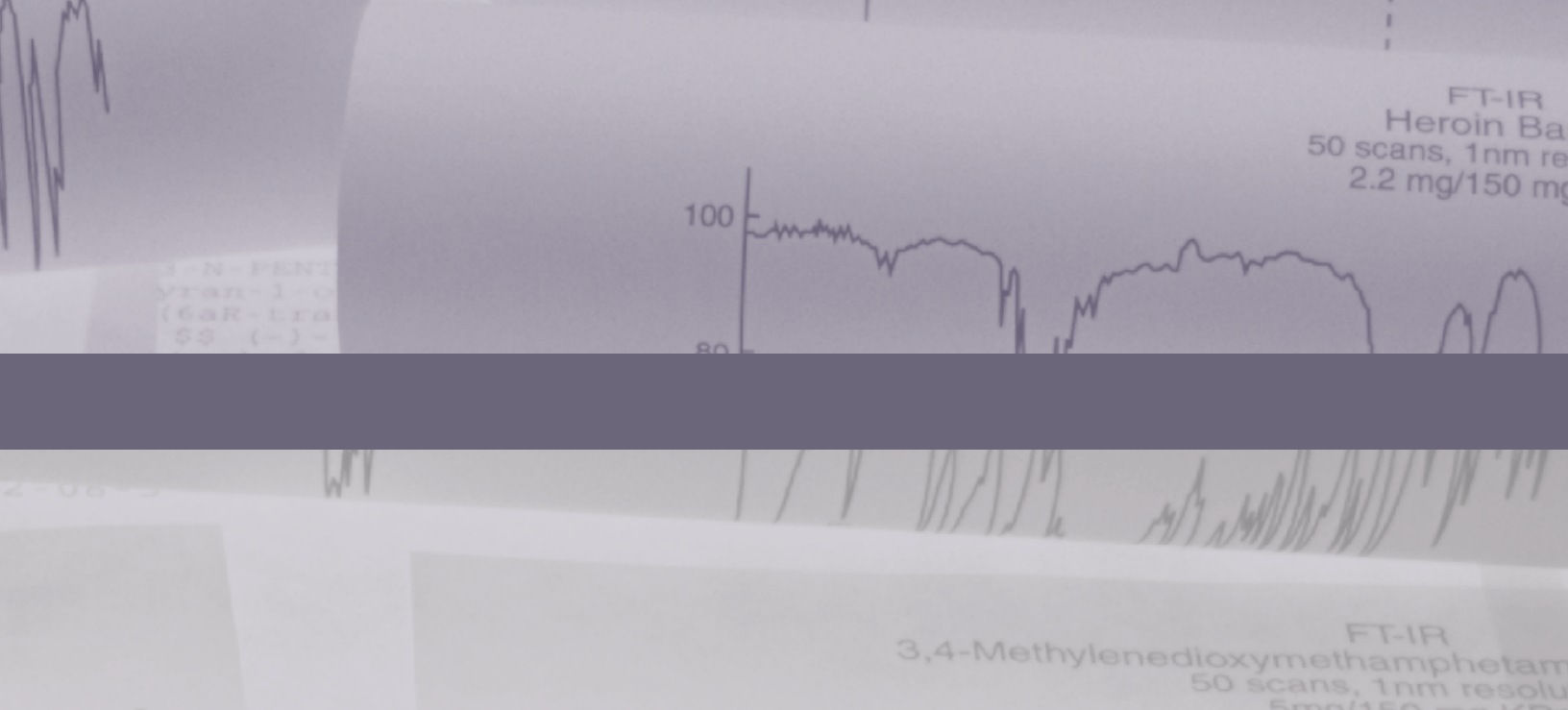

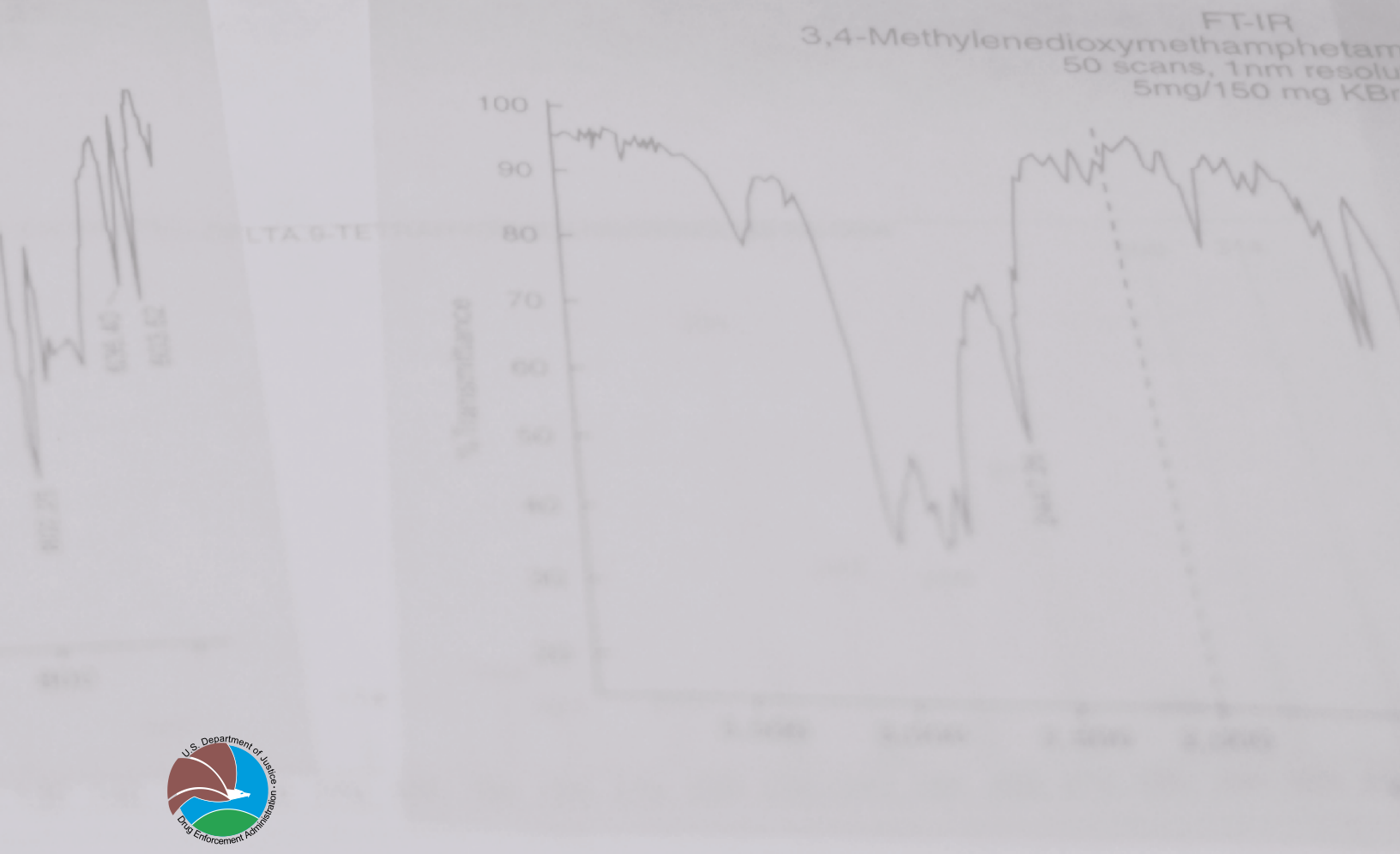

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