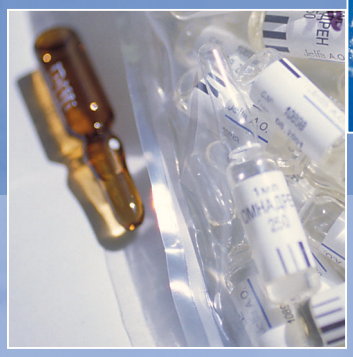
Drug Enforcement Administration

Office of Diversion Control

NFLIS

NATIONAL FORENSIC LABORATORY INFORMATION SYSTEM

YEAR 2003 ANNUAL REPORT



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Drug Enforcement Administration

Foreword

The Office of Diversion Control of the Drug Enforcement Administration (DEA) is pleased to present the 2003 Annual Report for the National Forensic Laboratory Information System (NFLIS). NFLIS is a DEA program that systematically collects drug analysis results and associated information from state and local forensic laboratories across the country. Implemented in 1997, DEA-NFLIS is an operational information system that includes 41 state laboratory systems and 82 local or municipal laboratory systems. DEA laboratories have also recently joined the DEA-NFLIS partnership. Future plans include expansion of the system to include all laboratories that regularly perform drug chemistry analyses, including federal laboratories operated by the FBI and Customs & Border Protection.

The core mission of the DEA is to enforce the controlled substances laws and regulations of the United States. In order to achieve this mission, we must collaborate with federal, state, and local agencies to collect, analyze, and disseminate strategic and operational drug intelligence information. The DEA-NFLIS is an excellent example of the benefits of this type of interagency collaboration. The system has proved to be an important data resource providing timely information on drug trafficking and abuse patterns across the United States, including emerging drugs. This type of information is essential to the DEA's Office of Diversion Control in supporting drug scheduling efforts and related activities.

This 2003 NFLIS Annual Report presents findings on the trafficking and abuse of a wide range of controlled substances including marijuana, cocaine, methamphetamine, heroin, prescription drugs, club drugs, anabolic steroids, and benzodiazepines. The results show that the most commonly reported drugs by U.S. forensic laboratories differ across regions. Methamphetamine is highest in the West, cocaine in the South, heroin in the Northeast, and cannabis in the Midwest. Findings also show that while trafficking and abuse of drugs such as MDMA have declined since 2001, others, such as oxycodone and hydrocodone, have been on the rise. The ability to track this type of information systematically allows the DEA to develop effective and timely strategies to address emerging problems.

The DEA would like to take this opportunity to encourage federal, state, and local forensic labs that are not currently participating in DEA-NFLIS to join this important program. To those laboratories that have already joined DEA-NFLIS, we would like to extend our special thanks. Without your assistance, this partnership would not be possible. Thank you again for your support.

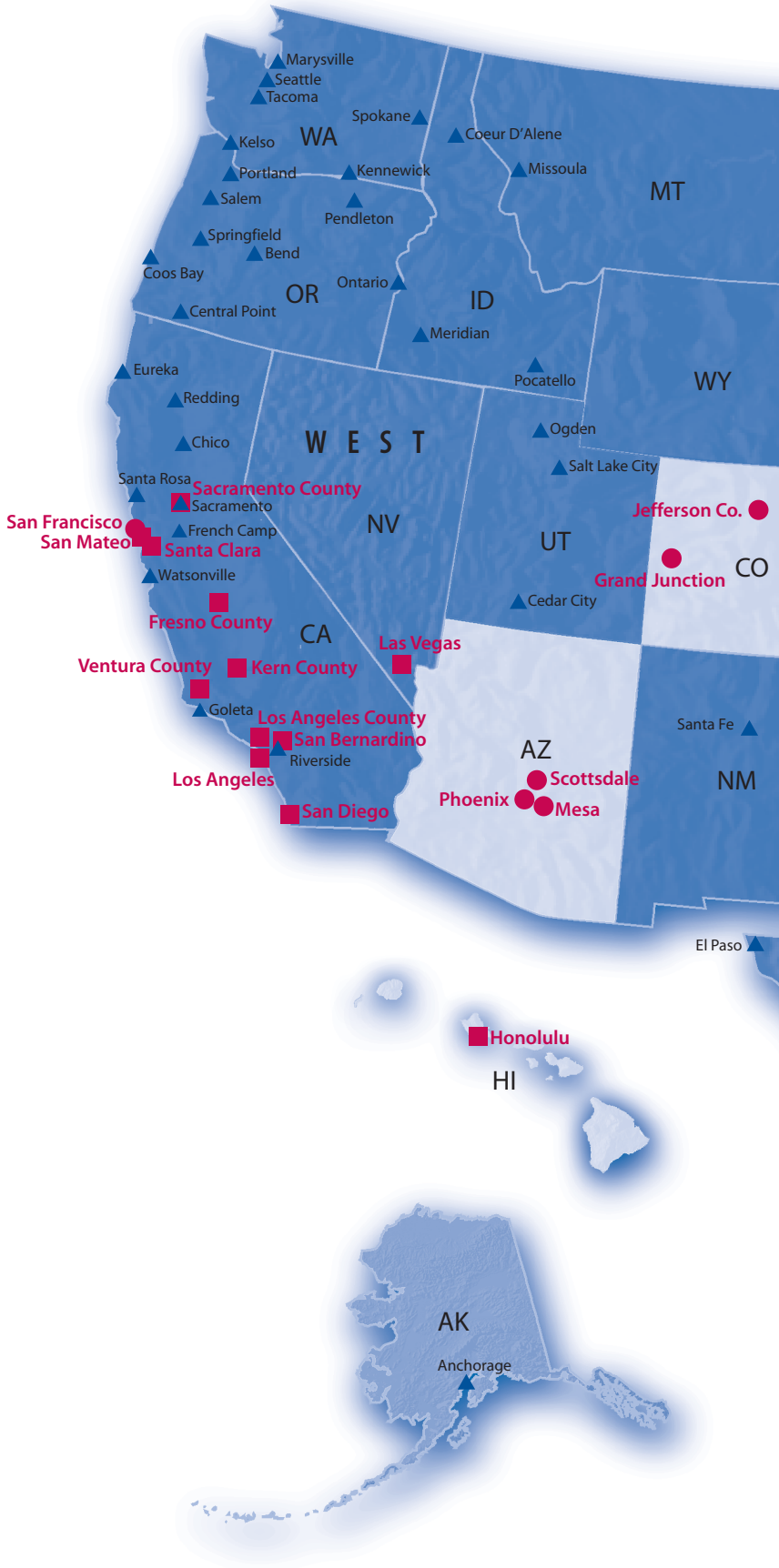
William J. Walker
Deputy Assistant Administrator

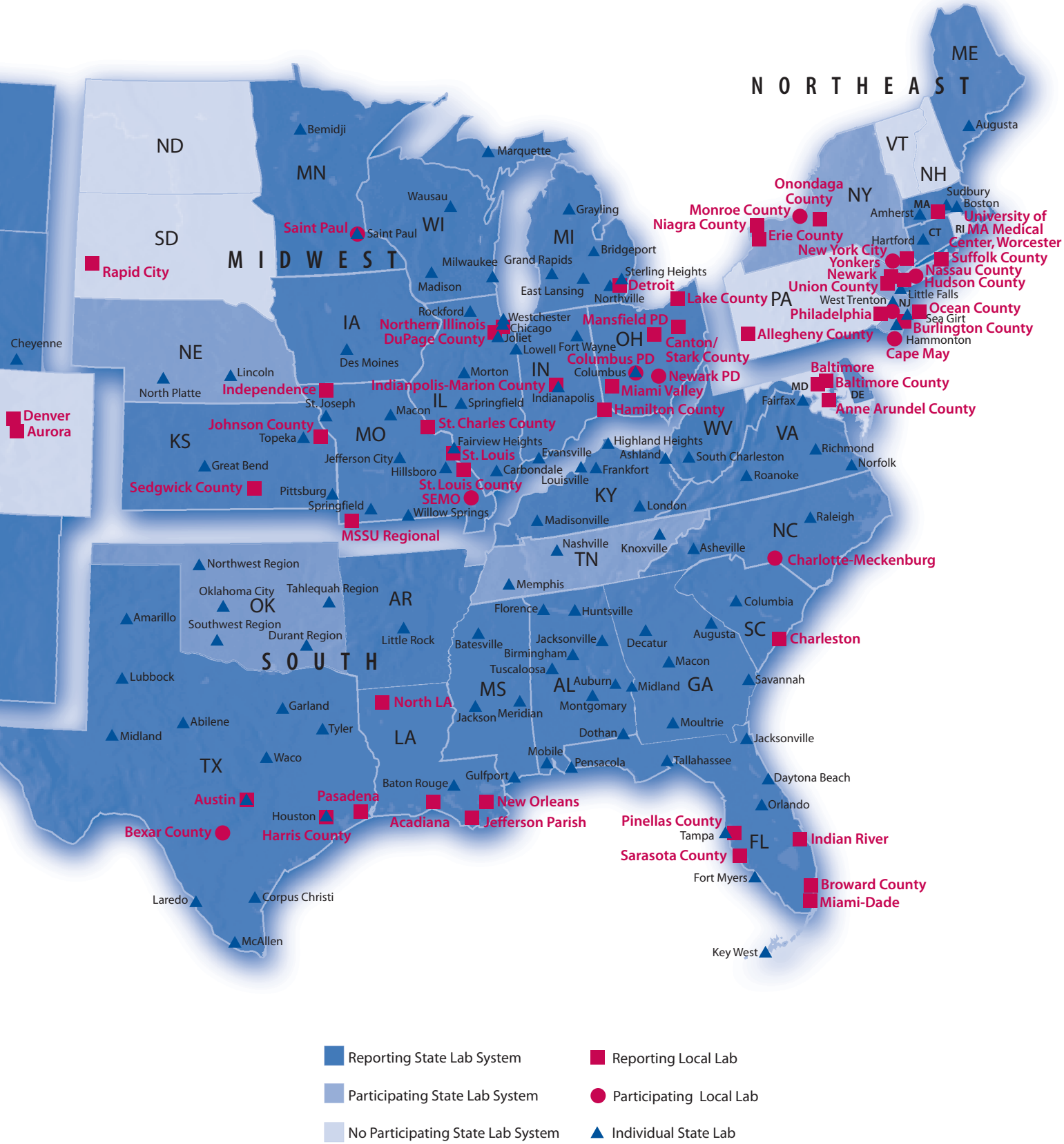
INTRODUCTION

The National Forensic Laboratory Information System (NFLIS) is a Drug Enforcement Administration (DEA)–sponsored program that systematically collects results from drug analyses conducted by state and local forensic laboratories. These laboratories analyze substances secured in law enforcement operations across the country, offering a valuable resource for monitoring illegal drug abuse and trafficking, including the diversion of legally manufactured drugs into illegal markets. NFLIS data are used to support drug scheduling efforts as well as to inform drug policy and drug enforcement initiatives, nationally and in local communities.

Since its implementation in 1997, NFLIS has become an operational information system that includes data from forensic laboratories that analyze nearly 70% of the nation's estimated 1.2 million annual state and local drug cases. As of July 2004, 41 state systems and 82 local or municipal laboratory systems, representing a total of 232 individual labs, had joined NFLIS. Efforts are ongoing to recruit all state and local laboratories while also integrating federal laboratories into the system. Data from DEA's System To Retrieve Information from Drug Evidence II (STRIDE) have been added to the NFLIS database and are included in this report. STRIDE reflects the results of drug evidence analyzed at the eight DEA federal laboratories across the country.

This 2003 Annual Report presents the results of drug evidence analyzed by state and local laboratories between January 1, 2003, and December 31, 2003. Section 1 presents national and regional estimates for the 25 most frequently identified drugs, as well as national and regional quarterly trends from 2001 through 2003. National and regional estimates are based on drug analysis data reported among the NFLIS national sample of laboratories. The remaining sections (Sections 2–5) provide drug analysis results for all state and local labs reporting at least 6 months of data to NFLIS during 2003. These include findings on major drug categories, drug combinations, drug purity, and drugs identified in major cities across the country. The benefit and limitations of NFLIS are presented in Appendix A, and Appendix B describes the NFLIS interactive data site.

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Nashville
Memphis
Columbia
Augusta
Savannah
Jacksonville
Daytona Beach
Orlando
Tampa
Fort Myers
Key West
Tallahassee
Pensacola
Mobile
Gulfport
Baton Rouge
Moultrie
Dothan
Montgomery
Auburn
Macon
Midland
Decatur
Jacksonville
Huntsville
Florence
Batesville
Birmingham
Tuscaloosa
Jackson
Meridian
Little Rock
Durant Region
Southwest Region
Tahlequah Region
Oklahoma City
Northwest Region
Amarillo
Lubbock
Midland
Abilene
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Onondaga County
Monroe County
Niagra County
Erie County
New York City
Yonkers
Newark
Union County
Philadelphia
Allegheny County
Suffolk County
Nassau County
Hudson County
Ocean County
Burlington County
Cape May
University of MA Medical Center, Worcester
Baltimore County
Anne Arundel County
Lake County
Detroit
Sterling Heights
Northville
Mansfield PD
Canton/ Stark County
Columbus PD
Newark PD
Miami Valley
Hamilton County
Columbus
Indianapolis
Fort Wayne
Lowell
Westchester
Chicago
Joliet
Northern Illinois
DuPage County
Rockford
Grand Rapids
East Lansing
Bridgeport
Grayling
Marquette
Wausau
Milwaukee
Madison
Saint Paul
Bemidji
Rapid City
Cheyenne
Denver
Aurora
Independence
Lincoln
North Platte
St. Joseph
Johnson County
Topeka
Great Bend
Sedgwick County
Pittsburg
Springfield
Willow Springs
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St. Charles County
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St. Louis
Jefferson City
Hillsboro
St. Louis County
SEMO
Carbondale
Evansville
Louisville
Frankfort
Highland Heights
Ashland
South Charleston
London
Madisonville
Morton
Springfield
Indianapolis-Marion County
Des Moines
Northwest Region
Oklahoma City
Tahlequah Region
Southwest Region
Durant Region
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Lubbock
Midland
Abilene
Garland
Tyler
Waco
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Austin
Houston
Pasadena
Bexar County
Harris County
Acadiana
New Orleans
Jefferson Parish
Pinellas County
Sarasota County
Indian River
Broward County
Miami-Dade
Reporting State Lab System
Participating State Lab System
No Participating State Lab System
Reporting Local Lab
Participating Local Lab
Individual State Lab

Section 1

NATIONAL AND R

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 and cases analyzed by state and local laboratories in 2003. National trends are also presented for selected drugs from 2001 through 2003, along with regional trends per 100,000 persons age 15 and older. The methods used to prepare these estimates are described in Appendix C. Appendix D provides a list of NFLIS laboratories, including those in the national sample.

1.1 Drug Items Analyzed

In 2003, an estimated 1,715,598 drug items were analyzed by state and local forensic laboratories in the United States. This is a slight reduction from the 1,798,045 drug items analyzed during 2002. Table 1.1 presents the 25 most frequently identified drugs for the nation and for census regions.

The top 25 drugs accounted for 93% of all drug items analyzed in 2003, an estimated 1,596,780 items. As in previous years, the vast majority of all drugs reported in NFLIS were identified as the top four drugs, with cannabis/THC, cocaine, methamphetamine, and heroin representing 85% of all drug items analyzed. Nationally, 620,071 items were identified as cannabis/THC (36%), 528,806 as cocaine (31%), 204,861 as methamphetamine (12%), and 105,174 as heroin (6%).

Among other drugs, 18 of the top 25 were available in pharmaceutical products, 14 of which were controlled drugs. Included in this group of controlled pharmaceuticals were six narcotic analgesics: hydrocodone (16,903 items), oxycodone (16,520 items), methadone (4,967 items), codeine (2,757 items), morphine (2,534 items), and propoxyphene (2,103 items) and four benzodiazepines: alprazolam (17,738 items), diazepam (7,375 items), clonazepam (5,373 items), and lorazepam (1,705 items). Other controlled pharmaceutical drugs were phencyclidine (PCP) (4,642), amphetamine (3,505), methylphenidate (1,486), and ketamine (1,233). Four non-controlled pharmaceuticals were included in the top 25—pseudoephedrine (10,582 items), acetaminophen (4,236), carisoprodol (3,297), and ephedrine (1,263). Ephedrine and pseudoephedrine are List I precursor chemicals that are used to produce methamphetamine.

EGIONAL ESTIMATES

Table 1.1 NATIONAL AND REGIONAL ESTIMATES FOR THE 25 MOST FREQUENTLY IDENTIFIED DRUGS*
Estimated number and percentage of total analyzed drug items, 2003.

Drug	National		West		Midwest		Northeast		South	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cannabis/THC	620,071	36.14%	80,718	23.32%	209,755	49.48%	86,537	33.65%	243,061	35.31%
Cocaine	528,806	30.82%	71,776	20.73%	111,280	26.25%	93,793	36.47%	251,958	36.61%
Methamphetamine	204,861	11.94%	128,237	37.04%	31,604	7.46%	763	0.30%	44,257	6.43%
Heroin	105,174	6.13%	12,217	3.53%	22,523	5.31%	34,846	13.55%	35,588	5.17%
Alprazolam	17,738	1.03%	***	***	3,457	0.82%	2,667	1.04%	10,519	1.53%
Non-controlled, non-narcotic drug	16,991	0.99%	6,281	1.81%	3,844	0.91%	3,501	1.36%	3,366	0.49%
Hydrocodone	16,903	0.99%	2,116	0.61%	2,402	0.57%	1,727	0.67%	10,659	1.55%
Oxycodone	16,520	0.96%	1,224	0.35%	3,120	0.74%	5,137	2.00%	7,039	1.02%
Pseudoephedrine**	10,582	0.62%	2,288	0.66%	4,335	1.02%	***	***	3,956	0.57%
MDMA	9,887	0.58%	2,021	0.58%	1,311	0.31%	1,718	0.67%	4,838	0.70%
Diazepam	7,375	0.43%	1,170	0.34%	1,299	0.31%	1,051	0.41%	3,855	0.56%
Clonazepam	5,373	0.31%	532	0.15%	1,053	0.25%	1,804	0.70%	1,984	0.29%
Methadone	4,967	0.29%	546	0.16%	859	0.20%	1,526	0.59%	2,036	0.30%
Phencyclidine (PCP)	4,642	0.27%	1,349	0.39%	471	0.11%	2,174	0.85%	649	0.09%
Acetaminophen	4,236	0.25%	***	***	1,424	0.34%	***	***	1,077	0.16%
Amphetamine	3,505	0.20%	742	0.21%	652	0.15%	406	0.16%	1,705	0.25%
Carisoprodol	3,297	0.19%	***	***	328	0.08%	181	0.07%	1,935	0.28%
Psilocin	2,771	0.16%	1,051	0.30%	867	0.20%	201	0.08%	652	0.09%
Codeine	2,757	0.16%	474	0.14%	807	0.19%	327	0.13%	1,148	0.17%
Morphine	2,534	0.15%	526	0.15%	552	0.13%	576	0.22%	880	0.13%
Propoxyphene	2,103	0.12%	151	0.04%	633	0.15%	257	0.10%	1,061	0.15%
Lorazepam	1,705	0.10%	204	0.06%	406	0.10%	449	0.17%	645	0.09%
Methylphenidate	1,486	0.09%	169	0.05%	402	0.09%	361	0.14%	554	0.08%
Ephedrine	1,263	0.07%	75	0.02%	282	0.07%	***	***	884	0.13%
Ketamine	1,233	0.07%	88	0.03%	192	0.05%	527	0.20%	426	0.06%
Top 25 Total	1,596,780	93.06%	317,312	91.66%	403,858	95.27%	240,878	95.27%	634,732	92.22%
All Other Analyzed Items	118,818	6.93%	28,884	8.34%	20,029	4.73%	16,325	4.73%	53,580	7.78%
Total Analyzed Items	1,715,598	100.00%	346,196	100.00%	423,887	100.00%	257,203	100.00%	688,312	100.00%

MDMA = 3,4-methylenedioxymethamphetamine
Numbers may not sum to totals due to suppression and rounding.
** Sample n's and 95% confidence intervals for all estimates are available from the DEA or RTI.*
*** Includes items from a small number of laboratories that do not specify between pseudoephedrine and ephedrine.*
**** These data do not meet standards of precision and reliability due to their small sample sizes.*

1.2 Drug Cases Analyzed

Drug analysis results are also reported to NFLIS at the case level and typically describe all drugs identified within a drug-related incident, although a small proportion of labs may assign a single case number to all drug submissions related to an entire investigation. Table 1.2 presents national estimates for cases containing at least one or more items of the specified drug.

Table 1.2 **National Case Estimates**
Number and percentage of cases containing the 25 most frequently identified drugs, 2003.

Drug	Number	Percent
Cannabis/THC	459,933	40.29%
Cocaine	412,606	36.14%
Methamphetamine	150,065	13.14%
Heroin	76,489	6.70%
Alprazolam	14,775	1.29%
Hydrocodone	14,182	1.24%
Non-controlled, non-narcotic drug	13,464	1.18%
Oxycodone	12,809	1.12%
MDMA	7,966	0.70%
Pseudoephedrine*	6,665	0.58%
Diazepam	6,575	0.58%
Clonazepam	4,674	0.41%
Methadone	4,339	0.38%
Phencyclidine (PCP)	4,249	0.37%
Acetaminophen	3,616	0.32%
Carisoprodol	3,062	0.27%
Amphetamine	2,899	0.25%
Psilocin	2,471	0.22%
Codeine	2,253	0.20%
Morphine	2,240	0.20%
Propoxyphene	1,885	0.17%
Lorazepam	1,453	0.13%
Methylphenidate	1,239	0.11%
MDA	1,092	0.10%
Ketamine	1,001	0.09%
Top 25 Total	1,212,002	106.16%
All Other Substances	92,891	8.14%
Total All Substances	1,304,893	114.3%**

MDA = 3,4-methylenedioxyamphetamine

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

** *Multiple drugs can be reported within a single case, so the cumulative percentage exceeds 100%. The estimated national total of distinct cases that drug case percentages are based on is 1,141,658.*

Cannabis/THC was the most common drug reported in a laboratory drug case during 2003. Nationally, an estimated 40% of analyzed drug cases contained one or more cannabis/THC items, followed by cocaine, which was identified in 36% of all drug cases. About 13% of drug cases were estimated to have contained methamphetamine, and nearly 7% of cases contained heroin. Among other drugs, alprazolam, hydrocodone, and oxycodone were each 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 the eight DEA laboratories across the country. Drug exhibits are submitted by the DEA, other federal law enforcement agencies, and some local police agencies. STRIDE captures data on both domestic and international drug cases; however, the following results present only those drugs obtained in the U.S.

During 2003, a total of 55,167 drug exhibits were reported in STRIDE, about 3% of the estimated 1.7 million drug exhibits reported by state and local labs during this period. Eight in 10 drugs in STRIDE were identified as cocaine (29%), cannabis/THC (26%), methamphetamine (16%), or heroin (9%). Among other drugs, 3% were reported as MDMA and 3% as pseudoephedrine.

In comparison to state and local labs, DEA federal labs reported lower percentages of cannabis/THC (26% in STRIDE vs. 36% in NFLIS) and cocaine (29% in STRIDE vs. 31% in NFLIS). DEA labs reported higher percentages of methamphetamine (16% in STRIDE vs. 12% in NFLIS), heroin (9% vs. 6%), MDMA (3% vs. <1%), and pseudoephedrine (3% vs. <1%).

Most Frequenty Identified Drugs In STRIDE, 2003

Drug	Number	Percent
Cocaine	16,169	29.31%
Cannabis/THC	14,220	25.78%
Methamphetamine	8,919	16.17%
Heroin	5,053	9.16%
MDMA	1,866	3.38%
Pseudoephedrine	1,606	2.91%
Non-controlled, non-narcotic drug	987	1.79%
Phencyclidine (PCP)	502	0.91%
Hydrocodone	485	0.88%
Alprazolam	350	0.63%
All Other Drugs	5,010	9.08%
Total All Drugs	55,167	100.00%

1.3 National and Regional Drug Trends

National drug trends

Figure 1.1 presents national trends for the estimated number of drug items analyzed by state and local laboratories in 3-month increments for 2001 through 2003 for the top four drugs reported in NFLIS. It should be noted that while these data describe trafficking and abuse patterns, they may also reflect differing drug enforcement priorities and laboratory policies. Overall, there was a modest decline in total analyzed items between 2001 and 2003, from 457,967 items during the 1st quarter of 2001 to 406,971 items during the 4th quarter of 2003. Among the top four drugs, cannabis/THC was the only drug to experience a statistically significant change over the 3-year period, declining from 161,343 items in the 1st quarter of 2001 to 130,021 items in the 4th quarter of 2003 (α=.05).

Figure 1.1 National estimates for the top four drugs by quarter, 2001–2003.

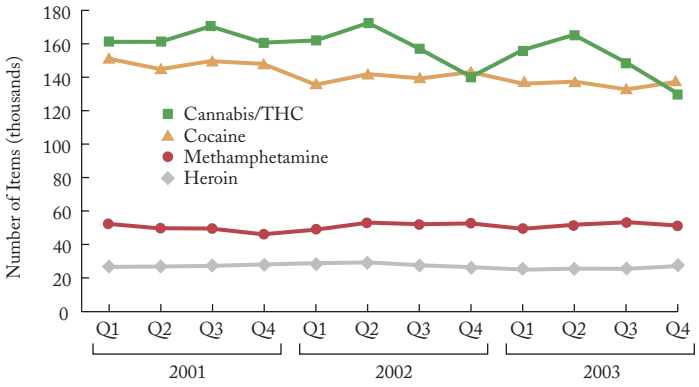
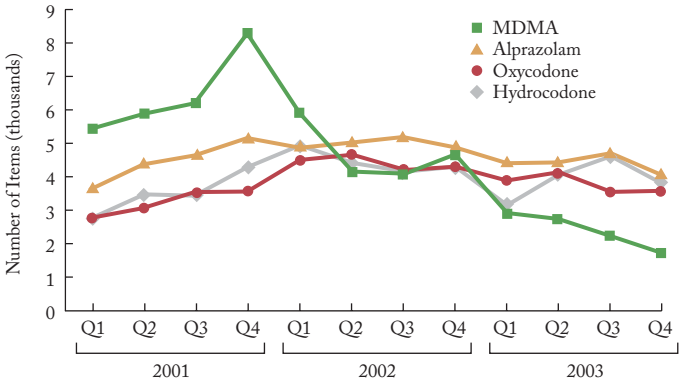


Figure 1.2 describes national trends for other commonly reported drugs in NFLIS. Most notable was the significant decline in MDMA (3,4-methylenedioxymethamphetamine) over the 3-year period, as well as the significant increases in oxycodone and hydrocodone. Overall, MDMA declined 68% from 5,427 items during the 1st quarter of 2001 to 1,732 during the 4th quarter of 2003. Oxycodone increased 30% from 2,771 items to 3,589, and hydrocodone increased 39% from 2,742 to 3,819.

Figure 1.2 National estimates for other selected drugs by quarter, 2001–2003.



Regional drug trends

The following figures present regional trends per 100,000 persons age 15 and older for commonly reported drugs in NFLIS. This shows changes in drugs reported over time, taking into consideration the population of each region.

Figure 1.3 describes regional trends per 100,000 for the top four drugs. Cannabis/THC declined across each of the regions, although the only stastically significant decline was reported in the South (α=.05). Overall, the highest rate of cannabis/THC continues to be reported in the Midwest, followed by the South. There were no significant changes for cocaine over the 3-year period. The highest rate of cocaine is reported by laboratories in the South, followed by the Northeast and the Midwest. Methamphetamine significantly increased in the South, nearly doubling from 8 to 14 per 100,000 (6,534 items to 10,979 items). Despite this increase, methamphetamine continues to predominate in the West. Laboratories in the West report methamphemine at more than four times the rate of any other region. There were no significant changes in heroin reports between the 1st quarter of 2001 and the 4th quarter of 2003 in any of the four regions. Heroin was reported by forensic laboratories in the Northeast at about twice the rate as in the South and the Midwest.

Figure 1.4 shows regional trends per 100,000 for other commonly reported drugs: hydrocodone, oxycodone, MDMA, and alprazolam. The most significant trend is the decline in MDMA across all census regions, especially the South and the Northeast (α=.05). MDMA declined in the South from 3.3 to 1.0 per 100,000 (2,589 items to 810 items) and in the Northeast from 2.5 to 0.6 per 100,000 (1,275 items to 303 items). Oxycodone increased significantly in the Northeast, more than doubling from 1.3 to 2.9 per 100,000 (636 items to 1,456 items). Hydrocodone increased significantly in the Northeast as well, more than tripling from 0.3 to 0.9 per 100,000 (131 items to 432 items).

Figure 1.3 Trends in the top four drugs reported per 100,000 population 15 and older, January 2001–December 2003.

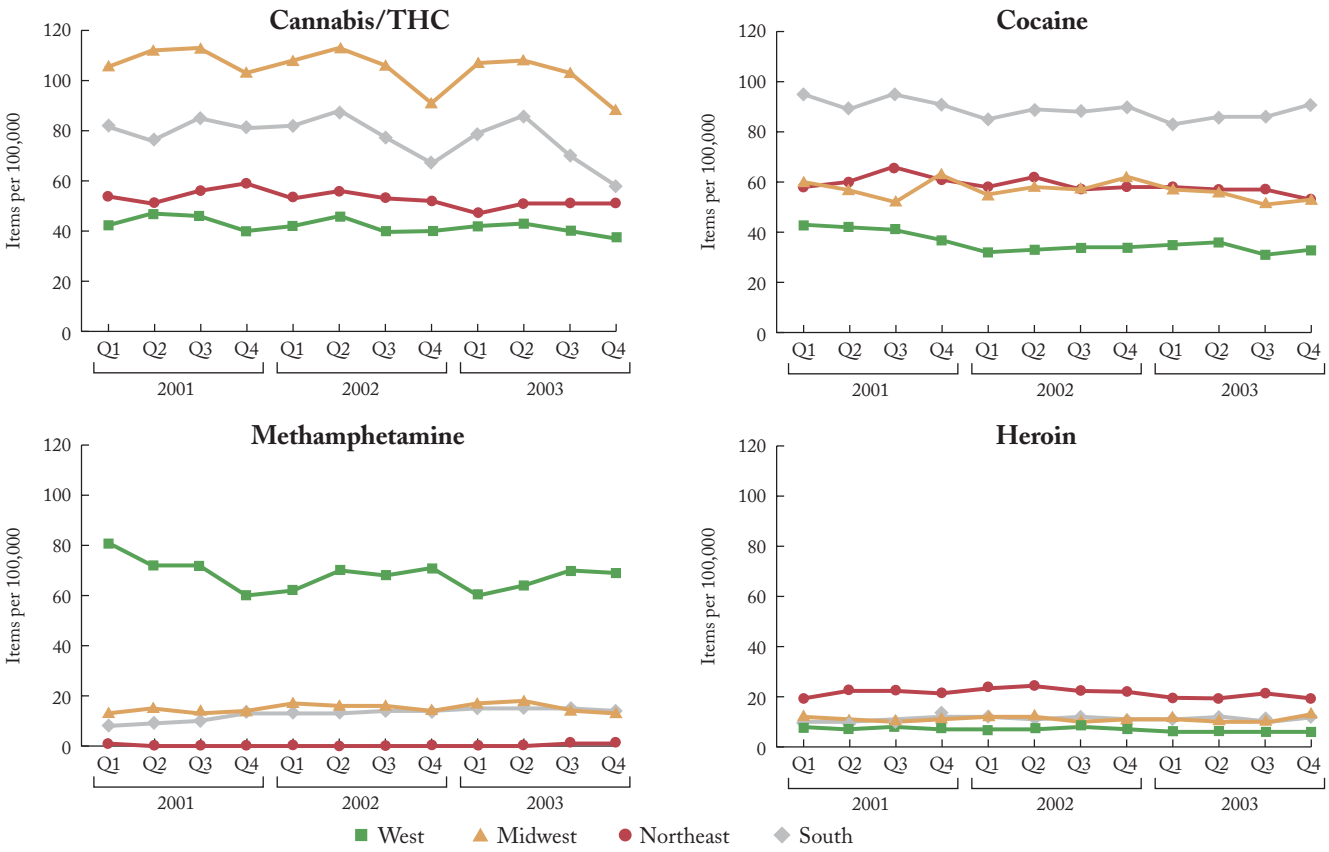
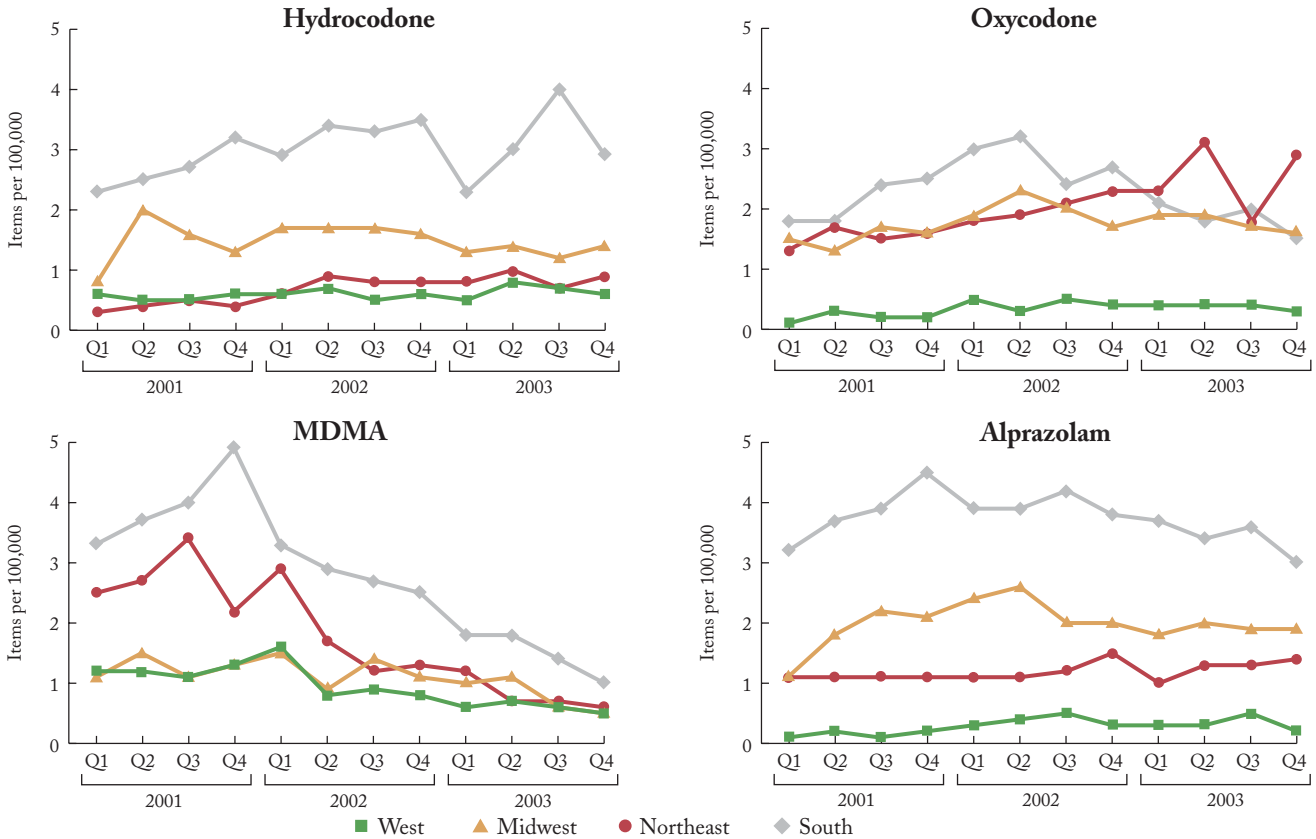


Figure 1.4 Trends in other selected drugs reported per 100,000 population 15 and older, January 2001–December 2003.



Section 2

MAJOR DRUG CATEGORIES

Section 2 presents results for the major drugs categories reported to NFLIS during 2003. 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 reflect national estimates based on data reported by the NFLIS national sample of laboratories. Section 2 and subsequent sections present data reported by all labs participating in NFLIS that provided 6 or more months of data during 2003. NFLIS labs analyzed a total of 1,042,167 drug items over this 12-month period.

2.1 Narcotic Analgesics

Narcotic analgesics are a category of pain medications that has emerged as a major drug problem in the United States, especially since the mid-1990s. Derived from natural and synthetic opiates, narcotic analgesics are used by drug abusers as heroin substitutes, although non-heroin users can and have become addicted as well. Drug abuse–related mentions of narcotic analgesics in emergency departments nearly tripled between 1995 and 2002, from 45,254 to 119,185.[1]

A total of 28,176 narcotic analgesics were identified by NFLIS labs in 2003, representing nearly 3% of all items analyzed (Table 2.1). Hydrocodone (36%) and oxycodone (30%) accounted for a majority of all narcotic analgesics reported. Among other narcotic analgesics, a quarter were identified as methadone (10%), codeine (6%), morphine (5%), or propoxyphene (5%).

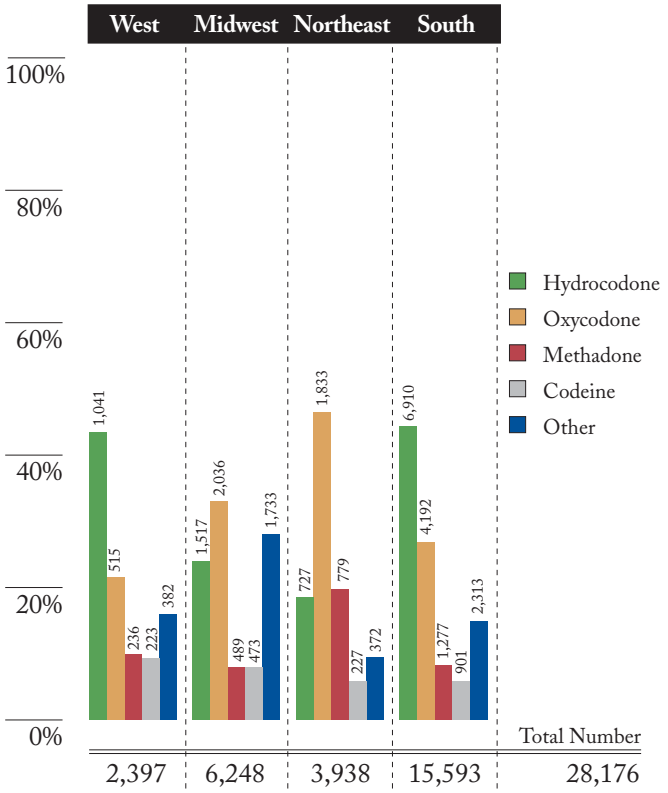
Table 2.1 NARCOTIC ANALGESICS
Number and percentage of total identified narcotic analgesics, 2003.

Analgesics	Number	Percent
Hydrocodone	10,195	36.18%
Oxycodone	8,576	30.44%
Methadone	2,781	9.87%
Codeine	1,824	6.47%
Morphine	1,488	5.28%
Propoxyphene	1,321	4.69%
Dihydrocodeine	807	2.86%
Hydromorphone	471	1.67%
Tramadol*	245	0.87%
Meperidine	240	0.85%
Fentanyl	152	0.54%
Pentazocine	47	0.17%
Nalbuphine*	10	0.04%
Buprenorphine	9	0.03%
Butorphanol	8	0.03%
Oxymorphone	2	0.01%
Total Narcotic Analgesics	28,176	100.00%

**Non-controlled narcotic analgesics.*

[1] Drug Abuse Warning Network (DAWN), 2003. The DAWN Report: Narcotic Analgesics. Substance Abuse and Mental Health Services Administration.

Figure 2.1 Distribution of narcotic analgesics within region, 2003.



During 2003, differences were found in the types of analgesics reported by region (Figure 2.1). The highest percentages of hydrocodone were reported in the South (44%) and West (43%). Oxycodone represented 47% of analgesics reported in the Northeast, compared to 33% in the Midwest, 27% in the South, and 21% in the West. The Northeast also reported the highest relative percentage of methadone (20%), followed by the West (10%). The West reported the highest relative percentage of codeine (9%).

2.2 Benzodiazepines

Benzodiazepines are tranquilizers commonly prescribed to treat anxiety, stress, panic attacks, and short-term sleep disorders. Because of the large volume of these drugs available in the legal market, there is great potential for misuse and abuse. Among benzodiazepines mentioned during drug-related emergency department visits in 2002, more than a third were identified as alprazolam (e.g., Xanax).

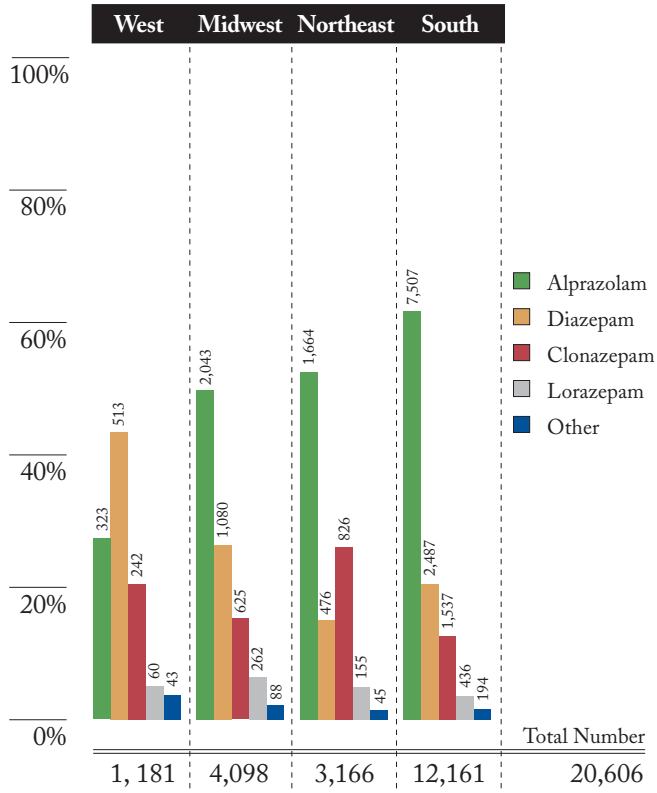
During 2003, 2% of all analyzed drugs, or 20,606 items, were identified in NFLIS as benzodiazepines (Table 2.2). Alprazolam accounted for more than half of the benzodiazepines identified, diazepam (e.g., Valium) accounted for 22%, and clonazepam (e.g., Klonopin or Rivotril) accounted for 16%.

The majority of benzodiazepines reported in the Midwest (50%), Northeast (53%), and South (62%) were identified as alprazolam (Figure 2.2). In the West, 43% of benzodiazepines were identified as diazepam, the highest percentage of any region. The Northeast and the West accounted for the highest relative percentages of clonazepam (26% and 20%, respectively).

Table 2.2 BENZODIAZEPINES
Number and percentage of total identified benzodiazepine drugs, 2003.

Benzodiazepines	Number	Percent
Alprazolam	11,537	55.99%
Diazepam	4,556	22.11%
Clonazepam	3,230	15.67%
Lorazepam	913	4.43%
Temazepam	214	1.04%
Chlordiazepoxide	86	0.42%
Flunitrazepam	39	0.19%
Triazolam	28	0.14%
Midazolam	3	0.01%
Total Benzodiazepines	20,606	100.00%

Figure 2.2 Distribution of benzodiazepines within region, 2003.



2.3 Club Drugs

Club drugs are a category of substances that gained popularity during the 1990s at dance clubs and "rave" parties. Abuse of club drugs, especially MDMA (Ecstasy) has become widespread among youth. The National Drug Intelligence Center reports that MDMA is now considered a mainstream drug in many areas of the country, regularly found in nightclubs and schools.[2] The rise in club drug use over the past decade is evident in emergency department data. From 1995 to 2002, the number of drug abuse–related emergency department mentions of MDMA increased from 421 to 4,026, of GHB from 145 to 3,330, and of ketamine from 81 to 260.[3]

In NFLIS, MDMA continues to be the most commonly reported club drug (Table 2.3). Of the 7,968 club drugs reported in NFLIS during 2003, over 75% were identified as MDMA (Table 2.3). Among other club drugs reported, 10% were identified as MDA (3,4-methylenedioxyamphetamine), 9% as ketamine, and 5% as GHB/GBL (gamma-hydroxybutyrate or gamma-butyrolactone).

As shown in Figure 2.3, MDMA was the most common club drug reported in each region, representing 80% of club drugs in the West, 77% in the South, 72% in the Northeast, and 71% in the Midwest. The Midwest continues to report the highest percentages of MDA (16%). The Northeast reported the highest percentage of ketamine (16%), followed by the Midwest (10%).

Figure 2.3 Distribution of club drugs within region, 2003.

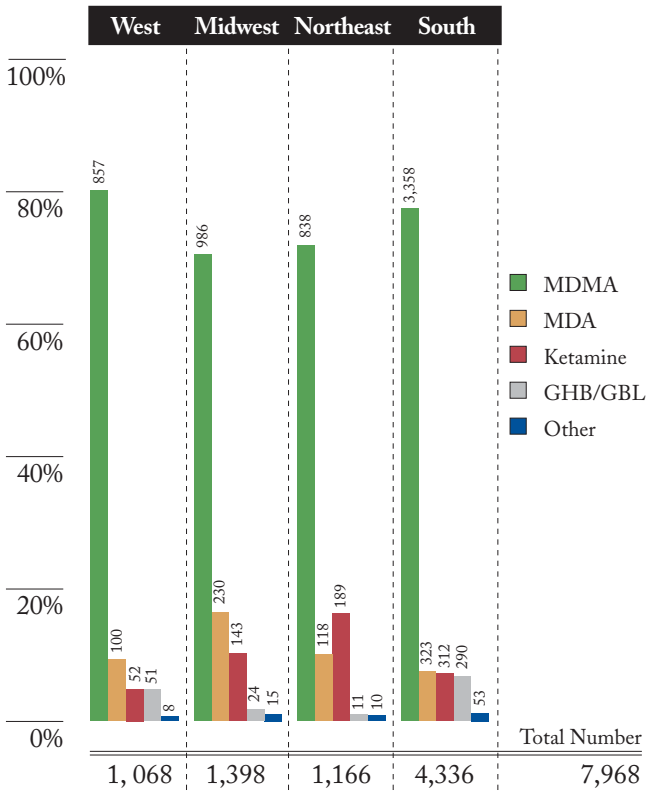


Table 2.3 CLUB DRUGS
Number and percentage of total identified club drugs, 2003.

Club Drug	Number	Percent
MDMA	6,039	75.80%
MDA	771	9.67%
Ketamine	696	8.73%
GHB/GBL	376	4.72%
MDEA	42	0.52%
1-Benzylpiperazine (BZP)	14	0.18%
5-Methoxy-N,N-Diisopropyltryptamine (5-MeO-DIPT)	14	0.18%
α-Methyltryptamine (AMT)	7	0.09%
1-(3-trifluoromethylphenyl)-piperazine (TFMPP)	6	0.07%
PMA	3	0.04%
Total Club Drugs	7,968	100.00%

GHB/GBL = gamma-hydroxybutyrate or gamma-butyrolactone
MDEA = methylenedioxyethylamphetamine
PMA = p-methoxyamphetamine

[2] National Drug Intelligence Center (NDIC), 2003. National Drug Threat Assessment 2003.

[3] Drug Abuse Warning Network (DAWN), 2003. The DAWN Report: Narcotic Analgesics. Substance Abuse and Mental Health Services Administration.

2.4 Anabolic Steroids

Anabolic steroids are medically prescribed for conditions such as breast cancer, anemia, testicular failure, and impotence. Because of their effects on muscle development, anabolic steroids are commonly abused by athletes and bodybuilders as a means for increasing strength and performance. While some anabolic steroids in the illicit market are diverted from legitimate U.S. markets, the majority are smuggled in from other countries.

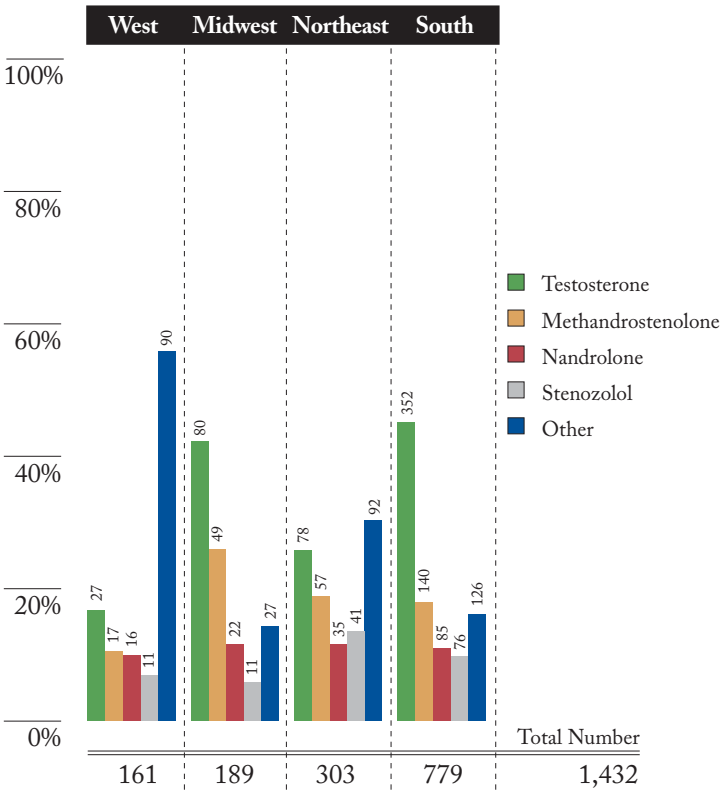
During 2003, 15 different anabolic steroids were reported in NFLIS, accounting for a total of 1,432 items (Table 2.4). The most commonly identified anabolic steroid was testosterone (38%), followed by methandrostenolone (18%), nandrolone (11%), and stenozolol (10%). Across census regions, the highest relative percentages of testosterone were reported in the South (45%) and the Midwest (42%) (Figure 2.4). More than a quarter of steroids reported in the Midwest were identified as methandrostenolone.

Table 2.4 ANABOLIC STEROIDS
Number and percentage of identified anabolic steroids, 2003.

Steroids	Number	Percent
Testosterone	537	37.50%
Methandrostenolone	263	18.37%
Nandrolone	158	11.04%
Anabolic steroids (not specified)	144	10.03%
Stenozolol	139	9.71%
Boldenone	66	4.61%
Oxymetholone	53	3.70%
Oxandrolone	24	1.68%
Fluoxymesterone	13	0.91%
Mesterolone	13	0.91%
Methyltestosterone	11	0.77%
Methenolone	7	0.49%
Androstene dione*	2	0.14%
Clostebol	1	0.07%
Methandriol	1	0.07%
Total Anabolic Steroids	1,432	100.00%

**Non-controlled anabolic steroid.*

Figure 2.4 Distribution of anabolic steroids within region, 2003.



Message From DEA – Anabolic Steriod Control Act of 2004

During the last decade, a large number of products purporting to contain anabolic steroids have appeared within the dietary supplements market. The potential health risks associated with the use of these steroids has caused growing concern among numerous international, national, and local sports and health care professional organizations. These products are sold over the Internet, via muscle-building magazines, and in health food stores nationwide.

In 1997, metabolic steroid precursors were first brought to the supplement market. These steroids convert in the body to other substances that mainly or partially account for the effects produced. An example is androstenedione, known as "Andro."

In 1999, supplement products began to appear with intrinsically active steroids. These substances, such as Δ1-dihydrotestosterone, currently found in many supplement preparations and popularly known as "1-testosterone," are active on their own, without first requiring enzymatic conversion in the body.

Recently, several so-called "designer" steroids have been detected in athletes. They were made to be given to athletes with the anticipation that their use would not be detected by sports testing laboratories. They include norbolethone and tetrahydrogestrinone, more commonly referred to as "THG." This latter steroid had never been synthesized and examined for pharmacological effects but recently has been detected in a number of top-level U.S. athletes.

The Anabolic Steroid Control Act of 2004, pending final passage by the U.S. Congress, is intended to address some of the regulatory issues that have arisen as a result of the emergence of both designer steroids and steroids found in dietary supplements.

Fourteen years after the 1990 Anabolic Steroid Control Act added 22 steroids to Schedule III of the Controlled Substances Act (CSA), the 2004 Anabolic Steroid Control Act amends the CSA to (1) remove the requirement to prove that a new steroid promotes muscle growth in order to be classified as a Schedule III anabolic steroid, (2) include ethers of Schedule III anabolic steroids as Schedule III substances as well, and (3) add to Schedule III 29 additional anabolic steroids.

A critical weakness of the 1990 steroid law that the 2004 Act seeks to rectify is the classification criteria for evaluating new steroids. These criteria include the stipulation that the new steroid be chemically and pharmacologically related to testosterone, produce muscle growth, and cannot be an estrogen, progestin, or corticosteroid. Particularly problematic is proving that new steroids promote muscle growth. Studies to evaluate the effects of steroids on muscle growth are both expensive and time-consuming to conduct, impeding timely regulatory evaluation and oversight of steroids in the supplement market.

Among the proposed 29 additional newly scheduled steroids included in the pending legislation, there are 16 metabolic precursors and 13 intrinsically active steroids. This includes 20 steroids purported to be in dietary supplements, 2 designer steroids, and 7 other steroids generally recognized as anabolic steroids. A number of steroids that have most recently emerged in the supplement market do not appear in the list of new steroids to be automatically scheduled under the new legislation. These steroids will subsequently have to be evaluated for classification as Schedule III anabolic steroids.

2.5 STIMULANTS

Stimulants are a category of drugs dominated by methamphetamine, a highly addictive central nervous system stimulant that can be injected, smoked, snorted, or ingested orally. Methamphetamine is the most prevalent synthetic drug clandestinely produced in the United States and can be easily manufactured using commonly available materials. According to the National Survey on Drug Use and Health,[4] more than 12 million people in the U.S. reported trying methamphetamine at least once in their lifetime. Areas with the largest methamphetamine problems are in the West and Midwest, although trafficking and abuse has become increasingly more common in the South.

A total of 149,189 stimulants were identified in NFLIS during 2003, accounting for about 14% of all items reported (Table 2.5). The vast majority of stimulants (97%) were identified as methamphetamine, accounting for 144,236 items. An additional 840 items were identified as ephedrine, a precursor chemical used to manufacture methamphetamine. Among other stimulants, 2,171 items were identified as amphetamine and 913 items as methylphenidate (e.g., Ritalin).

Methamphetamine accounted for more than 9 in 10 stimulants in every region except the Northeast (Figure 2.5). Methamphetamine represented 99% of the stimulants reported in the West, 95% in the Midwest, and 93% in the South. In the Northeast, 50% of stimulants were reported as methamphetamine, 21% as amphetamine, and 16% as methylphenidate.

Figure 2.5 Distribution of stimulants within region, 2003.

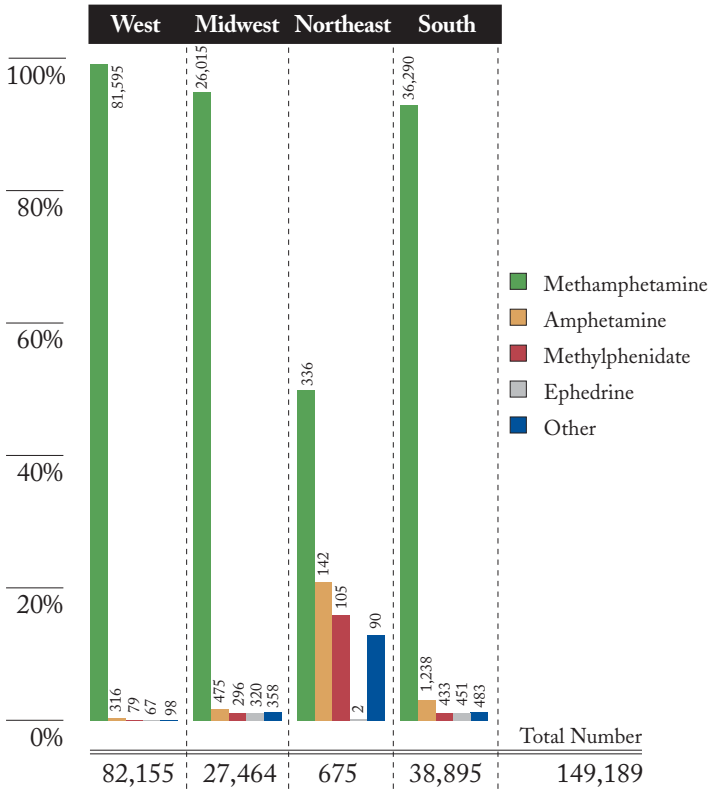


Table 2.5 STIMULANTS
Number and percentage of total identified stimulants, 2003.

Stimulants	Number	Percent
Methamphetamine	144,236	96.68%
Amphetamine	2,171	1.46%
Methylphenidate	913	0.61%
Ephedrine	840	0.56%
Caffeine*	427	0.29%
Phentermine	194	0.13%
Fluoxetine	102	0.07%
Cathinone	81	0.05%
Benzphetamine	65	0.04%
Phendimetrazine	32	0.02%
Fenfluramine	24	0.02%
Methcathinone	19	0.01%
Diethylpropion	18	0.01%
Pemoline	12	0.01%
Phenylpropanolamine	12	0.01%
Modafinil	11	0.01%
N,N-Dimethylamphetamine	10	0.01%
Cathine	9	0.01%
Propylhexedrine	7	0.00%
Clobenzorex	4	0.00%
Mefenorex	1	0.00%
Phenmetrazine	1	0.00%
Total Stimulants	149,189	100.00%

**Non-controlled stimulant.*

[4] Results from the National Survey on Drug Use and Health: National Findings, 2003. Substance Abuse and Mental Health Services Administration.

Section 3

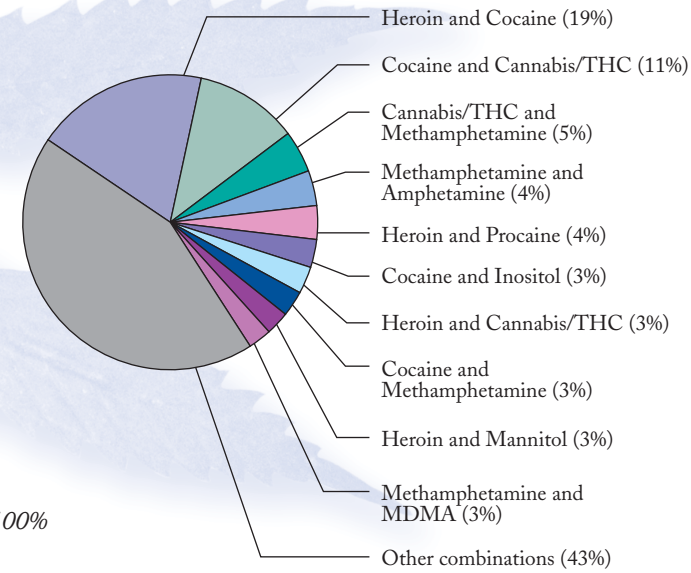
DRUG COMBINATIONS

An important function of NFLIS is the system's ability to provide information on drug combinations, which are identified when multiple substances are reported within a single drug item. These combinations reported in NFLIS include mixtures of substances as well as separately packaged substances within the same item or exhibit.

Mixing substances or taking multiple drugs simultaneously is sometimes desirable among drug users, as the use of different drugs can elicit complementary effects. For example, a primary reason given for "speedballing," which refers to the combined use of heroin and cocaine, is the enhanced euphoric effect that cocaine contributes to heroin. However, taking multiple drugs concurrently can exacerbate already serious health consequences.

During 2003, 10,006 items identified in NFLIS, about 1% of all reported items, contained two or more substances. The most common combinations in 2003—heroin/cocaine (19%), cocaine/cannabis (11%), cannabis/methamphetamine (5%), and methamphetamine/amphetamine (4%)—accounted for nearly half of all combinations reported.

Figure 3.1 Distribution of drug combinations, 2003.



Numbers may not sum to 100% due to rounding.

Drug combinations reported in STRIDE, 2003

A total of 21,531 drug combinations were reported in STRIDE during 2003; they represented 39% of all drugs reported. STRIDE collects results of drug evidence analyzed at the eight DEA laboratories across the country. The most common combination identified was methamphetamine/dimethylsulfone, which accounted for one in five of all combinations reported. Many of the other most frequently reported combinations were excipients used to dilute or adulterate either cocaine or heroin. These included cocaine/procaine (5%), heroin/procaine (4%), cocaine/caffeine (4%), heroin/quinine (3%), heroin/caffeine (3%), heroin/lidocaine (3%), and cocaine/sodium bicarbonate (3%). In addition to dimethylsulfone, the most common substances identified in methamphetamine-related combinations were pseudoephedrine (4%), MDMA (2%), and amphetamine (1%).

3.1 Cocaine Combinations

Cocaine, including powder and crack cocaine, was present in 43% of drug combinations reported during 2003 (Table 3.1). The most common combination contained cocaine and heroin (19%) which is often referred to as a "speedball." Cocaine/cannabis represented 11% of all combinations, and cocaine/methamphetamine (e.g., "Zoom") about 3%. Many of the other cocaine-related combinations included excipients used to adulterate or dilute cocaine. These included non-controlled substances such as inositol, procaine, boric acid, lactose, caffeine, lidocaine, and benzocaine.

3.2 Heroin Combinations

Heroin was present in 34% of drug combinations reported in 2003, a total of 3,388 items (Table 3.2). Over 18% of all combinations were reported as heroin/cocaine. Among the other substances combined with heroin, many were excipients designed to dilute or adulterate heroin. The most commonly reported excipients were procaine and mannitol.

3.3 Methamphetamine Combinations

Methamphetamine was present in about 20% of drug combinations, a total of 1,956 items (Table 3.3). Methamphetamine/cannabis and methamphetamine/amphetamine were the most commonly reported combinations. MDMA was reported in combination with methamphetamine in about 3% of drug combinations (255 items), up from 82 such items reported in 2002.

Dimethylsulfone is a diluent typically used by Mexican trafficking organizations to cut methamphetamine. There were 222 items containing methamphetamine/dimethylsulfone. Methamphetamine combinations that include pseudoephedrine, phosphorus, or ephedrine may reflect impurities resulting from a clandestine manufacturing process.

Table 3.1 COCAINE COMBINATIONS

Total items identified as cocaine combinations, 2003.

Substance One	Substance Two	Number	Percent
Cocaine	Heroin	1,890	18.89%
Cocaine	Cannabis/THC	1,132	11.31%
Cocaine	Inositol	307	3.07%
Cocaine	Methamphetamine	280	2.80%
Cocaine	Procaine	146	1.46%
Cocaine	Boric Acid	104	1.04%
Cocaine	Lactose	80	0.80%
Cocaine	Caffeine	61	0.61%
Cocaine	Lidocaine	51	0.51%
Cocaine	Benzocaine	26	0.26%
Other cocaine combinations		201	2.01%
Total Cocaine Combinations		4,278	42.76%
All Combinations		10,006	

Table 3.2 HEROIN COMBINATIONS

Total items identified as heroin combinations, 2003.

Substance One	Substance Two	Number	Percent
Heroin	Cocaine	1,890	18.89%
Heroin	Procaine	368	3.67%
Heroin	Cannabis/THC	296	2.96%
Heroin	Mannitol	259	2.59%
Heroin	Monoacetylmorphine	135	1.35%
Heroin	Lidocaine	49	0.49%
Heroin	Caffeine	47	0.47%
Heroin	Methamphetamine	43	0.43%
Heroin	Inositol	40	0.40%
Heroin	Acetaminophen	35	0.35%
Other heroin combinations		226	2.26%
Total Heroin Combinations		3,388	33.86%
All Combinations		10,006	

Table 3.3 METHAMPHETAMINE COMBINATIONS

Total items identified as methamphetamine combinations, 2003.

Substance One	Substance Two	Number	Percent
Methamphetamine	Cannabis/THC	460	4.60%
Methamphetamine	Amphetamine	384	3.84%
Methamphetamine	Cocaine	280	2.80%
Methamphetamine	MDMA	255	2.55%
Methamphetamine	Dimethylsulfone	222	2.22%
Methamphetamine	Pseudoephedrine	88	0.88%
Methamphetamine	Ketamine	46	0.46%
Methamphetamine	Heroin	43	0.43%
Methamphetamine	MDA	37	0.37%
Methamphetamine	Phosphorus	35	0.35%
Other methamphetamine combinations		106	1.06%
Total Methamphetamine Combinations		1,956	19.55%
All Combinations		10,006	

Numbers may not sum to total due to rounding.

Section 4

DRUG PURITY

NFLIS is unique from many data sources in its ability to monitor and analyze drug purity data. While most state and local laboratories perform quantitative (or purity) analyses, most do so only under special circumstances, such as a special request from law enforcement or the prosecutor. A smaller number of labs 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. If the pure form of the drug exceeds a specified threshold, then the defendant can be charged with a more serious offense.

Drug purity is an important characteristic that can be used to monitor drug markets and drug availability. Changes in drug purity can also have serious public health consequences, as increases in heroin purity in recent years have been associated with increases in heroin-related overdoses. The ability of NFLIS to monitor drug purity data reported by forensic laboratories is strengthened by two factors. 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.

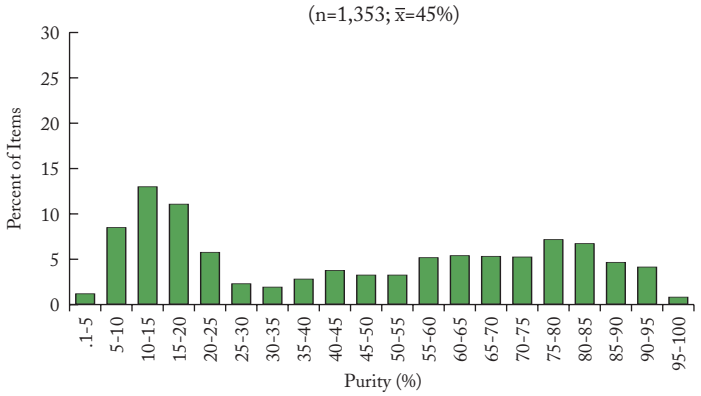
It is important to consider the laboratory policies for conducting quantitative analysis when reviewing the purity data, as these factors can impact the results presented. For example, the Illinois State Police laboratories typically limit quantitative analysis to larger seizures (e.g., powders over 1 kilogram). Other laboratories such as the Baltimore City Police Department Crime Laboratory perform quantitative analyses on a more routine basis, including smaller cocaine and heroin seizures.

4.1 Heroin Purity

This section describes heroin purity analyses reported by the Baltimore City Police Department Crime Laboratory and Massachusetts Department of State Police Crime Laboratory. The Baltimore City lab performs quantitative analysis on white powders greater than 1/4 ounce or if more than 30 dosage units are present in a case, especially for heroin seizures. The Massachusetts State Police lab expresses purity in terms of free base and has a policy of routinely performing quantitative analyses for heroin and cocaine submissions. The average purity of heroin reported by both of these labs has declined since 2001. This decrease in heroin purity was also reflected in STRIDE, for which the average purity of heroin exhibits was 42% in 2003, compared to 49% in 2002 and 48% in 2001.

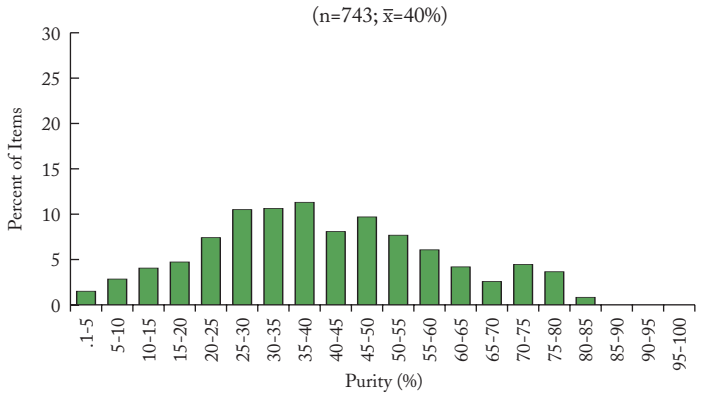
The Baltimore City Police Department reported heroin purity results for 1,353 drug items in 2003 (Figure 4.1). The average purity of heroin was 45%, down from 49% in both 2001 and 2002. There is a peak of heroin items between 5% and 10% and another cluster of items from 70% to 90% in 2003, which may reflect two grades of heroin available in Baltimore.

Figure 4.1 Heroin purity, 2003: Baltimore City Police Department Crime Laboratory.



The Massachusetts State Police reported heroin purity results for 743 items in 2003 (Figure 4.2). The average purity of heroin was 40%, a decline from an average of 47% in both 2001 and 2002. The overall distribution of heroin in 2003 was fairly similar to past years, although there was a reduction of higher-purity heroin items compared to 2001 and 2002.

Figure 4.2 Heroin purity, 2003: Massachusetts State Police Crime Laboratory.

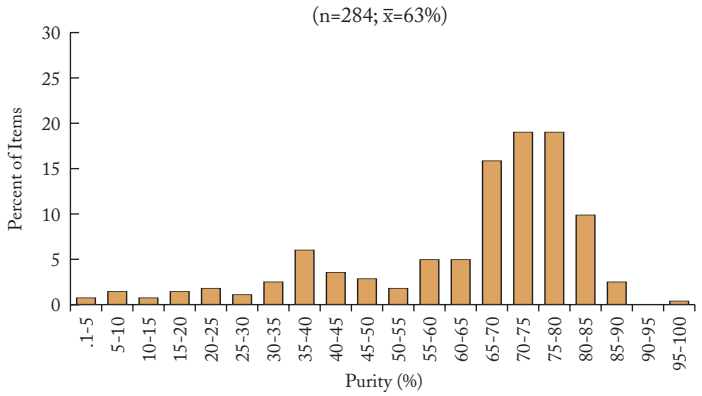


4.2 Cocaine Purity

Cocaine purity is presented for five NFLIS laboratories—the Texas Department of Public Safety (DPS), the Arkansas State Crime Laboratory, the Illinois State Police Division of Forensic Services–Chicago Laboratory, the Baltimore City Police Department Laboratory, and the Massachusetts State Police Crime Laboratory. In contrast to the declines in heroin purity, each of these labs reported increases in cocaine purity between 2001 and 2003. Cocaine purity reported in STRIDE also increased during this period, from an average of 58% in 2001 to 61% in 2002 and 66% in 2003.

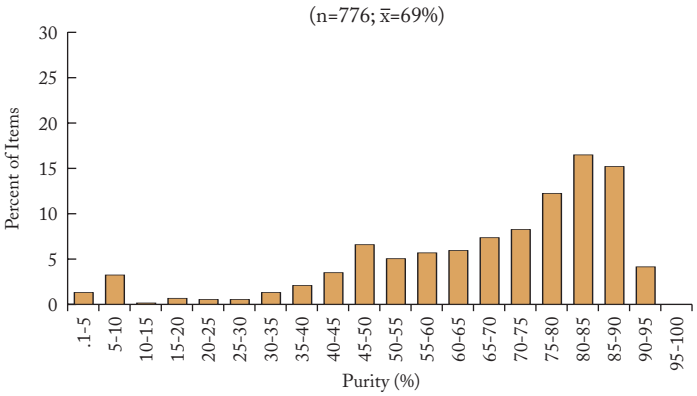
The Texas DPS laboratory system, which typically conducts quantitative analyses for powders of 200 grams or more, reported purity data for 284 cocaine items during 2003 (Figure 4.3). The average cocaine purity for 2003 was 63%, up from 60% in 2002 and 56% in 2001. Similar to these past years, there is a pronounced peak of items between 65% and 80%.

Figure 4.3 Cocaine purity, 2003: Texas DPS.



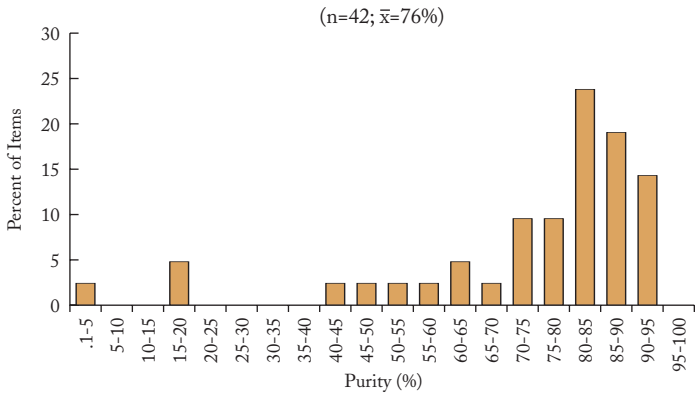
The Arkansas State Crime Laboratory reported cocaine purity for 776 items in 2003 (Figure 4.4). The Arkansas laboratory typically conducts quantitative analysis if a defendant is charged with intent to distribute. The average cocaine purity reported in Arkansas was 69% in 2003, compared to 59% in 2002. The 2003 purity data show a sharp peak of cocaine items between 75% and 90%.

Figure 4.4 Cocaine purity, 2003: Arkansas State Crime Laboratory.



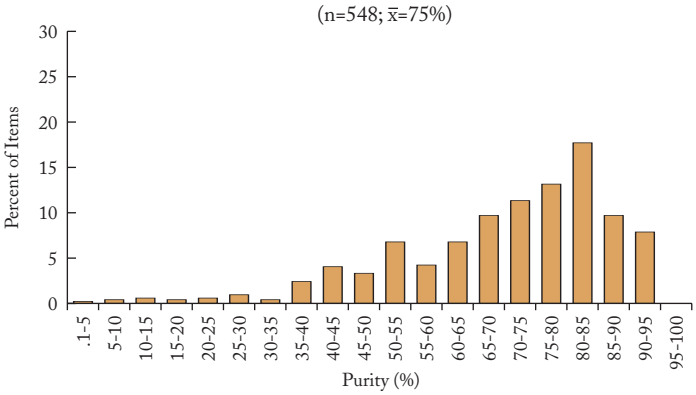
The Illinois State Police–Chicago Laboratory, which typically restricts purity analysis to cocaine cases over 1 kilogram, reported cocaine purity for 42 items in 2003 (Figure 4.5). The average cocaine purity reported by the Chicago lab was 76% in 2003, up from 67% in 2002 and 69% in 2001. There is a pronounced peak of cocaine items between 80% and 85%.

Figure 4.5 Cocaine purity, 2003: Illinois State Police–Chicago Laboratory.



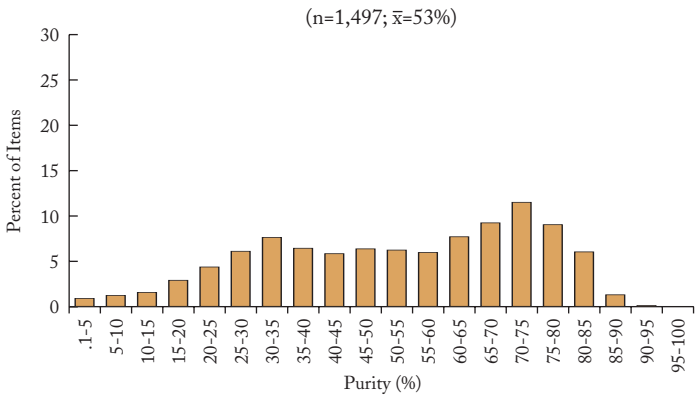
The Baltimore City Police Department Crime Laboratory reported cocaine purity for 548 items in 2003 (Figure 4.6). The average cocaine purity reported during 2003 was 75%, an increased from 67% in 2002 and 61% in 2001. There were a larger number of cocaine items in the higher purity ranges in 2003, with a peak of items between 75% and 90%.

Figure 4.6 Cocaine purity, 2003: Baltimore City Police Department Crime Laboratory.



The Massachusetts State Police Crime Laboratory reported cocaine purity for 1,497 items in 2003 (Figure 4.7). This lab routinely performs quantitative analysis on cocaine submissions, expressing purity in terms of free base. The average cocaine purity reported for 2003 was 53%, compared to 48% in 2002 and 53% in 2001.

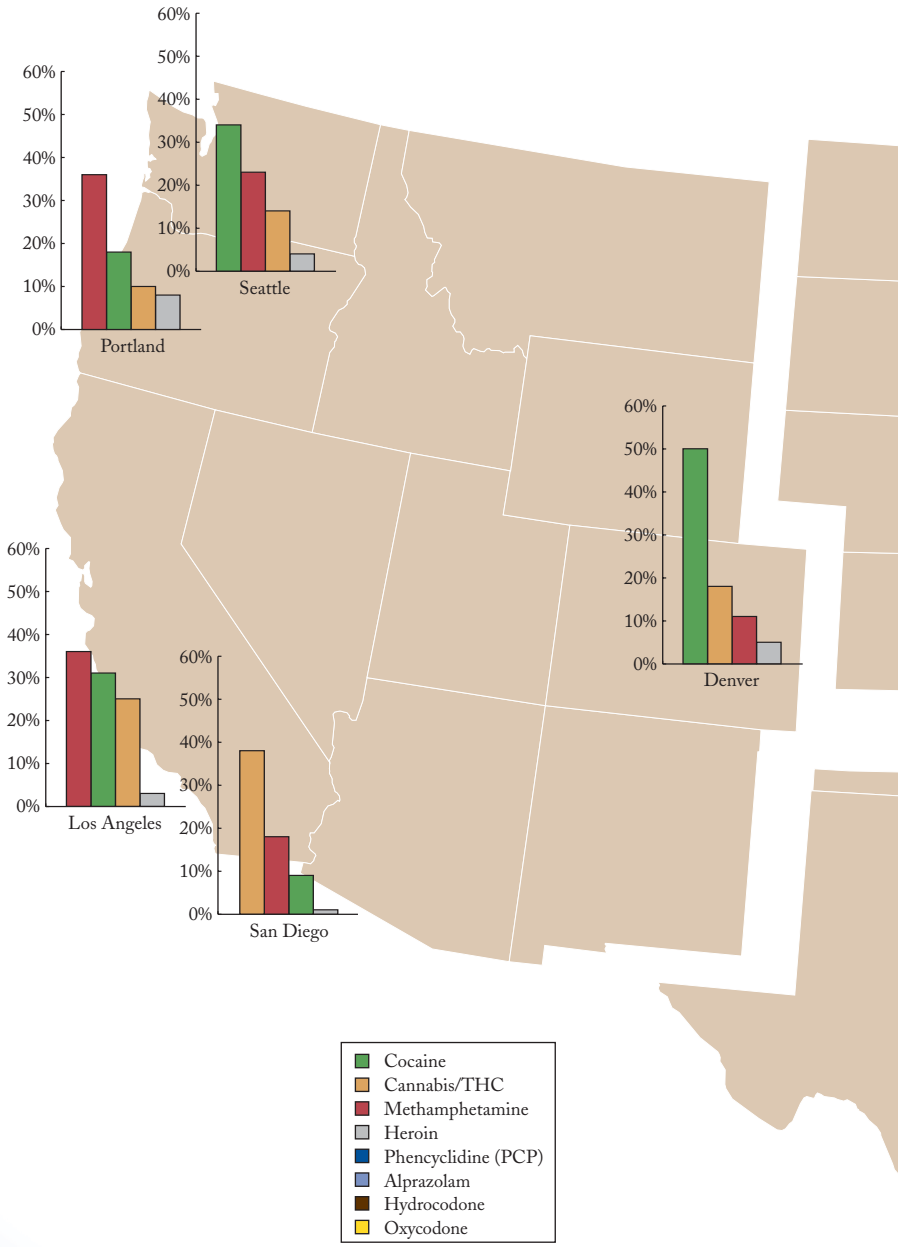
Figure 4.7 Cocaine purity, 2003: Massachusetts State Police Crime Laboratory.



Section 5

DRUGS IDENTIFIED

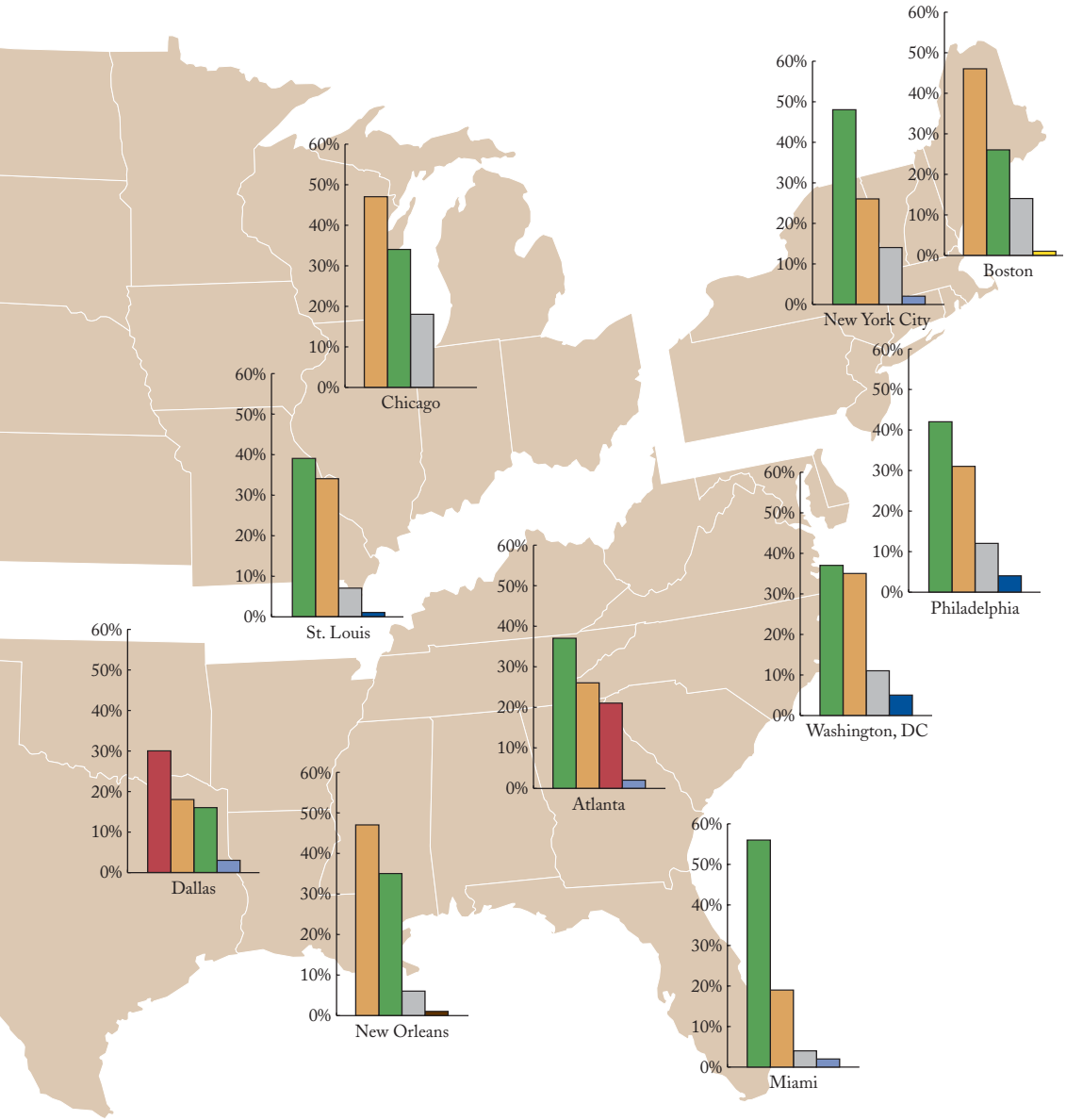
NFLIS can be used to monitor and analyze drugs reported by forensic laboratories across the country, including large U.S. cities. The drug analysis results presented in this section were reported during 2003 by NFLIS laboratories in cities such as Portland, Los Angeles, San Diego, Denver, Dallas, St. Louis, Chicago, Atlanta, Miami, Philadelphia, and New York City.



The types of drugs reported vary across regions of the country. The following results highlight geographic differences in the types of drugs identified and reported by forensic laboratories, such as the higher levels of cocaine on the East coast or methamphetamine on the West coast. This analysis presents 2003 data for the four most common drugs reported by NFLIS laboratories in selected locations.

Among cities in this analysis, the highest relative percentages of cocaine were reported along the East coast in locations such as Miami (56%), New York City (48%), Philadelphia (42%),

BY LOCATION



and Atlanta (37%). Nationally, 31% of all drugs were identified as cocaine. The highest percentages of methamphetamine were reported in western cities such as Los Angeles (36%) and Portland (36%), followed by Dallas (30%) and Atlanta (26%). For the nation, 12% of drugs were identified as methamphetamine. High percentages of heroin were reported in northeastern cities such as New York City (14%) and Philadelphia (12%), although Chicago (18%) and Portland (10%) also reported heroin at a rate higher than the national average of 6%.

Lab locations include:

Atlanta (Georgia Bureau of Investigation – Decatur Laboratory)

Boston (Massachusetts Department of Public Health Laboratory – Boston Laboratory)

Chicago (Illinois State Police – Chicago Laboratory)

Dallas (Texas Department of Public Safety – Garland Laboratory)

Denver (Denver Police Department Crime Laboratory)

Los Angeles (Los Angeles Police Department Scientific Investigation Division, and the Los Angeles County Sheriff's Department Scientific Services Bureau)

Miami (Miami-Dade Police Department Crime Laboratory)

New Orleans (New Orleans Police Department Crime Laboratory)

New York City (New York Police Department Crime Laboratory)

Philadelphia (Philadelphia Police Department Forensic Science Laboratory)

Portland (Washington State Patrol – Portland Laboratory)

Seattle (Washington State Patrol Crime Laboratory – Seattle Laboratory)

St. Louis (St. Louis Police Department Crime Laboratory)

San Diego (San Diego Police Department Crime Laboratory)

Washington, DC (Drug Enforcement Administration – Mid-Atlantic Laboratory)

Appendix A

NFLIS BENEFITS & 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 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 level
- 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
- supplementing information from other drug sources including DEA's STRIDE, the Drug Abuse Warning Network (DAWN), the National Survey on Drug Use and Health (NSDUH), and the Monitoring the Future (MTF) survey.

NFLIS is an opportunity for state and local labs to participate in a useful and high-visibility initiative. Participating laboratories regularly receive reports that summarize data national and regional data. In addition, the Interactive Data Site (IDS) is a secure website 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 inter-agency exchange forum that will allow the DEA, forensic laboratories, and other member 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 only includes data from state and local forensic laboratories. Drug analyses conducted by federal laboratories are not included, although data from STRIDE, which includes data from DEA's laboratories across the country, have recently been added to the NFLIS database. The STRIDE data are shown separately in this report. Efforts are under way to enroll additional federal laboratories during 2004.
- 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 2–6, 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 can affect the types of drugs submitted 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.

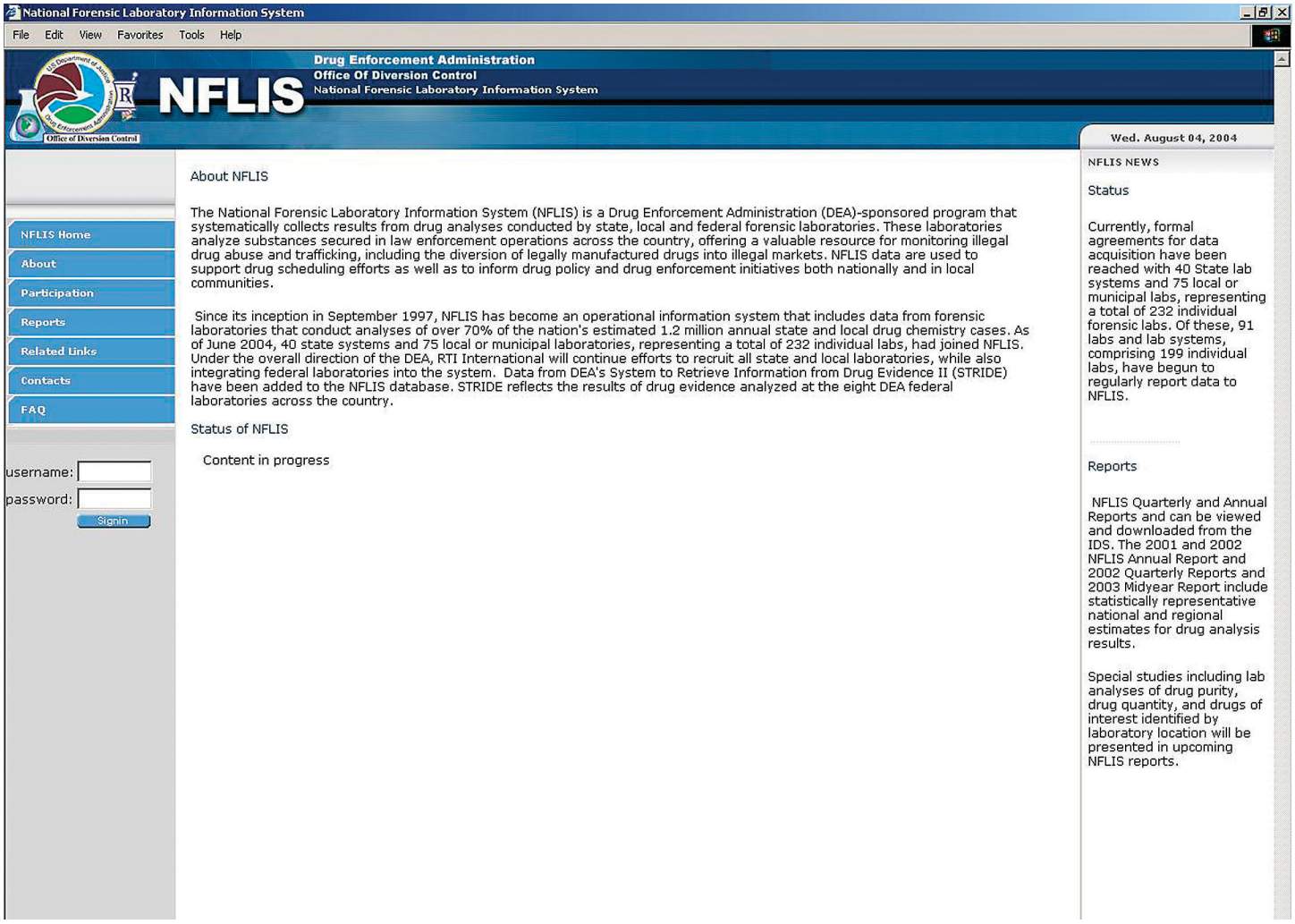
NFLIS INTERACTIVE DATA SITE

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

Currently, the IDS operates as a secure website located on a restricted server that is accessible through a direct dial-in connection using a toll-free telephone number. To access the IDS, each NFLIS laboratory is assigned a lab-specific user name and password. The IDS provides the capacity to query the data using standardized queries that generate customized reports. Laboratory staff can specify the time period, region, type of lab, and drug type in order to customize these queries. The DEA's STRIDE data have also be added to the IDS, a critical step toward integrating federal laboratories into NFLIS.

IDS Enhancements

A number of enhancements to the IDS are currently under way, including providing World Wide Web access to the IDS. This will improve the system's performance for labs with high-speed/broadband web access. Because the website will be available to participating labs and the general public, different access levels will be assigned to satisfy the needs of different users. Another enhancement for 2004 is the addition of an electronic bulletin board that can be used to post reports, technical notices, and other materials relevant to the forensic laboratory community. This is intended to promote communication between NFLIS laboratories, DEA, other federal drug control agencies, and NFLIS project staff. Upon implementation of the electronic bulletin board, participating labs are encouraged to submit suggestions for improvement by using the feedback page in the IDS, by sending an e-mail to NFLIS@rti.org, or by calling Al Bethke at (919) 485-7737.



Appendix C

NATIONAL ESTIMATES METHODOLOGY

Since 2001, NFLIS reports have included national and regional estimates for the number of drugs items and drug cases analyzed by state and local forensic laboratories in the United States. This section 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 labs that routinely perform drug analyses. A representative probability proportional to size (PPS) 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 D for a list of sampled and nonsampled NFLIS labs). Only the data for those laboratories that reported drug analysis data for 6 or more months during 2003 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 labs during 2003.

A separate item-level and case-level weight was computed for each sample laboratory or laboratory system using caseload information obtained from an updated lab survey administered in 2002. These survey results allowed for the case- and item-level weights to be post-stratified 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 labs did not report data for every month during 2003. 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 labs reporting a full year of data.

While most forensic laboratories report case-level analyses in a consistent manner, a small number of labs do not produce item-level counts that are comparable to those submitted by the vast majority of labs. 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." Since the case-level counts across labs are comparable, they were used to develop item-level counts for the few labs that count items differently. For those labs, it was assumed that drug-specific ratios of cases to items should be similar to labs 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 2003 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. All statistical tests were performed at the 95% confidence level ($\alpha = .05$), thus the probability of declaring a significant result when the result was not significant was 5%. In other words, if a the first reported quarter was found to be statistically different from the last reported quarter, the probability of observing the same or larger difference (under the assumption that no difference existed) was less than 5%.

PARTICIPATING AND REPORTING LABORATORIES

State	Lab Type	Lab Name	Reporting
AK	State	Alaska Department of Public Safety (Anchorage)	
AL	State	Alabama Department of Forensic Sciences (9 sites)*	X
AR	State	Arkansas State Crime Laboratory (Little Rock)*	X
AZ	Local	Scottsdale PD	
	Local	Phoenix PD	
	Local	Mesa PD	
CA	State	California Department of Justice (10 sites)*	X
	Local	Fresno County Sheriff's Forensic Lab (Fresno)	X
	Local	Kern County District Attorney's Office (Bakersfield)	X
	Local	Los Angeles Police Department (2 sites)	X
	Local	Los Angeles County Sheriff's Department (4 sites)*	X
	Local	Sacramento County District Attorney's Office (Sacramento)*	X
	Local	San Bernardino Sheriff's Office (2 sites)*	X
	Local	San Diego Police Department (San Diego)*	X
	Local	San Francisco Police Department (San Francisco)*	
	Local	San Mateo County Sheriff's Office (San Mateo)	X
	Local	Santa Clara District Attorney's Office (San Jose)	X
	Local	Ventura County Sheriff's Department (Ventura)	X
CO	Local	Aurora Police Department (Aurora)	X
	Local	Denver Police Department (Denver)*	X
	Local	Grand Junction Police Department (Grand Junction)	
	Local	Jefferson County Sheriff's Office (Golden)	
CT	State	Connecticut Department of Public Safety (Hartford)*	X
DE	State	DE State System	
FL	State	Florida Department of Law Enforcement (8 sites)*	X
	Local	Broward County Sheriff's Office (Ft. Lauderdale)*	X
	Local	Miami-Dade Police Department (Miami)*	X
	Local	Regional Crime Laboratory at Indian River Community College (Ft. Pierce)	X
	Local	Pinellas County Forensic Laboratory (Largo)	X
	Local	Sarasota County Sheriff's Office (Sarasota)	X
GA	State	Georgia State Bureau of Investigation (7 sites)*	X
HI	Local	Honolulu Police Department (Honolulu)	X
IA	State	Iowa Division of Criminal Investigation (Des Moines)*	X
ID	State	Idaho State Police (3 sites)*	X
IL	State	Illinois State Police (8 sites)*	X
	Local	DuPage County Sheriff's Office (Wheaton)	X
	Local	Northern Illinois Police Crime Lab (Chicago)*	X
IN	State	Indiana State Police Laboratory (4 sites)*	X
	Local	Indianapolis-Marion County Forensic Lab (Indianapolis)	X
KS	State	Kansas Bureau of Investigation (3 sites)	X
	Local	Johnson County Sheriff's Office (Mission)	X
	Local	Sedgwick County Regional Forensic Science Center (Witchita)	X
KY	State	Kentucky State Police (6 sites)*	X
LA	State	Louisiana State Police Crime Laboratory (Baton Rouge)*	X
	Local	Acadiana Criminalistics Laboratory (New Iberia)*	X
	Local	Jefferson Parish Sheriff's Office Crime Lab (Metairie)	X
	Local	New Orleans Police Department Crime Lab (New Orleans)*	X
	Local	North Louisiana Criminalistics Lab System (3 sites)	X
MA	State	Massachusetts Department of Public Health (2 sites)*	X
	State	Massachusetts Department of State Police (Sudbury)*	X
	Local	University of Massachusetts Medical Center (Worchester)	X
MD	Local	Anne Arundel County Police Department (Millersville)*	X
	Local	Baltimore City Police Department (Baltimore)*	X
	Local	Baltimore County Police Department (Towson)	X
ME	State	Maine Department of Human Services (Augusta)*	X
MI	State	Michigan State Police (7 sites)*	X
	Local	Detroit Police Department (Detroit)*	X
MN	State	Minnesota Bureau of Criminal Apprehension (2 sites)	X
	Local	St. Paul Police Department (St. Paul)	
MO	State	Missouri State Highway Patrol (6 sites)*	X
	Local	Independence Police Department Crime Lab (Independence)	X
	Local	MSSU Regional Crime Lab (Joplin)	X
	Local	St. Louis Police Department (St. Louis)*	X
	Local	St. Louis County Crime Laboratory (Clayton)	X
	Local	St. Charles County Criminalistics Lab (St. Charles)	X
	Local	South East Missouri Regional Crime Lab (Cape Girardeau)*	
MS	State	Mississippi Department of Public Safety (4 sites)*	X
MT	State	Montana Forensic Science Division (Missoula)	X
NC	State	North Carolina State Bureau of Investigation (2 sites)*	X
	Local	Charlotte-Mecklenburg Police Department (Charlotte)	
NE	State	Nebraska State Patrol Criminalistics Lab (Lincoln)	
NJ	State	New Jersey State Police (4 sites)*	
	Local	Burlington County Forensic Lab (Mt. Holly)	X
	Local	Cape May County Prosecutor's Office (Cape May)	
	Local	Hudson County Procecutor's Office (Jersey City)	
	Local	Newark Police Department (Newark)	X
	Local	Ocean County Sheriff's Department (Toms River)	X
	Local	Union County Prosecutor's Office (Westfield)*	X
NM	State	New Mexico Department of Public Safety (Sante Fe)*	X
NV	Local	Las Vegas Police Department (Las Vegas)*	X
NY	State	New York State Police (4 sites)	
	Local	Erie County Central Police Services Lab (Buffalo)	X
	Local	Monroe County Department of Public Safety (Rochester)	
	Local	Niagara County Police Department (Lockport)	X
	Local	Nassau County Police Department (Mineola)*	X
	Local	New York Police Department Crime Laboratory**	X
	Local	Onondaga County Center for Forensic Sciences (Syracuse)*	X
	Local	Suffolk County Crime Laboratory (Hauppauge)	X
	Local	Yonkers Police Department Forensic Science Lab (Yonkers)	
OH	State	Ohio Bureau of Criminal Identification & Investigation (3 sites)	X
	State	Ohio State Highway Patrol (Columbus)*	X
	Local	Canton-Stark County Crime Lab (Canton)	X
	Local	Columbus Police Department (Columbus)	
	Local	Hamilton County Coroners Office (Cincinnati)*	X
	Local	Lake County Regional Forensic Lab (Painesville)*	X
	Local	Mansfield Police Department Crime Lab (Mansfield)	X
	Local	Miami Valley Regional Crime Lab (Dayton)*	X
	Local	Newark Police Department Forensic Services (Newark)	
OK	State	Oklahoma State Bureau of Investigation (5 sites)	
OR	State	Oregon State Police Forensic Services Division (8 sites)*	X
PA	Local	Allegheny County Coroner's Office (Pittsburgh)*	X
	Local	Philadelphia Police Department (Philadelphia)*	X
SC	State	South Carolina Law Enforcement Division (Columbia)*	X
	Local	Charleston Police Department (Charleston)	X
SD	Local	Rapid City Police Department (Rapid City)	X
TN	State	TBI System	
TX	State	Texas Dept. of Public Safety (13 sites)*	X
	Local	Austin Police Department Crime Laboratory (Austin)*	X
	Local	Bexar County Criminal Investigations Lab (San Antonio)*	
	Local	Harris County Medical Examiner's Office (Houston)	X
	Local	Pasadena Police Department (Pasadena)	X
UT	State	Utah State Crime Lab (4 sites)	X
VA	State	Virginia Division Forensic Science (4 sites)*	X
WA	State	Washington State Patrol (6 sites)*	X
WI	State	Wisconsin Department of Justice (3 sites)	X
WV	State	West Virginia State Police (South Charleston)	X
WY	State	Wyoming State Crime Laboratory (Cheyenne)	X

* Laboratory is part of our national sample.

** The New York City Crime lab is part of the national sample and currently reports summary data.

Acknowledgements

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