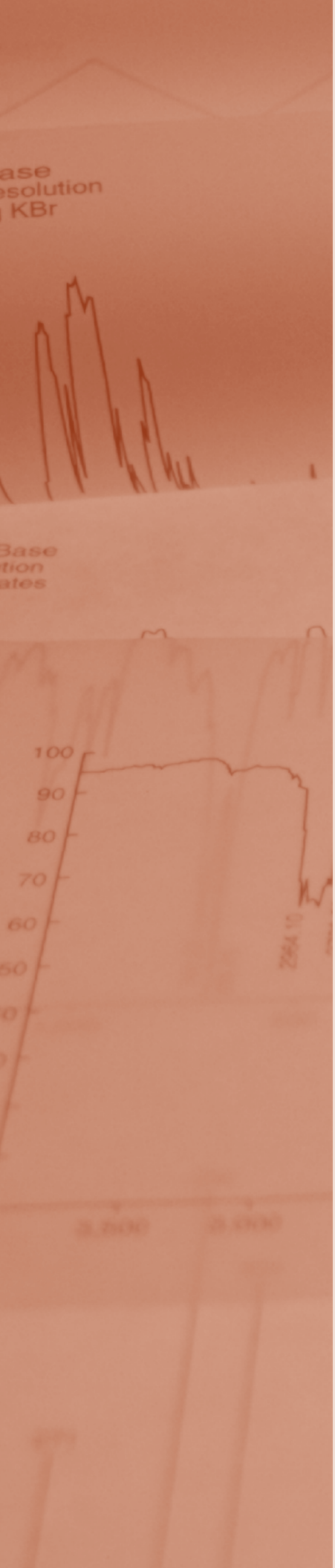
Drug Enforcement Administration

Office of Diversion Control

YEAR 2009 ANNUAL REPORT

NFLIS

NATIONAL FORENSIC LABORATORY INFORMATION SYSTEM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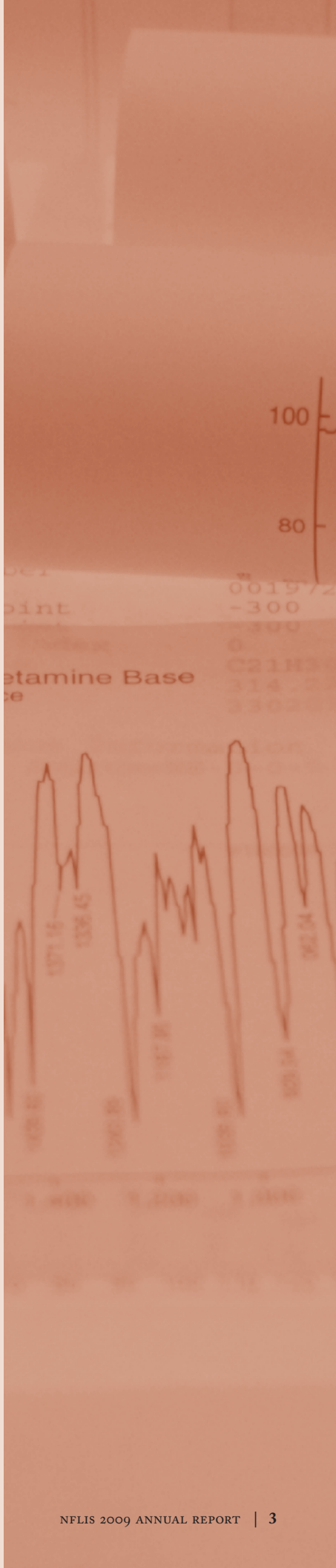

Foreword

The Drug Enforcement Administration (DEA) Office of Diversion Control is pleased to present the *National Forensic Laboratory Information System (NFLIS) Year 2009 Annual Report*. Through a partnership that includes 281 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 2009 Annual Report* presents national and regional findings on drug cases analyzed during the past year, including drug seizure information by location. The *NFLIS 2009 Annual Report* includes several key findings:

- State and local laboratories in the United States analyzed an estimated 1.74 million drug items in 2009. This represents about a 2% decrease when compared with the 1.77 million drug items analyzed in 2008. Cannabis/THC was the most frequently identified drug (590,791 items) in 2009, followed by cocaine (449,523 items), methamphetamine (134,891 items), and heroin (118,136 items).
- Nationally, reports of oxycodone, hydrocodone, alprazolam, clonazepam, and morphine experienced significant increases from 2001 through 2009. In this time period, reports more than tripled for oxycodone (from 13,004 to 47,098 items), hydrocodone (from 13,659 to 46,153 items), and morphine (from 2,103 to 7,362 items). During this time, alprazolam reports more than doubled, while reports of diazepam decreased significantly.
- Regionally, reports of oxycodone, hydrocodone, and morphine increased significantly in all U.S. Census regions from 2001 through 2009. Reports of alprazolam and clonazepam increased significantly in the Midwest, Northeast, and South. Reports of diazepam decreased significantly in the South.
- In 2009, almost three quarters of identified narcotic analgesics were oxycodone or hydrocodone. Alprazolam accounted for 60% of identified tranquilizers and depressants. Among identified hallucinogens, MDMA accounted for 70%.
- Reports of methamphetamine decreased significantly at the national level from 2001 through 2009, from 199,271 to 134,891 items.
- Cocaine reporting decreased significantly from 2001 through 2009 in the Midwest. Methamphetamine reporting significantly increased in the Northeast, but significantly decreased in the West during this time. From 2001 through 2009, reports of MDMA increased significantly in the Midwest and West, but decreased significantly in the Northeast.

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

DEA UPDATE

Synthetic Cannabinoids—Request for Information

Synthetic cannabinoids have become popular drugs of abuse. Law enforcement information suggests that these products are being smoked as an alternative to marijuana to evade detection via a drug screen. In the *NFLIS 2008 Annual Report,* DEA informed readers about Spice, a smokable herbal blend marketed as legal marijuana. Since that time, over 100 brand names of herbal blends have been identified and purported to contain synthetic cannabinoids. Products found to contain at least one synthetic cannabinoid include, but are not limited to, Blaze, Dream, Genie, Hard Core, K2, Magma, Serenity, Spice, Spike 99, Ultra Chronic, and Zohai.

There are several synthetic cannabinoids identified in the herbal blends, including, but not limited to, the following:

- **HU-210** [(6a*R*,10a*R*)-9-(hydroxymethyl)-6,6-dimethyl-3-(2-methyloctan-2-yl)-6a,7,10,10a-tetrahydrobenzo[c] chromen-1-ol]
- **HU-211** [(6a*S*,10a*S*)-9-(hydroxymethyl)-6,6-dimethyl-3-(2-methyloctan-2-yl)-6a,7,10,10a-tetrahydrobenzo[c] chromen-1-ol]
- **CP 47,497** [2-[(1*R*,3*S*)-3-hydroxycyclohexyl]-5-(2-methyloctan-2-yl)phenol)]
- **JWH-018** [1-Pentyl-3-(1-naphthoyl)indole]
- **JWH-073** [1-Butyl-3-(1-naphthoyl)indole]
- **JWH-081** [1-Pentyl-3-[1-(4-methoxy)naphthoyl]indole]
- **JWH-200** [1-[2-(4-Morpholinyl)ethyl]-3-(1-napthoyl) indole]
- **JWH-250** [1-Pentyl-3-(2-methoxyphenylacetyl)indole]

HU-210 is a potent psychoactive chemical that is structurally and pharmacologically similar to Δ9-tetrahydrocannabinol (Δ9-THC), the active ingredient of marijuana. It is a schedule I substance under the Controlled Substances Act (CSA).

HU-211 is the enantiomer of HU-210. The only distinguishing difference is the opposite orientation of two hydrogen atoms at positions 6a and 10a. Although it is categorized as a THC substance and structurally similar to Δ9-THC, HU-211 is believed to have no Δ9-THC-like activity in humans. HU-211 is currently not controlled under the CSA.

CP 47,497 (and its homologues), JWH-018, JWH-073, JWH-081, JWH-200, and JWH-250 are synthetic cannabinoid agonists without the classical cannabinoid chemical structure. They are used in scientific research as tools to study the cannabinoid system. Although these substances are likely to have similar effects in humans as Δ9-THC, CP 47,497 (and its homologues), JWH-018, JWH-073, JWH-081, JWH-200, and JWH-250 are not controlled under the CSA.

Currently, scientific information regarding the pharmacology and toxicology of these synthetic cannabinoids in humans is limited, and the few animal studies provide evidence of short- and long-term health effects. These synthetic powders are added to plant material in varying amounts and promoted as herbal products. Of concern to DEA, some manufacturers and distributors are producing and marketing products adulterated with these potentially dangerous psychoactive substances.

Users of synthetic cannabinoids report experiencing psychoactive effects lasting from 30 minutes to 2 hours. Research reports state that some of the synthetic cannabinoids may be more potent than cannabis. A case report suggested that these drugs are a possible trigger for cannabis-associated psychotic episodes. Several state and regional poison control centers indicate that emergency department personnel have inquired about patients' adverse reactions to substances purported to be synthetic cannabinoids. Emergency department patients are presenting as nonresponsive with tachycardia, hallucinations, vomiting, and elevated blood pressure.

Since the publication of the *NFLIS 2008 Annual Repor*t, Alabama, Arkansas, Georgia, Hawaii, Kansas, Kentucky, Louisiana, Missouri, and Tennessee have controlled these synthetic cannabinoids as schedule I substances. Legislation has been introduced in other states to control one or more synthetic cannabinoids as schedule I controlled substances. In addition, Canada, Chile, Russia, South Korea, and some European countries have enacted legislation to prohibit products that contain HU-210, CP 47,497 (and its homologues), JWH-018, or JWH-073.

The Drug & Chemical Evaluation Section (ODE) of the DEA Office of Diversion Control continues to gather information on abuse, diversion, and trafficking of synthetic cannabinoids and products containing these substances. ODE would appreciate receiving additional information related to federal, state, or local law enforcement encounters, drug identification, and abuse of synthetic cannabinoids.

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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 1.3 million annual state and local drug analysis cases. As of March 2010, NFLIS included 47 state systems, 94 local or municipal laboratories/laboratory systems, and 1 territorial laboratory, representing a total of 281 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 2009 Annual Report presents the results of drug cases analyzed by forensic laboratories between January 1, 2009, and December 31, 2009. Section 1 presents national and regional estimates for the 25 most frequently identified drugs, as well as national and regional trends from 2001 through 2009. National and regional estimates are based on the NFLIS national sample of laboratories (see Appendix A for the national estimates methodology and Appendix B for a list of NFLIS laboratories, including those in the national sample). Federal laboratory data reported in STRIDE are also presented. Section 2 presents results for major drug categories for all state and local laboratories that reported at least 6 months of data to NFLIS during 2009.

Section 3 describes heroin, cocaine, and methamphetamine purity analyses reported by state and local laboratories. Section 4 presents a Geographic Information System (GIS) analysis on drug seizures of alprazolam and clonazepam by state and by county for selected states for 2005 and 2009. Section 5 presents drugs reported for selected cities across the country. The benefits and limitations of NFLIS are presented in Appendix C. A key area of improvement to NFLIS includes ongoing enhancements to the NFLIS Data Query System (DQS), formerly the Interactive Data Site or IDS; Appendix D summarizes these DQS enhancement activities.


NORTHEAST
ME
Augusta
Waterbury
VT
NH
Sudbury
Boston
University of MA Medical Center, Worcester
Amherst
MA
Providence
RI
Hartford
CT
Suffolk County
Nassau County
New York City
Hudson County
Burlington County
Ocean County
Bucks County
Cape May
Baltimore County
Montgomery County
Anne Arundel County
Berlin
Onondaga County
NY
Monroe County
Niagara County
Erie County
Westchester County
Yonkers
Newark
Union County
Wyoming
Erie
PA
Lake County
Allegheny County
Bethlehem
Philadelphia
Harrisburg
Greensburg
Media
Baltimore City
Pikesville
Hagerstown
Fairfax
DE
MD
Richmond
Norfolk
Roanoke
WV
VA
Charlotte-Mecklenburg PD
Spartanburg
Asheville
Raleigh
NC
Knoxville
Nashville
TN
Cleveland
Columbia
Charleston
SC
Augusta
Decatur
Jacksonville
Savannah
Macon
Midland
GA
Auburn
Montgomery
Moultrie
Dothan
Jacksonville
Tallahassee
Pensacola
Mobile
Gulfport
Daytona Beach
Orlando
Pinellas County
Tampa
FL
Indian River
Sarasota County
Palm Beach County
Fort Myers
Broward County
Miami-Dade PD
Key West
PR
MIDWEST
ND
Bismarck
Bemidji
MN
Marquette
Wausau
WI
St. Paul
St. Paul
Grayling
MI
Bridgeport
Sterling Heights
Detroit
Northville
Toledo
Mansfield PD
OH
Canton-Stark County
Columbus PD
Columbus
Newark PD
Miami Valley
Hamilton County
Grand Rapids
Milwaukee
Madison
East Lansing
Rockford
Northern Illinois
DuPage County
Westchester
Chicago
Joliet
Lowell
Fort Wayne
IA
Des Moines
Rapid City
SD
Cheyenne
NE
Lincoln
North Platte
Denver
Denver
Aurora
Colorado Springs
Pueblo
KS
Johnson County
Topeka
Independence
KCMO Regional
Great Bend
Sedgwick County
Pittsburg
Springfield
MSSU Regional
MO
St. Joseph
Macon
Morton
Indianapolis-Marion County
Indianapolis
IL
Springfield
IN
St. Charles County
Fairview Heights
St. Louis
Jefferson City
Hillsboro
Carbondale
St. Louis County
SEMO Regional
Willow Springs
Evansville
Louisville
Frankfort
KY
Madisonville
London
Highland Heights
Ashland
South Charleston
SOUTH
Northwest Region
Oklahoma City
OK
Tahlequah Region
Amarillo
Southwest Region
Durant Region
Lubbock
Fort Worth
Garland
Abilene
Midland
Tyler
TX
Waco
Austin
Houston
Bexar County
Harris County
Brazoria County
Laredo
Corpus Christi
McAllen
AR
Little Rock
Memphis
Florence
Huntsville
Trion
Tupelo
Batesville
Jackson PD
MS
Jackson
Meridian
Birmingham
Tuscaloosa
AL
Jacksonville
North LA
LA
Jefferson County
Acadiana
Southwest LA
Baton Rouge
New Orleans
Jefferson Parish
Pasadena
Honolulu
HI
AK
Anchorage

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.

The following section describes national and regional estimates for drug items analyzed by state and local laboratories in 2009. Trends are presented for selected drugs from 2001 through 2009.

1.1 Drug Items Analyzed

In 2009, an estimated 1,739,906 drug items were analyzed by state and local forensic laboratories in the United States. This estimate is a decrease of about 2% from the 1,768,886 drug items analyzed during 2008. Table 1.1 presents the 25 most frequently identified drugs for the nation and for the U.S. Census regions.

The top 25 drugs accounted for slightly more than 89% of all drugs analyzed in 2009. As in previous years, the majority of all drugs reported in NFLIS were identified as the top 4 drugs, with cannabis/THC, cocaine, methamphetamine, and heroin representing 74% of all drugs analyzed. Nationally, 590,791 items were identified as cannabis/THC (34%), 449,523 as cocaine (26%), 134,891 as methamphetamine (8%), and 118,136 as heroin (7%).

There were 7 narcotic analgesics in the top 25 drugs: oxycodone (47,098 items), hydrocodone (46,153 items), methadone (10,774 items), buprenorphine (8,172 items), morphine (7,362 items), codeine (4,160 items), and hydromorphone (2,232 items). Also included were four tranquilizers and depressants: alprazolam (37,380 items), clonazepam (10,494 items), diazepam (7,711 items), and lorazepam (2,369 items). There were also four hallucinogens: MDMA (23,358 items), BZP (13,397 items), psilocin (4,063 items), and TFMPP (1,707 items). Other controlled pharmaceutical drugs were phencyclidine (PCP) (5,700 items) and methylphenidate (2,401 items). Pseudoephedrine (5,678 items), a listed chemical, and carisoprodol (4,863 items), a noncontrolled pharmaceutical, were also included in the 25 most frequently identified drugs.

GIONAL ESTIMATES

Table 1.1 **NATIONAL AND REGIONAL ESTIMATES FOR THE 25 MOST FREQUENTLY IDENTIFIED DRUGS[1]**
Estimated number and percentage of total analyzed drug items, 2009.

	National		West		Midwest		Northeast		South	
Drug	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cannabis/THC	590,791	33.96%	82,606	29.03%	198,918	49.95%	91,146	30.40%	218,121	28.80%
Cocaine	449,523	25.84%	44,704	15.71%	74,480	18.70%	98,644	32.91%	231,695	30.59%
Methamphetamine	134,891	7.75%	72,603	25.51%	19,241	4.83%	1,440	0.48%	41,607	5.49%
Heroin	118,136	6.79%	15,164	5.33%	29,784	7.48%	41,740	13.92%	31,449	4.15%
Oxycodone	47,098	2.71%	5,853	2.06%	7,819	1.96%	10,401	3.47%	23,025	3.04%
Hydrocodone	46,153	2.65%	5,669	1.99%	8,732	2.19%	3,750	1.25%	28,002	3.70%
Alprazolam	37,380	2.15%	2,154	0.76%	6,281	1.58%	5,585	1.86%	23,360	3.08%
MDMA	23,358	1.34%	6,061	2.13%	4,629	1.16%	3,694	1.23%	8,974	1.18%
1-Benzylpiperazine (BZP)	13,397	0.77%	1,069	0.38%	3,960	0.99%	1,440	0.48%	6,927	0.91%
Methadone	10,774	0.62%	1,915	0.67%	1,837	0.46%	2,181	0.73%	4,842	0.64%
Clonazepam	10,494	0.60%	1,130	0.40%	2,210	0.56%	2,608	0.87%	4,546	0.60%
Noncontrolled, non-narcotic drug[2]	8,745	0.50%	*	*	4	0.00%	1,642	0.55%	*	*
Buprenorphine	8,172	0.47%	606	0.21%	881	0.22%	3,285	1.10%	3,400	0.45%
Diazepam	7,711	0.44%	1,340	0.47%	1,726	0.43%	871	0.29%	3,773	0.50%
Morphine	7,362	0.42%	1,585	0.56%	1,686	0.42%	1,011	0.34%	3,080	0.41%
Amphetamine	6,498	0.37%	772	0.27%	1,688	0.42%	866	0.29%	3,172	0.42%
Phencyclidine (PCP)	5,700	0.33%	813	0.29%	334	0.08%	2,796	0.93%	1,756	0.23%
Pseudoephedrine[3]	5,678	0.33%	245	0.09%	2,475	0.62%	*	*	2,952	0.39%
Carisoprodol	4,863	0.28%	*	*	424	0.11%	128	0.04%	3,505	0.46%
Codeine	4,160	0.24%	686	0.24%	599	0.15%	541	0.18%	2,334	0.31%
Psilocin/psilocibin	4,063	0.23%	1,287	0.45%	1,073	0.27%	542	0.18%	1,161	0.15%
Methylphenidate	2,401	0.14%	323	0.11%	673	0.17%	484	0.16%	921	0.12%
Lorazepam	2,369	0.14%	436	0.15%	632	0.16%	488	0.16%	812	0.11%
Hydromorphone	2,232	0.13%	323	0.11%	413	0.10%	296	0.10%	1,199	0.16%
TFMPP	1,707	0.10%	*	*	355	0.09%	0	0.00%	1,311	0.17%
Top 25 Total	1,553,657	89.30%	250,120	87.89%	370,857	93.13%	275,586	91.93%	657,094	86.76%
All Other Analyzed Items	186,249	10.70%	34,455	12.11%	27,349	6.87%	24,194	8.07%	100,252	13.24%
Total Analyzed Items[4]	1,739,906	100.00%	284,575	100.00%	398,206	100.00%	299,780	100.00%	757,346	100.00%

MDMA=3,4-Methylenedioxymethamphetamine
TFMPP=1-(3-Trifluoromethylphenyl)piperazine

* *The estimate for this drug does not meet standards of precision and reliability. See Appendix A for a more detailed methodology discussion.*

[1] *Sample n's and 95% confidence intervals for all estimates are available on request.*

[2] *As reported by NFLIS laboratories, with no specific drug name provided.*

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

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

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 2009, a total of 51,027 drug exhibits or items were reported in STRIDE, about 3% of the estimated 1.74 million drug exhibits analyzed by state and local laboratories during this period. The number of items reported in STRIDE remained unchanged from 2008 (51,022 items) to 2009 (51,027 items). In 2009, more than three quarters of the drugs in STRIDE were identified as cocaine (31%), cannabis/THC (25%), methamphetamine (13%), or heroin (9%). MDMA and oxycodone each were identified in 3% of items, and 2% were identified as BZP.

MOST FREQUENTLY IDENTIFIED DRUGS IN STRIDE, 2009

Drug	Number	Percent
Cocaine	15,781	30.93%
Cannabis/THC	12,539	24.57%
Methamphetamine	6,783	13.29%
Heroin	4,668	9.15%
MDMA	1,425	2.79%
Oxycodone	1,384	2.71%
1-Benzylpiperazine (BZP)	1,049	2.06%
Hydrocodone	522	1.02%
Noncontrolled, non-narcotic drug	496	0.97%
Alprazolam	365	0.72%
All Other Drugs	6,015	11.79%
Total Analyzed Items	51,027	100.00%

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 2009, there were 1,285,974 drug cases analyzed by state and local forensic laboratories, representing a 4% decrease from the 1,343,757 cases in 2008.

Among cases, cannabis/THC was the most common drug reported during 2009. Nationally, an estimated 39% of analyzed drug cases contained one or more cannabis/THC items, followed by cocaine, which was identified in 32% of all drug cases. About 9% of drug cases were estimated to have contained one or more methamphetamine items, 8% of cases contained one or more heroin items, and 4% of cases contained one or more hydrocodone items. Oxycodone and alprazolam were each reported in about 3% of cases.

Table 1.2 **NATIONAL CASE ESTIMATES**
Number and percentage of cases containing the 25 most frequently identified drugs, 2009.

Drug	Number	Percent
Cannabis/THC	420,247	39.10%
Cocaine	342,576	31.87%
Methamphetamine	95,304	8.87%
Heroin	87,095	8.10%
Hydrocodone	38,061	3.54%
Oxycodone	36,535	3.40%
Alprazolam	30,696	2.86%
MDMA	15,781	1.47%
1-Benzylpiperazine (BZP)	7,530	0.70%
Methadone	8,900	0.83%
Clonazepam	9,069	0.84%
Noncontrolled, non-narcotic drug[1]	6,413	0.60%
Buprenorphine	7,146	0.66%
Diazepam	6,547	0.61%
Morphine	5,937	0.55%
Amphetamine	5,392	0.50%
Phencyclidine (PCP)	5,010	0.47%
Pseudoephedrine[2]	4,095	0.38%
Carisoprodol	4,407	0.41%
Codeine	3,434	0.32%
Psilocin/psilocibin	3,307	0.31%
Methylphenidate	1,977	0.18%
Lorazepam	2,042	0.19%
Hydromorphone	1,927	0.18%
TFMPP	1,161	0.11%
Top 25 Total	1,150,589	107.05%
All Other Drugs	135,387	12.60%
Total All Drugs	1,285,974[3]	119.64%[4]

MDMA=3,4-Methylenedioxymethamphetamine
TFMPP=1-(3-Trifluoromethylphenyl)piperazine

[1] *As reported by NFLIS laboratories, with no specific drug names provided.*

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

[3] *Numbers may not sum to totals due to rounding.*

[4] *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 1,074,838 distinct cases analyzed during 2009.*

1.3 National and Regional Drug Trends

National prescription drug trends

Figure 1.1 presents national trends for the estimated number of oxycodone, hydrocodone, alprazolam, clonazepam, diazepam, and morphine items analyzed by state and local laboratories from 2001 through 2009. Nationally, reports of oxycodone, hydrocodone, alprazolam, clonazepam, and morphine experienced significant increases ($p < .05$). From 2001 through 2009, reports more than tripled for oxycodone (from 13,004 to 47,098 items) and hydrocodone (from 13,659 to 46,153 items). During this time, reports more than doubled for alprazolam (from 17,926 to 37,380 items) and clonazepam (from 5,106 to 10,494 items). Reports of morphine more than tripled, from 2,103 items in 2001 to 7,362 items in 2009. Reports of diazepam decreased significantly from 2001 through 2009 (from 8,803 to 7,711 items).

Other national drug trends

Figure 1.2 presents national trends for cannabis/THC, cocaine, methamphetamine, heroin, and MDMA. Nationally, reports of methamphetamine experienced significant decreases from 2001 through 2009 ($p < .05$). Reports of methamphetamine decreased by almost a third, from 199,271 items in 2001 to 134,891 items in 2009. Though not significant, reports of cocaine decreased by almost a quarter during this same time, from 590,852 items in 2001 to 449,523 items in 2009.

Regional prescription drug trends

Figure 1.3 presents regional trends per 100,000 persons aged 15 or older for oxycodone, hydrocodone, alprazolam, clonazepam, diazepam, and morphine. This figure illustrates changes in drugs reported over time, taking into account the population of each U.S. Census region.

Reports of oxycodone, hydrocodone, and morphine increased significantly in all regions from 2001 through 2009 ($p < .05$). Oxycodone items increased 12-fold in the West (from 1.1 to 12.0 items per 100,000 persons) and more than tripled in the Midwest (from 5.0 to 15.5 items per 100,000 persons), Northeast (from 7.4 to 24.4 items per 100,000 persons), and South (from 8.6 to 29.2 items per 100,000 persons). Reports of hydrocodone more than quadrupled in the Northeast, from 2.0 items per 100,000 persons in 2001 to 8.8 items per 100,000 persons in 2009. Hydrocodone items more tripled in the West (from 3.3 to 11.6 items per 100,000 persons), Midwest (from 5.4 to 17.3 items per 100,000 persons), and South (from 10.7 to 35.5 items per 100,000 persons). In the West, reports of morphine more than quadrupled from 0.7 items per 100,000 persons in 2001 to 3.2 items per 100,000 persons in 2009. Morphine items more than tripled in the Midwest (from 1.0 to 3.3 items per 100,000 persons) and South (from 1.1 to 3.9 items per 100,000 persons), and more than doubled in the Northeast (from 1.0 to 2.4 items per 100,000 persons).

Reports of alprazolam and clonazepam increased significantly from 2001 through 2009 in the Northeast, Midwest, and South ($p < .05$). During this time, reports of alprazolam more than doubled in the Northeast (from 5.2 to 13.1 items per 100,000 persons) and nearly doubled in the Midwest (from 6.4 to 12.4 items per 100,000 persons) and South (from 15.3 to 29.6 items per 100,000 persons). From 2001 through 2009, reports of clonazepam more than tripled in the Midwest (from 1.4 to 4.4 items per 100,000 persons) and more than doubled in the South (from 2.8 to 5.8 items per 100,000 persons). Reports of diazepam decreased significantly in the South, from 7.0 items per 100,000 persons in 2001 to 4.8 items per 100,000 persons in 2009.

Figure 1.1 National trend estimates for selected prescription drugs, January 2001–December 2009.

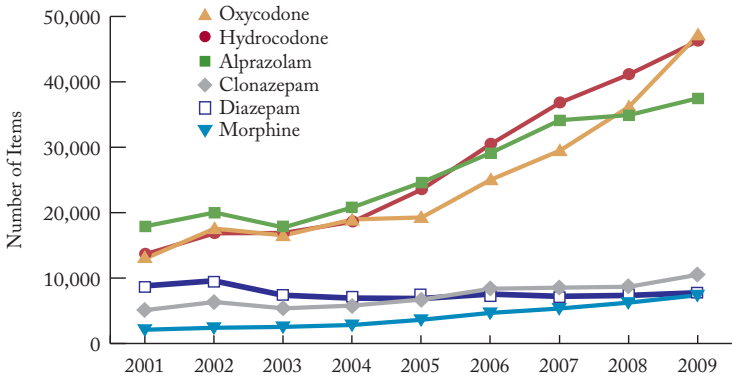
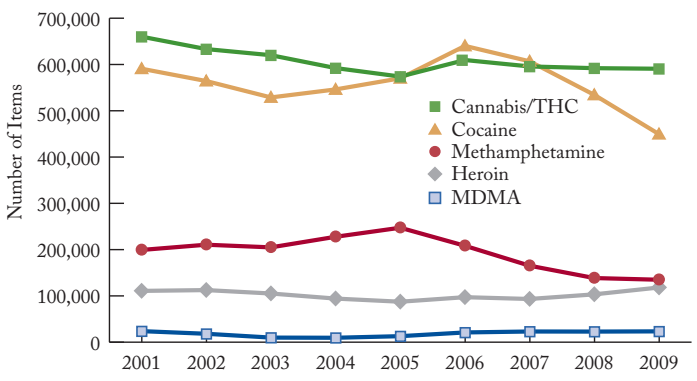


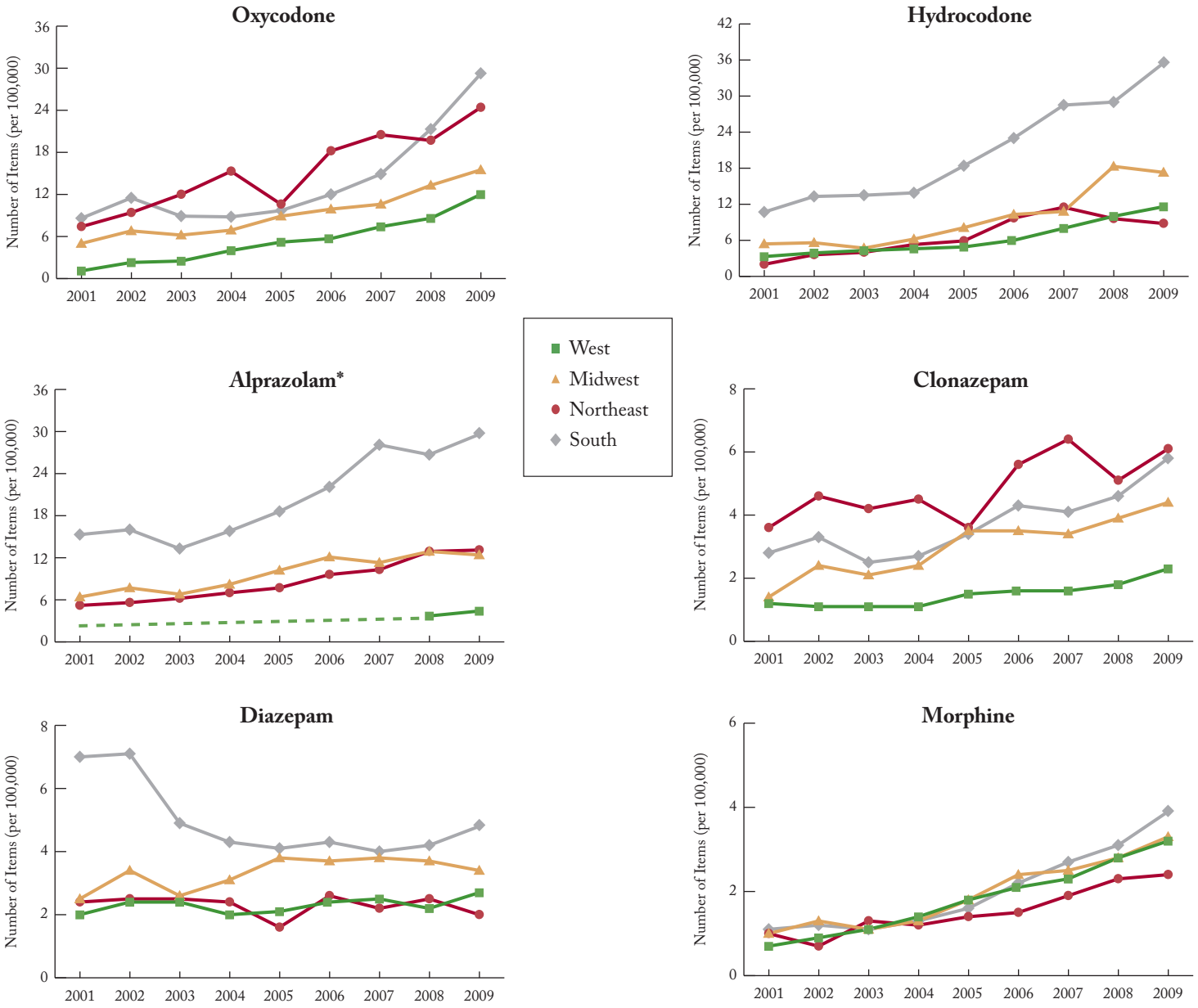
Figure 1.2 National trend estimates for other selected drugs, January 2001–December 2009.



Other regional drug trends

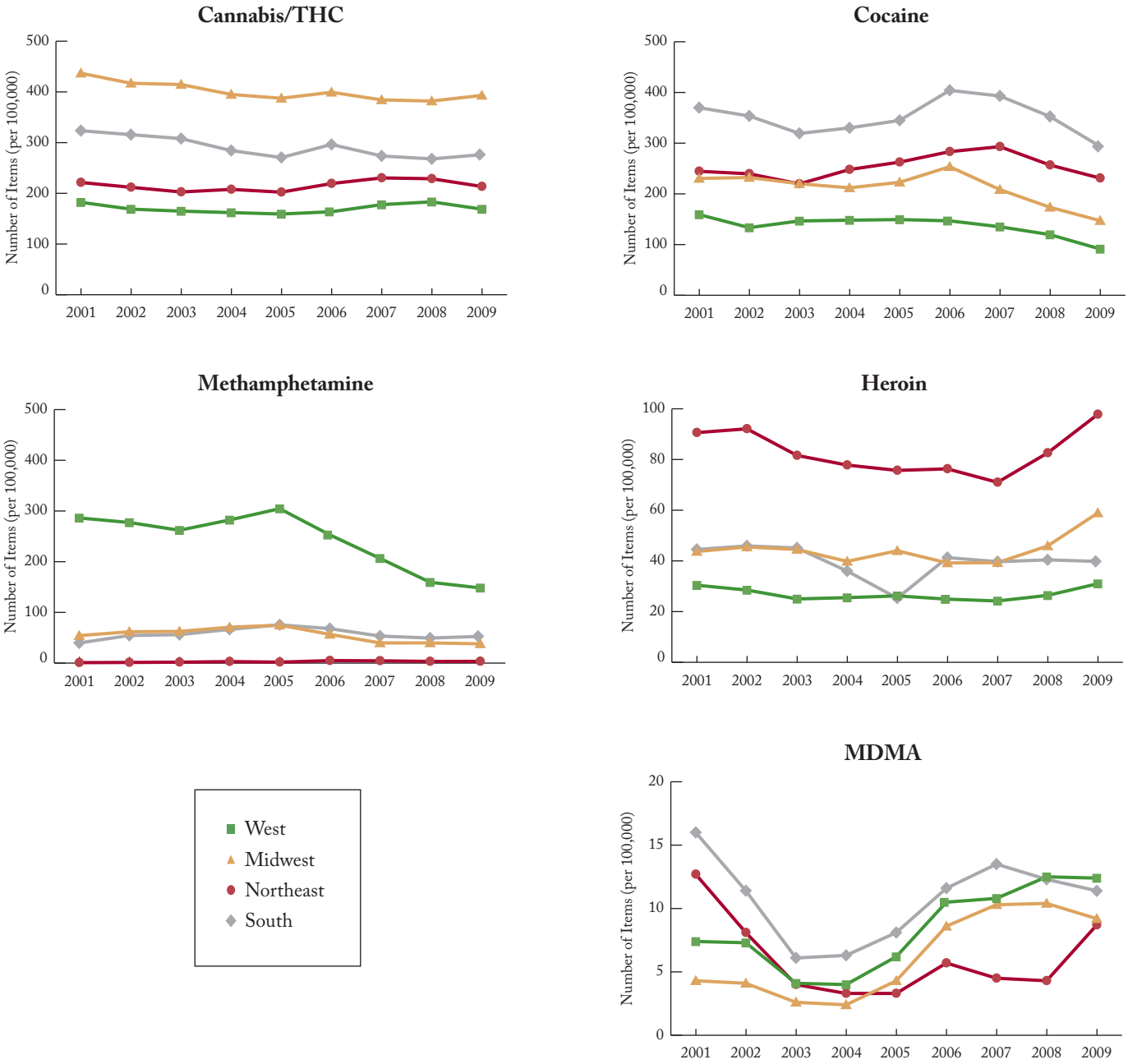
Figure 1.4 shows regional trends per 100,000 persons aged 15 or older for cannabis/THC, cocaine, methamphetamine, heroin, and MDMA. Cocaine reporting decreased significantly from 2001 through 2009 in the Midwest, where reports decreased from 230.4 to 147.2 items per 100,000 persons ($p < .05$). Methamphetamine reporting significantly increased from 2001 through 2009 in the Northeast (from 0.9 to 3.4 items per 100,000 persons), but decreased significantly in the West (from 286.3 to 148.3 items per 100,000 persons). From 2001 through 2009, reports of MDMA increased significantly in the Midwest (from 4.3 to 9.2 items per 100,000 persons) and in the West (from 7.4 to 12.4 items per 100,000 persons), but decreased significantly in the Northeast (from 12.7 to 8.7 items per 100,000 persons). Reports of cannabis/THC and heroin did not significantly change from 2001 through 2009.

Figure 1.3 Regional trends in selected prescription drugs reported per 100,000 persons aged 15 or older, January 2001–December 2009.



**A dashed trend line indicates estimates did not meet the criteria for precision or reliability. See Appendix A for a more detailed methodology discussion.*

Figure 1.4 Regional trends in other selected drugs reported per 100,000 persons aged 15 or older, January 2001–December 2009.



Section 2

MAJOR DRUG CATEGORIES

Section 2 presents results for major drug categories reported by NFLIS laboratories during 2009. 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 (including those not in the national sample) that reported 6 or more months of data in 2009. NFLIS laboratories analyzed a total of 1,476,940 drug items during 2009.

[1] Office of Applied Studies. (2009, September). *Results from the 2008 National Survey on Drug Use and Health: Detailed tables* [Tables 1.56A and 1.56B]. Rockville, MD: Substance Abuse and Mental Health Services Administration. [Available at http://oas.samhsa.gov/WebOnly.htm]

Oxycodone

2.1 Narcotic Analgesics

When taken exactly as prescribed, narcotic analgesics, or pain relievers, can effectively and safely manage pain. But chronic use or abuse of these substances can result in physical dependence and addiction. According to the 2008 National Survey on Drug Use and Health (NSDUH), 12% of persons aged 18 to 25, or 3.9 million young adults, used prescription pain relievers for nonmedical reasons during the past year.[1]

A total of 114,062 narcotic analgesics were identified by NFLIS laboratories in 2009, representing 8% of all items analyzed (Table 2.1). Oxycodone (37%) and hydrocodone (36%) accounted for the majority of all narcotic analgesics reported. Other narcotic analgesics reported included methadone (8%), buprenorphine (6%), morphine (6%), codeine (3%), hydromorphone (2%), propoxyphene (1%), and tramadol (1%).

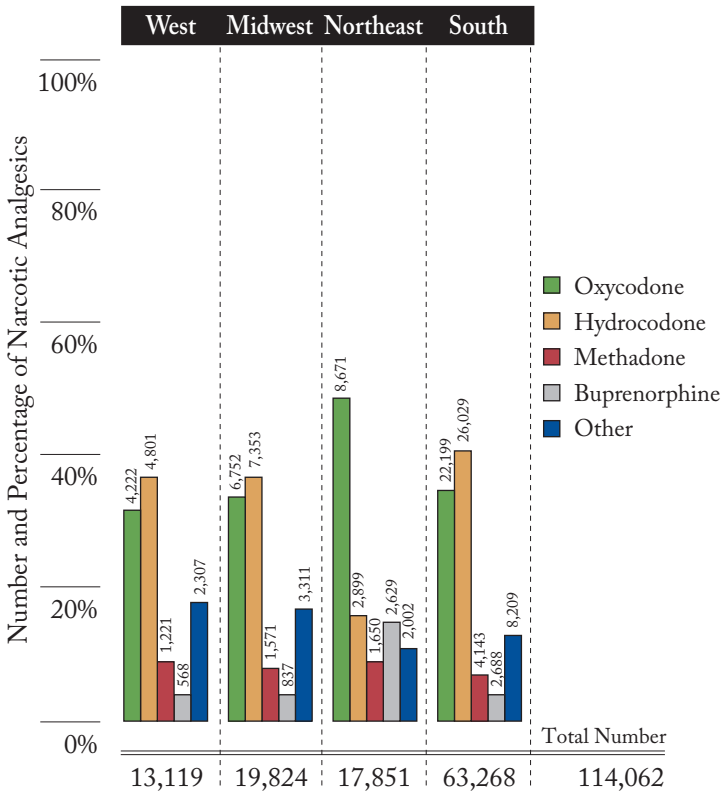
The types of narcotic analgesics reported varied considerably by region (Figure 2.1). In comparison with reports from other regions in the country, a higher percentage of oxycodone was reported in the Northeast (49%), while the South (41%),

Table 2.1 NARCOTIC ANALGESICS
Number and percentage of identified narcotic analgesics, 2009.

Analgesic	Number	Percent
Oxycodone	41,844	36.69%
Hydrocodone	41,082	36.02%
Methadone	8,585	7.53%
Buprenorphine	6,722	5.89%
Morphine	6,360	5.58%
Codeine	3,301	2.89%
Hydromorphone	2,014	1.77%
Propoxyphene	1,293	1.13%
Tramadol*	1,112	0.98%
Fentanyl	514	0.45%
Oxymorphone	355	0.31%
Opium	301	0.26%
Meperidine	271	0.24%
Dihydrocodeine	244	0.21%
Pentazocine	57	0.05%
Butorphanol	4	0.00%
Nalbuphine*	3	0.00%
Total Narcotic Analgesics	114,062	100.00%
Total Analyzed Items	1,476,940	

**Noncontrolled narcotic analgesics.*

Figure 2.1 Distribution of narcotic analgesics within region, 2009.



West (37%), and Midwest (37%) reported higher percentages of hydrocodone. Similarly, in comparison with reports from other U.S. regions, the West (9%) and Northeast (9%) reported higher percentages of methadone, and the Northeast (15%) reported a higher percentage of buprenorphine.

2.2 *Tranquilizers and Depressants*

Tranquilizers and depressants are used to induce sleep, relieve stress, and allay anxiety. Unlike most other classes of drugs of abuse, tranquilizers and depressants are rarely produced in clandestine laboratories and are generally legitimate pharmaceutical products that are diverted to the illicit market.[2]

During 2009, approximately 4% of all analyzed drugs, or 56,990 items, were identified by NFLIS laboratories as tranquilizers or depressants (Table 2.2). Alprazolam accounted for three fifths of reported tranquilizers and depressants. Approximately 16% of tranquilizers and depressants were identified as clonazepam, 12% were identified as diazepam, and 4% were identified as lorazepam.

More than half of tranquilizers and depressants reported in the South (67%), Northeast (56%), and Midwest (53%) were identified as alprazolam (Figure 2.2). Clonazepam accounted for more than one fifth of tranquilizers and depressants identified in the Northeast, while diazepam accounted for one fifth of the tranquilizers and depressants identified in the West.

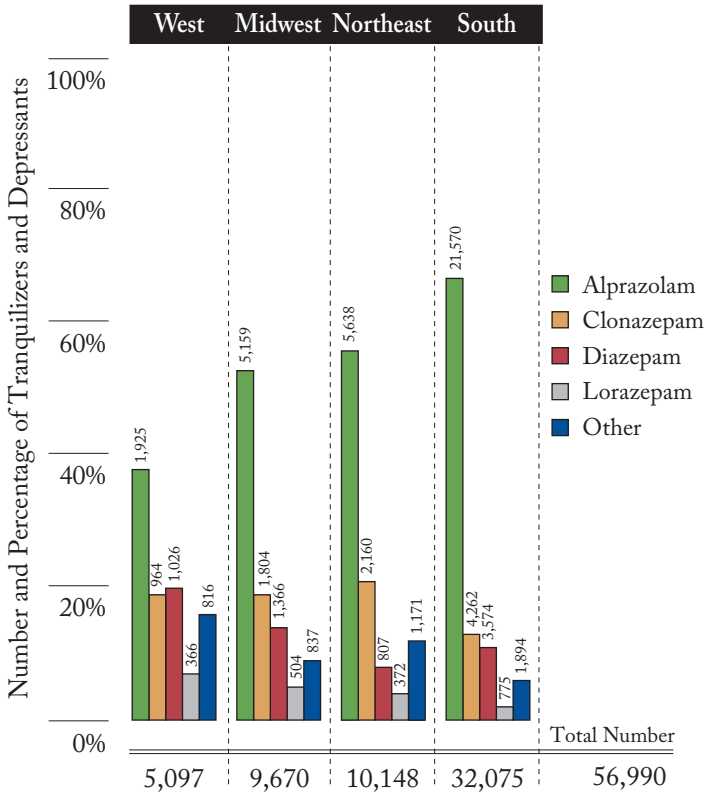
[2] U.S. Department of Justice, Drug Enforcement Administration (2005.) *Drugs of abuse*. Retrieved on April 1, 2010, from http://www.usdoj.gov/dea/pubs/abuse/index.htm

Table 2.2 **TRANQUILIZERS AND DEPRESSANTS**
Number and percentage of total identified tranquilizers and depressants, 2009.

Tranquilizer/Depressant	Number	Percent
Alprazolam	34,292	60.17%
Clonazepam	9,190	16.13%
Diazepam	6,773	11.88%
Lorazepam	2,017	3.54%
Zolpidem	1,314	2.31%
Ketamine	953	1.67%
Temazepam	349	0.61%
Butalbital	340	0.60%
Hydroxyzine	272	0.48%
GHB	205	0.36%
Pregabalin	165	0.29%
Phenobarbital	144	0.25%
Eszopiclone	96	0.17%
Chlordiazepoxide	87	0.15%
Other tranquilizers/depressants	793	1.39%
Total Tranquilizers/Depressants	56,990	100.00%
Total Analyzed Items	1,476,940	

GHB=Gamma-hydroxybutyrate

Figure 2.2 Distribution of tranquilizers and depressants within region, 2009.



2.3 *Hallucinogens*

Hallucinogens are among the oldest known group of drugs used for their ability to alter human perception and mood. Many hallucinogens occur naturally, but in recent years a number of synthetic hallucinogens have been produced, some of which are much more potent than their naturally occurring counterparts.[3]

NFLIS laboratories identified 27,266 items as hallucinogens in 2009 (Table 2.3). Of these, 70% were identified as MDMA. Among the other hallucinogens reported, 13% were identified as psilocin and 6% were identified as TFMPP.

As shown in Figure 2.3, MDMA accounted for 76% of hallucinogens in the Northeast, 71% in the West, 70% in the South, and 65% in the Midwest. Approximately 17% of the hallucinogens reported in the West and 16% reported in the Midwest were psilocin. In the South, 10% of hallucinogens were TFMPP.

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Table 2.3 **HALLUCINOGENS**
Number and percentage of total identified hallucinogens, 2009.

Hallucinogen	Number	Percent
MDMA	19,073	69.95%
Psilocin	3,410	12.51%
TFMPP*	1,542	5.66%
LSD	828	3.04%
Psilocibin	558	2.05%
Psilocin/psilocibin, unspecified	541	1.98%
MDA	276	1.01%
Dimethyltryptamine	156	0.57%
Salvinorin-A	57	0.21%
2C-B	46	0.17%
Mescaline	45	0.17%
4-Bromo-2,5-dimethoxyamphetamine	41	0.15%
5-MeO-DIPT	35	0.13%
2C-E	27	0.10%
Other hallucinogens	631	2.31%
Total Hallucinogens	27,266	100.00%
Total Analyzed Items	1,476,940	

MDMA=3,4-Methylenedioxymethamphetamine
TFMPP=1-(3-Trifluoromethylphenyl)piperazine
MDA=3,4-Methylenedioxyamphetamine
2C-B=4-Bromo-2,5-dimethoxyphenethylamine
5-MeO-DIPT=5-Methoxy-N,N-diisopropyltryptamine
2C-E=4-Ethyl-2,5 dimethoxyphenethylamine

** Noncontrolled hallucinogen.*
Note: Percentages may not total to 100% because of rounding.

2.4 *Anabolic Steroids*

Anabolic steroids can enhance certain types of performance or appearance, but when used inappropriately they can lead to early high blood pressure, liver damage, kidney failure, and serious psychiatric problems.[4,5] According to the 2008 Monitoring the Future study, 2.2% of 12th grade students reported illegal steroid use in their lifetimes, 1.5% reported use in the past year, and 1.0% reported use in the past month.[6]

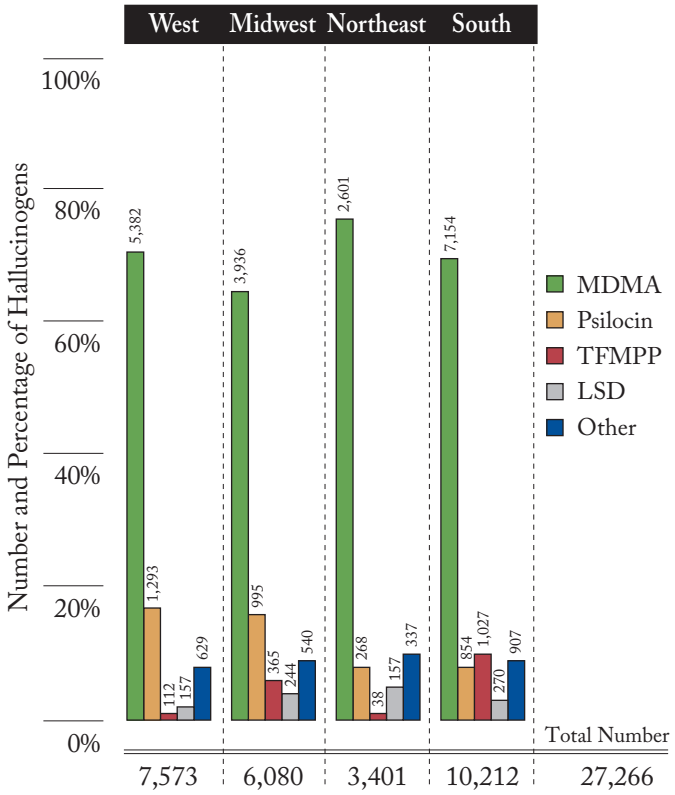
[3] U.S. Department of Justice, Drug Enforcement Administration. (n.d.). *DEA briefs & background, drugs and drug abuse, drug descriptions: Hallucinogens.* Retrieved April 1, 2010, from http://www.justice.gov/dea/concern/hallucinogens.html

[4] National Institute on Drug Abuse. (2008, June). *NIDA InfoFacts: Steroids (anabolic-androgenic)*. Retrieved on April 1, 2010, from http://www.drugabuse.gov/Infofacts/steroids.html

[5] U.S. Department of Justice, Drug Enforcement Administration, Office of Diversion Control. (2009, June). *Drugs and chemicals of concern: Anabolic steroids*. Retrieved April 1, 2010, from http://www.deadiversion.usdoj.gov/drugs_concern/anabolic.htm

[6] Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2009). *Monitoring the Future national survey results on drug use, 1975-2008: Secondary school students* (NIH Publication No. 09-7402, Vol. I). Bethesda, MD: National Institute on Drug Abuse. [Available as a PDF at http://monitoringthefuture.org/pubs.html#monographs]

Figure 2.3 Distribution of hallucinogens within region, 2009.



During 2009, a total of 2,250 items were identified as anabolic steroids (Table 2.4). The most commonly identified anabolic steroid was testosterone (47%), followed by stanozolol (14%), methandrostenolone (12%), and nandrolone (11%). Testosterone accounted for 60% of anabolic steroids in the Midwest, 52% in the South, 46% in the West, and 34% in the Northeast (Figure 2.4). The South reported the highest percentage of stanozolol (14%), while the Northeast reported the highest percentage of methandrostenolone (15%). The West reported the highest percentage of nandrolone (13%).

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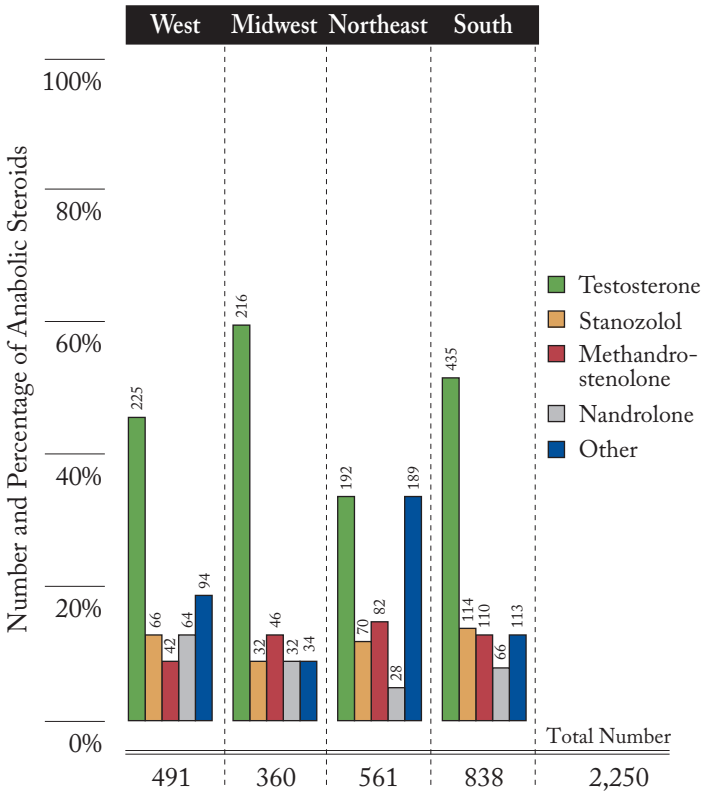
Table 2.4 ANABOLIC STEROIDS
Number and percentage of identified anabolic steroids, 2009.

Steroid	Number	Percent
Testosterone	1,068	46.93%
Stanozolol	282	14.22%
Methandrostenolone	280	11.68%
Nandrolone	190	11.09%
Anabolic steroids, not specified	131	4.50%
Oxandrolone	89	3.36%
Oxymetholone	82	2.32%
Boldenone	60	2.09%
Methyltestosterone	27	1.18%
Methenolone	18	0.86%
Drostanolone	7	0.73%
Mesterolone	7	0.68%
Fluoxymesterone	5	0.23%
Methandriol	3	0.09%
4-Androstenedione	1	0.04%
Total Anabolic Steroids	2,250	100.00%
Total Analyzed Items	1,476,940	

Figure 2.4 Distribution of anabolic steroids within region, 2009.



2.5 *Stimulants*

Stimulants increase alertness, attention, and energy, as well as elevate blood pressure and increase the heart rate and respiration. Stimulants, such as amphetamines and methylphenidate, are most commonly prescribed as a treatment for attention deficit/hyperactivity disorder (ADHD) and narcolepsy and, in some instances, depression.[7,8] The 2008 Monitoring the Future study showed that 7% of 12th graders reported past year nonmedical use of amphetamines, which ranked third among 12th graders for past year illicit drug use.[9]

A total of 154,480 stimulant items were analyzed during 2009, accounting for about 10% of all items reported (Table 2.5). Methamphetamine accounted for 85% of stimulants, or 131,823 items, identified in 2009. An additional 11,691 items were identified as BZP, and 5,566 items were identified as amphetamine.

Methamphetamine accounted for 97% of stimulants reported in the West, 81% in the South, and 74% in the Midwest (Figure 2.5). In the Northeast, 31% of stimulants were reported as BZP, 26% as methamphetamine, and 24% as amphetamine.

[7] National Institute on Drug Abuse. (2001; revised August 2005). *Prescription drugs: Abuse and addiction* (NIH Publication No. 05-4881 & NIH Publication No. 01-4881, NIDA Research Report Series). Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health. [Available at http://www.drugabuse.gov/ResearchReports/Prescription/Prescription.html]

[8] U.S. Department of Justice, Drug Enforcement Administration, Office of Diversion Control. (2009, June). *Drugs and chemicals of concern: Methylphenidate*. Retrieved April 1, 2010, from http://www.deadiversion.usdoj.gov/drugs_concern/methylphenidate.htm

[9] See footnote 6.

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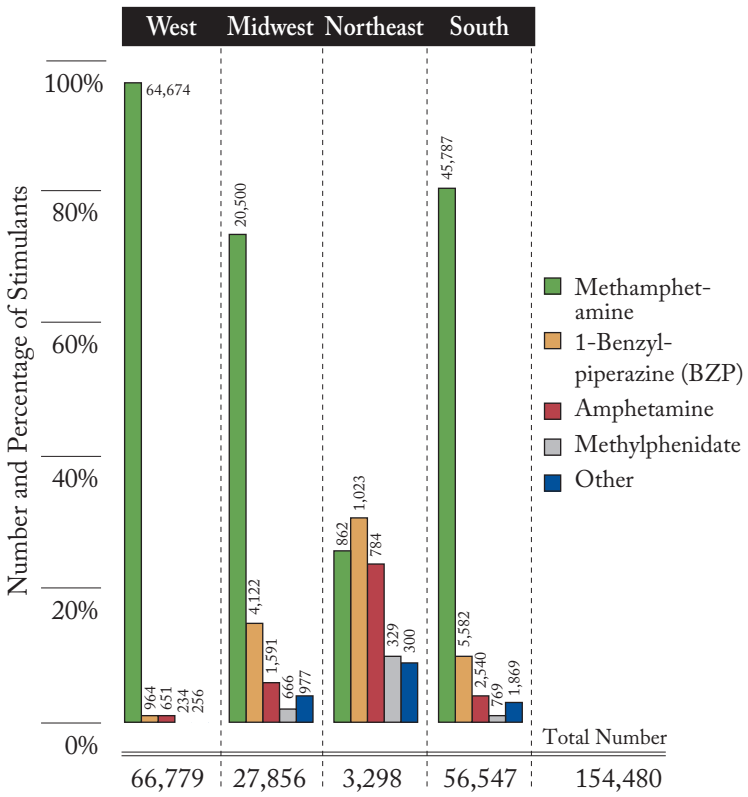
Table 2.5 STIMULANTS
Number and percentage of total identified stimulants, 2009.

Stimulant	Number	Percent
Methamphetamine	131,823	85.33%
1-Benzylpiperazine (BZP)	11,691	7.57%
Amphetamine	5,566	3.60%
Methylphenidate	1,998	1.29%
Caffeine*	1,717	1.11%
Phentermine	598	0.39%
Ephedrine**	391	0.25%
Cathinone	258	0.17%
Other stimulants	438	0.28%
Total Stimulants	154,480	100.00%
Total Analyzed Items	1,476,940	

** Substance is an ingredient of many controlled pharmaceutical products and is often used as a cutting agent.*
*** Listed chemical.*
Note: Percentages may not total to 100% because of rounding.

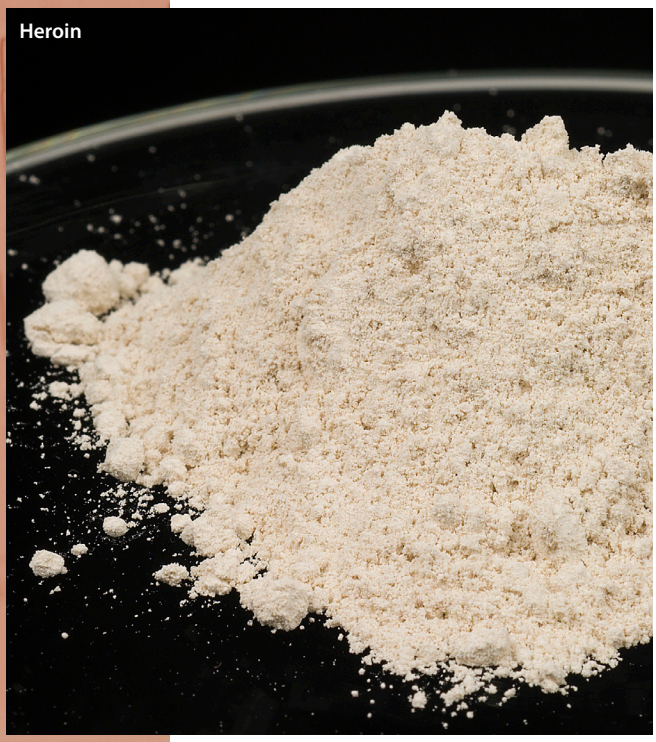
Figure 2.5 Distribution of stimulants within region, 2009.



Section 3

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.


Heroin

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 analyses 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 2009, 17 individual laboratories (including laboratories from 4 state 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.

3.1 Heroin Purity

This section describes heroin purity analyses reported by the Massachusetts State Police Crime Laboratory, the Austin Police Department Crime Laboratory, and the Philadelphia Police Department Forensic Science 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. The Austin and Philadelphia laboratories conduct quantitative analysis to include residue.

Figure 3.1 Heroin purity, 2002–2009: The Massachusetts State Police Crime Laboratory.

The Massachusetts State Police Crime Laboratory reported heroin purity for 338 items in 2009. Overall, the average purity of heroin, as reported by the Massachusetts laboratory, declined between 2002 and 2009. The average purity of heroin was 20% in 2009 compared with 24% in 2008, 25% in 2007, 26% in 2006, 31% in 2005 and 2004, 40% in 2003, and 47% in 2002 (Figure 3.1).

The Austin Police Department Crime Laboratory reported heroin purity for 20 items in 2009. The Austin laboratory reported an average heroin purity of 32% in both 2009 and 2008 compared with 30% in 2007. The Philadelphia Police Department Forensic Sciences Laboratory reported heroin purity for 21 items in 2009, with an average purity of 59%.

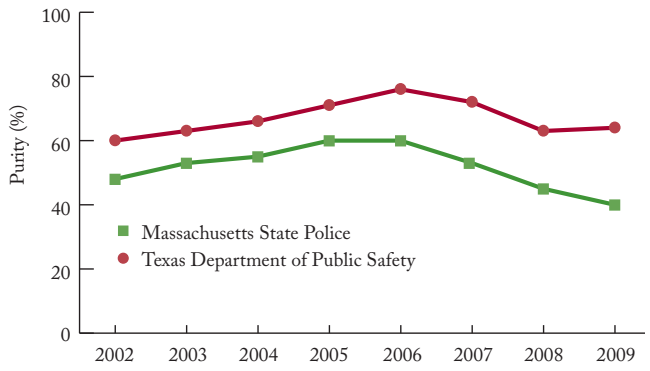
3.2 Cocaine Purity

Cocaine purity is presented for four NFLIS laboratories—the Massachusetts State Police Crime Laboratory, the Texas Department of Public Safety (DPS), the Austin Police Department Crime Laboratory, and Westchester County Forensic Sciences Laboratory (Valhalla).

The average cocaine purity reported by the Massachusetts laboratory steadily increased from 2002 to 2005, but decreased from 2007 to 2009. In 2009, Massachusetts reported purity results for 762 items with an average purity of 40%, compared with 45% in 2008, 53% in 2007, 60% in 2006 and 2005, 55% in 2004, 53% in 2003, and 48% in 2002 (Figure 3.2).

The Texas DPS laboratory system, which typically conducts quantitative analyses for powders of 200 grams or more, reported purity data for 30 cocaine items in 2009. The average cocaine purity reported by the Texas DPS increased steadily from 60% in 2002 to 76% in 2006, but decreased from 72% in 2007 to 63% and 64% in 2008 and 2009, respectively.

Figure 3.2 Cocaine purity, 2002–2009: The Massachusetts State Police Crime Laboratory and the Texas Department of Public Safety.



The Austin Police Department Crime Laboratory reported cocaine purity for 74 items in 2009. Between 2007 and 2008, there was a sharp decline in the cocaine purity reported by the Austin laboratory, from 71% in 2007 to 48% in 2008. In 2009, the average purity reported by the Austin laboratory increased to 50%.

The Westchester County Forensic Sciences Laboratory conducts quantitative analyses to include residue. In 2009, the Westchester laboratory reported cocaine purity for 123 items, with an average purity of 55%.

3.3 Methamphetamine Purity

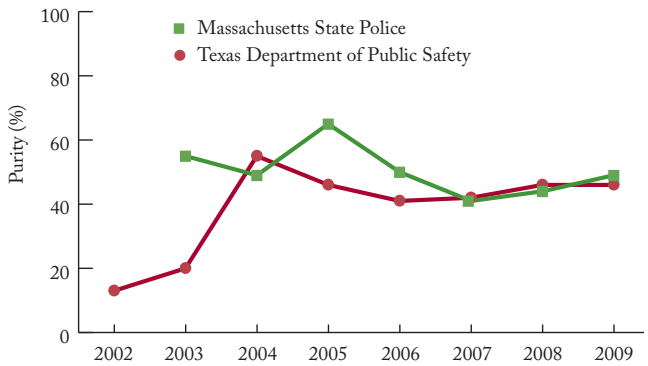
Methamphetamine purity is also presented for the Massachusetts State Police, the Texas DPS, and the Austin Police Department, as well as for the Oregon State Police Forensic Services Division. The Massachusetts State Police reported methamphetamine purity for 19 items in 2009. The average methamphetamine purity reported by Massachusetts was 49% in 2009, compared with 44% in 2008, 41% in 2007, 50% in 2006, 65% in 2005, 49% in 2004, and 55% in 2003 (Figure 3.3).

The Texas DPS reported purity data for 31 methamphetamine items in 2009. The average methamphetamine purity increased sharply from 13% in 2002 and 20% in 2003 to 55% in 2004, then steadily declined to 42% in 2007, increased slightly to 46% in 2008, and remained stable at 46% in 2009 (Figure 3.3).

The Austin Police Department reported methamphetamine purity for 19 items in 2009. The average methamphetamine purity reported by Austin increased substantially between 2007 and 2008, from 25% to 55%, and declined sharply in 2009 to 35%.

The Oregon State Police Forensic Sciences Division, which typically conducts quantitative analyses to include residue, reported methamphetamine purity for 16 items in 2009. The average methamphetamine purity reported by the Oregon laboratory was 63%.

Figure 3.3 Methamphetamine purity, 2002–2009: The Massachusetts State Police Crime Laboratory and the Texas Department of Public Safety.



Section 4

GIS Analyses: Alprazolam and Clonazepam, Comparisons by Location, 2005 and 2009

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 data at the state and county levels for the percentage of analyzed drug items identified as alprazolam and clonazepam at two points in time—2005 and 2009. In both years, these two pharmaceuticals were 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, while over 88% of the nation's analyzed drug cases are reported to NFLIS, 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 4.1 Percentage of analyzed drug items identified as alprazolam, by state, 2005.

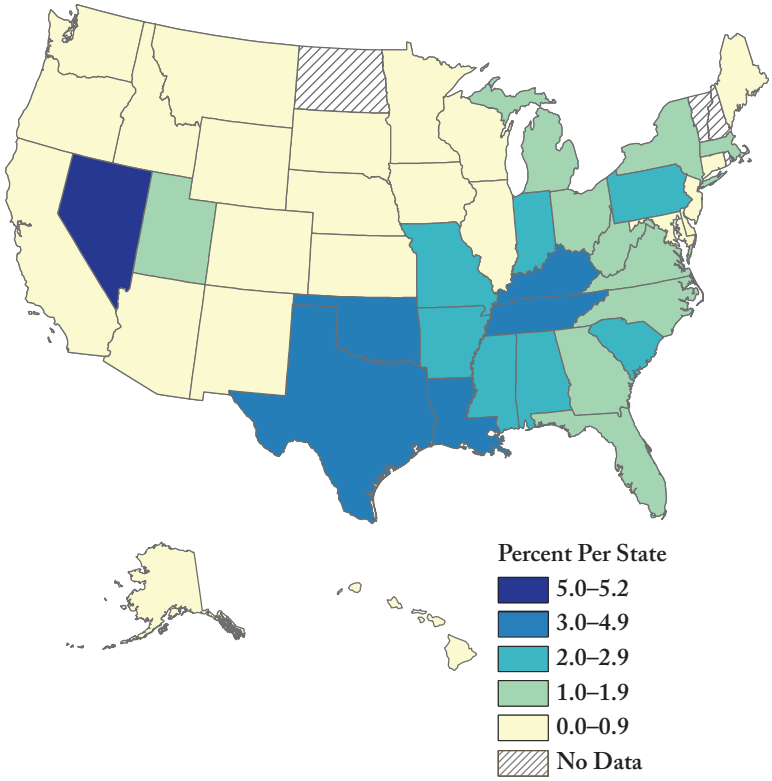


Figure 4.2 Percentage of analyzed drug items identified as alprazolam, by state, 2009.

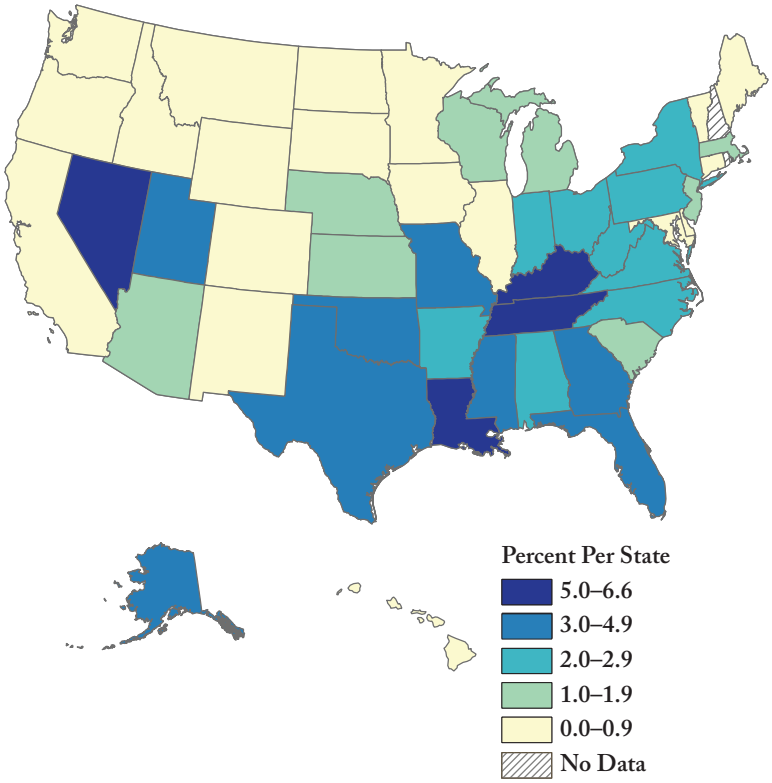


Figure 4.3 Percentage of analyzed drug items identified as clonazepam, by state, 2005.

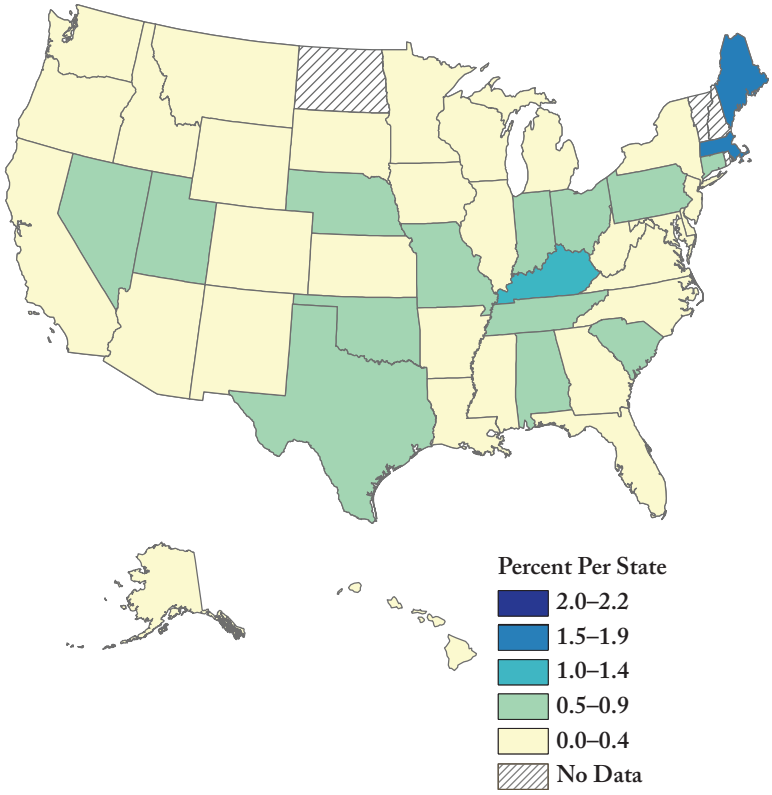


Figure 4.4 Percentage of analyzed drug items identified as clonazepam, by state, 2009.

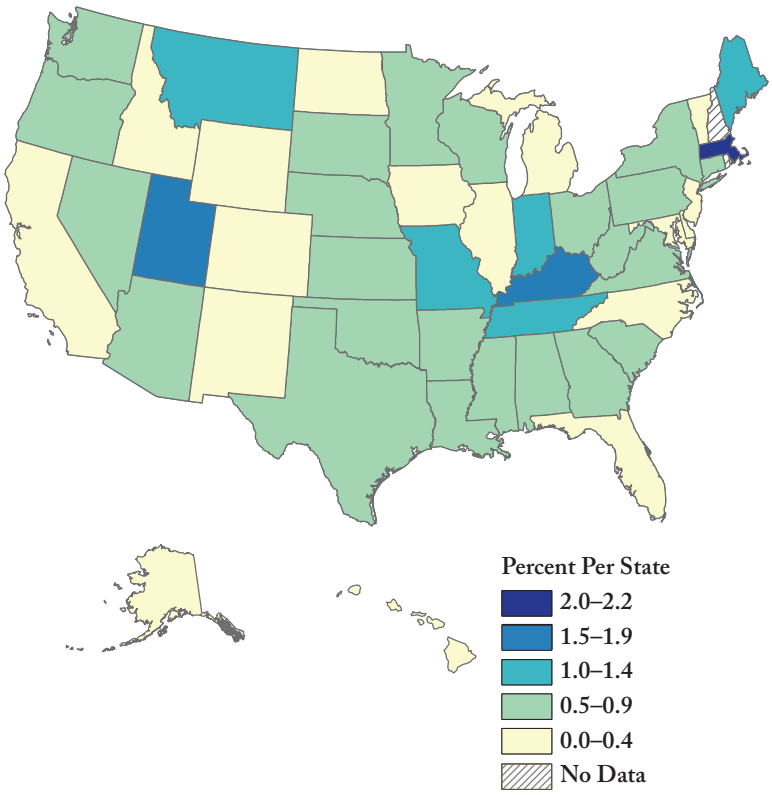


Figure 4.5 Percentage of analyzed drug items identified as alprazolam in Florida, by county, 2005.

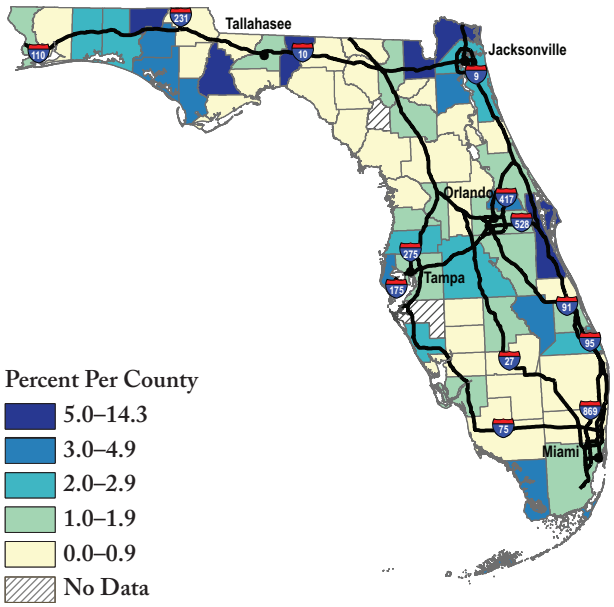


Figure 4.6 Percentage of analyzed drug items identified as alprazolam in Florida, by county, 2009.

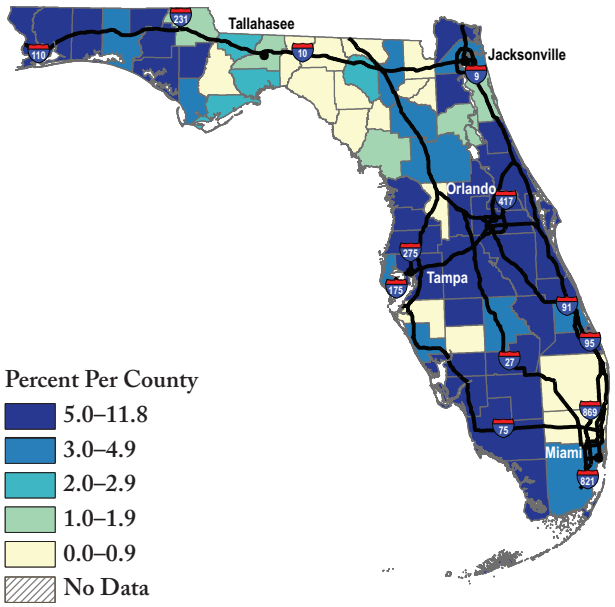


Figure 4.7 Percentage of analyzed drug items identified as clonazepam in Indiana, by county, 2005.

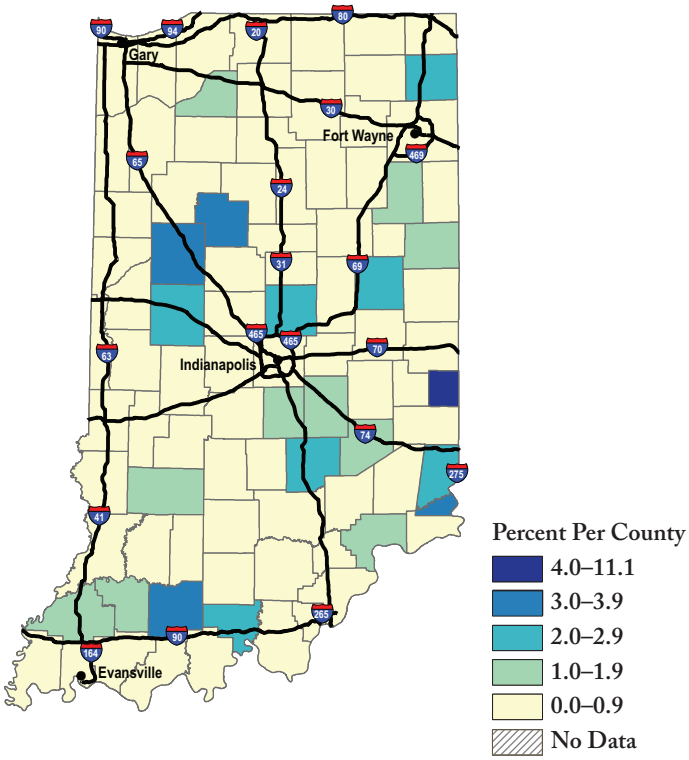
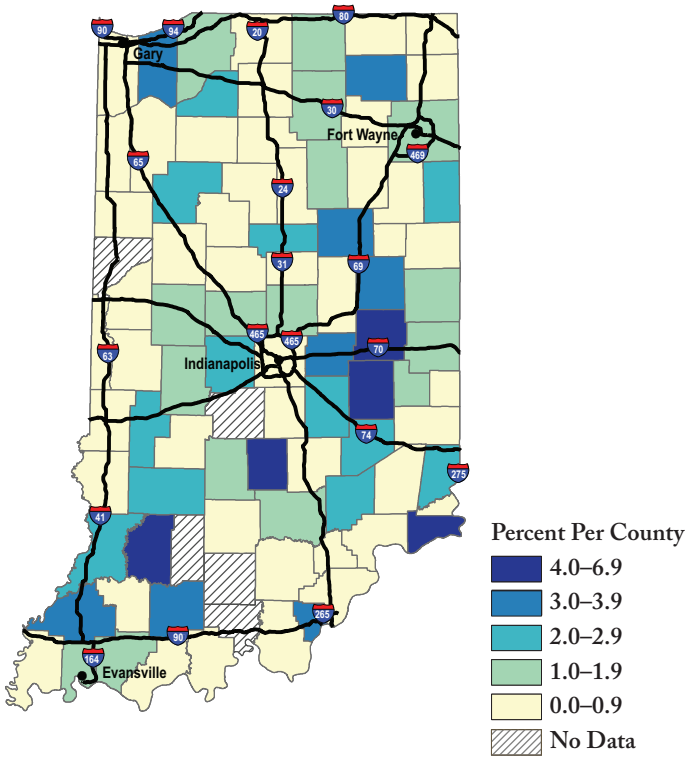


Figure 4.8 Percentage of analyzed drug items identified as clonazepam in Indiana, by county, 2009.



Section 5

DRUGS IDENTIFIED SELECTED U.S. CITIES

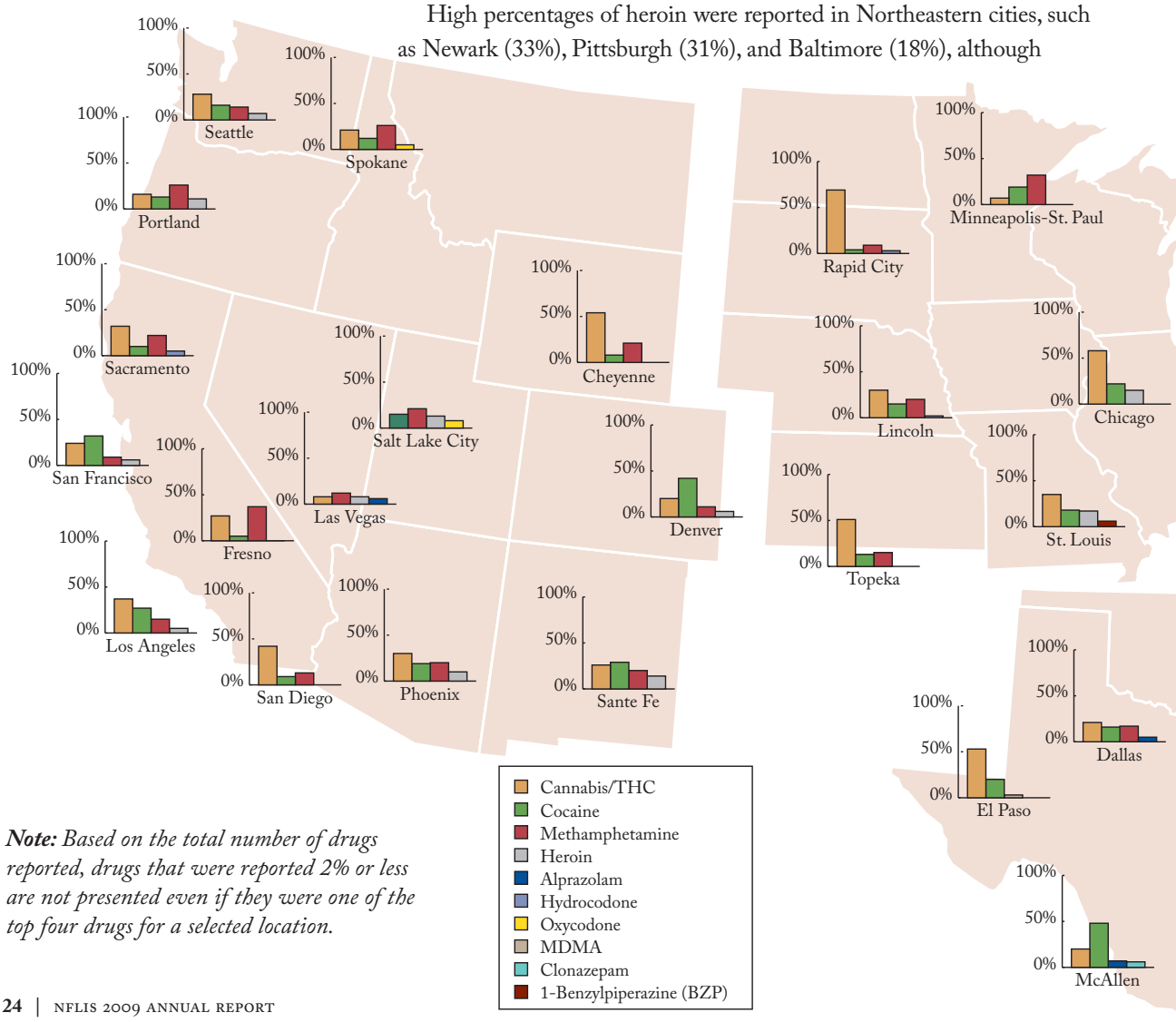
NFLIS can be used to monitor drugs reported by forensic laboratories across the country, including large U.S. cities. The drug analysis results presented in this section were reported during 2009 by NFLIS laboratories in selected large cities.

This section presents 2009 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, 26% of all drugs were identified as cocaine (Table 1.1). Cities east of the Mississippi River that reported the highest levels of cocaine included Columbia (80%), Miami (52%), Atlanta (46%), Tampa (45%), New York City (38%), Orlando (38%), Raleigh (35%), Philadelphia (31%), and Boston (30%). Among other cities, McAllen (48%), Denver (42%), and San Francisco (32%) 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 Minneapolis-St. Paul (32%), Portland (26%), Spokane (26%), Oklahoma City (22%), Sacramento (22%), Cheyenne (21%), and Salt Lake City (21%). Nationally, 8% of drugs in NFLIS were identified as methamphetamine.

High percentages of heroin were reported in Northeastern cities, such as Newark (33%), Pittsburgh (31%), and Baltimore (18%), although



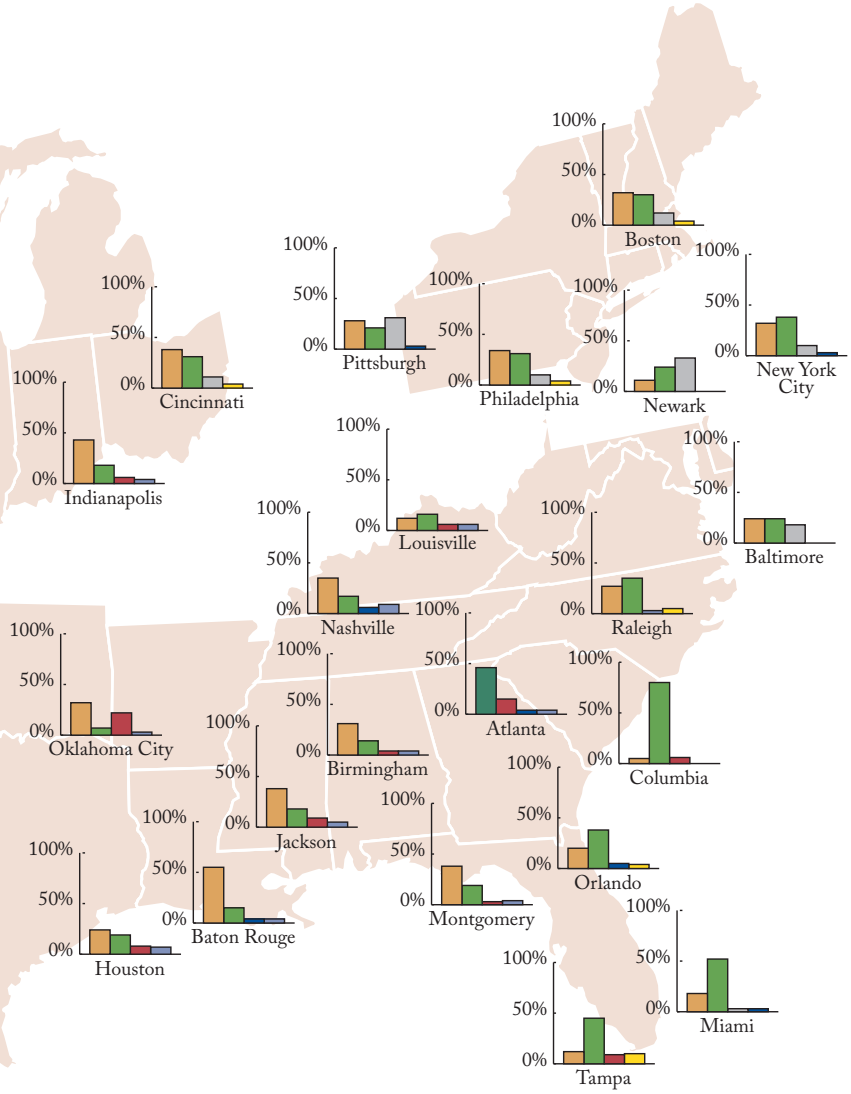
Note: *Based on the total number of drugs reported, drugs that were reported 2% or less are not presented even if they were one of the top four drugs for a selected location.*

BY LABORATORIES IN

St. Louis (17%), Chicago (15%), Santa Fe (14%), Salt Lake City (13%), Boston (12%), Cincinnati (11%), Portland (11%), New York City (10%), Philadelphia (10%), and Phoenix (10%) also reported heroin at a rate higher than the 7% reported nationally in NFLIS.

Among controlled prescription drugs, the highest percentages of oxycodone were reported in Tampa (10%), Salt Lake City (8%), Raleigh (5%), and Spokane (5%). Boston (4%), Cincinnati (4%), Orlando (4%), and Philadelphia (4%) also reported oxycodone at a higher percentage than the NFLIS national estimate of 3%.

Southern cities, such as Nashville (9%), Houston (7%), and Louisville (6%), reported the highest percentages of hydrocodone, although Jackson (5%), Sacramento (5%), Atlanta (4%), Baton Rouge (4%), Birmingham (4%), Indianapolis (4%), and Montgomery (4%) also reported hydrocodone at a higher percentage than the NFLIS national estimate of 3%. In addition, Southern cities also reported higher percentages of alprazolam, including McAllen (7%), Nashville (6%), Dallas (5%), Orlando (5%), Baton Rouge (4%), Atlanta (4%), and Miami (3%). Las Vegas (6%), New York City (3%), and Pittsburgh (3%) also reported alprazolam at a higher percentage than the NFLIS national estimate of 2%. McAllen (6%) reported the highest percentage of clonazepam compared with the NFLIS national estimate of 0.6 percent.



Selected Laboratories
Atlanta (Georgia State Bureau of Investigation—Decatur Laboratory)
Baltimore (Baltimore City Police Department)
Baton Rouge (Louisiana State Police)
Birmingham (Alabama Department of Forensic Sciences—Birmingham Laboratory)
Boston (Massachusetts Department of Public Health—Boston Laboratory)
Cheyenne (Wyoming State Crime Laboratory)
Chicago (Illinois State Police—Chicago Laboratory)
Cincinnati (Hamilton County Coroner's Office)
Columbia (South Carolina Law Enforcement Division—Columbia Laboratory)
Dallas (Texas Department of Public Safety—Garland Laboratory)
Denver (Denver Police Department Crime Laboratory)
El Paso (Texas Department of Public Safety—El Paso Laboratory)
Fresno (California Department of Justice—Fresno Laboratory and Fresno County Sheriff's Forensic Laboratory)
Houston (Texas Department of Public Safety—Houston Laboratory and Harris County Medical Examiner's Office)
Indianapolis (Indianapolis-Marion County Forensic Laboratory)
Jackson (Mississippi Department of Public Safety—Jackson Laboratory and Jackson Police Department Crime Laboratory)
Las Vegas (Las Vegas Metropolitan Police Crime Laboratory)
Lincoln (Nebraska State Patrol—Lincoln Laboratory)
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-St. Paul (Minnesota Bureau of Criminal Apprehension—Minneapolis Laboratory)
Montgomery (Alabama Department of Forensic Sciences—Montgomery Laboratory)
Nashville (Tennessee Bureau of Investigation—Nashville Laboratory)
Newark (Newark Police Department)
New York City (New York City 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 Forensic Services Division—Portland Laboratory)
Rapid City (Rapid City Police Department)
Raleigh (North Carolina State Bureau of Investigation—Raleigh 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)
Santa Fe (New Mexico Department of Public Safety—Santa Fe Laboratory)
Seattle (Washington State Patrol—Seattle Laboratory)
Spokane (Washington State Patrol—Spokane Laboratory)
St. Louis (St. Louis Police Department)
Tampa (Florida Department of Law Enforcement—Tampa Laboratory)
Topeka (Kansas Bureau of Investigation—Topeka Laboratory)

Appendix A

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 (updated in 2002, 2004, and 2008) 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 B 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 2009 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 2009 through December 2009.

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 2008. 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

For some drugs, such as cannabis/THC and cocaine, thousands of items are reported annually, allowing for reliable national prevalence estimates to be computed. For other drugs, reliable estimates cannot be computed because of a combination of low item counts and substantial variability in item counts between laboratories. Thus, a cutoff point for estimates was established.

The method for evaluating the precision and reliability of estimates was established using the relative standard error, or RSE, which is the ratio between the standard error of an estimate and the estimate itself. As a rule, drug estimates with an RSE greater than 50% were suppressed and not shown in the tables.

Earlier reports stated that the coefficient of variation, or CV, was the statistic used to evaluate the reliability of an estimate. The CV and the RSE both measure variation; however, the RSE is usually expressed as a percentage, and the CV is usually expressed as a decimal.

IMPUTATIONS AND ADJUSTMENTS

Due to technical and other reporting issues, several laboratories did not report data for every month during 2009. 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 2009 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.[10]) All statistical tests were performed at the 95% confidence level ($p < .05$). 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%.

Note that the trend analyses test for a linear trend is based on a time series of annual estimates. The tests do not compare the most recent annual estimate to the estimate for 2001. Instead, the tests compare the trend across all time points. For example, it is possible for an increasing trend to be reported when the most recent annual estimate is less than the estimate for 2001 because the overall trend, across all time points, is increasing. It is also possible that the trend line does not fit the time series particularly well because the actual time series shows a curvilinear pattern. For example, if the estimates increased drastically during the early years of the time series but decreased in recent years, the linear trend test may detect an increasing trend, thus oversimplifying the actual pattern.

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

Appendix B

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 County Sheriff's Department (4 sites)**	✓
	Local	**Los Angeles Police Department (2 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 (5 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	Indian River Crime Laboratory (Fort Pierce)	✓
	Local	**Miami-Dade Police Department Crime Laboratory**	✓
	Local	Palm Beach County Sheriff's Office Crime Laboratory (West Palm Beach)	
	Local	Pinellas County Forensic Laboratory (Largo)	✓
	Local	Sarasota County Sheriff's Office	✓
GA	**State**	**Georgia State Bureau of Investigation (8 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 (4 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	State	Maryland State Police Forensic Sciences Division (3 sites)	
	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 (8 sites)**	✓
	Local	Independence Police Department	✓
	Local	KCMO Regional Crime Laboratory (Kansas City)	✓
	Local	St. Charles County Criminalistics Laboratory (O'Fallon)	✓
	Local	St. Louis County Crime Laboratory (Clayton)	✓
	Local	**St. Louis Police Department**	✓
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 (3 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 (2 sites)**	✓
	Local	Albuquerque Police Department	✓
NV	**Local**	**Las Vegas Metropolitan Police Crime Laboratory**	✓
	Local	Washoe County Sheriff's Office Crime Laboratory (Reno)	
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 (6 sites)**	✓
PA	State	Pennsylvania State Police Crime Laboratory (6 sites)	✓
	Local	**Allegheny County Coroner's Office (Pittsburgh)**	✓
	Local	**Bucks County Crime Laboratory (Warminster)**	✓
	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	Fort Worth Police Department Criminalistics Laboratory	✓
	Local	Harris County Medical Examiner's Office (Houston)	✓
	Local	Jefferson County Sheriff's Regional Crime Laboratory (Beaumont)	✓
	Local	Pasadena Police Department	✓
UT	State	Utah State Crime Laboratory (4 sites)	✓
VA	**State**	**Virginia Department of Forensic Science (4 sites)**	✓
VT	State	Vermont Forensic Laboratory	✓
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 (4 sites)	✓

This list identifies participating and reporting laboratories as of April 2010.

Laboratories in bold are part of the national sample.

* The Detroit Police Department currently reports data via the Michigan State Police.

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

Appendix C

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 Data Query System (DQS) 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 DQS 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.

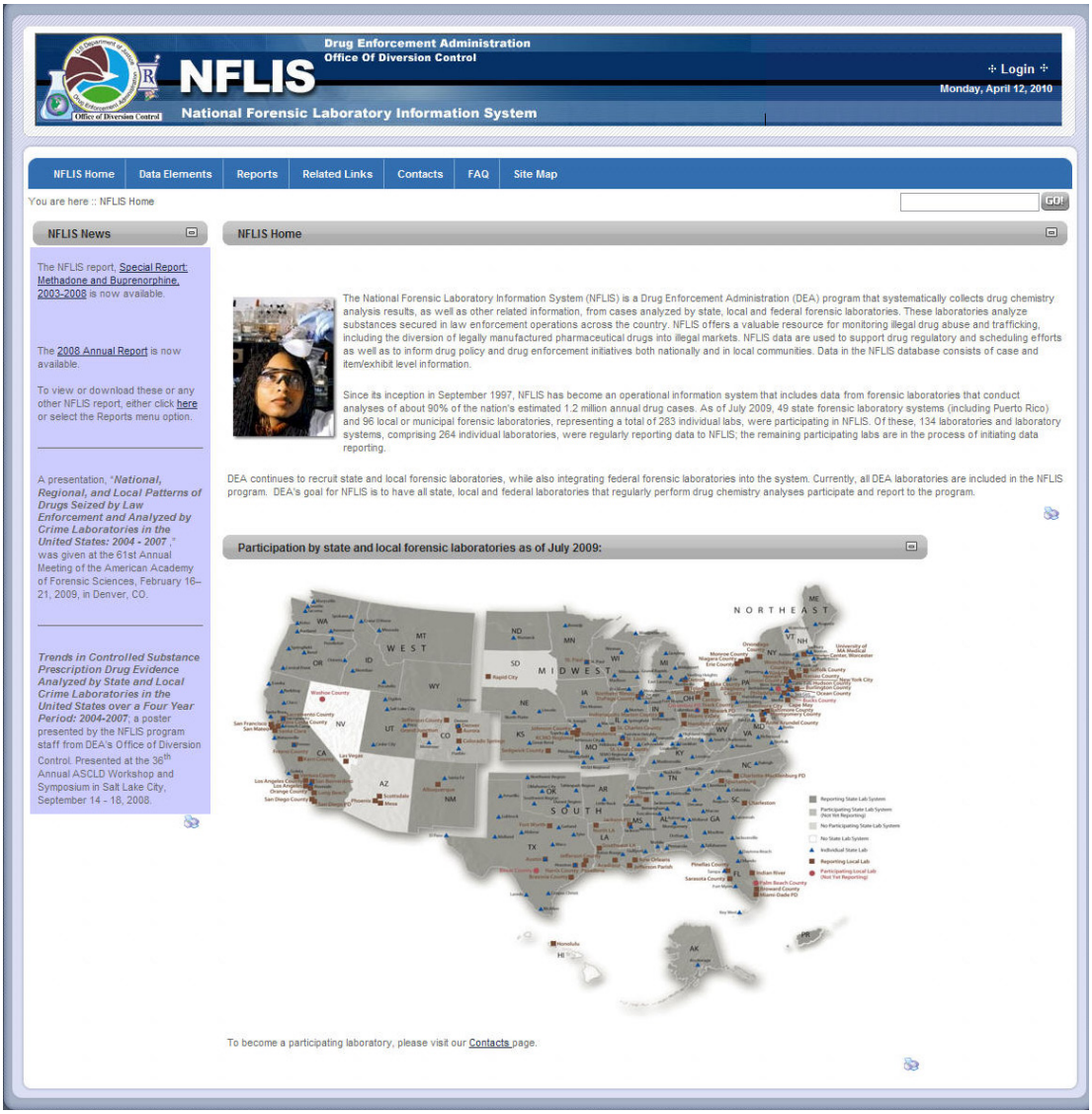
- Currently, NFLIS includes data from state and local forensic laboratories, as well as data from the DEA's STRIDE. STRIDE includes data from DEA laboratories across the country. The STRIDE data are shown separately in this report. Efforts are under way to enroll additional federal laboratories.
- NFLIS 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 that are participating in NFLIS.
- State and local policies related to the enforcement and prosecution of specific drugs may affect drug evidence submissions to laboratories for analysis.
- Laboratory policies and procedures for handling drug evidence vary. Some laboratories analyze all evidence submitted to them, while others analyze only selected items. Many laboratories do not analyze drug evidence if the criminal case was dismissed from court or if no defendant could be linked to the case.
- Laboratories vary with respect to the records they maintain. For example, some laboratories' automated records include the weight of the sample selected for analysis (e.g., the weight of one of five bags of powder), while others record total weight.

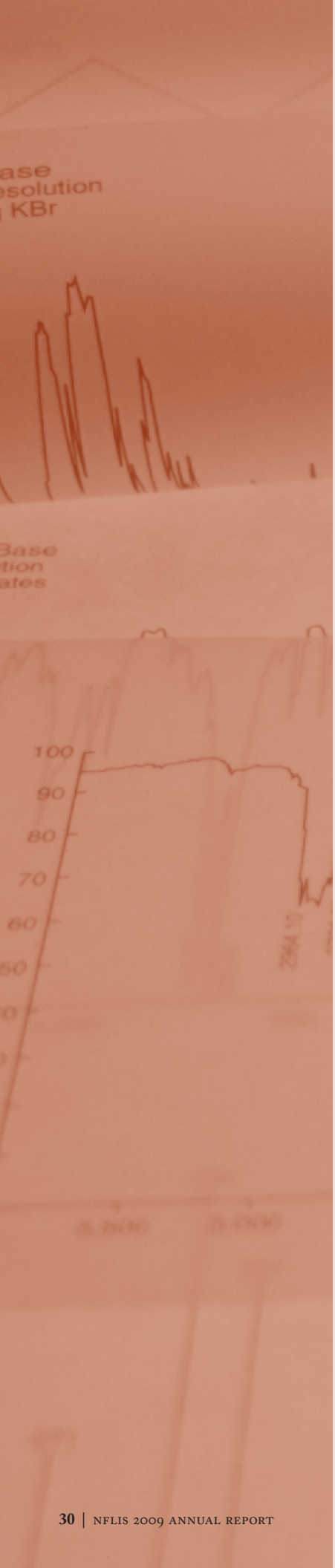
NFLIS DATA QUERY SYSTEM

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

The DQS operates as a secure section of the NFLIS Web site located on a restricted server. To access the DQS, 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 DQS, including providing World Wide Web access to the DQS. This provides more secure and confidential DQS access, as well as improved system performance for laboratories with high-speed/broadband Internet access. As part of the enhanced DQS, 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. New usernames and passwords are required to access restricted areas of the NFLIS Web site, including the DQS. To obtain information about participation, please visit the NFLIS Web site at https://www.nflis.deadiversion.usdoj.gov.





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