NFLIS

NATIONAL FORENSIC LABORATORY INFORMATION SYSTEM

2012 ANNUAL REPORT

U.S. DEPARTMENT OF JUSTICE
DRUG ENFORCEMENT ADMINISTRATION
OFFICE OF DIVERSION CONTROL

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Highlights

- An estimated total of 1,622,435 drug reports were submitted to State and local forensic laboratories in the United States from January 1 through December 31, 2012, and analyzed by March 31, 2013.
- Cannabis/THC was the most frequently identified drug (513,095 reports) in 2012, followed by cocaine (268,402 reports), methamphetamine (180,187 reports), and heroin (131,624 reports).
- Nationally, oxycodone reports increased significantly ($p < .05$) since 2001 and did so more dramatically from 2006 through 2012. Buprenorphine showed a similar pattern, but its rate of increase slowed from 2010 through 2012. Although hydrocodone and alprazolam reports increased from 2001 through 2010, they began to decrease in 2011 and 2012. Clonazepam reports showed a linear increasing trend since 2001. Amphetamine reports decreased from 2001 through 2004, but increased from 2004 to 2012.
- Reports of oxycodone, hydrocodone, and alprazolam decreased significantly from 2011 to 2012, while reports of buprenorphine and amphetamine increased significantly.
- Regionally, for oxycodone and hydrocodone, all regions showed increasing trends until about 2009. After 2009, a downward trend or curvature is found across all regions, though it is not always significant. For alprazolam and clonazepam, the West and Northeast region showed linear increasing trends, while the South showed an S-shaped trend as it began curving downward in 2010. For buprenorphine, all regions showed upward curving trends. For amphetamine, three regions (Midwest, South, and Northeast) showed upward-curving trends in drug reports, especially since 2007.
- In 2012, oxycodone and hydrocodone accounted for 69% of narcotic analgesic reports. Alprazolam accounted for 51% of identified tranquilizers and depressants. Among identified hallucinogens, AM-2201 accounted for 21% of reports.
- Nationwide, cannabis/THC reports showed an S-shaped trend in that they decreased from 2001 through 2004, slightly increased from 2004 to 2009, and decreased since 2009. Cocaine reports decreased sharply between 2005 and 2012. Methamphetamine and MDMA reports both showed clear S-shaped trends. Methamphetamine reports increased from 2001 through 2004, decreased from 2004 through 2009, and increased since 2009. MDMA reports showed the opposite trend in that they decreased from 2001 through 2004, increased from 2004 through 2009, and decreased since 2009. Heroin reports showed a U-shaped trend in that they decreased from 2001 through 2005, but increased since 2005.

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 submitted to and analyzed by Federal, State, and local forensic laboratories. These laboratories analyze controlled and noncontrolled substances secured in law enforcement operations. 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 includes data from forensic laboratories that handle approximately 90% of an estimated 1.0 million distinct annual State and local drug analysis cases. Currently, NFLIS includes 49 State systems and 94 local or municipal laboratories/laboratory systems, representing 277 individual laboratories. The NFLIS database also includes Federal data from the DEA's System To Retrieve Information from Drug Evidence II (STRIDE) and from U.S. Customs and Border Protection (CBP) laboratories. STRIDE reflects the results of drug evidence analyzed at DEA laboratories nationwide.

The 2012 Annual Report presents the results of drug cases submitted to State and local laboratories from January 2012 through December 2012 that were analyzed by March 31, 2013. Section 1 presents national and regional estimates for the 25 most frequently reported drugs, as well as national and regional trends from 2001 through 2012. National and regional estimates are based on the NEAR approach (National Estimates Based on All Reports). See Appendix A for details on the NEAR approach and Appendix B for a list of NFLIS participating and reporting laboratories. Data from Federal laboratories are also included in this publication. All data presented in this publication included the first, second, and third drug reports that were mentioned in laboratories' reported drug items.

Sections 2 through 4 present actual reported data rather than national and regional estimates; all data reported by NFLIS State and local laboratories are included. Section 2 presents drug reports by major drug categories. Section 3 presents a Geographic Information System (GIS) analysis on AM-2201 and alpha-PVP reports by State and by county for selected States. Section 4 presents drugs reported by selected laboratories in cities across the country. The benefits and limitations of NFLIS are presented in Appendix C. A key area of the program is the NFLIS Data Query System (DQS); Appendix D summarizes the DQS and the NFLIS website.

NORTHEAST
MIDWEST
SOUTH
ME
Augusta
Waterbury
VT
NH
Concord
Amherst
Sudbury
Boston
University of MA Medical Center, Worcester
Providence
RI
Hartford
CT
Suffolk County
Westchester County
New York City
Hudson County
Burlington County
Ocean County
Bucks County
Cape May
Baltimore County
Montgomery County
Anne Arundel County
Berlin
MD
VA
Richmond
Norfolk
Roanoke
Onondaga County
NY
Albany
MA
Newburgh
Niagara County
Erie County
Port Crane
Olean
Wyoming
Yonkers
Union County
Little Falls
NJ
West Trenton
Bethlehem
Philadelphia
Sea Girt
Hammonton
Media
Harrisburg
Greensburg
Erie
PA
Allegheny County
Lake County
Richfield
Cuyahoga County
Toledo
Mansfield PD
OH
Canton-Columbus PD
Stark County
Newark PD
Miami Valley
Hamilton County
Baltimore City
Pikesville
Hagerstown
DE
Fairfax
WV
Highland Heights
Ashland
South Charleston
Grayling
MI
Bridgeport
Sterling Heights
Northville
Grand Rapids
Milwaukee
Madison
East Lansing
Chicago
Rockford
Westchester
Joliet
Fort Wayne
Lowell
Bowling Green
Columbus
London
Morton
Springfield
Indianapolis
IN
Indianapolis-Marion County
IL
Macon
St. Joseph
Des Moines
IA
Northern Illinois
DuPage County
Wausau
WI
Marquette
Bemidji
MN
St. Paul
St. Paul
ND
Bismarck
SD
Rapid City
NE
North Platte
Lincoln
Cheyenne
Denver
Denver
Aurora
Colorado Springs
Great Bend
Pueblo
KS
Johnson County
Topeka
Independence
KCMO Regional
Jefferson City
St. Charles County
Fairview Heights
St. Louis
Hillsboro
Carbondale
St. Louis County
MO
Sedgwick County
Pittsburg
Springfield
SEMO Regional
Willow Springs
MSSU Regional
Evansville
Louisville
Frankfort
KY
London
Madisonville
Greensboro
Raleigh
NC
Knoxville
Asheville
Charlotte-Mecklenburg PD
Nashville
TN
Cleveland
Spartanburg
Anderson/Oconee
Columbia
Northwest Region
Tulsa
OK
Tahlequah Region
Oklahoma City
Amarillo
Southwest Region
Durant Region
AR
Little Rock
Memphis
Florence
Huntsville
Tupelo
Batesville
Jacksonville
Birmingham
Decatur
Augusta
SC
Charleston
Hobbs
Lubbock
Tuscaloosa
Macon
Savannah
Fort Worth
Garland
Jackson PD
MS
AL
Auburn
Midland
GA
Abilene
Tyler
North LA
Jackson
Meridian
Montgomery
Moultrie
Midland
LA
Dothan
Jacksonville
Mobile
Gulfport
Pensacola
Tallahassee
TX
Waco
Southwest LA
Baton Rouge
Daytona Beach
Austin
Jefferson County
Houston
Acadiana
New Orleans
Jefferson Parish
Orlando
Bexar County
Harris County
Pasadena
Brazoria County
Pinellas County
Tampa
Manatee County
Sarasota County
FL
Indian River
Palm Beach County
Broward County
Miami-Dade PD
Fort Myers
Laredo
Corpus Christi
McAllen
San Juan
PR
Mayagüez
Ponce
Honolulu
HI
AK
Anchorage
Reporting State Lab System
Participating State Lab System
(Not Yet Reporting)
No Participating State Lab System
No State Lab System
Individual State Lab
Reporting Local Lab
Participating Local Lab
(Not Yet Reporting)

Section 1

NATIONAL AND REGIONAL ESTIMATES

This section describes national and regional estimates for drug reports and drug cases submitted to State and local laboratories from January through December 2012 that were analyzed by March 31, 2013. Trends are presented for selected drugs from 2001 through 2012.

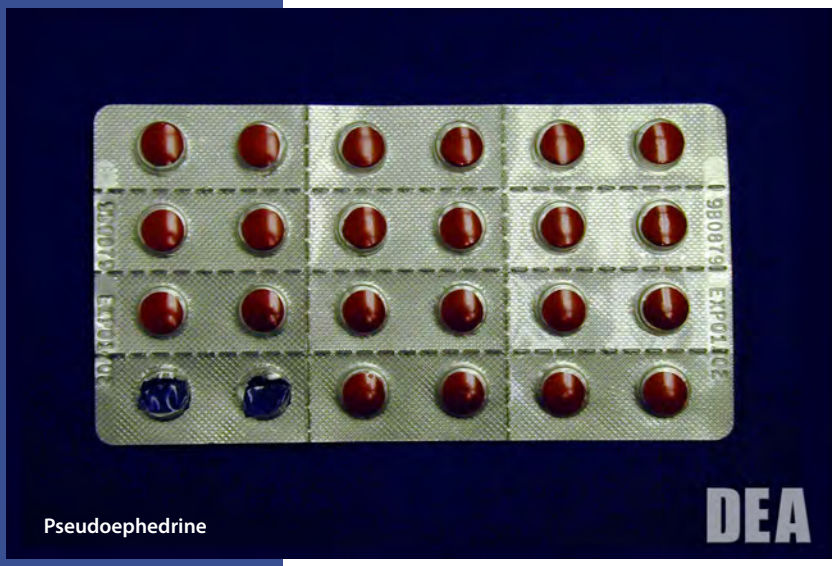
National and regional drug estimates presented in the following section include all drug reports (up to three per laboratory item). The NEAR approach (National Estimates Based on All Reports) was used to produce estimates for the Nation and for the U.S. census regions. The NEAR approach uses all NFLIS reporting laboratories. Appendix A provides a detailed description of the methods used in preparing these estimates.

1.1 Drug Reports

In 2012, an estimated 1,622,435 drug reports were identified by State and local forensic laboratories in the United States. This represents a 2% decrease from the 1,660,216 drug reports identified during 2011. Table 1.1 presents the 25 most frequently identified drugs for the Nation and for each of the U.S. census regions.

The top 25 drugs accounted for 84% of all drugs analyzed in 2012. Two-thirds of all drugs reported in NFLIS were identified as cannabis/THC, cocaine, methamphetamine, and heroin. Nationally, 513,095 drugs were identified as cannabis/THC (32%), 268,402 as cocaine (17%), 180,187 as methamphetamine (11%), and 131,624 as heroin (8%).

Six narcotic analgesics were in the top 25 drugs: oxycodone (55,237 reports), hydrocodone (43,115 reports), buprenorphine (11,801 reports), morphine (9,311 reports), methadone (8,071 reports), and hydromorphone (4,441 reports). Also included were five tranquilizers and depressants: alprazolam (39,874 reports), clonazepam (11,464 reports), diazepam (6,155 reports), phencyclidine (PCP) (5,595 reports), and carisoprodol (5,281 reports). There were six hallucinogens: AM-2201 (14,263 reports), XLR11 (9,003 reports), MDMA (5,923 reports), UR-144 (5,892 reports), psilocin/psilocibin (5,050 reports), and methylone (4,825 reports). Of these, this is the first time that XLR11, UR-144, and methylone have appeared in the top 25 drugs. Other controlled drugs included two stimulants: amphetamine (10,314 reports) and BZP (4,855 reports). Pseudoephedrine (5,574 reports), a listed chemical, was also included in the 25 most frequently identified drugs.



Pseudoephedrine

Table 1.1 NATIONAL AND REGIONAL ESTIMATES FOR THE 25 MOST FREQUENTLY IDENTIFIED DRUGS[1]

Estimated number and percentage of total drug reports submitted to laboratories from January 2012 through December 2012 and analyzed by March 31, 2013

	National		West		Midwest		Northeast		South	
Drug	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Cannabis/THC	513,095	31.63%	61,168	22.53%	156,302	40.44%	93,321	33.82%	202,305	29.38%
Cocaine	268,402	16.54%	26,524	9.77%	45,630	11.81%	61,389	22.25%	134,859	19.58%
Methamphetamine	180,187	11.11%	89,544	32.99%	30,280	7.84%	1,854	0.67%	58,510	8.50%
Heroin	131,624	8.11%	22,067	8.13%	38,971	10.08%	41,090	14.89%	29,496	4.28%
Oxycodone	55,237	3.40%	6,000	2.21%	8,445	2.19%	13,114	4.75%	27,679	4.02%
Hydrocodone	43,115	2.66%	5,464	2.01%	9,095	2.35%	2,743	0.99%	25,814	3.75%
Alprazolam	39,874	2.46%	2,901	1.07%	6,802	1.76%	6,675	2.42%	23,495	3.41%
AM-2201	14,263	0.88%	1,778	0.65%	4,414	1.14%	2,036	0.74%	6,035	0.88%
Buprenorphine	11,801	0.73%	1,023	0.38%	1,813	0.47%	4,167	1.51%	4,798	0.70%
Clonazepam	11,464	0.71%	1,161	0.43%	2,401	0.62%	2,544	0.92%	5,358	0.78%
Amphetamine	10,314	0.64%	1,081	0.40%	2,787	0.72%	1,394	0.51%	5,052	0.73%
Morphine	9,311	0.57%	1,686	0.62%	2,327	0.60%	901	0.33%	4,397	0.64%
XLR11	9,003	0.55%	793	0.29%	3,672	0.95%	790	0.29%	3,748	0.54%
Methadone	8,071	0.50%	1,486	0.55%	1,402	0.36%	1,468	0.53%	3,715	0.54%
Noncontrolled, non-narcotic[2]	7,638	0.47%	2,173	0.80%	6	0.00%	736	0.27%	4,723	0.69%
Diazepam	6,155	0.38%	905	0.33%	1,347	0.35%	623	0.23%	3,281	0.48%
MDMA	5,923	0.37%	2,076	0.76%	1,395	0.36%	1,045	0.38%	1,408	0.20%
UR-144	5,892	0.36%	712	0.26%	1,882	0.49%	572	0.21%	2,726	0.40%
Phencyclidine (PCP)	5,595	0.34%	584	0.22%	983	0.25%	2,420	0.88%	1,608	0.23%
Pseudoephedrine[3]	5,574	0.34%	92	0.03%	2,426	0.63%	305	0.11%	2,751	0.40%
Carisoprodol	5,281	0.33%	891	0.33%	445	0.12%	229	0.08%	3,717	0.54%
Psilocin/psilocibin	5,050	0.31%	1,694	0.62%	1,454	0.38%	534	0.19%	1,368	0.20%
1-Benzylpiperazine (BZP)	4,855	0.30%	368	0.14%	2,246	0.58%	937	0.34%	1,305	0.19%
Methylone	4,825	0.30%	332	0.12%	490	0.13%	841	0.30%	3,163	0.46%
Hydromorphone	4,441	0.27%	472	0.17%	646	0.17%	177	0.06%	3,145	0.46%
Top 25 Total	1,366,990	84.26%	232,972	85.82%	327,661	84.79%	241,902	87.67%	564,455	81.97%
All Other Drug Reports	255,446	15.74%	38,485	14.18%	58,796	15.21%	34,006	12.33%	124,158	18.03%
Total Drug Reports[4]	1,622,435	100.00%	271,458	100.00%	386,457	100.00%	275,908	100.00%	688,613	100.00%

AM-2201=1-(5-fluoropentyl)-3-(1-naphthoyl)indole

XLR11=[1-(5-fluoropentyl)-1H-indol-3-yl](2,2,3,3-tetramethylcyclo-propyl) methanone

MDMA=3,4-Methylenedioxymethamphetamine

UR-144=1-pentyl-1H-indol-3-yl)(2,2,3,3-tetramethylcyclopropyl)methanone

[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 distinguish between pseudoephedrine and ephedrine.*

[4] *Numbers and percentages may not sum to totals because of rounding.*

Table 1.2 *National Case Estimates*
Top 25 estimated number of drug-specific cases and their percentage of distinct cases, January 2012 through December 2012

Drug	Number	Percent
Cannabis/THC	359,808	38.65%
Cocaine	207,171	22.26%
Methamphetamine	127,177	13.66%
Heroin	99,830	10.72%
Oxycodone	42,921	4.61%
Hydrocodone	35,908	3.86%
Alprazolam	32,751	3.52%
Buprenorphine	10,282	1.10%
Clonazepam	9,997	1.07%
Amphetamine	8,543	0.92%
AM-2201	8,235	0.88%
Morphine	7,841	0.84%
Methadone	6,983	0.75%
Diazepam	5,421	0.58%
Phencyclidine (PCP)	4,846	0.52%
Noncontrolled, non-narcotic[1]	4,825	0.52%
XLR11	4,777	0.51%
Carisoprodol	4,526	0.49%
Psilocin/psilocibin	4,076	0.44%
MDMA	3,919	0.42%
Hydromorphone	3,882	0.42%
Pseudoephedrine[2]	3,625	0.39%
Methylone	3,535	0.38%
UR-144	3,175	0.34%
Codeine	3,111	0.33%
Top 25 Total	1,007,166	108.19%
All Other Drugs	181,923	19.54%
Total All Drugs	1,189,089[3]	127.74%[4]

AM-2201=1-(5-fluoropentyl)-3-(1-naphthoyl)indole

XLR11=[1-(5-fluoropentyl)-1H-indol-3-yl](2,2,3,3-tetramethylcyclo-propyl)methanone

MDMA=3,4-Methylenedioxymethamphetamine

UR-144=1-pentyl-1H-indol-3-yl)(2,2,3,3-tetramethylcyclopropyl) methanone

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

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

[3] *Numbers and percentages may not sum to totals because of 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 930,892 distinct cases submitted to State and local laboratories from January 2012 through December 2012 and analyzed by March 31, 2013.*

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 the top 25 drug-specific cases. This table illustrates the number of cases that contained one or more reports of the specified drug. In 2012, there were 1,189,089 drug-specific cases submitted to and analyzed by State and local forensic laboratories, representing a 2% decrease from the 1,218,161 in 2011.

Among cases, cannabis/THC was the most common drug reported during 2012. Nationally, an estimated 39% of drug cases contained one or more reports of cannabis/THC, followed by cocaine, which was identified in 22% of all drug cases. About 14% of drug cases contained methamphetamine, 11% contained heroin, and 5% contained oxycodone; hydrocodone and alprazolam were each reported in about 4% of cases.

Cannabis-laced Edibles

Drugs Reported by Federal Laboratories

Drug reports presented in this section are from the DEA's System To Retrieve Information from Drug Evidence II (STRIDE) and from seven U.S. Customs and Border Protection (CBP) laboratories. STRIDE reflects results of substance evidence from drug seizures, undercover drug buys, and other evidence analyzed at DEA laboratories located across the country. STRIDE includes results for drug cases submitted by DEA agents, other Federal law enforcement agencies, and select local police agencies. Although STRIDE captures both domestic and international drug cases, the results presented in this section describe only those drugs obtained within the United States.

A total of 67,968 drugs were submitted to DEA and CBP laboratories in 2012 and analyzed by March 31, 2013. In 2012, half of the drugs reported by DEA and CBP laboratories were identified as cocaine (15%), cannabis/THC (15%), methamphetamine (14%), or heroin (8%). This is the first time that AM-2201 and alpha-PVP have appeared in the top 10 most frequently reported drugs by Federal laboratories.

MOST FREQUENTLY REPORTED DRUGS BY FEDERAL LABORATORIES[1]

Number and percentage of drug reports submitted to laboratories from January 2012 through December 2012 and analyzed by March 31, 2013

Drug	Number	Percent
Cocaine	10,222	15.04%
Cannabis/THC	10,120	14.89%
Methamphetamine	9,757	14.36%
Heroin	5,442	8.01%
Oxycodone	1,474	2.17%
AM-2201	1,115	1.64%
Noncontrolled, non-narcotic drug	1,045	1.54%
Hydrocodone	454	0.67%
alpha-PVP	404	0.59%
Phencyclidine (PCP)	392	0.58%
All Other Drug Reports	27,543	40.52%
Total Drug Reports	77,246	100.00%[2]

AM-2201=1-(5-fluoropentyl)-3-(1-naphthoyl)indole
alpha-PVP=alpha-Pyrrolidinopentiophenone

[1] *Federal drug reports in this table include 65,645 reports from DEA laboratories and 2,323 reports from U.S. Customs and Border Protection (CBP) laboratories.*

[2] *Percentages may not sum to 100% because of rounding.*

1.3 National and Regional Drug Trends

The remainder of this section presents annual national and regional trends of selected drugs submitted to State and local laboratories during each annual data reference period and analyzed within three months of the end of each annual period. The trend analyses test the data for the presence of both linear and curved trends using statistical methods described in more detail in Appendix A. Curved trends are sometimes described as U-shaped (i.e., decreasing in earlier years and increasing in recent years) and S-shaped (i.e., two turns in the trend, roughly either increasing-decreasing-increasing or decreasing-increasing-decreasing). Estimates include all drug reports (up to three) identified among the NFLIS laboratories' reported drug reports.

National prescription drug trends

Figures 1.1 and 1.2 present national trends for the estimated number of prescription drug reports that were identified as oxycodone, hydrocodone, alprazolam, clonazepam, buprenorphine, and amphetamine. Nationally, from the period of 2001 through 2012, all six of these drugs exhibited a significant ($p < .05$) increasing trend. More specifically:

- Oxycodone reports increased more dramatically from 2006 through 2012 than they did from 2001 through 2005. Even though the oxycodone trend curve was still increasing through 2012, the number of estimated oxycodone reports started to decrease in 2010.
- Hydrocodone and alprazolam reports began to decrease in 2011 and 2012.

Figure 1.1 National trend estimates for oxycodone, hydrocodone, and alprazolam, January 2001–December 2012

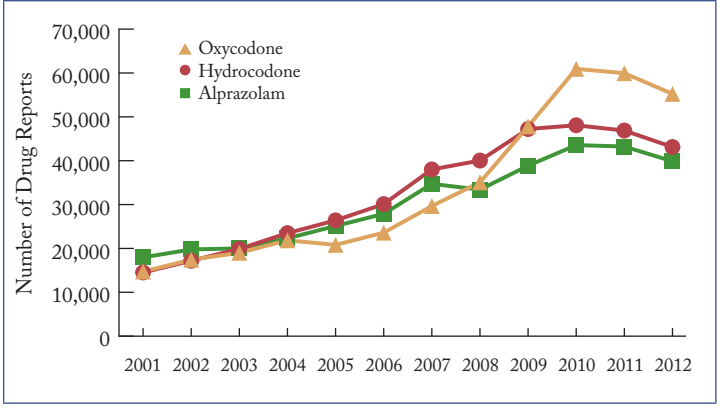
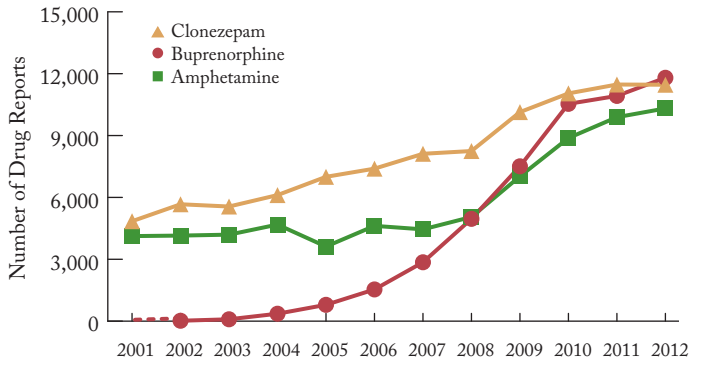


Figure 1.2 National trend estimates for clonazepam, buprenorphine, and amphetamine, January 2001–December 2012*



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

- Clonazepam reports showed a linear increasing trend since 2001.
- Buprenorphine reports increased dramatically from 2004 to 2009. The rate of increase slowed from 2010 through 2012, but reports still appeared to be increasing.
- Amphetamine reports decreased slightly from 2001 to 2004, but increased since 2004.

Significance tests were also performed on differences from 2011 to 2012 in order to identify more recent changes. Across these two periods, reports of oxycodone (from 59,953 to 55,237 reports), hydrocodone (from 46,872 to 43,115 reports), and alprazolam (from 43,231 to 39,874 reports) decreased significantly ($p < .05$), while reports of buprenorphine (from 10,922 to 11,801 reports) and amphetamine (from 9,890 to 10,314 reports) increased significantly.

Other national drug trends

Figures 1.3 and 1.4 present national trends for reports of cannabis/THC, cocaine, methamphetamine, heroin, and MDMA. Significant ($p < .05$) results include the following:

- Cannabis/THC reports showed an S-shaped trend in that they decreased from 2001 through 2004, slightly increased from 2004 to 2009, and decreased since 2009.
- Cocaine reports decreased between 2005 and 2012.
- Methamphetamine and MDMA reports both showed clear S-shaped trends. Methamphetamine reports increased from 2001 through 2004, decreased from 2004 through 2009, and increased since 2009. MDMA reports showed the opposite trend in that they decreased from 2001 through 2004, increased from 2004 through 2009, and decreased since 2009.
- Heroin reports showed a U-shaped trend in that they decreased from 2001 through 2005, but increased since 2005.

Figure 1.3 National trend estimates for cannabis/THC and cocaine, January 2001–December 2012

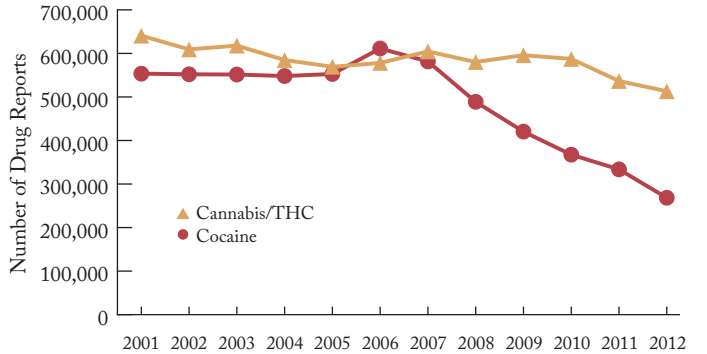
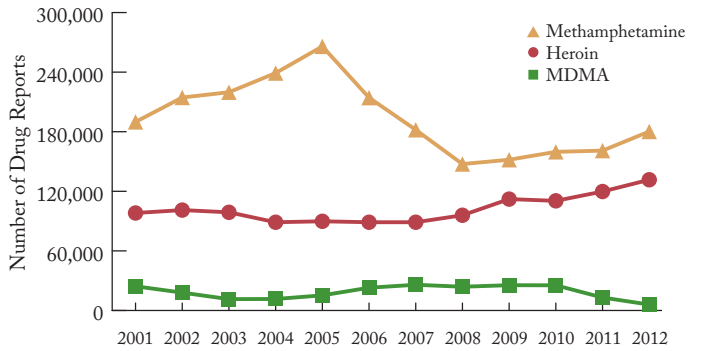


Figure 1.4 National trend estimates for methamphetamine, heroin, and MDMA, January 2001–December 2012



More recently, from 2011 to 2012, reports of methamphetamine (from 160,960 to 180,187 reports) and heroin (from 119,765 to 131,624 reports) increased significantly ($p < .05$), while reports of cannabis/THC (from 536,630 to 513,095 reports), cocaine (from 333,645 to 268,402 reports), and MDMA (from 13,031 to 5,923 reports) decreased significantly.

Regional prescription drug trends

Figures 1.5 through 1.10 show regional trends per 100,000 persons aged 15 or older for reports of oxycodone, hydrocodone, alprazolam, clonazepam, buprenorphine, and amphetamine from 2001 through 2012. These figures illustrate changes in prescription drugs reported over time, taking into account the population of each U.S. census region. Significant ($p < .05$) trend results include the following:

- For oxycodone and hydrocodone, all regions showed increasing trends until about 2009. After 2009, a downward trend or curvature is suggested across all regions, though it is not always significant.
- For alprazolam and clonazepam, the West and Northeast region showed linear increasing trends. For alprazolam in the Northeast, the trend had a slight S-shape, increasing with slight upward curvature from 2001 to 2010, but flattening out since 2010. For alprazolam in the South, the S-shape was more pronounced. Instead of flattening out since 2010, the trend began curving downward in 2010.
- For buprenorphine, all regions showed upward curving trends. In the Northeast, the rate of increase slowed in recent years, especially since 2010.
- For amphetamine, no trend was evident in the West, but the other three regions showed upward-curving trends, especially since 2007.

More recently, from 2011 to 2012, oxycodone reports decreased significantly in all regions except the West ($p < .05$), while hydrocodone reports decreased significantly in all regions except the Midwest. Alprazolam decreased significantly in the South. Clonazepam decreased significantly in the Northeast, but increased significantly in the South. Buprenorphine decreased significantly in the Northeast, but increased significantly in the other three regions. Amphetamine increased significantly in the Midwest.

Figure 1.5 Regional trends in oxycodone reported per 100,000 persons aged 15 or older, January 2001–December 2012

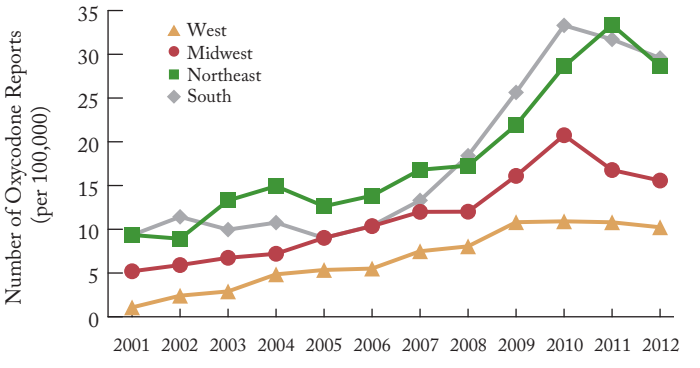


Figure 1.6 Regional trends in hydrocodone reported per 100,000 persons aged 15 or older, January 2001–December 2012

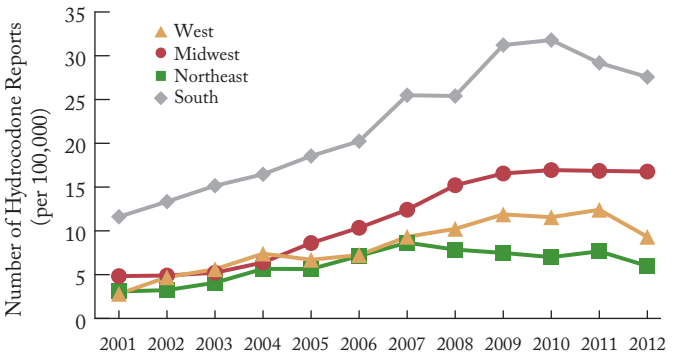
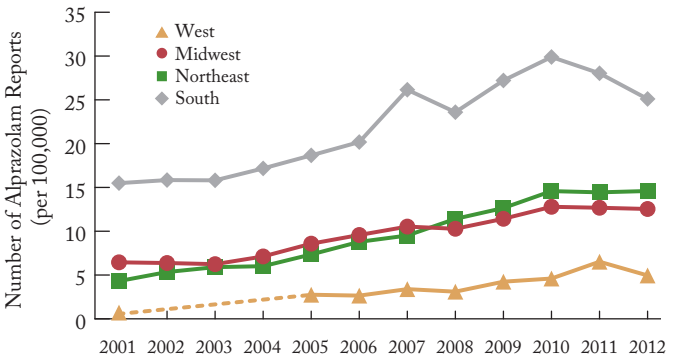


Figure 1.7 Regional trends in alprazolam reported per 100,000 persons aged 15 or older, January 2001–December 2012*



Note: U.S. Census 2012 population data by age were not available for this publication. Population data for 2012 were imputed.

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

Figure 1.8 Regional trends in clonazepam reported per 100,000 persons aged 15 or older, January 2001–December 2012

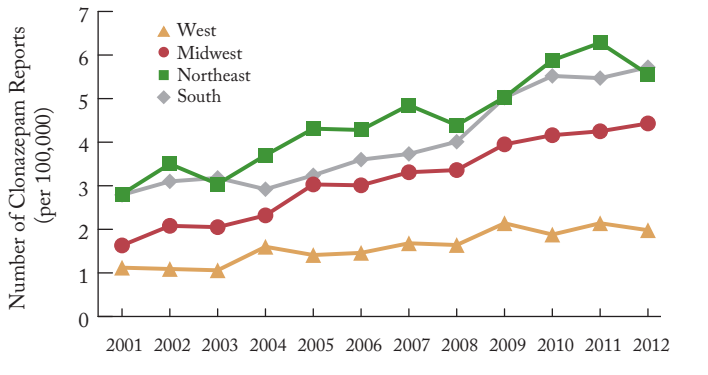


Figure 1.9 Regional trends in buprenorphine reported per 100,000 persons aged 15 or older, January 2001-December 2012*

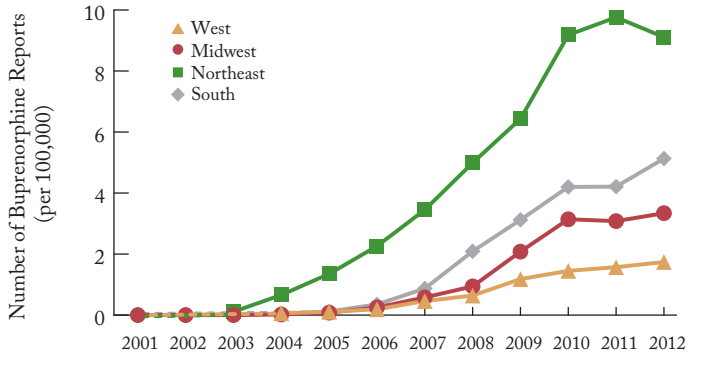
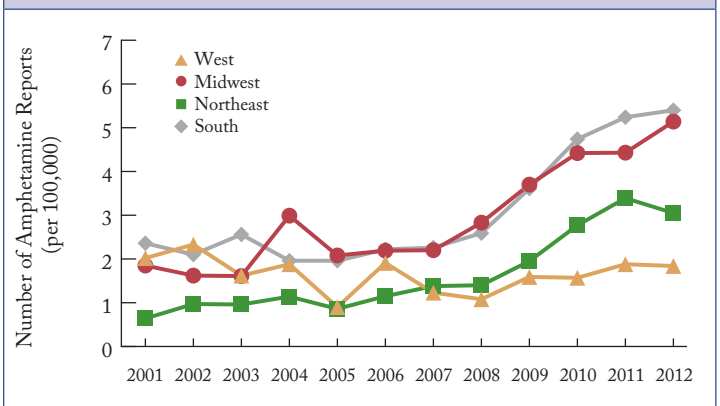


Figure 1.10 Regional trends in amphetamine reported per 100,000 persons aged 15 or older, January 2001-December 2012



Note: U.S. Census 2012 population data by age were not available for this publication. Population data for 2012 were imputed.

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

Other regional drug trends

Figures 1.11 through 1.15 present regional trends per 100,000 persons aged 15 or older for cannabis/THC, cocaine, methamphetamine, heroin, and MDMA reports from 2001 through 2012. Significant ($p < .05$) trends include the following:

- For cannabis/THC reports, the Midwest and South regions showed linear decreasing trends. In the Northeast, the trend was S-shaped: decreasing from 2001 through 2002, increasing from 2002 through 2009, and decreasing since 2009. In the West, the trend was S-shaped like the national trend: decreasing from 2001 through 2004, relatively flat from 2004 to 2009, and decreasing since 2009.
- For cocaine, the trends were decreasing in all four regions. The trend in the West was linear, but the trends in the other three regions were curved downward.
- For methamphetamine and MDMA, the regional trends were all S-shaped like the corresponding national trends. For methamphetamine, all regions showed increases since 2009. For MDMA, all regions showed decreases since 2009.
- For heroin, the Northeast, Midwest, and West regions showed U-shaped trends. The lowest point occurred in about 2006 for the Northeast and West regions and in 2004 for the Midwest region.

Between 2011 and 2012, MDMA and cocaine decreased significantly in all regions, and cannabis/THC decreased significantly in all regions except the South ($p < .05$). Both methamphetamine and heroin increased significantly in all regions except the West.

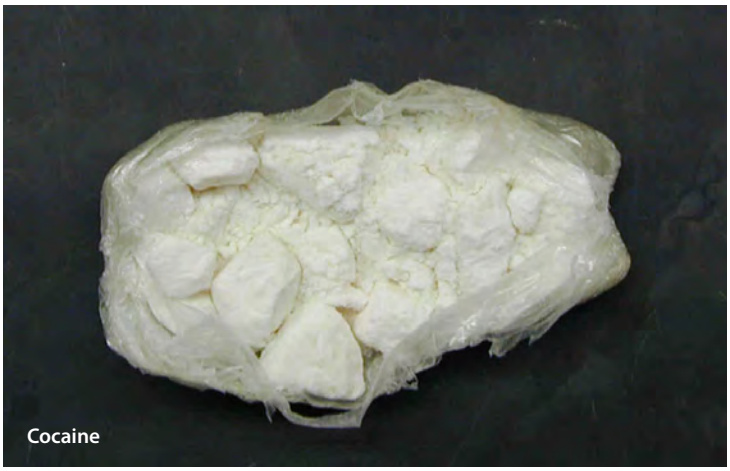

Cocaine

Figure 1.11 Regional trends in cannabis/THC reported per 100,000 persons aged 15 or older, January 2001-December 2012

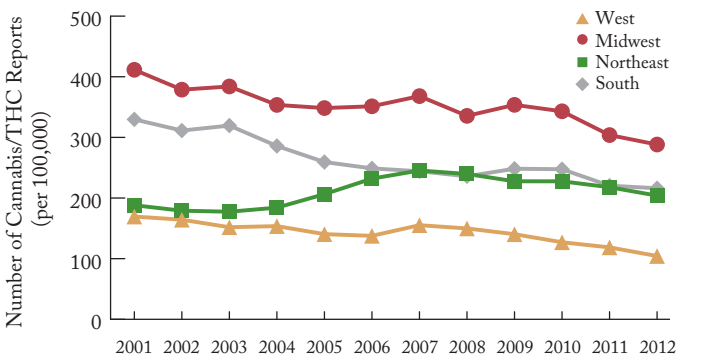


Figure 1.12 Regional trends in cocaine reported per 100,000 persons aged 15 or older, January 2001–December 2012

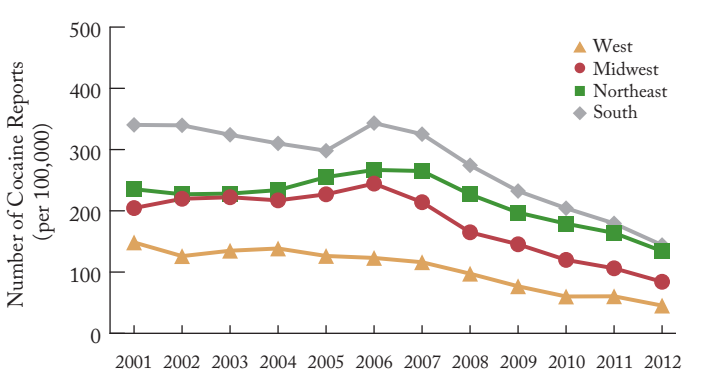
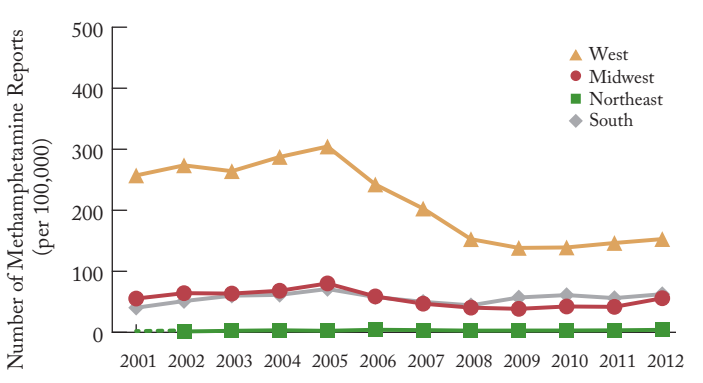


Figure 1.13 Regional trends in methamphetamine reported per 100,000 persons aged 15 or older, January 2001-December 2012*



Note: U.S. Census 2012 population data by age were not available for this publication. Population data for 2012 were imputed.

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

Figure 1.14 Regional trends in heroin reported per 100,000 persons aged 15 or older, January 2001–December 2012

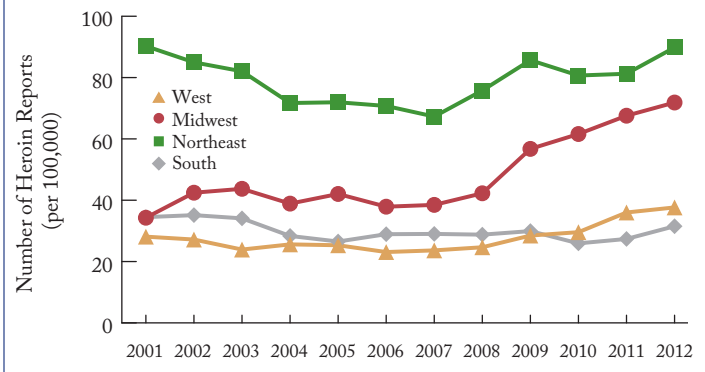
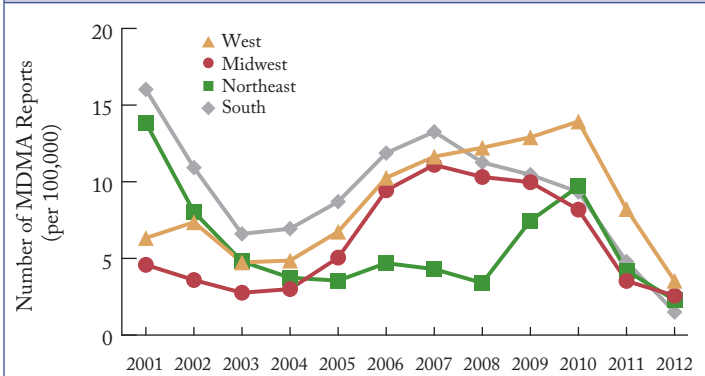


Figure 1.15 Regional trends in MDMA reported per 100,000 persons aged 15 or older, January 2001–December 2012



Section 2

MAJOR DRUG CATEGORIES

Section 2 presents results for drug categories reported by NFLIS laboratories. 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 the NEAR approach (see Appendix A for a description of the methodology). The data presented in Section 2 and subsequent sections are not weighted and only represent those laboratories that provided data during the reference period. A total of 1,420,811 drug reports were submitted to State and local laboratories during 2012 and were analyzed by March 31, 2013.

2.1 Narcotic Analgesics

According to the Centers for Disease Control and Prevention, more than 16,500 people die every year from prescription opioid-related drug overdoses.[1] Opioids include powerful narcotic analgesics, or pain relievers, such as oxycodone, hydrocodone, and methadone. In 2011, 10% of adults aged 18 to 25 reported past year nonmedical use of prescription pain relievers.[2]

A total of 127,219 narcotic analgesics were identified by NFLIS laboratories in 2012, representing 9% of all drug reports (Table 2.1). Oxycodone (39%) and hydrocodone (30%) accounted for the majority of all narcotic analgesic reports. Other narcotic analgesics reported included buprenorphine (8%), morphine (7%), methadone (5%), and hydromorphone (3%). The types of narcotic analgesics reported varied considerably by region (Figure 2.1). In comparison with reports from other regions in the country, the Northeast reported the highest percentages of oxycodone (56%) and buprenorphine (18%). Hydrocodone accounted for 35% of narcotic analgesics in the Midwest and 34% in the West and South.

Table 2.1 *Narcotic Analgesics*
*Number and percentage of narcotic analgesic reports, 2012**

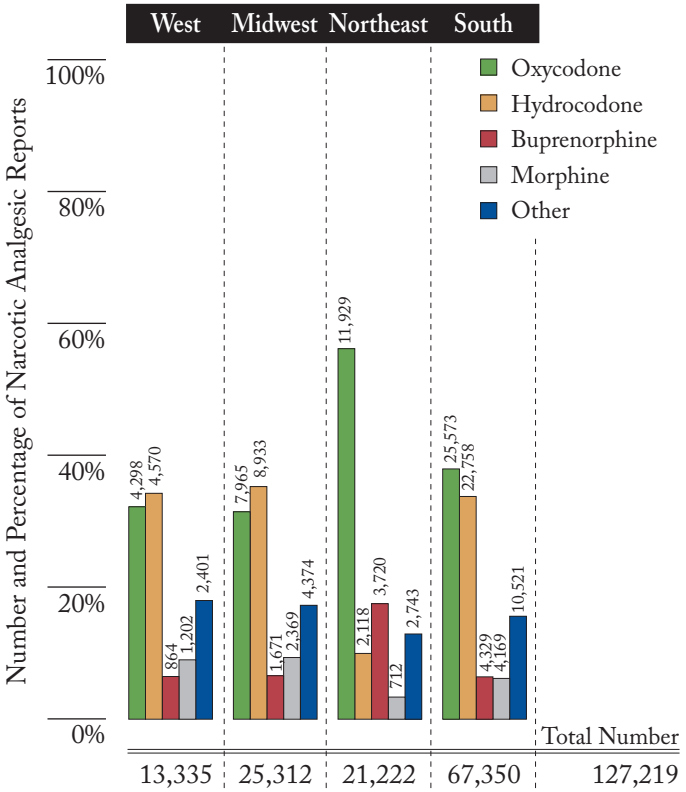
Narcotic Analgesic Reports	Number	Percent
Oxycodone	49,765	39.12%
Hydrocodone	38,379	30.17%
Buprenorphine	10,584	8.32%
Morphine	8,452	6.64%
Methadone	6,886	5.41%
Hydromorphone	4,151	3.26%
Codeine	3,052	2.40%
Oxymorphone	2,443	1.92%
Tramadol	1,918	1.51%
Fentanyl	592	0.47%
Propoxyphene	293	0.23%
Dextropropoxyphene	119	0.09%
Meperidine	116	0.09%
Pentazocine	91	0.07%
Acetylcodeine	64	0.05%
Other narcotic analgesics	314	0.25%
Total Narcotic Analgesic Reports	127,219	100.00%
Total Drug Reports	1,420,811	

* *Includes drug reports submitted to laboratories from January 2012 through December 2012 that were analyzed by March 31, 2013.*

[1] Frieden, T. (2013, April 2). *Stopping the epidemic of prescription opioid abuse*. Presented at the National Prescription Drug Abuse Summit, Orlando, FL. Retrieved from http://www.slideshare.net/OPUNITE/us-response-thomasfrieden

[2] Center for Behavioral Health Statistics and Quality. (2012, September). *Results from the 2011 National Survey on Drug Use and Health: Detailed tables* [Table 1.56B]. Retrieved from http://www.samhsa.gov/data/NSDUH/2011SummNatFindDetTables/Index.aspx

Figure 2.1 Distribution of narcotic analgesic reports within region, 2012*



2.2 Tranquilizers and Depressants

Tranquilizers and depressants are generally legitimate pharmaceuticals that are diverted to the illicit market. They are used to treat sleep problems, anxiety, muscle spasms, and seizures.[3] Substance abuse treatment admissions in which tranquilizers were the primary substance of abuse increased steadily between 2000 and 2010, more than doubling from 6,617 to 15,707 admissions.[4]

Approximately 5% of all drug reports in 2012, or 70,126 reports, were identified by NFLIS laboratories as tranquilizers and depressants (Table 2.2). Alprazolam accounted for 51% of reported tranquilizers and depressants. Approximately 15% of tranquilizers and depressants were identified as clonazepam. Alprazolam was identified in more than one-half of the tranquilizers and depressants reported in the South (57%) (Figure 2.2). Clonazepam accounted for 18% of tranquilizers and depressants identified in the Northeast and 17% in the Midwest. The West reported the highest percentage of diazepam (11%), while the Northeast reported the highest percentage of PCP (16%).

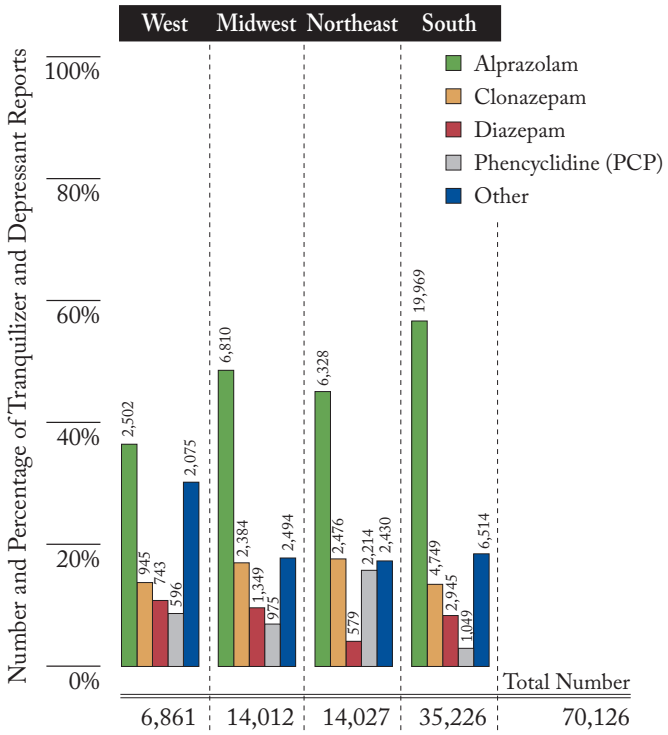
[3] U.S. Drug Enforcement Administration. (2011). Drugs of abuse: *A DEA resource guide* (2011 ed.). Retrieved from http://www.justice.gov/dea/docs/drugs_of_abuse_2011.pdf

[4] Center for Behavioral Health Statistics and Quality. (2012, June). *Treatment Episode Data Set (TEDS): 2000–2010. National admissions to substance abuse treatment services* (HHS Publication No. SMA 12-4701, Drug and Alcohol Services Information System Series S-61). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Table 2.2 *Tranquilizers and Depressants*
*Number and percentage of tranquilizers and depressant reports, 2012**

Tranquilizer and Depressant Reports	Number	Percent
Alprazolam	35,609	50.78%
Clonazepam	10,554	15.05%
Diazepam	5,616	8.01%
Phencyclidine (PCP)	4,834	6.89%
Carisoprodol	4,499	6.42%
Lorazepam	2,368	3.38%
Zolpidem	1,779	2.54%
Cyclobenzaprine	1,242	1.77%
Ketamine	924	1.32%
Temazepam	344	0.49%
Hydroxyzine	318	0.45%
Butalbital	293	0.42%
Pregabalin	272	0.39%
Gamma-hydroxybutyrate (GHB)	161	0.23%
Phenobarbital	140	0.20%
Other tranquilizer and depressants	1,173	1.67%
Total Tranquilizer and Depressant Reports	70,126	100.00%
Total Drug Reports	1,420,811	

Figure 2.2 Distribution of tranquilizer and depressant reports within region, 2012*



** Includes drug reports submitted to laboratories from January 2012 through December 2012 that were analyzed by March 31, 2013.*

2.3 Hallucinogens

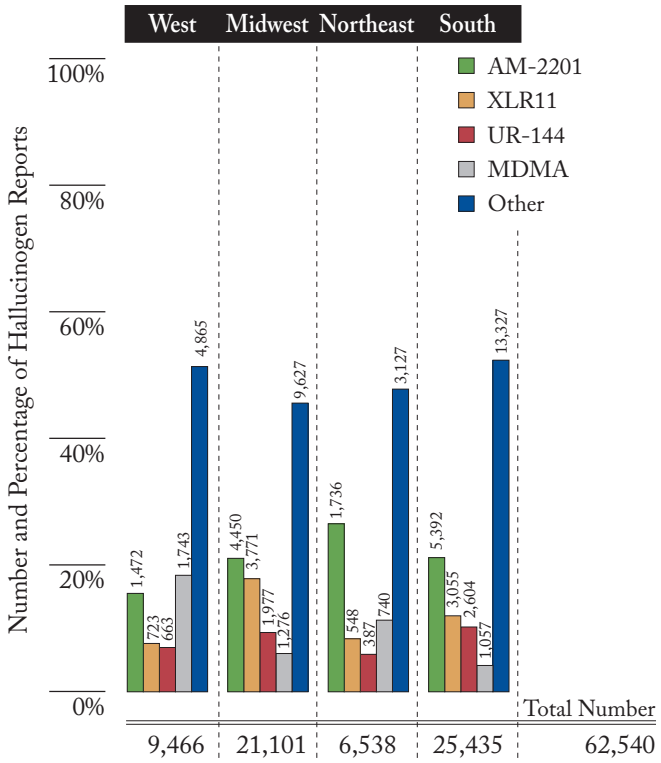
Hallucinogens are found naturally in plants and mushrooms. They are also synthetically produced. In the United States, hallucinogens have no medically accepted uses in treatment. Most deaths from hallucinogen overdoses occur as a result of suicide, dangerous behavior, or accidental ingestion of poisonous plant material.[5]

NFLIS laboratories identified 62,540 hallucinogens in 2012, representing 4% of all drug reports (Table 2.3). Of these, 21% were identified as AM-2201. Among the other hallucinogen reports, 13% were identified as XLR11, 9% as UR-144, 8% as MDMA, 7% as psilocin/psilocibin, 6% as methylone, and 5% as MDPV. As shown in Figure 2.3, AM-2201 accounted for 27% of hallucinogens in the Northeast and 21% in the Midwest and South. Approximately 18% of the hallucinogens reported in the Midwest were XLR11, while 18% in the West were MDMA and 10% in the South were UR-144.

Table 2.3 *Hallucinogens*
*Number and percentage of hallucinogen reports in the United States, 2012**

Hallucinogen Reports	Number	Percent
AM-2201	13,050	20.87%
XLR11	8,097	12.95%
UR-144	5,631	9.00%
MDMA	4,816	7.70%
Psilocin/psilocibin	4,189	6.70%
Methylone	3,603	5.76%
MDPV	3,246	5.19%
JWH-122	2,270	3.63%
TFMPP	1,792	2.87%
JWH-210	1,681	2.69%
5-MeO-DIPT	1,431	2.29%
MAM-2201	1,369	2.19%
JWH-018 (AM-678)	998	1.60%
LSD	786	1.26%
Dimethyltryptamine (DMT)	691	1.10%
Other hallucinogens	8,890	14.21%
Total Hallucinogen Reports	62,540	100.00%
Total Drug Reports	1,420,811	

Figure 2.3 Distribution of hallucinogen reports within region, 2012*



AM-2201=1-(5-fluoropentyl)-3-(1-naphthoyl)indole

XLR11=[1-(5-fluoropentyl)-1H-indol-3-yl](2,2,3,3-tetramethylcyclo-propyl) methanone

UR-144=1-pentyl-1H-indol-3-yl)(2,2,3,3-tetramethylcyclopropyl)methanone

MDMA=3,4-Methylenedioxymethamphetamine

MDPV=3,4-Methylenedioxypyrovalerone

JWH-122=1-pentyl-3-(4-methylnaphthoyl)indole

TFMPP=1-(3-trifluoromethylphenyl)-piperazine

JWH-210=1-pentyl-3-(4-ethyl-1-naphthoyl)indole

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

MAM-2201=(1-(5-fluoropentyl)-1H-indol-3-yl)(4-methyl-1-naphthalenyl)-methanone

JWH-018 (AM-678)=1-pentyl-3-(1-naphthoyl)indole

Note: Percentages may not sum to 100% because of rounding.

** Includes drug reports submitted to laboratories from January 2012 through December 2012 that were analyzed by March 31, 2013.*

Synthetic Marijuana

[5] See footnote 3.

2.4 Anabolic Steroids

Anabolic steroid use can cause serious health problems, such as high cholesterol, prostate cancer, liver damage, coronary artery disease, and sterility, some of which may not be reversible. Steroids can also be addictive even though they do not cause the same euphoria or high as other drugs. Users may experience depression and suicidal thoughts when they stop taking steroids.[6]

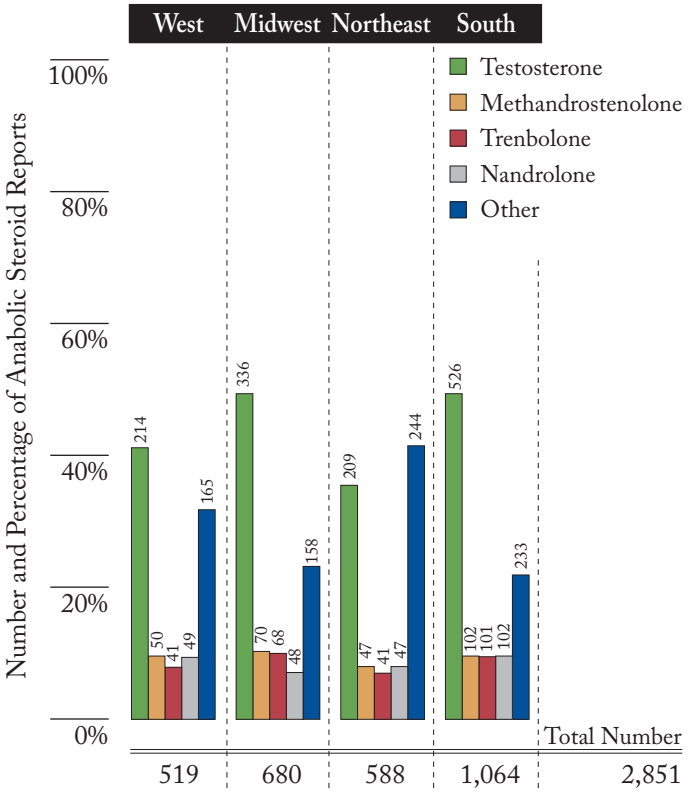
During 2012, a total of 2,851 drug reports were identified by NFLIS laboratories as anabolic steroids (Table 2.4). The most commonly identified anabolic steroid was testosterone (45%), followed by methandrostenolone (9%), trenbolone (9%), nandrolone (9%), and stanozolol (7%). Testosterone accounted for 49% of anabolic steroids in the Midwest and South, 41% in the West, and 36% in the Northeast (Figure 2.4). Methandrostenolone accounted for 10% of anabolic steroids in the West, Midwest, and South. The Midwest reported the highest percentage of trenbolone (10%), and the South reported the highest percentage of nandrolone (10%).

Steroids

Table 2.4 *Anabolic Steroids*
*Number and percentage of anabolic steroid reports in the United States, 2012**

Anabolic Steroid Reports	Number	Percent
Testosterone	1,285	45.07%
Methandrostenolone	269	9.44%
Trenbolone	251	8.80%
Nandrolone	246	8.63%
Stanozolol	195	6.84%
Boldenone	131	4.59%
Oxandrolone	115	4.03%
Oxymetholone	97	3.40%
Drostanolone	44	1.54%
Methyltestosterone	21	0.74%
Mesterolone	19	0.67%
Dehydrochlormethyltestosterone	12	0.42%
Methenolone	11	0.39%
4-Chlorodehydromethyltestosterone	9	0.32%
Other anabolic steroids	146	5.12%
Total Anabolic Steroid Reports	2,851	100.00%
Total Drug Reports	1,420,811	

Figure 2.4 Distribution of anabolic steroid reports within region, 2012*



* *Includes drug reports submitted to laboratories from January 2012 through December 2012 that were analyzed by March 31, 2013.*

[6] See footnote 3.

2.5 Stimulants

Prescribed stimulant drugs are used to treat a variety of health conditions, including attention deficit hyperactivity disorder (ADHD), obesity, narcolepsy, and depression.[7] The nonmedical use of amphetamines, which are often prescribed to treat ADHD, are most common among high school and college students who use the drugs to enhance academic and work performance. In fact, during 2012, 8% of high school seniors and 11% of college students reported nonmedical use of amphetamines in the past year.[8]

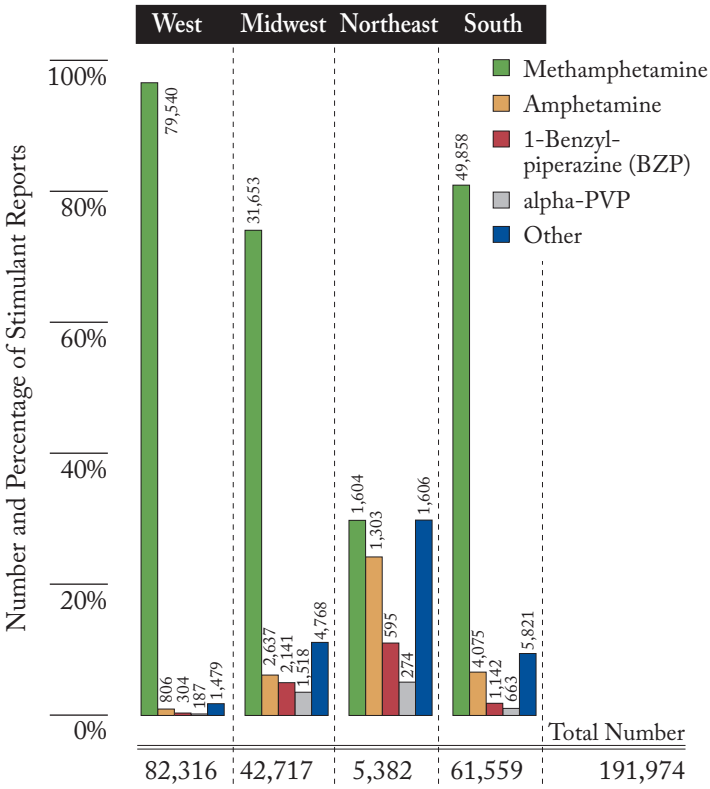
A total of 191,974 stimulants were identified by NFLIS laboratories during 2012, accounting for about 14% of all drugs reported (Table 2.5). Methamphetamine accounted for 85% of all stimulant reports in 2012. Amphetamine accounted for approximately 5%, and BZP accounted for approximately 2%. Methamphetamine accounted for 97% of stimulant reports in the West, 81% in the South, and 74% in the Midwest (Figure 2.5). In the Northeast, 24% of stimulants were reported as amphetamine, and 11% were reported as BZP.

Table 2.5 *Stimulants*
*Number and percentage of stimulant reports in the United States, 2012**

Stimulant Reports	Number	Percent
Methamphetamine	162,655	84.73%
Amphetamine	8,821	4.59%
1-Benzylpiperazine (BZP)	4,182	2.18%
alpha-PVP	2,642	1.38%
Methylphenidate	2,280	1.19%
Lisdexamfetamine	1,298	0.68%
4-MEC	995	0.52%
Trazodone	891	0.46%
Pentedrone	882	0.46%
Phentermine	619	0.32%
Cathinone	533	0.28%
Citalopram	287	0.15%
Sertraline	264	0.14%
Amitriptyline	261	0.14%
Benocyclidine	238	0.12%
Butylone	238	0.12%
Other stimulants	4,888	2.55%
Total Stimulant Reports	191,974	100.00%
Total Drug Reports	1,420,811	

alpha-PVP=alpha-Pyrrolidinopentiophenone
4-MEC=4-Methyl-N-Ethylcathinone
Note: Percentages may not sum to 100% because of rounding.

Figure 2.5 Distribution of stimulant reports within region, 2012*



alpha-PVP=alpha-Pyrrolidinopentiophenone

** Includes drug reports submitted to laboratories from January 2012 through December 2012 that were analyzed by March 31, 2013.*

[7] See footnote 3.

[8] Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2013). *Monitoring the Future national survey results on drug use, 1975-2012: Volume I, Secondary school students*. Ann Arbor, MI: University of Michigan, Institute for Social Research.

Section 3

GIS ANALYSES: AM-2201 AND ALPHA-PVP COMPARISONS BY LOCATION, 2011 AND 2012

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

This section presents data at the State and county levels for the percentage of drug reports identified as AM-2201 and alpha-PVP at two points in time—2011 and 2012. Reports of AM-2201 and alpha-PVP increased substantially in NFLIS between 2011 and 2012. In fact, AM-2201 was first reported in NFLIS in 2010; alpha-PVP was first reported in 2011. In 2011, AM-2201 first appeared in the NFLIS top 25 most frequently identified drugs; in 2012, it was the 8th most frequently reported drug.

The GIS data presented here are based on information provided to the forensic laboratories by law enforcement agencies (Figures 3.1 to 3.8). 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. On occasion, when a ZIP Code or county of origin is unavailable, the drug seizure or incident is assigned to the same county as the submitting law enforcement agency. If the submitting agency is unknown, the seizure or incident is assigned to the county in which the laboratory completing the analyses is located.

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

Figure 3.1 Percentage of total drug reports identified as AM-2201, by State, 2011*

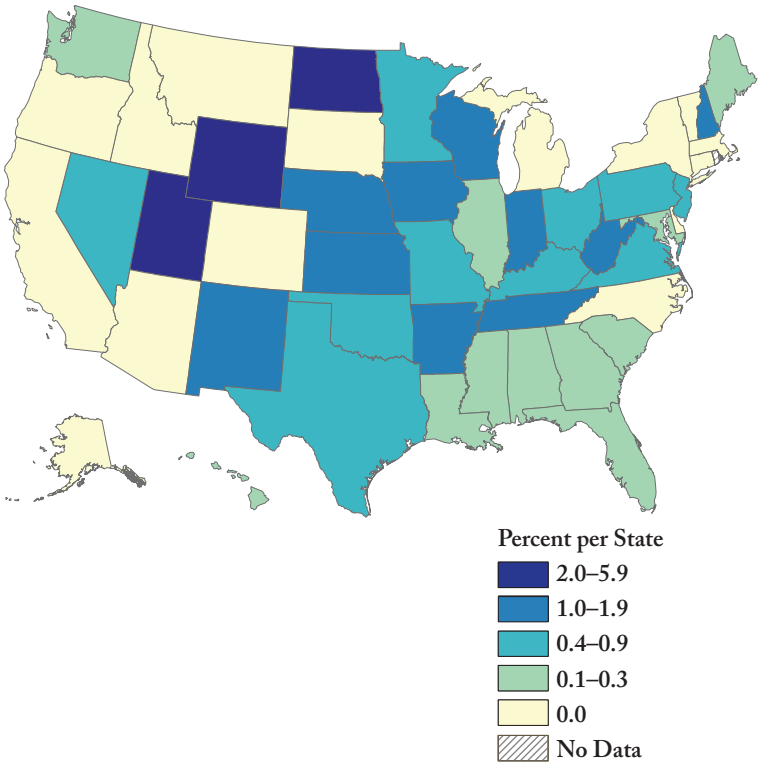


Figure 3.2 Percentage of total drug reports identified as AM-2201, by State, 2012*

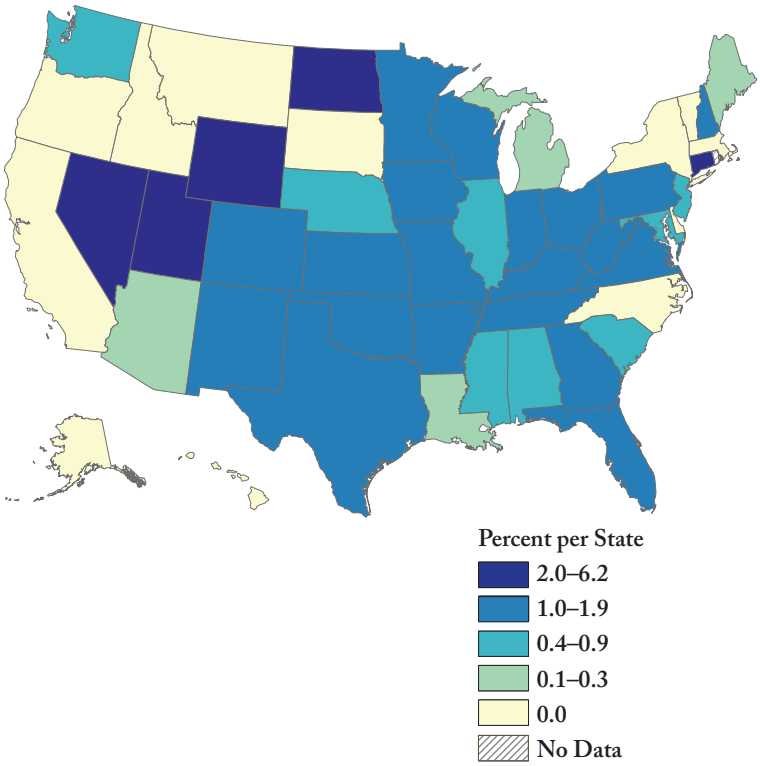


Figure 3.3 Percentage of total drug reports identified as alpha-PVP, by State, 2011*

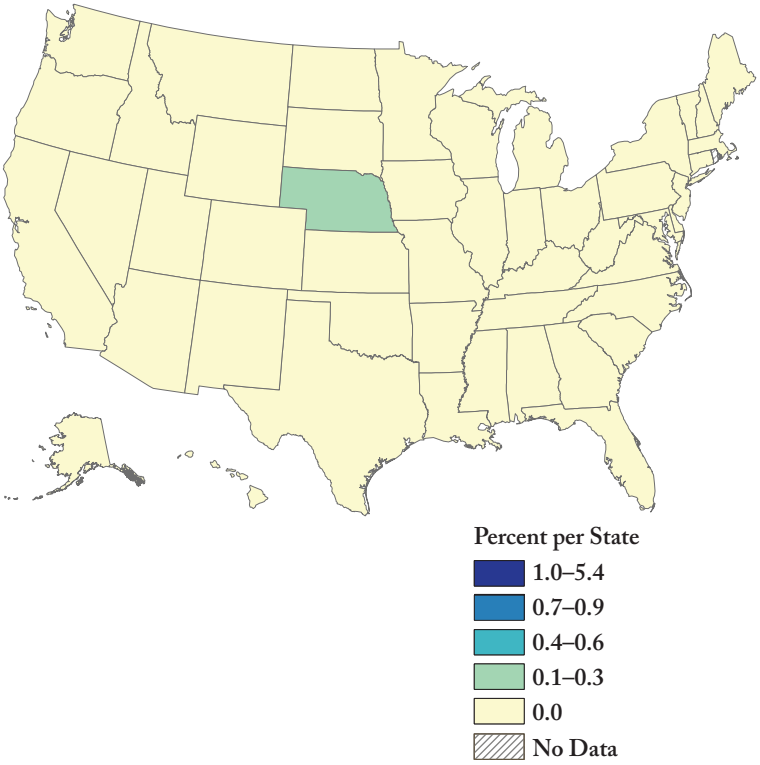
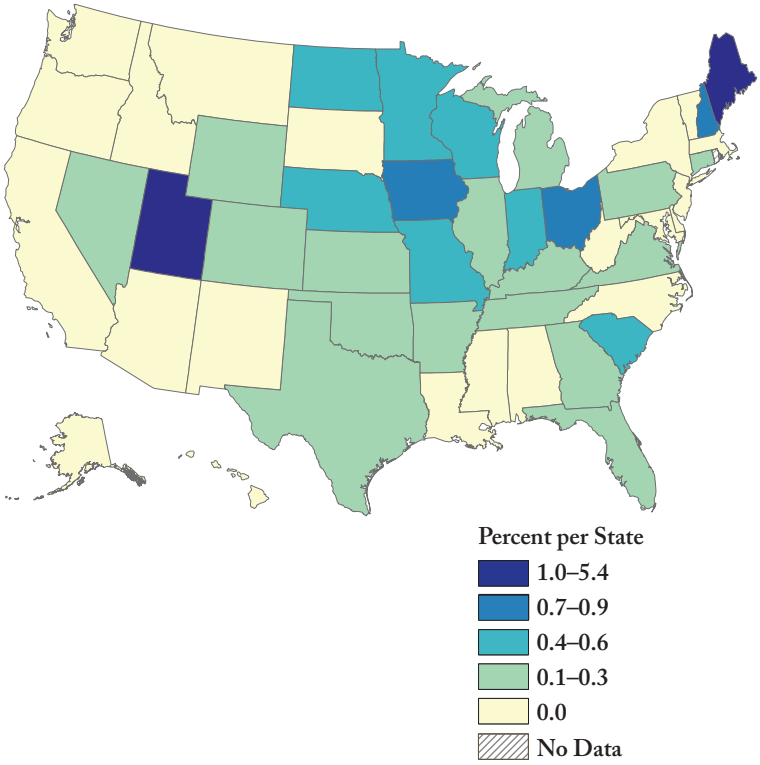


Figure 3.4 Percentage of total drug reports identified as alpha-PVP, by State, 2012*



** Includes drug reports submitted to State and local laboratories during the calendar year that were analyzed within three months of the reporting period.*

Figure 3.5 Percentage of total drug reports identified as AM-2201 in Texas, by county, 2011*

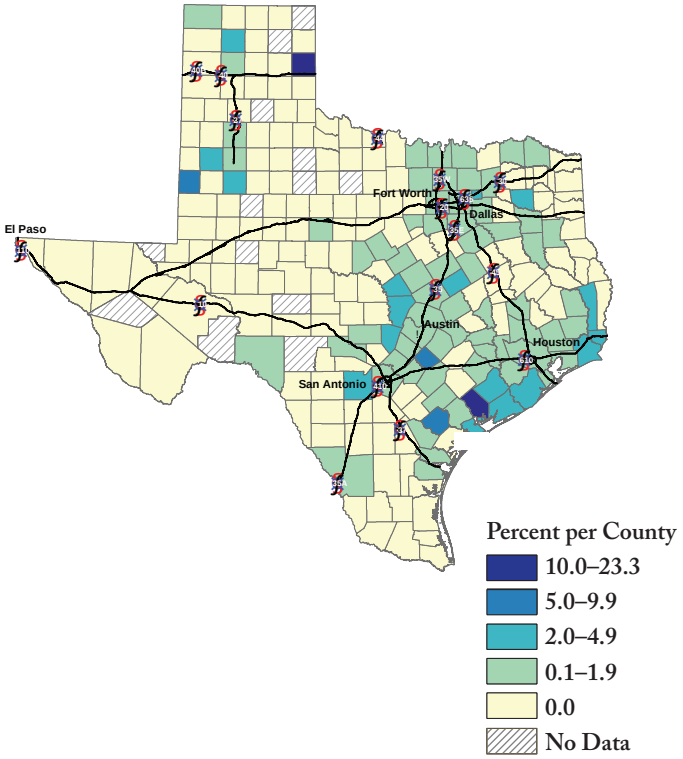


Figure 3.6 Percentage of total drug reports identified as AM-2201 in Texas, by county, 2012*

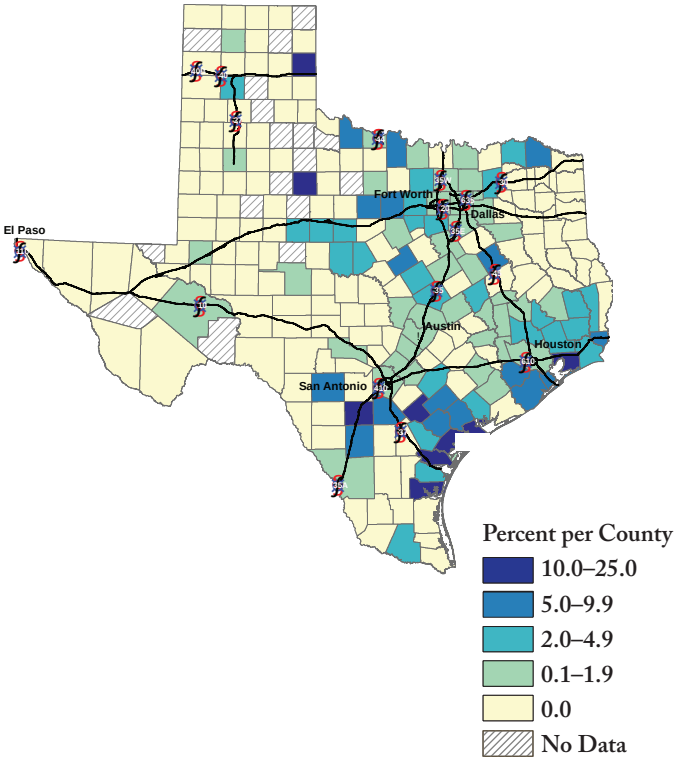


Figure 3.7 Percentage of total drug reports identified as alpha-PVP in Ohio, by county, 2011*

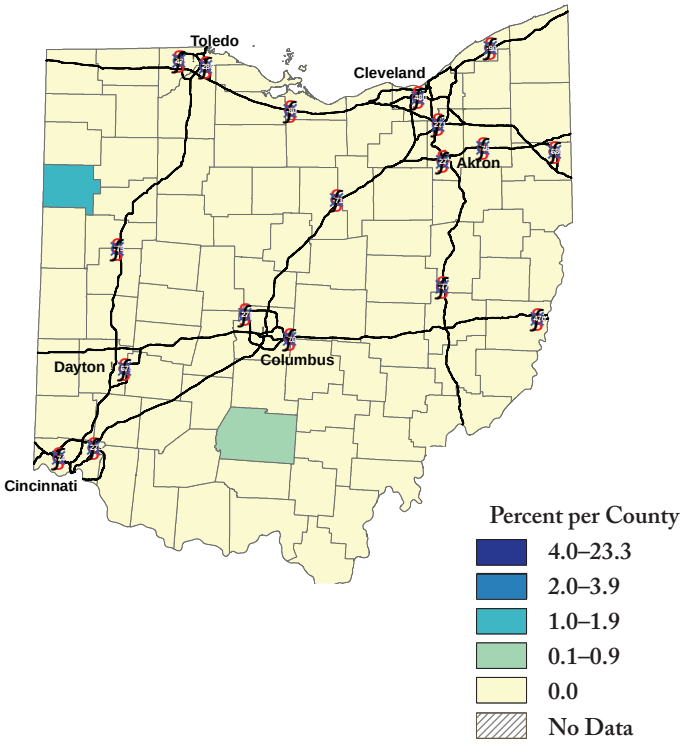
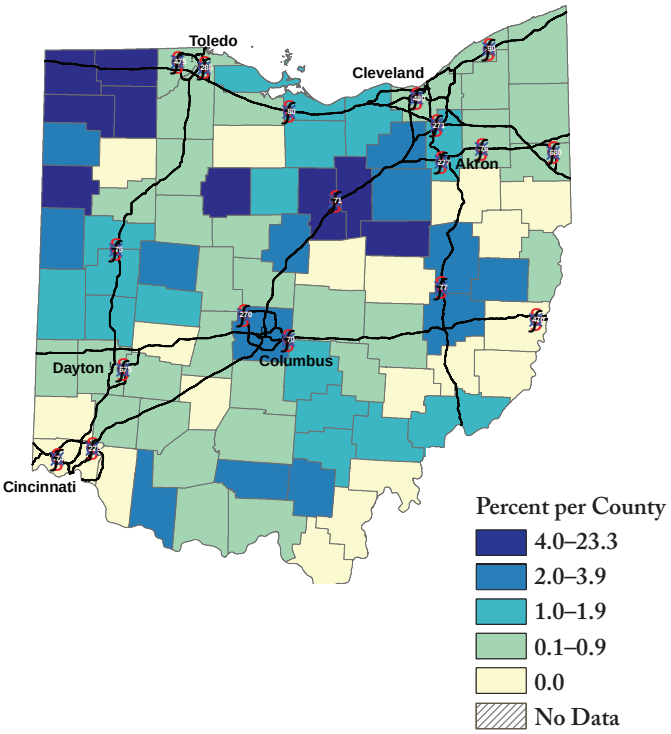


Figure 3.8 Percentage of total drug reports identified as alpha-PVP in Ohio, by county, 2012*



** Includes drug reports submitted to State and local laboratories during the calendar year that were analyzed within three months of the reporting period.*

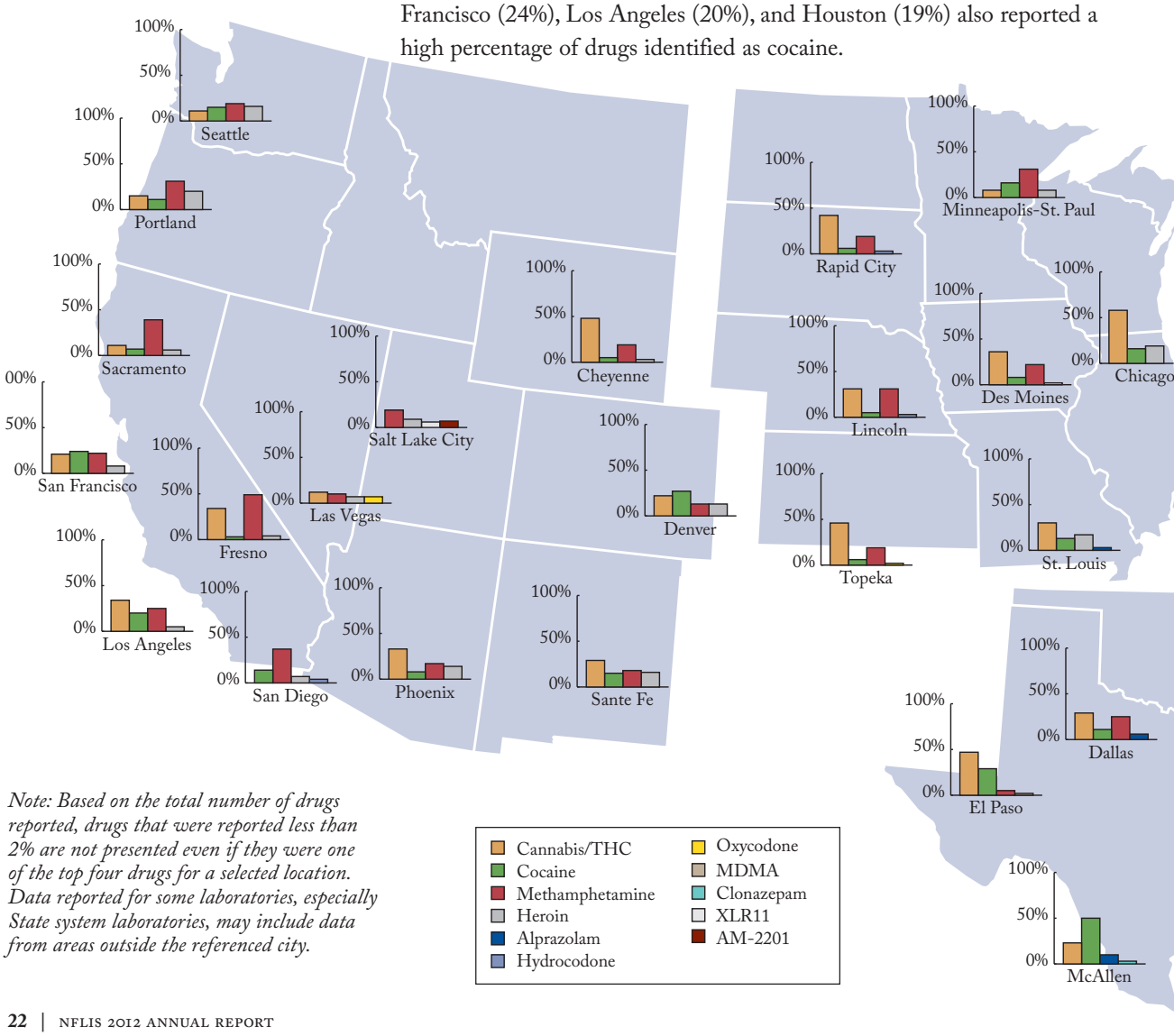
Section 4

DRUGS IDENTIFIED BY LABORATORIES IN SELECTED U.S. CITIES

NFLIS can be used to monitor drugs reported by forensic laboratories across the country, including large U.S. cities. This section presents drug analysis results of all drug reports (up to three per laboratory item) submitted to State and local laboratories during 2012 and analyzed by March 31, 2013.

This section presents 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, 17% of all drugs in NFLIS were identified as cocaine (Table 1.1). Cities east of the Mississippi River that reported the highest levels of cocaine included Miami (54%), Orlando (43%), Columbia (35%), Tampa (33%), New York (31%), Philadelphia (27%), Baltimore (24%), Boston (21%), Augusta (21%), Raleigh (20%), and Atlanta (20%). Among other cities, McAllen (50%), El Paso (29%), Denver (27%), San Francisco (24%), Los Angeles (20%), and Houston (19%) also reported a high percentage of drugs identified as cocaine.

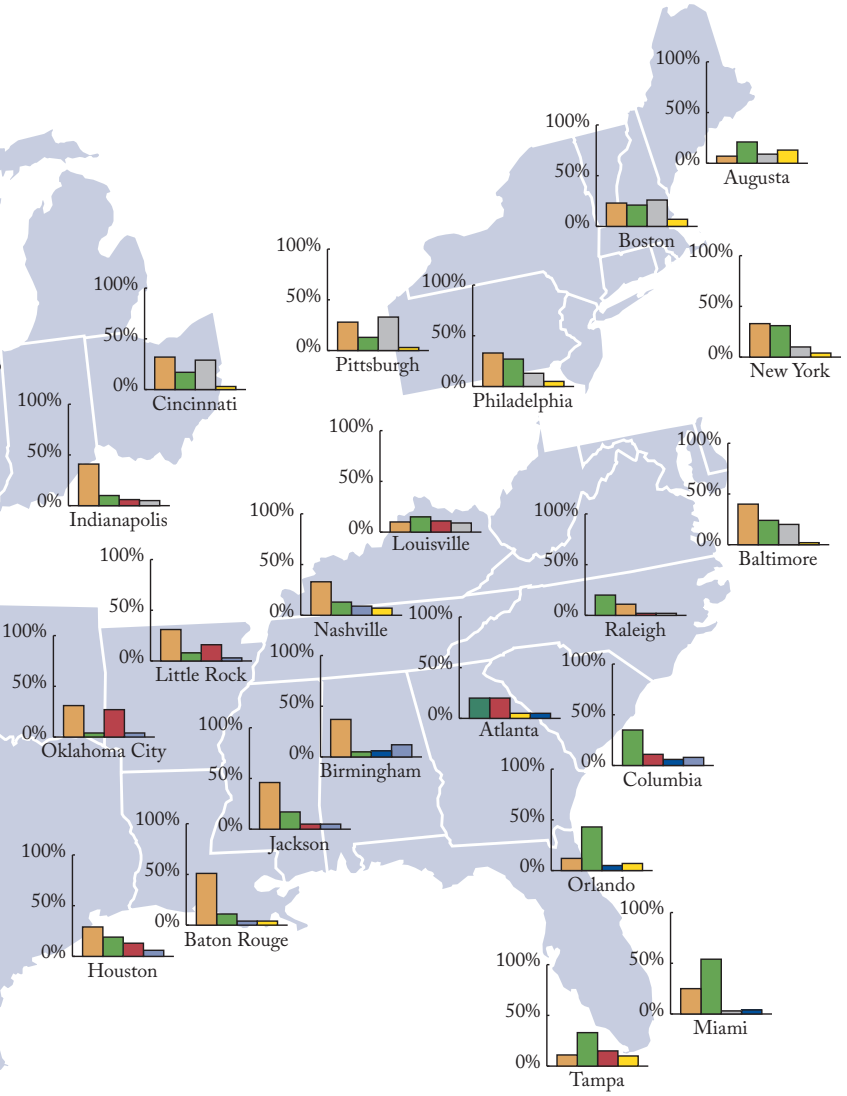


Note: Based on the total number of drugs reported, drugs that were reported less than 2% are not presented even if they were one of the top four drugs for a selected location. Data reported for some laboratories, especially State system laboratories, may include data from areas outside the referenced city.

The highest percentages of methamphetamine were reported in cities located in the West and Midwest, such as Fresno (49%), Sacramento (39%), San Diego (37%), Portland (31%), Minneapolis-St. Paul (31%), Los Angeles (25%), Des Moines (22%), and San Francisco (22%). Oklahoma City (27%), Dallas (25%), and Atlanta (20%), cities located in the South, also reported a high percentage of drugs identified as methamphetamine. Nationally, 11% of drugs in NFLIS were identified as methamphetamine.

The highest percentages of heroin were reported in the Northeastern cities of Pittsburgh (33%) and Boston (26%) and the Midwestern city of Cincinnati (29%). Portland (20%), Baltimore (20%), Chicago (19%), and St. Louis (17%) also reported a high percentage of drugs identified as heroin. Nationally, 8% of all drugs in NFLIS were identified as heroin.

Among controlled prescription drugs, the highest percentages of oxycodone were reported in Augusta (13%), Tampa (10%), Orlando (7%), Nashville (7%), Las Vegas (7%), and Boston (7%). Nationally, 3% of drugs in NFLIS were identified as oxycodone. Southern cities, such as Birmingham (12%), Nashville (9%), Louisville (8%), Columbia (8%), Houston (6%), and Dallas (6%), reported the highest percentages of hydrocodone, and at a higher percentage than the NFLIS national estimate of 3%. Cities that reported percentages of alprazolam that were higher than the NFLIS national estimate of 2% included McAllen (10%), Birmingham (6%), Columbia (6%), Dallas (6%), Atlanta (5%), Orlando (5%), Miami (4%), and St. Louis (3%). McAllen (3%) reported the highest percentage of clonazepam compared with the NFLIS national estimate of 0.7%.



Selected Laboratories
Atlanta (Georgia State Bureau of Investigation—Decatur Laboratory)
Augusta (Maine Department of Human Services)
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)
Des Moines (Iowa Division of Criminal Investigations)
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 Criminalistics Laboratory—Lincoln Laboratory)
Little Rock (Arkansas State Crime 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
Nashville (Tennessee Bureau of Investigation—Nashville Laboratory)
New York (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)
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

Overview

Since 2001, NFLIS publications have included national and regional estimates for the number of drug reports 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, imputation, and trend analysis procedures. RTI International, under contract to the DEA, began implementing NFLIS in 1997. Results from a 1998 survey (updated in 2002, 2004, and 2008) provided laboratory-specific information, including annual caseloads, which was used to establish a national sampling frame of all State and local forensic laboratories that routinely perform drug chemistry 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, and a total of 168 individual laboratories (see Appendix B for a list of sampled NFLIS laboratories).

Estimates appearing in this publication are based on cases and items *submitted* to laboratories between January 1, 2012, and December 31, 2012, and analyzed by March 31, 2013. Analysis has shown that approximately 95% of cases submitted during a semiannual period are analyzed within three months of the end of the semiannual period (not including the approximately 30% of cases that are never analyzed).

For each drug item (or exhibit) analyzed by a laboratory in the NFLIS program, up to three drugs can be reported to NFLIS and counted in the estimation process. A drug-specific case is one for which the specific drug was identified as the first, second, or third drug report for any item associated with the case. A drug-specific report is the total number of reports of the specific drug.

Currently, laboratories representing more than 90% of the national drug caseload participate in NFLIS, with about 88% of the national caseload reported for each reporting period. This reporting provided an opportunity to implement a method, referred to as NEAR (National Estimates Based on All Reports), that has strong statistical advantages for producing national and regional estimates.

NEAR Methodology

In NFLIS publications before 2011, data reported by nonsampled laboratories were not used in national or regional estimates.[9] However, as the number of nonsampled laboratories reporting to NFLIS increased,[10] it began to make sense to consider ways to utilize the data they submitted. Under NEAR, the "volunteer" laboratories (i.e., the reporting nonsampled laboratories) represent themselves and are no longer represented by the reporting sampled laboratories. The volunteer laboratories are assigned weights of one, and hence the weights of the sampled and responding laboratories are appropriately adjusted downward. The outcome is that the estimates are more precise, especially for recent years, which include a large number of volunteer laboratories. More precision allows for more power to detect trends and fewer suppressed estimates in Tables 1.1 and 1.2 of the NFLIS annual and midyear reports.

NEAR imputations and adjusting for missing monthly data in reporting laboratories

Because of technical and other reporting issues, some laboratories do not report data for every month during a given reporting period, resulting in missing monthly data. If a laboratory reports fewer than six months of data for the annual estimates (fewer than three months for the semiannual estimates), it is considered nonreporting, and its reported data are not included in the estimates. Otherwise, imputations are performed separately by drug for laboratories that are missing monthly data, using drug-specific proportions generated from laboratories that are reporting all months of data. This imputation method is used for cases, items, and drug-specific reports and accounts for both the typical month-to-month variation and the size of the laboratory requiring imputation. The general idea is to use the nonmissing months to assess the size of the laboratory requiring imputation and then to apply the seasonal pattern exhibited by all laboratories with no missing data. Imputations of monthly case counts are created using the following ratio (r_L):

$$r_L = \frac{\sum_{m \in R_L} c_{L,m}}{\sum_{m \in R_L} c_{.,m}},$$

where

R_L = set of all nonmissing months in laboratory L,
$c_{L,m}$ = case count for laboratory L in month m, and
$c_{.,m}$ = mean case counts for all laboratories reporting complete data.

[9] The case and item loads for the nonsampled laboratories were used in calculating the weights.

[10] In 2009, for example, out of 110 nonsampled laboratories and laboratory systems, 74 (or 67%) reported.

Monthly item counts are imputed for each laboratory using an estimated item-to-case ratio (s_L) for nonmissing monthly item counts within the laboratory. The imputed value for the missing monthly number of items in each laboratory is calculated by multiplying $c_{L,m}$ by s_L.

$$s_L = \frac{\sum_{m \in R_L} i_{L,m}}{\sum_{m \in R_L} c_{L,m}},$$

where

R_L = set of all nonmissing months in laboratory L,
$i_{L,m}$ = item count for laboratory L in month m, and
$c_{L,m}$ = case count for laboratory L in month m.

Drug-specific case and report counts are imputed using the same imputation techniques presented above for the case and item counts. The total drug, item, and case counts are calculated by aggregating the laboratory and laboratory system counts for those with complete reporting and those that require imputation.

NEAR imputations and drug report-level adjustments

Most forensic laboratories classify and report case-level analyses in a consistent manner in terms of the number of vials of a particular pill. A small number, however, do not produce drug report-level counts in the same way as those submitted by the vast majority. Instead, they report as items the count of the individual pills themselves. Laboratories that consider items in this manner also consider drug report-level counts in this same manner. Drug report-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 report counts for the relevant laboratories.

NEAR weighting procedures

Each NFLIS reporting laboratory was assigned a weight to be used in the calculation of design-consistent, nonresponse-adjusted estimates. Two weights were created: one for estimating cases and one for estimating drug reports. The weight used for case estimation was based on the caseload for every laboratory in the NFLIS population, and the weight used for drug reports' estimation was based on the item load for every laboratory in the NFLIS population. For reporting laboratories, the caseload and item load used in weighting were the reported totals. For nonreporting laboratories, the caseload and item load used in weighting were obtained from an updated laboratory survey administered in 2008.

When the NFLIS sample was originally drawn, two stratifying variables were used: (1) type of laboratory (State system or municipal or county laboratory) and (2) determination of "certainty" laboratory status. To ensure that the NFLIS sample had strong regional representation, U.S. census regions were used as the geographical divisions to guide selection of certainty laboratories and systems. Some large laboratories were automatically part of the original NFLIS sample because they were deemed critically important to the calculation of reliable estimates. These laboratories are called "certainty laboratories." The criteria used in selecting the certainty laboratories included (1) size, (2) region, (3) geographical location, and (4) other special considerations (e.g., strategic importance of the laboratory).

Each weight has two components, the design weight and the nonresponse adjustment factor, the product of which is the final weight used in estimation. After imputation, the final item weight is based on the item count, and the final case weight is based on the case count of each laboratory or laboratory system. The final weights are used to calculate national and regional estimates. The first component, the design weight, is based on the proportion of the caseload and item load of the NFLIS universe[11] represented by the individual laboratory. This step takes advantage of the original PPS sample design, which provides precise estimates as long as the number of drug-specific case estimates and report estimates are correlated with the overall caseload and item load.[12]

For noncertainty reporting laboratories in the sample (and reporting laboratories in the certainty strata with nonreporting laboratories), the design-based weight for each laboratory is calculated as follows:

$$\text{Design Weight}_i = A/(B \times \text{Case [item] Count for Laboratory or Laboratory System } i),$$

where

i = ith laboratory or laboratory system;
A = sum of the case (item) counts for all of the laboratories and laboratory systems (sampled and nonsampled) within a specific stratum, excluding certainty strata and the volunteer stratum; and
B = number of sampled laboratories and laboratory systems within the same stratum, excluding certainty strata and the volunteer stratum.

Certainty laboratories were assigned a design weight of one.[13]

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[11] See the Introduction of this publication for a description of the NFLIS universe.

[12] Lohr, S. L. (2010). *Sampling: Design and analysis* (2nd ed., pp. 231-234). Boston, MA: Brooks/Cole.

[13] With respect to the design weight, reporting laboratories and laboratory systems in certainty strata with nonreporting laboratories and laboratory systems are treated the same way as reporting noncertainty sampled laboratories and laboratory systems. This is done to reduce the variance; otherwise, all reporting laboratories and laboratory systems in certainty strata would get the same weight.

The second component, the nonresponse adjustment factor, adjusts the weights of the reporting and sampled laboratories to account for the nonreporting and sampled laboratories. The nonresponse (*NR*) adjustment, for both certainty and noncertainty laboratories, is calculated as follows:

$$NR_j = C/D,$$

where

- j = stratum;
- C = sum of the case (item) counts of all sampled laboratories and laboratory systems within the stratum, excluding the volunteer stratum; and
- D = sum of the case (item) counts for all sampled reporting laboratories and laboratory systems within the same stratum.

Because volunteer laboratories only represent themselves, they were automatically assigned a final weight of one.

NEAR estimation

The estimates in this publication are the weighted sum of the counts from each laboratory. The weighting procedures make the estimates more precise by assigning large weights to small laboratories and small weights to large laboratories.[14] Because most of the values being estimated tend to be related to laboratory size, the product of the weight and the value to be estimated tends to be relatively stable across laboratories, resulting in precise estimates.

A finite population correction is also applied to account for the high sampling rate. In a sample-based design, the sampling fraction, which is used to create the weights, equals the number of sampled laboratories divided by the number of laboratories in the NFLIS universe. Under NEAR, the sampling fraction equals the number of sampled laboratories divided by the sum of the number of sampled laboratories and the number of nonreporting, unsampled laboratories. Volunteer laboratories are not included in the sampling fraction calculation. Thus, the NEAR approach makes the sampling rate even higher because volunteer laboratories do not count as nonsampled laboratories.

Suppression of Unreliable Estimates

For some drugs, such as cannabis/THC and cocaine, thousands of reports occur annually, allowing for reliable national prevalence estimates to be computed. For other drugs, reliable and precise estimates cannot be computed because of a combination of low report counts and substantial variability in report counts between laboratories. Thus, suppression rules were established. Precision and reliability of estimates are evaluated using the relative standard error (RSE), which is the ratio between the standard error of an estimate and the estimate. Drug estimates with an RSE > 50% are suppressed and not shown in the tables.

Statistical Techniques for Trend Analysis

Two types of analyses to compare estimates across years were used. The first is called *prior-year comparisons* and compared national and regional estimates from January 2011 through December 2011 with those from January 2012 through December 2012. The second is called *long-term trends* and examined trends in the annual national and regional estimates from January 2001 through December 2012. The long-term trends' method described below was implemented beginning with the 2012 Midyear Report. The new method offers the ability to identify both linear and curved trends, unlike the method used in previous NFLIS publications. Both types of trend analyses are described below. For the region-level prior-year comparisons and long-term trends, the estimated drug reports were standardized to the most recent regional population totals for persons aged 15 years or older.

Prior-year comparisons

For selected drugs, the prior-year comparisons statistically compared estimates in Table 1.1 of this publication with estimates in Table 1.1 of the 2011 Annual Report. The specific test examined whether the difference between any two estimates was significantly different from zero. A standard *t*-test was completed using the statistic,

$$t_{df} = \frac{a\hat{T}_{2012} - b\hat{T}_{2011}}{\sqrt{a^2 \operatorname{var}(\hat{T}_{2012}) + b^2 \operatorname{var}(\hat{T}_{2011}) - 2ab \operatorname{cov}(\hat{T}_{2011}, \hat{T}_{2012})}},$$

where

- df = the appropriate degrees of freedom (number of laboratories minus number of strata);
- $\hat{T}_{2012}$ = estimated total number of reports for the given drug for January 2012 through December 2012;
- $\hat{T}_{2011}$ = estimated total number of reports for the given drug for January 2011 through December 2011;
- $\operatorname{var}(\hat{T}_{2012})$ = variance of $\hat{T}_{2012}$;
- $\operatorname{var}(\hat{T}_{2011})$ = variance of $\hat{T}_{2011}$; and
- $\operatorname{cov}(\hat{T}_{2011}, \hat{T}_{2012})$ = covariance between $\hat{T}_{2011}$ and $\hat{T}_{2012}$.

For the national prior-year comparisons, $a = b = 1$. For the regional prior-year comparisons, a = 100,000 divided by the regional population total for 2012, and b = 100,000 divided by the regional population total for 2011.

The percentile of the test statistic in the *t* distribution determined whether the prior-year comparison was statistically significant (a two-tailed test at $\alpha = .05$).

[14] See footnote 12.

Long-term trends

A long-term regression trends' analysis was performed on the January 2001 through December 2012 annual national estimates of totals and regional estimates of rates for selected drug reports. The models allow for randomness in the totals and rates due to both the sample and the population. That is, for the vector of time period totals over that time,

$$\mathbf{Y}^T \equiv (Y_1, Y_2, \ldots, Y_{23}),$$

and for the estimates,

$$\hat{\mathbf{Y}}^T \equiv (\hat{Y}_1, \hat{Y}_2, \ldots, \hat{Y}_{23}),$$

the regression model is

$$\hat{\mathbf{Y}} = \mathbf{X}\beta + \eta + \varepsilon,$$

where

$\eta = \hat{\mathbf{Y}} - \mathbf{Y}$ is a 23×1 vector of errors due to the probability sample, and

ε is a 23×1 vector of errors due to the underlying model.

Randomness due to the sample exists because only a sample of all eligible laboratories has been randomly selected to be included. Randomness due to the population exists because many factors that can be viewed as random contribute to the specific total reported by a laboratory in a time period. For example, not all drug seizures that could have been made were actually made, and there may have been some reporting errors. If rates (per 100,000 persons aged 15 years or older) and not totals are of interest, the above model can be applied to $\hat{\mathbf{Y}}^* = c\hat{\mathbf{Y}}$, where c equals 100,000 divided by the 15-or-older regional population size as given by the U.S. Census Bureau.

The regression model used to perform the analysis is

$$Y_t = \alpha_0 + \alpha_1 t + \alpha_2 t^2 + \alpha_3 t^3 + \varepsilon_t \qquad t = 1, \ldots, T,$$

where

Y_t is the population total value, considered to be a realization of the underlying model; and

ε_t is one of a set of 23 independent normal variates with a mean of zero and a variance of σ^2.

The model allows for a variety of trend types: linear (straight-line), quadratic (U-shaped), and cubic (S-shaped). Because it is a model for Y_t but the sample estimates $\hat{Y}_t$ differ by the sampling error, estimation was performed by restricted maximum likelihood (REML), allowing for the two sources of error.

To implement the regression model, point estimates of totals $\hat{Y}_t$ and their standard errors were obtained for all 12 annual periods beginning with the January to December 2001 period and ending with the January to December 2012 period. Sampling standard errors were estimated as the full sampling variance-covariance matrix $\mathbf{S}$ over these 23 time periods. The $\mathbf{S}$ matrix contains variances in totals at any time period and covariances in totals between any two time periods, thus giving a very general modeling of the sampling variance structure. The variance-covariance matrix of the totals is then $V[\hat{\mathbf{Y}}] = \sigma^2 \boldsymbol{I} + \mathbf{S}$, where $\boldsymbol{I}$ is the identity matrix.

Regression coefficients were estimated using the REML method. Because higher order polynomial regression models generally show strong collinearity among predictor variables, the model was reparameterized using orthogonal polynomials. The reparameterized model is

$$Y_t = \beta_0 X_0(t) + \beta_1 X_1(t) + \beta_2 X_2(t) + \beta_3 X_3(t) + \varepsilon_t,$$

where

$X_0(t) = 1/\sqrt{T}$ for all t, and

$X_1(t), X_2(t), X_3(t)$ provide contributions for the first-order (linear), second-order (quadratic), and third-order (cubic) polynomials, respectively.

Note that the error term is the same in both the original model and the reparameterized model because the fitted surface is the same for both models. The model was further constrained to have regression residuals sum to zero, a constraint that is not guaranteed by theory for these models, but was considered to improve model fit due to an approximation required to estimate $\mathbf{S}$. Standard errors of the regression trend estimates were obtained by simulation.

Final models were selected after testing for the significance of coefficients at the $\alpha = 0.05$ level ($p < .05$), which means that if the trend of interest (linear, quadratic, cubic) were in fact zero, then there would be a 5% chance that the trend would be detected as statistically significant when in fact it is not. Final fitted models are most easily interpreted using graphical plots.

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 (9 sites)	✓
AR	State	Arkansas State Crime Laboratory (2 sites)	✓
AZ	Local	Mesa Police Department	✓
	Local	Phoenix Police Department	✓
	Local	Scottsdale Police Department	✓
	Local	Tucson Police Department Crime Laboratory	✓
CA	State	California Department of Justice (10 sites)	✓
	Local	Alameda County Sheriff's Office Crime Laboratory (San Leandro)	✓
	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	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 (7 sites)	✓
	Local	Broward County Sheriff's Office (Fort Lauderdale)	✓
	Local	Indian River Crime Laboratory (Fort Pierce)	✓
	Local	Manatee County Sheriff's Office (Bradenton)	✓
	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 (7 sites)	✓
HI	Local	Honolulu Police Department	✓
IA	State	Iowa Division of Criminal Investigations	✓
ID	State	Idaho State Police (3 sites)	✓
IL	State	Illinois State Police (7 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)*	✓
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)	✓
NH	State	New Hampshire State Police Forensic Laboratory	✓
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	Ocean County Sheriff's Department (Toms River)	✓
	Local	Union County Prosecutor's Office (Westfield)	✓
NM	State	New Mexico Department of Public Safety (3 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	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	Cuyahoga County Regional Forensic Science Laboratory (Cleveland)	✓
	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)	✓
	Local	Tulsa Police Department Forensic Laboratory	
OR	State	Oregon State Police Forensic Services Division (5 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	Anderson/Oconee Regional Forensics Laboratory	✓
	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 (3 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 (3 sites)	✓

This list identifies laboratories that are participating in and reporting to NFLIS as of June 15, 2013.

* This laboratory is not currently conducting drug chemistry analysis. Cases for the agencies they serve are being analyzed via contracts or agreements with other laboratories.

**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 aid our understanding of the Nation's illicit drug problem. NFLIS serves as a 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 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, high-visibility initiative. Participating laboratories regularly receive reports that summarize national and regional data. In addition, the Data Query System (DQS) 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 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 Federal, State, and local forensic laboratories. Federal data are shown separately in this publication. 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 Section 2 through 4, 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 case items. Many laboratories do not analyze drug evidence if the criminal case was dismissed from court or if no defendant could be linked to the case.
- Laboratories vary with respect to the records they maintain. For example, some laboratories' automated records include the weight of the sample selected for analysis (e.g., the weight of one of five bags of powder), while others record total weight.

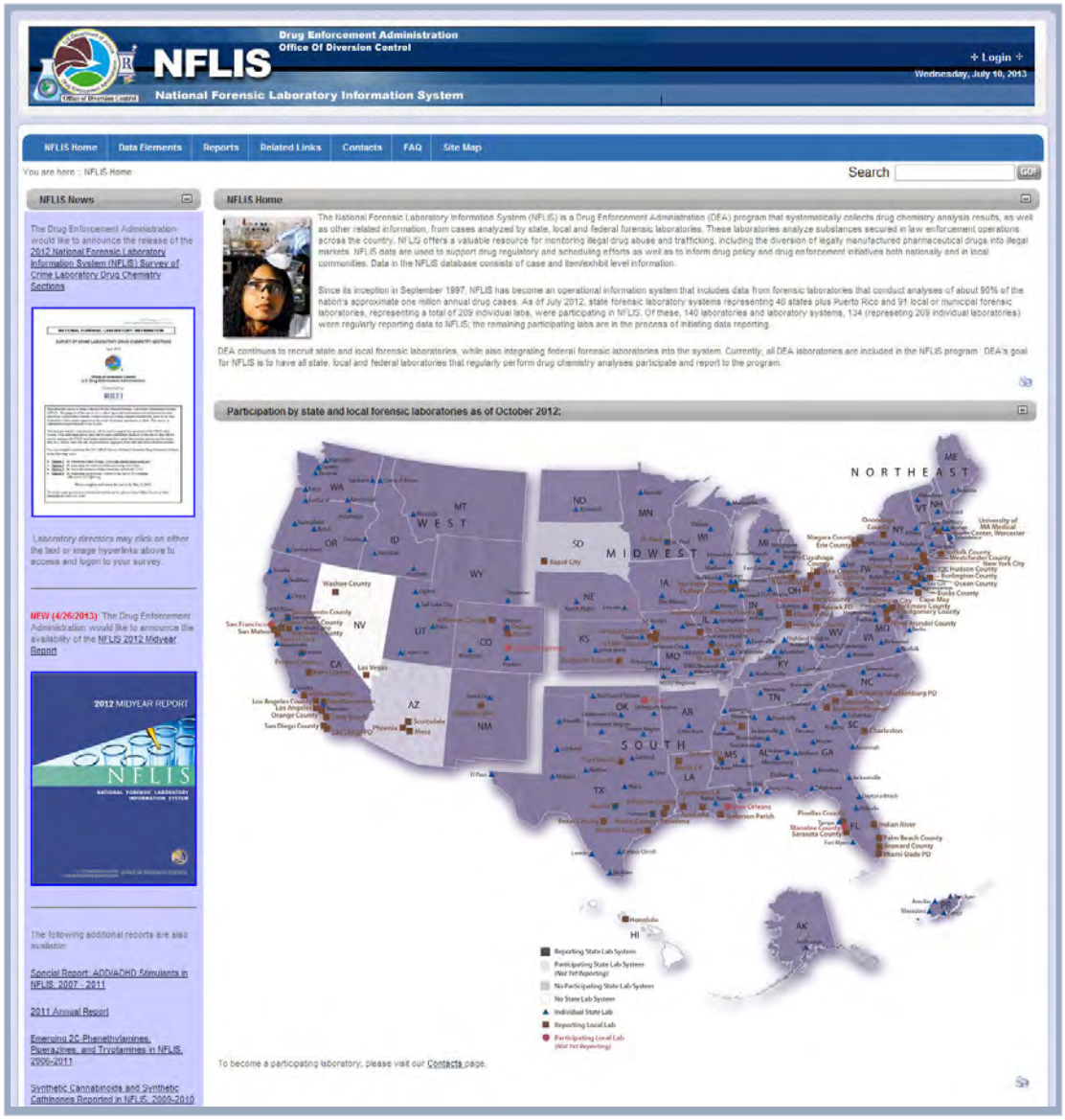
Appendix D NFLIS Website and Data Query System

The NFLIS website (https://www.nflis.deadiversion.usdoj.gov/) is an important feature of the NFLIS program. It is the key resource to provide NFLIS-related information, both through a public site and through a private site, which gives secure access to the NFLIS Data Query System (DQS).

The public site is frequently updated with NFLIS-related news, including information relevant to drug control efforts and DEA participation in conferences. Also available are downloadable versions of published NFLIS reports, links to other websites, and contact information to key NFLIS staff. Public features include links to mass spectral libraries, such as the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) library at http://www.swgdrug.org/ and the ForensicDB library at https://www.forensicdb.org/.

The private site requires user accounts, and security roles are assigned to manage access to its features, including the Map Library, NFLIS Data Entry Application, and DQS. The DQS is a distinct resource for NFLIS reporting laboratories to run customizable queries on their own case-level data and on aggregated metropolitan, State, regional, and national data. Features include the drug category queries for synthetic cannabinoids and synthetic cathinones.

To obtain information about NFLIS participation or the DQS, please visit the NFLIS website at https://www.nflis.deadiversion.usdoj.gov/.



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