

# **NDEWS** *National Drug Early Warning System*

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Funded at the Center for Substance Abuse Research by the National Institute on Drug Abuse

## Overview and Limitations About Selected Data Sources Found in NDEWS Sentinel Community Site Profile Appendix Data Tables

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NDEWS Coordinating Center

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## Area Description Indicators

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### American Community Survey (ACS) Population Estimates, by Demographic Characteristics and Socio-Economic Characteristics

#### ***Overview and Limitations***

Data on demographic, social, and economic characteristics are based on 2009-2013 American Community Survey (ACS) 5-Year Estimates. The U.S. Census Bureau's ACS is a nationwide survey designed to provide communities with reliable and timely demographic, social, economic, and housing data on an annual basis.

While the main function of the decennial census is to provide *counts* of people for the purpose of congressional apportionment and legislative redistricting, the primary purpose of the ACS is to measure the changing social and economic *characteristics* of the U.S. population. As a result, the ACS does not provide official counts of the population in between censuses. Instead, the Census Bureau's Population Estimates Program will continue to be the official source for annual population totals, by age, race, Hispanic origin, and sex.

ASC selects approximately 3.5 million housing unit addresses from every county across the nation to survey. Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error (MOE). The values shown in the table are the 90 percent margin of errors. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value.

#### ***Sources***

***Data Sources:*** Adapted by the NDEWS Coordinating Center from data from the American Community Survey; *2009-2013 American Community Survey 5-Year Estimates*; Table DP03; using American FactFinder; <<http://factfinder2.census.gov>>; Accessed on [3/12/2015]; U.S. Census Bureau.

***Overview/Methods/Limitations Sources:*** Adapted by the NDEWS Coordinating Center from U.S. Census Bureau, *A Compass for Understanding and Using American Community Survey Data: What General Data Users Need to Know*. U.S. Government Printing Office, Washington, DC, 2008. Available at:

<http://www.census.gov/acs/www/Downloads/handbooks/ACSGeneralHandbook.pdf>

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# Drug Use Indicators

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## Self-Reported Substance Use Behaviors from the National Survey on Drug Use and Health (NSDUH)

### **Overview and Limitations**

“NSDUH is an ongoing survey of the civilian, noninstitutionalized population of the United States aged 12 years or older. Substate estimates are based on the combined 2010-2012 National Surveys on Drug Use and Health (NSDUHs). All estimates are based on a small area estimation (SAE) methodology in which substate-level NSDUH data are combined with county and census block group/tract-level data from the State. In 2010-2012, NSDUH collected data from 206,222 respondents aged 12 or older and was designed to obtain representative samples from the 50 States and the District of Columbia. The survey is planned and managed by SAMHSA’s Center for Behavioral Health Statistics and Quality (CBHSQ)<sup>b</sup>.”

**Substate Regions** were defined by officials from each of the 50 States and the District of Columbia and were typically based on the substance abuse treatment planning regions specified by the States in their applications for the Substance Abuse Prevention and Treatment Block Grant (SABG) administered by SAMHSA. There is extensive variation in the size and use of substate regions across States. In some States, the substate regions are used more for administrative purposes rather than for planning purposes. The goal of the project was to provide substate-level estimates showing the geographic distribution of substance use prevalence for regions that States would find useful for planning and reporting purposes. The final substate region boundaries were based on the State’s recommendations, assuming that the NSDUH sample sizes were large enough to provide estimates with adequate precision. Estimates for 384 substate regions were generated using the 2010-2012 NSDUH data. Substate Regions used for each SCS are defined in the Notes sections of the Table.

### **Notes about Data Terms**

**Estimated percentages** are based on survey-weighted hierarchical Bayes estimation approach, and the 95 percent prediction (credible) intervals are generated by Markov Carlo techniques.

**95% Confidence Interval (CI)** provides a measure of the accuracy of the estimate. It defines the range within which the true value can be expected to fall 95 percent of the time.

**Estimated #** is the estimated number of persons aged 12 or older who used the specified drug or are dependent/abuse a substance; the estimated number of persons using/dependent on a particular drug was calculated by multiplying the prevalence rate and the population estimate from Table C1 of the NSDUH report. The population estimate is the simple average of the 2010, 2011, and 2012 population counts for persons aged 12 or older

**Binge Alcohol** is defined as drinking 5 or more drinks on the same occasion on at least 1 day in the past 30 days.

**Use of Illicit Drug Other Than Marijuana** is defined as any illicit drug other than marijuana and includes cocaine (including crack), heroin, hallucinogens, inhalants, or any prescription-type psychotherapeutic used nonmedically.

**Dependence or Abuse in Past Year** is based on definitions found in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV).

## **Sources**

**Data Sources:** <sup>a</sup>Adapted by the NDEWS Coordinating Center from data provided by the Substance Abuse and Mental Health Services Administration (SAMHSA), Substate Estimates of Substance Use and Mental Disorders from the *2010-2012 National Surveys on Drug Use and Health: Results and Detailed Tables*. Rockville, MD. 2014. Available at: <http://www.samhsa.gov/data/NSDUH/substate2k12/toc.aspx>.

**Overview/Methods/Limitations Sources:** <sup>b</sup>Adapted by the NDEWS Coordinating Center from Substance Abuse and Mental Health Services Administration (SAMHSA), Substate Estimates of Substance Use and Mental Disorders from the *2010-2012 National Surveys on Drug Use and Health: Guide to Substate Tables and Summary of Small Area Estimation Methodology*. Rockville, MD 2014. Available at: <http://www.samhsa.gov/data/sites/default/files/substate2k12-Methodology/NSDUHsubstateMethodology2012.pdf>

## Self-Reported Substance Use Behaviors from the Youth Risk Behavioral Survey (YRBS)

### Overview

“The Youth Risk Behavior Surveillance System (YRBSS) was designed to enable public health professionals, educators, policy makers, and researchers to 1) describe the prevalence of health-risk behaviors among youths, 2) assess trends in health-risk behaviors over time, and 3) evaluate and improve health-related policies and programs. YRBSS also was developed to provide comparable national, state, territorial, and large urban school district data as well as comparable data among subpopulations of youths (e.g., racial/ethnic subgroups) and to monitor progress toward achieving national health objectives. The YRBSS monitors six categories of priority health risk behaviors among youth and young adults: 1) behaviors that contribute to unintentional injuries and violence; 2) tobacco use; 3) alcohol and other drug use; 4) sexual behaviors that contribute to unintended pregnancy and sexually transmitted infections; 5) unhealthy dietary behaviors; and 6) physical inactivity. We have included selected drug and alcohol survey questions from the 2011 and 2013 YRBSS<sup>b</sup>.”

“One component of the Surveillance System is the school-based Youth Risk Behavior Survey (YRBS) which includes representative samples of high school students in the nation, states, tribes, and select large urban school district across the country. The ongoing surveys are conducted biennially; each cycle begins in July of the preceding even-numbered year (e.g., in 2010 for the 2011 cycle) when the questionnaire for the upcoming year is released and continues until the data are published in June of the following even-numbered year (e.g., in 2012 for the 2011 cycle)<sup>b</sup>.”

For states and large urban school districts, the YRBSSs are administered by state and local education or health agencies. Each state, territorial, tribal, and large urban school district YRBS employs a two-stage, cluster sample design to produce a representative sample of students in grades 9–12 in its jurisdiction. All the data presented in these tables are based on weighted data. Weighted results are representative of all students in grades 9–12 attending public schools in each jurisdiction. According to CDC, “weighted results mean that the overall response rate was at least 60%. The overall response rate is calculated by multiplying the school response rate times the student response rate<sup>b</sup>.”

**Limitations.** All YRBS data are self-reported, and the extent of underreporting or overreporting of behaviors cannot be determined, although there have been studies that demonstrate that the data are of acceptable quality.

The data apply only to youths who attend school and therefore are not representative of all persons in this age group. Nationwide, in 2009, approximately 4% of persons aged 16–17 years were not enrolled in a high school program and had not completed high school<sup>c</sup>. The NHIS and Youth Risk Behavior Supplement conducted in 1992 demonstrated that out-of-school youths are more likely than youths attending school to engage in the majority of health-risk behaviors<sup>d</sup>.

Local parental permission procedures are not consistent across school-based survey sites. However, in a 2004 study, CDC demonstrated that the type of parental permission typically does not affect prevalence estimates as long as student response rates remain high<sup>e</sup>.

### Notes about Data Terms

**Binge Alcohol** use is defined as having five or more drinks of alcohol in a row within a couple of hours on at least 1 day during the 30 days before the survey.

### Sources

**Data Sources:** <sup>a</sup>Adapted by the NDEWS Coordinating Center from data provided by Centers for Disease Control and Prevention (CDC), 1991-2013 High School Youth Risk Behavior Survey Data. Available at <http://nccd.cdc.gov/youthonline/>. Accessed on [3/12/2015].

**Overview/Methods/Limitations Sources:** <sup>b</sup>Adapted by the NDEWS Coordinating Center from *Methodology of the Youth Risk Behavior Surveillance System— 2013 Report* in the Centers for Disease Control and Prevention (CDC) *March 1, 2013 Morbidity and Mortality Weekly Report (MMWR)*; 62(1). Available at <http://www.cdc.gov/mmwr/pdf/rr/rr6201.pdf>. Accessed on [4/10/2015].

<sup>c</sup>Chapman C, Laird J, Ifill N, KewalRamani A. Trends in high school dropout and completion rates in the United States: 1972–2009 (NCES 2012–006). Available at <http://nces.ed.gov/pubs2012/2012006.pdf>. Accessed February 11, 2013.

<sup>d</sup>CDC. Health risk behaviors among adolescents who do and do not attend school—United States, 1992. *MMWR* 1994;43:129–32.

<sup>e</sup>Eaton DK, Lowry R, Brener ND, Grunbaum JA, Kann L. Passive versus active parental permission in school-based survey research: does type of permission affect prevalence estimates of self-reported risk behaviors? *Evaluation Review* 2004;28:564–77.

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## Substance Abuse Treatment

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### Treatment Admissions data from local data sources.

Treatment admissions data presented in the NDEWS Coordinating Center Appendix Tables were made available to the Coordinating Center by the NDEWS Sentinel Community Epidemiologist for each SCS. This is the only data source included in the Appendix Tables that is not from a federal data source. See below for site-specific data sources.

### *Notes about Data Terms*

Site-specific notes about treatment data are provided in the “Notes” section of each site’s treatment admissions data tables (Tables 4a and 4b).

### *Sources*

**Atlanta Metro:** Data provided by the Atlanta Metro NDEWS SCE and the Georgia Department of Human Resources.

**Chicago Metro:** Treatment admissions data was not available from NDEWS Chicago SCE.

**Denver Metro:** Data provided by the Denver Metro NDEWS SCE and the Colorado Department of Human Services, Office of Behavioral Health (OBH), Drug/Alcohol Coordinated Data System (DACODS).

**King County (Seattle Area):** Data provided by the King County (Seattle Area) NDEWS SCE and the Washington State Department of Social and Health Services (DSHS), Division Behavioral Health and Recovery, Treatment Report and Generation Tool (TARGET).

**Los Angeles County:** Data provided by the Los Angeles NDEWS SCE; 2013 and 2014 data provided by the California Department of Health Care Services, Mental Health Services Division, Office of Applied Research and Analysis, CalOMS, and 2010-2012 data provided by California Department of Drug and Alcohol Programs.

**Maine:** Data provided by the Maine NDEWS SCE and the Maine Office of Substance Abuse.

**Southeastern Florida (Miami Area):** Data provided by the Southeastern Florida NDEWS SCE, the Florida Department of Children and Families and the Broward Behavioral Health Coalition.

**New York City:** Data provided by the New York City NDEWS SCE and the New York State Office of Alcoholism and Substance Abuse Services (OASAS), Client Data System accessed May 2015.

**Philadelphia:** Data provided by the Philadelphia NDEWS SCE and the Philadelphia Department of Behavioral Health and Intellectual disAbility Services, Office of Addiction Services, Behavioral Health Special Initiative.

**San Francisco County:** Data provided by the San Francisco NDEWS SCE and AVATAR.

**Texas:** Data provided by the Texas NDEWS SCE and the Texas Department of State Health Services (DSHS).

**Wayne County (Detroit Area):** Data provided by the Wayne County (Detroit Area) NDEWS SCE and the Michigan Department of Health and Human Services, Bureau of Behavioral Health and Developmental Disabilities, Division of Quality Management and Planning, Performance Measurement and Evaluation Section.



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# Consequences of Drug Use Indicators

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## Drug Poisoning Deaths

### *Overview and Limitations*

Drug poisoning deaths are defined as the rate per 100,000 of deaths with underlying causes of drug related poisonings. The data presented is for multiple data years 2009-2011 and 2010-2012. The cause of death is based on codes from the International Classification of Diseases (ICD), 10th Rev., 2nd Ed., 2010.

Estimates based on fewer than 20 deaths are considered unreliable and are not displayed.

### *Notes about Data Terms*

**Numerator:** Deaths due to drug poisoning, ICD-10 codes X40-X44, X60-X64, X85, Y10-Y14.

The specific ICD-10 codes are defined below:

**X40:** Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics.

**X41:** Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified.

**X42:** Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified.

**X43:** Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system.

**X44:** Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances.

**X60:** Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics.

**X61:** Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified.

**X62:** Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified.

**X63:** Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system.

**X64:** Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances.

**X85:** Assault by drugs, medicaments and biological substances.

**Y10:** Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent.

**Y11:** Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent.

**Y12:** Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent.

**Y13:** Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent.

**Y14:** Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent.

**Denominator:** Total population

**For multiple data years** rates are calculated based on sum of data year populations from the Vintage matching the data years. For example, for rates of data years 2004-2006 combined, the sum of 2004 population from Vintage 2004, 2005 population from Vintage 2005, and 2006 population from Vintage 2006 are used as denominator.

This Indicator uses Age-Adjustment Groups: < 1, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+.

**95% Confidence Interval (CI)** provides a measure of the accuracy of the estimate. It defines the range within which the true value can be expected to fall 95 percent of the time.

**Age-Adjusted Rate:** the rate is adjusted based on the age distribution of a standard population allowing for comparison of rates across different sites.

### ***Sources***

**Data Sources:** <sup>a</sup>Adapted by the NDEWS Coordinating Center from National Vital Statistics System-Mortality (NVSS-M) data provided by the Centers for Disease Control and Prevention, National Center for Health Statistics. Accessed from Health Indicators Warehouse. [www.healthindicators.gov](http://www.healthindicators.gov). [3/19/15].

## HIV/AIDS and Viral Hepatitis Cases

### **Overview and Limitations**

**HIV Surveillance System.** CDC'S National HIV Surveillance System is the primary source for monitoring HIV trends in the United States. CDC funds and assists state and local health departments to collect the information. Health departments report de-identified data to CDC so that information from around the country can be analyzed to determine who is being affected and why. The HIV data presented in Table 6 were taken from the CDC'S National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) Atlas. It is an interactive tool that allows CDC to disseminate data, while allowing users to observe trends and patterns by creating detailed reports, maps, and other graphics.

**Hepatitis Surveillance System:** "As part of CDC'S National Notifiable Disease Surveillance System (NNDS), viral hepatitis case-reports are received electronically from state health departments via CDC'S National Electronic Telecommunications System for Surveillance (NETSS), a computerized public health surveillance system that provides CDC with data regarding cases of nationally notifiable diseases on a weekly basis. Although surveillance infrastructure is in place for reporting of acute infection, reports of chronic hepatitis B and C, which account for the greatest burden of disease, are not submitted by all states. Surveillance capacity to monitor both acute and chronic viral hepatitis is limited at the state and local levels, resulting in underreporting and variable data quality<sup>d</sup>."

This data should be interpreted with the consideration that reported cases of acute or chronic viral hepatitis represent only those relatively few infected persons who were detected, diagnosed, met a stringent case definition, and eventually reported to CDC in 2012. Because most acute and chronic infections are not reported, this Summary is mainly useful in detecting major trends in viral hepatitis A (HAV), B (HBV) and C (HCV)<sup>d</sup>.

### **Notes about Data Terms**

**Diagnoses of HIV Infection:** Diagnoses of HIV infection refers to confirmed diagnoses during a given time period. For example, the 2012 data on HIV infection would include persons with laboratory-confirmatory evidence of HIV infection during January 1, 2012 through December 31, 2012 and reported to CDC through June 30, 2013<sup>a</sup>.

Note that diagnoses of HIV infection are regardless of stage of disease at diagnosis (that is, persons diagnosed with HIV infection who have not progressed to stage 3 (AIDS); persons who were diagnosed with HIV infection and classified as stage 3 (AIDS) at the same time; and persons who were diagnosed with HIV infection that later received a stage (3) classification.

**Persons Living with Diagnosed HIV Infection, Year-End:** The data in the HIV Surveillance Report represent the number of persons living with HIV infection who have been diagnosed, have been reported to the HIV surveillance system, and have not been reported as deceased<sup>c</sup>. The data reflect persons living with diagnosed HIV infection at the end of 2011. The exclusion of data for the most recent year allowed at least 18 months for deaths to be reported to CDC and for these deaths to be factored into prevalence calculations<sup>a</sup>.

**Rate** refers to rate per 100,000 population. HIV surveillance data use Census data to calculate rates. Rates based on numbers less than 12 should be interpreted with caution because the estimates have relative standard errors greater than 30% and are considered unreliable<sup>a</sup>.

**Acute Hepatitis B/C<sup>d</sup>** is defined as acute illness with 1) discrete onset of symptoms (e.g., nausea, anorexia, fever, malaise, and abdominal pain) and 2) jaundice, dark urine, or elevated serum alanine aminotransferase (ALT) >200 IU/L.

Laboratory Criteria for **Acute Hepatitis B** is:

- IgM antibody to hepatitis B core antigen (anti-HBc) positive OR hepatitis B surface antigen (HBsAg) positive **AND**
- IgM anti-HAV negative (if performed).

Laboratory Criteria for **Acute Hepatitis C**

- IgM anti-HAV negative and IgM anti-HBc negative **AND**
- One or more of the following three criteria:
  - Antibody to hepatitis C virus (anti-HCV) screening-test positive, with a signal-to-cut-off ratio predictive of a true positive for the particular assay as defined by CDC (signal to cut-off ratios available at <http://www.cdc.gov/hepatitis/HCV/LabTesting.htm>) **OR**
  - Hepatitis C Virus Recombinant Immunoblot Assay (HCV RIBA) positive **OR**
  - Nucleic Acid Test (NAT) for HCV RNA positive (including genotype).

**Chronic Cases of Hepatitis B/C** (currently not available)

**Sources**

**Data Sources:** Adapted by the NDEWS Coordinating Center from data provided by:

<sup>a</sup>Centers for Disease Control and Prevention (CDC). NCHHSTP Atlas. Accessed on [3/20/15]. Available at: <http://www.cdc.gov/nchhstp/atlas/>

<sup>b</sup>Centers for Disease Control and Prevention (CDC), National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of Viral Hepatitis, *Surveillance for Viral Hepatitis — United States, 2012*. Available at: <http://www.cdc.gov/hepatitis/Statistics/2012Surveillance/index.htm>

**Overview/Methods/Limitations Sources:** Adapted by the NDEWS Coordinating Center from:

<sup>c</sup>Centers for Disease Control and Prevention (CDC), National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, National Center for HIV/AIDS, *Terms, Definitions, and Calculations Used in CDC HIV Surveillance Publications*. Available at: [http://www.cdc.gov/hiv/pdf/prevention\\_ongoing\\_surveillance\\_terms.pdf](http://www.cdc.gov/hiv/pdf/prevention_ongoing_surveillance_terms.pdf)

<sup>d</sup>Centers for Disease Control and Prevention (CDC), National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of Viral Hepatitis, *Surveillance for Viral Hepatitis — United States, 2012, Summary*. Available at: <http://www.cdc.gov/hepatitis/Statistics/2012Surveillance/Commentary.htm>

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## Availability Indicators

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### Drug Reports from the National Forensic Laboratory Information System (NFLIS)

#### ***Overview and Limitations***

NFLIS systematically collects results from drug analyses conducted by State and local forensic laboratories. These laboratories analyze controlled and noncontrolled substances secured in law enforcement operations across the US. Over 91% of the Nation's estimated 1 million annual State and local drug analysis cases is represented by forensic laboratories that are reporting to NFLIS. Fifty State systems and 101 local or municipal laboratories/laboratory systems participate in NFLIS, representing a total of 278 individual laboratories. In addition, the NFLIS database includes Federal data from DEA and U.S. Customs and Border Protection laboratories<sup>b</sup>.

**Limitations.** NFLIS includes results from completed analyses only. Drug evidence secured by law enforcement but not analyzed by laboratories is not included in the NFLIS database.

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 analyses (e.g., the weight of one of five bags of powder), while others record total weight<sup>b</sup>.

#### ***Notes about Data Terms***

**Drug Report:** drug that is identified in law enforcement items, submitted to and analyzed by federal, state, or local forensic labs, and included in the NFLIS database. This database allows for the reporting of up to three drug reports per item submitted for analysis. The data presented are a total count of first, second, and third listed reports for each selected drug item seized and analyzed.

For each site, the NFLIS drug reports are based on submissions of items seized in the site's catchment area. The catchment area for each site is described in the Notes section below each table. The time frame is January-December 2014. Data were queried from the DEA's NFLIS Data Query System (DQS) in May 2015 using drug item submission date.

Five new psychoactive substance (NPS) drug categories and Fentanyl & Fentanyl Analogs are of current interest to the NDEWS Project because of the recent increase in their numbers, types, and availability. The five NPS categories are: synthetic cannabinoids, synthetic cathinones, piperazines, tryptamines, and 2C Phenethylamines. A complete list of drugs included in each NPS category that were reported to NFLIS during the January to December 2014 timeframe is provided on the following pages.

## Synthetic Cannabinoids:

4-FLUORO AB-PINACA  
5-CHLORO-UR-144 (1-(5-CHLOROPENTYL)-1H-INDOL-3-YL)(2,2,3,3-TETRAMETHYLCYCLOPROPYL)METHANONE)  
5F-AB-PINACA  
5-FLUORO AB-005  
5-FLUORO ABICA  
5-FLUORO AMB  
5-FLUORO NPB-22  
5-FLUORO SDB-005  
5-FLUORO SDB-006  
5-FLUORO-ADBICA  
5F-PB-22 (1-(5-FLUOROPENTYL)-1H-INDOLE-3-CARBOXYLIC ACID 8-QUINOLINYL ESTER)  
A-796,260  
A-834,735  
A836,339 (N-[(2E)-3-(2-METHOXYETHYL)-4,5-DIMETHYL-1,3-THIAZOL-2(3H)-YLIDENE]-2,2,3,3-TETRAMETHYLCYCLOPROPANECARBOXAMIDE)  
AB-001 (1-PENTYL-3-(1-ADAMANTOYL)INDOLE)  
AB-005  
AB-CHMINACA (N-[(1S)-1-(AMINOCARBONYL)-2-METHYLPROPYL]-1-(CYCLOHEXYLMETHYL)-1H-INDAZOLE-3-CARBOXAMIDE)  
AB-FUBINACA  
AB-PINACA  
ADB-FUBINACA (N-(1-AMINO-3,3-DIMETHYL-1-OXOBUTAN-2-YL)-1-(4-FLUOROBENZYL)-1H-INDAZOLE-3-CARBOXAMIDE)  
ADBICA  
ADB-PINACA  
AKB48 (N-(1-ADAMANTYL)-1-PENTYL-1H-INDAZOLE-3-CARBOXAMIDE)  
AKB48 N-(4-FLUOROBENZYL)  
AKB48 N-(5-FLUOROPENTYL)  
AM-1220 (1-[(N-METHYL-2-PIPERIDINYL)METHYL]-3-(1-NAPHTHOYL)INDOLE)  
AM-1220 AZEPANE ISOMER (1-(N-METHYL AZEPAN-3-YL)-3-(1-NAPHTHOYL)INDOLE)  
AM-1241 (1-(METHYLPIPERIDIN-2-YLMETHYL)-3-(2-iodo-5-NITROBENZOYL)INDOLE)  
AM-1248 (1-[(N-METHYLPIPERIDIN-2-YL)METHYL]-3-(ADAMANT-1-OYL)INDOLE)  
AM-2201 (1-(5-FLUOROPENTYL)-3-(1-NAPHTHOYL)INDOLE)  
AM2201 BENZIMIDAZOLE ANALOG  
AM-2201 N-(4-FLUOROPENTYL)  
AM-2233 (1-[(N-METHYL-2-PIPERIDINYL)METHYL]-3-(2-iodobenzoYL)INDOLE)  
AM-356 (METHANANDAMIDE)  
AM-679 (1-PENTYL-3-(2-iodobenzoYL)INDOLE)  
AM-694 (1-(5-FLUOROPENTYL)-3-(2-iodobenzoYL)INDOLE)  
BB-22 (1-(CYCLOHEXYLMETHYL)-8-QUINOLINYL ESTER-1H-INDOLE-3-CARBOXYLIC ACID)  
CB-13 (1-NAPHTHALENYL[4-(PENTYLOXY)-1-NAPHTHALENYL]METHANONE)  
CP 47,497 (5-(1,1-DIMETHYLHEPTYL)-2-(3-HYDROXYCYCLOHEXYL)-PHENOL)  
CP 47,497-C6-HOMOLOG (5-(1,1-DIMETHYLHEXYL)-2-(3-HYDROXYCYCLOHEXYL)-PHENOL)  
CP 47,497-C8-HOMOLOG (5-(1,1-DIMETHYLOCTYL)-2-(3-HYDROXYCYCLOHEXYL)-PHENOL)  
CP 47,497-C9-HOMOLOG (5-(1,1-DIMETHYLNONYL)-2-(3-HYDROXYCYCLOHEXYL)-PHENOL)  
EAM-2201 (1-(5-FLUOROPENTYL)-3-(4-ETHYL-1-NAPHTHOYL)INDOLE)  
EG 018 (NAPHTHALEN-1-YL(9-PENTYL-9H-CARBAZOL-3-YL)METHANONE)  
FDU-PB-22 (NAPHTHALEN-1-YL 1-(4-FLUOROBENZYL)-1H-INDOLE-3-CARBOXYLATE)  
FUB-144 ((1-(4-FLUOROBENZYL)-1H-INDOL-3-YL)(2,2,3,3-TETRAMETHYLCYCLOPROPYL)METHANONE)  
FUB-AMB  
FUB-PB-22 (QUINOLIN-8-YL-1-(4-FLUOROBENZYL)-1H-INDOLE-3-CARBOXYLATE)  
HU-210 (((6AR,10AR)-9-(HYDROXYMETHYL)-6,6-DIMETHYL-3-(2-METHYLOCTAN-2-YL)-6A,7,10,10A-TETRAHYDROBENZO[C]CHROMEN-1-OL)  
HU-211 (((6AS,10AS)-9-(HYDROXYMETHYL)-6,6-DIMETHYL-3-(2-METHYLOCTAN-2-YL)-6A,7,10,10A-TETRAHYDROBENZO[C]CHROMEN-1-OL)  
HU-308 (4-[4-(1,1-DIMETHYLHEPTYL)-2,6-DIMETHOXYPHENYL]-6,6-DIMETHYL-BICYCLO[3.1.1]HEPT-2-ENE-2-METHANOL)  
JWH-007 (1-PENTYL-2-METHYL-3-(1-NAPHTHOYL)INDOLE)  
JWH-015 ((2-METHYL-1-PROPYL-1H-INDOL-3-YL)-1-NAPHTHALENYLMETHANONE)

## Synthetic Cannabinoids (cont'd):

JWH-018 (1-PENTYL-3-(1-NAPHTHOYL)INDOLE)  
JWH-018 ADAMANTYL CARBOXAMIDE  
JWH-018 N-(X-HYDROXYPENTYL) ANALOG  
JWH-019 (1-HEXYL-3-(1-NAPHTHOYL)INDOLE)  
JWH-022 (1-PENTYL-3-(4-METHYL-1-NAPHTHOYL)INDOLE)  
JWH-073 (1-BUTYL-3-(1-NAPHTHOYL)INDOLE)  
JWH-081 ([1-PENTYL-3-[1-(4-METHOXY)NAPHTHOYL]INDOLE])  
JWH-122 (1-PENTYL-3-(4-METHYL-1-NAPHTHOYL)INDOLE)  
JWH-122 5-METHYLNAPHTHYL ISOMER  
JWH-122 N-(4-PENTENYL) ANALOG  
JWH-200 ([1-[2-(4-MORPHOLINYL)ETHYL]-3-(1-NAPHTHOYL)INDOLE])  
JWH-201 (1-PENTYL-3-(4-METHOXYPHENYLACETYL)INDOLE)  
JWH-203 (1-PENTYL-3-(2-CHLOROPHENYLACETYL)INDOLE)  
JWH-210 (1-PENTYL-3-(4-ETHYL-1-NAPHTHOYL)INDOLE)  
JWH-250 (1-PENTYL-3-(2-METHOXYPHENYLACETYL)INDOLE)  
JWH-251 (1-PENTYL-3-(2-METHYLPHENYLACETYL)INDOLE)  
JWH-267 (1-PENTYL-3-(2-METHOXY-1-NAPHTHOYL)INDOLE)  
JWH-302 (1-PENTYL-3-(3-METHOXYPHENYLACETYL)INDOLE)  
MAB-CHMINACA (ADB-CHMINACA)  
MAM-2201 (1-(5-FLUOROPENTYL)-3-(4-METHYL-1-NAPHTHOYL)INDOLE)  
NM2201 (NAPHTHALEN-1-YL 1-(5-FLUOROPENTYL)-1H-INDOLE-3-CARBOXYLATE)  
NNE1 (N-(NAPHTHALEN-1-YL)-1-PENTYL-INDOLE-3-CARBOXAMIDE)  
NPB-22  
PB-22 (1-PENTYL-1H-INDOLE-3-CARBOXYLIC ACID 8-QUINOLINYL ESTER)  
PRAVADOLINE (WIN 48,098)  
RCS-4 (1-PENTYL-3-(4-METHOXYBENZOYL)INDOLE)  
RCS-4, C4 HOMOLOG (1-BUTYL-3-(4-METHOXYBENZOYL)INDOLE)  
RCS-8 (1-(2-CYCLOHEXYLETHYL)-3-(2-METHOXYPHENYLACETYL)INDOLE)  
SDB-005  
SDB-006  
SDB-006 N-PHENYL ANALOG  
STS-135 (N-ADAMANTYL-1-FLUOROPENTYLINDOLE-3-CARBOXAMIDE)  
SYNTHETIC CANNABINOID  
SYNTHETIC CANNABINOID (ADAMANTOYLINDOLES)  
SYNTHETIC CANNABINOID (BENZOYLINDOLES)  
SYNTHETIC CANNABINOID (CYCLOPROPANOYLINDOLES)  
SYNTHETIC CANNABINOID (NAPHTHOYLINDOLES)  
SYNTHETIC CANNABINOID (PHENYLACETYLINDOLES)  
SYNTHETIC CANNABINOID (QUINOLINYLINDOLECARBOXYLATES)  
THJ 2201(1-(5-FLUOROPENTYL)-1H-INDAZOL-3-YL)(NAPHTHALEN-1-YL)METHANONE  
UR-144 ((1-PENTYLINDOL-3-YL)-(2,2,3,3-TETRAMETHYLCYCLOPROPYL)METHANONE)  
UR-144 N-(5-CHLOROPENTYL) ANALOG  
UR-144 N-HEPTYL ANALOG  
URB597 (3-(AMINOCARBONYL)[1,1-BIPHENYL]-3-YL)-CYCLOHEXYLCARBAMATE)  
URB-602 (CYCLOHEXYL BIPHENYL-3-YLCARBAMATE)  
URB754 (6-METHYL-2-[(4-METHYLPHENYL)AMINO]-1-BENZOXAZIN-4-ONE)  
URB937 (3'-CARBAMOYL-6-HYDROXY-[1,1'-BIPHENYL]-3-YL CYCLOHEXYLCARBAMATE)  
WIN 55,212-2  
XLR-11 (1-(5-FLUOROPENTYL-1H-3-YL)(2,2,3,3-TETRAMETHYLCYCLOPROPYL)METHANONE)  
XLR11 N-(2-FLUOROPENTYL) ISOMER  
XLR11 N-(4-FLUOROPENTYL) ISOMER

## Synthetic Cathinones:

2,3-METHYLENEDIOXYMETHCATHINONE (2,3-MDMC)  
3,4-DIMETHYLMETHCATHINONE (3,4-DMMC)  
3,4-METHYLENEDIOXYETHYLCATHINONE (ETHYLONE)  
3-ETHYLMETHCATHINONE  
3-FLUOROMETHCATHINONE (3-FMC)  
3-METHYLETHCATHINONE (3-MEC)  
3-METHYLMETHCATHINONE (3-MMC) (MOPHEDRONE)  
4-ETHYLETHCATHINONE (4-EEC)  
4-ETHYLMETHCATHINONE (4-EMC)  
4-FLUORO-ALPHA-PYRROLIDINOPENTIOPHENONE (4-FLUORO-ALPHA-PVP)  
4-FLUOROISOCATHINONE  
4-FLUOROMETHCATHINONE (4-FMC; FLEPHEDRONE)  
4F-PVP (1-(4-FLUOROPHENYL)-2-(1-PYRROLIDINYL)-1-PENTANONE)  
4'-METHOXY-ALPHA-PYRROLIDINOPROPIOPHENONE (MOPPP)  
4-METHOXYETHYLCATHINONE  
4-METHOXYMETHCATHINONE (METHEDRONE)  
4'-METHYL-ALPHA-PYRROLIDINOHEXIOPHENONE (MHP)  
4'-METHYL-ALPHA-PYRROLIDINOPROPIOPHENONE (4-MEPPP)  
4-METHYLBUPHEDRONE  
4-METHYLMETHCATHINONE (4-MMC) (MEPHEDRONE)  
4-METHYL-N-ETHYLCATHINONE (4-MEC)  
ALPHA-ETHYLAMINOPENTIOPHENONE  
ALPHA-PYRROLIDINOBTIOPHENONE (ALPHA-PBP)  
ALPHA-PYRROLIDINOHEPTAPHENONE (PV8)  
ALPHA-PYRROLIDINOHEXANOPHENONE (ALPHA-PHP)  
ALPHA-PYRROLIDINOPENTIOPHENONE (ALPHA-PVP)  
ALPHA-PYRROLIDINOPENTIOTHIOPHENONE (ALPHA-PVT)  
ALPHA-PYRROLIDINOPROPIOPHENONE (ALPHA-PPP)  
BREPHEDRONE (4-BROMOMETHCATHINONE) (4-BMC)  
BUPHEDRONE (ALPHA-METHYLAMINO-BUTYROPHENONE (MABP))  
BUTYLONE ( $\beta$ -KETO-N-METHYLBENZO-DIOXYLPROPYLAMINE)  
DIBUTYLONE (BETA-KETO-N,N-DIMETHYL-1,3-BENZODIOXYLBUTANAMINE; BK-DMBDB)  
DIMETHYLONE (3,4-METHYLENEDIOXYDIMETHYLCATHINONE; bk-MDDMA)  
ETHYLCATHINONE  
FLUOROMETHCATHINONE  
ISOPENTEDRONE (1-METHYLAMINO-1-PHENYLPENTAN-2-ONE)  
MDPBP (3',4'-METHYLENEDIOXY-ALPHA-PYRROLIDINOBTIOPHENONE)  
MDPPP (3,4-METHYLENEDIOXY-A-PYRROLIDINOPROPIOPHENONE)  
METHCATHINONE  
METHYLENEDIOXYPYROVALERONE (MDPV)  
N,N-DIMETHYLCATHINONE  
N-ACETYL-3,4-METHYLENEDIOXYMETHCATHINONE (N-ACETYL-3,4-MDMC)  
NAPHTHYLPYROVALERONE (NAPHYRONE)  
N-ETHYLBUPHEDRONE  
N-METHYL-3,4-METHYLENEDIOXYCATHINONE (METHYLONE)  
PENTEDRONE (2-(METHYLAMINO)-1-PHENYLPENTAN-1-ONE)  
PENTYLONE ( $\beta$ -KETO-METHYLBENZODIOXYLPENTANAMINE)  
PYROVALERONE  
SUBSTITUTED CATHINONE

## 2C Phenethylamines:

2-(4-BROMO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (2C-B-NBOMe)  
2-(4-CHLORO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (2C-C-NBOMe)  
2-(4-iodo-2,5-dimethoxyphenyl)-N-(2-methoxybenzyl)ethanamine (2C-I-NBOMe)  
2,5-DIMETHOXY-4-(2-FLUROETHYLTHIO)-PHENETHYLAMINE (2C-T-21)  
2,5-DIMETHOXY-4-(N)-PROPYLPHENETHYLAMINE (2C-P)  
2,5-DIMETHOXY-4-CYCLOPROPYLMETHYLTHIOPHENETHYLAMINE (2C-T-8)  
2,5-DIMETHOXY-4-ETHYLPHENETHYLAMINE (2C-E)



## 2C Phenethylamines (cont'd):

2,5-DIMETHOXY-4-ETHYLTHIOPHENETHYLAMINE (2C-T-2)  
2,5-DIMETHOXY-4-IODOPHENETHYLAMINE (2C-I)  
2,5-DIMETHOXY-4-ISOPROPYLTHIOPHENETHYLAMINE (2C-T-4)  
2,5-DIMETHOXY-4-METHYLPHENETHYLAMINE (2C-D)  
2,5-DIMETHOXY-4-NITROPHENETHYLAMINE (2C-N)  
2,5-DIMETHOXY-4-N-PROPYLTHIOPHENETHYLAMINE (2C-T-7)  
2,5-DIMETHOXY-N-(2-METHOXYBENZYL)PHENETHYLAMINE (2C-H-NBOME)  
2,5-DIMETHOXYPHENETHYLAMINE (2C-H)  
4-BROMO-2,5-DIMETHOXYPHENETHYLAMINE (2C-B)  
4-CHLORO-2,5-DIMETHOXYPHENETHYLAMINE (2C-C)

## Piperazines:

1-(2-FLUOROPHENYL)PIPERAZINE  
1-(2-METHOXYPHENYL)PIPERAZINE  
1-(3-TRIFLUOROMETHYL)PHENYL-PIPERAZINE (TFMPP)  
1-(4-CHLOROPHENYL)PIPERAZINE (pCPP)  
1,4-DIBENZYLPIPERAZINE (DBZP)  
1-METHYL-4-BENZYLPIPERAZINE (MBZP)  
2-{4-(2-HYDROXYETHYL)PIPERAZINE-1-YL}ETHANESULFONIC ACID AKA HEPES  
4-BROMO-2,5-DIMETHOXY-1-BENZYLPIPERAZINE (2C-B-BZP)  
4-FLUOROPHENYLPIPERAZINE (pFPP)  
4-METHOXYPHENYLPIPERAZINE (MeOPP)  
META-CHLORPHENYLPIPERAZINE (MCP)  
MT-45 (1-CYCLOHEXYL-4-(1,2-DIPHENYLETHYL)-PIPERAZINE)  
N-BENZYLPIPERAZINE (BZP)  
PIPERAZINE

## Tryptamines:

4-ACETOXY-N,N-DIETHYLTRYPTAMINE (4-ACO-DET)  
4-ACETOXY-N,N-DIISOPROPYLTRYPTAMINE (4-ACO-DIPT)  
4-ACETOXY-N,N-DIMETHYLTRYPTAMINE (4-ACO-DMT)  
4-ACETOXY-N-METHYL-N-ISOPROPYLTRYPTAMINE (4-ACO-MIPT)  
4-HYDROXY-N,N-DIISOPROPYLTRYPTAMINE (4-OH-DIPT)  
4-HYDROXY-N-DIETHYLTRYPTAMIN-O-PHOSPHATE  
4-HYDROXY-N-DIETHYLTRYPTAMINE  
4-HYDROXY-N-METHYL-N-ETHYLTRYPTAMINE (4-HO-MET)  
4-HYDROXY-N-METHYL-N-ISOPROPYLTRYPTAMINE (4-OH-MIPT)  
4-METHOXY-N-METHYL-N-ISOPROPYLTRYPTAMINE (4-MEO-MIPT)  
4-METHYL-ALPHA-ETHYLTRYPTAMINE  
5-HYDROXYTRYPTAMINE (5-HT)  
5-METHOXY-ALPHA-METHYLTRYPTAMINE (5-MEO-AMT)  
5-METHOXY-N,N-DIETHYLTRYPTAMINE (5-MEO-DET)  
5-METHOXY-N,N-DIISOPROPYLTRYPTAMINE (5-MEO-DIPT)  
5-METHOXY-N,N-DIMETHYLTRYPTAMINE (5-MEO-DMT)  
5-METHOXY-N,N-DIPROPYLTRYPTAMINE (5-MEO-DPT)  
5-METHOXY-N-METHYL-N-ISOPROPYLTRYPTAMINE (5-MEO-MIPT)  
5-METHOXYTRYPTAMINE (5-MT)  
ALPHA-ETHYLTRYPTAMINE  
ALPHA-METHYLTRYPTAMINE  
BUFOTENINE  
DIETHYLTRYPTAMINE (DET)  
DIISOPROPYLTRYPTAMINE HYDROCHLORIDE  
DIMETHYLTRYPTAMINE (DMT)  
DIPROPYLTRYPTAMINE (DPT)  
METHOXYDIMETHYLTRYPTAMINE

## Tryptamines (cont'd):

N,N-DIALLYL-5-METHOXYTRYPTAMINE (5-MEO-DALT)  
N,N-DIISOPROPYLTRYPTAMINE (DIPT)  
N-METHYL-N-ISOPROPYLTRYPTAMINE (MIPT)

N-METHYLTRYPTAMINE  
TRYPTAMINE

### **Sources**

**Data Sources:** Adapted by the NDEWS Coordinating Center from data provided by the U.S. Drug Enforcement Administration (DEA), Office of Diversion Control, Drug and Chemical Evaluation Section, Data Analysis Unit. Data were retrieved from NFLIS Data Query System (DQS) in May 2015.

**Overview/Methods/Limitations Sources:** Adapted by the NDEWS Coordinating Center from U.S. Drug Enforcement Administration (DEA), Office of Diversion Control. (2015) *National Forensic Laboratory Information System: Midyear Report 2014*. Springfield, VA: U.S. Drug Enforcement Administration.