NDEWS National Drug Early Warning System

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

Wayne County (Detroit Area) Sentinel Community Site (SCS) Drug Use Patterns and Trends, 2016

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NDEWS Coordinating Center

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National Drug Early Warning System (NDEWS)
Sentinel Community Site (SCS)
Drug Use Patterns and Trends, 2016

The National Drug Early Warning System (NDEWS) was launched in 2014 with the support of the National Institute on Drug Abuse (NIDA) to collect and disseminate timely information about drug trends in the United States. The Center for Substance Abuse Research (CESAR) at the University of Maryland manages the NDEWS Coordinating Center and has recruited a team of nationally recognized experts to collaborate on building NDEWS, including 12 Sentinel Community Epidemiologists (SCEs). The SCEs serve as the point of contact for their individual Sentinel Community Site (SCS), and correspond regularly with NDEWS Coordinating Center staff throughout the year to respond to queries, share information and reports, collect data and information on specific drug topics, and write an annual *SCE Narrative* describing trends and patterns in their local SCS.

This *Sentinel Community Site Drug Use Patterns and Trends* report contains three sections:

- The *SCS Snapshot*, prepared by Coordinating Center staff, contains graphics that display information on drug use, substance use disorders and treatment, drug poisoning deaths, and drug seizures. The *SCS Snapshots* attempt to harmonize data available for each of the 12 sites by presenting standardized graphics from local treatment admissions and four national data sources.

- The *SCE Narrative*, written by the SCE, provides their interpretation of important findings and trends based on available national data as well as sources specific to their area, such as data from local medical examiners or poison control centers. As a local expert, the SCE is able to provide context to the national and local data presented.

- The *SCS Data Tables*, prepared by Coordinating Center staff, include information on demographic and socioeconomic characteristics of the population, drug use, substance use disorders and treatment, drug poisoning deaths, and drug seizures for the Sentinel Community Site. The *SCS Data Tables* attempt to harmonize data available for each of the 12 sites by presenting standardized information from local treatment admissions and five national data sources.

The *Sentinel Community Site Drug Use Patterns and Trends* reports for each of the 12 Sentinel Community Sites and detailed information about NDEWS can be found on the NDEWS website at www.ndews.org.

National Drug Early Warning System (NDEWS)
Sentinel Community Site (SCS)
Drug Use Patterns and Trends: SCS Snapshot

The *SCS Snapshot* is prepared by NDEWS Coordinating Center staff and contains graphics that display information on drug use, substance use disorders and treatment, drug poisoning deaths, and drug seizures. The *SCS Snapshots* attempt to harmonize data available for each of the 12 sites by presenting standardized graphics from local treatment admissions and four national data sources:

- National Survey on Drug Use and Health;
- Youth Risk Behavior Survey;
- SCE-provided local treatment admissions data;
- National Vital Statistics System mortality data queried from CDC WONDER; and
- National Forensic Laboratory Information System.

The *SCS Snapshots* for each of the 12 Sentinel Community Sites and detailed information about NDEWS can be found on the NDEWS website at www.ndews.org.

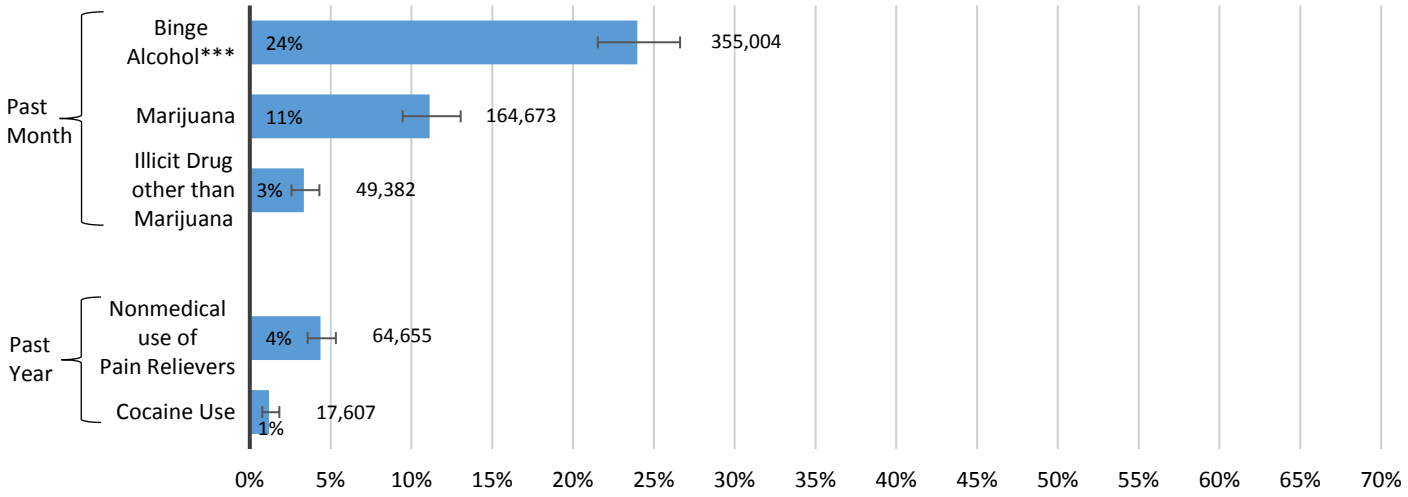
Wayne County (Detroit Area) SCS Snapshot, 2016

Substance Use

*National Survey on Drug Use and Health (NSDUH): Survey of U.S. Population**

Persons 12+ Years Reporting Selected Substance Use, Wayne County (Detroit Area) Region^, 2012-2014

Estimated Percent, 95% Confidence Interval, and Estimated Number of Persons**



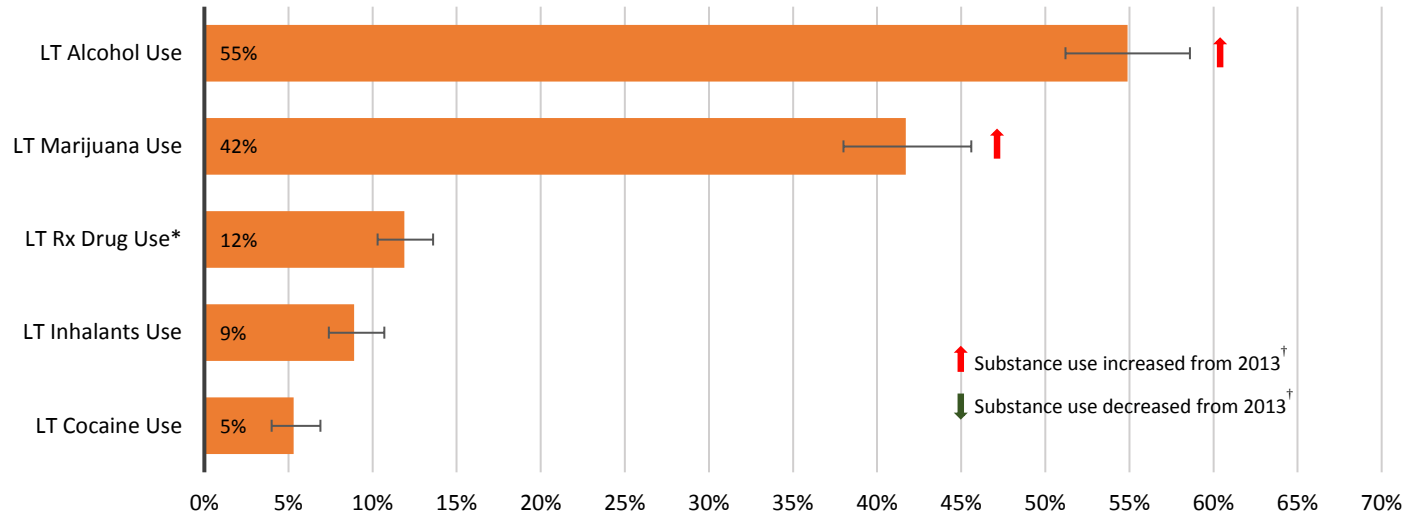
*U.S. Population: U.S. civilian non-institutionalized population. ^Wayne County (Detroit Area) Region: NSDUH Region 7 (Wayne County). **Estimated Number: Calculated by multiplying the prevalence rate and the population estimate of persons 12+ years (1,480,129) from Table C1 of the NSDUH Report. ***Binge Alcohol: Defined as drinking five or more drinks on the same occasion.

Source: Adapted by the NDEWS Coordinating Center from data provided by SAMHSA, NSDUH. Annual averages based on combined 2012 to 2014 NSDUH data.

Youth Risk Behavior Survey (YRBS): Survey of Student Population

Public High-School Students Reporting Lifetime (LT) Use of Selected Substances, Detroit, 2015

Estimated Percent and 95% Confidence Interval



*LT Rx Drug Use: Defined as ever taking prescription drugs without a doctor's prescription one or more times during their life.

†Statistically significant change: p<0.05 by t-test.

See *Sentinel Community Site (SCS) Data Tables* and *Overview & Limitations* section for more information regarding the data.

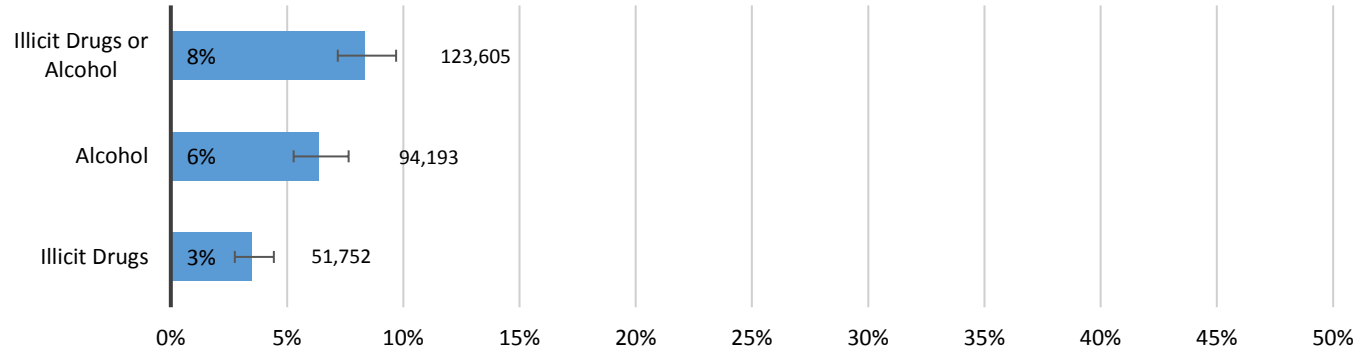
Source: Adapted by the NDEWS Coordinating Center from data provided by CDC, 1991-2015 High School YRBS data.

Substance Use Disorders and Treatment

*National Survey on Drug Use and Health (NSDUH): Survey of U.S. Population**

Substance Use Disorders** in Past Year Among Persons 12+ Years, Wayne County (Detroit Area)^, 2012-2014

Estimated Percent, 95% Confidence Interval, and Estimated Number of Persons***



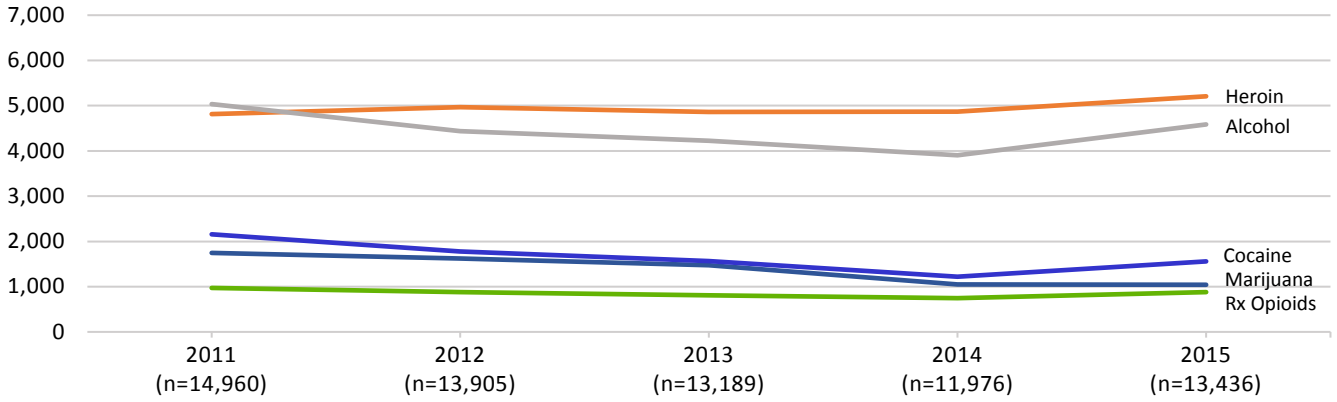
*U.S. Population: U.S. civilian non-institutionalized population. **Substance Use Disorders in Past Year: Persons are classified as having a substance use disorder in the past 12 months based on responses to questions that meet the criteria specified in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*. ^Wayne County (Detroit Area) Region: NSDUH Region 7 (Wayne County). ***Estimated Number: Calculated by multiplying the prevalence rate and the population estimate of persons 12+ years (1,480,129) from Table C1 of the NSDUH Report.

Source: Adapted by the NDEWS Coordinating Center from data provided by SAMHSA, NSDUH. Annual averages based on combined 2012 to 2014 NSDUH data.

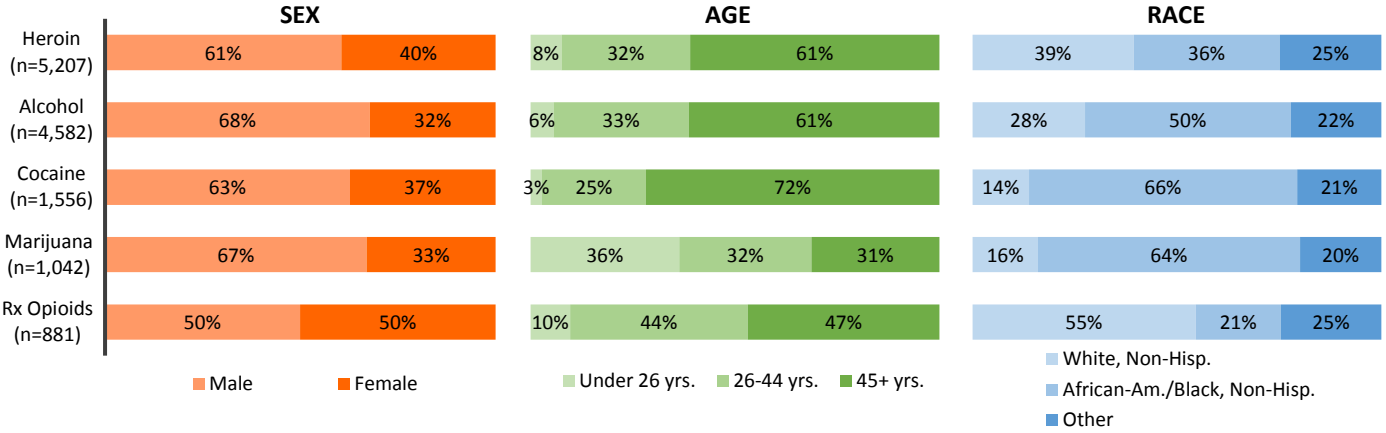
Treatment Admissions Data from Local Sources

Trends in Treatment Admissions*, by Primary Substance of Abuse, Wayne County (Detroit Area), 2011-2015

(n = Number of Treatment Admissions)



Demographic Characteristics of Treatment Admissions*, Wayne County (Detroit Area), 2015



*Treatment Admissions: Includes admissions whose treatment was covered by Medicaid or Block Grant funds; excludes admissions covered by private insurance, treatment paid for in cash, and admissions funded by the Michigan Department of Corrections. Percentages may not sum to 100 due to rounding. See *Sentinel Community Site (SCS) Data Tables* and *Overview & Limitations* section for more information regarding the data.

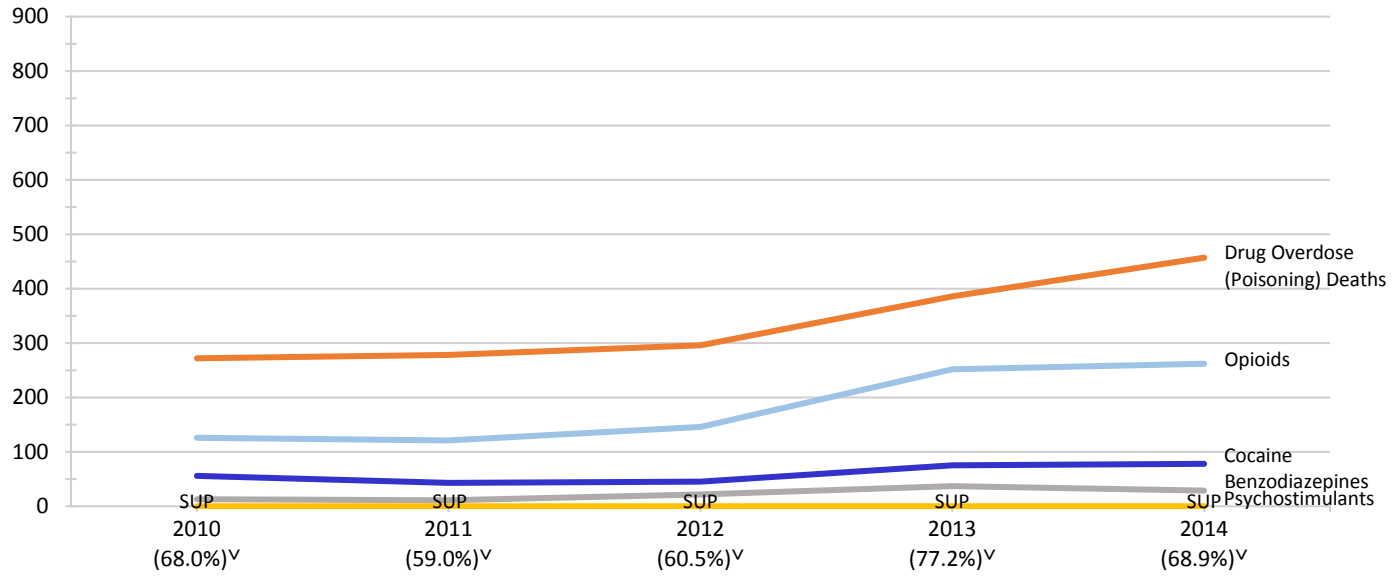
Source: Data provided to the Wayne County (Detroit Area) NDEWS SCE by the Michigan Department of Health and Human Services, Bureau of Behavioral Health and Developmental Disabilities, Division of Quality Management and Planning, Performance Measurement and Evaluation Section.

Drug Overdose (Poisoning) Deaths

National Vital Statistics System (NVSS) via CDC WONDER

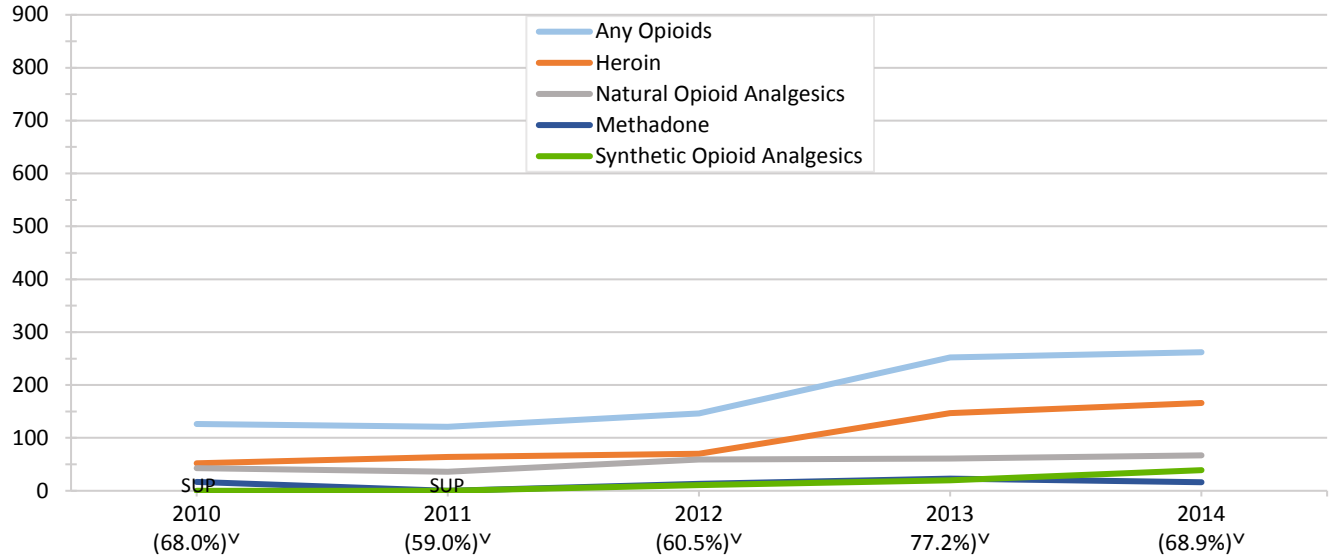
Trends in Drug Overdose (Poisoning) Deaths*, by Drug**, Wayne County (Detroit Area), 2010–2014

(Number of Deaths and Percent of Drug Overdose (Poisoning) Deaths with Drug(s) Specified[v])



Trends in Opioid Overdose (Poisoning) Deaths*, by Opioid, Wayne County (Detroit Area), 2010–2014

(Number of Deaths, by Drug** and Percent of Drug Overdose (Poisoning) Deaths with Drug(s) Specified[v])



*Drug Overdose (Poisoning) Deaths: Defined as deaths with ICD-10 underlying cause-of-death (UCOD) codes: X40-X44, X60-X64, X85, and Y10-Y14. **Drug Overdose (Poisoning) Deaths, by Drug: Drug overdose (poisoning) deaths with ICD-10 multiple cause-of-death (MCOD) T-codes: Benzodiazepines (T42.4); Cocaine (T40.5); Psychostimulants with Abuse Potential [excluding cocaine] (T43.6)—may include amphetamines, caffeine, MDMA, methamphetamine, and/or methylphenidate; Any Opioids (T40.0-T40.4, OR T40.6). Specific opioids are defined: Opium (T40.0); Heroin (T40.1); Natural Opioid Analgesics (T40.2)—may include morphine, codeine, and semi-synthetic opioid analgesics, such as oxycodone, hydrocodone, hydromorphone, and oxymorphone; Methadone (T40.3); Synthetic Opioid Analgesics [excluding methadone] (T40.4)—may include drugs such as tramadol and fentanyl; and Other and Unspecified Narcotics (T40.6). vPercent of Drug Overdose (Poisoning) Deaths with Drug(s) Specified: The percentage of drug overdose (poisoning) deaths with specific drugs mentioned varies considerably by state/catchment area. This statistic describes the annual percentage of drug overdose (poisoning) deaths that include at least one ICD-10 MCOD code in the range T36-T50.8. SUP=Suppressed: Counts are suppressed for subnational data representing 0–9 deaths. See *Sentinel Community Site (SCS) Data Tables* and/or *Overview & Limitations* for additional information on mortality data.

Source: Adapted by the NDEWS Coordinating Center from data provided by the Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Multiple cause of death 1999-2014, available on the CDC WONDER Online Database, released 2015. Data compiled in the Multiple cause of death 1999-2014 were provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Retrieved between December 2015 - May 2016, from http://wonder.cdc.gov/mcd-icd10.html

Law Enforcement Drug Seizures

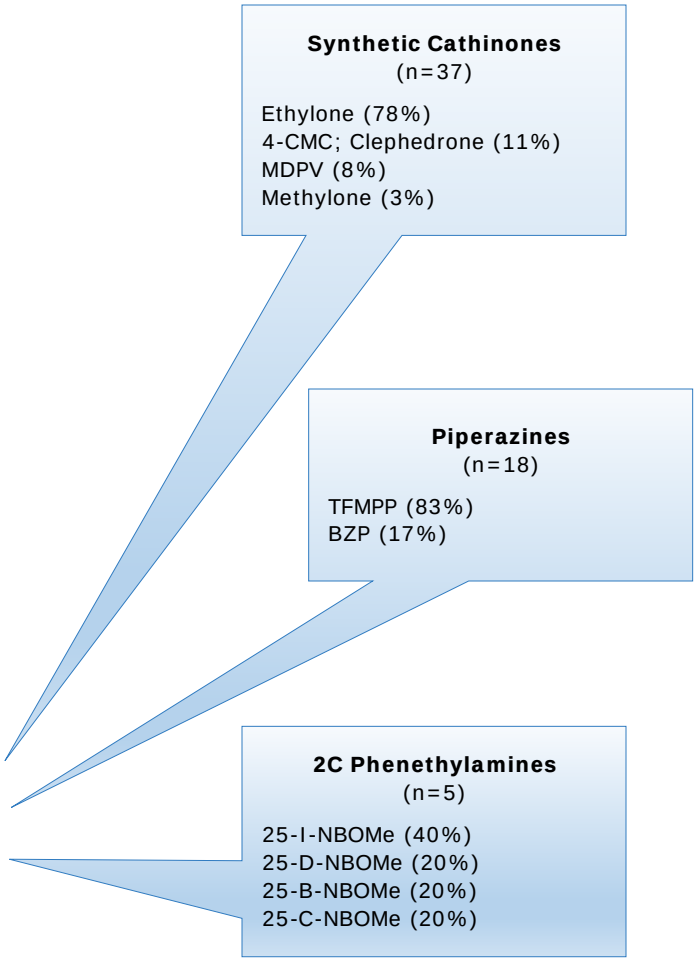
National Forensic Laboratory Information System (NFLIS)

Drug Reports* for Items Seized by Law Enforcement in Wayne County (Detroit Area) in 2015
DEA National Forensic Laboratory Information System (NFLIS)

Top 10 Drug Reports and Selected Drug Categories

Drug Identified	Number (#)	Percent of Total Drug Reports (%)
TOTAL Drug Reports	**7,376**	**100%**
Top 10 Drug Reports		
Cannabis	3,699	50.1%
Cocaine	1,381	18.7%
Heroin	998	13.5%
No Controlled Drug Identified	289	3.9%
Hydrocodone	209	2.8%
Alprazolam	184	2.5%
Oxycodone	89	1.2%
Amphetamine	78	1.1%
Fentanyl	59	0.8%
Buprenorphine	38	0.5%
Top 10 Total	**7,024**	**95.2%**
Selected Drugs/Drug Categories		
Opioids	1,470	19.9%
Fentanyl	59	0.8%
Other Fentanyls***	0	0.0%
Synthetic Cathinones	37	0.5%
Piperazines	18	0.2%
2C Phenethylamines	5	<0.1%
Synthetic Cannabinoids	0	0.0%
Tryptamines	0	0.0%

Top 5 Drugs, by Selected Drug Category
(% of Category)**



*Drug Reports: 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. The NFLIS database allows for the reporting of up to three drugs 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.

**Percentages may not sum to 100 due to rounding. ***Other Fentanyls are substances that are structurally related to fentanyl (e.g., acetylfentanyl and butyrl fentanyl). See *Notes About Data Terms* in *Overview and Limitations* section for full list of Other Fentanyls that were reported to NFLIS during the January to December 2015 timeframe. See *Sentinel Community Site (SCS) Data Tables* and *Overview & Limitations* for more information regarding the data.

Source: Adapted by the NDEWS Coordinating Center from data provided by the U.S. Drug Enforcement Administration (DEA), Diversion Control Division, Drug and Chemical Evaluation Section. Data Analysis Unit. Data were retrieved from the NFLIS Data Query System (DQS) on May 18, 2016.

National Drug Early Warning System (NDEWS)
Sentinel Community Site (SCS)
Drug Use Patterns and Trends: SCE Narrative

The *SCE Narrative* is written by the Sentinel Community Epidemiologist (SCE) and provides their interpretation of important findings and trends based on available national data as well as sources specific to their area, such as data from local medical examiners or poison control centers. As a local expert, the SCE is able to provide context to the national and local data presented.

This *SCE Narrative* contains the following sections:

- ◊ SCS Highlights
- ◊ Changes in Legislation
- ◊ Substance Use Patterns and Trends
- ◊ Local Research Highlights (if available)
- ◊ Infectious Diseases Related to Substance Use (if available)

The *SCE Narratives* for each of the 12 Sentinel Community Sites and detailed information about NDEWS can be found on the NDEWS website at www.ndews.org.

National Drug Early Warning System (NDEWS)
Wayne County (Detroit Area) Sentinel Community Site (SCS)
Drug Use Patterns and Trends, 2016: SCE Narrative

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Highlights

- **Heroin** continues to be the primary drug of concern in Michigan and Wayne County as measured by increasing deaths and steadily high levels of treatments admissions and seizures.
- **Cocaine** seems to be more of a problem in urban Wayne County than for the state as whole and may be stabilizing as measured by treatment admissions, seizures, and deaths.
- In contrast, **methamphetamine** seems to be more of a problem across the state than in urban Wayne County and accounts for far fewer treatment admissions than other drugs of abuse.
- **Prescription opioids** are more of a problem across the state than in urban Wayne County based on treatment admissions and seizures; **hydrocodone** continues to be more commonly identified in seizures than other prescribed opioids despite upscheduling.
- Few **novel psychoactive substances** measured in either absolute numbers and diversity were identified by seizures.
- There were no substantial new patterns of drug use or new emerging drugs.

Changes in Legislation

Specific policies affecting drug use include the statewide approval of medical marijuana in 2008. At the local level, several municipalities have decriminalized possession of small amounts of marijuana, including Detroit in 2012. Michigan scheduled compounds used in synthetic cannabinoids and cathinones in 2012. Nevertheless, Michigan lagged in approving the wider use of naloxone and Good Samaritan rules. Only in late 2014 were they approved, with additional clarifying laws signed in 2015. The Good Samaritan rule in particular only applies to minors who report overdoses from alcohol or prescription medications. Additional legislature is under discussion at this time.

The Michigan Prescription Drug and Opioid Abuse Task Force released its recommendations in October 2015, which included updating and requiring the use of the prescription monitoring system. In 2014, substance abuse was added to the mental health law as a possible cause for involuntary treatment. Also signed into law was the requirement that all first-responders in the state be required to have naloxone. Funding and training issues are still being resolved in some counties. Naloxone has been dispensed to a limited extent at needle exchanges, one of which is operated by a nonprofit organization in Detroit.

Michigan was one state that expanded Medicaid, which allowed for an increase in the number of people entering drug treatment that is reflected in the treatment admissions data provided in this profile. In addition, the integration of substance abuse services with mental health services included the use of a common admission form in fiscal year 2015.

Substance Use Patterns and Trends

OVERVIEW

- There were no substantial new patterns of drug use or new emerging drugs.

Heroin continues to be the primary drug of abuse in Michigan and Wayne County. In Wayne County, deaths attributed to heroin increased every year from 2010 (2.9 per 100,000) through 2014 (9.4 per 100,000) (see Exhibit 1). The number of deaths attributed to heroin was also higher than the number of deaths attributed to other opioids (3.8 per 100,000 for natural and seminatural opioids and 2.2 per 1000,000 for synthetic opioids) or cocaine (4.3 per 100,000) (see Exhibit 1). Admissions for heroin use disorder accounted for 38.8% of publicly funded treatment during 2015 in Wayne County, which was more than for any other substance. In 2011, such admissions accounted for 32.2% of all treatment admissions. For the state, heroin was the second most common primary drug of abuse for publicly funded treatment (30.4% in 2015 compared with 19.1% in 2011). The medications used in treatment, namely, methadone and buprenorphine, are increasingly dispensed (see Exhibits 6 and 7). The recent approval of naloxone for first-responders has not been fully implemented yet in all counties.

Prescription opioids continue to account for a minority of treatment admissions (Michigan, 13.5% in 2015 compared with 14.7% in 2011; Wayne County, 6.5% in 2011 and 6.6% in 2015) and deaths (3.8 per 100,000 for natural and seminatural opioids and 2.2 per 1000,000 for synthetic opioids).

Treatment admissions for cocaine were lower than in 2011 (Wayne County: 11.6% for 2015 compared with 14.4% and Michigan: 6.9% for 2015 compared with 8.6%). For both Wayne County and Michigan, cocaine admissions have a higher percentage of African Americans than other substances (65.6% in Wayne County and 51.6% for Michigan). Additionally, people admitted with cocaine as the primary drug of abuse were more likely 45 years of age or older (60.6% for Michigan and 71.7% for Wayne County) than other drugs of abuse. Nevertheless, there were more admissions with cocaine as a secondary drug to major drugs of abuse than as a primary drug for Michigan (6,339 compared with 3,907) and Wayne County (2,422 compared with 1,556).

Methamphetamine accounts for far fewer treatment admissions than other major drugs of abuse (*n* = 12 for Wayne County and 801 or 1.4% for Michigan).

Benzodiazepines and marijuana contribute more to admissions as secondary drugs of abuse to major drugs of abuse than as primary drugs, for both Wayne County and Michigan. For benzodiazepines, the numbers were 454 compared with 77 as primary drug in Wayne County and for Michigan, 3,026 compared with 534. For marijuana, the numbers were 1,622 compared with 1,042 as primary drug in Wayne County and for Michigan, 8,583 compared with 6,142.

Drug poisoning deaths (not adjusted for age or other demographic variables) increased almost every year in Michigan from 1999 to 2014 to 20.7 per 100,000 (from 7.2 per 100,000). The rate surpassed that of the country every year. In contrast, alcohol poisoning deaths only increased to 9.1 per 100,000 in 2014. The increase in drug poisoning deaths occurred in both sexes, age groups with sufficient numbers to test, and in both Whites and Blacks. The subgroup with the greatest increases was Whites although it is of great concern that there were increases in heroin-specific deaths among people 21–34 and 35–54 years of age.

BENZODIAZEPINES

The number of people admitted with benzodiazepines as the primary drug of abuse in 2015 was low at both the state (*n* = 534) and the county level (*n* = 77). Nevertheless, the number of admissions with benzodiazepines as secondary drug of abuse was higher (*n* = 454 for the county and 3,026 for the state). The 2015 NFLIS highlights benzodiazepine diversion or abuse. Alprazolam ranked 6th in Wayne County (184 items or 2.5% of drug reports) and 7th in Michigan (881 items or 2.7% of drug reports).

COCAINE

- Cocaine seems to be more of a problem in urban Wayne County than for the state as whole and may be stabilizing as measured by treatment admissions, seizures, and deaths.

The number of Wayne County drug-associated deaths with laboratory confirmed cocaine detected was 143 in fiscal year 2015 (from 146 in fiscal year 2014). The numbers of deaths are consistently more than 118 in fiscal year 2013. Additionally, from 2012 to 2013, the number of overdose deaths with cocaine as

a cause increased from 75 to 78, underscoring that using cause of death may underestimate its involvement. Cocaine was the third most common primary drug of abuse at admission to treatment at the county level (*n* = 1,556 or 11.6%) and 5th at the state level (*n* = 3,907 or 6.9%), but more people had cocaine as a secondary drug than as a primary drug of abuse. People admitted with the primary drug of cocaine were most likely to smoke it; at the state level, it was 77.7%, and at the county level, it was 86.8%. Those who were admitted to treatment were more likely to be Black (65.6% for county and 51.6% for state) and older (45 or older, 71.7% for county and 60.6% for state) than for other drugs of abuse. Cocaine was the second-ranked drug identified in reports for items seized and analyzed in the National Forensic Laboratory Information System (NFLIS) database for 2015; it accounted for 13.7% of items analyzed across the state and 18.7% in Wayne County. Wayne County accounted for 30.4% of cocaine items analyzed statewide.

MARIJUANA

The number of medical marijuana certificates declined from a peak of 118,368 (14,169 in Wayne County or 12.0%) in fiscal year 2013 to 96,408 (12,258 in Wayne County or 12.7%) in fiscal year 2014, possibly suggesting that people are not viewing the certificate as legal protection or as necessary as in past years. Nevertheless, in fiscal year 2015, there were 182,091 patients approved for medical marijuana with 25,949 in Wayne County (14.3% of total; see Exhibit 2). Treatment admissions, traditionally driven by legal pressure, declined over time at both the state (*n* = 6,142 or 10.8%) and the county (*n* = 1,042 or 7.8%) level during 2015. Admissions with the primary drug of abuse of marijuana still had the youngest age distribution (state, 15.8% younger than 18 years of age and 13.1% at the county level). At the county level, people admitted were predominately Black (64.1%), but at the state level, the majority were White (52.6%). Among treatment admissions, it is the most common secondary drug of abuse for Michigan and second to cocaine for Wayne County. Marijuana is the most common drug identified in reports for items seized and analyzed in NFLIS at both the state (44.2% of items) and the county level (50.1% of items). Wayne County accounted for 25.2% of marijuana items analyzed statewide.

METHAMPHETAMINE

- In contrast, methamphetamine seems to more a problem across the state than in urban Wayne County accounts for far fewer treatment admissions than other drugs of abuse.

Methamphetamine is the 6th-leading primary drug of abuse at treatment admission at the state level (*n* = 801 or 1.4%) and 8th for the county (*n* = 12 admissions or 0.1%). At both the state and the county level, the people admitted with methamphetamine as the primary drug of abuse are most likely to be non-Hispanic Whites (90.8% for the state and 58.3% for the county). At the state level, 47.4% of admissions smoked it and 75.0% at the county level ingested it orally. In the 2015 NFLIS, methamphetamine ranked 5th for the state (4.4% of items) and 12th for the county (0.4% with 29 items). Wayne County accounted for 2.0% of methamphetamine items analyzed statewide.

NEW PYSCHOACTIVE SUBSTANCES (OTHER THAN OPIOIDS)

- Few novel psychoactive substances measured in either absolute numbers and diversity were identified by seizures.

Calls to the Michigan Poison Control Center were low for synthetic cannabinoids (*n* = 29). No one was admitted for synthetic cannabinoids use disorder in Michigan during the first half of 2016.

At the state level, 20 different synthetic substances of interest to NDEWS (and 264 reports) were identified in reports for items seized and analyzed in NFLIS; 10 (50%) different substances were in Wayne County (60 reports or 22.7% of the state's total). The synthetic with the most items identified was BZP for both Wayne County and Michigan in 2014. Nevertheless, in 2015, the substance most frequently identified was ethylone (29 at the county level and 93 at the state level). Wayne County accounted for 31.5% of piperazine, 28.9% of synthetic cathinone, 8.6% of phenethylamine, and no items that were identified as tryptamine or synthetic cannabinoid items. The low proportions for some of these synthetic substances could represent different distributions, different likelihoods of items being seized by law enforcement, or other items being more attractive for prosecutors to request analysis.

For the state, the only piperazines identified were BZP (*n* = 20 vs. 128 in 2014) and TFMPP (*n* = 37 in 2015). The most common synthetic cathinone was ethylone (*n* = 93 out of 128 drug reports for the state and 29 out of 37 for the county). The most common phenthylamine was 25-I-NBOME (*n* = 33 out of 58 for the state and 2 out of 5 for the county). The only tryptamine identified at the state level was DMT (*n* = 13 compared with 22 in 2015), and the most common synthetic cannabinoid was AB-PINACA (*n* = 4 out of 8 in 2015 compared with *n* = 11 in 2015). Compared with the nation, Michigan does not seem to have the diversity or number of synthetic compounds identified in other sites in the NFLIS database. This does not mean that the synthetics are absent or that those that are being distributed are safe. It means that the items seized by law enforcement and requested by the prosecutor to be analyzed were mostly marijuana, cocaine, and heroin (69% of drug reports in 2015).

Data are limited to determine temporal trends for NFLIS. In 2012, there were 135 synthetic cathinone items analyzed compared with 116 in 2014 and 128 in 2015 (state of Michigan). As in 2012, there were more synthetic cathinone items identified in 2014 than synthetic cannabinoid items identified. For 2015, there 8 reports of synthetic cannabinoids with none of them seized in Wayne County. It is not possible from the NFLIS report to determine the form of the synthetics (e.g., sold as Ecstasy or as bath salts).

OPIOIDS

- Heroin continues to be the primary drug of concern in Michigan and Wayne County as measured by increasing deaths and steadily high levels of treatments admissions and seizures.

- Prescription opioids are more a problem across the state than in urban Wayne County based on treatment admissions and seizures; hydrocodone continues to be more commonly identified in seizures than other prescribed opioids despite upscheduling.

Heroin

The number of Wayne County drug-associated deaths with laboratory-confirmed heroin detected increased to 267 in fiscal year 2015, up from 239 the prior year. It surpassed the number of deaths for all other drugs and alcohol. Deaths with heroin as a cause increased from 147 in 2013 to 155 in 2014 for an age-adjusted rate of 9.5 per 100,000. For both the state and the county, treatment admissions with the primary drug of heroin accounted for a substantial proportion (24.7% and 40.6% in 2014 vs. 30.4%

and 38.8% in 2015). In 2015, heroin was the second most common drug reported at admission at the state level (after alcohol) and the first at the county level. The state reports that it again spent a record amount on methadone treatment ($17.9 million) in FY 2015 (see Exhibit 6). The number of units of buprenorphine dispensed in the state also increased (see Exhibit 7). The proportion of treatment admissions injecting heroin continued to be higher for state admissions (75.5%) than for the county (55.7%). At the state level, a greater percentage of people had prescription opioids as a secondary drug of abuse (5.9%) compared with Wayne County (2.2%). During the last years, there has not been an increase in the proportion of admissions among young people, in contrast to changes at the state level from 2003 to 2008. For both the county and the state, heroin was the 3rd-ranked drug identified in reports for items seized and analyzed in NFLIS. For the state, it accounted for 11.1% of items, and for the county, it accounted for 13.5% of items analyzed. Overall, Wayne County accounted for 27.1% of heroin items analyzed statewide even though the county has 17.9% of the population.

Prescription Opioids and Fentanyl

The number of prescription units dispensed increased from 2007 to 2015 (see Exhibit 4). The number of prescription units dispensed for Schedule II medications saw a decline in 2015 compared with 2014 for the first time since prescription monitoring moved online (2007), which is consistent with national reports. Units dispensed of Schedule IV also increased consistent with scheduling of tramadol. Units dispensed of Schedule V medications were lower in 2015 than at any time since 2007.

Prescription opioids as primary drug of abuse ranked 3rd in the state (13.5% of admissions) and 5th in the county (6.6% of admissions). Similar to methamphetamine, the people admitted were predominately White at the state and county levels.

The most dramatic finding with regard to opioids was the increase in drug-associated deaths with laboratory-confirmed fentanyl detected. Over the 3-year period of fiscal years 2013–2015, the number of deaths increased from 11 in FY2013 to 148 in FY2015. Nevertheless, the number of deaths is much lower (148) than is the number of deaths with heroin (267). Some decedents only had fentanyl detected. The number of deaths with all other prescribed opioids (whether obtained with a prescription or otherwise) accounted for 144 deaths, which is a decline from 177 in FY2014 and 190 in FY2013. Within Wayne County, the age-adjusted death rate for synthetic opioids (fentanyl and tramadol according to the CDC) doubled from 1.1 per 100,000 in 2013 to 2.3 in 2014.

In the NFLIS database, hydrocodone is the most common prescription medication identified in reports for items seized and analyzed. For Wayne county, hydrocodone was ranked 5th with 209 items and oxycodone was ranked 7th with 89 items. At the state level, hydrocodone was ranked 6th with 1,179 items and oxycodone was 11th with 367 items.

Infectious Diseases Related to Substance Use

There were 814 new HIV infections reported in Michigan in 2014, which was an increase from 789 in 2013. The 814 people represent a rate of 8.2 per 100,000 population for 2014. Risk groups for the newly diagnosed infections include Male–Male Sex (MSM; 60%), Heterosexual Contact (17%), Injection Drug Use (IDU; 2%), MSM/IDU (1%), Perinatal (1%), and Undetermined (19%). The age groups with the most new diagnoses were 20–24 years (24%), 25–29 years (20%), and 30–39 years (20%). African Americans were most impacted (64%) followed by Whites (26%).

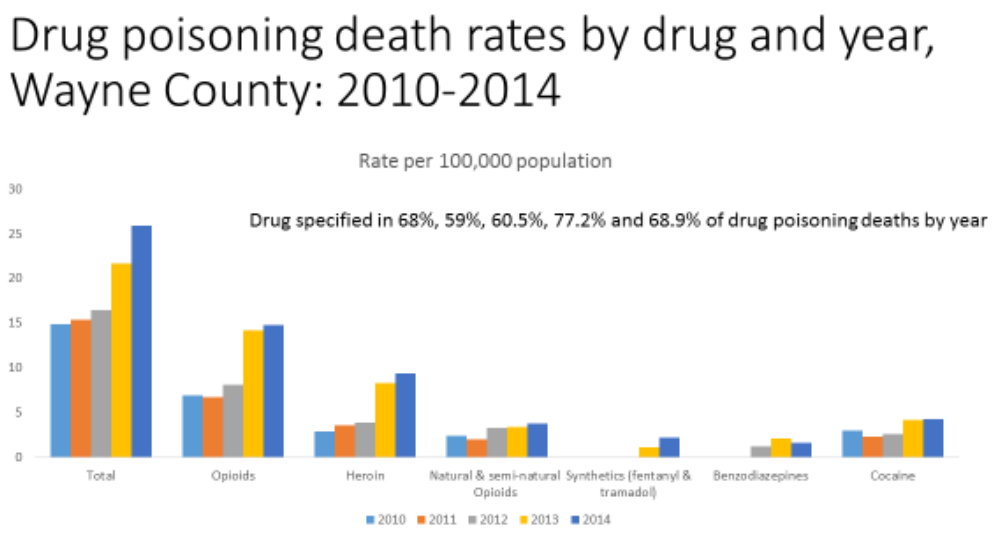
As of July 2015, there are 16,190 people living in Michigan with diagnosed HIV infection for a rate of 163 per 100,000. This rate is lower than 170.4 per 100,000 reported in 2011. Overall, risk groups for the prevalent cases include MSM (52%), Heterosexual Contact (19%), IDU (8%), MSM/IDU (4%), Perinatal (1%), and Undetermined (16%). The age groups with the most prevalent cases were 20–24 years (16%), 25–29 years (17%), and 30–39 years (32%). African Americans were most impacted (58%) followed by Whites (33%). More than half (54%) of the prevalent cases live in Wayne County (*n* = 8,760) for a rate of 425 per 100,000. Within Wayne County, Detroit is home for 6,840 prevalent cases for a rate of 800 per 100,000.

There were 50 new acute cases of hepatitis B in 2014 (the most recent year of published data), which is a rate of 0.5 per 100,000. This rate has decreased every year since 2008 and is below the national rate of 1.0 per 100,000. The new cases did not differ by gender (50% female and 50% male) but were predominately White (62%) with a mean age of 46. There were 1,141 new chronic hepatitis B diagnoses in Michigan in 2014 for a rate of 11.55 per 100,000 people with a predominance of males (56.5%) and Whites (25%) and Asian Americans (22.7%).

There were 76 new hepatitis C infections in 2014, which is a rate of 0.8 per 100,000 that is similar to rates in 2012 and 2013. It is also similar to the national rate of 0.7 per 100,000. For new cases in 2013, injection drug use was reported by 69.8% of acute hepatitis C cases. There were 8,233 new chronic hepatitis C cases in 2014 for a rate of 83.30 per 100,000. The rate is twice as high among men (107.57) compared with women (59.58). The rate is also higher among American Indians and Alaskan Natives (122.6) and African Americans (115.77) than the general population. Injection drug use was a risk factor for 64.9% and incarceration for 67.3%. No information is published on the rates by county. Nevertheless, since 2004, the number of cases among persons 18–29 years of age increased by more than 484%. For this age group, 87.2% reported injection drug use.

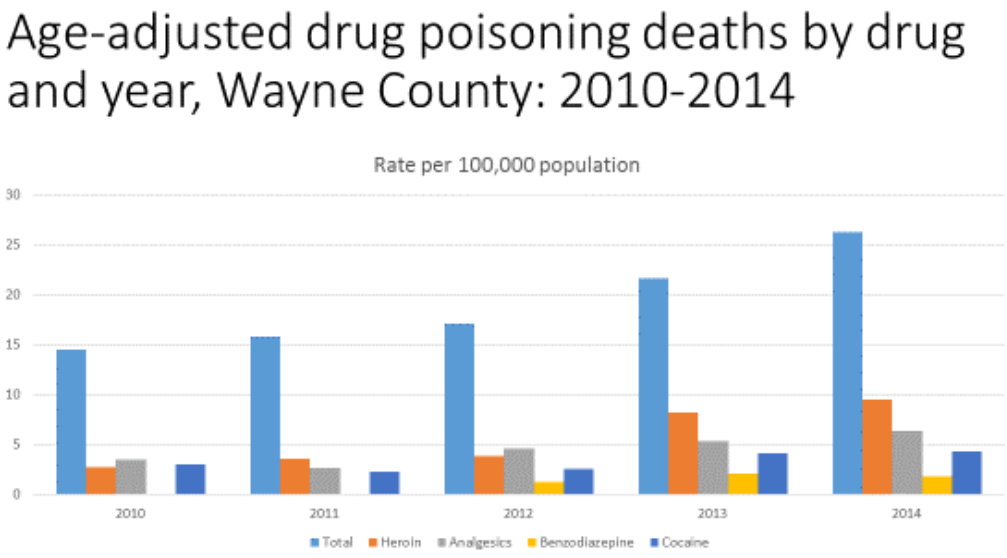
Exhibits

Exhibit 1. Wayne County Drug Poisoning Death Rates by Drug and Year, 2010–2014



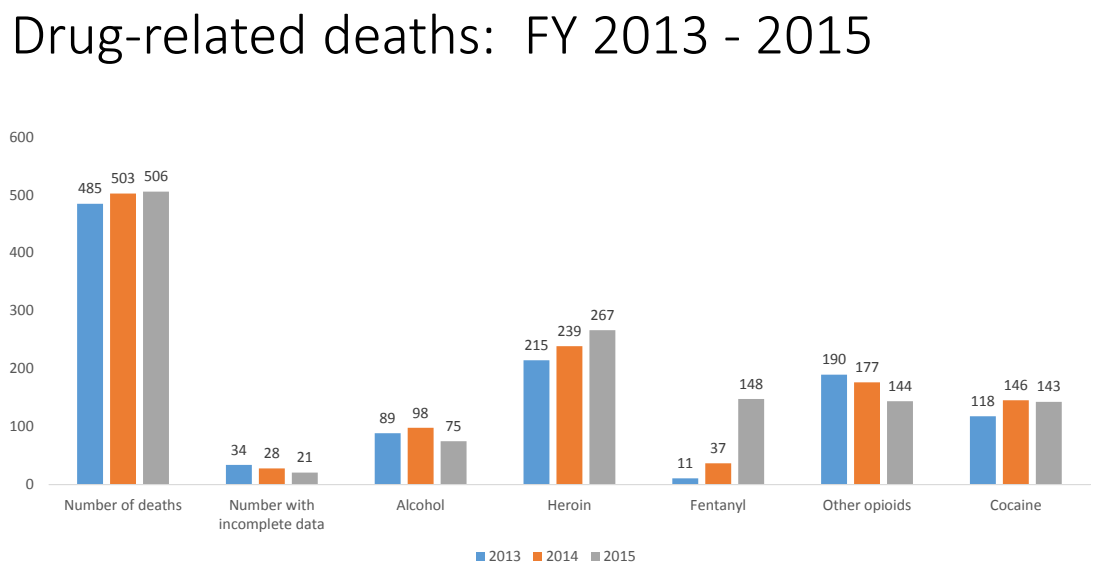
SOURCE: CDC WONDER

Exhibit 2. Wayne County Age-Adjusted Drug Poisoning Death Rates by Drug and Year, 2010–2014



SOURCE: CDC WONDER

Exhibit 3. Wayne County Overdose Deaths by Drug, by Fiscal Year 2013–2015



SOURCE: Wayne County Medical Examiner. For some decedents not enough information was shared to determine if they tested positive for substance. Testing positive is not sufficient to conclude that the level of consumption was lethal or even contributed to the death.

Exhibit 4. Number of People Certified to Use Medical Marijuana in Michigan, by Fiscal Year 2013–2015

Fiscal Year	Number Approved	Number Certified
2013	118,368	14,169
2014	96,408	12,258
2015	182,091	25,949

Source: Department of Licensing and Regulation Affairs

Exhibit 5. Poison Control Center Information for the State of Michigan, by Year 2012–2014

	2012			2013			2014			
	All exposures	Uninten-tional	%	All exposures	Uninten-tional	%	All exposures	Uninten-tional	%	% change from 2013
Cocaine	169	9	5.3	189	8	4.2	152	3	2.0	–19.6
Heroin	165	1	0.6	330	0	0.0	246	7	2.8	–25.5
Marijuana	264	26	9.8	215	11	5.1	222	24	10.8	3.3
THC homologs	280	4	1.4	25	0	0.0	55	3	5.5	120.0
Meth-amphetamine	59	26	44.1	62	27	43.5	46	15	32.6	-25.8
Hallucinogenic Amphetamines	70	2	2.9	55	3	5.5	59	1	1.7	7.3
Select Opioids										
Fentanyl	69	12	17.4	66	11	16.7	45	7	15.6	-31.8
Hydrocodone	19	4	21.1	24	8	33.3	28	13	46.4	16.7
Oxycodone	148	50	33.8	149	38	25.5	145	59	40.7	-2.7
Benzodiazepines	2,978	569	19.1	2,820	538	19.1	2,684	501	18.7	-4.8

Source: Children's Hospital of Michigan Poison Control, provided by Michigan State Police.

Exhibit 6. Prescription Drug Monitoring Program Number and Percentages of Prescriptions and Units, State of Michigan, by Schedule and Year 2007–2015

	2007				2008				2009			
	# scripts	%	# units	%	# scripts	%	# units	%	# scripts	%	#units	%
Schedule II	2,906,747	17.1	179,842,778	16.6	3,029,489	17.4	214,003,030	18.5	3,204,752	17.9	227,784,508	19.0
Schedule III	6,503,453	38.2	419,944,480	38.7	6,598,127	37.9	433,049,073	37.4	6,832,326	38.2	457,786,665	38.1
Schedule IV	6,701,637	39.4	357,203,517	32.9	6,758,505	38.8	363,185,285	31.3	6,897,970	38.6	374,952,579	31.2
Schedule V	896,021	5.3	129,230,111	11.9	1,014,519	5.8	148,896,629	12.8	941,636	5.3	140,632,437	11.7
total	*17,007,858*		*1,086,230,111*		*17,400,640*		*1,159,134,017*		*17,876,684*		*1,201,156,189*	
change from prior year						2.3%		6.7%		2.7%		3.6%

	2010				2011				2012			
	# scripts	%	# units	%	# scripts	%	# units	%	# scripts	%	# units	%
Schedule II	3,581,342	18.9	229,458,625	18.3	3,933,409	19.9	249,358,221	19.0	4,323,434	20.6	273,371,647	19.7
Schedule III	7,342,654	38.7	489,505,190	39.1	8,160,970	41.3	541,380,646	41.2	8,449,497	40.3	566,242,625	40.8
Schedule IV	7,085,734	37.4	384,172,059	30.7	6,635,037	33.6	356,144,523	27.1	7,245,381	34.5	394,318,345	28.4
Schedule V	944,442	5.0	148,254,265	11.8	1,034,264	5.2	168,496,479	12.8	972,708	4.6	154,417,013	11.1
total	*18,954,172*		*1,251,390,139*		*19,763,680*		*1,315,379,869*		*20,991,020*		*1,388,349,630*	
change from prior year		6.0%		4.2%		4.3%		5.1%		6.2%		5.5%

Exhibit 6. Prescription Drug Monitoring Program Number and Percentages of Prescriptions and Units, State of Michigan, by Schedule and Year 2007–2015 (continued)

	2013				2014				5-year change, %		1-year change, %	
	# scripts	%	# units	%	# scripts	%	# units	%	# scripts	# units	# scripts	# units
Schedule II	4,500,619	21.5	282,352,544	20.0	10,944,794	51.9	744,741,300	52.3	241.5	226.9	143.2	163.8
Schedule III	8,280,239	39.6	586,109,834	41.5	1,560,120	7.4	101,457,486	7.1	–77.2	–77.8	–81.2	–82.7
Schedule IV	7,125,334	34.1	389,558,304	27.6	7,594,404	36.0	439,947,800	30.9	10.1	17.3	6.6	12.9
Schedule V	1,019,141	4.9	152,784,022	10.8	969,725	4.6	136,540,707	9.6	3.0	–2.9	–4.8	–10.6
total	*20,925,333*		*1,410,804,704*		*21,069,043*		*1,422,687,293*		17.9	18.4	0.7	0.8
change from prior year		0.3%		1.6%		0.7%		0.8%				

Source: Michigan Department of Licensing and Regulatory Affairs

Exhibit 7. Number of Dispensed Units of Medications by Michigan by Schedule Over Time: CY2007-2015

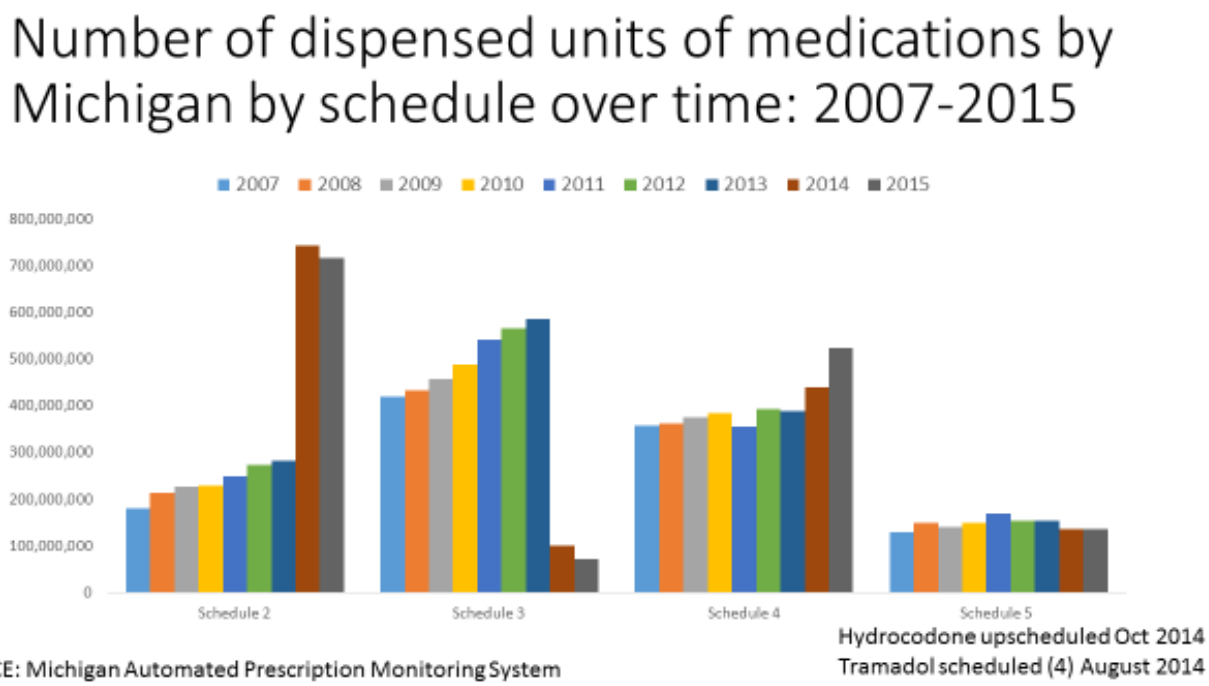


Exhibit 8. Amount Spent on Methadone for Treating Opioid Use Disorder in Michigan, FY2006-FY2015

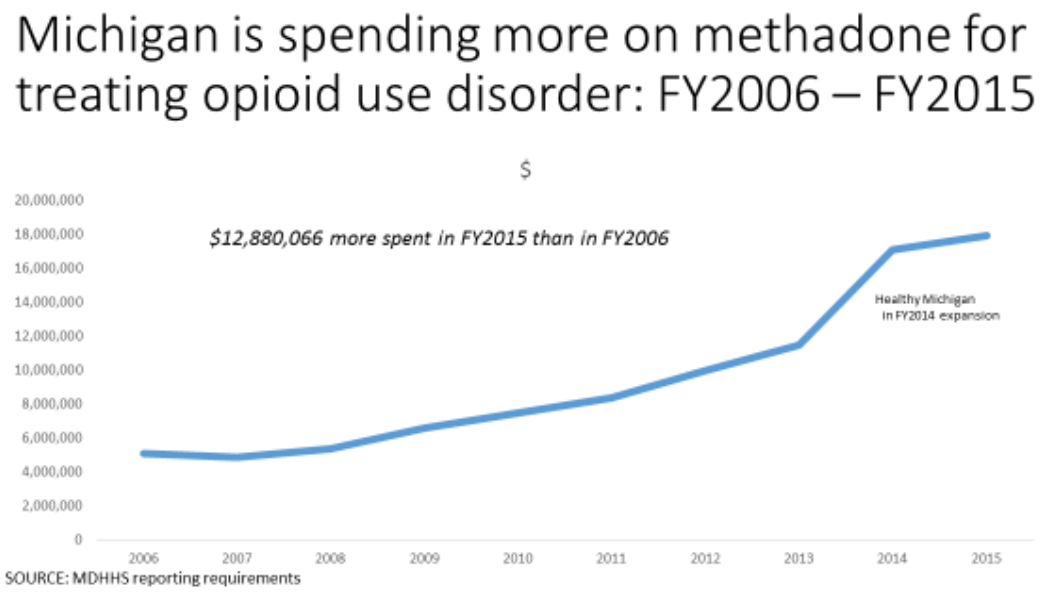
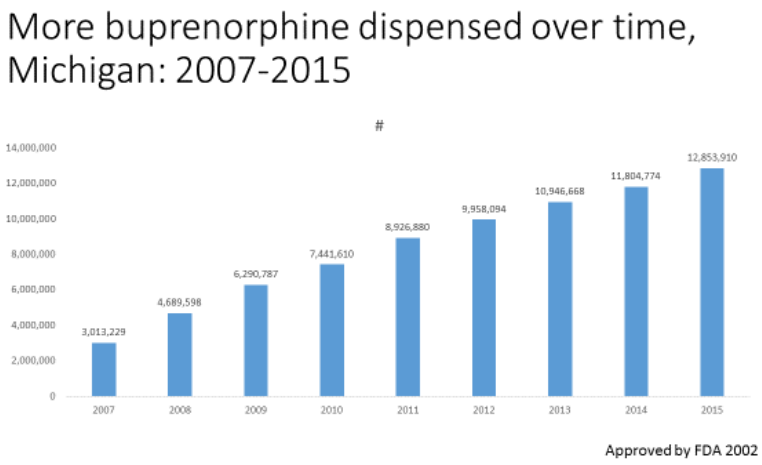


Exhibit 9. Number of Dispensed Units of Buprenorphine, Michigan, 2007-2015



Data Sources

Data for this report were drawn from the following sources:

Treatment admissions data were provided by the Performance Measurement and Evaluation Section of the Division of Quality Management and Planning in the Bureau of Behavioral Health and Developmental Disabilities, Michigan Department of Health and Human Services, for those clients whose treatment was covered by Medicaid or Block Grant funds. It therefore underestimates the total number of people receiving treatment as it does not include treatment paid by cash or covered by private insurance. Additionally, the data do not include admissions funded by the Michigan Department of Corrections.

Data on drug reports among drug items seized in Wayne County and the State of Michigan and analyzed were provided by the National Forensic Laboratory Information System (NFLIS) for calendar year 2015 as reported in May 2016. The total reports include primary, secondary, and tertiary substances detected. The totals are preliminary and subject to change.

Numbers of prescriptions filled in the state of Michigan were provided by the Michigan Department of Licensing and Regulatory Affairs.

Numbers of people certified to use Medical Marijuana were provided by the Michigan Department of Licensing and Regulatory Affairs

Drug-related infectious disease data were provided by the Michigan Department of Health and Human Services on human immunodeficiency virus (HIV) and hepatitis.

Numbers of accidental drug associated deaths for Wayne County were provided by the Office of the Medical Examiner (Wayne County).

Drug poisoning death data are from the Centers for Disease Control and Prevention (CDC)'s online WONDER database (http://wonder.cdc.gov/) and from the National Vital Statistics System-Mortality (NVSS-M) data accessed from the CDC's Health Indicators Warehouse (www.healthindicators.gov) on 12/16/2015–2/9/2016.

Calls to Children's Hospital of Michigan Poison Control are for human exposures and cover the entire state of Michigan. Michigan State Police provided the data.

For additional information about the drugs and drug use patterns discussed in this report, please contact Cynthia L. Arfken, Ph.D., Professor, Wayne State University, Department of Psychiatry and Behavioral Neurosciences, 3901 Chrysler Service Drive, Tolan Park Medical Building, Detroit MI 48207, Phone: 313–993–3490, E-mail: cynthia.arfken@wayne.edu.

National Drug Early Warning System (NDEWS)
Sentinel Community Site (SCS)
Drug Use Patterns and Trends: SCS Data Tables

The *SCS Data Tables* are prepared by NDEWS Coordinating Center staff and include information on demographic and socioeconomic characteristics of the population, drug use, substance use disorders and treatment, drug poisoning deaths, and drug seizures for the Sentinel Community Site. The *SCS Data Tables* attempt to harmonize data available for each of the 12 sites by presenting standardized information from local treatment admissions and five national data sources:

- ◊ American Community Survey;
- ◊ National Survey on Drug Use and Health;
- ◊ Youth Risk Behavior Survey;
- ◊ SCE-provided local treatment admissions data;
- ◊ National Vital Statistics System mortality data queried from CDC WONDER; and
- ◊ National Forensic Laboratory Information System.

The *SCS Data Tables* for each of the 12 Sentinel Community Sites and detailed information about NDEWS can be found on the NDEWS website at www.ndews.org.

Table 1: Demographic and Socioeconomic Characteristics
Wayne County (Detroit Area)* and *State of Michigan
2010–2014 ACS 5-Year Estimates

	Wayne County		Michigan	
	Estimate	Margin of Error	Estimate	Margin of Error
Total Population (#)	**1,790,078**	**	**9,889,024**	**
Age				
18 years and over (%)	75.4%	**	77.0%	+/-0.1
21 years and over (%)	71.1%	+/-0.1	72.5%	+/-0.1
65 years and over (%)	13.2%	+/-0.1	14.6%	+/-0.1
Median Age	37.7		39.3	
Race (%)				
White, Not Hisp.	49.8%	+/-0.1	76.1%	+/-0.1
Black/African Am, Not Hisp.	39.5%	+/-0.1	13.8%	+/-0.1
Hispanic/Latino (of any race)	5.5%	**	4.6%	+/-0.1
American Indian/Alaska Native	0.3%	+/-0.1	0.5%	+/-0.1
Asian	2.8%	+/-0.1	2.6%	+/-0.1
Native Hawaiian/Pacific Islander	0.0%	+/-0.1	0.0%	+/-0.1
Some Other Race	0.2%	+/-0.1	0.1%	+/-0.1
Two or More Races	2.0%	+/-0.1	2.2%	+/-0.1
Sex (%)				
Male	48.1%	+/-0.1	49.1%	+/-0.1
Female	51.9%	+/-0.1	50.9%	+/-0.1
Educational Attainment (*Among Population Aged 25+ Years*) (%)				
High School Graduate or Higher	84.4%	+/-0.2	89.3%	+/-0.1
Bachelor's Degree or Higher	21.6%	+/-0.3	26.4%	+/-0.2
Unemployment (*Among Civilian Labor Force Population Aged 16+ Years*) (%)				
Percent Unemployed	16.8%	+/-0.3	11.4%	+/-0.1
Income ($)				
Median Household Income (in 2014 inflation-adjusted dollars)	$41,421	+/-325	$49,087	+/-192
Health Insurance Coverage *(Among Civilian Noninstitutionalized Population)* (%)				
No Health Insurance Coverage	4.3%	+/-0.4	10.9%	+/-0.1
Poverty (%)				
All People Whose Income in Past Year Is Below Poverty Level	24.8%	+/-0.4	16.9%	+/-0.2

NOTES:
Margin of Error: Can be interpreted roughly as providing a 90% 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.
**The estimate is controlled; a statistical test for sampling variability is not appropriate.

SOURCE: Adapted by the NDEWS Coordinating Center from data provided by the U.S. Census Bureau, 2010–2014 American Community Survey (ACS) 5-Year Estimates.

Table 2a: Self-Reported Substance Use Behaviors Among Persons 12+ Years in Wayne County (Detroit Area)^ and State of Michigan, 2012–2014

Estimated Percent, 95% Confidance Interval, and Estimated Number*

Annual Averages Based on Combined 2012 to 2014 NSDUH Data

Substance Use Behaviors	Region: Wayne County^		Michigan	
	Estimated % (95% CI)*	Estimated #*	Estimated % (95% CI)*	Estimated #*
Used in Past Month				
Alcohol	48.39 (45.23 – 51.55)	716,177	54.52 (53.11 – 55.92)	4,550,462
Binge Alcohol**	23.98 (21.53 – 26.62)	355,004	24.71 (23.54 – 25.92)	2,062,210
Marijuana	11.13 (9.46 – 13.05)	164,673	9.74 (9.00 – 10.54)	813,083
Use of Illicit Drug Other Than Marijuana	3.34 (2.58 – 4.30)	49,382	3.28 (2.86 – 3.76)	274,031
Used in Past Year				
Cocaine	1.19 (0.77 – 1.83)	17,607	1.08 (0.87 – 1.35)	90,418
Nonmedical Use of Pain Relievers	4.37 (3.58 – 5.32)	64,655	4.36 (3.91 – 4.85)	363,481
Substance Use Disorders in Past Year***				
Illicit Drugs or Alcohol	**8.35 (7.18 – 9.69)**	**123,605**	**8.29 (7.68 – 8.94)**	**691,947**
Alcohol	6.36 (5.28 – 7.65)	94,193	6.52 (5.94 – 7.15)	544,251
Illicit Drugs	3.50 (2.75 – 4.43)	51,752	2.71 (2.38 – 3.07)	225,818

NOTES:

^Wayne County: Includes NSDUH Substate Region 7 which comprises Wayne County.

***Estimated %:** Substate estimates are based on a small area estimation methodology in which 2012–2014 substate level NSDUH data are combined with county and census block group/tract-level data from the state; **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 #:** The estimated number of persons aged 12 or older who used the specified drug or are dependent/abuse a substance was calculated by multiplying the prevalence rate and the population estimate of persons 12+ years (Regions 7 = 1,480,129 and Michigan = 8,345,968) from Table C1 of the NSDUH report. The population estimate is the simple average of the 2012, 2013, and 2014 population counts for persons aged 12 or older.

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

*****Substance Use Disorders in Past Year:** Persons are classified as having a substance use disorder in the past 12 months based on reponses to questions that meet the criteria specified in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* .

SOURCE: 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 Illness from the 2012–2014 National Surveys on Drug Use and Health. Available at: http://www.samhsa.gov/data/population-data-nsduh/reports?tab=38

Table 2b: Self-Reported Substance Use Behaviors Among Persons in *Wayne County (Detroit Area)*^ and *State of Michigan*, by Age Group, 2012–2014

Estimated Percent and 95% Confidence Interval (CI)*, Annual Averages Based on Combined 2012 to 2014 NSDUH Data

	Region: Wayne County^						Michigan					
	12–17		18–25		26+		12–17		18–25		26+	
Substance Use Behaviors	Estimated Percent (95% CI)*		Estimated Percent (95% CI)*		Estimated Percent (95% CI)*		Estimated Percent (95% CI)*		Estimated Percent (95% CI)*		Estimated Percent (95% CI)*	
Used in Past Month												
Binge Alcohol**	5.66	(4.43 – 7.21)	36.71	(32.85 – 40.76)	24.15	(21.19 – 27.38)	6.32	(5.54 – 7.21)	41.97	(40.14 – 43.82)	24.02	(22.58 – 25.52)
Marijuana	8.57	(6.80 – 10.74)	27.42	(23.83 – 31.32)	8.55	(6.67 – 10.91)	8.37	(7.47 – 9.35)	22.75	(21.20 – 24.37)	7.67	(6.80 – 8.63)
Use of Illicit Drug Other Than Marijuana	3.26	(2.36 – 4.49)	5.68	(4.26 – 7.52)	2.93	(2.09 – 4.10)	3.33	(2.76 – 4.01)	6.80	(5.96 – 7.74)	2.67	(2.20 – 3.24)
Used in Past Year												
Cocaine	0.29	(0.15 – 0.56)	2.37	(1.56 – 3.58)	1.10	(0.63 – 1.90)	0.36	(0.22 – 0.59)	3.04	(2.48 – 3.72)	0.84	(0.60 – 1.17)
Nonmedical Use of Pain Relievers	4.93	(3.72 – 6.51)	9.08	(7.34 – 11.17)	3.45	(2.59 – 4.59)	5.09	(4.40 – 5.89)	9.70	(8.71 – 10.80)	3.34	(2.85 – 3.91)
Substance Use Disorder in Past Year* **												
Illicit Drugs or Alcohol	5.04	(3.87 – 6.52)	15.30	(12.76 – 18.24)	7.55	(6.22 – 9.14)	5.25	(4.53 – 6.08)	16.59	(15.27 – 18.01)	7.24	(6.50 – 8.04)
Alcohol	2.21	(1.60 – 3.04)	11.39	(9.20 – 14.01)	6.02	(4.77 – 7.56)	2.79	(2.30 – 3.38)	12.94	(11.76 – 14.23)	5.88	(5.20 – 6.64)
Illicit Drugs	3.46	(2.56 – 4.68)	6.70	(5.23 – 8.54)	2.93	(2.08 – 4.10)	3.56	(2.99 – 4.24)	6.25	(5.42 – 7.19)	1.99	(1.63 – 2.43)

NOTES:

^Wayne County: Includes NSDUH Substate Region 7 which comprises Wayne County.

***Estimated %:** Substate estimates are based on a small area estimation methodology in which 2012–2014 substate level NSDUH data are combined with county and census block group/tract-level data from the state;

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.

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

*****Substance Use Disorders in Past Year:** Persons are classified as having a substance use disorder in the past 12 months based on responses to questions that meet the criteria specified in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* .

SOURCE: 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 Illness from the 2012–2014 National Surveys on Drug Use and Health. Available at: http://www.samhsa.gov/data/population-data-nsduh/reports?tab=38

Table 3: Self-Reported Substance Use-Related Behaviors Among *Detroit* ^ Public High-School Students, 2015
Estimated Percent and 95% Confidence Interval (CI)
2013 and 2015 YRBS*

Substance Use Behaviors	2015 vs 2013			2015 by Sex			2015 by Race			
	2015 Estimate (95% CI)	2013 Estimate (95% CI)	*p* value	Male Estimate (95% CI)	Female Estimate (95% CI)	*p* value	White Estimate (95% CI)	Black Estimate (95% CI)	Hispanic Estimate (95% CI)	Asian Estimate (95% CI)
Used in Past Month										
Alcohol	22.6 (19.0 - 26.7)	19.5 (16.2 - 23.1)	0.22	19.4 (15.2 - 24.4)	25.1 (20.5 - 30.3)	0.05	N/A	22.1 (18.3 - 26.4)	27.0 (15.4 - 43.0)	N/A
Binge Alcohol**	9.0 (7.1 - 11.2)	8.9 (7.1 - 11.0)	0.94	7.9 (5.8 - 10.7)	9.7 (7.5 - 12.4)	0.20	N/A	8.2 (6.5 - 10.3)	15.2 (8.5 - 25.7)	N/A
Marijuana	22.6 (19.5 - 26.0)	17.1 (14.6 - 19.9)	**0.01**	22.5 (18.4 - 27.3)	22.6 (19.0 - 26.7)	0.99	N/A	23.4 (20.1 - 27.2)	16.6 (12.5 - 21.8)	N/A
Ever Used in Lifetime										
Alcohol	54.9 (51.2 - 58.6)	47.8 (42.9 - 52.7)	**0.02**	49.0 (44.2 - 53.8)	59.6 (54.6 - 64.3)	**0.00**	N/A	54.9 (50.8 - 59.0)	62.5 (56.4 - 68.3)	N/A
Marijuana	41.7 (38.0 - 45.6)	33.7 (30.1 - 37.5)	**0.00**	41.5 (36.0 - 47.3)	41.4 (37.4 - 45.6)	0.97	N/A	42.0 (37.9 - 46.3)	38.6 (31.1 - 46.7)	N/A
Cocaine	5.3 (4.0 - 6.9)	4.4 (2.9 - 6.6)	0.46	6.8 (5.0 - 9.1)	3.4 (2.2 - 5.1)	**0.00**	N/A	4.7 (3.4 - 6.3)	5.7 (2.8 - 11.0)	N/A
Hallucinogenic Drugs	—	—	~	—	—	~	—	—	—	—
Synthetic Marijuana	6.1 (4.8 - 7.8)	—	~	7.5 (5.6 - 10.1)	4.4 (3.1 - 6.4)	**0.01**	N/A	5.3 (4.0 - 7.1)	7.9 (5.1 - 12.2)	N/A
Inhalants	8.9 (7.4 - 10.7)	10.4 (8.3 - 12.9)	0.31	8.3 (6.1 - 11.2)	9.3 (7.5 - 11.3)	0.52	N/A	9.1 (7.4 - 11.2)	7.8 (4.2 - 14.1)	N/A
Ecstasy also called "MDMA"	—	—	~	—	—	**~**	—	—	—	—
Heroin	4.3 (3.1 - 5.9)	3.9 (2.5 - 6.1)	0.76	5.7 (4.0 - 8.2)	2.7 (1.5 - 4.8)	**0.02**	N/A	3.8 (2.6 - 5.6)	5.7 (2.9 - 11.1)	N/A
Methamphetamine	3.7 (2.6 - 5.2)	4.7 (3.4 - 6.6)	0.30	4.7 (3.2 - 6.9)	2.4 (1.5 - 4.0)	**0.02**	N/A	3.6 (2.5 - 5.0)	2.4 (0.9 - 6.2)	N/A
Rx Drugs without a Doctor's Prescription	11.9 (10.3 - 13.6)	12.9 (10.7 - 15.5)	0.48	13.2 (10.8 - 16.1)	10.3 (8.3 - 12.8)	0.11	N/A	11.5 (9.7 - 13.5)	10.8 (7.0 - 16.2)	N/A
Injected Any Illegal Drug	4.0 (3.0 - 5.2)	—	~	4.1 (2.6 - 6.2)	3.7 (2.7 - 5.2)	0.76	N/A	4.1 (3.0 - 5.5)	1.9 (0.8 - 4.9)	N/A

NOTES:
^Detroit: Weighted data were available for Detroit in 2013 and 2015; 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. Weighted results are representative of all students in grades 9–12 attending public schools in each jurisdiction.
'—': Data not available; **~:** *p* value not available; **N/A:** <100 respondents for the subgroup.
***Sample Frame for the 2013 and 2015 YRBS:** Consisted of public schools with students in at least one of grades 9-12. The sample size for 2013 was 1,507 with an overall response rate of 72%; the 2015 sample size was 1,699 with a 67% overall response rate.
****Binge Alcohol:** Defined as having had 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.

SOURCE: Adapted by the NDEWS Coordinating Center from data provided by the Centers for Disease Control and Prevention (CDC), 1991-2015 High School Youth Risk Behavior Survey Data. Available at http://nccd.cdc.gov/youthonline/. Accessed on [7/5/2016].

Table 4a: Trends in Admissions* to Programs Treating Substance Use Disorders, *Wayne County (Detroit Area) Residents,* 2011-2015

Number of Admissions and Percentage of Admissions with Selected Substances Cited as Primary Substance of Abuse at Admission, by Year and Substance

	Calendar Year									
	2011		2012		2013		2014		2015	
	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)
Total Admissions (#)	**14,960**	**100%**	**13,905**	**100%**	**13,189**	**100%**	**11,976**	**100%**	**13,436**	**100%**
Primary Substance of Abuse (%)										
Alcohol	5,035	33.7%	4,436	31.9%	4,223	32.0%	3,904	32.6%	4,582	34.1%
Cocaine/Crack	2,157	14.4%	1,778	12.8%	1,565	11.9%	1,220	10.2%	1,556	11.6%
Heroin	4,814	32.2%	4,965	35.7%	4,858	36.8%	4,867	40.6%	5,207	38.8%
Prescription Opioids	972	6.5%	880	6.3%	809	6.1%	746	6.2%	881	6.6%
Methamphetamine	6	<0.1%	11	0.1%	17	0.1%	24	0.2%	12	0.1%
Marijuana	1,746	11.7%	1,622	11.7%	1,477	11.2%	1,049	8.8%	1,042	7.8%
Benzodiazepines	147	1.0%	140	1.0%	116	0.9%	96	0.8%	77	0.6%
MDMA	14	0.1%	6	<0.1%	2	<0.1%	8	0.1%	4	0.0%
Synthetic Stimulants***	unavail/sup	unavail/sup	unavail/sup	unavail/sup	unavail/sup	unavail/sup	unavail/sup	unavail/sup	8	0.1%
Synthetic Cannabinoids	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other Drugs/Unknown	69	0.5%	67	0.5%	122	0.9%	62	0.5%	51	0.4%

NOTES:

***Admissions:** Admissions whose treatment was covered by Medicaid or Block Grant funds; excludes admissions covered by private insurance, treatment paid for in cash, and admissions funded by the Michigan Department of Corrections. Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.

****Synthetic Stimulants:** Includes amphetamines and synthetic stimulants.

unavail/sup: Data suppressed to protect confidentiality; **unavail:** Data not available.

SOURCE: Data provided to the Wayne County (Detroit Area) NDEWS SCE by 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.

Table 4b: Demographic and Drug Use Characteristics of Primary Treament Admissions* for Select Substances of Abuse, *Wayne County (Detroit Area)* Residents, 2015

Number of Admissions, by Primary Substance of Abuse and Percentage of Admissions with Selected Demographic and Drug Use Characteristics

	Primary Substance of Abuse													
	Alcohol		Cocaine/Crack		Heroin		Prescription Opioids		Methamphetamine		Marijuana		Benzo-diazepines	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Number of Admissions (#)	**4,582**	**100%**	**1,556**	**100%**	**5,207**	**100%**	**881**	**100%**	**12**	**100%**	**1,042**	**100%**	**77**	**100%**
Sex (%)														
Male	3,107	67.8%	975	62.7%	3,149	60.5%	440	49.9%	7	58.3%	698	67.0%	33	42.9%
Female	1,475	32.2%	581	37.3%	2,058	39.5%	441	50.1%	5	41.7%	344	33.0%	44	57.1%
Race/Ethnicity (%)														
White, Non-Hisp.	1,261	27.5%	215	13.8%	2,046	39.3%	481	54.6%	7	58.3%	167	16.0%	49	63.6%
African-Am/Black, Non-Hisp	2,304	50.3%	1,021	65.6%	1,858	35.7%	184	20.9%	0	0.0%	668	64.1%	6	7.8%
Hispanic/Latino	107	2.3%	26	1.7%	136	2.6%	30	3.4%	0	0.0%	29	2.8%	7	9.1%
Asian	55	1.2%	9	0.6%	100	1.9%	19	2.2%	0	0.0%	23	2.2%	0	0.0%
Other	855	18.7%	285	18.3%	1,057	20.3%	167	19.0%	5	41.7%	155	14.9%	15	19.5%
Age Group (%)														
Under 18	9	0.2%	0	0.0%	4	0.1%	0	0.0%	0	0.0%	136	13.1%	1	1.3%
18-25	247	5.4%	44	2.8%	391	7.5%	85	9.6%	2	16.7%	243	23.3%	15	19.5%
26-44	1,519	33.2%	396	25.4%	1,638	31.5%	383	43.5%	7	58.3%	337	32.3%	32	41.6%
45+	2,807	61.3%	1,116	71.7%	3,174	61.0%	413	46.9%	3	25.0%	326	31.3%	29	37.7%
Route of Administration (%)														
Smoked	7	0.2%	1,351	86.8%	62	1.2%	16	1.8%	1	8.3%	1,010	96.9%	0	0.0%
Inhaled	3	0.1%	170	10.9%	2,186	42.0%	46	5.2%	0	0.0%	2	0.2%	3	3.9%
Injected	1	0.0%	4	0.3%	2,901	55.7%	41	4.7%	2	16.7%	0	0.0%	0	0.0%
Oral/Other/Unknown	4,571	99.8%	31	2.0%	58	1.1%	778	88.3%	9	75.0%	30	2.9%	74	96.1%
Secondary Substance (%)														
None	2,464	53.8%	653	42.0%	2,640	50.7%	462	52.4%	5	41.7%	177	17.0%	29	37.7%
Alcohol	0	0.0%	514	33.0%	429	8.2%	97	11.0%	1	8.3%	92	8.8%	10	13.0%
Cocaine/Crack	918	20.0%	11	0.7%	1,392	26.7%	65	7.4%	0	0.0%	30	2.9%	5	6.5%
Heroin	114	2.5%	69	4.4%	0	0.0%	49	5.6%	1	8.3%	2	0.2%	6	7.8%
Prescription Opioids	96	2.1%	11	0.7%	174	3.3%	4	0.5%	3	25.0%	0	0.0%	16	20.8%
Methamphetamine	3	0.1%	4	0.3%	2	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Marijuana	922	20.1%	283	18.2%	314	6.0%	89	10.1%	1	8.3%	0	0.0%	11	1.0%
Benzodiazepines	65	1.4%	11	0.7%	256	4.9%	115	13.1%	1	8.3%	5	0.5%	0	0.0%

NOTES:

***Admissions:** Admissions whose treatment was covered by Medicaid or Block Grant funds; excludes admissions covered by private insurance, treatment paid for in cash, and admissions funded by the Michigan Department of Corrections. Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.

unavail: Data not available; **Percentages** may not sum to 100 due to either rounding, missing data and/or because not all possible categories are presented in the table.

SOURCE: Data provided to the Wayne County (Detroit Area) NDEWS SCE by 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.

Table 5: Drug Overdose (Poisoning) Deaths*, by Drug and Year, *Wayne County (Detroit Area)*, 2010–2014**

Number, Crude Rate, and Age-Adjusted Rate*** (per 100,000 population)

	2010			2011			2012			2013			2014		
	Number (#)	Crude Rate	Age-Adjusted Rate	Number (#)	Crude Rate	Age-Adjusted Rate	Number (#)	Crude Rate	Age-Adjusted Rate	Number (#)	Crude Rate	Age-Adjusted Rate	Number (#)	Crude Rate	Age-Adjusted Rate
Drug Overdose (Poisoning) Deaths	**272**	**14.9**	**14.5**	**278**	**15.4**	**15.8**	**296**	**16.5**	**17.1**	**386**	**21.7**	**21.6**	**457**	**25.9**	**26.2**
Opioids‡	**126**	**6.9**	**6.8**	**121**	**6.7**	**6.8**	**146**	**8.1**	**8.4**	**252**	**14.2**	**14.1**	**262**	**14.8**	**15.1**
Heroin	52	2.9	2.8	64	3.6	3.6	70	3.9	3.9	147	8.3	8.2	166	9.4	9.5
Natural Opioid Analgesics	43	2.4	2.3	36	2.0	2.1	59	3.3	3.5	61	3.4	3.3	67	3.8	3.9
Methadone	17	UNR	UNR	SUP	SUP	SUP	13	UNR	UNR	23	1.3	1.3	16	UNR	UNR
Synthetic Opioid Analgesics	SUP	SUP	SUP	SUP	SUP	SUP	11	UNR	UNR	20	1.1	1.1	39	2.2	2.3
Benzodiazepines	**13**	**UNR**	**UNR**	**11**	**UNR**	**UNR**	**22**	**1.2**	**1.3**	**37**	**2.1**	**2.1**	**29**	**1.6**	**1.8**
Benzodiazepines **AND** Any Opioids	10	UNR	UNR	SUP	SUP	SUP	19	UNR	UNR	32	1.8	1.8	24	1.4	1.5
Benzodiazepines **AND** Heroin	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	11	UNR	UNR
Psychostimulants															
Cocaine	56	3.1	3.0	43	2.4	2.3	45	2.5	2.6	75	4.2	4.2	78	4.4	4.3
Psychostimulants with Abuse Potential	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP
Cannabis (derivatives)	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**
Percent with Drugs Specified‡	**68.0%**			**59.0%**			**60.5%**			**77.2%**			**68.9%**		

NOTES:

***Drug Overdose (Poisoning) Deaths:** Defined as deaths with **underlying cause-of-death** codes from the World Health Organization's (WHO's) *International Classification of Diseases, Tenth Revision* (ICD-10) of X40-X44, X60-X64, X85, and Y10-Y14. See *Overview & Limitations* section for additional information on mortality data and definitions of the specific ICD-10 codes listed.

****Drug Overdose (Poisoning) Deaths, by Drug:** Among the deaths with drug poisoning identified as the underlying cause, the specific drugs are identified by ICD-10 **multiple cause-of-death (MCOD)** T-codes (see below). Each death certificate may contain up to 20 causes of death indicated in the MCOD field. Thus, the total count across drugs may exceed the actual number of dead persons in the selected population. Some deaths involve more than one drug; these deaths are included in the rates for each drug category. This is not a complete list of all drugs that may have been involved with these drug poisoning deaths.

*****Age-Adjusted Rate:** Age-adjusted rates are weighted averages of the age-specific death rates, where the weights represent a fixed population by age (2000 U.S. Population). Age adjustment is a technique for removing the effects of age from crude rates, so as to allow meaningful comparisons across populations with different underlying age structures. Age-adjusted rates should be viewed as relative indexes rather than as direct or actual measures of mortality risk. See http://wonder.cdc.gov/wonder/help/mcd.html for more information.

‡**Opioids:** Includes any of these MCOD codes T40.0-T40.4, or T40.6

Opium (T40.0); *Heroin* (T40.1); *Natural Opioid Analgesics* (T40.2)—may include morphine, codeine, and semi-synthetic opioid analgesics, such as oxycodone, hydrocodone, hydromorphone, and oxymorphone; *Methadone* (T40.3); *Synthetic Opioid Analgesics [excluding methadone]* (T40.4)—may include drugs such as tramadol and fentanyl; *Other and Unspecified Narcotics* (T40.6)

Benzodiazepines: (T42.4)

Benzodiazepines AND *Any Opioids* (T42.4 AND T40.0-T40.4, or T40.6)

Benzodiazepines AND *Heroin* (T42.4 AND T40.1)

Psychostimulants:

Cocaine (T40.5); *Psychostimulants with Abuse Potential [excluding cocaine]* (T43.6) (e.g., amphetamines, caffeine, MDMA, methamphetamine, and methylphenidate)

Cannabis (derivatives): (T40.7)

‡**Percent of Drug Overdose (Poisoning) Deaths with Drug(s) Specified:** Among drug overdose (poisoning) deaths, deaths that mention the type of drug(s) involved are defined as those including at least one ICD-10 MCOD in the range T36-T50.8. See *Overview & Limitations* section for more information about this statistic.

SUP = Suppressed: Counts and Rates are suppressed for subnational data representing 0–9 deaths. **UNR = Unreliable:** Rates are Unreliable when the death count <20.

SOURCE: Adapted by the NDEWS Coordinating Center from data taken from the Centers for Disease Control and Prevention, National Center for Health Statistics, Multiple cause of death 1999-2014, available on the CDC WONDER Online Database, released 2015. Data compiled in the Multiple cause of death 1999-2014 were provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Retrieved between December 2015 - May 2016, from http://wonder.cdc.gov/mcd-icd10.html

Table 6a: Drug Reports* for Items Seized by Law Enforcement in *Wayne County (Detroit Area)* in 2015
DEA National Forensic Laboratory Information System (NFLIS)
Number of Drug-Specific Reports and Percent of Total Analyzed Drug Reports

Drug Identified	Number (#)	Percent of Total Drug Reports* (#)
Total Drug Reports*	**7,376**	**100.0%**
CANNABIS	3,699	50.1%
COCAINE	1,381	18.7%
HEROIN	998	13.5%
NO CONTROLLED DRUG IDENTIFIED	289	3.9%
HYDROCODONE	209	2.8%
ALPRAZOLAM	184	2.5%
OXYCODONE	89	1.2%
AMPHETAMINE	78	1.1%
FENTANYL	59	0.8%
BUPRENORPHINE	38	0.5%
3,4-METHYLENEDIOXYETHYLCATHINONE (ETHYLONE)	29	0.4%
METHAMPHETAMINE	29	0.4%
CODEINE	28	0.4%
CLONAZEPAM	23	0.3%
DIPHENHYDRAMINE	20	0.3%
CARISOPRODOL	17	0.2%
DIAZEPAM	16	0.2%
1-(3-TRIFLUOROMETHYL)PHENYL-PIPERAZINE (TFMPP)	15	0.2%
PHENYLIMIDOTHIAZOLE ISOMER UNDETERMINED	15	0.2%
MORPHINE	13	0.2%
OXYMORPHONE	12	0.2%
PSILOCIN	11	0.1%
LACTOSE	8	0.1%
METHADONE	8	0.1%
3,4-METHYLENEDIOXYMETHAMPHETAMINE (MDMA)	7	< 0.1%
3,4-METHYLENEDIOXYAMPHETAMINE (MDA)	6	< 0.1%
6-MONOACETYLMORPHINE	6	< 0.1%
CAFFEINE	6	< 0.1%
BENZOCAINE	5	< 0.1%
LORAZEPAM	5	< 0.1%
METHYLPHENIDATE	5	< 0.1%
4-CHLOROMETHCATHINONE (4-CMC; CLEPHEDRONE)	4	< 0.1%
KETAMINE	4	< 0.1%
NOSCAPINE	4	< 0.1%
QUETIAPINE	4	< 0.1%
SOME OTHER SUBSTANCE	4	< 0.1%
CATHINONE	3	< 0.1%
HYDROMORPHONE	3	< 0.1%
INOSITOL	3	< 0.1%
LYSERGIC ACID DIETHYLAMIDE (LYSERGIDE)	3	< 0.1%
METHYLENEDIOXYPYROVALERONE (MDPV)	3	< 0.1%
N-BENZYLPIPERAZINE (BZP)	3	< 0.1%
PHENACETIN	3	< 0.1%
QUININE	3	< 0.1%
TESTOSTERONE	3	< 0.1%

Drug Identified	Number (#)	Percent of Total Drug Reports* (#)
2-(4-IODO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-I-NBOME)	2	< 0.1%
DIMETHYLSULFONE	2	< 0.1%
LISDEXAMFETAMINE	2	< 0.1%
PAPAVERINE	2	< 0.1%
2-(2,5-DIMETHOXY-4-METHYLPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-D-NBOME)	1	< 0.1%
2-(4-BROMO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-B-NBOMe)	1	< 0.1%
2-(4-CHLORO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-C-NBOME)	1	< 0.1%
4-FLUOROAMPHETAMINE (4-FA)	1	< 0.1%
CATHINE	1	< 0.1%
LIDOCAINE	1	< 0.1%
NIACINAMIDE	1	< 0.1%
N-METHYL-3,4-METHYLENEDIOXYCATHINONE (METHYLONE)	1	< 0.1%
PHENTERMINE	1	< 0.1%
PROCAINE	1	< 0.1%
TEMAZEPAM	1	< 0.1%
TRAMADOL	1	< 0.1%
ZOLPIDEM	1	< 0.1%

NOTES:

***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. The time frame is January to December 2015.

The NFLIS database allows for the reporting of up to three drugs 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.

Source: Adapted by the NDEWS Coordinating Center from data provided by the U.S. Drug Enforcement Administration (DEA), Diversion Control Division, Drug and Chemical Evaluation Section, Data Analysis Unit. Data were retrieved from the NFLIS Data Query System (DQS) on May 18, 2016.

Table 6b: Drug Reports* for Items Seized by Law Enforcement in *Wayne County (Detroit Area)* in 2015
DEA National Forensic Laboratory Information System (NFLIS)

Drug Reports* by Select Drug Categories of Interest
Number of Drug-Specific Reports, Percent of Analyzed Drug Category Reports**, & Percent of Total Analyzed Drug Reports

NPS Category Drug Identified	Number (#)	Percent of Drug Category** (%)	Percent of Total Reports (%)
Total Drug Reports*	**7,376**	**100.0%**	**100.0%**
Opioids Category	**1,470**	**100.0%**	**19.9%**
Heroin	**998**	**67.9%**	**13.5%**
Narcotic Analgesics	**460**	**31.3%**	**6.2%**
HYDROCODONE	209	14.2%	2.8%
OXYCODONE	89	6.1%	1.2%
FENTANYL	59	4.0%	0.8%
BUPRENORPHINE	38	2.6%	0.5%
CODEINE	28	1.9%	0.4%
MORPHINE	13	0.9%	0.2%
OXYMORPHONE	12	0.8%	0.2%
METHADONE	8	0.5%	0.1%
HYDROMORPHONE	3	0.2%	< 0.1%
TRAMADOL	1	< 0.1%	< 0.1%
Narcotics	**12**	**0.8%**	**0.2%**
6-MONOACETYLMORPHINE	6	0.4%	< 0.1%
NOSCAPINE	4	0.3%	< 0.1%
PAPAVERINE	2	0.1%	< 0.1%
Synthetic Cathinones Category	**37**	**100.0%**	**0.5%**
Synthetic Cathinones	**33**	**89.2%**	**0.4%**
3,4-METHYLENEDIOXYETHYLCATHINONE (ETHYLONE)	29	78.4%	0.4%
4-CHLOROMETHCATHINONE (4-CMC; CLEPHEDRONE)	4	10.8%	< 0.1%
Synthetic Cathinones (Hallucinogen)	**4**	**10.8%**	**< 0.1%**
METHYLENEDIOXYPYROVALERONE (MDPV)	3	8.1%	< 0.1%
N-METHYL-3,4-METHYLENEDIOXYCATHINONE (METHYLONE)	1	2.7%	< 0.1%
Piperazines Category	**18**	**100.0%**	**0.2%**
Piperazines (Hallucinogen)	**15**	**83.3%**	**0.2%**
1-(3-TRIFLUOROMETHYL)PHENYL-PIPERAZINE (TFMPP)	15	83.3%	0.2%
Piperazines (Stimulant)	**3**	**16.7%**	**< 0.1%**
N-BENZYLPIPERAZINE (BZP)	3	16.7%	< 0.1%
Phenethylamines (2C Series) (H) Category	**5**	**100.0%**	**< 0.1%**
2-(4-IODO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-I-NBOME)	2	40.0%	< 0.1%
2-(2,5-DIMETHOXY-4-METHYLPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-D-NBOME)	1	20.0%	< 0.1%
2-(4-BROMO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-B-NBOMe)	1	20.0%	< 0.1%
2-(4-CHLORO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-C-NBOME)	1	20.0%	< 0.1%

NOTES:
***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. The time frame is January to December 2015.
****Selected Drug Categories:** Opioids, Synthetic Cannabinoids, Synthetic Cathinones, 2C Phenethylamines, Piperazines, and Tryptamines are drug categories of current interest to the NDEWS Project because of the recent increase in their numbers, types, and availability.

The NFLIS database allows for the reporting of up to three drugs 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.

Source: Adapted by the NDEWS Coordinating Center from data provided by the U.S. Drug Enforcement Administration (DEA), Diversion Control Division, Drug and Chemical Evaluation Section, Data Analysis Unit. Data were retrieved from the NFLIS Data Query System (DQS) on May 18, 2016.

National Drug Early Warning System (NDEWS) Sentinel Community Site (SCS) Drug Use Patterns and Trends, 2016: Overview and Limitations About Data Sources

The *Overview and Limitations About Data Sources,* written by Coordinating Center staff, provides a summary and a detailed description of the limitations of some of the national data sources used this report, including indicators of substance use, treatment, consequences, and availability.

Area Description Indicators

American Community Survey (ACS): Population Estimates, by Demographic and Socioeconomic Characteristics

Overview and Limitations

Data on demographic, social, and economic characteristics are based on 2010–2014 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. Although 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.[a]

The ACS 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 margin of errors. The MOE can be interpreted roughly as providing a 90% probability that the interval defined by the estimate minus the MOE and the estimate plus the MOE (the lower and upper confidence bounds) contains the true value.[a]

Sources

***Data Sources*:** Adapted by the NDEWS Coordinating Center from data from the American Community Survey; *2010–2014 American Community Survey 5-Year Estimates;* Tables DP02, DP03, and DP05; using American FactFinder; http://factfinder2.census.gov; Accessed on [5/24/2016]; U.S. Census Bureau.

***Overview/Methods/Limitations Sources*:** [a]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: https://www.census.gov/library/publications/2008/acs/general.html

Substance Use Indicators

National Survey on Drug Use and Health (NSDUH): Substance Use Among Population 12 Years or Older

Overview and Limitations

NSDUH is an ongoing survey of the civilian, noninstutionalized population of the United States aged 12 years or older that is planned and managed by the Substance Abuse and Mental Health Administration's (SAMHSA) Center for Behavioral Health Statistics and Quality (CBHSQ). Data is collected from individuals residing in households, noninstitutionalized group quarters (e.g., shelters, rooming houses, dormitories) and civilians living on military bases. In 2012–2014, NSDUH collected data from 204,048 respondents aged 12 years or older; this sample was designed to obtain representative samples from the 50 states and the District of Columbia.[a]

The **substate estimates** are derived from a hierarchical Bayes model-based small area estimation procedure in which 2012–2014 NSDUH data at the substate level are combined with local area county and census block group/tract-level data from the area to provide more precise estimates of substance use and mental health outcomes. [See 2012–2014 NSDUH Methods Report for more information about the methodolgy used to generate substate estimates]. Comparable estimates derived from the small area estimation procedure were also produced for the 50 states and the District of Columbia. We present these estimates for Maine and Texas. Because these data are based on 3 consecutive years of data, they are not directly comparable with the annually published state estimates that are based on only 2 consecutive years of NSDUH data.[a]

Substate regions were defined by officials from each of the 50 states and the District of Columbia and were typically based on the treatment planning regions specified by the states in their applications for the Substance Abuse Prevention and Treatment Block Grant (SABG) administered by SAMHSA. There has been extensive variation in the size and use of substate regions across states. In some states, the substate regions have been used more for administrative purposes 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. Most states defined regions in terms of counties but some defined them in terms of census tracts. Estimates for 384 substate regions were generated using the 2012–2014 NSDUH data. Substate regions used for each SCS are defined in the Notes sections of Tables 2a and 2b.[a]

Notes about Data Terms

Estimated percentages are based on a survey-weighted hierarchical Bayes estimation approach, and the 95% 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% of the time.

Estimated # is the estimated number of persons aged 12 years or older who used the specified drug or are dependent on/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 2012, 2013, and 2014 population counts for persons aged 12 years or older.

Binge Alcohol is defined as drinking five 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.

Substance Use Disorder in Past Year: Persons are classified as having a substance use disorder in the past 12 months based on responses to questions that meet the criteria specified in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV).

Sources

***Data Sources*:** 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 *2012–2014 National Surveys on Drug Use and Health: Results and Detailed Tables.* Rockville, MD. 2014. Available at: http://www.samhsa.gov/data/population-data-nsduh/reports?tab=38; Accessed on [8/5/2016].

***Overview/Methods/Limitations Sources*:** [a]Adapted by the NDEWS Coordinating Center from Substance Abuse and Mental Health Services Administration (SAMHSA), *2012–2014 National Surveys on Drug Use and Health: Guide to Substate Tables and Summary of Small Area Estimation Methodology.* Rockville, MD 2016. Available at: http://www.samhsa.gov/data/sites/default/files/NSDUHsubstateMethodology2014/NSDUHsubstateMethodology2014.html; Accessed on [8/5/2016].

Youth Risk Behavioral Survey (YRBS): Substance Use Among Student Populations

Overview and Limitations

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.[a] We have included selected drug and alcohol survey questions from the YRBSS.

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).[a]

For States and large urban school districts, the YRBSs 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 area 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.”[a]

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.[b] 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.[c]

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

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: 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*:** Adapted by the NDEWS Coordinating Center from:

[a]*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].

[b]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 on [2/11/2013].

[c]CDC. Health risk behaviors among adolescents who do and do not attend school—United States, 1992. MMWR 1994;43:129–32.

[d]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.

Treatment for Substance Use Disorders

Treatment Admissions Data from Local Data Sources

Overview and Limitations

Drug treatment admissions data provide indicators of the health consequences of substance misuse and their impact on the treatment system.[a] Treatment admissions data can provide some indication of the types of drugs being used in geographic areas and can show patterns of use over time. However, it is important to note that treatment data only represent use patterns of individuals entering treatment programs and the availability of particular types of treatment in a geographic area will also influence the types of drugs being reported. Also, most sites report only on admissions to publicly funded treatment programs; thus, information on individuals entering private treatment programs may not be represented by the data. It should also be noted that each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.[b]

Treatment admissions data are made available to the NDEWS Coordinating Center by the NDEWS Sentinel Community Epidemiologist for each SCS. Calendar year 2015 treatment admissions data were available for 10 of 12 SCSs. Calendar Year 2015 data were not available for the Chicago Metro SCS; Fiscal Year 2015 for Chicago (not entire Chicago metro area) is provided. No treatment data for the Atlanta Metro SCS was available for 2015. See below for site-specific information about the data.

Site-Specific Notes about 2015 Treatment Data and Sources of the Data

- **Atlanta Metro**

  Data Availability: Calendar year 2015 treatment data are not available for the Atlanta Metro SCS.

  Catchment Area: Includes residents of: Barrow, Bartow, Butts, Carroll, Cherokee, Clayton, Cobb, Coweta, Dawson, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Haralson, Heard, Henry, Jasper, Lamar, Meriwether, Morgan, Newton, Paulding, Pickents, Pike, Rockdale, Spalding, and Walton counties.

  Notes & Definitions:
  Admissions: includes admissions to publicly-funded programs.
  Marijuana/Synthetic Cannabinoids: the data do not differentiate between marijuana and synthetic cannabinoids.

  Source: Data provided to the Atlanta Metro NDEWS SCE by the Georgia Department of Human Resources.

❖ **Chicago Metro**

Data Availability: Only fiscal year data are available at this time.

Catchment Area: Data were only available for residents of Chicago, not for the entire Chicago MSA.

Notes & Definitions:
Admissions: Includes admissions to publicly funded programs. Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.

Declines in overall treatment admissions are due to several factors, including budget cuts and changes in providers and payers that affect the reporting of these data (e.g., the expansion of Medicaid under the ACA to cover some forms of drug treatment).
Prescription Opioids: Includes oxycodone/hydrocodone, nonprescription methadone, and other opiates.

Source: Data provided to the NDEWS Chicago SCE by the Illinois Department of Substance Use.

❖ **Denver Metro**

Catchment Area: Includes admissions data for residents of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, and Jefferson counties.

Notes & Definitions:
Admissions: Includes admissions to all Colorado alcohol and drug treatment agencies licensed by the Colorado Department of Human Services, Office of Behavioral Health (OBH). Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.
Prescription Opioids: Includes nonprescription methadone and other opiates and synthetic opiates.
MDMA: Coded as "club drugs," which are mostly MDMA.
Other Drugs/Unknown: Includes inhalants, over-the-counter, and other drugs not specified.

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

❖ **King County (Seattle Area)**

Notes & Definitions:
Admissions: Includes admissions to all modalities of care in publicly funded programs. Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.
Prescription Opioids: Includes oxycodone/hydrocodone, nonprescription methadone, and other opiates.

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

❖ **Los Angeles County**

Notes & Definitions:

Admissions: Includes all admissions to programs receiving any public funds or to programs providing narcotic replacement therapy, as reported to the California Outcomes Monitoring System (CalOMS). An admission is counted only after all screening, intake, and assessment processes have been completed, and all of the following have occurred: 1) the provider has determined that the client meets the program admission criteria; 2) if applicable, the client has given consent for treatment/recovery services; 3) an individual recovery or treatment plan has been started; 4) a client file has been opened; 5) the client has received his/her first direct recovery service in the facility and is expected to continue participating in program activities; and 6) in methadone programs, the client has received his/her first dose. Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.

Prescription Opioids: Includes drug categories labeled "oxycodone/OxyContin" and "other opiates or synthetics."

Source: Data provided to the Los Angeles NDEWS SCE by the California Department of Health Care Services, Mental Health Services Division, Office of Applied Research and Analysis, CalOMS (2013 and 2014 data) and the California Department of Drug and Alcohol Programs (2011 and 2012 data).

❖ **Maine**

Notes & Definitions:

Admissions*:* includes all admissions to programs receiving State funding.

Source: Data provided to the Maine NDEWS SCE by the Maine Office of Substance Abuse.

❖ **New York City**

Notes & Definitions:

Non-Crisis Admissions: Includes non-crisis admissions to outpatient, inpatient, residential, and methadone maintenance treatment programs licensed in the state.

Crisis Admissions: Includes detox admissions to all licensed treatment programs in the state

Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.

Prescription Opioids: Includes nonprescription methadone, buprenorphine, other synthetic opiates, and OxyContin.

Benzodiazepines: Includes benzodiazepines, alprazolam, and rohypnol.

Synthetic Stimulants: Includes other stimulants and a newly created category, synthetic stimulants (created in 2014).

Source: Data provided to the New York City NDEWS SCE by the New York State Office of Alcoholism and Substance Abuse Services (OASAS), Client Data System accessed May 2016 from Local Governmental Unit (LGU) Inquiry Reports.

❖ **Philadelphia**

Notes & Definitions:
Admissions: Includes admissions for uninsured and underinsured individuals admitted to any licensed treatment programs funded through the Philadelphia Department of Behavioral Health and Intellectual disAbility Services (DBHIDS). Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.

2015 Data: Pennsylvania expanded Medicaid coverage under the Affordable Care Act and more than 100,000 additional individuals became eligible in 2015. As individuals who historically have been uninsured become insured, the number of individuals served through the BHSI (Behavioral Health Special Initiative) program has declined; thus treatment admissions reported by BHSI declined from 8,363 in 2014 to 4,810 in 2015. However, similar patterns of substance use were observed among those seeking treatment in 2014 and in 2015.

Methamphetamine: Includes both amphetamines and methamphetamine.

Other Drugs: May include synthetics, barbiturates, and over-the-counter drugs. Synthetic Stimulants and Synthetic Cannabinoids are not distinguishable from "Other Drugs" in the reporting source.

Source: Data provided to the Philadelphia NDEWS SCE by the Philadelphia Department of Behavioral Health and Intellectual disAbility Services (DBHIDS), Office of Addiction Services, Behavioral Health Special Initiative.

❖ **San Francisco County**

Notes & Definitions
Admissions: Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.

Source: Data provided to the San Francisco NDEWS SCE by the San Francisco Department of Public Health, Community Behavioral Health Services Division.

❖ **Southeastern Florida (Miami Area)**

Catchment Area: Includes the three counties of the Miami MSA—Broward, Miami-Dade, and Palm Beach counties.

Notes & Definitions:
Admissions: Includes all admissions to programs receiving any public funds. Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.
2011–2013: Data for Palm Beach County is not available for 2011-2013, therefore, 2011–2013 only includes data for Broward and Miami-Dade counties.

Source: Data provided to the Southeastern Florida NDEWS SCE by the Florida Department of Children and Families and the Broward Behavioral Health Coalition.

❖ **Texas**

Notes & Definitions:
Admissions: Includes all admissions reported to the Clinical Management for Behavioral Health Services (CMBHS) of the Department of State Health Services (DSHS). Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.
Methamphetamine: Includes amphetamines and methamphetamine.
Synthetic Cannabinoids: DSHS collects data on "other Cannabinoids," which may not include all the synthetic cannabinoids.
Females: Calculated using formula "1 minus Male %."

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

❖ **Wayne County (Detroit Area)**

Notes & Definitions:
Admissions: Admissions whose treatment was covered by Medicaid or Block Grant funds; excludes admissions covered by private insurance, treatment paid for in cash, and admissions funded by the Michigan Department of Corrections. Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.
Synthetic Stimulants: Includes amphetamines and synthetic stimulants; data suppressed to protect confidentiality.

Source: Data provided to the Wayne County (Detroit Area) NDEWS SCE by 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.

Sources

Data Sources: Adapted by the NDEWS Coordinating Center from data provided by NDEWS SCEs listed above.

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

[a]National Institute on Drug Abuse; National Institutes of Health; U.S. Department of Health and Human Services, *Assessing Drug Abuse Within and Across Communities, 2nd Edition*. 2006. Available at: https://www.drugabuse.gov/publications/assessing-drug-abuse-within-across-communities

[b]National Institute on Drug Abuse; National Institutes of Health; U.S. Department of Health and Human Services, *Epidemiologic Trends in Drug Abuse, Proceedings of the Community Epidemiology Work Group, Highlights and Executive Summary, June 2014*. Available at: https://www.drugabuse.gov/sites/default/files/cewgjune2014.pdf

Consequences of Drug Use Indicators

Drug Overdose (Poisoning) Deaths

Overview and Limitations

The multiple cause-of-death mortality files from the National Vital Statistics System (NVSS) (queried from the CDC WONDER Online Database) were used to identify drug overdose (poisoning) deaths. Mortality data are based on information from all death certificates for U.S. residents filed in the 50 states and the District of Columbia. Deaths of nonresidents and fetal deaths are excluded. The death certificates are either 1) coded by the states or provided to the CDC's National Center for Health Statistics (NCHS) through the Vital Statistics Cooperative Program; or 2) coded by NCHS from copies of the original death certificates provided to NCHS by the respective state registration office. Each death certificate contains a single underlying cause of death, up to 20 additional multiple causes, and demographic data.[1] (Click here for more information about CDC WONDER Multiple Cause of Death data)

The drug-specific poisoning deaths presented in the 2016 National Drug Early Warning System (NDEWS) reports are deaths that have been certified "as due to acute exposure to a drug, either alone or in combination with other drugs or other substances" (Goldberger, Maxwell, Campbell, & Wilford, p. 234)[2] and are identified by using the World Health Organization's (WHO's) *International classification of diseases, 10th Revision* (ICD-10)[3] **underlying cause-of-death** codes X40–X44, X60–X64, X85, and Y10–Y14. Drug-specific poisoning deaths are the subset of drug overdose (poisoning) deaths with drug-specific **multiple cause-of-death** codes (i.e., T-codes). For the definitions of specific ICD-10 codes, see the section titled ***Notes About Data Terms***. Each death certificate may contain up to 20 causes of death indicated in the multiple cause-of-death (MCOD) field. Thus, the total count across drugs may exceed the actual number of dead persons in the selected population. Some deaths involve more than one drug; these deaths are included in the rates for each drug category.

As stated in its report, *Consensus Recommendations for National and State Poisoning Surveillance,* the Safe States Injury Surveillance Workgroup on Poisoning (ISW7)[a] identified the limitations of using mortality data from NVSS to measure drug poisoning deaths:

[a] The Safe States Alliance, a nongovernmental membership association, convened the Injury Surveillance Workgroup on Poisoning (ISW7) to improve the surveillance of fatal and nonfatal poisonings. Representation on the ISW7 included individuals from the National Center for Injury Prevention and Control (NCIPC), the National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention (CDC), the Substance Abuse and Mental Health Services Administration (SAMHSA), the Council of State and Territorial Epidemiologists (CSTE), the American Association of Poison Control Centers (AAPCC), the Association of State and Territorial Health Officials (ASTHO), the Society for the Advancement of Injury Research (SAVIR), state health departments, academic centers, the occupational health research community, and private research organizations.

> Several factors related to death investigation and reporting may affect measurement of death rates involving specific drugs. At autopsy, toxicological lab tests may be performed to determine the type of legal and illegal drugs present. The substances tested for and circumstance in which tests are performed vary by jurisdiction. Increased attention to fatal poisonings associated with prescription pain medication may have led to changes in reporting practices over time such as increasing the level of substance specific detail included on the death certificates. Substance-specific death rates are more susceptible to measurement error related to these factors than the overall poisoning death rate. (The Safe States Alliance, p. 63)[4]

Warner et al.[5] found that there was considerable variation in certifying the manner of death and the percentage of drug intoxication deaths with specific drugs identified on death certificates and that these variations across states can lead to misleading cross-state comparisons. Based on 2008–2010 data, Warner et al.[5] found that the percentage of deaths with an "undetermined" manner of death ranged from 1% to 85%. Comparing state-specific rates of "unintentional" or "suicidal" drug intoxication deaths would be problematic because the "magnitude of the problem will be underestimated in States with high percentages of death in which the manner is "undetermined."[5] The drug overdose (poisoning) deaths presented in the NDEWS tables include the various manner of death categories: unintentional (X40–X44); suicide (X60–X64); homicide (X85); or undetermined (Y10–Y14).

Based on 2008–2010 data, Warner et al.[5] found that the percentage of drug overdose (poisoning) deaths with specific drugs mentioned varied considerably by state and type of death investigation system. The authors found that in some cases, deaths without a specific drug mentioned on the death certificate may indicate a death involving multiple drug toxicity. The **Percent of Drug Overdose (Poisoning) Deaths with Drug(s) Specified** statistic is calculated for each NDEWS SCS catchment area so the reader can assess the thoroughness of the data for the catchment area. This statistic is defined as drug poisoning deaths with at least one ICD-10 multiple cause of death in the range T36–T50.8.

Notes About Data Terms

Underlying Cause of Death (UCOD): The CDC follows the WHO's definition of *underlying cause of death*: "[T]he disease or injury which initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury." Underlying cause of death is selected from the conditions entered by the physician on the cause-of-death section of the death certificate. When more than one cause or condition is entered by the physician, the underlying cause is determined by the sequence of condition on the certificate, provisions of the ICD, and associated selection rules and modifications. (Click here for more information about CDC WONDER Multiple Cause of Death data)

Specific ICD-10 codes for *underlying cause of death*[3] (Click here to see full list of WHO ICD-10 codes)

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 (suicide) by and exposure to nonopioid analgesics, antipyretics, and antirheumatics.

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

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

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

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

X85: Assault (homicide) 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.

Multiple Cause of Death: Each death certificate may contain up to 20 *multiple causes of death*. Thus, the total count by "any mention" of cause in the *multiple cause of death* field may exceed the actual number of dead persons in the selected population. Some deaths involve more than one drug; these deaths are included in the rates for each drug category. (Click here for more information about CDC WONDER Multiple Cause of Death data)

Drug-specific ICD-10 T-codes for *multiple cause of death*[3]
(Click here to see full list of WHO ICD-10 codes)

Any Opioids (T40.0–T40.4 or T40.6) [T40.0 (Opium) and T40.6 (Other and Unspecified Narcotics)]

Heroin (T40.1)

Methadone (T40.3)

Natural Opioid Analgesics (T40.2)

Please note the ICD-10 refers to T40.2 as *Other Opioids*; CDC has revised the wording for clarity: http://www.cdc.gov/drugoverdose/data/analysis.html

Synthetic Opioid Analgesics (T40.4)

Please note the ICD-10 refers to T40.4 as *Other Synthetic Narcotics*; CDC has revised the wording for clarity: http://www.cdc.gov/drugoverdose/data/analysis.html

Cocaine (T40.5)

Psychostimulants with Abuse Potential [excludes cocaine] (T43.6)

Cannabis (derivatives) (T40.7)

Benzodiazepines (T42.4)

Percentage of Drug Overdose (Poisoning) Deaths with Drug(s) Specified: Percentage of drug overdose (poisoning) deaths that mention the type of drug(s) involved, by catchment area. This statistic is defined as drug poisoning deaths with at least one ICD-10 multiple cause of death in the range T36–T50.8.

Population (used to calculate rates): The population estimates used to calculate the crude rates are bridged-race estimates based on Bureau of the Census estimates of total U.S., state, and county resident populations. The year 2010 populations are April 1 modified census counts. The year 2011–2014 population estimates are bridged-race postcensal estimates of the July 1 resident population. Click here for more information about CDC WONDER Multiple Cause of Death data)

Age-Adjusted Rate: Age-adjusted death rates are weighted averages of the age-specific death rates, where the weights represent a fixed population by age. They are used to compare relative mortality risk among groups and over time. An age-adjusted rate represents the rate that would have existed had the age-specific rates of the particular year prevailed in a population whose age distribution was the same as that of the fixed population. Age-adjusted rates should be viewed as relative indexes rather than as direct or actual measures of mortality risk. The rate is adjusted based on the age distribution of a standard population allowing for comparison of rates across different sites. The year "2000 U.S. standard" is the default population selection for the calculation of age-adjusted rates. (Click here for more information about CDC WONDER Multiple Cause of Death data)

5-Year Percent Change: Change in age-adjusted rate between 2010 and 2014.

Suppressed Data: As of May 23, 2011, all subnational data representing 0–9 deaths are suppressed (privacy policy). Corresponding subnational denominator population figures are also suppressed when the population represents fewer than 10 persons. (Click here for more information about CDC WONDER Multiple Cause of Death data)

Unreliable Data: Estimates based on fewer than 20 deaths are considered unreliable and are not displayed. (Click here for more information about CDC WONDER Multiple Cause of Death data

Sources

Data Sources: Adapted by the NDEWS Coordinating Center from data taken from the Centers for Disease Control and Prevention, National Center for Health Statistics, *Multiple cause of death 1999–2014*, available on the CDC WONDER Online Database, released 2015. Data compiled in the *Multiple cause of death 1999–2014*

were provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Retrieved between December 16, 2015 and February 9, 2016, from http://wonder.cdc.gov/mcd-icd10.html

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

[1]Center from Centers for Disease Control and Prevention, National Center for Health Statistics. (2015). *Multiple cause of death 1999–2014*. Retrieved December 16, 2015, from http://wonder.cdc.gov/wonder/help/mcd.html

[2]Goldberger, B. A., Maxwell, J. C., Campbell, A., & Wilford, B. B. (2013). Uniform standards and case definitions for classifying opioid-related deaths: Recommendations by a SAMHSA consensus panel. *Journal of Addictive Diseases*, *32*, 231–243.

[3]World Health Organization (WHO). (2016). *International statistical classification of diseases and related health problems 10th Revision*. Retrieved March 14, 2016, from http://apps.who.int/classifications/icd10/browse/2016/en

[4]The Safe States Alliance. (2012). *Consensus recommendations for national and state poisoning surveillance*. Atlanta, GA: Injury Surveillance Workgroup 7.

[5]Warner, M., Paulozzi, L. J., Nolte, K. B., Davis, G. G., & Nelson, L.S. (2013). State variation in certifying manner of death and drugs involved in drug intoxication deaths. *Acad Forensic Pathol,* 3(2),231–237.

Availability Indicators

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 United States. The DEA describes NFLIS as:

> "a comprehensive information system that includes data from forensic laboratories that handle the Nation's drug analysis cases. The NFLIS participation rate, defined as the percentage of the national drug caseload represented by laboratories that have joined NFLIS, is currently over 97%. Currently, NFLIS includes 50 State systems and 101 local or municipal laboratories/laboratory systems, representing a total of 277 individual laboratories. The NFLIS database also includes Federal data from DEA and U.S. Customs and Border Protection (CBP) laboratories."[a]

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, whereas 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.[a]

Notes about Reporting Labs

Reporting anomalies were identified in several NDEWS SCSs in 2015 and are described below:

- **Denver Metro Area:** The Aurora Police Department laboratory's last reported data are from July 2014, following the migration to a new laboratory information management system (LIMS).
- **San Francisco County:** The San Francisco Police Department (SFPD) laboratory has been closed since 2010; however, beginning in January 2012, the Alameda Sheriff Department laboratory began reporting their SFPD cases to NFLIS. All available data from the SFPD were included in the counts.
- **Texas:** The Austin Police Department laboratory closed, and no data were provided for 2015. The Houston Forensic Science Government Corporation (formerly Houston Police Department Crime Lab) lab was added in April 2014 and has been reporting data since then.

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 2015. Data were queried from the DEA's NFLIS Data Query System (DQS) on May 18, 2016 using drug item submission date.

Five new psychoactive substance (NPS) drug categories and Fentanyls 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.

Other Fentanyls are substances that are structurally related to fentanyl (e.g., acetylfentanyl and butyrl fentanyl).

A complete list of drugs included in the Other Fentanyls category that were reported to NFLIS during the January to December 2015 timeframe includes:

3-METHYLFENTANYL

ACETYL-ALPHA-METHYLFENTANYL

ACETYLFENTANYL

Beta-HYDROXYTHIOFENTANYL

BUTYRYL FENTANYL

P-FLUOROBUTYRYL FENTANYL (P-FBF)

P-FLUOROFENTANYL

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) May 18, 2016.

***Overview/Methods/Limitations Sources*:** [a]Adapted by the NDEWS Coordinating Center from U.S. Drug Enforcement Administration (DEA), Office of Diversion Control. (2016) *National Forensic Laboratory Information System: Midyear Report 2015.* Springfield, VA: U.S. Drug Enforcement Administration. Available at: https://www.nflis.deadiversion.usdoj.gov/DesktopModules/ReportDownloads/Reports/NFLIS_MidYear2015.pdf