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, 2017

November 2017

NDEWS Coordinating Center

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National Drug Early Warning System (NDEWS)
Sentinel Community Site (SCS)
Drug Use Patterns and Trends, 2017

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.

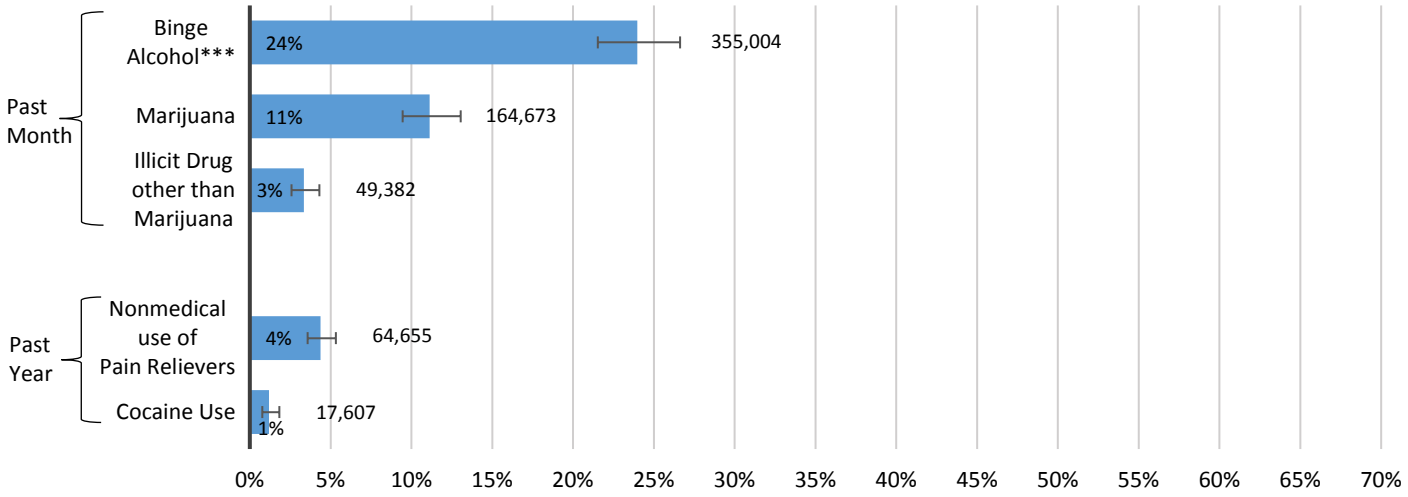
Wayne County (Detroit Area) SCS Snapshot, 2017

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**



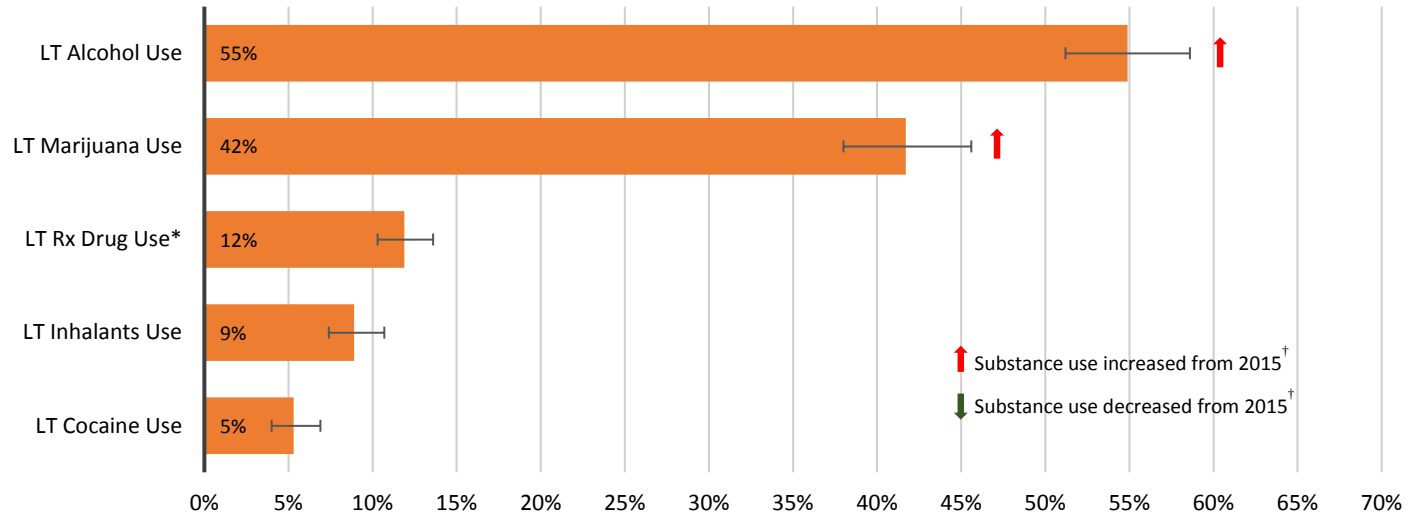
*U.S. Population: U.S. civilian non-institutionalized population. ^Wayne County (Detroit Area) Region: NSDUH Region 7 (Wayne County). **Estimated Number: Calculated by multiplying the prevalence rate and the population estimate of persons 12+ years (1,480,129) from Table C1 of the NSDUH Report. ***Binge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

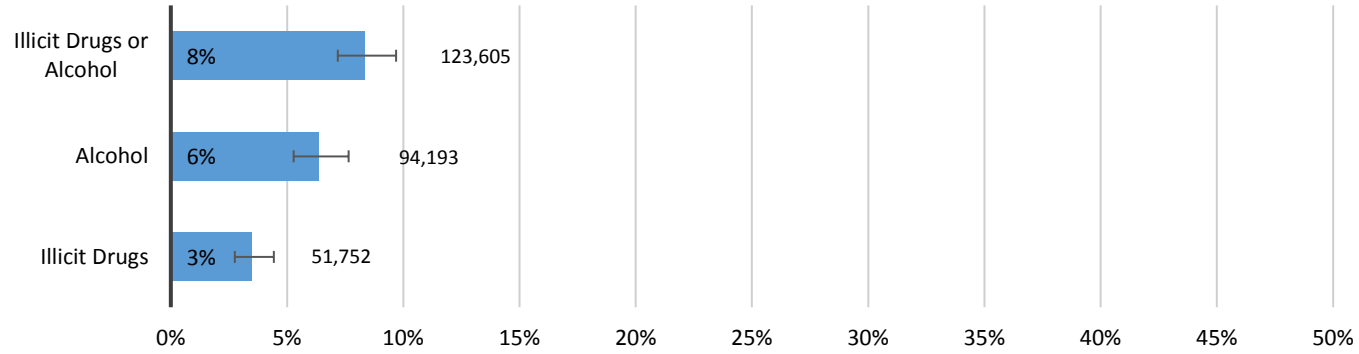
Source: Adapted by the NDEWS Coordinating Center from data provided by CDC, 1991-2015 High School YRBS data.

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***



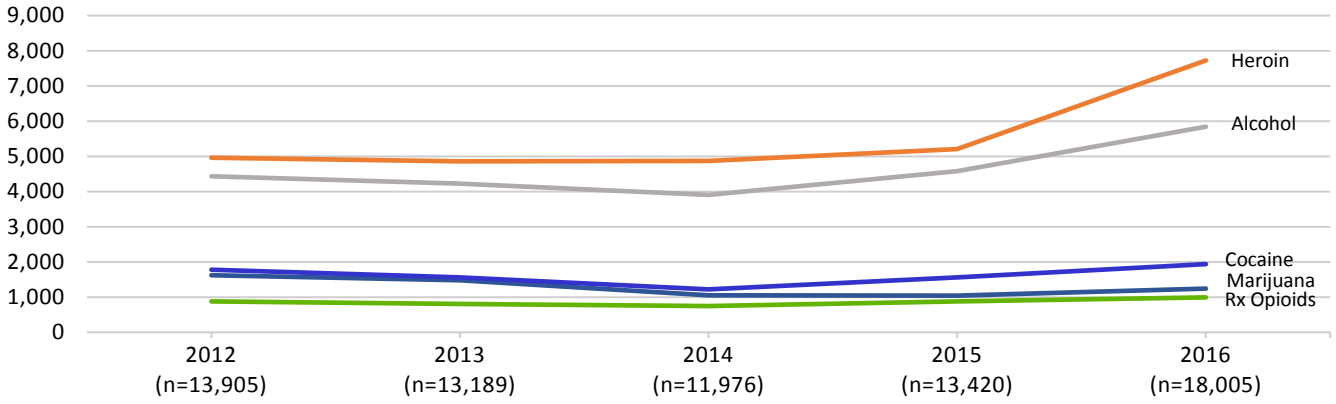
*U.S. Population: U.S. civilian non-institutionalized population. **Substance Use Disorders in Past Year: Persons are classified as having a substance use disorder in the past 12 months based on responses to questions that meet the criteria specified in the 4th edition of the *Diagnostic and Statistical 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.

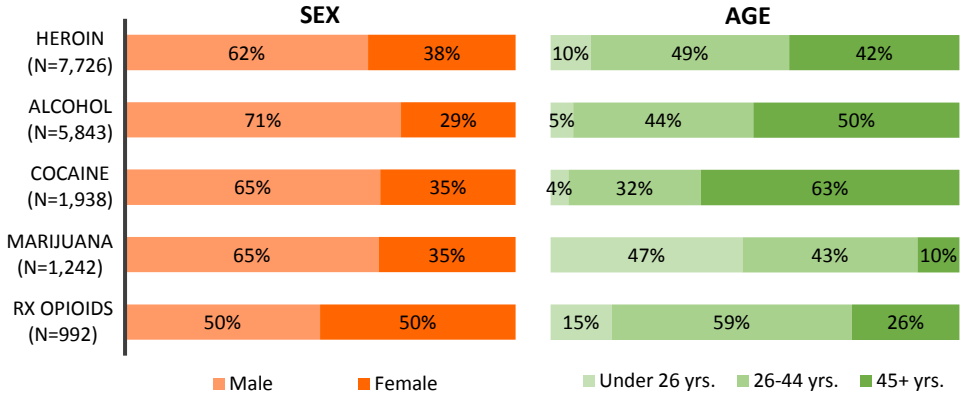
Treatment Admissions Data from Local Sources

Trends in Treatment Admissions*, by Primary Substance of Abuse, Wayne County (Detroit Area), 2012-2016

(n = Number of Treatment Admissions)



Demographic Characteristics of Treatment Admissions*, Wayne County (Detroit Area), 2016



*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.

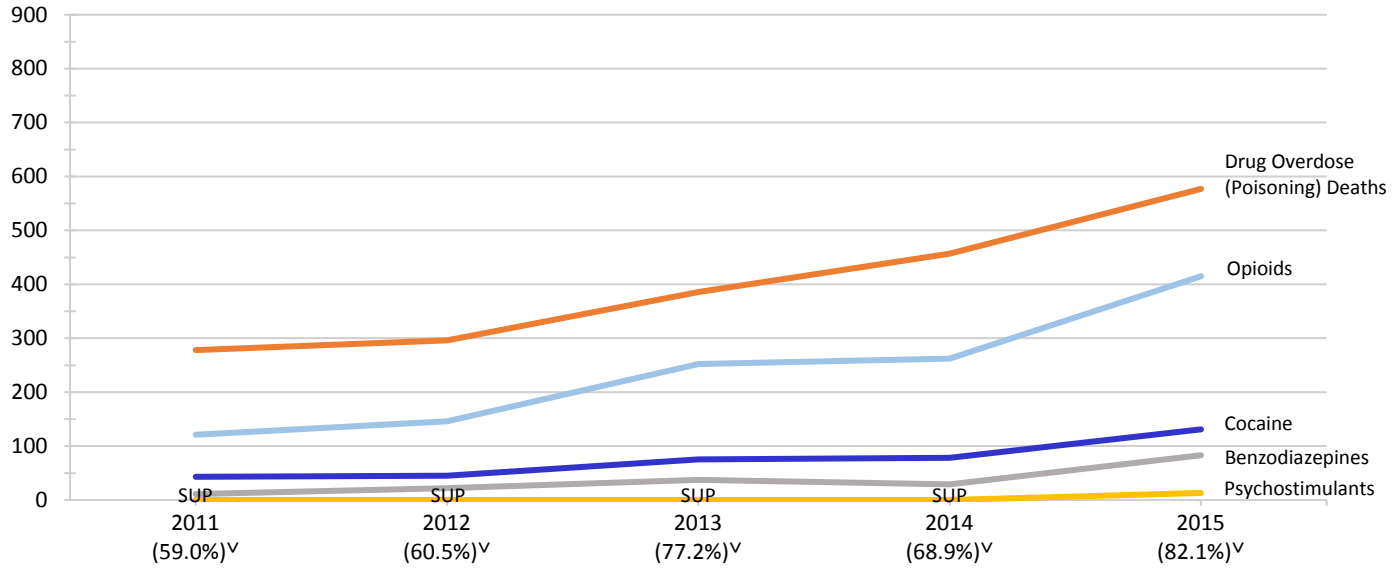
Source: Data provided to the Wayne County (Detroit Area) NDEWS SCE by the Michigan Department of Health and Human Services, Bureau of Behavioral Health and Developmental Disabilities, Division of Quality Management and Planning, Performance Measurement and Evaluation Section.

Drug Overdose (Poisoning) Deaths

National Vital Statistics System (NVSS) via CDC WONDER

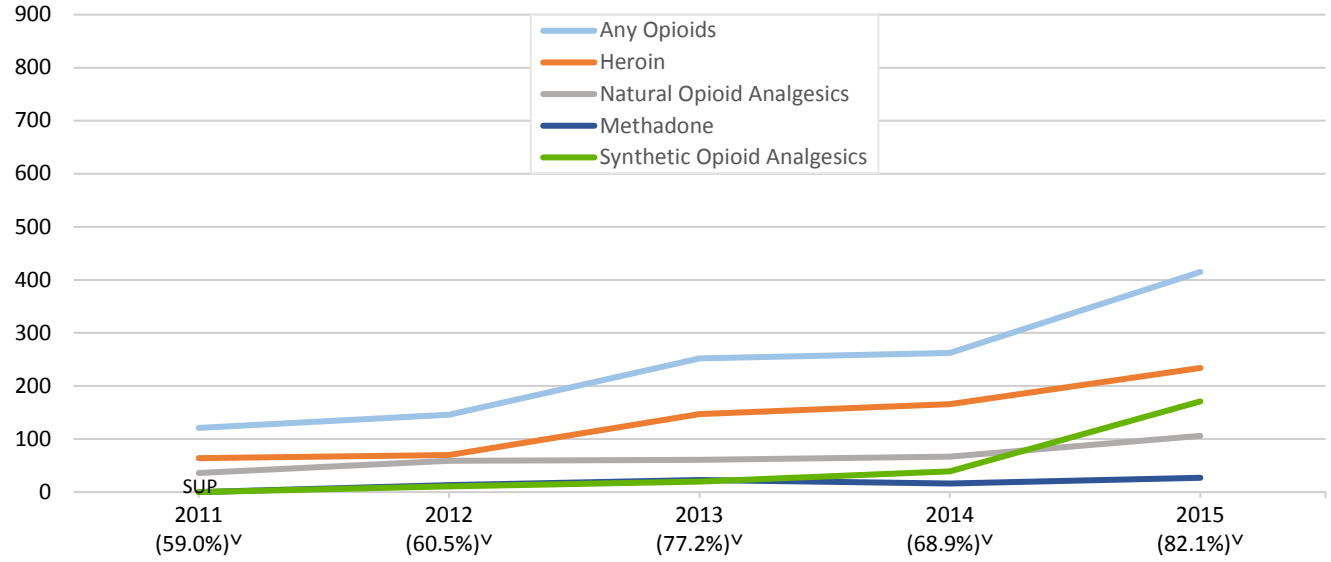
Trends in Drug Overdose (Poisoning) Deaths*, by Drug**, Wayne County (Detroit Area), 2011–2015

(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), 2011–2015

(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 1999-2015, available on the CDC WONDER Online Database, released 2016. Data compiled in the Multiple cause of death 1999-2015 were provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Retrieved between February-June 2017, from http://wonder.cdc.gov/mcd-icd10.html

Law Enforcement Drug Seizures

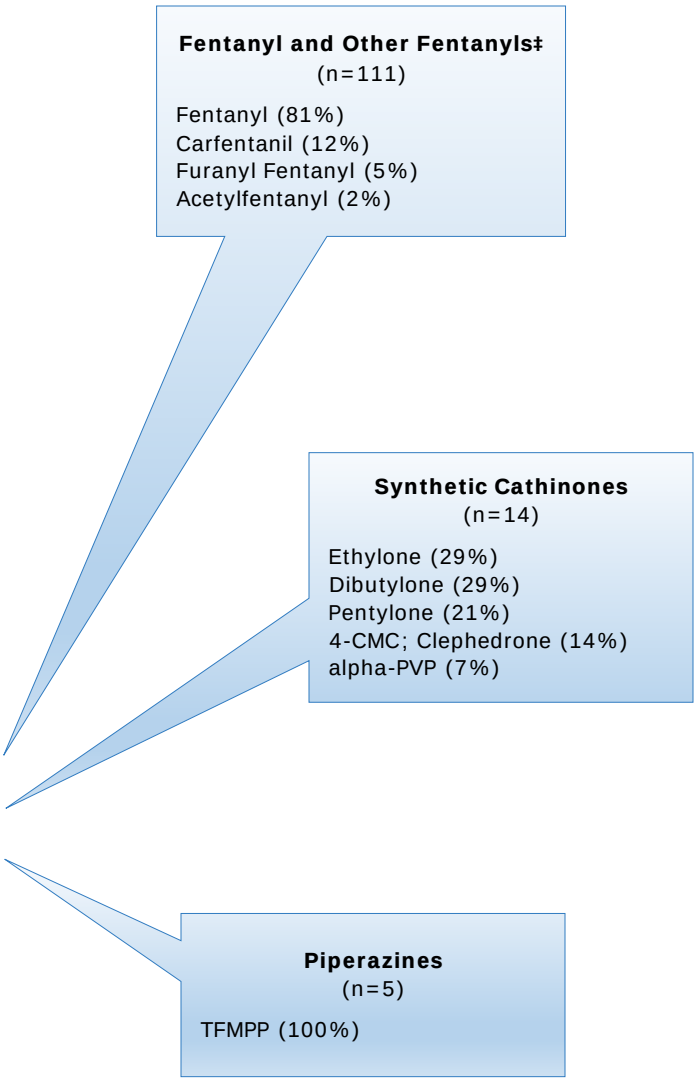
National Forensic Laboratory Information System (NFLIS)

Drug Reports* for Items Seized by Law Enforcement in Wayne County^ (Detroit Area) in 2016
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	**5,350**	**100%**
Top 10 Drug Reports		
Cannabis	2,651	49.6%
Cocaine	953	17.8%
Heroin	613	11.5%
No Controlled Drug Identified	239	4.5%
Alprazolam	154	2.9%
Hydrocodone	126	2.4%
Oxycodone	108	2.0%
Fentanyl	90	1.7%
Amphetamine	54	1.0%
Methamphetamine	50	0.9%
Top 10 Total	**5,038**	**94.2%**
New Psychoactive Substances (NPS) Drug Categories†		
Fentanyl and Other Fentanyls‡	111	2.1%
Synthetic Cathinones	14	0.3%
Piperazines	5	<0.1%
2C Phenethylamines	1	<0.1%
Tryptamines	1	<0.1%
Synthetic Cannabinoids	0	0.0%
Any Opioid†	**1,049**	**19.6%**

Top Drug Reports Among Select NPS Drug Categories†**
(% of Category)



*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 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. The timeframe is January-December 2016.

^The MI State Police began reporting data from a lab in Detroit starting in March 2016. **Select NPS Drug Categories: The 3 most prevalent NPS drug categories. Percentages may not sum to 100 due to either rounding, missing data and/or because not all possible categories are presented in the table.

†Drug Categories/Any Opioid: See *Sentinel Community Site (SCS) Data Table 6b* for a full list of the drug reports for each NPS and Opioid category.

‡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 a list of Other Fentanyls that were reported to NFLIS from the 12 NDEWS sites.

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 28, 2017.

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:

- ◊ Highlights
- ◊ Primary and Emerging Substance Use Problems
- ◊ Local Research Highlights (if available)
- ◊ Infectious Diseases Related to Substance Use (if available)
- ◊ Legislative and Policy Updates

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, 2017: SCE Narrative

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Highlights

- **Fentanyl** and **carfentanil** are the primary drugs of concern in Wayne County because of their sudden appearance and dramatic contribution to the 56% rise in drug overdose deaths from 2015 to 2016.
- **Heroin** continues to be an important drug of concern in Wayne County as measured by increasing deaths, treatments admissions, and seizures.
- **Cocaine** is increasingly found in drug overdose deaths but not in seizures or as a primary drug of abuse in treatment admissions.
- **Methamphetamine** accounts for fewer treatment admissions or deaths than other drugs of abuse but is increasingly identified in seizures.
- **Prescription opioids,** excluding **fentanyl and carfentanil,** are increasingly found in drug overdose deaths (especially among Whites) but not as a primary drug of abuse for treatment admissions or in law enforcement seizures (for 2016 there were 98 times of fentanyl or analog and 13 carfentanil items): Michigan's prescription drug monitoring program documented for the state and the county decreasing dry units dispensed for total scheduled medications. Data from the DEA's Automation of Reports and Consolidated Orders System (ARCOS) showed a temporal decline in **hydrocodone** distribution but minimal change for **oxycodone** since 2012. Codeine was seized and identified more than expected based on national estimates (27 compared with expected 18 items).
- Few **new nonopioid psychoactive substances** measured in either absolute numbers or diversity were identified in drug reports for items seized by law enforcement in Wayne County, but those seized were more likely to be classified as synthetic cathinones (14 items) or piperazines (5 items) as opposed to as synthetic cannabinoids (0 items), phenethylamines (1 item), or tryptamines (1 item). When compared with national estimates, the number of items of synthetic cathinones, phenethylamines, synthetic cannabinoids, and tryptamines were fewer than expected.
- For the second year, seizures of hallucinogenic drugs including **MDMA** declined.
- Wayne County experienced a **56.4% increase in drug overdose deaths** that documented **fentanyl**, **fentanyl analogues carfentanil**, and **U-47700** alone and in combination in the decedents.

Primary and Emerging Substance Use Problems

OVERVIEW

In 2016, Wayne County experienced a 56% increase in drug overdose deaths with fentanyl, carfentanil, and U-47700 as causes of death. That one sentence underscores the public health urgency that drug abuse constitutes and the importance of ongoing monitoring and dissemination of results. Although there were bright spots in that units of scheduled medications dispensed declined for the first time ever and there was no infectious disease outbreak specifically linked to substance abuse, the number of deaths overshadows everything especially because the drug overdose rate had already increased from 9.1 per 100,000 in 2000 to 32.8 in 2015. In 2015, Wayne County ranked 25th in the country among all counties for drug overdose death rates. In 2012, it ranked 125th.

Steps taken to address the increase in drug overdose deaths include authorizing standing orders for naloxone and treatment capacity expansion through Medicaid funding. In 2016, the number of admissions increased by 4,585 (28% increase from 2015) with almost half of the total admissions (48.4%) having a primary drug of abuse of either heroin or prescription opioids. Nevertheless, the overdose deaths are also a reminder of the diversity of people who abuse drugs. The mean age of admissions ranged from a high of 46.2 for cocaine to 28.4 for marijuana. Other primary drugs of abuse with a young mean age at admission were benzodiazepines (32.8), other stimulants besides methamphetamine (32.9), and methamphetamine (29.3).

Below is an overview of the specific drugs of abuse.

Fentanyl and carfentanil are the primary drugs of concern in Wayne County during 2016 because of their sudden appearance and dramatic contribution to the 56% rise in drug overdose deaths from 2015 to 2016. The National Forensic Laboratory Information System (NFLIS) also documented that carfentanil was found in Wayne County items for the first time in 2016 and that fentanyl is increasingly found.

Heroin continues to be an important drug of abuse in Wayne County. The number of deaths caused by heroin in 2016 was 39.4%, more than any other drug except fentanyl. Admissions for heroin as the primary drug of abuse accounted for 42.9% of publicly funded treatment admissions during 2016, more than for any other substance. In 2011, heroin admissions accounted for 32.2% of all treatment admissions. In reports from NLIS, heroin was the third most common substance seized and analyzed (behind cannabis and cocaine). The expansion of naloxone training and recent approval of standing orders for naloxone are important actions to counter the rise in opioid deaths.

The other opioids, such as prescription opioids including methadone, were found in 25.7% of drug overdose deaths and ranked 5th among primary drugs of abuse for treatment admissions. In NFLIS, hydrocodone accounted for 2.4% of items and oxycodone accounted for 2.0%, both less than alprazolam. The DEA's Automation of Reports and Consolidated Orders System (ARCOS) continued to document the tremendous volume of codeine distributed in Michigan; the only states with more codeine distributed were California and Texas.

Cocaine was found in almost as many drug overdose deaths as heroin (39.2% vs. 39.4%), but among the deaths caused by cocaine, opioids were also listed as a cause of death in 81.4%. Cocaine was the third most common primary drug of abuse at admission to treatment and was predominately smoked (88.7%). There were more admissions with cocaine as the secondary than as the primary drug of abuse. Admissions with cocaine as the primary drug of abuse were more likely 45 years of age and older (63.3%) than with other drugs of abuse. Cocaine continued to rank second in NFLIS.

Marijuana admissions as a percentage of total admissions declined, but as the primary drug of abuse, it still ranked 4th. Admissions were younger than for other drugs of abuse. It was the most common drug identified in the NFLIS, even though Michigan has medical marijuana and Detroit decriminalized possession of small amounts by adults.

Benzodiazepines caused the death of 96 people in Wayne County during 2016, of which alprazolam in particular was identified in 64 deaths. A high proportion had nonfentanyl prescription opioids as a cause of death (53.1%). There were 165 admissions with benzodiazepine as the primary and 877 with it as the secondary drug of abuse. Alprazolam ranked 4th in NFLIS reports, ahead of hydrocodone and oxycodone.

Methamphetamine accounted for fewer treatment admissions or deaths than other drugs of abuse but was increasingly identified in seizures. This increase may indicate an increased supply of the drug.

BENZODIAZEPINES

Among the 817 drug overdose deaths in 2016 available for preliminary analysis, 96 had a benzodiazepine listed as a cause of death and 64 had alprazolam specifically listed. Of those 96 decedents, 54.2% were female, 75.0% were non-Hispanic Whites, and a minority were found in Detroit (30.2%). Of note, Detroit comprises 21.2% of the land area of Wayne County; decedents found in Detroit may have died there or were brought there for hospitalization or abandonment. The people whose deaths were caused by benzodiazepines had a mean age of 43.1 years at the time of their death. They were also likely to have prescription opioids excluding fentanyl (53.1%) listed as a cause of death.

There were 165 admissions with benzodiazepines as the primary drug of abuse (0.9% of total admissions), ranking it 6th among primary drug of abuses. Admissions were predominately female (57.6%) and concentrated among those ages 26 to 44 (64.2%). Common secondary drugs of abuse were prescription opioids (20.6%), alcohol (19.4%), and marijuana (15.8%). These admissions with benzodiazepines as the primary drug of abuse were dwarfed by the number of admissions with benzodiazepines as secondary drug of abuse (*N* = 877).

One benzodiazepine, alprazolam, ranked 4th with 154 items (2.9% of total drug reports) in the NFLIS in 2016. Other benzodiazepines, such as clonazepam (*N* = 12) and diazepam (*N* = 8), were less commonly identified. The number of items identified as alprazolam was lower in 2016 compared with 2015 when 184 items were reported (2.5% of total drug reports).

COCAINE

- Cocaine is increasingly found in drug overdose deaths but not in seizures or as a primary drug of abuse in treatment admissions.

The number of Wayne County drug overdose deaths caused by cocaine was 332 or 39.2% of all drug overdose deaths according to public statements by the Chief Medical Examiner. In preliminary analysis on 817 deaths, there were 296 deaths caused by cocaine or 36.2% of the total drug overdose deaths with December 2016 having the highest absolute number (*N* = 39). Decedents with cocaine as the cause of death were mostly male (68.9%), non-Hispanic White (61.8%), found in Detroit (57.8%), and with fentanyl (57.4%) and heroin (38.5%) also listed as causes of death. Opioids (i.e., fentanyl, heroin, U-47700, carfentanil, or prescription opioids,) were listed as causes of deaths in 81.4% of the cocaine deaths. There were 12 deaths with no other drugs listed as cause of death. The mean age of the decedents was 42.8 years. The Wayne County Office of Medical Examiner changed the coding of causes of death in 2016 to list all drugs detected. This makes comparisons with past years difficult, but it appears that cocaine is increasingly common. In 2012 and 2013, the number of overdose deaths with cocaine as a cause were 75 and 78.

Cocaine was the third most common primary drug of abuse at admission to treatment (*N* = 1,938 or 10.8%), but there were more admissions with cocaine as a secondary than as a primary drug of abuse. People admitted with the primary drug of cocaine were more likely to be male (65.3%) and to smoke it (88.7 %). Those who were admitted to treatment were also more likely to be older (45 or older, 63.3%) than for other drugs of abuse. The most common secondary drug of abuse was alcohol (35.9%) and marijuana (17.6%). The number of admissions for cocaine as the primary drug of abuse has trended upwards since 2014.

Cocaine continued to be the second-ranked drug identified in reports for items seized and analyzed in the NFLIS database for 2016; it accounted for 17.8% of items analyzed compared with 18.7% in 2015.

MARIJUANA

The number of medical marijuana certificates both newly approved and renewed in Wayne County was 21,143 in fiscal year 2016 compared with 25,949 in fiscal year 2015.

Treatment admissions, traditionally driven by legal pressure, was 1,242 in 2016, which is lower in absolute numbers and percentage of total for 2012 and 2013. The percentage, but not absolute number, of admissions is also lower in 2016 compared with 2014 and 2015. Marijuana ranked 4th among primary drugs of abuse for admissions in 2016. Admissions with the primary drug of abuse of marijuana had the youngest age distribution (16.7% younger than 18 years of age), but the plurality of people were aged 26 to 44 (42.8%). Among treatment admissions, the most common secondary drug of abuse was alcohol (30.4%). Marijuana was also a common secondary drug of abuse among people admitted for treatment (20.5% for alcohol, 17.6% of cocaine, 22.2% for methamphetamine, and 19.0% for other stimulants).

Marijuana was the most common drug identified in reports for items seized and analyzed in NFLIS in 2016 (49.6% compared with 50.1% of items in 2015).

METHAMPHETAMINE

- Methamphetamine accounts for fewer treatment admissions or deaths than other drugs of abuse but is increasingly identified in seizures

Methamphetamine was 7th among the 8 top primary drugs of abuse at treatment admission (*N* = 27 admissions or 0.1%). Admissions with methamphetamine as the primary drug of abuse are most likely to be male (81.5%) and between the ages of 26 and 44 (85.2%). Most admissions for methamphetamine reported smoking it (66.7%); 22.2% reported marijuana and 14.8% reported heroin as the secondary drug of abuse. During the past 5 years, the number of admissions with methamphetamine as the primary drug has fluctuated but may be increasing from very low levels: 11 in 2012, 17 in 2013, 24 in 2014, 12 in 2015, and 27 in 2016.

In the 2016 NFLIS, methamphetamine was ranked 9th in psychoactive substances seized compared with 12th in 2015. The number of items seized increased from 29 items (0.4%) to 50 items (0.9% of 5,350 items analyzed).

It is not known if the small increases in both admissions and items seized represent a growing demand or increased supply.

NEW PYSCHOACTIVE SUBSTANCES (OTHER THAN OPIOIDS)

- Few new nonopioid psychoactive substances measured in either absolute numbers or diversity were identified in drug reports for items seized by law enforcement in Wayne County, but those seized were more likely to be classified as synthetic cathinones (14 items) or piperazines (5 items) as opposed to as synthetic cannabinoids (0 items), phenethylamines (1 item), or tryptamines (1 item). When compared with national estimates, the number of items of synthetic cathinones, phenethylamines, synthetic cannabinoids, and tryptamines were fewer than expected.

- For the second year, seizures of hallucinogenic drugs including MDMA declined.

In Wayne County, 8 different new psychoactive substances other than opioids, (and 21 reports) were identified in reports from items seized and analyzed in NFLIS out of a total of 5,350 reports for 2016. In 2015, the nonopioid psychoactive substance with the most items identified was ethylone (*N* = 29). In 2016, however, there were only 4 reports of ethylone. In contrast, there were 5 reports of TFMPP. Of items seized and analyzed, synthetic cathinones were most common (*N* = 14) followed by piperazines (*N* = 5). Phenethylamines and tryptamines had only 1 report each. No items were identified as synthetic cannabinoids. It is not possible from the NFLIS data obtained for this report to determine the form of the synthetics seized and analyzed (e.g., sold as Ecstasy, bath salts, or mixed with other substances)

When compared with the expected number of reports from the national total, Wayne County had fewer than expected synthetic cathinones (14 vs. 43 expected), phenethylamines (1 vs. 4 expected), tryptamines (1 vs. 4 expected), and synthetic cannabinoids (0 vs. 143 expected). Only piperazines were more commonly reported than expected (5 reported vs. 3 expected). Compared with the nation, Wayne County does not seem to have the diversity or number of synthetic compounds identified when compared with other sites in the NFLIS database. This does not mean that the new psychoactive

substances are absent in the community or that those that are being distributed are safe. Furthermore, there is not a Wayne County site in the Toxicology Investigators Consortium Registry, a consortium that monitors toxicology reports in patients. This means that Wayne County relies on NFLIS for data; items seized by law enforcement and requested by the prosecutor to be analyzed were mostly cannabis, cocaine, and heroin (78.9% of drug reports in 2016).

Compared with 2015, there was a decline in the number of synthetic cathinones identified (14 vs. 37), no change in synthetic cannabinoids (0 both years), decline in piperazines (5 vs. 18), decline in phenethylamines (1 vs. 5), and slight increase in tryptamines (1 vs. 0).

OPIOIDS

- Fentanyl and carfentanil are the primary drugs of concern in Wayne County because of their sudden appearance and dramatic contribution to the 56% rise in drug overdose deaths from 2015 to 2016.

- Heroin continues to be an important drug of concern in Wayne County as measured by increasing deaths, treatments admissions, and seizures.

- Prescription opioids, excluding fentanyl and carfentanil, are increasingly found in drug overdose deaths (especially among Whites) but not as a primary drug of abuse for treatment admissions or in seizures (for 2016 there were 98 times of fentanyl or analog and 13 carfentanil items): Michigan's prescription drug monitoring program documented that the county had a decline in dry units dispensed for total scheduled medications in 2016 compared with 2017. Data from ARCOS showed a temporal decline in hydrocodone distribution but minimal change for oxycodone since 2012. Codeine was seized and identified more than expected based on national estimates (27 items compared with expected 18 items), reflecting that Michigan ranks 3rd in total volume for codeine distribution behind California and Texas.

- Wayne County experienced a 56.4% increase in drug overdose deaths that documented fentanyl, fentanyl analogues carfentanil, and U-47700 alone and in combination in the decedents.

Heroin

The number of Wayne County drug-associated deaths with laboratory-confirmed heroin detected increased in 2016 to 334 (39.4%) from 267 in fiscal year 2015. In preliminary analysis based on 817 drug overdose deaths, heroin was listed as the cause of death in 313 or 38.2%. The month with the highest number of heroin deaths was December 2016 (*N* = 43) with more than twice as many heroin deaths as in January 2016 (*N* = 20). The people who died from heroin were mostly male (69.2%), non-Hispanic White (62.5%), and found in Detroit (56.4%). People whose deaths were caused by heroin frequently also had fentanyl as a cause of death (556.1%). Non-Hispanic Whites (mean age = 38.9) and Hispanics (mean age = 38.6) who died from heroin were younger than African Americans (mean age = 50.9) who died from heroin.

Treatment admissions with the primary drug of heroin accounted for the largest proportion of total admissions (*N* = 7,726 or 42.9%) in 2016 of any drug. Moreover, the proportion of total admissions with heroin as a primary drug of abuse is the highest in the past 5 years. The number of admissions represents an increase of 55.6% for that time period. Admissions with heroin as the primary drug of abuse were mostly male (62.2%) and aged 26 to 44 (48.5%). The proportion of treatment admissions injecting heroin was 56.3% with 41.2% inhaling the drug. Cocaine was the most common secondary drug of abuse (32.6%).

Heroin was the 3rd-ranked drug identified in reports for items seized and analyzed in NFLIS with 11.5% of total reports. This proportion is a decline from 13.5% in 2015.

Prescription Opioids and Fentanyl

The most dramatic findings with regard to opioids were (a) the increase in deaths caused by fentanyl, (b) the detection of carfentanil in decedents and NFLIS, and (c) the detection of U-47700 in decedents.

Of the 848 drug overdose deaths, 430 were from fentanyl (50.7%). In the preliminary analysis of 817 decedents, fentanyl caused 412 deaths (50.4%) compared with being found in 148 decedents in fiscal year 2015. The month with the high number of deaths with fentanyl was October 2016 (*N* = 53), but November (*N* = 46) and December (*N* = 46) were also elevated. People who died from fentanyl were mostly male (71.1%), non-Hispanic White (62.8%), and found in Detroit (58%). Mean age at death was 41.3 years. Other drugs listed as causes of death were heroin (41.7%) and cocaine (41.3%). Nevertheless, 18.2% died from fentanyl or an analog with no other cause of death. Fentanyl was also increasingly seized and identified in NFLIS: from 7 items in 2014 and 59 in 2015 to 90 items in 2016. Specific analogues of fentanyl reported in Wayne County were furanyl fentanyl (*N* = 6) and acetylfentanyl (*N* = 2).

Carfentanil was detected in 51 (6.2%) decedents according to the preliminary analysis of 817 decedents. More people died from carfentanil than from the combined class of amphetamine/methamphetamine (2.6%). Disturbingly, carfentanil was first detected in September and then every month until the end of 2016. People who died from carfentanil were mostly male (76.5%) and non-Hispanic Whites (60.8%) and found in Detroit (74.5%). The mean age at death was 41.8 years. There were 13 reports of carfentanil in NFLIS, more than for morphine (*N* = 12) but less than the combined number of synthetic cathinones (*N* = 14).

U-47700 was not reported to NFLIS in 2016. Nonetheless, at least 15 people died from U-47700 in 2016. Of the 15 decedents, 10 were male, 10 were non-Hispanic Whites, and 10 were found in Detroit. The age of death ranged from 22 to 64 with a mean age of 42.7. The people who died from U-47700 also frequently had fentanyl and/or carfentanil listed as a cause of death (*N* = 14). The one decedent with U-47700 as a cause of death without fentanyl or carfentanil had cocaine also listed as a cause of death.

Prescription opioids other than fentanyl and carfentanil caused 210 deaths (25.7% of the preliminary 817 deaths available for analysis) in 2016. Of those deaths, 56 listed morphine or “opiates” as a cause of death. The remaining death certificates listed specific opioids besides morphine. Among the 210 deaths, most were male (60.5%), non-Hispanic Whites (68.6%) and found outside of Detroit (58.1%). The mean

age at death was 43.7 years. In statistical analysis using dichotomous coding of individual causes of death, decedents with these other opioids were more likely to also have benzodiazepines as a cause of death; 24.3% of deaths with prescription opioids as a cause of death also had benzodiazepines as a cause of death. The deaths caused by prescription opioids were statistically less likely to also have fentanyl, cocaine, or heroin as a cause of death.

Prescription opioids as the primary drug of abuse ranked 5th in treatment admissions (*N* = 992 or 5.5% of admissions). The proportion of total admissions with prescription opioids as the primary drug of abuse has stayed fairly constant since 2013 although the absolute number has increased. It is the only primary drug of abuse with almost equal gender representation (50.1% female). Similar to many other drugs of abuse, the age group 26 to 44 accounted for the majority of admissions (58.8%). The most common secondary drug of abuse was benzodiazepines (21.5%).

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 (same as 2016) with 126 items (2.4%) and oxycodone was ranked 6th with 108 items (2.0%). Pharmacists anecdotally report that generic oxycodone immediate release is the most frequently diverted opioid. Nevertheless, NFLIS does not report on packaging of substances analyzed. Codeine was seized and identified more than expected based on national estimates (27 compared with expected 18 items).

The number of scheduled prescription units (dry units, including pills, patches, and lozenges and excluding liquids) dispensed increased from 2007 to 2015 but declined in 2016 for both Michigan and Wayne County. The decline was consistent across all schedules, from Schedule II to Schedule IV medications. Although there had been declines in separate schedules before, it was the first time since the electronic prescription drug monitoring program was implemented that there was a decline across all schedules. When examined as the number of opioid prescriptions filled (not units), there was an increase from 2014 to 2015; data for 2016 are not available. Also the CDC's comparison of morphine milligram equivalent (MME) per capita for 2010 and 2016 saw stable prescription dispensing for Wayne County: 796.6 to 801.5 MME per capita. For the 2,734 counties with data, Wayne County ranked 1,234 in 2010 and 1,015 in 2015.

Per ARCOS records for 2010 to 2016, the ranking of Michigan for total weight of medication distributed did not show major changes across select medications with the exception of hydrocodone that moved to number 2 (behind California) Yet, when the total grams of hydrocodone by year in Michigan was examined, there was a numeric decline in grams for 2016 compared with 2015, suggesting that the upward movement in ranking meant that other states showed greater declines.

Local Research Highlights

In response to the rise in deaths attributed to fentanyl, we assessed the prevalence and characteristics of methadone-maintained patients who tested positive for fentanyl as part of routine clinical monitoring by conducting a retrospective chart review of all clients at one clinic between January 2015 and May

2016. This time period was chosen as fentanyl was added to urine drug screens (UDS) in January 2015. To assist in interpreting the results, 113 patients in the clinic during August 2016 completed an anonymous survey. Of the 368 unique patients with at least one UDS between January 2015 and May 2016, 38.0% had at least one and 26.1% had multiple fentanyl-positive UDS results. None of the patients had a fentanyl prescription. Patients ever testing positive for fentanyl were more likely to have cocaine listed as a secondary or tertiary drug of abuse at admission ($p = .034$), have shorter stays in treatment ($p < .001$), and have multiple treatment admissions to the clinic ($p = .012$). Fentanyl-positive UDS results commonly occurred concurrently with cocaine- and heroin-positive UDS results. Of the anonymously surveyed patients, most (67.3%) reported they did not know anyone seeking fentanyl, a proportion significantly higher than for heroin, cocaine, alprazolam, hydrocodone, or morphine. We concluded that fentanyl was commonly detected during this period with some patients having multiple positive UDS. Although most patients did not know anyone seeking to obtain it, the characteristics of the patients with fentanyl-positive UDS suggest that clinics need to address this high-risk group through naloxone training and distribution (Arfken et al. 2017).

The rapid rise of drug overdose deaths also sparked concern that Wayne County was seeing a repeat of an earlier fentanyl epidemic. That epidemic was attributed to people seeking heroin but finding fentanyl-contaminated heroin instead with the peaks of deaths occurring in 2006. In graphing the drug overdose deaths from 1999 to 2015 using data from CDC WONDER, the rate of drug overdose deaths in 2015 (32.8 per 100,000) clearly exceeds the rate that occurred during the height of the epidemic (17 per 100,000 in 2006). With the closure of the illegal fentanyl production lab in Mexico in 2006, it was expected that the drug overdose death rate would decline. Between 2006 and 2012, however, the drug overdose death rate was fairly stable (16.5 per 100,000 in 2012). As Wayne County is approximately 50% non-Hispanic White and 40% African American, the race-specific drug overdose death rates were then explored. The graph shows similar death rates by race prior to the first epidemic (2000–2002). Starting in 2003, however, the rates for non-Hispanic Whites diverge and are consistently higher than those for African Americans. The divergence is especially evident during the period of 2006 to 2012 when the death rate for non-Hispanic Whites fluctuates (from 20.3 in 2006 to 22.1 in 2012) but declines for African Americans (13.7 to 10 per 100,000 in 2016). For both races, the drug overdose death rates increases rapidly from 2013 onward with the rate almost twice as high for non-Hispanic Whites (42.5 per 100,000) as for African Americans (22.3 per 100,000). The lower rate for African Americans for drug overdose deaths is not generalized to other substance-abuse related deaths. For alcohol-related deaths, there is no clear racial difference. In contrast, for HIV-related deaths, African Americans were disproportionately represented although the death rate is declining. More attention needs to be paid to race-specific deaths rates locally to inform prevention activities.

Infectious Diseases Related to Substance Use

There have been no reports of outbreaks in infectious diseases specifically linked to injecting drug use. People known to abuse drugs were included in the ongoing spike of Hepatitis A cases in the tri-county metropolitan Detroit area but were not reported to be the cause of it. Between August 2016 and May

2017, there were 12 reported cases in Wayne County compared with fewer than 5 cases per year usually.

As of July 2016, there were an estimated 17,660 people living in Michigan with diagnosed HIV infection for a rate of 153.2 per 100,000 using the new method of estimating cases. Nevertheless, there was a decline in prevalence of people living with HIV, a decline attributed to emigration. Overall, risk groups for the prevalent cases include men who have sex with men (MSM) (52%), heterosexual contact (19%), injection drug use (IDU; 8%), MSM/IDU (4%), perinatal (1%), and undetermined (16%). The age groups with the most prevalent cases were 50–59 years (29%), 40–49 years (24%), and 30–39 years (17%). African Americans were most impacted (57%) followed by Whites (34%). More than half (54%) of the prevalent cases live in Wayne County (*n* = 7,940) for a rate of 450 per 100,000. Within Wayne County, Detroit is home for 5,630 prevalent cases for a rate of 719 per 100,000. The HIV infection-related deaths per 100,000 is much higher for African Americans than for Whites, both for Michigan and for Wayne County but has declined from 15.2 per 100,000 for African Americans in 1999 to 5.2 per 100,000 in 2015. Among the people who inject drugs and are living with HIV infection, 56% had viral suppression (the goal is 80%).

As of July 2016, there were 735 new cases of HIV infection for a rate of 7.4 per 100,000. Similar to the prevalence data, African Americans (62%) and males (81%) were disproportionately represented. In fact, African American males accounted for almost half of the new cases (49%). Risk groups for infection were MSM (56%), undetermined (23%), heterosexual contact (16%), IDU (3%), and MSM/IDU (2%) with 1 perinatal case. The new cases in Michigan disproportionately lived in Detroit (32%) and outside of Wayne County (12%).

There were 61 new acute cases of Hepatitis B in 2015, which is a rate of 0.6 per 100,000. This rate increased slightly from 2014 but 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 1,076 new chronic Hepatitis B diagnoses in Michigan in 2015 for a rate of 10.89 per 100,000 people with a predominance of males (59.9%) and Asian Americans (88.80 per 100,000).

There were 84 new acute Hepatitis C infections across Michigan in 2015 for a rate of 0.85 per 100,000. This rate is higher than those reported in 2013 (0.75) and 2014 (0.77). Cases are still being followed from 2013, but injection drug use was reported by 61% of acute Hepatitis C cases. There were 7,833 new chronic Hepatitis C cases in 2015 for a rate of 79.25 per 100,000, which was a slight decline from 2014. The rate is twice as high among men (100.51) compared with women (58.44). The rate is also higher among American Indians and Alaskan Natives (157.32) and African Americans (97.13) than among the general population. Injection drug use was a risk factor for 66% and incarceration for 12%. No information is published on the rates by county. Importantly, since 2005, the number of cases among persons 18–29 years of age increased by more than 302%. For this age group, 86.7% reported injection drug use.

Legislative and Policy Updates

Specific recent policies affecting drug use include the statewide approval of medical marijuana (2008), centralizing of regulations of medical marijuana within the Bureau of Medical Marihuana Regulation with new statutory requirements of facility licensing and regulation (2017), expansion of Good Samaritan laws (2016), standing order preauthorizing the distribution of naloxone by pharmacists (2017), and release of an updated prescription drug monitoring program (2017). There is currently an initiative collecting signatures to place on the November 2017 ballot the legalization of recreational marijuana use by adults.

Other policies impacting drug abuse include the Michigan Prescription Drug and Opioid Abuse Task Force releasing its recommendations (2015), which included updating (now completed) and requiring providers to use of the prescription monitoring system (currently in the legislature). 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 be trained in the use of naloxone in 2014.

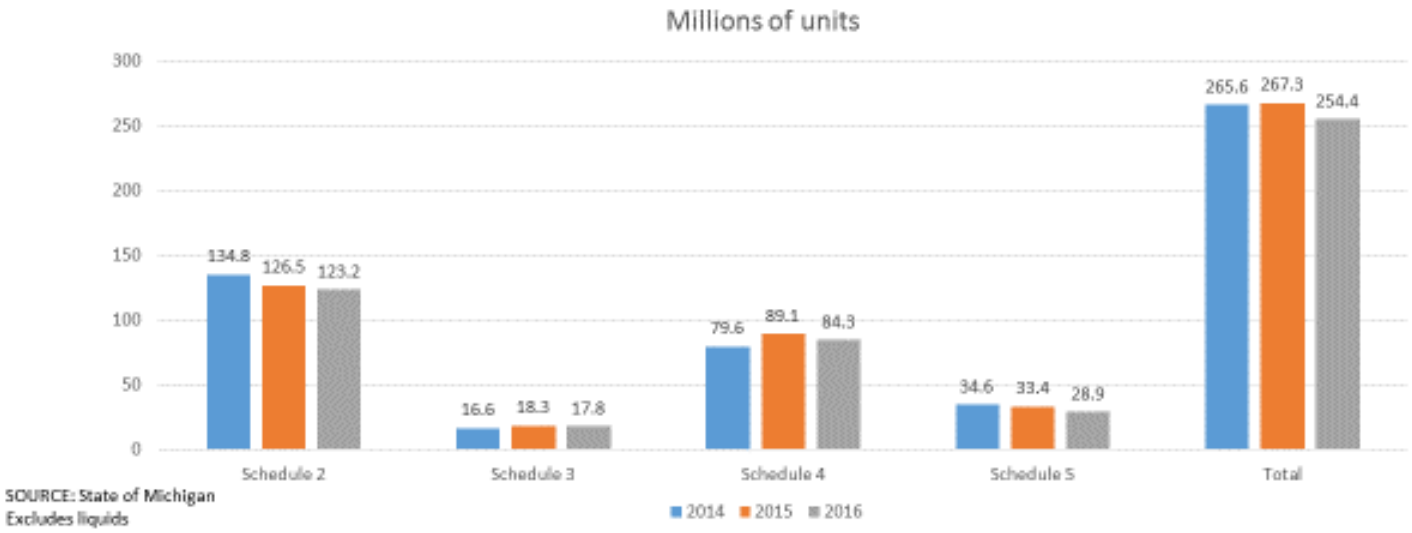
At the local level, several municipalities have decriminalized possession of small amounts of marijuana, including Detroit in 2012. Dispensaries of medical marijuana are subject to local zoning ordinances. In Detroit, dispensaries or Medical Marihuana Caregiver Centers (MMCCs) are currently only allowed in select areas and they must obtain a business license. In 2017, there were 5 MMCCs approved and 147 applications awaiting approval; 172 dispensaries operating prior to the change in ordinance were closed.

In Wayne County, naloxone training began in 2016 for first-responders and then expanded to the community with the Detroit Wayne Mental Health Authority (entity responsible for public funding of behavioral health in Wayne County) providing training and naloxone kits. The Detroit Wayne Mental Health Authority also expanded permanent drug take-back sites to 46 police stations across the county. Additionally, the Detroit Wayne Mental Health Authority trained providers at all methadone-maintenance treatment centers to administer long-acting naltrexone and encouraged them to offer buprenorphine as a way to expand medication-assisted treatment capacity.

Michigan was one of the states that expanded Medicaid, which allowed for an increase in the number of people entering drug treatment. This expansion was reflected in the overall increase in 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 that started in fiscal year 2015.

Exhibits

Exhibit 1. Total Number of Controlled Medication Units Dispensed by Schedule, Wayne County: CY 2014-2016



SOURCE: State of Michigan
Excludes liquids

Exhibit 2. Opioid Prescriptions Dispensed in Wayne County: CY 2009-2015

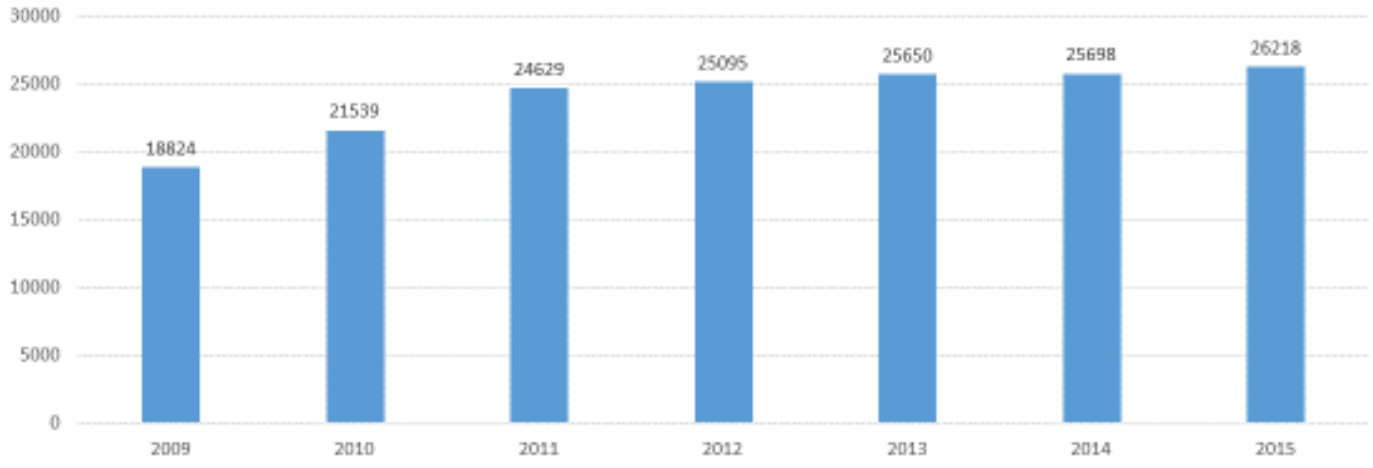


Exhibit 3. Age-Adjusted Death Rates from Alcohol-Induced Causes in Wayne County by Race: 1999-2015

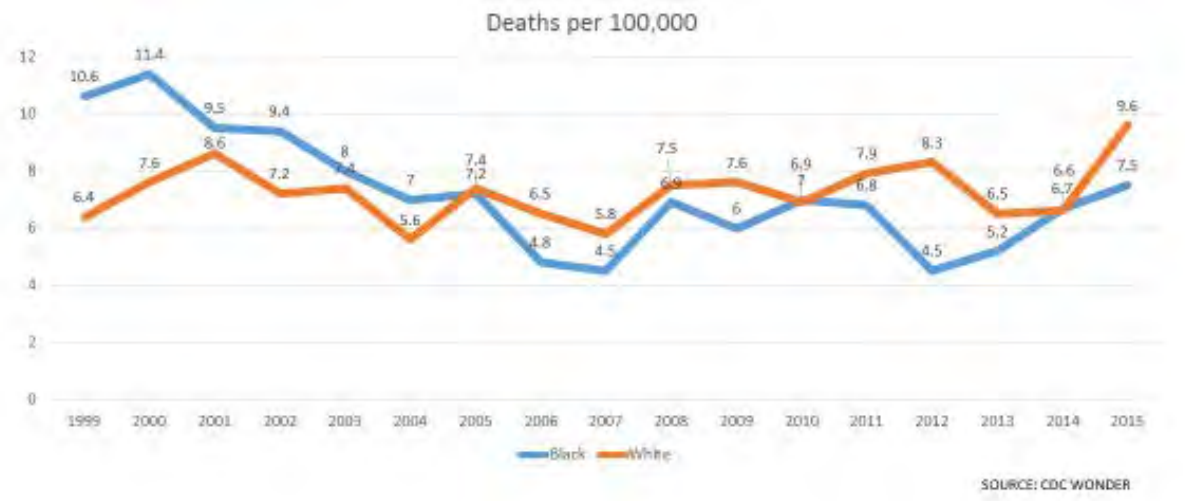


Exhibit 4. Drug Overdose Deaths per 100,000 Residents for Wayne County, by Race

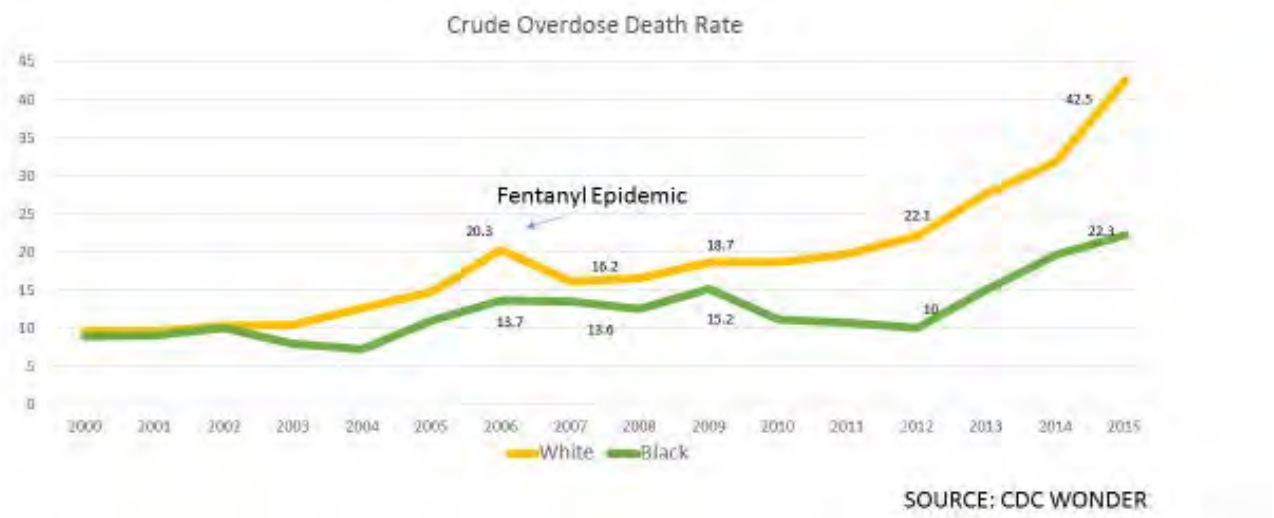


Exhibit 5. Percentage of Deaths Caused by Select Classes of Drugs

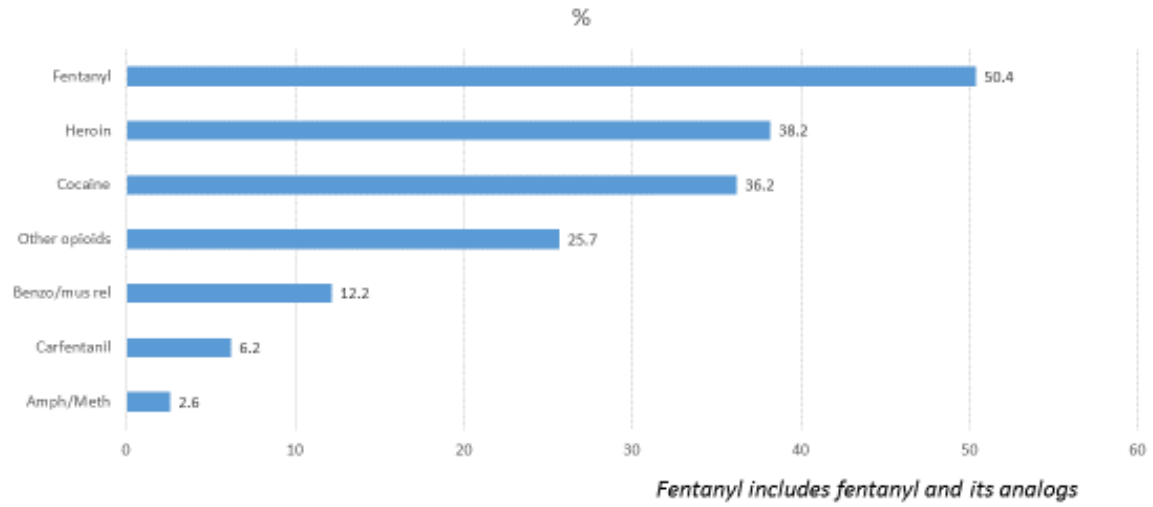
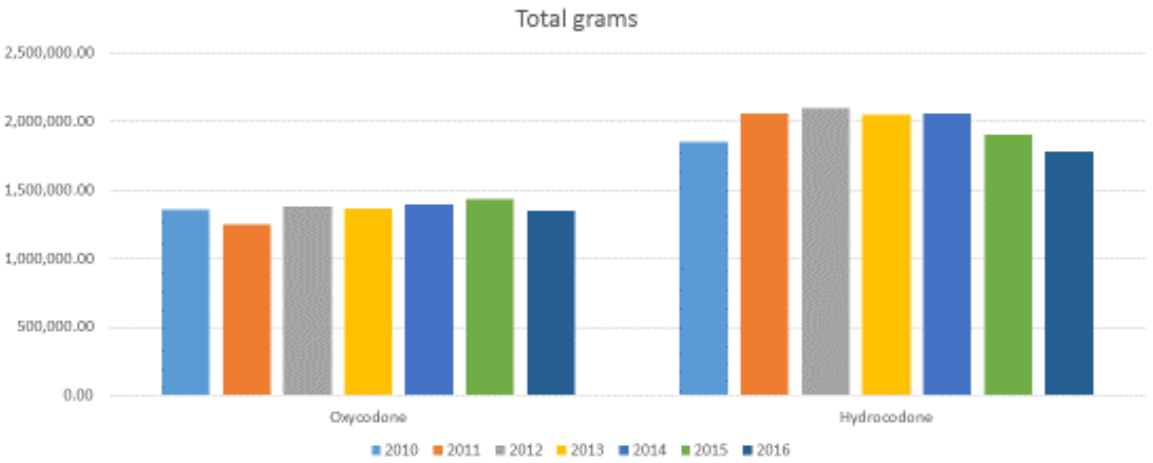
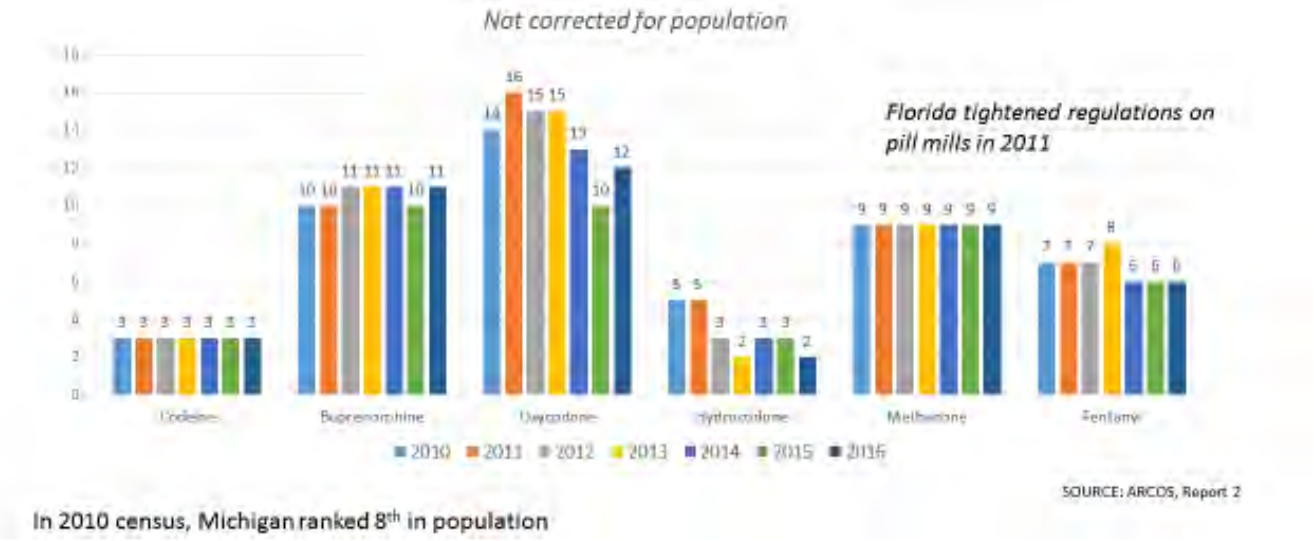


Exhibit 6. Changes Over Time in Wholesale Distribution of Oxycodone and Hydrocodone: Michigan 2010-2016



SOURCE: ARCOS, Report 2

Exhibit 7. Wholesale Distribution of Prescription Opioids: Michigan's Ranking from 2010-2016



In 2010 census, Michigan ranked 8th in population

Exhibit 8. Age-Adjusted Death Rates from Human Immunodeficiency Virus (HIV) in Wayne County by Race: 1999-2015

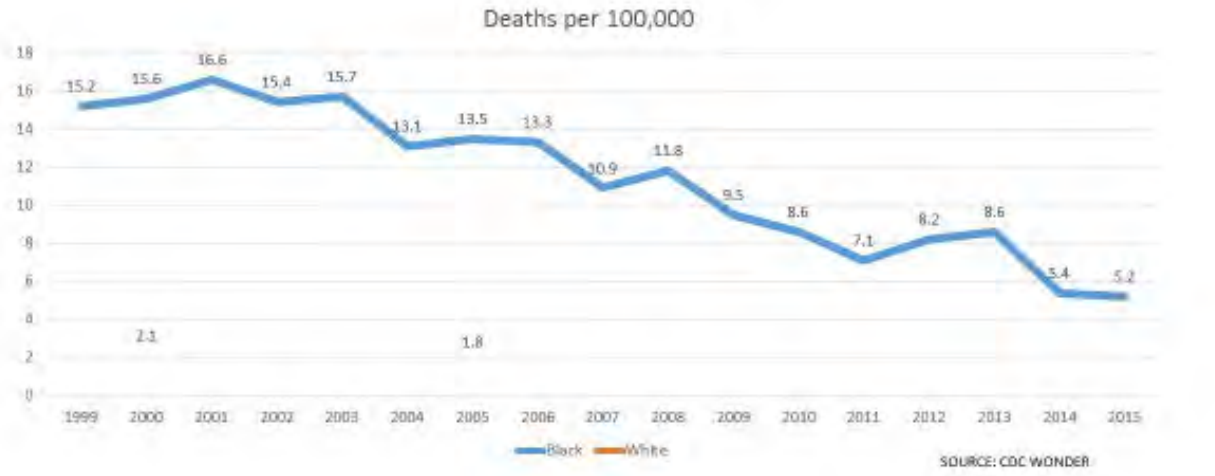


Exhibit 9: Percentage of Total NFLIS Reports from Drugs Seized and Analyzed, Wayne County, Michigan, and Nation, 2016

Ranking (Wayne County)	Drug Identified	Wayne County (*N* = 5,350)	State of Michigan (*N* = 27,631)	Nation (*N* = 1,452,594)
1	Cannabis	**49.6%**	**42.5%**	**24.7%**
2	Cocaine	17.8%	13.8%	13.9%
3	Heroin	11.5%	10.1%	11.5%
4	Alprazolam	2.9%	2.7%	3.3%
5	Hydrocodone	2.4%	3.2%	1.6%
6	Oxycodone	2.0%	1.2%	2.5%
7	Fentanyl	**1.7%**	**1.3%**	**2.4%**
8	Amphetamine	1.0%	1.6%	0.8%
9	Methamphetamine	**0.9%**	**6.2%**	**21.5%**
10	Codeine	**0.5%**	**0.4%**	**0.2%**
11	Buprenorphine	0.5%	1.2%	1.2%
(17)	Morphine	**0.2%**	**1.1%**	**0.4%**

Notes: Excludes reports of "No controlled drug identified." Up to 3 reports are recorded per item analyzed.

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. The data therefore underestimate the total number of people receiving treatment because they do 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. For Wayne County data, records are pulled from Behavioral Health electronic records. The data contained an unexpectedly high percentage of two or more races. Therefore, data on treatment admissions by race are not included in the report.

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 2016 as reported in May 2017. 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). The numbers reported for the total closed cases were reported publicly in May 2017 and for provisional data from February before all cases had been closed. The Office of the Medical Examiner changed how they completed the death certificates by moving to list all drugs detected as causes of death.

Drug poisoning death data are from the Centers for Disease Control and Prevention (CDC)'s online WONDER database (http://wonder.cdc.gov/).

Data on **fentanyl use in methadone-maintained clients** are from Arfken, C.l. Suchanek, J., Greenwald, M.K. "Characterizing fentanyl use in methadone-maintained clients." *J Subst Abuse Treat*. 2017 Apr;75:17-21. doi: 10.1016/j.jsat.2017.01.004. Epub 2017 Jan 14.

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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
2011–2015 ACS 5-Year Estimates

	Wayne County		Michigan	
	Estimate	Margin of Error	Estimate	Margin of Error
Total Population (#)	**1,778,969**	**	**9,900,571**	**
Age				
18 years and over (%)	75.7%	+/-0.1	77.3%	+/-0.1
21 years and over (%)	71.5%	+/-0.1	72.9%	+/-0.1
65 years and over (%)	13.5%	+/-0.1	15.0%	+/-0.1
Median Age (years)	37.8	+/-0.1	39.5	+/-0.1
Race (%)				
White, Not Hisp.	49.8%	+/-0.1	75.9%	+/-0.1
Black/African Am, Not Hisp.	39.2%	+/-0.1	13.8%	+/-0.1
Hispanic/Latino (of any race)	5.5%	**	4.7%	+/-0.1
American Indian/Alaska Native, Not Hisp.	0.3%	+/-0.1	0.5%	+/-0.1
Asian, Not Hisp.	2.9%	+/-0.1	2.7%	+/-0.1
Native Hawaiian/Pacific Islander, Not Hisp.	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	2.3%	+/-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	84.7%	+/-0.2	89.6%	+/-0.1
Bachelor's Degree or Higher	22.0%	+/-0.3	26.9%	+/-0.2
Unemployment (*Among Civilian Labor Force Population Aged 16+ Years***) (%)**				
Unemployment Rate	14.9%	+/-0.3	9.8%	+/-0.1
Income ($)				
Median Household Income (in 2015 inflation-adjusted dollars)	$41,210	+/-304	$49,576	+/-186
Health Insurance Coverage *(Among Civilian Noninstitutionalized Population)* **(%)**				
No Health Insurance Coverage	12.3%	+/-0.2	9.6%	+/-0.1
Poverty (%)				
All People Whose Income in Past 12 Months Is Below Poverty Level	25.0%	+/-0.4	16.7%	+/-0.1

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, 2011–2015 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

	Region: Wayne County^		Michigan	
Substance Use Behaviors	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), 2012-2016

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

	Calendar Year									
	2012		2013		2014		2015		2016	
	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)
Total Admissions (#)	**13,905**	**100%**	**13,189**	**100%**	**11,976**	**100%**	**13,420**	**100%**	**18,005**	**100%**
Primary Substance of Abuse (%)										
Alcohol	4,436	31.9%	4,223	32.0%	3,904	32.6%	4,582	34.1%	5,843	32.5%
Cocaine/Crack	1,778	12.8%	1,565	11.9%	1,220	10.2%	1,556	11.6%	1,938	10.8%
Heroin	4,965	35.7%	4,858	36.8%	4,867	40.6%	5,207	38.8%	7,726	42.9%
Prescription Opioids	880	6.3%	809	6.1%	746	6.2%	881	6.6%	992	5.5%
Methamphetamine	11	<0.1%	17	0.1%	24	0.2%	12	<0.1%	27	0.1%
Marijuana	1,622	11.7%	1,477	11.2%	1,049	8.8%	1,042	7.8%	1,242	6.9%
Benzodiazepines	140	1.0%	116	0.9%	96	0.8%	77	0.6%	165	0.9%
MDMA	6	<0.1%	2	<0.1%	8	<0.1%	4	<0.1%	unavail	unavail
Synthetic Stimulants***	unavail/sup	unavail/sup	unavail/sup	unavail/sup	unavail/sup	unavail/sup	8	<0.1%	21	0.1%
Synthetic Cannabinoids	0	0.0%	0	0.0%	0	0.0%	0	0.0%	unavail	unavail
Other Drugs/Unknown	67	0.5%	122	0.9%	62	0.5%	51	0.4%	51	0.3%

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 Treatment Admissions* for Select Substances of Abuse, Wayne County (Detroit Area), 2016

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		Synthetic Stimulants**		Synthetic Cannabinoids	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Number of Admissions (#)	**5,843**	**100%**	**1,938**	**100%**	**7,726**	**100%**	**992**	**100%**	**27**	**100%**	**1,242**	**100%**	**165**	**100%**	**21**	**100%**	**unavail**	**100%**
Sex (%)																		
Male	4,126	70.6%	1,266	65.3%	4,809	62.2%	495	49.9%	22	81.5%	806	64.9%	70	42.4%	13	61.9%	unavail	unavail
Female	1,717	29.4%	672	34.7%	2,917	37.8%	497	50.1%	5	18.5%	436	35.1%	95	57.6%	8	38.1%	unavail	unavail
Race/Ethnicity (%)																		
White, Non-Hisp.	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail
African-Am/Black, Non-Hisp	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail
Hispanic/Latino	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail
Asian	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail
Other	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail
Age Group (%)																		
Under 18	5	<0.1%	0	0.0%	2	<0.1%	3	0.3%	0	0.0%	208	16.7%	0	0.0%	0	0.0%	unavail	unavail
18-25	316	5.4%	84	4.3%	757	9.8%	145	14.6%	4	14.8%	375	30.2%	39	23.6%	2	9.5%	unavail	unavail
26-44	2,579	44.1%	628	32.4%	3,748	48.5%	583	58.8%	23	85.2%	532	42.8%	106	64.2%	16	76.2%	unavail	unavail
45+	2,943	50.4%	1,226	63.3%	3,219	41.7%	261	26.3%	0	0.0%	127	10.2%	20	12.1%	3	14.3%	unavail	unavail
Route of Administration (%)																		
Smoked	21	0.4%	1,719	88.7%	107	1.4%	12	1.2%	18	66.7%	1,188	95.7%	0	0.0%	0	0.0%	unavail	unavail
Inhaled	1	<0.1%	158	8.2%	3,182	41.2%	45	4.5%	3	11.1%	8	0.6%	3	1.8%	2	9.5%	unavail	unavail
Injected	1	<0.1%	4	0.2%	4,348	56.3%	47	4.7%	1	3.7%	1	<0.1%	0	0.0%	0	0.0%	unavail	unavail
Oral/Other/Unknown	5,820	99.6%	57	2.9%	89	1.2%	888	89.5%	5	18.5%	45	3.6%	162	98.2%	19	90.5%	unavail	unavail
Secondary Substance (%)																		
None	2,722	46.6%	691	35.7%	3,021	39.1%	339	34.2%	11	40.7%	673	54.2%	33	20.0%	9	42.9%	unavail	unavail
Alcohol	0	0.0%	696	35.9%	624	8.1%	82	8.3%	3	11.1%	377	30.4%	32	19.4%	2	9.5%	unavail	unavail
Cocaine/Crack	1,364	23.3%	0	0.0%	2,515	32.6%	88	8.9%	2	7.4%	110	8.9%	20	12.1%	1	4.8%	unavail	unavail
Heroin	198	3.4%	130	6.7%	0	0.0%	72	7.3%	4	14.8%	12	1.0%	17	10.3%	0	0.0%	unavail	unavail
Prescription Opioids	202	3.5%	36	1.9%	376	4.9%	13	1.3%	0	0.0%	28	2.3%	34	20.6%	3	14.3%	unavail	unavail
Methamphetamine	2	<0.1%	4	0.2%	13	0.2%	5	0.5%	0	0.0%	3	0.2%	0	0.0%	0	0.0%	unavail	unavail
Marijuana	1,197	20.5%	342	17.6%	549	7.1%	121	12.2%	6	22.2%	0	0.0%	26	15.8%	4	19.0%	unavail	unavail
Benzodiazepines	102	1.7%	19	1.0%	527	6.8%	213	21.5%	1	3.7%	13	1.0%	0	0.0%	2	9.5%	unavail	unavail
Synthetic Stimulants**	15	0.3%	2	0.1%	19	0.2%	24	2.4%	0	0.0%	8	0.6%	2	1.2%	0	0.0%	unavail	unavail
Synthetic Cannabinoids	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail	unavail

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: 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 (and category frequencies may not add to drug total 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 Poisoning Deaths*, by Drug and Year, *Wayne County (Detroit Area)*, 2011–2015**
Number, Crude Rate, and Age-Adjusted Rate* (per 100,000 population)**

	2011			2012			2013			2014			2015		
	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 Poisoning Deaths	**278**	**15.4**	**15.8**	**296**	**16.5**	**17.1**	**386**	**21.7**	**21.6**	**457**	**25.9**	**26.2**	**577**	**32.8**	**33.0**
Opioids‡	**121**	**6.7**	**6.8**	**146**	**8.1**	**8.4**	**252**	**14.2**	**14.1**	**262**	**14.8**	**15.1**	**415**	**23.6**	**24.0**
Heroin	64	3.6	3.6	70	3.9	3.9	147	8.3	8.2	166	9.4	9.5	234	13.3	13.7
Natural Opioid Analgesics	36	2.0	2.1	59	3.3	3.5	61	3.4	3.3	67	3.8	3.9	106	6.0	6.2
Methadone	SUP	SUP	SUP	13	UNR	UNR	23	1.3	1.3	16	UNR	UNR	27	1.5	1.4
Synthetic Opioid Analgesics	SUP	SUP	SUP	11	UNR	UNR	20	1.1	1.1	39	2.2	2.3	171	9.7	9.9
Benzodiazepines	**11**	**UNR**	**UNR**	**22**	**1.2**	**1.3**	**37**	**2.1**	**2.1**	**29**	**1.6**	**1.8**	**83**	**4.7**	**4.8**
Benzodiazepines **AND** Any Opioids	SUP	SUP	SUP	19	UNR	UNR	32	1.8	1.8	24	1.4	1.5	74	4.2	4.3
Benzodiazepines **AND** Heroin	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	11	UNR	UNR	36	2.0	2.3
Psychostimulants															
Cocaine	43	2.4	2.3	45	2.5	2.6	75	4.2	4.2	78	4.4	4.3	131	7.4	7.4
Psychostimulants with Abuse Potential	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	SUP	13	UNR	UNR
Cannabis (derivatives)	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**	**SUP**
Percent with Drugs Specified‡	**59.0%**			**60.5%**			**77.2%**			**68.9%**			**82.1%**		

NOTES:

***Drug Poisoning Deaths:** Drug poisoning deaths are 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 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.

*****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

Heroin (T40.1); *Natural Opioid Analgesics* (T40.2) - Including morphine and codeine, and semi-synthetic opioid analgesics, including drugs such as oxycodone, hydrocodone, hydromorphone, and oxymorphone; *Methadone* (T40.3); *Synthetic Opioid Analgesics* (T40.4) - Other than methadone, including 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* [excludes cocaine] (T43.6)

Cannabis (derivatives): (T40.7)

‡**Percent of Drug Poisoning Deaths with Drug(s) Specified:** Among drug 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 1999-2015, available on the CDC WONDER Online Database, released December 2016. Data compiled in the Multiple cause of death 1999-2015 were provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Retrieved between February 2017 - June 2017, from http://wonder.cdc.gov/mcd-icd10.html

Table 6a: Drug Reports* for Items Seized by Law Enforcement in Wayne County (Detroit Area) in 2016
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	**5,350**	**100.0%**
CANNABIS	2,651	49.6%
COCAINE	953	17.8%
HEROIN	613	11.5%
NO CONTROLLED DRUG IDENTIFIED	239	4.5%
ALPRAZOLAM	154	2.9%
HYDROCODONE	126	2.4%
OXYCODONE	108	2.0%
FENTANYL	90	1.7%
AMPHETAMINE	54	1.0%
METHAMPHETAMINE	50	0.9%
CODEINE	27	0.5%
BUPRENORPHINE	26	0.5%
PHENYLIMIDOTHIAZOLE ISOMER UNDETERMINED	26	0.5%
3,4-METHYLENEDIOXYMETHAMPHETAMINE (MDMA)	22	0.4%
DIPHENHYDRAMINE	16	0.3%
CARFENTANIL	13	0.2%
CLONAZEPAM	12	0.2%
MORPHINE	12	0.2%
OXYMORPHONE	10	0.2%
QUININE	10	0.2%
CAFFEINE	9	0.2%
CARISOPRODOL	8	0.1%
DIAZEPAM	8	0.1%
TRAMADOL	7	0.1%
FURANYL FENTANYL	6	0.1%
LYSERGIC ACID DIETHYLAMIDE (LYSERGIDE)	6	0.1%
PSILOCIN	6	0.1%
1-(3-TRIFLUOROMETHYL)PHENYL-PIPERAZINE (TFMPP)	5	< 0.1%
LIDOCAINE	5	< 0.1%
3,4-METHYLENEDIOXYETHYLCATHINONE (ETHYLONE)	4	< 0.1%
ACETAMINOPHEN	4	< 0.1%
CATHINONE	4	< 0.1%
DIBUTYLONE (BETA-KETO-N,N-DIMETHYL-1,3-BENZODIOXOLYLBUTANAMINE; BK-DMBDB)	4	< 0.1%
LISDEXAMFETAMINE	4	< 0.1%
3-FLUOROPHENMETRAZINE (3-FPM)	3	< 0.1%
BENZOCAINE	3	< 0.1%
LACTOSE	3	< 0.1%
METHADONE	3	< 0.1%
METHYLPHENIDATE	3	< 0.1%
PENTYLONE (ß-KETO-METHYLBENZODIOXOLYLPENTANAMINE)	3	< 0.1%
PHENTERMINE	3	< 0.1%
SOME OTHER SUBSTANCE	3	< 0.1%
TESTOSTERONE	3	< 0.1%
4-CHLOROMETHCATHINONE (4-CMC; CLEPHEDRONE)	2	< 0.1%
6-MONOACETYLMORPHINE	2	< 0.1%
ACETYLFENTANYL	2	< 0.1%
DIMETHYLSULFONE	2	< 0.1%
DIPYRONE	2	< 0.1%
LORAZEPAM	2	< 0.1%
NOSCAPINE	2	< 0.1%
QUETIAPINE	2	< 0.1%
SUCROSE	2	< 0.1%
2-(4-CHLORO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-C-NBOME)	1	< 0.1%
4-CHLORO-2,5-DIMETHOXYAMPHETAMINE (DOC)	1	< 0.1%
ALPHA-PYRROLIDINOPENTIOPHENONE (ALPHA-PVP)	1	< 0.1%
DIMETHYLTRYPTAMINE (DMT)	1	< 0.1%

Table 6a (cont'd): Drug Reports* for Items Seized by Law Enforcement in Wayne County (Detroit Area) in 2016
DEA National Forensic Laboratory Information System (NFLIS)

Drug Identified	Number (#)	Percent of Total Drug Reports* (#)
GABAPENTIN	1	< 0.1%
HYDROMORPHONE	1	< 0.1%
KETAMINE	1	< 0.1%
MANNITOL	1	< 0.1%
METHORPHAN	1	< 0.1%
PHENOBARBITAL	1	< 0.1%
TEMAZEPAM	1	< 0.1%
TRENBOLONE	1	< 0.1%
ZOLPIDEM	1	< 0.1%

NOTES:
Important Note About Reporting Labs: The MI State Police began reporting data from a lab in Detroit starting in March 2016.
***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 - December 2016.

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 28, 2017.

Table 6b: Drug Reports* for Items Seized by Law Enforcement in Wayne County (Detroit Area) in 2016
DEA National Forensic Laboratory Information System (NFLIS)

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

Drug Identified, by Selected Drug Category**	Number (#)	Percent of Drug Category (%)	Percent of Total Reports (%)
Total Drug Reports*	**5,350**	**100.0%**	**100.0%**
Opioids Category	**1,049**	**100.0%**	**19.6%**
Heroin	**613**	**58.4%**	**11.5%**
Narcotic Analgesics	**418**	**39.8%**	**7.8%**
HYDROCODONE	126	12.0%	2.4%
OXYCODONE	108	10.3%	2.0%
FENTANYL	90	8.6%	1.7%
CODEINE	27	2.6%	0.5%
BUPRENORPHINE	26	2.5%	0.5%
MORPHINE	12	1.1%	0.2%
OXYMORPHONE	10	1.0%	0.2%
TRAMADOL	7	0.7%	0.1%
FURANYL FENTANYL	6	0.6%	0.1%
METHADONE	3	0.3%	< 0.1%
ACETYLFENTANYL	2	0.2%	< 0.1%
HYDROMORPHONE	1	< 0.1%	< 0.1%
Narcotics	**18**	**1.7%**	**0.3%**
CARFENTANIL	13	1.2%	0.2%
6-MONOACETYLMORPHINE	2	0.2%	< 0.1%
NOSCAPINE	2	0.2%	< 0.1%
METHORPHAN	1	< 0.1%	< 0.1%
Synthetic Cathinones Category	**14**	**100.0%**	**0.3%**
Synthetic Cathinones	**14**	**100.0%**	**0.3%**
3,4-METHYLENEDIOXYETHYLCATHINONE (ETHYLONE)	4	28.6%	< 0.1%
DIBUTYLONE (BETA-KETO-N,N-DIMETHYL-1,3-BENZODIOXOLYLBUTANAMINE; BK-DMBDB)	4	28.6%	< 0.1%
PENTYLONE (ß-KETO-METHYLBENZODIOXOLYLPENTANAMINE)	3	21.4%	< 0.1%
4-CHLOROMETHCATHINONE (4-CMC; CLEPHEDRONE)	2	14.3%	< 0.1%
ALPHA-PYRROLIDINOPENTIOPHENONE (ALPHA-PVP)	1	7.1%	< 0.1%
Piperazines Category	**5**	**100.0%**	**< 0.1%**
Piperazines (Hallucinogen)	**5**	**100.0%**	**< 0.1%**
1-(3-TRIFLUOROMETHYL)PHENYL-PIPERAZINE (TFMPP)	5	100.0%	< 0.1%
Phenethylamines (2C Series) (H) Category	**1**	**100.0%**	**< 0.1%**
2-(4-CHLORO-2,5-DIMETHOXYPHENYL)-N-(2-METHOXYBENZYL)ETHANAMINE (25-C-NBOME)	1	100.0%	< 0.1%
Tryptamines Category	**1**	**100.0%**	**< 0.1%**
DIMETHYLTRYPTAMINE (DMT)	1	100.0%	< 0.1%

NOTES:

Important Note About Reporting Labs: The MI State Police began reporting data from a lab in Detroit starting in March 2016.

***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 - December 2016.

****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 28, 2017.

National Drug Early Warning System (NDEWS) Sentinel Community Site (SCS) Drug Use Patterns and Trends, 2017: 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.

Overview and Limitations of American Community Survey (ACS) Data

Data on demographic, social, and economic characteristics are based on 2011–2015 American Community Survey (ACS) 5-Year Estimates, collected between January 1, 2011 and December 31, 2015. 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; *2011–2015 American Community Survey 5-Year Estimates;* Tables DP02, DP03, and DP05; using American FactFinder; http://factfinder.census.gov; Accessed April 2017; 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

Overview and Limitations of National Survey of Drug Use and Health (NSDUH) Data

NSDUH is an annual 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 produced from a hierarchical Bayes model-based small area estimation (SAE) 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. The goal of this method is to enhance statistical power and analytic capability, and to provide more precise estimates of substance use and mental health outcomes within and across states. [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, also referred to as planning regions or substate areas, 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 or groups of counties, while 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 Sentinel Community Site (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 in the civilian, noninstitutionalized population 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 August 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 August 2016.

Overview and Limitations of Youth Risk Behavioral Survey (YRBS) Data

The Youth Risk Behavior Surveillance System (YRBSS) was established in 1991 by the Centers for Disease Control and Prevention (CDC) to monitor six priority health-risk behaviors that contribute to the leading causes of morbidity and mortality among youth and young adults in the United States.[a] The 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.[a] One component of the surveillance system is the biennial school-based Youth Risk Behavior Survey (YRBS). Survey results are based on representative samples of high school students in the nation, States, tribes, and select large urban school district across the country.[a] Weighted survey estimates of alcohol and drug use are presented for the nation and the YRBS state and large urban school district catchment areas that most closely represent each NDEWS SCS.

The national YRBS estimates are representative of all students in grades 9–12 attending **public and private** schools in the 50 states and the District of Columbia. Public schools in the national sample might include charter schools and public alternative, special education, or vocational schools. Private schools in the national sample might include religious and other private schools, but they do not include private alternative, special education, or vocational schools.[a]

The estimates for the NDEWS Sentinel Community Sites (SCS) catchment areas are represented by state and large urban school districts. Only jurisdictions with an overall response rate ≥60% are presented. See Table A for sample size and overall response rate for each SCS. The weighted estimates for state and large urban school districts are representative of all students in grades 9–12 attending **public** schools in each of their respective jurisdictions.[b] State and substate public schools might include charter schools; public alternative, special education, or vocational schools; and schools overseen by the Bureau of Indian Education.[b] In 2015, data were not available for 5 NDEWS sites and YRBS regions did not correspond exactly to the catchment areas of each NDEWS SCS:

- 2015 YRBS survey results were unavailable for the following 5 SCSs: Chicago Metro, Atlanta Metro, Texas, Denver Metro, and King County.
- The Detroit YRBS is used to represent the Wayne County SCS; Detroit does not represent the entire Wayne County catchment area.
- The Southeastern Florida (Miami Area) SCS reporting area includes separate results for each of the 3 counties making up the SCS reporting area.

Thus, results for 9 YRBS reporting areas representing 7 of the 12 NDEWS SCSs are presented in the YRBS Cross-Site Data Presentation. See Figures and Tables for description of the YRBS catchment areas, where available, used to represent each NDEWS SCS. For more information about the YRBSS and 2015 YRBS survey methodology, see *Youth Risk Behavior Surveillance—United States, 2015*.

Table A: Sample Sizes and Overall Response Rates, United States and Selected YRBS Sites, YRBS, 2015

NDEWS SCS	YRBS Site	Student Sample Size (#)	Overall Response Rate (%)
United States	**National Sample**	**15,624**	**60%**
Maine	Maine	9,605	66%
Los Angeles County	Los Angeles	2,336	81%
New York City	New York City	8,522	70%
Philadelphia	Philadelphia	1,717	68%
San Francisco	San Francisco	2,181	82%
Southeastern Florida (Miami Area)	Broward County Miami-Dade County Palm Beach County	1,413 2,728 2,490	72% 78% 71%
Wayne County (Detroit Area)	Detroit	1,699	67%

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 2012, approximately 3% of persons aged 16–17 years were not enrolled in a high-school program and had not completed high school.[c] 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.[d]

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.[e]

Notes about Data Terms

Lifetime Prescription Drug Misuse is defined as "*taken prescription drugs (e.g., Oxycontin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription one or more times during their life"*.

Lifetime Inhalant Use is defined as "*sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high one or more times during their life"*.

Lifetime Synthetic Cannabinoid Use is defined as "*used "synthetic marijuana" (also called "K2," "Spice," "fake weed," "King Kong," "Yucatan Fire," "Skunk," or "Moon Rocks") one or more times during their life"*.

Past Month 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), 1991–2015 High School Youth Risk Behavior Survey Data. Available at http://nccd.cdc.gov/youthonline/. Accessed on [10/11/2016].

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

[a]Brener N, Kann L, Shanklin S, et al. Methodology of the Youth Risk Behavior Surveillance System—*2013.* MMWR Recomm Rep; 2013, 62(No. RR-1);1–20. Available at http://www.cdc.gov/mmwr/pdf/rr/rr6201.pdf. Accessed on [4/10/2015].

[b]Kann L, McManus T, Harris WA, et al. Youth Risk Behavior Surveillance—United States, 2015. MMWR Surveill Summ 2016; 65(No. SS-6);1–174. Available at https://www.cdc.gov/mmwr/volumes/65/ss/ss6506a1.htm Accessed on [10/11/2016].

[c]Stark P, Noel AM. Trends in high school dropout and completion rates in the United States: 1972–2012 (NCES 2015-015). US Department of Education. Washington, DC: National Center for Education Statistics; 2015. Available at http://nces.ed.gov/pubs2015/2015015.pdf

[d]CDC. Health risk behaviors among adolescents who do and do not attend school—United States, 1992. MMWR 1994;43(08):129–32.

[e]Eaton DK, Lowry R, Brener ND, et al. 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.

Overview and Limitations of Treatment Admissions Data from Local Sources

Treatment admissions data provide indicators of the health consequences of drug use and their impact on the treatment system.[a] The 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 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 reported to the NDEWS Coordinating Center by the NDEWS Sentinel Community Epidemiologist for each SCS, when available. Calendar year 2016 data were available for 10 of 12 NDEWS SCSs; data were not available for the Atlanta Metro and Chicago SCSs. See below for site-specific information about the data.

Site-Specific Notes about 2016 Treatment Data and Sources of the Data

- **Atlanta Metro**

  Data Availability: Calendar year 2015 and 2016 data are not available; therefore data for 2012–2014 are presented in the Atlanta Metro SCS Data Tables and Snapshot.

  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, Pickens, 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: Calendar Year (CY) data are not available for the Chicago SCS so fiscal year data are presented. Data for 2016 were also not available at this time so FY2012-2015 are presented.

  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 Human Services, Division of Alcoholism and Substance Abuse (DASA).

❖ **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 (excluding detox and DUI) 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. Treatment data presented in this year's report differ from data presented in previous SCS reports due to a change in access to treatment data and/or a change in query search terms.
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:

Data Availability: 2016 figures are estimates based on doubling preliminary numbers reported for July-December 2016.
Treatment authorizations: Includes admissions to outpatient, opioid treatment programs and residential 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 hydromorphine, other opiates and synthetics, and oxycodone.

Source: Data provided to the King County (Seattle Area) NDEWS SCE by the Washington State Department of Social and Health Services (DSHS) and King County Behavioral Health and Recovery Division for July-Dec 2016.

❖ **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 (2013–2016 data) and the California Department of Drug and Alcohol Programs (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 24, 2017 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 and 2016 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 3,507 in 2016. However, similar patterns of substance use were observed among those seeking treatment in 2014 and in 2015.

Beginning in FY2015, services funded by the Pennsylvania Department of Drug and Alcohol Programs and tracked by BHSI for OAS are required to report through an Internet portal. This new reporting system does not require drug of choice in the data collection. The impact of this change in reporting protocol resulted in an increase in the proportion of "unknown" drug of choice in subsequent years.

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: Treatment episodes include clients admitted in prior years who are still receiving services in a particular year (e.g., methadone maintenance clients). 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 (SFDPH), 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 admissions of all clients in programs receiving any public funding located in Miami-Dade, Broward and Palm Beach counties as provided by the Florida Department of Children and Families Office of Substance Abuse and Mental Health. Each admission does not necessarily represent a unique individual because some individuals are admitted to treatment more than once in a given period.

2012–2013: Data for Palm Beach County is not available for 2012–2013, therefore, data for 2012–2013 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, Office of Substance Abuse and Mental Health.

❖ **Texas**

Notes & Definitions:

Admissions: Includes all admissions reported to the Clinical Management for Behavioral Health Services (CMBHS) of the Texas Health and Human Services Commission, Behavioral Health Services (HHSC BHS). 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.

Please Note: Treatment data presented in this year's report differ from data presented in previous NDEWS reports because the treatment data for Texas have been revised.

Source: Data provided to the Texas NDEWS SCE by the Texas Health and Human Services Commission, Behavioral Health Services (HHSC BHS).

❖ **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

Overview and Limitations of CDC WONDER Multiple Cause of Death Data

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 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:

> 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-

[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.

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%. Thus, 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. national, state, and county resident populations. The year 2010 populations are April 1 modified census counts. The year 2011–2015 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)

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 1999–2015*, available on the CDC WONDER Online Database, released December 2016. Data compiled in the *Multiple cause of death 1999–2015* were provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Retrieved between February 2017 - June 2017, 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.

Overview and Limitations of National Forensic Laboratory Information System (NFLIS) Data

The Drug Enforcement Administration's (DEA) National Forensic Laboratory Information System (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 NFLIS participation rate, defined as the percentage of the national drug caseload represented by laboratories that have joined NFLIS, is currently over 98%. 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 2016 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 are included in the counts. Please note that previously published 2014 and 2015 San Francisco County NDEWS reports did not include SFPD cases analyzed by the Alameda Sheriff Department laboratory. The dramatic increases in this year's 2016 data, compared to 2014 and 2015, are a result of the inclusion of SFPD data analyzed by the Alameda laboratory.
- **Texas:** The Austin Police Department laboratory resumed reporting for 2016. Dallas Institute of Forensic Science is a new lab reporting all 2016 data to date.
- **Wayne County (Detroit Area):** The Michigan State Police began reporting data from a lab in Detroit starting in March 2016.

Notes about Data Terms

SCS 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.

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 through December 2016. Data were retrieved from the NFLIS Data Query System (DQS) on May 28, 2017. Please note that

the data are subject to change; data queried on different dates may reflect differences in the time of data analyses and reporting.

National Estimates in Table 5a of the Cross-Site Data Presentation of NFLIS data: The top 10 most frequently identified drugs in the United States are included in Table 5a; this list comes from the DEA's *National Forensic Laboratory Information System (NFLIS) Annual 2016 Report* and is based on national estimates of drug reports using the NEAR (National Estimates Based on All Reports) approach. The NEAR estimates are based on cases and items submitted to laboratories from January through December 2016 that were analyzed by March 31, 2017. A national sampling frame of all State and local forensic laboratories that routinely perform drug chemistry analyses has been developed based on laboratory-specific information, such as annual caseloads, ascertained from a 1998 survey (updated in 2002, 2004, 2008, and 2013).[a] A probability proportional to size (PPS) sample was drawn on the basis of annual cases analyzed per laboratory resulting in a NFLIS national sample of 29 State laboratory systems and 31 local or municipal laboratories, and a total of 168 individual laboratories.[a] Over the years, the number of non-sampled laboratories reporting to NFLIS has increased, so the DEA sought ways to use the data submitted by these "volunteer" laboratories. Since 2011, data from the "volunteer" laboratories have been included and assigned a weight of one. Estimates are more precise, especially for recent years, due to this inclusion of a large number of volunteer laboratories. This precision allows for more power to detect trends and fewer suppressed estimates."[a]

Since 2011, for each drug item (exhibit) analyzed by a laboratory in the NFLIS program, up to three drugs were reported to NFLIS and counted in the estimation process. A further enhancement to account for multiple drugs per item was introduced in 2017 for the 2016 Annual Report. All drugs reported in an item are now counted in the estimation process. This change ensures that the estimates will take into consideration all reported substances including emerging drugs of interest that may typically be reported as the fourth or fifth drug within an item. This change was implemented in the 2016 data processing cycle and for future years.[a] (See *National Forensic Laboratory Information System (NFLIS): Statistical Methodology* report for more information about how the national estimates are derived).

NPS Categories: 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 butyryl fentanyl).

A complete list of drugs included in the Other Fentanyls category that were reported to NFLIS during the January to December 2016 timeframe includes:

3-METHYLFENTANYL
3-METHYLTHIOFENTANYL
4-METHOXY-BUTYRYL FENTANYL
ACETYL-ALPHA-METHYLFENTANYL
ACETYLFENTANYL
ACRYL-ALPHA-METHYLFENTANYL
ACRYLFENTANYL
ALFENTANIL
ALPHA-METHYLFENTANYL
ALPHA-METHYLTHIOFENTANYL
BENZYLFENTANYL
BETA-HYDROXY-3-METHYLFENTANYL

BETA-HYDROXYFENTANYL
Beta-HYDROXYTHIOFENTANYL
BUTYRYL FENTANYL
CARFENTANIL
CIS-3-METHYLFENTANYL
DESPROPIONYL FENTANYL
FLUOROFENTANYL
FLUOROISOBUTYRYLFENTANYL
FURANYL FENTANYL
LOFENTANIL
ORTHO-FLUOROFENTANYL
P-FLUOROBUTYRYL FENTANYL (P-FBF)
P-FLUOROFENTANYL
P-FLUOROISOBUTYRYL FENTANYL
REMIFENTANIL
SUFENTANIL
THENYLFENTANYL
THIOFENTANYL
TRANS-3-METHYLFENTANYL
VALERYL FENTANYL

Sources

***Data Sources*:** SCS Drug Report data 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 NFLIS Data Query System (DQS) May 28, 2017.

National estimates adapted by the NDEWS Coordinating Center from data provided by the U.S. Drug Enforcement Administration (DEA), Diversion Control Division. (2017) *National Forensic Laboratory Information System: 2016 Annual Report.* Springfield, VA: U.S. Drug Enforcement Administration. Available at: https://www.nflis.deadiversion.usdoj.gov/DesktopModules/ReportDownloads/Reports/NFLIS2016AR.pdf

***Overview/Methods/Limitations Sources*:** [a]Adapted by the NDEWS Coordinating Center from U.S. Drug Enforcement Administration (DEA), Diversion Control Division. (2017) *National Forensic Laboratory Information System: 2016 Annual Report.* Springfield, VA: U.S. Drug Enforcement Administration. Available at: https://www.nflis.deadiversion.usdoj.gov/DesktopModules/ReportDownloads/Reports/NFLIS2016AR.pdf

U.S. Drug Enforcement Administration (DEA), Diversion Control Division. (2017) *National Forensic Laboratory Information System: Statistical Methodology Revised September 2017.* Springfield, VA: U.S. Drug Enforcement Administration. Available at: https://www.nflis.deadiversion.usdoj.gov/DesktopModules/ReportDownloads/Reports/NFLIS-2017-StatMethodology.pdf