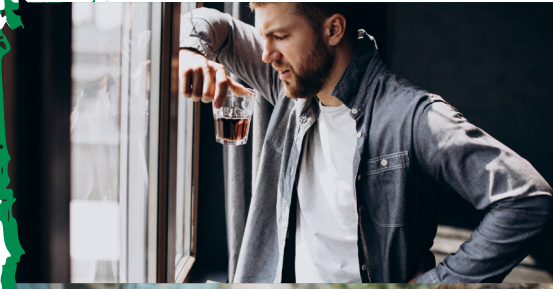
The Prevalence, Consumption, and Consequences of Alcohol, Tobacco, Marijuana, Opioids, Stimulants, Mental Health, Problem Gambling, and Viral Hepatitis/HIV/AIDS in INDIANA, SFY 2023

A STATE EPIDEMIOLOGICAL PROFILE








Developed by Indiana State Epidemiological Outcomes Workgroup

SyraHealth

INDIANA FAMILY & SOCIAL SERVICES ADMINISTRATION

The Prevalence, Consumption, and Consequences of Alcohol, Tobacco, Marijuana, Opioids, Stimulants, Mental Health, Problem Gambling, and Viral Hepatitis, HIV, AIDS in Indiana:

A State Epidemiological Profile

Developed by the Indiana State Epidemiological Outcomes Workgroup, 2022-2023

OUR VISION

Healthy, safe, and drug-free environments that nurture and assist all Indiana citizens to thrive.

OUR MISSION

To reduce substance use and abuse across the lifespan of Indiana citizens.

Published by **Syra Health**

The following document analyzes and presents data to support the development of a framework for advancing the mission of the Indiana Substance Abuse Prevention System. The intended audience of this document is for state policymakers and community leaders.

More information about SEOW, reports and dashboards can be viewed in the below website: https://www.in.gov/fssa/dmha/substance-misuse-prevention-and-mental-health-promotion/prevention-partners/state-epidemiological-outcomes-workgroup/

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About Syra Health

Syra Health is a healthcare professional services company that provides unique and innovative patient-centric solutions to a plethora of entities and organizations involved in improving patient care and health outcomes at a local, community, state, and national level.

At Syra Health, we strongly believe in behavioral health equity and strive to provide quality health care to all populations, regardless of race, ethnicity, gender, socioeconomic status, sexual orientation, or geographic location. Prevention, specialized clinical workforce, and recovery services for mental and substance use disorders are among our services to the Indiana population. At the core of our services is health education and outreach for healthcare personnel and patients, our team develops strategic and insightful content through medical storytelling to instill confidence in clinical decisions and provide knowledge to healthier living.

Since 2021, Syra Health has been supporting the ongoing efforts of State Epidemiological Outcomes Workgroup by monitoring substance use and mental health. We also provide data-driven evidence-based solutions to improve public health and evaluate/frame public policies. We are in the process of evaluating the Indiana's regional prevention system and providing recommendations for improvement.

Additionally, Syra Health has a broad team of data scientists, public health experts, health economists, and biostatisticians that provide advanced health analytics on retrospective to real-world data to provide meaningful insights to improve quality of clinical care, understand patterns and trends around diagnosis, treatment, and continued care.

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CHAPTER 01

Executive Summary

The Indiana Statewide Epidemiological Outcomes Workgroup (SEOW) is comprised of committee members from over 16 state agencies/divisions from the state of Indiana who are knowledgeable about mental, emotional, and behavioral health disorders, as well as prevention, intervention, and treatment. The goal of the SEOW committee is to monitor the prevalence of substance misuse and mental illness in Indiana and implement state-based interventions to reduce the occurrence of related behavioral health issues. The SEOW is committed to using epidemiological data and evidence-based practices to assess the needs of all Indiana residents and to promote physical and mental wellness to combat drug addiction, mental illness, and suicide. The SEOW Annual Report describes the prevalence, consequences, and other behavioral health indicators of alcohol, tobacco, marijuana, opioid, and stimulant use and the occurrence of mental illness and suicide. For this report, the SEOW workgroup identified several indicators from various national and state data sources that were relevant to monitor substance use, and mental health based on relevance, timeliness, validity, and representation. These measures help identify emerging trends related to the state of behavioral and mental health in Indiana. This report also shows the changes in data relative to prior years for most measures.

ALCOHOL

Alcohol is widely consumed in the U.S, with misuse leading to numerous health issues and over 3 million global deaths per year. In 2021, 44.1% of Hoosiers aged 12 and older were current alcohol users, with young adults (18 to 25) exhibiting higher usage at 51.5% (NSDUH, 2022). Binge drinking was reported among 21.1% of Hoosiers aged 12 and older, and 32.5% among young adults (NSDUH, 2022). Adult alcohol use slightly increased to 51.9% in 2021, with men reporting a slight decrease and women showing a significant increase (CDC-BRFSS, 2022). Alcohol Use Disorder was reported by 10.6% of the Indiana population aged 12 and older (NSDUH, 2022). Consequences of high alcohol use rates include an alcohol-attributable mortality rate of 14.8 per 100,000 population in 2021 (CDC,2022) and a contributing factor in 10.2% of child removal cases (IN-DCS, 2022).

TOBACCO

Tobacco use is a major public health concern in the U.S., with 28.3 million adults and 3.08 million middle to high school students regularly using tobacco products, including cigarettes and e-cigarettes (CDC, 2023). The habit claims nearly 500,000 lives annually and leaves 16 million living with smoking-related illnesses, costing over $225 billion for medical care yearly (CDC, 2023). In Indiana, the 2021 data showed a decrease in tobacco use to 23.8%, with 18.9% being cigarette smokers, and a notable decrease among men and women (NSDUH, 2022; CDC-BRFSS, 2022). High smoking rates persist among working-age adults, less-educated individuals, and lower-income groups (CDC-BRFSS, 2022). Despite a decline in Indiana's smoking rates from 2011 to 2021, they remain above the national average (CDC-BRFSS, 2022).

MARIJUANA

Marijuana, the most used illicit drug in the U.S, was reportedly consumed by about 18% of the population in 2019 (CDC, Data and Statistics, 2021). In Indiana, marijuana use increased by 0.8% in 2021, with 11.7% of people aged 12+ reporting usage, although the percentage of young adults (18-25) reporting past-month use slightly decreased

to 25.5% (NSDUH, 2022). Nearly half (48.6%) of the 2022 treatment episodes involved marijuana, up 1.5% from the previous year, with marijuana being the primary substance in 18.8% of cases (IN-DMHA, 2023).

OPIOID

Opioid use remains a major issue in Indiana, with a dispensation rate of 178.4 per 1,000 population in 2022, although it showed a slight decrease from the prior year (IDOH, 2022). The reported misuse of these drugs, including analgesics and addiction treatment was 1.5% among Hoosiers aged 12 and above (NSDUH, 2022). However, opioids still account for 16.8% of treatment admissions in 2022 (IN-DMHA, 2023), including 7.4% where opioids were identified as the primary substance.

Heroin use is a small part of the opioid crisis, with 0.3% of the population aged 26 and older reporting usage in the past year (NSDUH, 2022). It figured in 21.8% of total treatment admissions (IN-DMHA, 2023).

The consequences of opioid use, such as drug overdoses, have escalated from 1,098 deaths in 2018 to 2,205 in 2021 (IDOH, 2023). Furthermore, there were 2,812 drug poisoning deaths in 2021 (IDOH, 2022). Emergency department visits due to opioid overdose also increased in 2021 to 8,193 (IDOH, 2023).

STIMULANTS

Based on the 2021 NSDUH data, 1.5% of Hoosiers reported previous year cocaine use, a 0.3-point decrease from 2020. Cocaine use was reported by 2.9% of young adults aged 18-25 (NSDUH, 2022). Treatment admissions in 2022 indicated 11% with cocaine use, up 0.8 points, with 4% naming it as the primary substance, a 0.7-point increase (IN-DMHA, 2023).

The 2021 NSDUH data showed 1.0% of Hoosiers used methamphetamine, a 0.2-point decrease from the previous year (NSDUH, 2022). In 2022, treatment admissions showed 42.9% reported methamphetamine use, up 1.5 points, with 25.4% as the primary substance, a 1.4-point increase from the previous year (IN-DMHA, 2023).

In 2022, Indiana had 22 meth lab seizures, down 16 from 2021, and 17 meth lab arrests, down 22 from the previous year (ISP, 2023).

POLYSUBSTANCE ABUSE

In SFY 2022, 34.8% of individuals in Indiana substance use treatment reported opioid use as a main substance (IN-DMHA, 2023). Polysubstance abuse was evident, with methamphetamine (52.8%), marijuana (34.2%), and alcohol (18.2%) commonly used alongside opioids.

MENTAL HEALTH

The 2021 NSDUH report showed that 23.7% of Indiana residents aged 18 and over experienced a mental illness in the past year, a 1.9% increase from the previous period. Serious mental illness was reported by 6.0%, a 0.8% decrease. Major depressive episodes were reported by 9.4% of Hoosiers, a 0.6% increase (NSDUH, 2022). According to the CDC-BRFSS 2021 data, depression diagnoses increased for both men (16.2%) and women (31.8%). Furthermore, depression rates increased across all race groups (CDC-BRFSS, 2022). The suicide mortality rate in Indiana was 16.4 per 100,000 in 2021, a 1.4% rise, with men having a higher rate (25.2 per 100,000) than women (6.1 per 100,000) (CDC, 2022).

PROBLEM GAMBLING

The Indiana Problem Gambling Study by Jun et al. (2021) found that a significant portion of adults in Indiana participate in various gambling activities. According to the study, 84.8% of adults in Indiana reported participating in at least one form of gambling within the past year (Jun et al., 2021). Notably, 71.7% played the lottery, 20.5% participated in sports gaming, and 46.2% visited casinos. The study also revealed that 72.3% engaged in other forms of gambling and 40.4% reported engaging in casino gambling. These findings illuminate the high prevalence and diverse gambling preferences among Indiana adults, highlighting the need for responsible gambling initiatives and support services.

VIRAL HEPATITIS/HIV/AIDS

According to the Indiana Department of Health Office of Data Analytics Stats Explorer, in 2021, Indiana saw a slight increase in the prevalence rates of HIV/AIDS (from 185.6 to 193 cases per 100,000), Chlamydia (from 487.7 to 510.6 cases per 100,000), and Gonorrhea (from 207 to 212.8 cases per 100,000). Rates of new acute and chronic Hepatitis B were 1.2 and 11.8 cases per 100,000, respectively, while those of Hepatitis C were 2.9 (acute) and 70.4 (chronic) cases per 100,000.

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CHAPTER 02

Alcohol Use in Indiana: Prevalence And Consequences

INTRODUCTION

Alcohol is the most widely consumed substance in the United States and the world. The 2019 National Survey on Drug Use and Health (NSDUH) found that 85.6% of Americans over the age of 18 have consumed alcohol at some point in their life (NSDUH, 2021). Excessive drinking in a short period (binge drinking) occurred with 15.7% and 15.4% of the US population in 2021 and 2022, respectively (CDC, 2022). Excessive drinking and alcohol misuse have been associated with various adverse health conditions.

Alcohol has become increasingly more accessible and appealing in the last couple of years, and consumption has trended upwards. Wide social acceptance, stress, the environment, and other factors have led to the harmful misuse of alcohol. During the COVID-19 pandemic, many Americans faced an enormous amount of mental stress from quarantine. Anxiety or depressive disorders increased by 30% and alcohol or substance abuse increased by 12% (Panchal et al., 2021). In response to the economic impacts of the pandemic, many American environments saw a change in accessibility to alcohol. In Indiana, House Bill 1396 relaxed restrictions on the sale of alcohol and permitted restaurants to allow "to go" forms of alcohol to be delivered to patrons (Smaltz, Clere, Bartels, & May, 2021). Beer, wine, and liquor sales increased by 20% during the pandemic since many Americans were able to order alcohol online and have it delivered to their front door (Castaldelli- Maia et al., 2021).

Alcohol misuse is also related to numerous adverse health conditions that could lead to death. Overconsumption and harmful drinking of alcohol have contributed to over 3 million deaths a year worldwide (World Health Organization, 2022). In 2019, alcohol-related vehicle accidents contributed to over 10,000 deaths, 106 of which were in Indiana alone (Thelin, 2020). The economic impact of alcohol misuse in the U.S. reached over $249 billion in 2010 through loss in work productivity, healthcare expenses, criminal justice expenses, and other expenses (Sacks et al., 2015).

As the prevalence of alcohol consumption for age groups under 25 increases, rates of alcohol misuse may also increase. Misuse can lead to unintended consequences such as alcohol overdoses, sexual assaults, injuries, and deaths. Long-term health consequences of alcohol abuse include chronic liver disease, low self-esteem, depression, and impeded brain development (NIH, 2004). Mortality is increased in people with liver disease due to heavy alcohol use; about 44% of deaths from liver disease are due to alcohol (Basra, 2011).

PREVALENCE OF ALCOHOL CONSUMPTION IN THE GENERAL POPULATION

National Survey on Drug Use and Health

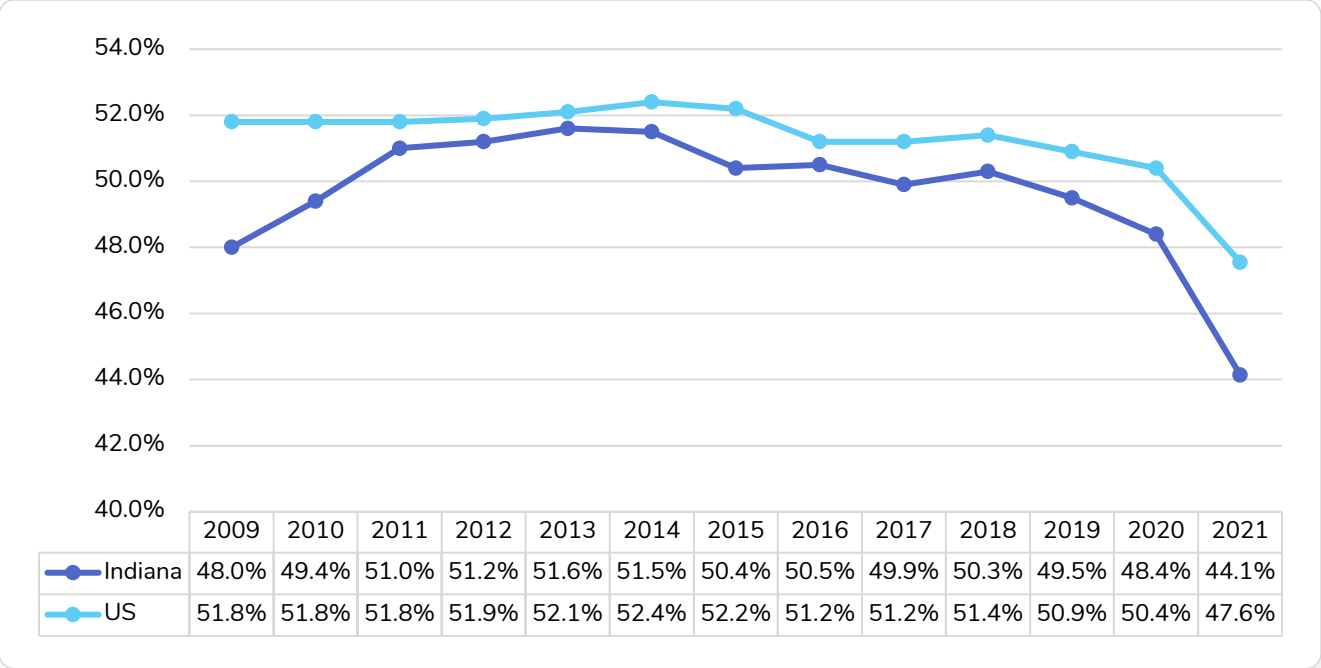
The Substance Abuse and Mental Health Services Administration (SAMHSA)'s National Survey on Drug Use and Health (NSDUH) showed that an estimated 44.14% (95% Confidence Interval [CI]: 40.09-48.27) of Indiana residents ages 12 and up used alcohol in the past month. Indiana's prevalence rate for current alcohol use [in past 30 days or past month] is lower than the national rate of 47.55% (95% CI: 46.75-48.35) (See Figure 2.1). The alcohol use among young adults ages 18-25 at 51.46% (95% CI: 45.48-57.41) (U.S.: 50.13%, 95% CI: 48.61-51.65). of repetitive (See Figure 2.2). In the age group 12-17, 6.00% (95% CI: 4.27-8.38) of young people reported alcohol consumption in the past 30 days, slightly below the nation's average of 6.99% (95% CI: 6.22-7.85) (NSDUH, 2022)

Under NSDUH, binge drinking is defined as "five or more drinks (for males) or four or more drinks (for females) on the same occasion (i.e., at the same time or within a couple of hours of each other)" on at least 1 day in the past 30 days ("Section 2 PE Tables," 2021, (NSDUH, 2022).

NSDUH estimated that in 2021, 21.05% of Indiana's population 12 years of age or older reported current binge drinking (95% CI: 18.29-24.11); this represents a rate similar to the national average of 21.45% (95% CI: 20.85-22.07). Binge drinking was more prevalent among 18 to

25 year olds than among any other age group (IN: 32.53%; 95% CI: 26.94-38.65; U.S.: 29.15%; 95% CI: 27.81-30.54). 2020 binge drinking rates in individuals ages 12 to 20 were similar in Indiana (6.74%; 95% CI: 5.16-8.75) and the U.S. (8.29%; 95% CI: 7.61-9.03) (NSDUH, 2022) (See Figure 2.3).

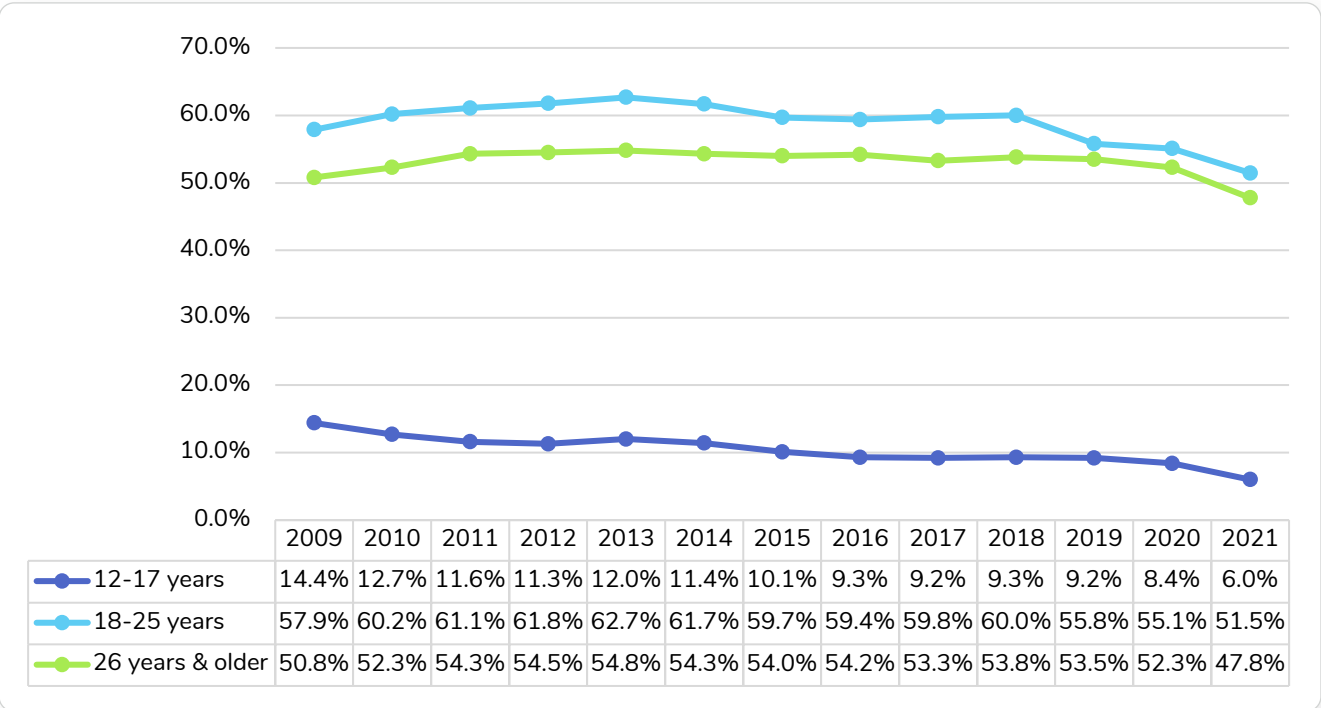
Figure 2.1 Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Current Alcohol Use (National Survey on Drug Use and Health, 2009–2021)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	48.0%	49.4%	51.0%	51.2%	51.6%	51.5%	50.4%	50.5%	49.9%	50.3%	49.5%	48.4%	44.1%
US	51.8%	51.8%	51.8%	51.9%	52.1%	52.4%	52.2%	51.2%	51.2%	51.4%	50.9%	50.4%	47.6%

Source: SAMHSA-NSDUH, 2022

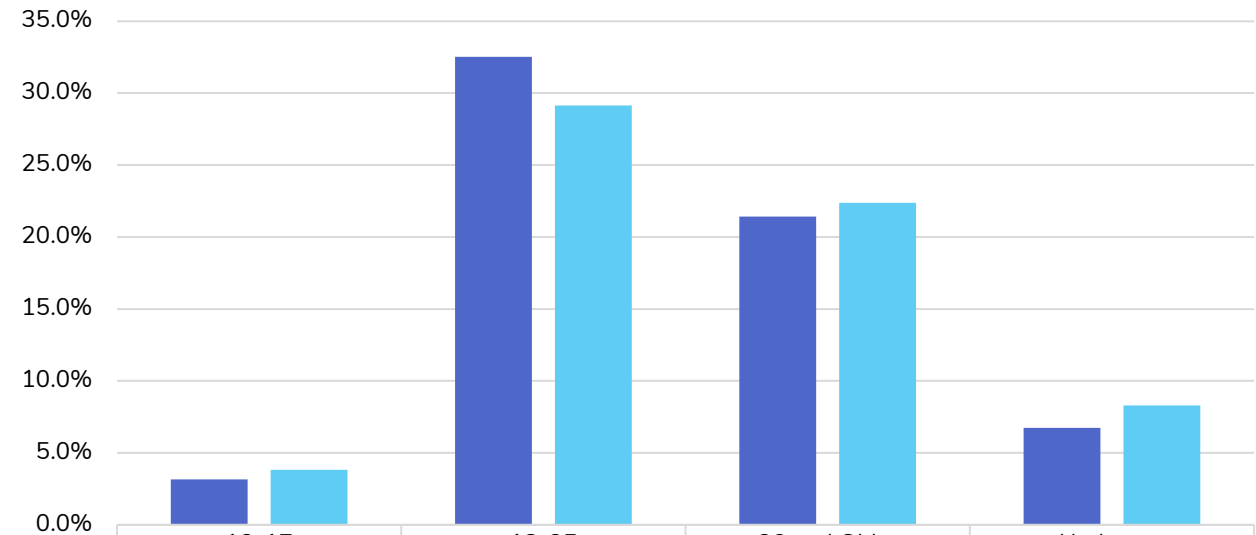
Figure 2.2 Percentage of Indiana Population Reporting Current Alcohol Use by Age Group (National Survey on Drug Use and Health, 2009–2021)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
12-17 years	14.4%	12.7%	11.6%	11.3%	12.0%	11.4%	10.1%	9.3%	9.2%	9.3%	9.2%	8.4%	6.0%
18-25 years	57.9%	60.2%	61.1%	61.8%	62.7%	61.7%	59.7%	59.4%	59.8%	60.0%	55.8%	55.1%	51.5%
26 years & older	50.8%	52.3%	54.3%	54.5%	54.8%	54.3%	54.0%	54.2%	53.3%	53.8%	53.5%	52.3%	47.8%

Source: SAMHSA-NSDUH, 2022

Figure 2.3 Current Binge Drinking in Indiana and the U.S. by Age Group (National Survey on Drug Use and Health, 2021)



	12-17	18-25	26 and Older	Underage
Indiana	3.2%	32.5%	21.4%	6.7%
US	3.8%	29.2%	22.4%	8.3%

Source: SAMHSA-NSDUH, 2022

Behavioral Risk Factor Surveillance System

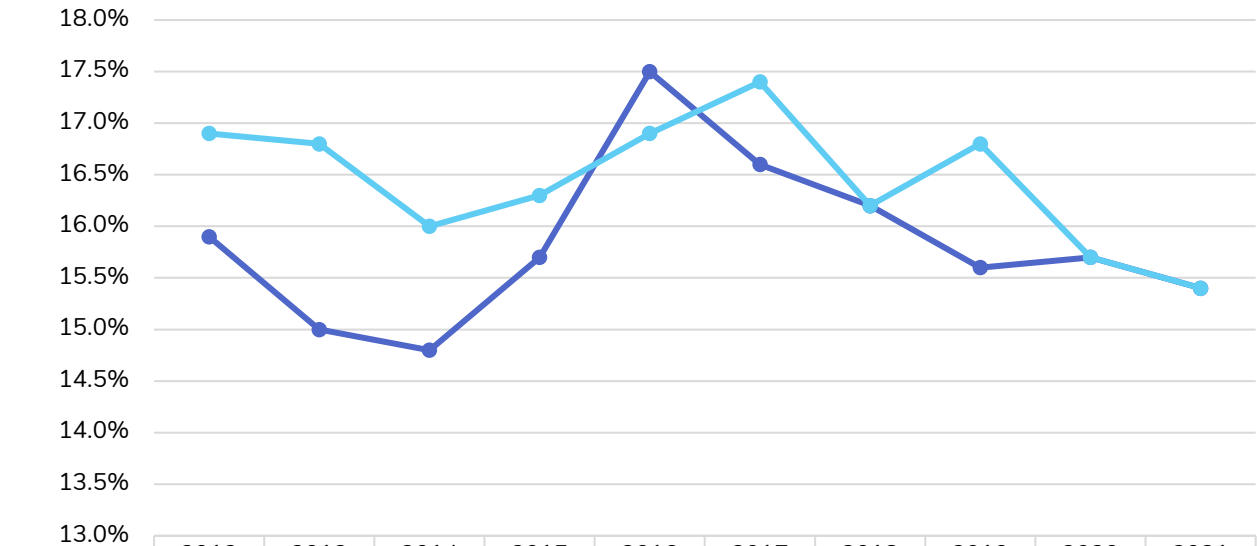
The Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS) is a telephone-based survey system that collects data on health-related topics. BRFSS collects data from all 50 states using prevalence and trend data tools. BRFSS findings on adult prevalence rates for current alcohol use in 2021 were 50.6% (95% CI: 49.4-51.9) for Indiana and 53.2% for the nation. The rates continue to be higher for males and the working-age population (See Table 2.1). The prevalence of adult binge drinking in Indiana (15.4%, 95% CI: 14.5-16.4) was similar to the US median rate (15.3%) in 2021. Males in Indiana had significantly higher rates of reported binge drinking than females: 19.3% (95% CI: 17.7-20.8) vs. 11.8% (95% CI: 10.6-13.0) (See Table 2.2) ("BRFSS Prevalence & Trends," 2022). Trends in binge drinking are shown in Figure 2.4 (CDC, 2019). Men were more likely to participate in binge drinking, leading to higher rates of alcohol use disorder. Excessive alcohol use can affect reproductive health in men, as well as increase the chances of engaging in high-risk sexual behavior ("Excessive Alcohol Use," 2019). Alcohol is a risk factor associated with certain cancers, and in men, it can increase the chances of prostate cancer. Reducing alcohol consumption would be a preventable action against such cancers ("Excessive Alcohol Use," 2019).

Table 2.1 Percentage of Indiana Adults Having Used Alcohol in the Past 30 Days, by Gender, Race/Ethnicity, and Age Group in 2021 (Behavioral Risk Factor Surveillance System, 2021)

		Indiana % (95% CI)
Gender	Male	55.4% (53.6-57.3)
	Female	46.1% (44.4-47.8)
Race/Ethnicity	White	51.6% (50.2-53.0)
	Black	48.4% (43.8-53.2)
	Asian	31.4% (22.9-39.8)
	Hispanic	48.5% (43.1-54.0)
Age Group	18-24	50.5% (45.6-55.4)
	25-34	61.4% (57.9-64.9)
	35-44	60.5% (57.4-63.7)
	45-54	50.6% (47.9-53.4)
	55-64	47.8% (45.2-50.4)
	65+	37.7% (35.8-39.7)
Total		50.6% (49.4-51.9)

Source: CDC-BRFSS, 2022

Figure 2.4 Percentage of Indiana and U.S. Adults Reporting Binge Drinking in the Past 30 Days (Behavioral Risk Factor Surveillance System, 2012–2021)



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	15.9%	15.0%	14.8%	15.7%	17.5%	16.6%	16.2%	15.6%	15.7%	15.4%
US	16.9%	16.8%	16.0%	16.3%	16.9%	17.4%	16.2%	16.8%	15.7%	15.4%

Source: CDC-BRFSS, 2022

Table 2.2 Percentage of Indiana Residents Who Engaged in Binge Drinking in the Past 30 Days, by Gender, Race/Ethnicity, and Age Group (Behavioral Risk Factor Surveillance System, 2021)

		Indiana % (95% CI)
Gender	Male	19.3% (17.7-20.8)
	Female	11.8% (10.6-13.0)
Race/Ethnicity	White	15.3% (14.2-16-4)
	Black	13.9% (10.5-17.4)
	Hispanic	21.5% (16.7-26.3)
Age Group	18-24	22.4% (18.5-26.2)
	25-34	24.3% (21.2-27.5)
	35-44	21.1% (18.4-23.9)
	45-54	14.5% (12.6-16.5)
	55-64	11.4% (9.7-13.1)
	65+	4.4% (3.5-5.2)
Total		15.4% (14.5-16.4)

Source: CDC-BRFSS, 2022

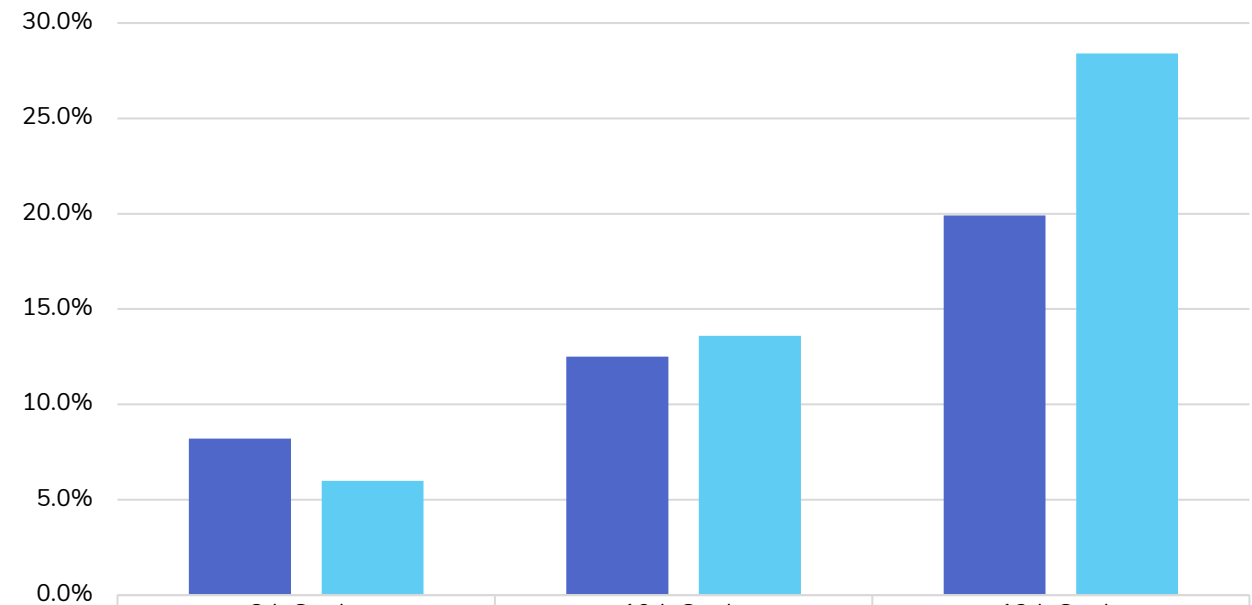
Youth Risk Behavior Surveillance System

CDC's Youth Risk Behavior Surveillance System (YRBSS) is used to monitor and collect data on health behaviors among young adults through a survey system. The 2021 YRBSS survey on alcohol consumption shows that 20.6% (95%CI: 17.6-23.9). of Indiana high school students had consumed at least one alcoholic drink in the past 30 days (*Indiana Youth Survey Report*, 2020). Rates among grade levels varied, with 9th grade at the lowest rate of consumption. Binge drinking among all Indiana high school students (10.5%: 95% CI: 8.1-13.5) was the same as the national rate (10.5%: 95% CI: 9.5-11.8) (YRBS, 2021). Although rates of consumption appear to be declining in high school students, significant health conditions from alcohol use still exist within these groups. Alcohol use in groups under 17 years of age can affect normal adolescent brain development and can lead to other adverse health conditions early on. As rates of binge drinking are higher in males, a significant portion of young male alcohol users are still at risk for adverse health conditions (NIAAA, 2022).

Indiana Youth Survey

The Indiana Youth Survey (INYS) assesses students in grades 6-12 to collect data on substance use, mental health, gambling, and other areas of risk (*Indiana Youth Survey Report*, 2022). Among students in all grades, alcohol was found to be the most used substance in the past 30 days. Students in 12th grade reported the highest prevalence of recent alcohol use among all grades at 19.9% (Indiana Youth Survey Report, 2022). Overall prevalence rates increased as the grade level increased, and no significant differences were found due to gender. Prevalence of past month's alcohol use decreased in 2022 compared to 2020 (Indiana Youth Survey Report, 2022). Consequences of alcohol use in youth include poor test performance and affected adolescent brain development (*Indiana Youth Survey Report*, 2022). Figure 2.5 shows the prevalence rate of monthly alcohol use among 8th, 10th and 12th grade students and Figure 2.6 shows the trends of monthly alcohol use among 12th grade students (high school seniors).

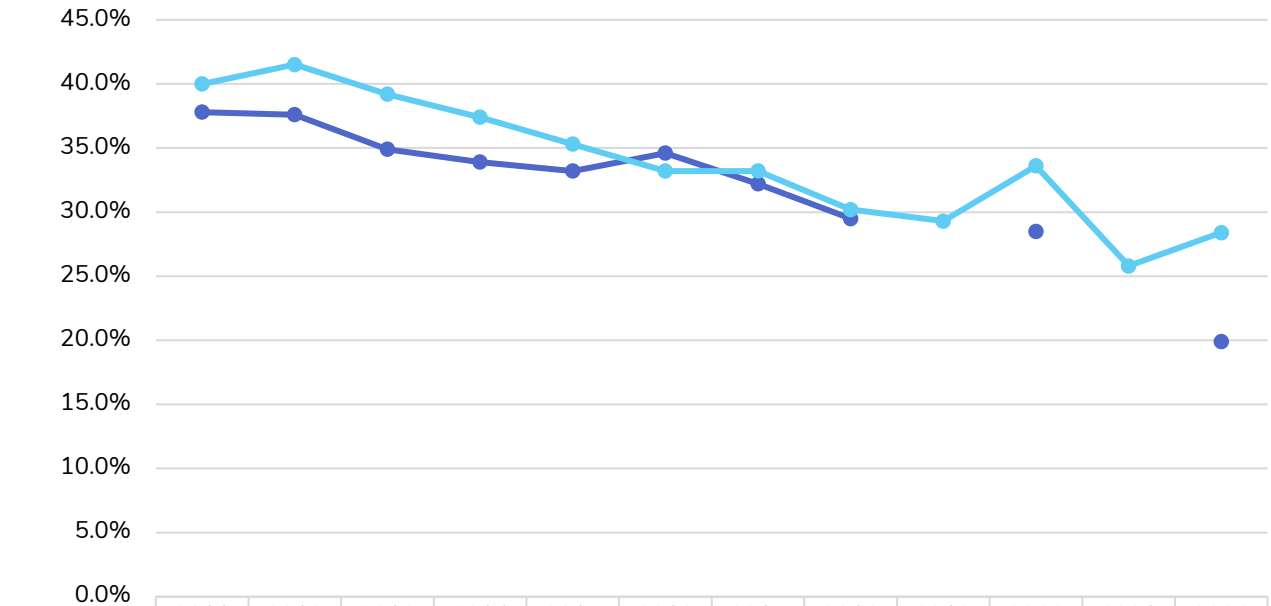
Figure 2.5 Percentage of Indiana and U.S. 8th, 10th, and 12th Grade Students Reporting Monthly Alcohol Use (Indiana Youth Survey and Monitoring the Future Survey, 2022)



	8th Grade	10th Grade	12th Grade
Indiana	8.2%	12.5%	19.9%
US	6.0%	13.6%	28.4%

Source: Gassman et al., 2022; Inter-university Consortium for Political and Social Research, University of Michigan, 2022

Figure 2.6 Percentage of Indiana and U.S. High School Seniors (12th Grade) Reporting Monthly Alcohol Use (Indiana Youth Survey and Monitoring the Future Survey, 2011–2022)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Indiana	37.8%	37.6%	34.9%	33.9%	33.2%	34.6%	32.2%	29.5%		28.5%		19.9%
US	40.0%	41.5%	39.2%	37.4%	35.3%	33.2%	33.2%	30.2%	29.3%	33.6%	25.8%	28.4%

Source: Gassman et al., 2022; Inter-university Consortium for Political and Social Research, University of Michigan, 2022

Notes: The Indiana Youth Survey (INYS) switched to a biennial data collection after 2018; hence 2019 estimates are not available.

Indiana College Substance Use Survey

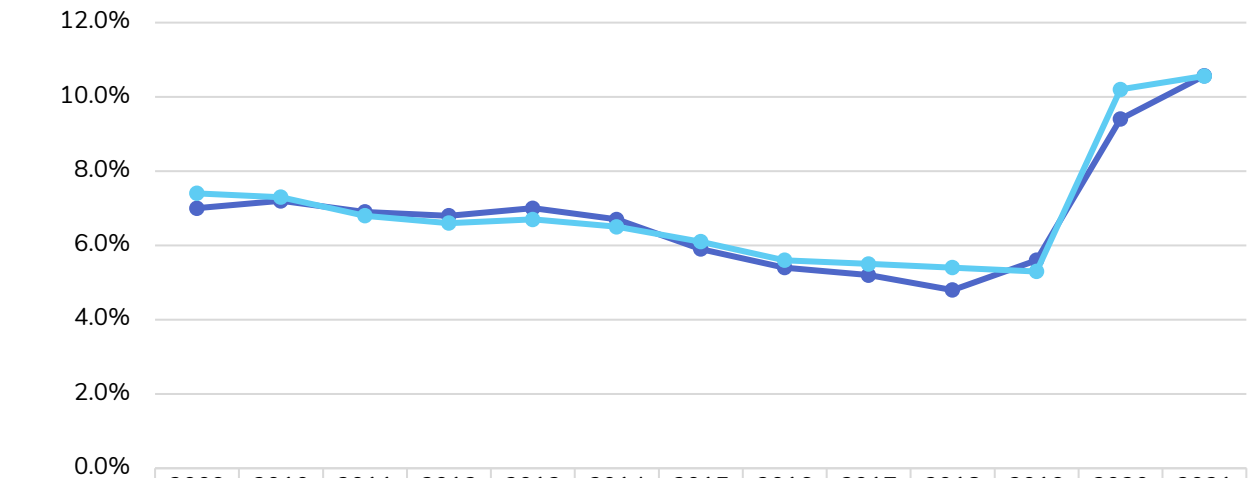
The 2021 Indiana College Substance Use Survey (ICSUS) collected data from 8,059 students who were 18-25 years of age from 23 colleges in Indiana. The survey may not be representative of all college students in Indiana due to convenience sampling, but provides valuable insights into behavioral health among young adults. About 55.6% of students reported consuming alcohol in the past 30 days. Among students who reported alcohol consumption, 40.4% were under the age of 21. Binge drinking in the last two weeks was reported by 27.2% of students, slightly lower than the national prevalence of 32.7% (King & Jun, 2021). A significantly higher prevalence of binge drinking in the past two weeks was found in students ages 21-25 (36.8%) compared to students under the age of 21 (19.7%). The negative consequences of drinking in college can range from poor performance in school to violence and injuries. Alcohol use is a major contributor to sexual assault on campus, with at least 50% of assaults involving alcohol or other substances (Krebs et al., 2007).

USE OF ALCOHOL IN THE TREATMENT POPULATION

National Survey on Drug Use and Health

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines alcohol use disorder (AUD) as a condition in which a user is unable to control alcohol use despite adverse consequences (NIH, 2021). Based on the Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) definitions, NSDUH classifies AUD as meeting the criteria for alcohol dependence and abuse. Indiana's prevalence of AUD in ages 12 and up were estimated to be 10.57% (95% CI: 8.78-12.66) in the 2021 NSDUH report (U.S.: 10.56%; 95% CI: 10.10-11.03) (See Figure 2.7). Of that age group, an estimated 9.0% required treatment but did not receive it. The age group 18-25 has the highest level of AUD prevalence in both Indiana and the U.S. Excessive and uncontrollable alcohol use can lead to health complications within all age groups. A SAMHSA report on people ages 12-20, who visited the emergency department from 2010-2013, found that 18 to 20 year-olds had the highest percentage of alcohol-related visits (Naeger, 2017).

Figure 2.7 Percentage of Indiana and U.S. Population Ages 12 and Older with Alcohol Use Disorder (National Survey on Drug Use and Health, 2009–2021)



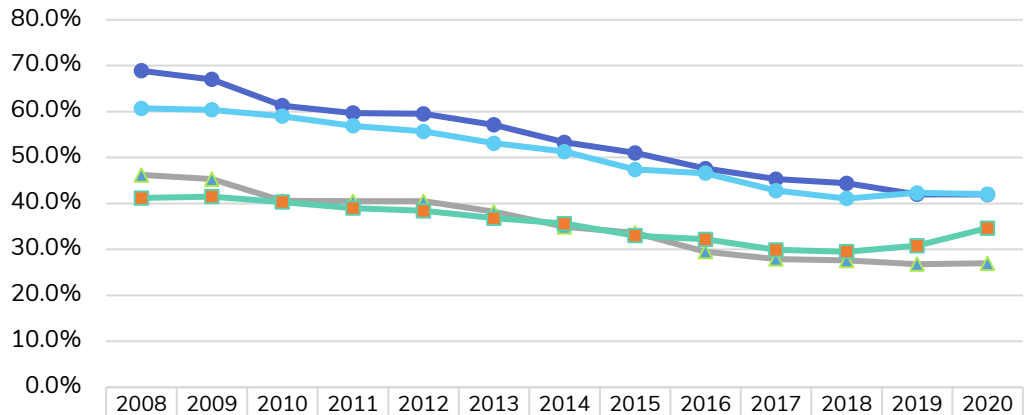
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	7.0%	7.2%	6.9%	6.8%	7.0%	6.7%	5.9%	5.4%	5.2%	4.8%	5.6%	9.4%	10.57%
US	7.4%	7.3%	6.8%	6.6%	6.7%	6.5%	6.1%	5.6%	5.5%	5.4%	5.3%	10.2%	10.56%

Source: SAMHSA-NSDUH, 2022

Treatment Episode Data Set

Alcohol has been found to play a role in substance abuse treatment admissions both in Indiana and nationally ("Treatment Episode Data Set," 2022). Based on data from 2020, alcohol use was reported in 42.0% of Indiana treatment episodes, which is the same as the U.S. rate of 42.0%. Alcohol dependence was reported at 27.0%, compared to national rates of 34.6% (See Figure 2.8) ("Treatment Episode Data Set," 2022). Alcohol dependence was defined as individuals seeking substance abuse treatment listing alcohol as their primary substance at admission.

Figure 2.8 Percentage of Treatment Episodes in Indiana and the United States with Alcohol Use and Alcohol Dependence Reported at Treatment Admission (Treatment Episode Data Set, 2008–2020)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Indiana Alcohol Use	68.9%	67.0%	61.3%	59.7%	59.5%	57.1%	53.3%	51.0%	47.6%	45.3%	44.4%	42.0%	42.0%
US Alcohol Use	60.7%	60.4%	59.0%	56.9%	55.7%	53.1%	51.3%	47.4%	46.6%	42.8%	41.1%	42.3%	42.0%
Indiana Alcohol Dependence	46.2%	45.3%	40.6%	40.5%	40.5%	38.2%	34.9%	33.6%	29.5%	27.9%	27.6%	26.8%	27.0%
US Alcohol Dependence	41.2%	41.5%	40.3%	39.0%	38.4%	36.8%	35.6%	33.0%	32.2%	29.9%	29.5%	30.8%	34.6%

Source: SAMHSA-Treatment Episode Data Set, 2022

In Indiana's treatment population, gender, race/ethnicity, and age contributed to alcohol use:

Gender — Males reported significantly higher alcohol use in substance use treatment (46.4%) compared to females (36.1%). The percentage of dependence in gender followed similar patterns.

Race/ethnicity — Blacks (56.7%) and other races (48.2%) reported alcohol use, at the time of admission, more than whites (39.3%). Hispanics reported alcohol use (53.4%) higher than non-Hispanics (41.5%). Overall, non-whites report higher alcohol use than whites at admission. Hispanics reported higher alcohol dependence (36.4%) than non-Hispanics (26.6%) and whites (25.2%), but overall non-white dependence was still significantly higher than compared to white dependence.

Age—Reported alcohol use at admission increased with age, with ages 55 and older holding the highest reported percentage (54.6%). Alcohol dependence followed the same pattern in which the percentage increased with age (See Table 2.3).

During the State Fiscal Year 2022, out of all treatment episodes, 42.0% of the patients consumed alcohol, and 27.0% had alcohol dependence. Appendix 2B shows the treatment episodes in Indiana with alcohol use and dependence by county

Table 2.3 Percentage of Treatment Episodes in Indiana with Alcohol Use and Alcohol Dependence Reported at Treatment Admission, by Gender, Race, Ethnicity, and Age Group (Treatment Episode Data Set, 2020)

		Alcohol Use	Alcohol Dependence
Gender	Male	46.4%	30.2%
	Female	36.1%	22.6%
Race	White	39.3%	25.2%
	Black	56.7%	36.0%
	Other	48.2%	33.2%
Ethnicity	Hispanic	53.4%	36.4%
	Non-Hispanic	41.5%	26.6%
Age Group	Under 18	41.8%	16.8%
	18-24	34.7%	17.6%
	25-34	34.3%	20.4%
	35-44	42.3%	26.9%
	45-54	56.9%	41.9%
	55+	67.2%	54.6%
Total		42.0%	27.0%

Source: SAMHSA-Treatment Episode Data Set, 2022

Impact of Alcohol During COVID-19 Pandemic

During the COVID-19 Pandemic, alcohol use increased in older persons, essential workers, and those dealing with mental health issues (Sallie et al., 2020). In a household with children ages 5-7 years, about 57% of adults reported consuming more alcohol at home. In a survey, about 60% of binge drinkers reported drinking more during the pandemic, while only 27% of non-binge drinkers reported an increase in alcohol consumption (Weerakoon et al., 2021). The same survey found that the prevalence of binge drinking increased as the number of weeks spent in quarantine increased. In a sample study, college students reported a decrease in the number of drinks per week but reported a slight increase in the frequency of days spent drinking (White et al., 2020). Alcohol-related diseases increased during the reopening phase; gastrointestinal and liver diseases attributable to alcohol rose by 78.7% (Rubin, 2021).

CONSEQUENCES OF ALCOHOL USE

Hospitalizations

In 2019, 10,575 patients were hospitalized with a prognosis related to alcohol (using the diagnosis that is 100% attributable to alcohol) these patients accounted for 1.4% of all discharges in the state. (IDOH, 2019). Appendix 2C shows the conditions that are directly attributable to alcohol in Indiana computed by CDC based on 2015 to 2019 averages. Healthcare treatment costs are very high; curbing alcohol-related hospitalization would free up high healthcare costs to be used for other conditions.

Fetal Alcohol Spectrum Disorders

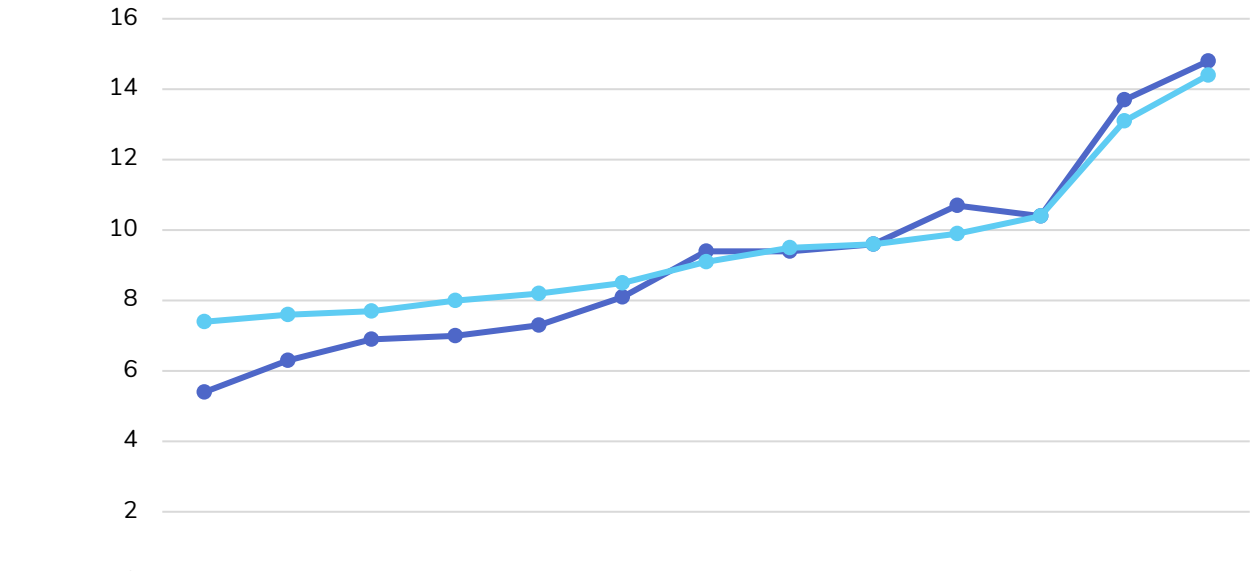
Fetal alcohol spectrum disorders (FASD) are the direct result of alcohol use during pregnancy. FASD is an umbrella term used to describe a range of disorders such as fetal alcohol syndrome, alcohol-related neurodevelopmental disorders, and alcohol-related birth defects. From 2015-2017, 61 children were born with fetal alcohol syndrome, the most severe form of FASD, in Indiana (IDOH, 2018).

State law requires doctors, hospitals, the Center for Health Policy, and other healthcare providers to submit a report to the registry at Indiana Department of Health (IDOH) when a child is born with a birth defect. The Indiana Birth Defects and Problems Registry collects information on birth defects and birth problems for all children in Indiana from birth to 3 years old (5 years old for autism and fetal alcohol syndrome). The prevalence of FASD has not been accurately calculated, but experts estimate that the full range of FASD in the United States might be as high as 1 to 5 per 100 school children (CDC, 2022).

Alcohol-Related Mortality

Alcohol-related causes contributed to 3,727 deaths in Indiana from 2018-2021 (CDC, 2018-2021). The alcohol-induced causes of death include ICD-10 codes such as E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78.0, X45, X65, and Y15. In 2020, there were 1,027 deaths among Hoosiers and 49,061 deaths overall in the nation. Mortality rates related to alcohol increased in

Figure 2.9 Age-Adjusted Alcohol-attributable Mortality Rates per 100,000 Population in Indiana and the United States (CDC WONDER, 2009–2021)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	5.4	6.3	6.9	7	7.3	8.1	9.4	9.4	9.6	10.7	10.4	13.7	14.8
US	7.4	7.6	7.7	8	8.2	8.5	9.1	9.5	9.6	9.9	10.4	13.1	14.4

Source: CDC, 2009-2021

both the nation and Indiana (CDC, 1999–2021). In 2021, Indiana's age-adjusted alcohol-attributable death rate was 14.8 per 100,000 (95% CI: 13.9-15.6); similiar to the U.S. rate (14.4; 95% CI: 14.3-14.5) (See Figure 2.9) (CDC, 1999–2021).

Alcohol-Related Motor Vehicle Accidents

Alcohol-related collisions in Indiana increased from 4,038 in 2020 to 4,208 in 2021 based on data from the Automated Reporting Information Exchange System (ARIES, 2022). There were 125 fatal crashes with alcohol involvement, (For a detailed listing of alcohol-related collisions and fatalities in Indiana by county for 2021, see Appendix 2D). The overall rate for alcohol-related collisions in Indiana in 2021 was 0.62 per 1,000 population (ARIES, 2022).

Child Removals due to Parental Substance Abuse

Alcohol use is a commonly used reason to remove children from unfit homes. There were a total of 5,178 children removed from their homes in the State Fiscal Year 2022. In 10.2% of those cases, parental alcohol use was indicated as a reason for the removal (Indiana Department of Child Services, 2023). Some of the removals could be the result of multiple episodes from the same children. See Appendix 2E for county-level distribution of child removals in the State Fiscal Year 2022. Child abuse leads to long-term consequences such as poor mental and emotional health, post-traumatic stress, and alcohol and drug use (Children's Bureau, 2019). People with childhood trauma are about 7 times more likely to abuse alcohol or drugs in adulthood (Children's Bureau, 2019).

Alcohol, Tobacco, and/or Drug-Related School Suspensions or Expulsions

Since alcohol use is illegal for anyone under the age of 21, students can face severe penalties if caught with alcohol. In Indiana, students can be suspended or expelled from school for using alcohol, tobacco, and/or drugs on school property. Data from the Indiana Department of Education (IDOE) indicate that during the academic year 2020, a total of 574 suspensions/expulsions were recorded in Indiana schools related to alcohol (See Appendix 2F) (IDOE, 2021).

COVID-19 and Adolescent Alcohol Use

Safety measures during the pandemic included school closures and a transition to online classes. As adolescents were under more parental supervision, access to alcohol became limited. Despite a lack of access, levels of binge drinking among adolescents did not drastically change. Of people under the age of 18, about 17% reported binge drinking in the past two weeks prior to the pandemic: that number dipped to only 13% during the pandemic (Miech, 2021).

APPENDIX 2A

Percentage of Indiana Students Reporting Monthly and Binge Alcohol Use, by Region and Grade (Indiana Youth Survey, 2022)

		Indiana	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
6th Grade	Monthly	4.0%	4.9%*	2.2%*	5.3%*	5.1%	4.5%	3.7%	3.1%*	3.9%	3.1%	3.2%
	Binge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7th Grade	Monthly	5.80%	5.70%	7.2%*	5.50%	7.8%*	6.60%	4.1%*	4.5%*	4.7%*	7.7%*	6.9%*
	Binge	1.90%	1.2%*	2.6%*	1.90%	1.40%	1.90%	1.60%	1.70%	1.50%	3.2%*	1.90%
8th Grade	Monthly	8.20%	9.8%*	8.10%	8.40%	10.00%	10.7%*	4.6%*%	7.30%	8.60%	8.60%	7.10%
	Binge	2.50%	2.90%	2.20%	2.80%	3.10%	3.30%	1.3%*	2.00%	2.90%	2.90%	2.10%
9th Grade	Monthly	10.20%	10.90%	8.1%*	12.7%*	12.9%*	9.30%	8.2%*	11.40%	10.50%	10.90%	9.20%
	Binge	3.20%	2.80%	2.60%	6.0%*	4.00%	2.60%	2.70%	3.10%	3.30%	4.00%	2.40%
10th Grade	Monthly	12.50%	11.30%	8.1%*	15.5%*	15.3%*	12.90%	12.20%	13.50%	15.8%*	8.6%*	12.80%
	Binge	4.00%	3.70%	3.10%	4.10%	4.70%	4.00%	4.00%	3.10%	5.7%*	3.00%	4.70%
11th Grade	Monthly	15.90%	16.30%	11.4%*	16.80%	19.20%	12.8%*	14.40%	17.80%	20.5%*	12.4%*	15.80%
	Binge	6.20%	6.10%	3.8%*	6.20%	8.30%	5.00%	5.50%	7.50%	9.1%*	4.60%	5.50%
12th Grade	Monthly	19.90%	18.90%	15.4%*	24.4%*	25.2%*	14.7%*	18.70%	22.50%	26.1%*	16.3%*	16.8%*
	Binge	8.20%	6.1%*	7.00%	9.60%	8.20%	5.3%*	7.40%	8.90%	14.1%*	5.5%*	8.10%

Source: Gassman et al., 2022

* signifies that the local rate and the state rate are statistically different (P < .05)

Data from INYS at the state and regional levels is provided. Until 2018, there were 8 regions. DMHA changed the number of regions to 10 in 2020. The counties in each region include:

Region 1: Lake, LaPorte, Porter
Region 2: Cass, Elkhart, Fulton, Howard, Kosciusko, Marshall, Miami, Pulaski, St. Joseph, Starke, Wabash Region 3: Adams, Allen, DeKalb, Huntington, Lagrange, Noble, Steuben, Wells, Whitley
Region 4: Benton, Boone, Carroll, Clinton, Fountain, Jasper, Montgomery, Newton, Tippecanoe, Warren, White
Region 5: Blackford, Delaware, Grant, Hamilton, Hancock, Henry, Jay, Madison, Randolph, Tipton, Wayne
Region 6: Clay, Hendricks, Monroe, Morgan, Owen, Parke, Putnam, Sullivan, Vermillion, Vigo
Region 7: Marion
Region 8: Daviess, Dubois, Gibson, Greene, Knox, Martin, Perry, Pike, Posey, Spencer, Vanderburgh, Warrick
Region 9: Bartholomew, Brown, Clark, Crawford, Floyd, Harrison, Jackson, Johnson, Lawrence, Orange, Scott, Washington
Region 10: Dearborn, Decatur, Fayette, Franklin, Jefferson, Jennings, Ohio, Ripley, Rush, Shelby, Switzerland, Union

APPENDIX 2B

Number of Treatment Episodes with Alcohol Use and Dependence Reported at Treatment Admission in Indiana, by County (Treatment Episode Data Set, SFY 2022)

	Treatment Episodes	Alcohol Use		Alcohol Dependence	
County	Total	Number	%	Number	%
Adams	56	20	35.7%	12	21.4%
Allen	926	470	50.8%	323	34.9%
Bartholomew	281	118	42.0%	67	23.8%
Benton	34	17	50.0%	14	41.2%
Blackford	49	14	28.6%	5	10.2%
Boone	240	114	47.5%	75	31.3%
Brown	35	14	40.0%	12	34.3%
Carroll	41	22	53.7%	14	34.1%
Cass	57	23	40.4%	14	24.6%
Clark	393	139	35.4%	104	26.5%
Clay	55	23	41.8%	16	29.1%
Clinton	81	38	46.9%	25	30.9%
Crawford	10	4	40.0%	2	20.0%
Daviess	45	14	31.1%	8	17.8%
Dearborn	284	119	41.9%	64	22.5%
Decatur	122	51	41.8%	29	23.8%
DeKalb	192	111	57.8%	66	34.4%
Delaware	496	196	39.5%	138	27.8%
Dubois	241	127	52.7%	95	39.4%
Elkhart	317	138	43.5%	94	29.7%
Fayette	251	43	17.1%	29	11.6%
Floyd	160	59	36.9%	43	26.9%
Fountain	51	29	56.9%	20	39.2%
Franklin	38	11	28.9%	7	18.4%
Fulton	38	14	36.8%	7	18.4%
Gibson	106	47	44.3%	27	25.5%
Grant	315	116	36.8%	67	21.3%
Greene	34	15	44.1%	9	26.5%
Hamilton	528	291	55.1%	216	40.9%
Hancock	114	51	44.7%	30	26.3%
Harrison	35	15	42.9%	10	28.6%
Hendricks	525	210	40.0%	142	27.0%
Henry	305	98	32.1%	67	22.0%
Howard	476	202	42.4%	120	25.2%
Huntington	225	88	39.1%	53	23.6%
Jackson	149	46	30.9%	29	19.5%

	Treatment Episodes	Alcohol Use		Alcohol Dependence	
County	Total	Number	%	Number	%
Jasper	80	31	38.8%	22	27.5%
Jay	140	35	25.0%	23	16.4%
Jefferson	265	79	29.8%	49	18.5%
Jennings	150	49	32.7%	27	18.0%
Johnson	228	84	36.8%	55	24.1%
Knox	91	36	39.6%	20	22.0%
Kosciusko	250	115	46.0%	74	29.6%
LaGrange	98	49	50.0%	30	30.6%
Lake	956	588	61.5%	426	44.6%
LaPorte	392	162	41.3%	127	32.4%
Lawrence	224	80	35.7%	46	20.5%
Madison	1066	369	34.6%	226	21.2%
Marion	2885	1249	43.3%	820	28.4%
Marshall	122	53	43.4%	39	32.0%
Martin	6	2	33.3%	0	0.0%
Miami	82	41	50.0%	28	34.1%
Monroe	547	257	47.0%	134	24.5%
Montgomery	348	127	36.5%	64	18.4%
Morgan	324	120	37.0%	76	23.5%
Newton	17	12	70.6%	10	58.8%
Noble	202	98	48.5%	63	31.2%
Ohio	18	4	22.2%	4	22.2%
Orange	31	15	48.4%	13	41.9%
Owen	42	21	50.0%	15	35.7%
Parke	22	10	45.5%	7	31.8%
Perry	72	32	44.4%	25	34.7%
Pike	10	5	50.0%	3	30.0%
Porter	343	136	39.7%	94	27.4%
Posey	73	45	61.6%	18	24.7%
Pulaski	44	8	18.2%	2	4.5%
Putnam	206	89	43.2%	49	23.8%
Randolph	114	37	32.5%	25	21.9%
Ripley	83	26	31.3%	13	15.7%
Rush	142	58	40.8%	35	24.6%
Saint Joseph	759	346	45.6%	218	28.7%
Scott	213	50	23.5%	29	13.6%
Shelby	97	45	46.4%	28	28.9%
Spencer	97	39	40.2%	37	38.1%
Starke	181	50	27.6%	31	17.1%

	Treatment Episodes	Alcohol Use		Alcohol Dependence	
County	Total	Number	%	Number	%
Steuben	154	84	54.5%	57	37.0%
Sullivan	9	5	55.6%	3	33.3%
Switzerland	54	16	29.6%	10	18.5%
Tippecanoe	566	244	43.1%	166	29.3%
Tipton	42	18	42.9%	11	26.2%
Union	35	11	31.4%	8	22.9%
Vanderburgh	745	345	46.3%	185	24.8%
Vermillion	19	6	31.6%	3	15.8%
Vigo	208	98	47.1%	56	26.9%
Wabash	148	51	34.5%	32	21.6%
Warren	18	12	66.7%	10	55.6%
Warrick	106	63	59.4%	41	38.7%
Washington	47	21	44.7%	16	34.0%
Wayne	500	159	31.8%	106	21.2%
Wells	111	60	54.1%	38	34.2%
White	121	63	52.1%	44	36.4%
Whitley	93	31	33.3%	22	23.7%
Indiana	21301	9061	42.5%	5878	27.6%

Source: Indiana Family and Social Services Administration, 2023

Notes: Alcohol dependence is defined as those receiving substance abuse treatment who at admission listed alcohol as their primary substance.
The percentages are calculated by taking the count of reported alcohol use and dependence and dividing by the count of treatment episodes. As a result of confidentiality concerns, data was suppressed if the count of treatment episodes was less than 5.

APPENDIX 2C

Conditions that are Directly Attributable to Alcohol in Indiana (Alcohol-Related Disease Impact, Based on Averages from 2015-2019)

Condition	Percentage Directly Attributable to Alcohol
Alcohol abuse/dependence	100%
Alcohol cardiomyopathy	100%
Alcohol polyneuropathy	100%
Alcohol-induced chronic pancreatitis	100%
Alcoholic gastritis	100%
Alcoholic liver disease	100%
Alcoholic myopathy	100%
Alcoholic psychosis	100%
Degeneration of nervous system due to alcohol	100%
Fetal alcohol syndrome/Fetus and newborn affected by maternal alcohol use	100%
Alcohol poisoning	100%
Suicide by and exposure to alcohol	100%
Esophageal varices	68%
Portal hypertension	68%
Gastroesophageal hemorrhage	47%
Homicide	47%
Fire Injuries	42%
Hypothermia	41%
Liver cirrhosis, unspecified	40%
Drowning	34%
Fall injuries	32%
Poisoning (not alcohol)	29%
Suicide	24%

Source: Centers for Disease Control and Prevention, 2015-2019

APPENDIX 2D

Number and Rate (per 1,000) of All and Fatal Alcohol-Related Collisions in Indiana in 2021, by County (Automated Reporting Information Exchange System, 2022)

County	Total Collisions	Alcohol-related Collisions	Alcohol-related Collision Rate	Total Fatal Collision	Alcohol-related Fatal Collisions	Alcohol-related Fatal Collision Rate
Adams	754	9	0.252	6	0	0.00
Allen	12764	401	1.050	43	8	0.02
Bartholomew	1764	36	0.440	16	1	0.01
Benton	85	1	0.115	1	0	0.00
Blackford	251	3	0.247	2	1	0.08
Boone	2030	32	0.458	7	1	0.01
Brown	466	11	0.712	3	1	0.06
Carroll	508	24	1.183	3	0	0.00
Cass	1188	48	1.266	3	1	0.03
Clark	4040	55	0.458	4	0	0.00
Clay	636	11	0.417	9	0	0.00
Clinton	975	22	0.666	10	2	0.06
Crawford	330	10	0.951	3	0	0.00
Daviess	331	21	0.631	1	0	0.00
Dearborn	1468	43	0.852	3	0	0.00
Decatur	787	18	0.680	5	0	0.00
DeKalb	1315	31	0.720	5	0	0.00
Delaware	3780	64	0.569	16	1	0.01
Dubois	1310	36	0.828	5	0	0.00
Elkhart	7550	147	0.713	26	5	0.02
Fayette	563	12	0.513	7	1	0.04
Floyd	2566	51	0.641	6	0	0.00
Fountain	369	6	0.365	1	0	0.00
Franklin	637	12	0.527	3	1	0.04
Fulton	659	7	0.343	2	0	0.00
Gibson	969	17	0.515	3	0	0.00
Grant	2199	25	0.374	13	0	0.00
Greene	834	15	0.485	3	0	0.00
Hamilton	7706	173	0.506	16	1	0.00
Hancock	1968	24	0.305	7	1	0.01
Harrison	1177	25	0.633	2	0	0.00
Hendricks	4916	62	0.360	13	2	0.01
Henry	1088	22	0.450	10	0	0.00
Howard	2245	62	0.744	12	2	0.02
Huntington	1138	35	0.957	9	0	0.00
Jackson	1882	52	1.132	4	1	0.02

County	Total Collisions	Alcohol-related Collisions	Alcohol-related Collision Rate	Total Fatal Collision	Alcohol-related Fatal Collisions	Alcohol-related Fatal Collision Rate
Jasper	1194	26	0.788	4	0	0.00
Jay	570	7	0.340	2	0	0.00
Jefferson	857	11	0.333	3	0	0.00
Jennings	615	9	0.326	7	0	0.00
Johnson	3892	66	0.413	7	0	0.00
Knox	1202	19	0.523	1	1	0.03
Kosciusko	2573	58	0.724	9	2	0.02
LaGrange	1085	29	0.723	10	0	0.00
Lake	18425	383	0.772	68	9	0.02
LaPorte	3611	148	1.319	20	3	0.03
Lawrence	1465	21	0.465	3	0	0.00
Madison	3787	65	0.500	26	6	0.05
Marion	37012	440	0.454	141	38	0.04
Marshall	1591	43	0.931	7	1	0.02
Martin	154	7	0.708	1	0	0.00
Miami	1003	24	0.665	5	1	0.03
Monroe	3643	58	0.414	11	2	0.01
Montgomery	905	13	0.342	3	0	0.00
Morgan	2055	33	0.462	11	2	0.03
Newton	381	15	1.082	4	0	0.00
Noble	1189	26	0.550	7	1	0.02
Ohio	164	1	0.169	1	0	0.00
Orange	550	10	0.506	2	0	0.00
Owen	517	10	0.470	4	1	0.05
Parke	505	12	0.735	3	0	0.00
Perry	396	13	0.679	1	0	0.00
Pike	163	12	0.982	1	0	0.00
Porter	4917	156	0.905	14	2	0.01
Posey	538	17	0.672	3	1	0.04
Pulaski	436	3	0.240	2	0	0.00
Putnam	986	24	0.652	4	0	0.00
Randolph	480	9	0.365	5	1	0.04
Ripley	711	13	0.449	4	1	0.03
Rush	321	10	0.599	3	1	0.06
St Joseph	8446	117	0.430	30	5	0.02
Scott	631	8	0.329	8	0	0.00
Shelby	1375	40	0.892	7	0	0.00
Spencer	648	37	1.855	7	4	0.20

County	Total Collisions	Alcohol-related Collisions	Alcohol-related Collision Rate	Total Fatal Collision	Alcohol-related Fatal Collisions	Alcohol-related Fatal Collision Rate
Starke	592	13	0.559	7	0	0.00
Steuben	1631	33	0.960	3	0	0.00
Sullivan	409	10	0.480	5	1	0.05
Switzerland	166	8	0.811	1	0	0.00
Tippecanoe	6306	171	0.920	15	1	0.01
Tipton	417	10	0.654	2	1	0.07
Union	85	1	0.141	1	0	0.00
Vanderburgh	5112	70	0.390	13	4	0.02
Vermillion	299	7	0.452	2	0	0.00
Vigo	3509	71	0.667	12	0	0.00
Wabash	831	29	0.932	6	1	0.03
Warren	254	3	0.356	1	0	0.00
Warrick	1529	24	0.378	7	1	0.02
Washington	635	21	0.749	5	2	0.07
Wayne	2313	70	1.051	6	1	0.02
Wells	698	10	0.356	4	0	0.00
White	807	20	0.813	10	1	0.04
Whitley	888	21	0.617	1	0	0.00
Indiana	208722	4208	0.623	832	125	0.02

Source: ARIES and Indiana State Police, 2022

Notes: Rates calculated from numbers less than 20 are considered unreliable. Vehicle collisions are considered to be alcohol-related if at least one drive had 0.08g/dL or higher BAC.

APPENDIX 2E

Child Removals, Total and Due to Parental Alcohol Abuse, SFY 2022

County	Total	Count	Percentage
Adams	37	2	5.4%
Allen	357	40	5.6%
Bartholomew	49	6	4.1%
Benton	6	0	0.0%
Blackford	27	0	0.0%
Boone	40	9	7.5%
Brown	24	6	12.5%
Carroll	13	2	0.0%
Cass	32	1	3.1%
Clark	99	5	4.0%
Clay	39	8	20.5%
Clinton	14	1	7.1%
Crawford	11	2	18.2%
Daviess	26	4	11.5%
Dearborn	40	0	0.0%
Decatur	24	8	20.8%
Dekalb	25	0	0.0%
Delaware	102	7	2.0%
Dubois	62	4	0.0%
Elkhart	81	12	9.9%
Fayette	24	2	8.3%
Floyd	137	14	8.8%
Fountain	18	3	16.7%
Franklin	10	0	0.0%
Fulton	26	0	0.0%
Gibson	31	2	6.5%
Grant	114	18	3.5%
Greene	55	2	3.6%
Hamilton	52	6	5.8%
Hancock	50	16	20.0%
Harrison	23	1	4.3%
Hendricks	38	5	13.2%
Henry	36	2	5.6%
Howard	67	4	4.5%

County	Total	Count	Percentage
Huntington	28	0	0.0%
Jackson	50	4	0.0%
Jasper	24	2	0.0%
Jay	24	0	0.0%
Jefferson	40	4	5.0%
Jennings	33	1	3.0%
Johnson	63	6	6.3%
Knox	60	2	1.7%
Kosciusko	37	1	2.7%
Whitley	21	4	0.0%
Lagrange	17	0	0.0%
Lake	324	32	2.8%
LaPorte	107	7	3.7%
Lawrence	111	8	4.5%
Madison	298	31	6.4%
Marion	8	1	0.0%
Marshall	22	0	0.0%
Martin	10	1	10.0%
Miami	56	2	3.6%
Monroe	99	3	1.0%
Montgomery	51	8	11.8%
Morgan	105	12	3.8%
Newton	5	0	0.0%
Noble	33	1	0.0%
Ohio	20	3	0.0%
Orange	14	2	0.0%
Owen	28	6	17.9%
Parke	14	0	0.0%
Perry	43	5	9.3%
Pike	13	0	0.0%
Porter	66	8	4.5%
Posey	48	4	2.1%
Pulaski	18	0	0.0%
Putnam	39	7	15.4%

County	Total	Count	Percentage
Randolph	42	0	0.0%
Ripley	37	1	2.7%
Rush	19	5	15.8%
St Joseph	293	49	7.2%
Scott	34	5	8.8%
Shelby	33	8	15.2%
Spencer	30	1	0.0%
Starke	37	2	2.7%
Steuben	24	0	0.0%
Sullivan	36	0	0.0%
Switzerland	12	0	0.0%
Tippecanoe	89	8	3.4%
Tipton	15	1	6.7%
Union	3	0	0.0%
Vanderburgh	317	43	9.5%
Vermillion	5	0	0.0%
Vigo	188	30	9.0%
Wabash	23	2	0.0%
Warren	0	0	0.0%
Warrick	44	4	9.1%
Washington	17	0	0.0%
Wayne	96	4	3.1%
Wells	30	1	0.0%
White	36	7	19.4%
INDIANA	5178	528	10.2%

Source: Indiana Department of Child Services, 2023

Notes: The counts are of number of removals, as opposed to number of unique children removed. One child could potentially account for multiple episodes of removal in the same year or underrepresented based on removal reason.

APPENDIX 2F

School Suspensions or Expulsions Related to Alcohol, Tobacco, and/or Drug Use (2020)

County	Number of Incidents	Number of Unique Students Involved
Adams	28	27
Allen	560	535
Bartholomew	272	239
Benton	33	29
Blackford	30	28
Boone	110	107
Brown	33	29
Carroll	32	32
Cass	94	90
Clark	179	172
Clay	23	23
Clinton	82	78
Crawford	27	25
Daviess	19	19
Dearborn	138	125
Decatur	26	26
Dekalb	71	68
Delaware	146	140
Dubois	66	66
Elkhart	260	249
Fayette	40	36
Floyd	198	192
Fountain	37	32
Franklin	74	64
Fulton	43	41
Gibson	52	50
Grant	87	86
Greene	46	41
Hamilton	336	320
Hancock	122	114
Harrison	60	57
Hendricks	214	205
Henry	78	71
Howard	108	105
Huntington	74	66
Jackson	144	130

County	Number of Incidents	Number of Unique Students Involved
Jasper	48	47
Jay	85	76
Jefferson	63	58
Jennings	23	23
Johnson	283	273
Knox	156	142
Kosciusko	189	182
Lagrange	71	67
Lake	549	523
LaPorte	245	226
Lawrence	139	121
Madison	173	167
Marion	1,155	1,111
Marshall	91	86
Martin	7	7
Miami	147	137
Monroe	208	196
Montgomery	66	62
Morgan	139	126
Newton	61	56
Noble	131	119
Ohio	3	3
Orange	51	50
Owen	47	44
Parke	40	39
Perry	35	34
Pike	71	65
Porter	267	255
Posey	56	54
Pulaski	41	37
Putnam	47	43
Randolph	65	60
Ripley	87	67
Rush	16	15
St Joseph	326	306
Scott	67	66
Shelby	87	80
Spencer	9	8
Starke	56	53
Steuben	28	27
Sullivan	43	41
Switzerland		
Tippecanoe	175	164
Tipton	44	41
Union	23	20
Vanderburgh	207	195
Vermillion	26	25
Vigo	105	96
Wabash	41	38
Warren	5	5
Warrick	117	107
Washington	83	78
Wayne	92	85
Wells	49	46
White	60	57
Whitley	74	69
INDIANA	10,514	9,895

Source: Indiana Department of Education, 2021

Note: Counts of incidents observe each time a student, due to alchol use, was either suspended or expelled. The unique count is the number of unique students involved.

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CHAPTER 03

Tobacco Use in Indiana: Prevalence And Consequences

INTRODUCTION

Approximately 34 million people in the United States smoke cigarettes (CDC, 2021b). Using tobacco is the leading cause of preventable disease in the United States (Cornelius et al., 2020). Tobacco use can lead to many health conditions such as cancer, heart disease, stroke, lung disease, type 2 diabetes, and other chronic health conditions. Tobacco use during pregnancy increases the risk of complications and can lead to premature birth, low birth weight, birth defects, and sudden infant death syndrome (SIDS).

The landscape of tobacco products is changing drastically, and nonconventional tobacco products are hitting the market such as e-cigarettes, hookahs, synthetic nicotine, and heat-not-burn products. The use of these products is on the rise among the U.S. youth. Use of e-cigarettes and vaping products have been linked to lung injuries known as e-cigarette or vaping, product use - associated lung injury (EVALI). Patients with EVALI were first being identified in 2019. From 2019 to March 2020, there were 60 confirmed cases of vaping-related lung injuries and six deaths (IDOH, 2021). Health officials are still learning about the disease, and as of right now vitamin E acetate - an addictive used in e-cigarettes - has been the primary suspect (American Lung Association, n.d.).

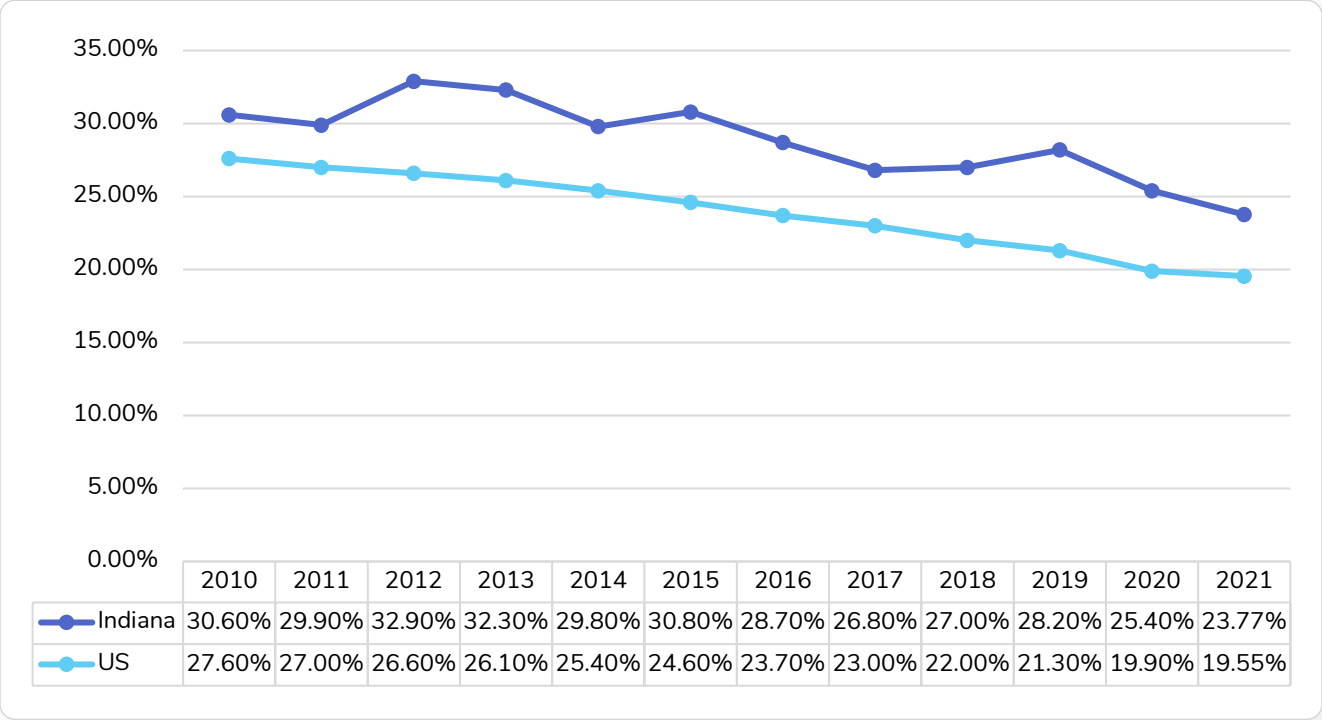
PREVALENCE OF TOBACCO CONSUMPTION IN THE GENERAL POPULATION

National Survey on Drug Use and Health

Survey results from the 2021 National Survey on Drug Use and Health shows 23.77% (95% CI: 20.64-27.22) of the Indiana population 12 years and older used a tobacco product in the past month, which is higher than the United States rate of 19.55% (95% CI: 18.89-20.22). Tobacco products in this survey included cigarettes, smokeless tobacco, cigars, and pipe tobacco. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), the rate of tobacco users in Indiana has significantly decreased over the past decade (See Figure 3.1).

Cigarettes were the most common tobacco product used. 18.93% (95% CI: 15.96-22.29) of 12 years and older Indiana residents reported using cigarettes in the past month: a rate significantly higher than the United States rate of 15.59% (95% CI: 14.98-16.21). In the past decade, Indiana's prevalence has of tobacco use significantly declined from 30.6% in 2010 to 23.8% in 2021 (95% CI: 20.6-27.2) (See Figure 3.2). There were variations in smoking use across different age groups. Figure 3.3 compares the prevalence of cigarette use in Indiana and the nation by age groups. Reported cigarette use among 12-17 year old Hoosiers was by far the lowest of all age groups (1.0%).

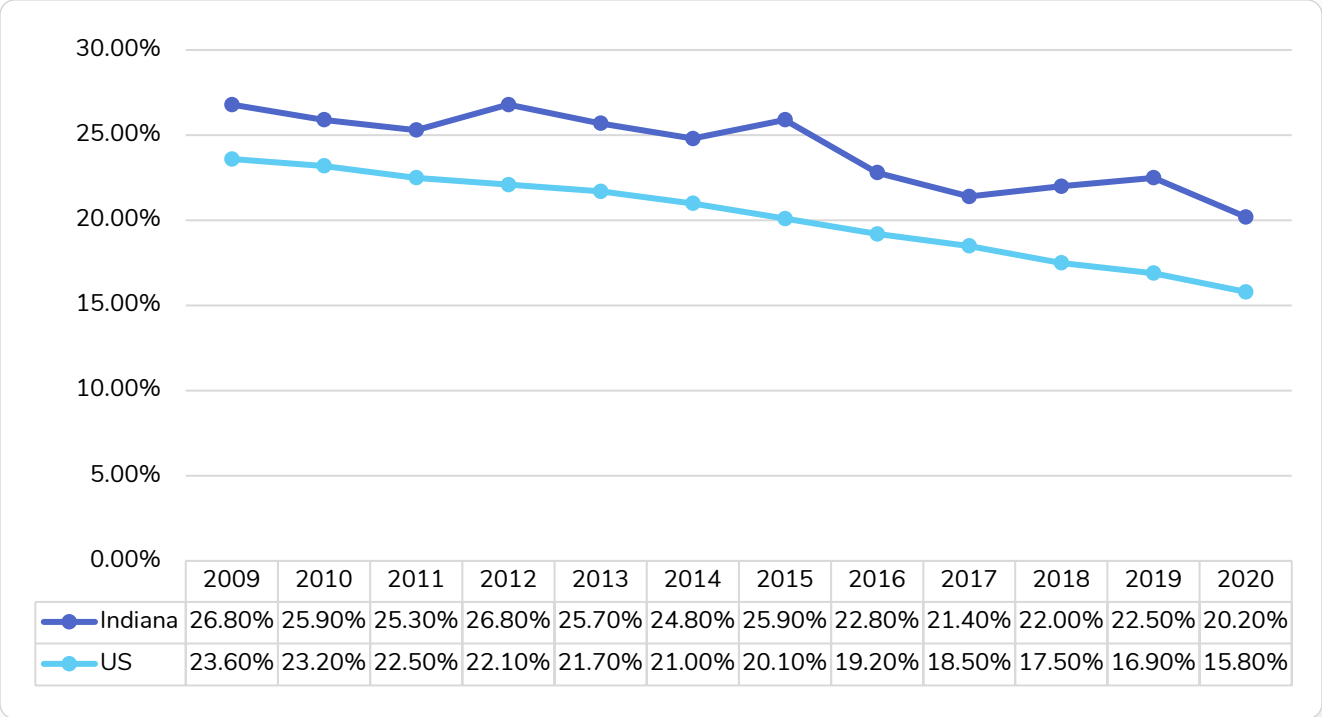
Figure 3.1 Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Any Tobacco Use in the Past Month (National Survey on Drug Use and Health, 2010–2021)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	30.60%	29.90%	32.90%	32.30%	29.80%	30.80%	28.70%	26.80%	27.00%	28.20%	25.40%	23.77%
US	27.60%	27.00%	26.60%	26.10%	25.40%	24.60%	23.70%	23.00%	22.00%	21.30%	19.90%	19.55%

Source: SAMHSA-NSDUH, 2022

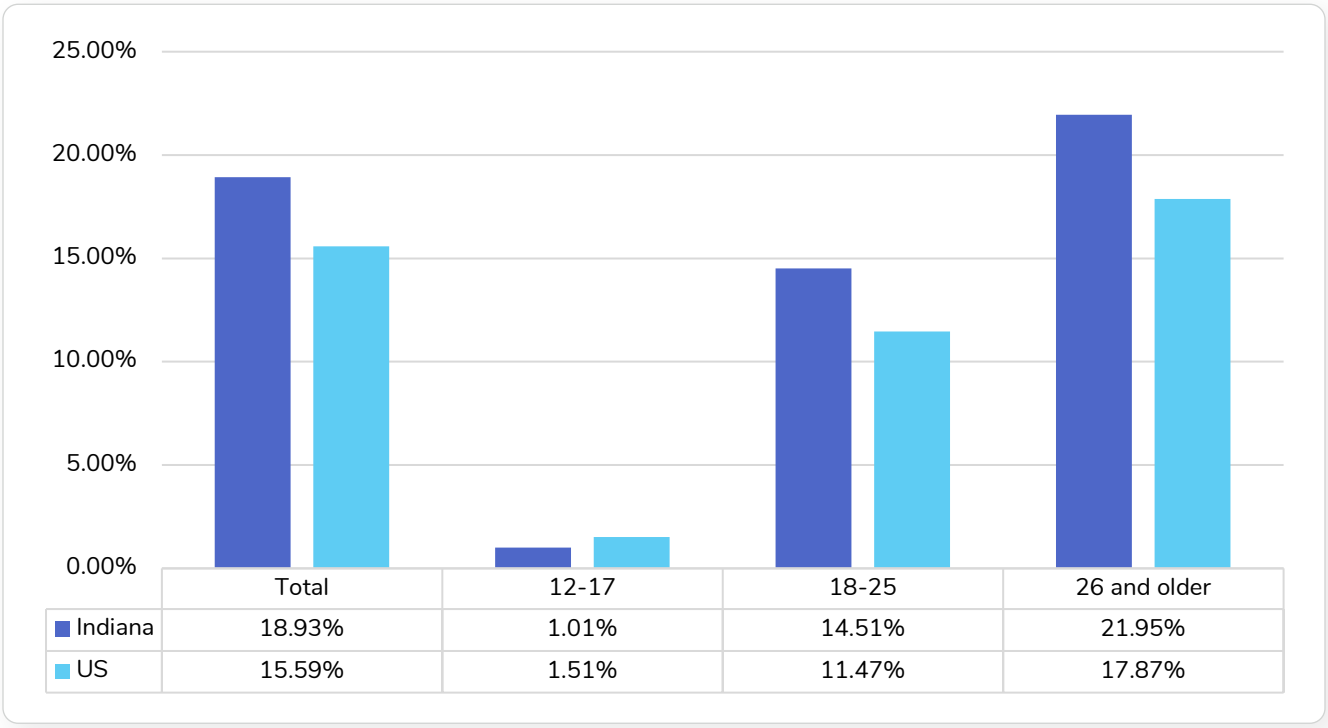
Figure 3.2 Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cigarette Use in the Past Month (National Survey on Drug Use and Health, 2009–2021)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Indiana	26.80%	25.90%	25.30%	26.80%	25.70%	24.80%	25.90%	22.80%	21.40%	22.00%	22.50%	20.20%
US	23.60%	23.20%	22.50%	22.10%	21.70%	21.00%	20.10%	19.20%	18.50%	17.50%	16.90%	15.80%

Source: SAMHSA-NSDUH, 2022

Figure 3.3 Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cigarette Use in the Past Month (National Survey on Drug Use and Health, 2021)



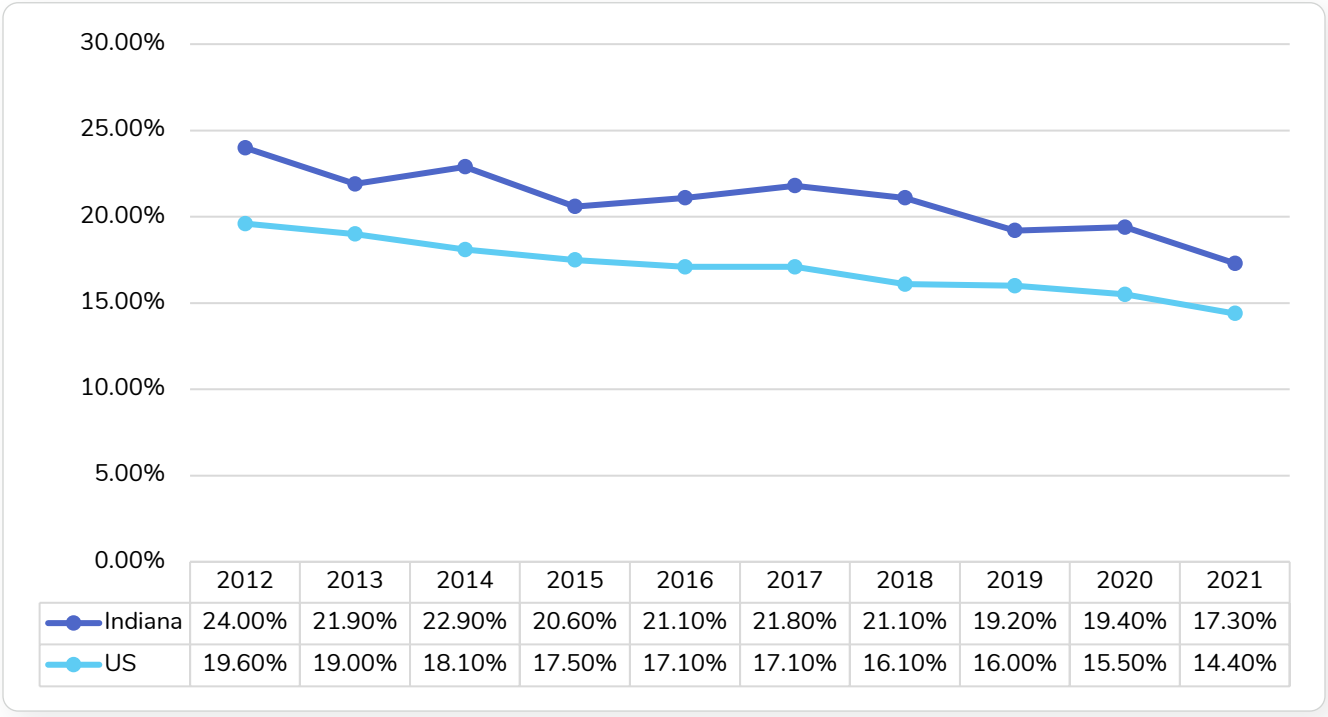
	Total	12-17	18-25	26 and older
Indiana	18.93%	1.01%	14.51%	21.95%
US	15.59%	1.51%	11.47%	17.87%

Source: SAMHSA-NSDUH, 2022

Behavior Risk Factor Surveillance System

Smoking prevalence in Indiana adults continues to be higher than the United States levels (See Figure 3.4). In 2021, About 14.4% of United States adults reported smoking in the past month in comparison to 17.3% (CI: 16.4-18.3) of Indiana adults (CDC, 2022b).

Figure 3.4 Percentage of Indiana and U.S. Population (18 Years and Older) Reporting Current Cigarette Use (Behavioral Risk Factor Surveillance System, 2012–2021)



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	24.00%	21.90%	22.90%	20.60%	21.10%	21.80%	21.10%	19.20%	19.40%	17.30%
US	19.60%	19.00%	18.10%	17.50%	17.10%	17.10%	16.10%	16.00%	15.50%	14.40%

Source: CDC-BRFSS, 2022

The following groups in Indiana have shown significant differences in smoking prevalence:

- Men have shown a higher smoking rate compared to women.
- Lowest smoking prevalence rate in adults ages 65 and older.
- Individuals with higher education showed the lowest smoking rates.
- Individuals with higher income showed the lowest smoking rates (See Table 3.1).

Table 3.1 Adult Smoking Prevalence in Indiana, by Gender, Race/Ethnicity, Age Group, Educational Attainment, and Income Level (Behavioral Risk Factor Surveillance System, 2021)

		Indiana (95% CI)
Gender	Male	18.3% (16.8-19.8)
	Female	16.4% (15.1-17.7)
Race / Ethnicity	White	17.5% (16.4-18.6)
	Black	20.3% (16.3-24.3)
	Hispanic	13.7% (9.7-17.6)
Age Group	18-24	7.4% (4.7-10.0)
	25-34	22.3% (19.1-25.5)
	35-44	21.9% (19.2-24.7)
	45-54	20.7% (18.4-23.0)
	55-64	21.2% (19.0-23.3)
	65+	11.0% (9.6-12.4)
Education	Less than High School	31.6% (27.0-36.4)
	High School or GED	21.6% (19.8-23.4)
	Some post-High School	16.7% (15.1-18.4)
	College Graduate	6.0% (5.1-6.9)
Income	Less than $15,000	38.3% (32.7-43.9)
	$15,000–$24,999	27.8% (24.1-31.6)
	$25,000–$34,999	23.4% (19.8-26.9)
	$35,000–$49,999	19.9% (16.6-23.2)
	$50,000 and above	15.2% (13.4-17.0)
Total		**17.3% (16.4-18.3)**

Source: CDC-BRFSS, 2022

Indiana Adult Tobacco Survey

According to the 2019 Indiana Adults Tobacco Survey, overall smoking prevalence among Indiana's adults was at 19.9% (95% CI: 17.3-22.7). Smoking was prevalent among certain groups:

- Individuals without a high school degree (30.4%; 95% CI: 20.7–42.2)
- Individuals with an annual household income of less than $20,000 (34.4%; 95% CI: 22.5-48.6)
- Ages 25 to 39 years (30.7%; 95% CI: 24.4–37.7)
- Individuals who classified themselves as "others" under ethnicity (28.3%; 95% CI: 19.3-39.4)

About 25.9% (95% CI: 23.1-28.7) of the adults in Indiana reported trying an e-cigarette. The share of current e-cigarette use was highest among youth and young adults compared to older adults. Further, 18.7% (95% CI: 13.5-25.3) of the individuals had the intention to quit within the next 30 days among the current smokers (IDOH, TPC, 2020). (See Table 3.2)

Table 3.2 Intentions to Quit Smoking among Current Smokers (Indiana Adult Tobacco Survey, 2019)

	Within next 30 days	Within 30 days to 6 months	Sometime after 6 months	No intention to quit
Gender				
Male	13.1% (7.9-21.1)	17.0% (10.4-26.4)	26.5% (17.3-38.2)	43.4% (32.4-55.1)
Female	27.2% (17.9-39.0)	20.8% (13.4-30.8)	20.5% (12.5-31.9)	31.4% (21.4-43.6)
Race/Ethnicity				
White	18.1% (12.3-25.8)	20.6% (14.4-28.5)	22.1% (14.9-31.4)	39.2% (30.3-48.9)
Black	21.4% (8.0-46.3)	5.5% (1.5-17.9)	34.9% (16.1-60.1)	38.1% (16.6-65.6)
Hispanic	23.6% (4.6-66.4)	--	60.5% (20.6-90.1)	15.9% (3.1-53.3)
Other	19.6% (8.3-39.4)	19.4% (8.4-38.6)	23.7% (9.6-47.7)	37.3% (18.5-60.9)
Age Group				
18-24	15.9% (3.8-47.4)	22.6% (8.1-49.1)	18.5% (5.5-46.6)	43.0% (20.1-69.4)
25-39	18.7% (10.5-31.0)	13.6% (6.7-25.7)	28.8% (17.8-43.0)	38.9% (25.6-54.1)
40-64	19.0% (12.0-28.7)	20.7% (13.5-30.5)	25.1% (15.7-37.7)	35.2% (24.8-47.1)
65+	19.2% (6.9-43.2)	27.6% (10.9-54.1)	2.5% (0.6-10.2)	50.7% (28.7-72.4)
Education				
Less than High School	15.5% (5.9-35.0)	6.9% (1.9-21.9)	19.8% (7.4-43.3)	57.9% (34.7-78.0)
High School Grad	17.3% (9.8-28.8)	23.0% (14.5-34.4)	27.0% (17.1-39.9)	32.7% (22.9-44.3)
Some College	20.9% (12.6-32.7)	18.3% (10.1-30.8)	27.0% (15.9-41.9)	33.8% (22.6-47.2)
College	22.5% (8.6-47.0)	22.2% (9.3-44.3)	13.5% (3.9-37.9)	41.8% (21.7-65.1)
Post-Graduate	37.6% (8.7-79.1)	22.8% (4.5-64.7)	--	39.6% (11.5-76.8)
Income				
Less than $20,000	17.4% (5.9-41.5)	24.9% (10.7-47.9)	15.9% (5.7-37.3)	41.8% (22.4-64.1)
$20,000 – $39,999	24.5% (13.3-40.6)	15.5% (8.0-27.7)	20.3% (9.9-37.1)	39.8% (23.3-59.0)
$40,000 – $69,999	19.1% (11.0-31.1)	19.5% (10.6-33.1)	23.3% (13.0-38.1)	38.2% (26.3-51.6)
$70,000 or more	9.7% (1.7-39.6)	10.6% (2.6-34.5)	45.8% (16.7-78.0)	33.9% (12.0-65.9)
Total	**18.7% (13.5-25.3)**	**18.5% (13.3-25.1)**	**24.4% (17.8-32.6)**	**38.4% (30.5-46.9)**

Source: IDOH/TPC, 2020

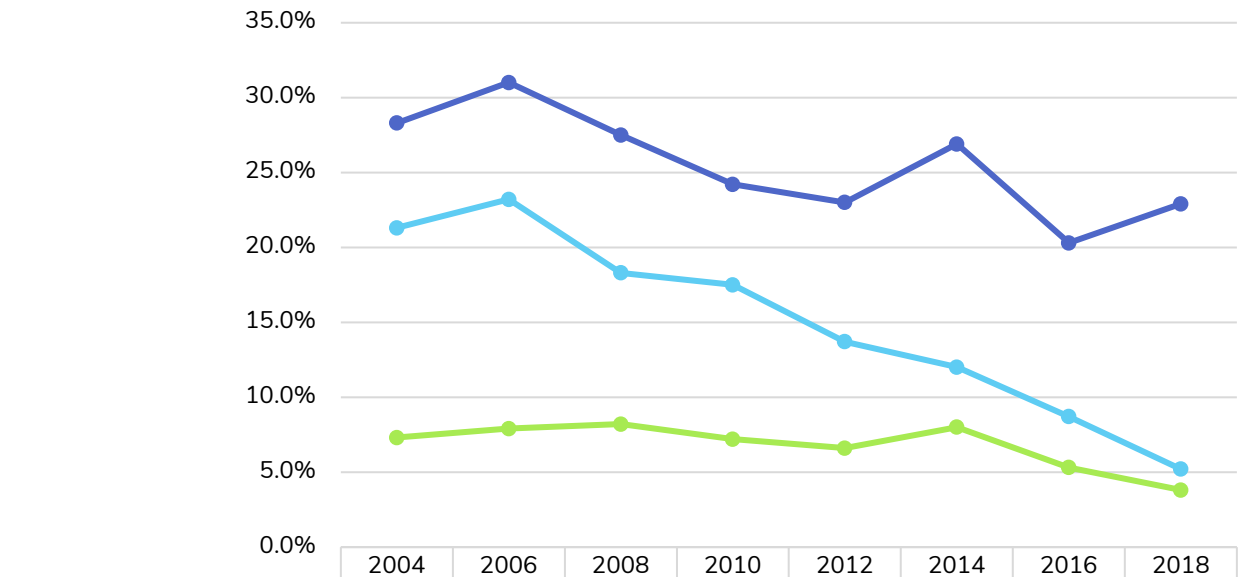
Indiana Youth Tobacco Survey (IYTS)

According to the Indiana Youth Tobacco Survey, overall tobacco use has significantly reduced in Indiana from 2004 to 2016 with a slight increase between 2016 to 2018 (IYTS, 2019). The survey captures information on tobacco use, smoking cessation, tobacco related attitudes and beliefs, social media influence on tobacco use, secondhand tobacco exposure, and various tobacco related issues in middle schoolers and high schoolers in Indiana. (Figure 3.5 and Figure 3.6).

The 2018 results from the Indiana Youth Tobacco Survey showed a total of 8.1% (95% CI: 6.3-10) of middle schoolers and 22.8% (95% CI: 19.8-26.1) of high schoolers used any tobacco product within the past month. 1.9% (95% CI: 1.3 – 2.5) of middle schoolers and 5.2% (95% CI:3.9-6.5) of high schoolers reported smoking cigarettes in the past month. Use of e-cigarettes in 2018 was at 5.5% and 18.5% within Indiana's middle schoolers and high schoolers respectively. Among Indiana youth that smoke cigarettes, 33.6% of middle school students and 45.8% of high school students reported using e-cigarettes. Appendix 3A shows the prevalence rate of smoking among youth and their demographic characteristics based on data from 2018 IYTS. E-cigarettes have been popular among middle schoolers and high schoolers. Many e-cigarettes are laced with substances other than nicotine, such as marijuana, THC, hash oil, or THC wax.

Appendix 3A shows the distribution of cigarette use, e-cigarette use, and smokeless tobacco by various demographic characteristics of middle and high school students.

Figure 3.5 Tobacco Use among Indiana High School Students (9th–12th Grade) (Indiana Youth Tobacco Survey, 2004-2018)

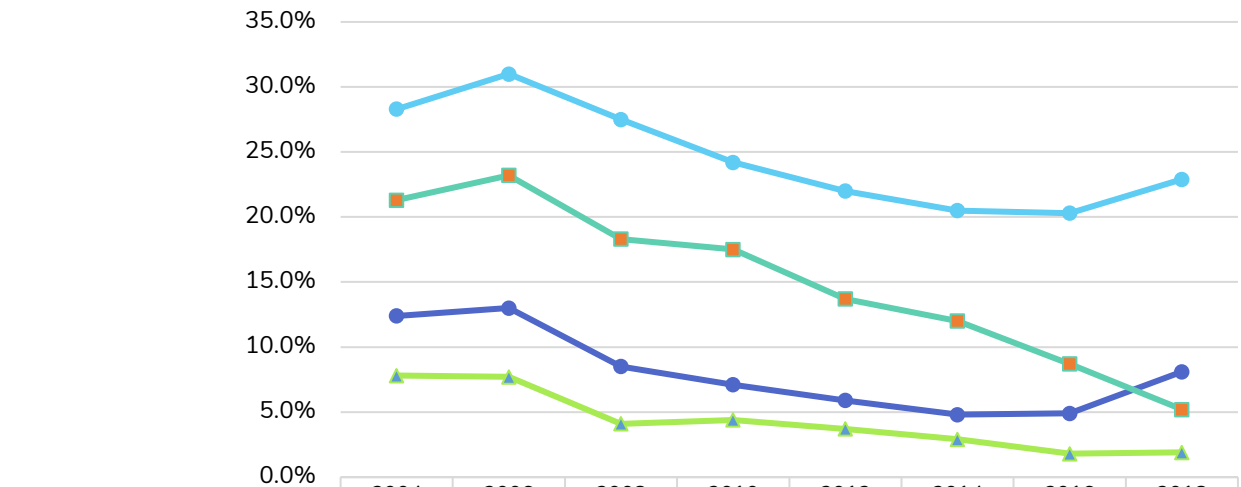


	2004	2006	2008	2010	2012	2014	2016	2018
Tobacco Use	28.3%	31.0%	27.5%	24.2%	23.0%	26.9%	20.3%	22.9%
Cigarette Use	21.3%	23.2%	18.3%	17.5%	13.7%	12.0%	8.7%	5.2%
Smokeless Tobacco Use	7.3%	7.9%	8.2%	7.2%	6.6%	8.0%	5.3%	3.8%

Source: IDOH/TPC, 2020

Note: Based on variability in prevalence rates of different type of tobacco products over time, the use of bidi's were included in the "Tobacco use" until 2016 and the e-cigarette use were included since 2012 by IYTS.

Figure 3.6 Percentage of Indiana Middle School and High School Students Reporting Current Tobacco and Cigarette Use (Indiana Youth Tobacco Survey, 2004–2018)



	2004	2006	2008	2010	2012	2014	2016	2018
Current MS Tobacco Use	12.4%	13.0%	8.5%	7.1%	5.9%	4.8%	4.9%	8.1%
Current HS Tobacco Use	28.3%	31.0%	27.5%	24.2%	22.0%	20.5%	20.3%	22.9%
Current MS Cigarettes Use	7.8%	7.7%	4.1%	4.4%	3.7%	2.9%	1.8%	1.9%
Current HS Cigarettes Use	21.3%	23.2%	18.3%	17.5%	13.7%	12.0%	8.7%	5.2%

Source: IDOH/TPC, 2020

Youth Risk Behavior Surveillance System

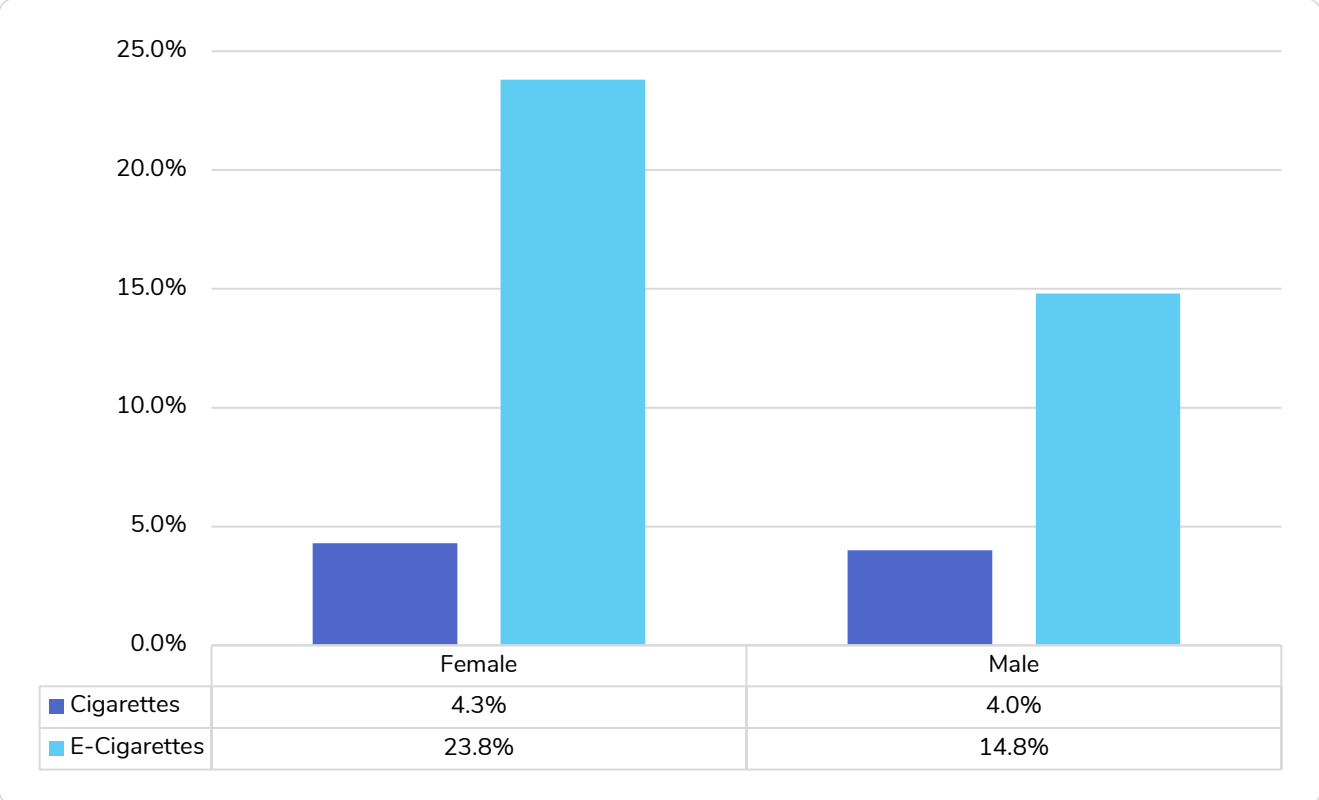
Youth Risk Behavior Surveillance System (YRBSS) monitors health related behaviors (such as alcohol, tobacco, and other drugs) that lead to death and disability among young and adults. One of the six health related behaviors includes tobacco use. Based on 2021 YRBSS data, 18.7% of high school students in the U.S. used tobacco products (See Table 3.3). Overall youth tobacco prevalence rate for Indiana was not available in YRBSS. The rate of cigarette use has decreased in Indiana from 25.6% (95% CI: 23.2-28.2) in 2003 to 4.2% (95% CI: 2.3-7.4) in 2021. The use of e-cigarettes among high school students, with 19.1% (95% CI: 14.7-24.3) reporting current use in Indiana during 2021 (CDC, 1991-2021). Use of cigarettes and e-cigarettes is higher among high school females than males. Additionally, use among African American high school students is higher than that of White high school students in Indiana. E-cigarette use ranged between 16.6 to 21.0 across grade level in Indiana high schoolers (See Fig 3.7 through 3.9).

Table 3.3 Current Use of Tobacco Products in Indiana and U.S. High School Students (Youth Risk Behavior Surveillance System, 2021)

	Indiana (95% CI)	U.S.(95% CI)
Any Tobacco Use		18.7% (16.8–20.7)
Electronic Vapor Products	19.1% (14.7–24.3)	18.0% (16.3–19.8)
Cigarettes	4.2% (2.3–7.4)	3.8% (3.3–4.4)
Cigars		3.1% (2.6–3.7)
Smokeless Tobacco		2.5% (2.0–3.0)

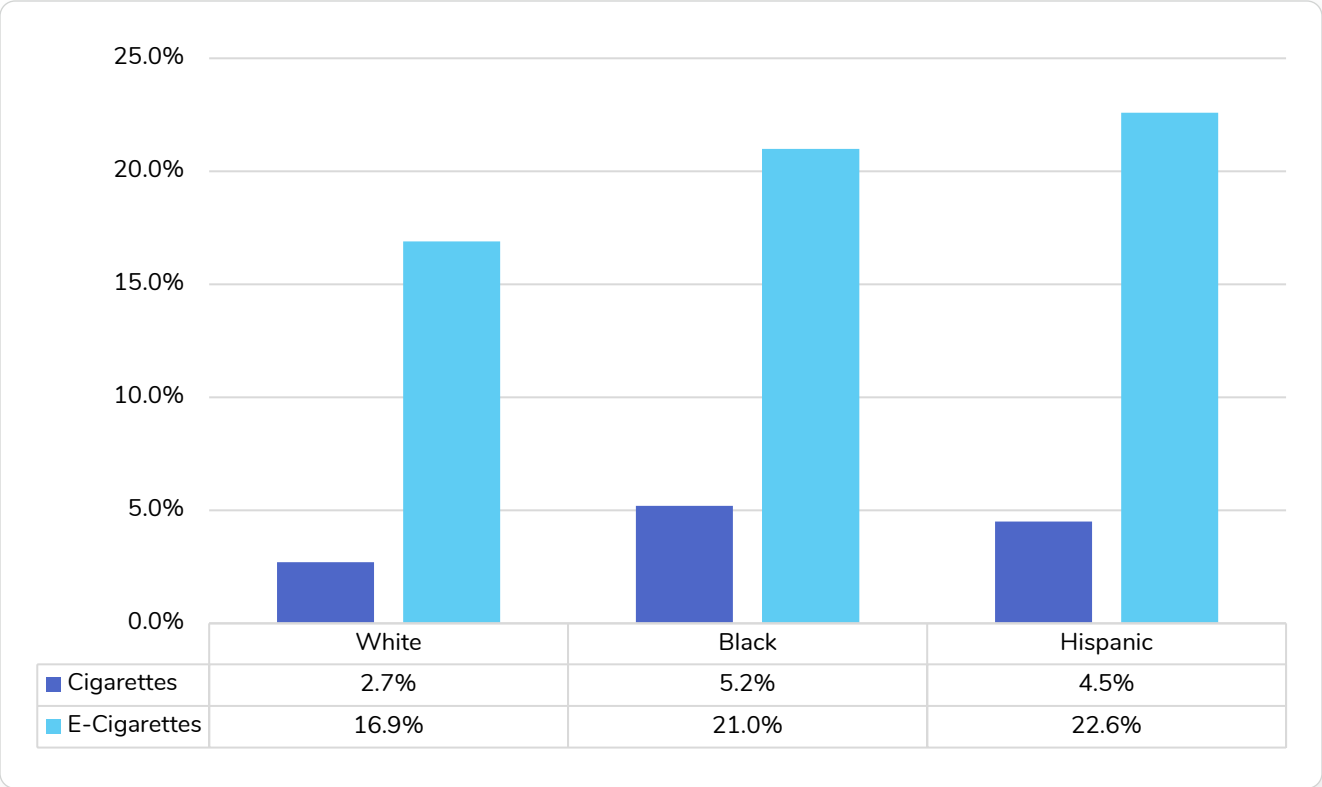
Source: CDC, 1991-2021

Figure 3.7 Rates of Current Use of Cigarettes and Electronic Vapor Products in Indiana High School Students (9th–12th Grade), by Gender (Youth Risk Behavior Surveillance System, 2021)



Source: CDC, 1991-2021

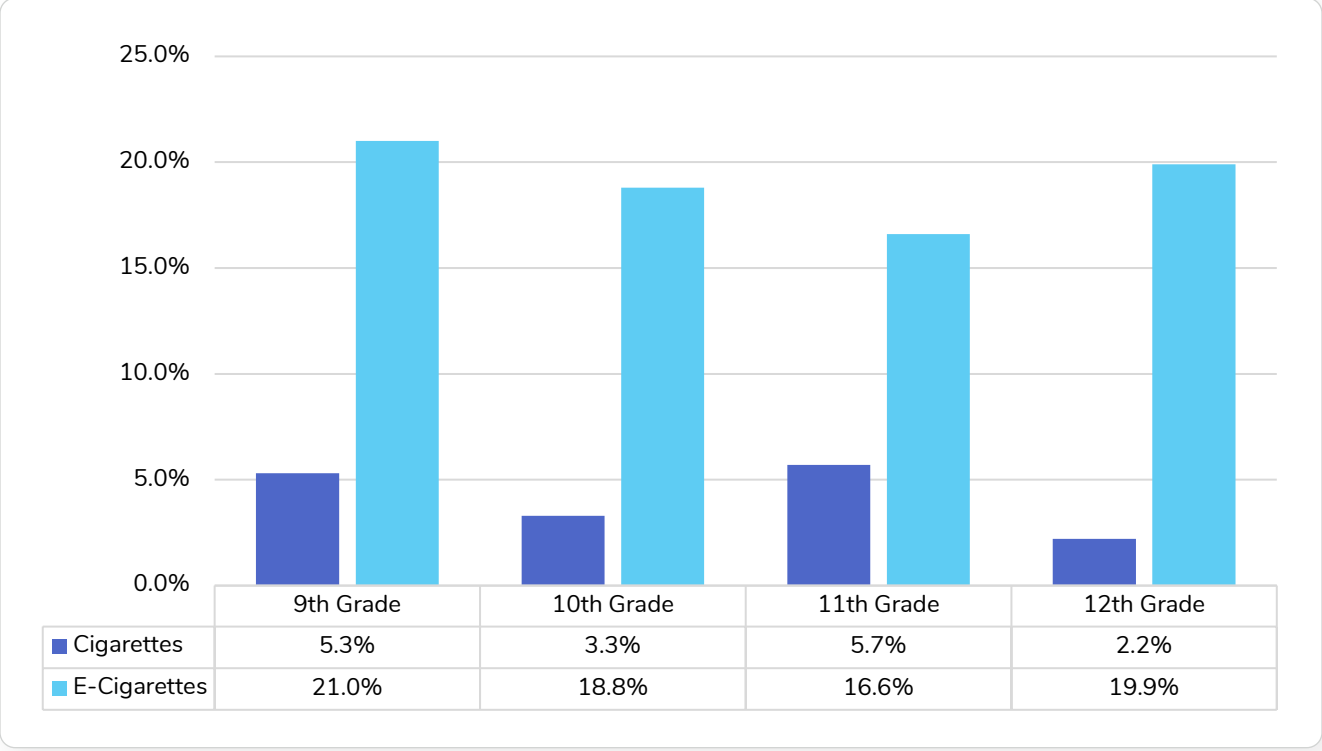
Figure 3.8 Rates of Current Use of Cigarettes and Electronic Vapor Products in Indiana High School Students (9th–12th Grade), by Race/Ethnicity (Youth Risk Behavior Surveillance System, 2021)



	White	Black	Hispanic
Cigarettes	2.7%	5.2%	4.5%
E-Cigarettes	16.9%	21.0%	22.6%

Source: CDC, 1991-2021

Figure 3.9 Rates of Current Use of Cigarettes and Electronic Vapor Products in Indiana High School Students (9th– 12th Grade), by Grade (Youth Risk Behavior Surveillance System, 2021)



	9th Grade	10th Grade	11th Grade	12th Grade
Cigarettes	5.3%	3.3%	5.7%	2.2%
E-Cigarettes	21.0%	18.8%	16.6%	19.9%

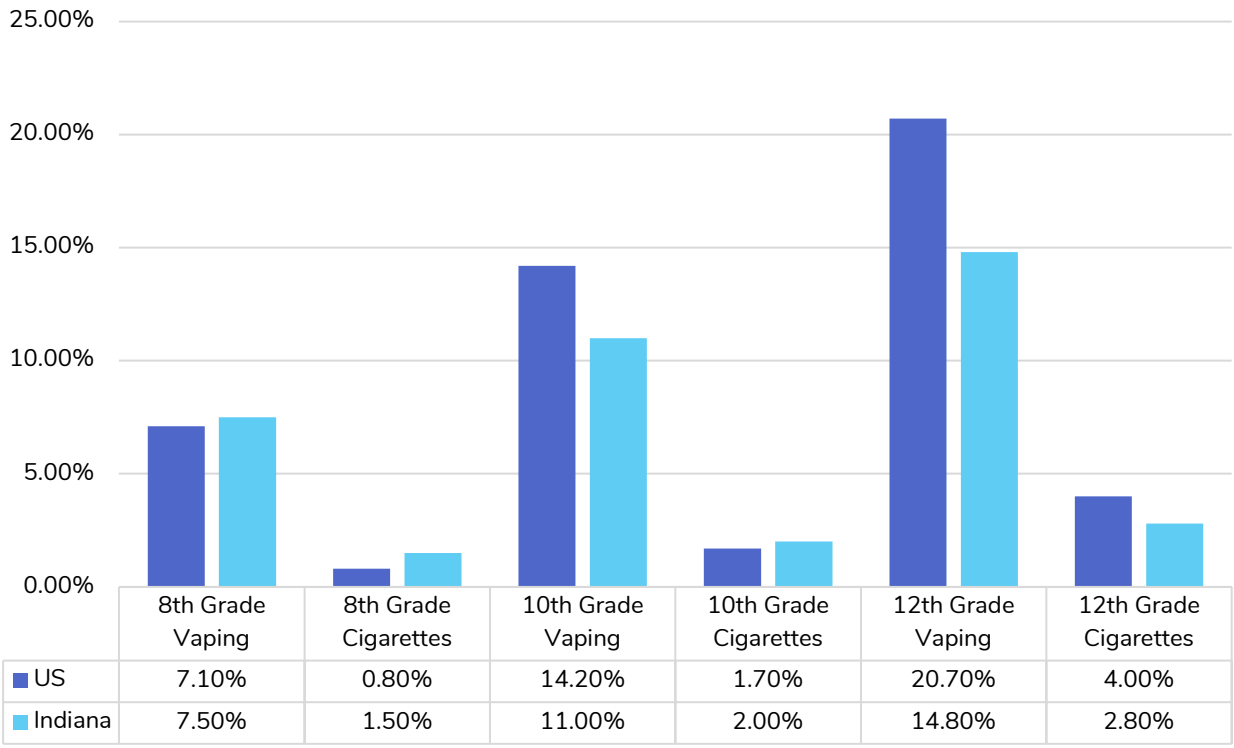
Source: CDC, 1991-2021

Indiana Youth Survey

The Indiana Youth Survey is conducted biennially for students in grades 6 to 12. The survey assesses the students use of substances, mental health, gambling, and risk and protective factors that can affect students' academic success. The 2022 results of the survey showed that cigarette and e-cigarette use increased as students progressed through the academic years. (See Figure 3.10) Appendix 3B shows the monthly cigarette and e-cigarette use by grade by region.

When comparing 12th grade students in Indiana to those in the United States, Indiana students have had higher rates of cigarettes use and vaping throughout the years. In addition, it was also noted that vaping had reached an all-time high and cigarette use had declined in 2018. 2020 and 2022 data suggest that although vaping rates have increased among high school students, rates have declined among Indiana high school students in comparison to the United States (See Figure 3.11). Of note, statistical significance could not be calculated due to a lack of details provided in the data. Therefore, it is recommended to interpret these results with caution.

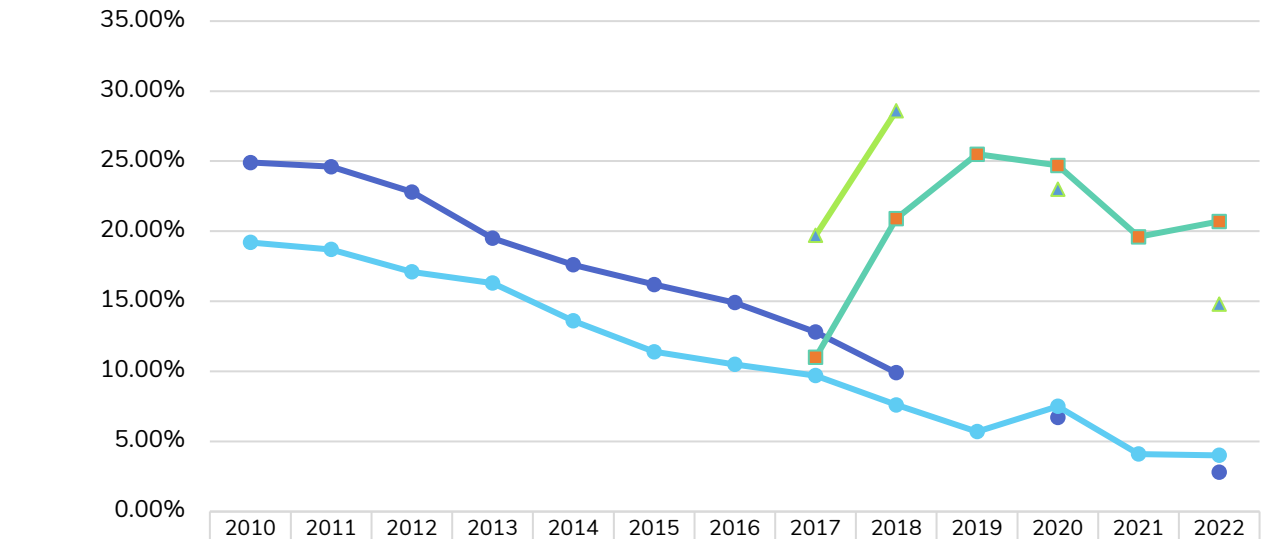
Figure 3.10 Monthly Cigarette Use and Vaping among 8th, 10th, and 12th Grade Students, Indiana and the United States (Indiana Youth Survey and Monitoring the Future Survey, 2022)



	8th Grade Vaping	8th Grade Cigarettes	10th Grade Vaping	10th Grade Cigarettes	12th Grade Vaping	12th Grade Cigarettes
US	7.10%	0.80%	14.20%	1.70%	20.70%	4.00%
Indiana	7.50%	1.50%	11.00%	2.00%	14.80%	2.80%

Source: Gassman et al., 2022; Inter-university Consortium for Political and Social Research, 2022

Figure 3.11 Monthly Cigarette Use and Vaping among 12th Grade Students in Indiana and the United States (Indiana Youth Survey: 2010–2022; and Monitoring the Future Survey, 2010–2022)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
IN Cigarettes	24.90%	24.60%	22.80%	19.50%	17.60%	16.20%	14.90%	12.80%	9.90%		6.70%		2.80%
US Cigarettes	19.20%	18.70%	17.10%	16.30%	13.60%	11.40%	10.50%	9.70%	7.60%	5.70%	7.50%	4.10%	4%
IN Vaping								19.70%	28.60%		23.00%		14.80%
US Vaping								11.00%	20.90%	25.50%	24.70%	19.60%	20.70%

Source: Gassman et al., 2022; Inter-university Consortium for Political and Social Research, 2022
Note: Vaping data only available since 2017.

Indiana College Substance Use Survey

About 21.6% of the Indiana college students reported the use of current (past month) electronic vapors vs 23.9% in the U.S. according to the Indiana College Substance Use Survey (Kim and Jun, 2021). Cigarette use was the second most common form of tobacco used (Indiana: 7.5% and US: 4.1%). The survey was based on 23 colleges and universities in Indiana and included questions on the use of various tobacco products. The survey may not be representative of all college students in Indiana due to convenience sampling, but provides valuable insights on behavioral health among young adults. Table 3.4 shows consumption rates for the different types of tobacco/nicotine products by demographic characteristic.

Table 3.4 Rates of Past-Month Use of Nicotine Products among Indiana College Students (Indiana College Substance Use Survey, 2021)

	Indiana (Total)	Male	Female	Under 21	21 or Over
Cigarettes	7.5%	10.0%	5.7%*	5.5%	9.9%*
Cigars	3.8%	6.9%	1.9%*	2.9%	4.9%*
Chewing/smokeless tobacco	2.5%	5.6%	0.7%*	1.9%	3.2%*
Smoking tobacco with hookah/ water pipe	2.4%	2.9%	1.9%*	1.6%	3.4%*
Electronic vapor products	21.6%	22.9%	20.6%	20.4%	23.1%*

Source: King & Jun, 2021
Note: *Statistical significance of P<0.05

CONSEQUENCES OF TOBACCO USE

Tobacco use has unintended consequences, especially in terms of addiction, health issues, and productivity loss at work. Tobacco use among youth also has a discernable impact, and its use among K-12 students on school property may lead to in-school suspensions or expulsions. There were 6,279 incidents of suspensions/expulsions at schools in academic year 2019-20 related to tobacco in Indiana (Indiana Department of Education, 2021). Appendix 3C shows the distribution of tobacco related school suspensions/expulsions by county.

Tobacco Related Morbidity and Mortality

About 480,000 people die yearly in the United States due to smoking, and it is the leading cause of preventable cancer. The most common cancer caused by tobacco use is lung cancer. Lung cancer is the leading cause of cancer death in the United States for both men and women. Smoking increases the risk of lung cancer by five to tenfold. In addition to lung cancer, smoking can also cause cancer of the mouth, pharynx, larynx, esophagus, stomach, pancreas, cervix, kidney, and bladder (NIH, 2020). The average life expectancy of a smoker is at least 10 years shorter than nonsmokers (CDC, 2020). Among women, risk of death is increased by almost 5 times among smokers.

Long term smoking can also cause lung disease, such as chronic bronchitis, emphysema, exacerbate existing asthma, and chronic obstructive pulmonary disease (COPD). Quitting smoking can repair much of the smoking induced lung damage. However, damage caused by COPD is irreversible (NIH, 2020). The risk of dying from bronchitits and emphysema is increased in male smokers by 17 times, and the chances of dying from coronary heart disease is increased by 4 times (CDC, 2020).

Appendix 3D shows the county-level data on several smoking-related outcomes provided by Indiana Tobacco Prevention and Cessation.

Secondhand Smoking

About 41,000 deaths occur each year due to secondhand smoke exposure in the United States. Secondhand smoke exposure can lead to stroke, lung cancer, and coronary heart disease. Secondhand smoke exposure in children can lead to exacerbation of existing asthma, acute respiratory infections, middle ear infections, slowed lung growth, and sudden infant death syndrome (SIDS) (CDC, 2020). In 2018, about 1,770 Hoosiers (adults/children/infants) died from diseases tied to secondhand smoke exposure and cost the state of Indiana $2.1 billion in health care and loss of life costs (Lewis and Zollinger, 2018).

Continuous Use

Continued use of tobacco and nicotine can lead to nicotine dependance, which endorses a cycle of nicotine and abuse that leads to further health complications. The use of e-cigarettes has increased in popularity tenfold, especially among U.S youth. The use of e-cigarettes became a popular trend due to its easy accessibility and variety of flavors that made it more appealing to younger consumers. Additives and use of other substances in e-cigarette formulas were linked to numerous respiratory failures and lung injury in U.S teens.

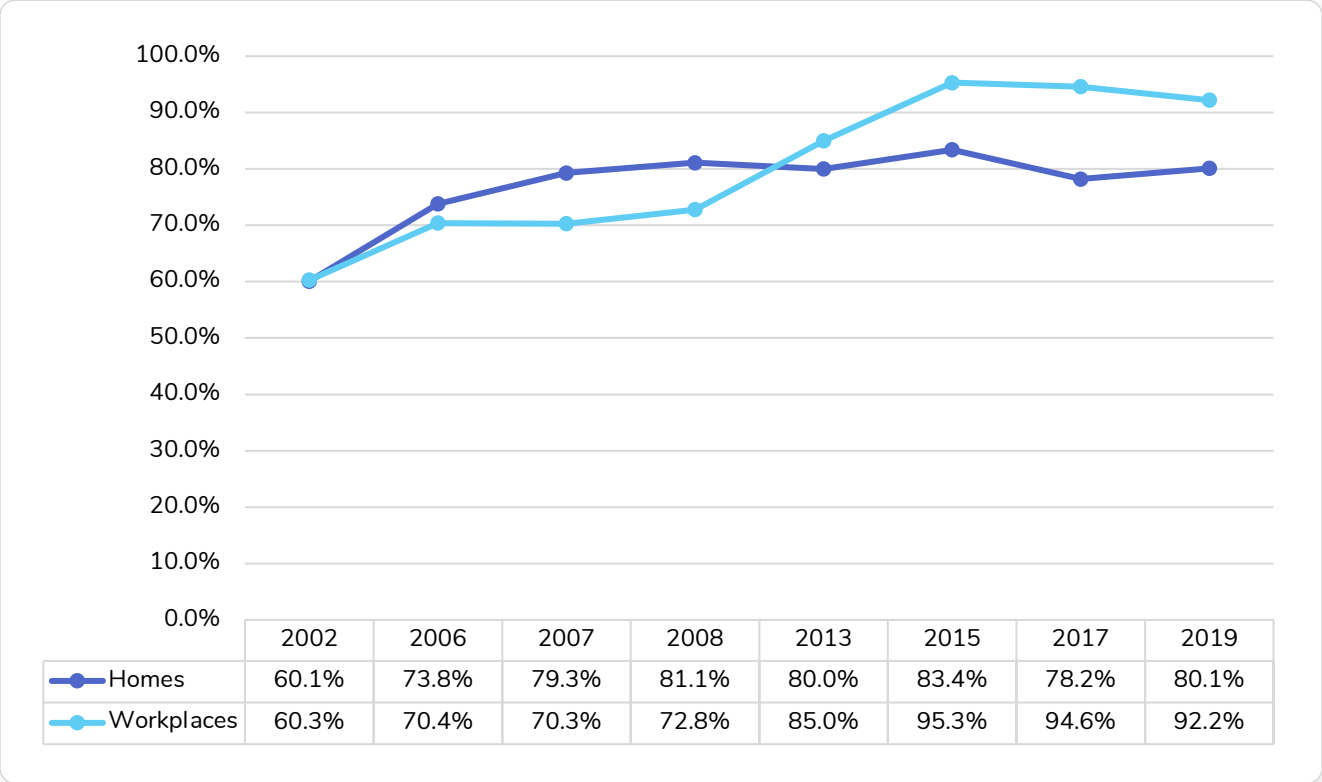
Continued nicotine use also leads to a decrease in immune response, resulting in increased infections. Nicotine and tobacco use affects the reproductive health of both males and females. In males, continuous use leads to decreased sperm count, sperm motility, and results in more mutations in sperm DNA. In females, the continuous use of tobacco and nicotine products can lead to loss in egg viability and cause early menopause (Szumilas et al., 2020). Use of tobacco in pregnancy is extensively documented, with well-known effects to embryos such as spontaneous abortions and fetal abnormalities. Smoking during pregnancy is associated with reduced lung function in newborns.

Economic Impact

Smoking related illnesses cost the United States $300 billion each year, with $156 billion lost in productivity and $5.6 billion lost in productivity due to secondhand smoking (CDC, 2021a). Creative ways have been used to reduce tobacco consumption, such as increasing the price of tobacco products. An increase of 10% in price estimates an overall reduction of 3-5% of tobacco consumption (CDC, 2021a). In Indiana, the annual healthcare costs associated with smoking were $2.93 billion, medical costs were $589.8 million, tax burden from government expenditures was $931 per household, and productivity losses due to smoking were $3.17 billion (Campaign for Tobacco-Free Kids, 2022).

Figure 3.12 shows percentage of smoke-free Indiana homes and workplaces from 2002 to 2019. The percentage of workplaces in Indiana that are smoke-free has increased significantly from 60.3% in 2002 to 92.2% in 2019.

Figure 3.12 Percentage of Smoke-free Homes and Workplaces in Indiana (Adult Tobacco Survey, 2002–2019)



	2002	2006	2007	2008	2013	2015	2017	2019
Homes	60.1%	73.8%	79.3%	81.1%	80.0%	83.4%	78.2%	80.1%
Workplaces	60.3%	70.4%	70.3%	72.8%	85.0%	95.3%	94.6%	92.2%

Source: ISDH/TPC, 2020

COVID-19 and Tobacco Use

Evidence has linked the use of nicotine and tobacco use to increased vulnerability to the COVID-19 infection. Tobacco use can be a risk factor for COVID-19 infection, as well as a risk factor for severe disease from COVID-19 (Gupta et al., 2021). This is possibly due to the decrease in immune function and the specificity of the COVID-19 virus in the respiratory system. Smoking also affects and damages cells in the airway lining, which are essential to defending against pathogens in the respiratory system. (American Lung Association, 2021). During the pandemic, frequent smokers reported an increase in tobacco use. The increase in use was reported as driven by pandemic related anxiety, boredom, and irregular routines (Giovenco et al., 2021).

APPENDIX 3A

Percentage of Indiana Middle School and High School Students Who Currently Use Cigarettes, E-Cigarettes, or Smokeless Tobacco by Gender, Race/Ethnicity, and School Grade (Indiana Youth Tobacco Survey, 2018)

	Current Use of Cigarettes		Current Use of E-Cigarettes		Current Use of Smokeless Tobacco	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
MIDDLE SCHOOL						
Gender						
Male	1.6	(1.0-2.3)	5.4	(3.9-6.9)	1.8	(1.0-2.6)
Female	2.1	(1.2-3.0)	5.4	(3.5-6.9)	1.1	(0.6-1.7)
Race/Ethnicity						
White	5.6	(4.2-7.0)	5.6	(4.1-7.0)	1.5	(0.9-2.1)
Black	12.5*	(7.4-17.7)	3.4*	(1.1-5.8)	1.5*	(-0.4-3.5)
Hispanic	7.3	(3.5-11.0)	6.7	(4.1-9.3)	1.4*	(0.5-2.2)
Other	7.3*	(4.0-10.7)	5.9*	(1.9-9.9)	1.0*	(-0.5-2.6)
Grade						
6	0.8*	(-0.2-1.9)	5.8	(3.6-8.0)	0.7*	(-0.2-1.5)
7	2.1	(0.8-3.4)	7.7	(5.4-10.1)	1.8	(0.8-2.9)
8	2.9	(1.8-3.9)	12	(9.0-15.0)	2	(1.1-2.9)
Total	1.9	(1.3-6.5)	5.5	(4.2-6.7)	1.5	(0.9-2.0)
HIGH SCHOOL						
Gender						
Male	5.6	(3.8-7.5)	20	(16.1-23.9)	5.7	(3.9-7.5)
Female	4.7	(3.4-6.0)	17	(13.8-20.2)	1.7	(1.1-2.4)
Race/Ethnicity						
White	17.5	(13.8-21.2)	20.9	(18.0-23.9)	4.1	(3.0-5.1)
Black	24.5*	(18.9-30.2)	9.4	(5.5-13.4)	2.0*	(0.3-3.6)
Hispanic	16.1	(11.4-20.8)	16.7	(11.5-21.9)	2.8*	(0.6-5.0)
Other	21.9*	(14.9-28.9)	12.2*	(4.3-20.0)	5.9*	(1.2-10.3)
Grade						
9	3	(2.0-4.0)	12	(9.0-15.0)	1.8	(1.2-2.4)
10	3.4	(2.0-4.9)	17.8	(13.4-22.3)	4	(2.3-5.8)
11	5.8	(3.7-8.0)	20.4	(15.9-24.9)	4.2	(1.7-6.7)
12	8.8	(5.5-12.1)	24.1	(17.0-31.2)	5.2	(3.1-7.2)
Total	5.2	(3.9-6.5)	18.5	(15.3-21.7)	3.8	(2.8-4.8)

Source: IDOH/TPC, 2019

Notes: * is used to indicate statistically unstable values (relative standard error >30%) and caution should be used in interpretation.

APPENDIX 3B - PART 1

Percentage of Indiana Students Reporting Monthly Cigarette Use, by Region and Grade (Indiana Youth Survey, 2022)

	Indiana	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
6th Grade	1.00%	1.10%	0.20%	1.00%	1.70%	1.20%	0.50%	0.90%	0.70%	1.20%	1.10%
7th Grade	1.10%	0.90%	1.00%	1.10%	0.70%	2.2%*	0.70%	1.10%	0.70%	2.7%*	0.90%
8th Grade	1.50%	1.00%	1.20%	1.60%	2.6%*	2.20%	1.00%	1.40%	1.10%	2.3%*	1.70%
9th Grade	2.00%	1.3%*	1.90%	2.00%	2.70%	1.90%	2.20%	1.70%	2.10%	2.70%	2.00%
10th Grade	2.00%	1.2%*	2.10%	2.00%	3.10%	2.80%	2.20%	1.40%	2.80%	1.80%	1.80%
11th Grade	2.80%	3.00%	2.20%	2.10%	3.90%	1.70%	3.50%	1.70%	3.40%	2.60%	3.40%
12th Grade	2.80%	2.00%	2.00%	3.60%	4.9%*	1.90%	1.90%	4.10%	4.4%*	2.60%	2.40%

Source: Gassman et al., 2022

Notes: * is used to indicate local rate that varies significantly from the state rate (P<.05).

APPENDIX 3B - PART 2

Percentage of Indiana Students Reporting Monthly E-Cigarette Use, by Region and Grade (Indiana Youth Survey, 2022)

	Indiana	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
6th Grade	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7th Grade	5.30%	4.50%	6.00%	5.60%	4.80%	8.3%*	3.8%*	5.40%	3.4%*	7.7%*	6.8%*
8th Grade	7.50%	7.10%	7.50%	8.8%*	8.20%	10.6%*	4.8%*	8.50%	6.40%	8.10%	7.10%
9th Grade	9.30%	9.80%	8.10%	11.5%*	11.50%	9.30%	7.1%*	12.7%*	8.10%	10.70%	8.30%
10th Grade	11%	9.2%*	9.20%	13.3*	12.80%	12.70%	9.40%	10.90%	13.9%*	9.2%*	10.10%
11th Grade	13.50%	15.20%	10.3%*	12.80%	16.30%	11.90%	13.20%	17.7%*	16.8%*	11.70%	10.9%*
12th Grade	14.80%	15.10%	11.7%*	18.0%*	19.0%*	10.4%*	12.10%	17.40%	21.2%*	11.6%*	10.9%*

Source: Gassman et al., 2022

Notes: * used to indicate local rate that varies significantly from the state rate (P<.05)

Data from INYS at the state and regional levels is provided. Until 2018, there were 8 regions. DMHA changed the number of regions to 10 in 2020. The counties in each region include:

Region 1: Lake, LaPorte, Porter

Region 2: Cass, Elkhart, Fulton, Howard, Kosciusko, Marshall, Miami, Pulaski, St. Joseph, Starke, Wabash

Region 3: Adams, Allen, DeKalb, Huntington, Lagrange, Noble, Steuben, Wells, Whitley

Region 4: Benton, Boone, Carroll, Clinton, Fountain, Jasper, Montgomery, Newton, Tippecanoe, Warren, White

Region 5: Blackford, Delaware, Grant, Hamilton, Hancock, Henry, Jay, Madison, Randolph, Tipton, Wayne

Region 6: Clay, Hendricks, Monroe, Morgan, Owen, Parke, Putnam, Sullivan, Vermillion, Vigo

Region 7: Marion

Region 8: Daviess, Dubois, Gibson, Greene, Knox, Martin, Perry, Pike, Posey, Spencer, Vanderburgh, Warrick

Region 9: Bartholomew, Brown, Clark, Crawford, Floyd, Harrison, Jackson, Johnson, Lawrence, Orange, Scott, Washington

Region 10: Dearborn, Decatur, Fayette, Franklin, Jefferson, Jennings, Ohio, Ripley, Rush, Shelby, Switzerland, Union

APPENDIX 3C

Number of Incidents and Unique Students Involved in Suspensions/Expulsions due to Tobacco Use in Indiana, Academic Year 2019-20

County	Students Enrolled	Number of Incidents	Number of Unique Students Involved
Adams	4804	19	18
Allen	69012	265	256
Bartholomew	14668	199	166
Benton	2118	31	27
Blackford	2330	18	16
Boone	14520	70	67
Brown	2386	19	16
Carroll	3488	22	22
Cass	7990	61	57
Clark	18780	141	134
Clay	5324	<5	<5
Clinton	8432	61	57
Crawford	1730	16	14
Daviess	3512	11	11
Dearborn	10592	119	106
Decatur	7346	20	20
DeKalb	8396	50	48
Delaware	16800	65	61
DuBois	8810	49	49
Elkhart	45836	98	94
Fayette	3216	29	25
Floyd	16530	102	98
Fountain	2636	27	22
Franklin	2512	66	56
Fulton	3384	31	29
Gibson	6904	35	34
Grant	12054	65	64
Greene	2578	33	28
Hamilton	65258	174	162
Hancock	16208	87	81
Harrison	3880	40	37
Hendricks	35274	144	136
Henry	8978	65	58

County	Students Enrolled	Number of Incidents	Number of Unique Students Involved
Howard	12920	77	74
Huntington	6394	53	45
Jackson	9670	112	98
Jasper	5716	22	21
Jay	3460	68	59
Jefferson	6634	50	45
Jennings	4968	<5	<5
Johnson	32626	152	146
Knox	6222	138	124
Kosciusko	16734	127	120
LaGrange	6046	56	52
Lake	94994	201	190
LaPorte	18954	133	119
Lawrence	7712	114	96
Madison	24336	120	114
Marion	199708	440	422
Marshall	10966	62	57
Martin	722	5	5
Miami	5368	121	112
Monroe	16194	141	129
Montgomery	6426	56	52
Morgan	12328	67	60
Newton	2050	37	32
Noble	9204	89	78
Ohio	522	<5	<5
Orange	3140	46	45
Owen	3048	33	30
Parke	3334	33	32
Perry	4744	30	29
Pike	2068	47	41
Porter	34220	148	137
Posey	4370	43	41
Pulaski	2260	37	33

County	Students Enrolled	Number of Incidents	Number of Unique Students Involved
Putnam	5808	28	25
Randolph	6458	46	45
Ripley	6848	71	51
Rush	3160	13	12
Saint Joseph	45274	127	117
Scott	3822	60	59
Shelby	9480	62	55
Spencer	2020	7	6
Starke	3906	43	40
Steuben	4562	22	21
Sullivan	3676	31	29
Switzerland		<5	<5
Tippecanoe	27792	125	116
Tipton	2690	30	27
Union	1482	18	15
Vanderburgh	27632	81	72
Vermillion	3220	11	10
Vigo	16566	52	47
Wabash	5266	33	30
Warren	1184	<5	<5
Warrick	11054	86	76
Washington	4742	74	69
Wayne	10496	31	30
Wells	4712	34	31
White	5086	42	39
Whitley	6680	62	57
Indiana	1237960	6279	5786

Source: Indiana Department of Education, 2021

Note: Incident numbers reflect each time a student was suspended/expelled due to tobacco use; unique count refers to the number of unique students involved (if the same student is suspended twice for tobacco, that reflects two incidents and one unique student).

Counts of incidents observe each time a student, due to tobacco use, was either suspended or expelled. The unique count is the number of unique students who involved.

APPENDIX 3D - PART 1

Adult Smoking Prevalence and Chronic Disease Outcomes, by County

County	Estimated adult smoking rate (Statewide: 2019 BRFSS; County-level: 2015-2019 BRFSS)	Age-adjusted rate of lung cancer deaths per 100,000 population (2015-2019)	Age-adjusted rate of major cardiovascular diseases deaths per 100,000 population (2016-2020)	Asthma ER Visits Age-Adjusted Rate per 10,000 population, 2015	Percentage of live births to mothers who smoked during pregnancy, 2021	Estimated cost of smoking-related births, 2021
Adams	21.3	48.4	165.5	21.9	4.7	$44,814
Allen	20.1	39.7	187.5	45	7.4	$528,262
Bartholomew	21.5	45	172.8	40.5	11.9	$165,676
Benton	30.4	33.1	196.1	26.8	13.2	$16,296
Blackford	28.5	67.7	205.4	43.3	26.2	$44,814
Boone	12.1	41.9	193.9	24.4	3.9	$46,172
Brown	22.6	55.9	158.5	Unstable Rate	12.9	$20,370
Carroll	15.6	49.8	151.5	24.2	12.9	$39,382
Cass	24.8	46.5	162.6	43.6	13	$84,196
Clark	23.6			25.6		
Clay	22.0	67.9	252.6	35.9	18.9	$73,332
Clinton	15.6	51.6	175.6	40.8	8.7	$46,172
Crawford	22.3	60.9	212.5	24.6	26.7	$36,666
Daviess	19.8	43.8	203.5	47.2	6.3	$46,172
Dearborn	22.3	56.6	174.9	25.5	13.2	$89,628
Decatur	17.6	44.2	208.4	49.2	18.3	$74,690
DeKalb	25.9	49.6	188	26	17.1	$131,726
Delaware	20.3	49.5	215.6	45	16	$244,440
Dubois	15.3	32.3	182.9	5.6	9.3	$62,468
Elkhart	20.2			44.5		
Fayette	29.0	54.6	254.9	27.5	17.2	$63,826
Floyd	20.2	45.2	195.9	27.1	12.9	$141,232
Fountain	30.4	49.5	212.3	60.9	11.7	$33,950
Franklin	17.6	34.6	164.6	12.4	13.2	$47,530
Fulton	22.5	50.7	210.9	35	17.1	$54,320
Gibson	20.0	42.1	213.7	47.4	10.8	$54,320
Grant	24.8			59.1		
Greene	24.0	60.3	210	24.8	17.6	$78,764
Hamilton	10.5	25.5	135.7	19.5	1.2	$66,542
Hancock	11.6	44.5	156	29	5.1	$61,110
Harrison	23.4	48.5	173.3	23	14.9	$84,196
Hendricks	14.5	43.2	161.5	15.3	4.2	$108,640
Henry	25.0	55.4	187.9	46.1	14.7	$84,196

County	Estimated adult smoking rate (Statewide: 2019 BRFSS; County-level: 2015-2019 BRFSS)	Age-adjusted rate of lung cancer deaths per 100,000 population (2015-2019)	Age-adjusted rate of major cardiovascular diseases deaths per 100,000 population (2016-2020)	Asthma ER Visits Age-Adjusted Rate per 10,000 population, 2015	Percentage of live births to mothers who smoked during pregnancy, 2021	Estimated cost of smoking-related births, 2021
Howard	26.1	48.6	225.1	57.3	16	$210,490
Huntington	24.4	45.7	202.2	40	13.9	$76,048
Jackson	22.6	52.1	187.4	67.9	15.3	$123,578
Jasper	25.6	47.1	219.7	34.1	13	$67,900
Jay	28.5	51.2	187.7	54.2	13.5	$54,320
Jefferson	30.9	58.7	226.3	31	19.7	$92,344
Jennings	29.1	70.3	209.3	55.6	22.5	$92,344
Johnson	20.0	44.2	179.5	39	8.4	$213,206
Knox	19.8	50.8	193	43.6	17.4	$95,060
Kosciusko	20.1	42.4	186.6	28.7	11.7	$149,380
LaGrange	21.6	43.9	189.1	27.4	4	$39,382
Lake	18.6			69.9		
LaPorte	29.1	47.1	233.3	52.5	15.6	$249,872
Lawrence	21.3	50.2	193.2	50.5	18.8	$127,652
Madison	27.9			87		
Marion	20.0			83.4		
Marshall	23.0	42.2	194.5	25.9	8.7	$65,184
Martin	19.8	58.5	192.5	Unstable Rate	18.2	$29,876
Miami	30.1	44.7	223	45	23.3	$111,356
Monroe	15.8	37.4	156.7	22.9	10.9	$162,960
Montgomery	20.3	43.5	234.8	51.3	15	$89,628
Morgan	23.0	50.1	213.2	41.6	14.2	$146,664
Newton	25.6	52.9	184.8	31.1	20.3	$42,098
Noble	20.5	48.5	187.5	32.8	13.8	$111,356
Ohio	30.9	53.7	121.6	Unstable Rate	14	$9,506
Orange	29.8	59.4	207.4	52.8	16	$48,888
Owen	22.0	53.7	211.8	32.8	23.3	$69,258
Parke	22.9	45.7	186.2	32.3	10.6	$31,234
Perry	22.3	25.1	227	73.8	22.3	$55,678
Pike	19.8	53.1	174.6	Unstable Rate	7.5	$13,580
Porter	20.5	41.8	173.9	44	5	$114,072
Posey	20.0	48.2	158	20.7	13.1	$39,382
Pulaski	22.5	44.2	215.5	29.4	21.4	$33,950
Putnam	22.9	61.5	179.8	25.1	13.6	$63,826
Randolph	28.5	45.8	204.9	47.7	20.3	$78,764

County	Estimated adult smoking rate (Statewide: 2019 BRFSS; County-level: 2015-2019 BRFSS)	Age-adjusted rate of lung cancer deaths per 100,000 population (2015-2019)	Age-adjusted rate of major cardiovascular diseases deaths per 100,000 population (2016-2020)	Asthma ER Visits Age-Adjusted Rate per 10,000 population, 2015	Percentage of live births to mothers who smoked during pregnancy, 2021	Estimated cost of smoking-related births, 2021
Ripley	18.2	36.6	212.1	39	14.2	$63,826
Rush	29.0	51.6	201.3	83.1	15.8	$43,456
Scott	29.1	60.9	217.2	51.9	20.8	$78,764
Shelby	22.7	61.9	167	51.6	18.1	$119,504
Spencer	22.3	49.6	217.2	22.5	9.8	$25,802
St. Joseph	18.9	45.5	187.3	50.6	6.3	$277,032
Starke	22.5	70.6	253.8	51.8	16.8	$54,320
Steuben	21.6	40.9	171.1	40.7	16.7	$80,122
Sullivan	24.0	63.4	226	46.8	16.7	$47,530
Switzerland	30.9	54.4	196.4	Unstable Rate	14.8	$25,802
Tippecanoe	14.9	38.8	162.6	38	9.1	$251,230
Tipton	26.1	42.1	189.9	40.4	5.9	$12,222
Union	29.0	41.9.	206.1	Suppressed	13.1	$14,938
Vanderburgh	21.8			54.9		
Vermillion	22.9	60.3	258.4	48.7	19.8	$44,814
Vigo	20.7	54.6	249.8	44.9	18	$277,032
Wabash	30.1	45.4	186.5	27.4	17.9	$76,048
Warren	30.4	43.2	206.8	47.3	7.9	$9,506
Warrick	14.8	36.6	185.7	30.1	6.8	$54,320
Washington	29.8	60.2	220.1	44.3	16.5	$71,974
Wayne	23.0	48.6	254.3	41.9	14.1	$149,380
Wells	21.3	41.4	184.6	28	14.2	$61,110
White	15.6	49.4	191.8	53.8	14.1	$50,246
Whitley	20.5	50.8	177.9	35.1	11.1	$54,320
Indiana	19.4	46	191.8	47.4	9.8	$10,658,942

Source: IDOH/TPC, 2022

APPENDIX 3D - PART 2

Adult Smoking Prevalence and Chronic Disease Outcomes, by County

County	Estimated number of people living with a tobacco-related illness	Estimated number of deaths due to tobacco	Estimated number of deaths due to secondhand smoke (SHS)	Estimated cost of SHS due to medical costs and premature death
Adams	1,757	59	9	$11.6 Million
Allen	18,914	630	101	$124.7 Million
Bartholomew	4,034	134	21	$26.6 Million
Benton	428	14	2	$2.8 Million
Blackford	594	20	3	$3.9 Million
Boone	3,475	116	18	$22.9 Million
Brown	759	25	4	$5 Million
Carroll	997	33	5	$6.6 Million
Cass	1,858	62	10	$12.2 Million
Clark	5,943	198	32	$39.2 Million
Clay	1,299	43	7	$8.6 Million
Clinton	1,629	54	9	$10.7 Million
Crawford	517	17	3	$3.4 Million
Daviess	1,638	55	9	$10.8 Million
Dearborn	2,487	83	13	$16.4 Million
Decatur	1,299	43	7	$8.6 Million
DeKalb	2,123	71	11	$14 Million
Delaware	5,492	183	29	$36.2 Million
Dubois	2,141	71	11	$14.1 Million
Elkhart	10,161	339	54	$67 Million
Fayette	1,148	38	6	$7.6 Million
Floyd	3,950	132	21	$26 Million
Fountain	809	27	4	$5.3 Million
Franklin	1,118	37	6	$7.4 Million
Fulton	1,005	34	5	$6.6 Million
Gibson	1,620	54	9	$10.7 Million
Grant	3,272	109	17	$21.6 Million
Greene	1,512	50	8	$10 Million
Hamilton	17,052	568	91	$112.4 Million
Hancock	3,918	131	21	$25.8 Million
Harrison	1,946	65	10	$12.8 Million
Hendricks	8,578	286	46	$56.5 Million
Henry	2,400	80	13	$15.8 Million

County	Estimated number of people living with a tobacco-related illness	Estimated number of deaths due to tobacco	Estimated number of deaths due to secondhand smoke (SHS)	Estimated cost of SHS due to medical costs and premature death
Howard	4,106	137	22	$27.1 Million
Huntington	1,799	60	10	$11.9 Million
Jackson	2,278	76	12	$15 Million
Jasper	1,615	54	9	$10.6 Million
Jay	1,005	33	5	$6.6 Million
Jefferson	1,627	54	9	$10.7 Million
Jennings	1,355	45	7	$8.9 Million
Johnson	7,939	265	42	$52.3 Million
Knox	1,781	59	9	$11.7 Million
Kosciusko	3,938	131	21	$26 Million
LaGrange	1,985	66	11	$13.1 Million
Lake	24,474	816	130	$161.3 Million
LaPorte	5,517	184	29	$36.4 Million
Lawrence	2,209	74	12	$14.6 Million
Madison	6,386	213	34	$42.1 Million
Marion	47,956	1,599	255	$316.1 Million
Marshall	2,262	75	12	$14.9 Million
Martin	482	16	3	$3.2 Million
Miami	1,765	59	9	$11.6 Million
Monroe	6,857	229	36	$45.2 Million
Montgomery	1,862	62	10	$12.3 Million
Morgan	3,523	117	19	$23.2 Million
Newton	679	23	4	$4.5 Million
Noble	2,329	78	12	$15.3 Million
Ohio	292	10	2	$1.9 Million
Orange	975	32	5	$6.4 Million
Owen	1,046	35	6	$6.9 Million
Parke	793	26	4	$5.2 Million
Perry	941	31	5	$6.2 Million
Pike	601	20	3	$4 Million
Porter	8,501	283	45	$56 Million
Posey	1,238	41	7	$8.2 Million
Pulaski	614	20	3	$4 Million
Putnam	1,802	60	10	$11.9 Million
Randolph	1,202	40	6	$7.9 Million

County	Estimated number of people living with a tobacco-related illness	Estimated number of deaths due to tobacco	Estimated number of deaths due to secondhand smoke (SHS)	Estimated cost of SHS due to medical costs and premature death
Ripley	1,423	47	8	$9.4 Million
Rush	822	27	4	$5.4 Million
Scott	1,197	40	6	$7.9 Million
Shelby	2,211	74	12	$14.6 Million
Spencer	972	32	5	$6.4 Million
St. Joseph	13,393	446	71	$88.3 Million
Starke	1,147	38	6	$7.6 Million
Steuben	1,690	56	9	$11.1 Million
Sullivan	1,022	34	5	$6.7 Million
Switzerland	478	16	3	$3.1 Million
Tippecanoe	9,140	305	49	$60.2 Million
Tipton	754	25	4	$5 Million
Union	348	12	2	$2.3 Million
Vanderburgh	8,840	295	47	$58.3 Million
Vermillion	758	25	4	$5 Million
Vigo	5,209	174	28	$34.3 Million
Wabash	1,520	51	8	$10 Million
Warren	414	14	2	$2.7 Million
Warrick	3,136	105	17	$20.7 Million
Washington	1,383	46	7	$9.1 Million
Wayne	3,266	109	17	$21.5 Million
Wells	1,383	46	7	$9.1 Million
White	1,212	40	6	$8 Million
Whitley	1,678	56	9	$11.1 Million
Indiana	333,000	11,100	1,770	$2.1 Billion

Source: IDOH/TPC, 2021

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CHAPTER 04

Marijuana Use in Indiana: Prevalence and Consequences

INTRODUCTION

Marijuana, commonly known as weed, pot, or cannabis is a mixture of dried flowers of the plant Cannabis sativa (CDC, 2021d). Two main chemical components of marijuana are extracted for medical and recreation purposes. Both delta-9-tetrahydrocannabinal (THC) and cannabidiol (CBD) have entirely different effects when consumed (CDC, 2021d). THC is the chemical component of the plant responsible for the psychotropic effects caused by smoking or ingesting marijuana. Whereas CBD may help with anxiety, pain, or insomnia, little evidence exists on the benefits of CBD. Ingesting or smoking marijuana can cause a wide array of experiences among individuals ranging from euphoria or relaxation to anxiety or panic attacks. Ingested marijuana has a delayed onset of action in comparison to when smoked, which can lead to increased THC consumption. As of July 2021, eighteen U.S. states, two territories and the District of Colombia have legalized adult recreational marijuana use (Hartman, 2021). Under the federal law of Controlled Substance Act (CSA) marijuana is still considered an illegal substance and a schedule 1 controlled drug substance (DEA, 2021). Possession and distribution of marijuana under federal law is subject to severe criminal penalties.

Over the years, several dosage forms of THC have developed and became popular such as: resin, hash oil, wax, and many others. These dosage forms have a variety of delivery routes, ranging from vaporized inhalant to edible snacks and consumables. Potency among THC products has increased significantly over the years, with some products claiming THC levels exceeding 80%. Increase in potency and availability can lead to risk of physical dependance and exacerbation of side effects associated with marijuana use. Side effects that can be exacerbated with increased concentration include: anxiety, agitation, paranoia, and psychosis (Abuse, 2020). Increase in edible consumption of marijuana is found most prevalent in states that have allowed medical use of marijuana (Abuse, 2019).

Marijuana use disorder is a form of dependence where an individual feels withdrawal symptoms when not taking the drug (NIH, 2021c). The percent of developing marijuana use disorder increases when use begins before 18 years of age (National Institute on Drug Abuse, 2020). Marijuana use prior to the age of 18 has also shown to be a risk factor for use of other drugs and development of drug and/or alcohol dependence (Lynskey et al., 2012).

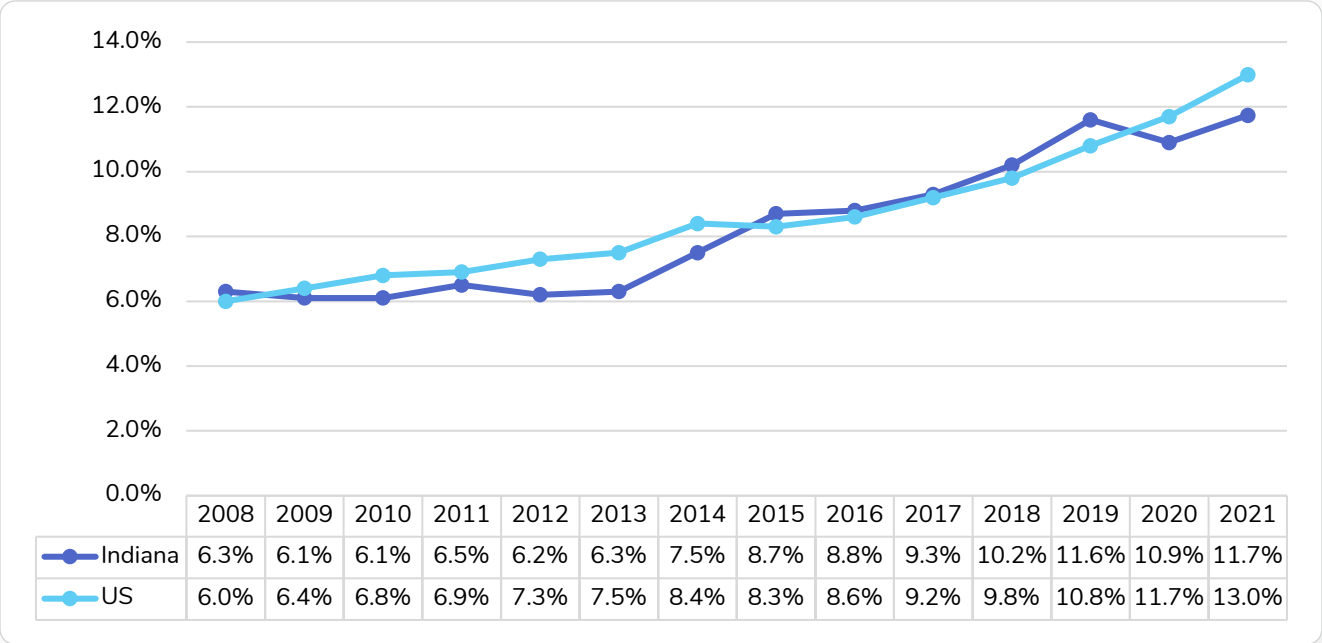
PREVALENCE OF MARIJUANA CONSUMPTION IN THE GENERAL POPULATION

National Survey on Drug Use and Health

In 2021, National Survey on Drug Health Use (NSDUH) reported 11.7% (95% Confidence Interval [CI]: 9.6-14.3) of Indiana residents ages 12 and older use marijuana (U.S.: 13.0%; 95% CI: 12.5-13.5). Marijuana use in the last year among Indiana Hoosiers was estimated at 18.7% (95% CI: 15.8–21.8), versus the national rate at 18.7% (95% CI: 18.1-19.4) See Figure 4.1 for trend on past months marijuana use. Individuals ages 18 to 25 showed the highest prevalence of marijuana use, with 25.5% (95% CI: 20.6-31.2) of Hoosiers in this age group reporting current marijuana use (U.S.: 24.1%; 95% CI: 22.9-25.4) and 38.3% (95% CI: 32.5-44.4) Hoosier young adults reporting past-year use (U.S.: 35.4%; 95% CI:34.0–36.8) in 2021 (Figure 4.2). Prevalence rates were lower among adults aged 26 and older. In 2021, about

9.5% (95% CI: 6.9–13.1) of 12- to 17-year-olds reported using marijuana in the past year in Indiana (U.S.: 10.5%; 95% CI: 9.6–11.4) and 5.1% (95% CI: 3.5-7.4) Hoosier young adults reported using within the past month (U.S.: 5.8%; 95% CI: 5.1-6.5). See Figure 4.2 for current rates of marijuana use by age group.

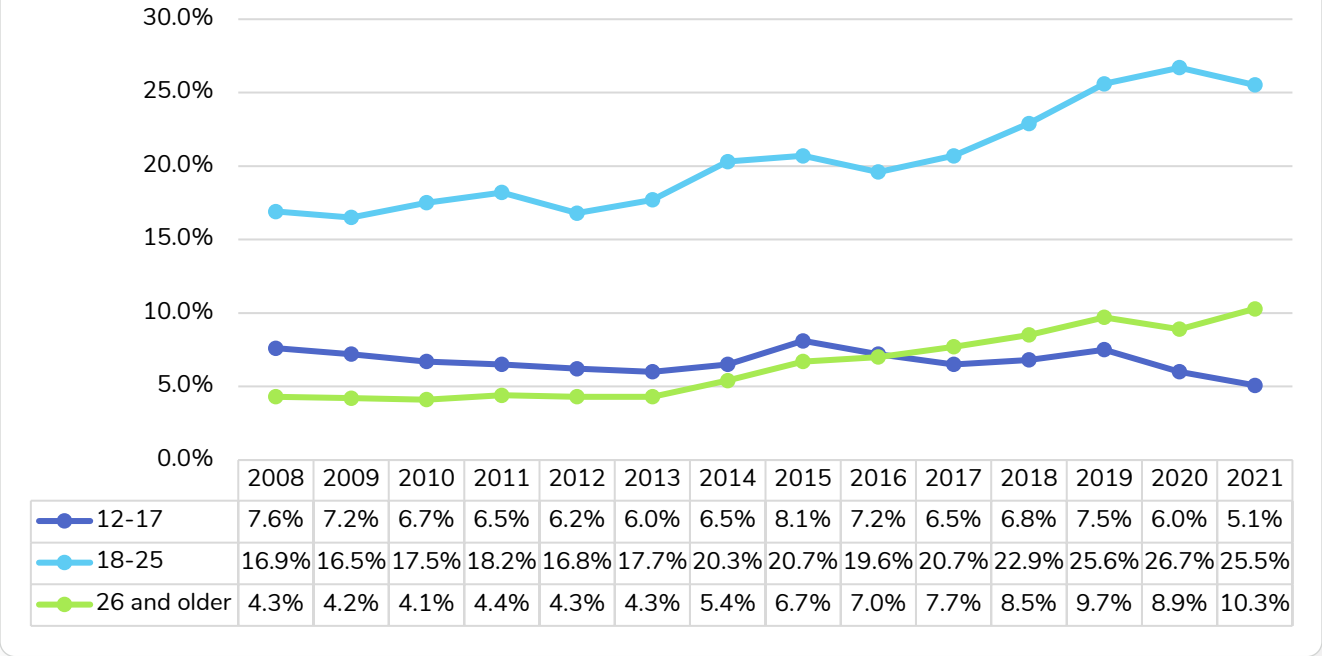
Figure 4.1 Percentage of Indiana and U.S. Population (Ages 12 and Older) Reporting Current Marijuana Use (National Survey on Drug Use and Health, 2021)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	6.3%	6.1%	6.1%	6.5%	6.2%	6.3%	7.5%	8.7%	8.8%	9.3%	10.2%	11.6%	10.9%	11.7%
US	6.0%	6.4%	6.8%	6.9%	7.3%	7.5%	8.4%	8.3%	8.6%	9.2%	9.8%	10.8%	11.7%	13.0%

Source: SAMHSA-NSDUH, 2022

Figure 4.2 Percentage of Indiana Residents Reporting Current Marijuana Use, by Age Group (National Survey on Drug Use and Health, 2008–2021)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
12-17	7.6%	7.2%	6.7%	6.5%	6.2%	6.0%	6.5%	8.1%	7.2%	6.5%	6.8%	7.5%	6.0%	5.1%
18-25	16.9%	16.5%	17.5%	18.2%	16.8%	17.7%	20.3%	20.7%	19.6%	20.7%	22.9%	25.6%	26.7%	25.5%
26 and older	4.3%	4.2%	4.1%	4.4%	4.3%	4.3%	5.4%	6.7%	7.0%	7.7%	8.5%	9.7%	8.9%	10.3%

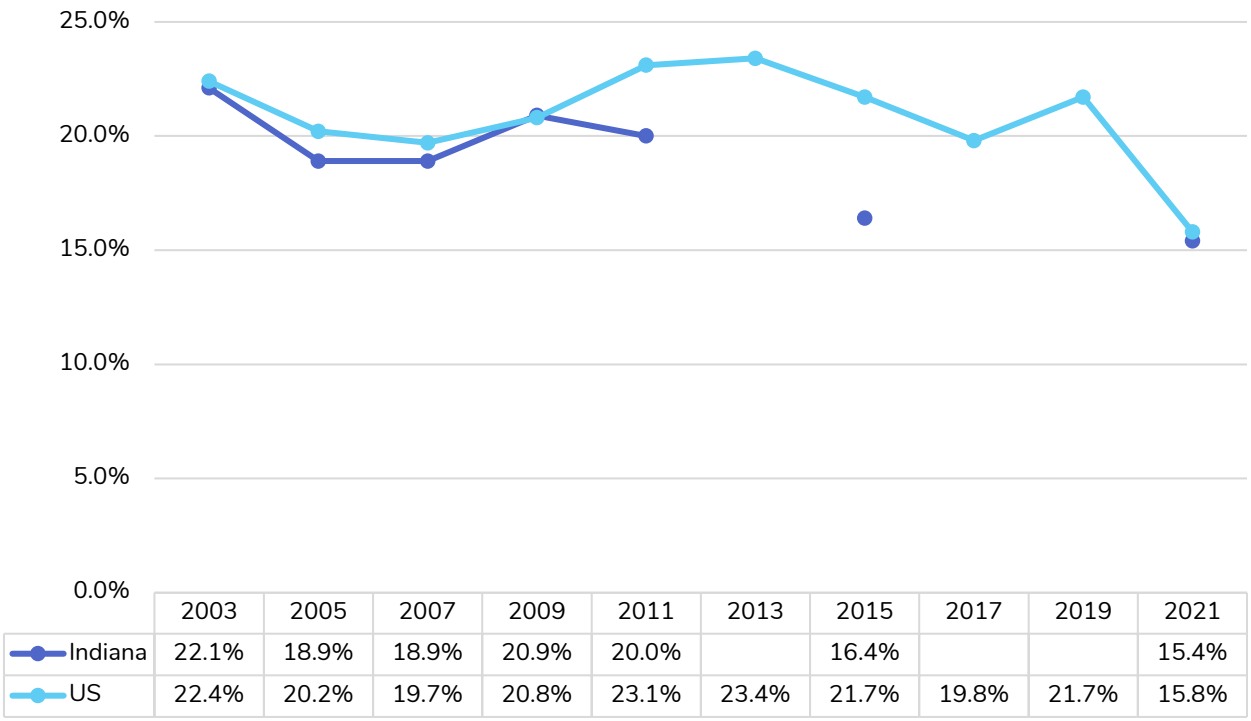
Source: SAMHSA-NSDUH, 2022

Adolescents and young adults largely reported first time marijuana use; an estimated 9.1% (95% CI: 6.9-11.9) of Hoosiers ages 18 to 25 initiated marijuana use in the past year (U.S.: 8.1%; 95% CI: 7.4-8.9), as did 3.6% (95% CI: 2.4-5.2) of Indiana youth ages 12 to 17 (U.S.: 4.0%; 95% CI: 3.6-4.5). Initiation rates were significantly lower in adults ages 26 and older for both Indiana and national rates (IN: 0.5%; 95% CI: 0.3-0.8; U.S.: 0.7%; 95% CI: 0.6-0.9).

Youth Risk Behavior Surveillance System

During the year 2021, Youth Risk Behavior Surveillance System (YRBSS) reported 15.4% (95% CI: 11.3-20.6) of Indiana's high school students used marijuana in the past month which is similar to the national average of 15.8% (95% CI: 14.1-17.6). Black and Hispanic students and students in higher grade levels were more likely to use marijuana. For detailed information refer to Figure 4.3 and Table 4.1. In 2021, 4.4% (95% CI: 2.9-6.8) of Indiana students reported experimenting with marijuana before the age of 13 which was comparable to the national rate (4.9%; 95% CI: 6.5–8.7). About 5.7% (95% CI: 4.1-7.8) of high school students in Indiana reported using synthetic marijuana (such as "fake weed", "K2", "Spice", "Black Mamba") one or more times during their lifetime compared to the national rate of 6.5% (95% CI: 4.0-5.8)

Figure 4.3 Percentage of Indiana and U.S. High School Students Currently Using Marijuana (Youth Risk Behavior Surveillance System, 2003–2021)



	2003	2005	2007	2009	2011	2013	2015	2017	2019	2021
Indiana	22.1%	18.9%	18.9%	20.9%	20.0%		16.4%			15.4%
US	22.4%	20.2%	19.7%	20.8%	23.1%	23.4%	21.7%	19.8%	21.7%	15.8%

Source: CDC, 2003-2021

Note: 2013, 2017, and 2019 estimates are not available for Indiana due to low response rates

Table 4.1 Percentage of Indiana and U.S. High School Students Reporting Current (Past Month) Marijuana Use, by Grade, Gender, and Race/Ethnicity (Youth Risk Behavior Surveillance System, 2021)

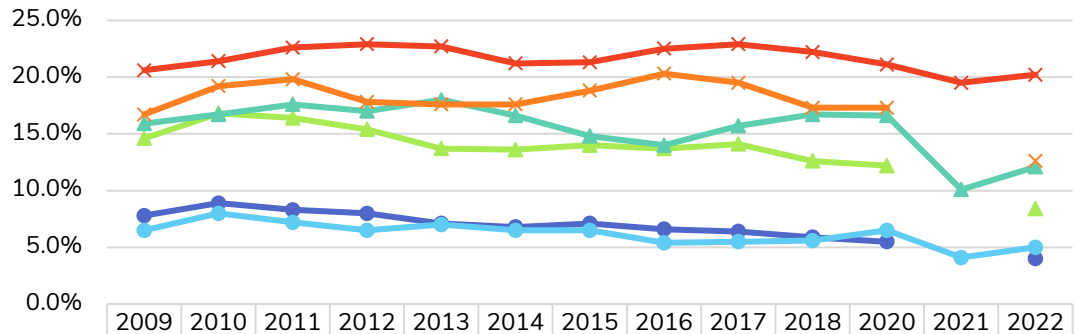
		Indiana (95% CI)	U.S. (95% CI)
Grade	9th	15.5% (10.8 - 21.7)	9.1% (7.6 - 10.9)
	10th	15.8% (12.2 - 20.2)	13.3% (11.4 - 15.4)
	11th	10.5% (6.2 - 17.5)	18.7% (16.4 - 21.2)
	12th	20.3% (11.1 - 34.3)	22.4% (20.1 - 24.9)
Gender	Male	12.8% (8.4 - 19.0)	13.6% (12.1 - 15.3)
	Female	18.3% (13.4 - 24.4)	17.8% (15.8 - 20.1)
Race/Ethnicity	Black	21.4% (12.1 - 34.8)	20.5% (17.4 - 23.9)
	White	14.1% (9.7 - 19.9)	14.8% (13.2 - 16.6)
	Hispanic	14% (6.5 - 27.4)	16.7% (14.0 - 19.7)
Total		**15.4% (11.3–20.6)**	**15.8% (14.1 - 17.6)**

Source: CDC, 2022

Indiana Youth Survey

Indiana Youth Survey and Monitoring the Future reported that marijuana use increased with grade level/age. Additionally, usage is lower in the state of Indiana than national use at every grade level. See Figure 4.4 for monthly use of marijuana by grade level in Indiana and the U.S. for 2022 and Appendix 4A by region and grade.

Figure 4.4 Percentage of Indiana and U.S. 8th, 10th, and 12th Grade Students Reporting Current Marijuana Use (Indiana Youth Survey and Monitoring the Future Survey, 2009–2022)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2020	2021	2022
Indiana 8th Grade	7.8%	8.9%	8.3%	8.0%	7.1%	6.8%	7.1%	6.6%	6.4%	5.9%	5.5%		4.0%
US 8th Grade	6.5%	8.0%	7.2%	6.5%	7.0%	6.5%	6.5%	5.4%	5.5%	5.6%	6.5%	4.1%	5.0%
Indiana 10th Grade	14.6%	16.8%	16.4%	15.4%	13.7%	13.6%	14.0%	13.7%	14.1%	12.6%	12.2%		8.4%
US 10th Grade	15.9%	16.7%	17.6%	17.0%	18.0%	16.6%	14.8%	14.0%	15.7%	16.7%	16.6%	10.1%	12.1%
Indiana 12th Grade	16.7%	19.2%	19.8%	17.8%	17.6%	17.6%	18.8%	20.3%	19.5%	17.3%	17.3%		12.6%
US 12th Grade	20.6%	21.4%	22.6%	22.9%	22.7%	21.2%	21.3%	22.5%	22.9%	22.2%	21.1%	19.5%	20.2%

Source: Gassman et al., 2022; ICPSR, 2022

Note: The Indiana Youth Survey (INYS) switched to a biennial data collection after 2018; hence 2019 estimates are not available.

Indiana College Substance Use Survey

In 2021, Indiana College Substance Use Survey (ICSUS) reported 21.3% of Indiana college students currently use marijuana.

More males (22.4%) than females (20%) reported past month marijuana use ($p<0.05$).

Marijuana use within college students for groups under the age of 21 and 21-25 were statistically similar (19.6% vs 23.4%)

Use of Marijuana in Treatment Population Treatment Episode Data Set

Treatment Episode Data Set (TEDS) reports data from patients being admitted for substance abuse treatment. Indiana reported significant higher percent of treatment episodes reported in comparison to the United States (46.9% versus 27.4%) in 2020. See Figure 4.5 for the trends of marijuana use and dependence using TEDS data in 2020. Table 4.2 shows the distribution of marijuana use and dependence by demographic characteristics.

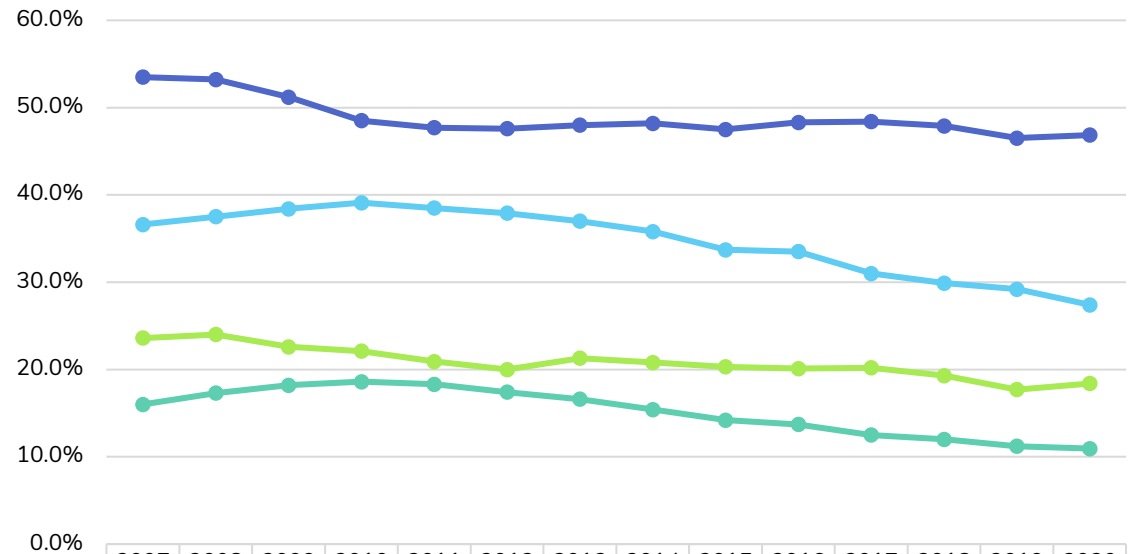
Gender: Males reported higher marijuana use (49.0%) as compared to females (44.0%). Marijuana dependence follows a similar pattern.

Race: Percent of Blacks reported higher marijuana use (57.1%) compared to Whites (45.1%) or other races (48.5%).

Age: Highest marijuana use was reported in adolescents under the age of 18 (91.3%) and the lowest use was reported amongst adults ages 55 and older (27.1%).

Further, Appendix 4B shows the treatment admissions with marijuana use and dependence for SFY 2022 by county.

Figure 4.5 Percentage of Indiana and U.S. Treatment Episodes with Marijuana Use and Marijuana Dependence Reported at Treatment Admission (Treatment Episode Data Set, 2007–2020)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
IN Use	53.5%	53.2%	51.2%	48.5%	47.7%	47.6%	48.0%	48.2%	47.5%	48.3%	48.4%	47.9%	46.5%	46.9%
US Use	36.6%	37.5%	38.4%	39.1%	38.5%	37.9%	37.0%	35.8%	33.7%	33.5%	31.0%	29.9%	29.2%	27.4%
IN Dependence	23.6%	24.0%	22.6%	22.1%	20.9%	20.0%	21.3%	20.8%	20.3%	20.1%	20.2%	19.3%	17.7%	18.4%
US Dependence	16.0%	17.3%	18.2%	18.6%	18.3%	17.4%	16.6%	15.4%	14.2%	13.7%	12.5%	12.0%	11.2%	10.9%

Source: SAMHDA-Treatment Episode Data Set, 2022

Table 4.2 Percentage of Indiana Treatment Admissions with Reported Marijuana Use and Dependence, by Gender, Race, and Age Group (Treatment Episode Data Set, 2020)

		Marijuana Use	Marijuana Dependence
Gender	Male	49.04%	19.12%
	Female	43.95%	17.41%
Race	White	45.08%	15.91%
	Black	57.10%	32.28%
	Other	48.49%	22.89%
Ethnicity	Hispanic	49.49%	23.88%
	Non-Hispanic	46.70%	18.20%
Age Group	Under 18	91.29%	76.25%
	18-24	68.40%	37.00%
	25-34	48.33%	17.53%
	35-44	42.10%	12.91%
	45-54	34.76%	10.37%
	55+	27.12%	8.00%
Total		**46.85%**	**18.39%**

Source: SAMHDA-Treatment Episode Data Set, 2022

CONSEQUENCES OF MARIJUANA USE

Marijuana use during adolescence and young adulthood can lead to brain function impairment and adverse effects on the developing brain (CDC, 2021b). Marijuana use can negatively impact teen lives by increasing the risk of mental health issues, reducing coordination, increasing difficulty maintaining attention, impairing memory, impairing learning, and affecting school and social lives (CDC, 2021b). Center of Disease Control (CDC) monitors and addresses the use of marijuana and the effects it has on health and social outcomes. Continuous education is provided by partnering up with public safety, schools, and community coalitions. An effort is made to improve public knowledge and awareness by developing web content and fact sheets for public education (CDC, 2021a).

Driving under the influence of marijuana was reported to be at 4.7% in ages greater than or equal to 16 during 2018 within the U.S. (Azofeifa, et. al., 2019). Marijuana can have negative effects on drivers including reduced reaction time, altered mental status, and increased in lane weaving. Marijuana related traffic deaths in Colorado have increased 35% since recreational marijuana was legalized (The Legalization of Marijuana in Colorado: The Impact, 2019).

Medical Uses of Marijuana

Unapproved medical marijuana is commonly used in the United States as a treatment to relieve chronic pain, AIDS wasting, epilepsy, neuropathic pain and spasticity from multiple sclerosis (FDA, 2020). Several clinical trials are currently taking place to understand the role of marijuana-based and CBD medications. Nabiximols (CBD+THC) is a mouth spray currently approved in the United Kingdom, Canada, and several European countries for the treatment of spasticity and neuropathic pain (Berlekamp, 2016). Current FDA approved THC medications are dronabinol and nabilone, which are both prescribed for treatment of nausea in patients receiving chemotherapy and as an appetite stimulant treatment. Epidiolex is a current CBD based FDA approved drug used for a rare type of childhood epilepsy.

COVID-19 and Marijuana

A U.S. based study looked at the effects of COVID-19 on marijuana use and found that about 35% of the patients reported increased marijuana use vs only 25% decreased their marijuana use (Boehnke et al., 2020). During the pandemic, an increase in marijuana use was attributed to boredom and anxiety about COVID-19. Another study examined adolescent drug use before and during the U.S. national COVID-19 social distancing policies (Miech et al., 2021). After reviewing the data, it was concluded that availability of marijuana, alcohol, and vaping devices declined during the pandemic. However, that did not reduce the prevalence of marijuana and alcohol use (NIH, 2021a).

Marijuana Use During Pregnancy

More research is needed on how the use of marijuana affects the unborn child. Animal studies have shown an increased risk of miscarriages when marijuana is used, but no human data exists yet. Some evidence suggests that the use of marijuana during pregnancy can lead to developmental disorders in the children (CDC, 2021c). Limited data exists on marijuana use causing low birth weight or premature birth. However, long-term use can increase the chances. The American College of Obstetricians and Gynecologists recommends against the use of marijuana during pregnancy, when trying to get pregnant, and during breast feeding (NIH, 2021b).

APPENDIX 4A

Percentage of Indiana Students Reporting Monthly Marijuana Use, by Region and Grade (Indiana Youth Survey, 2022)

	Indiana	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
6th Grade	1.00%	1.30%	0.30%	1.8%*	0.80%	0.40%	0.80%	0.90%	0.4%*	0.90%	0.80%
7th Grade	1.90%	1.40%	2.40%	2.8%*	0.50%	2.80%	2.00%	2.20%	0.6%*	3.1%*	1.90%
8th Grade	4.00%	4.70%	3.50%	5.7%*	3.10%	4.70%	2.2%*	5.00%	2.6%*	4.20%	3.70%
9th Grade	6.40%	7.40%	5.70%	10.5%*	6.20%	5.90%	5.50%	11.1%*	3.7%*	4.4%*	5.30%
10th Grade	8.40%	8.20%	7.80%	11.4%*	7.70%	9.40%	9.10%	11.4%*	6.7%*	5.9%*	7.10%
11th Grade	10.60%	13.4%*	9.20%	11.70%	11.60%	9.70%	12.40%	16.3%*	8.6%*	8.60%	8.1%*
12th Grade	12.60%	15.3%*	9.7%*	20.2%*	14.20%	7.9%*	12.50%	20.8%*	11.50%	9.0%*	7.7%*

Source: Gassman et al., 2022

Notes: * is used to indicate local rate that varies significantly from the state rate (P<.05).

Data from INYS at the state and regional levels is provided. Until 2018, there were 8 regions. DMHA changed the number of regions to 10 in 2020. The counties in each region include:

Region 1: Lake, LaPorte, Porter

Region 2: Cass, Elkhart, Fulton, Howard, Kosciusko, Marshall, Miami, Pulaski, St. Joseph, Starke, Wabash

Region 3: Adams, Allen, DeKalb, Huntington, Lagrange, Noble, Steuben, Wells, Whitley

Region 4: Benton, Boone, Carroll, Clinton, Fountain, Jasper, Montgomery, Newton, Tippecanoe, Warren, White

Region 5: Blackford, Delaware, Grant, Hamilton, Hancock, Henry, Jay, Madison, Randolph, Tipton, Wayne

Region 6: Clay, Hendricks, Monroe, Morgan, Owen, Parke, Putnam, Sullivan, Vermillion, Vigo

Region 7: Marion

Region 8: Daviess, Dubois, Gibson, Greene, Knox, Martin, Perry, Pike, Posey, Spencer, Vanderburgh, Warrick

Region 9: Bartholomew, Brown, Clark, Crawford, Floyd, Harrison, Jackson, Johnson, Lawrence, Orange, Scott, Washington

Region 10: Dearborn, Decatur, Fayette, Franklin, Jefferson, Jennings, Ohio, Ripley, Rush, Shelby, Switzerland, Union

APPENDIX 4B

Number of Treatment Admissions with Marijuana Use and Dependence Reported at Treatment Admission in Indiana, by County (Substance Abuse Population by County/Treatment Episode Data Set, SFY 2022)

	Treatment Episodes	Marijuana Use		Marijuana Dependence	
County	Total	Number	%	Number	%
Adams	56	25	44.6%	15	26.8%
Allen	926	460	49.7%	199	21.5%
Bartholomew	281	143	50.9%	46	16.4%
Benton	34	15	44.1%	5	14.7%
Blackford	49	31	63.3%	8	16.3%
Boone	240	121	50.4%	48	20.0%
Brown	35	20	57.1%	10	28.6%
Carroll	41	24	58.5%	5	12.2%
Cass	57	28	49.1%	8	14.0%
Clark	393	123	31.3%	43	10.9%
Clay	55	31	56.4%	9	16.4%
Clinton	81	42	51.9%	17	21.0%
Crawford	10	5	50.0%	<5	40.0%
Daviess	45	25	55.6%	<5	6.7%
Dearborn	284	124	43.7%	43	15.1%
Decatur	122	69	56.6%	29	23.8%
DeKalb	192	104	54.2%	32	16.7%
Delaware	496	199	40.1%	51	10.3%
Dubois	241	109	45.2%	50	20.7%
Elkhart	317	155	48.9%	57	18.0%
Fayette	251	69	27.5%	12	4.8%
Floyd	160	60	37.5%	17	10.6%
Fountain	51	27	52.9%	7	13.7%
Franklin	38	18	47.4%	<5	10.5%
Fulton	38	19	50.0%	<5	10.5%
Gibson	106	56	52.8%	23	21.7%
Grant	315	161	51.1%	35	11.1%
Greene	34	16	47.1%	<5	11.8%
Hamilton	528	282	53.4%	128	24.2%
Hancock	114	45	39.5%	14	12.3%
Harrison	35	11	31.4%	<5	0.0%
Hendricks	525	297	56.6%	141	26.9%

	Treatment Episodes	Marijuana Use		Marijuana Dependence	
County	Total	Number	%	Number	%
Henry	305	140	45.9%	51	16.7%
Howard	476	227	47.7%	56	11.8%
Huntington	225	112	49.8%	44	19.6%
Jackson	149	69	46.3%	17	11.4%
Jasper	80	28	35.0%	5	6.3%
Jay	140	69	49.3%	27	19.3%
Jefferson	265	129	48.7%	38	14.3%
Jennings	150	70	46.7%	17	11.3%
Johnson	228	107	46.9%	52	22.8%
Knox	91	53	58.2%	19	20.9%
Kosciusko	250	123	49.2%	36	14.4%
LaGrange	98	57	58.2%	27	27.6%
Lake	956	436	45.6%	195	20.4%
LaPorte	392	112	28.6%	30	7.7%
Lawrence	224	112	50.0%	28	12.5%
Madison	1066	603	56.6%	237	22.2%
Marion	2885	1466	50.8%	749	26.0%
Marshall	122	62	50.8%	19	15.6%
Martin	6	2	33.3%	<5	33.3%
Miami	82	50	61.0%	19	23.2%
Monroe	547	292	53.4%	80	14.6%
Montgomery	348	220	63.2%	90	25.9%
Morgan	324	167	51.5%	66	20.4%
Newton	17	6	35.3%	<5	5.9%
Noble	202	118	58.4%	41	20.3%
Ohio	18	7	38.9%	<5	5.6%
Orange	31	9	29.0%	<5	6.5%
Owen	42	18	42.9%	8	19.0%
Parke	22	13	59.1%	8	36.4%
Perry	72	26	36.1%	17	23.6%
Pike	10	6	60.0%	<5	20.0%
Porter	343	133	38.8%	34	9.9%
Posey	73	41	56.2%	20	27.4%
Pulaski	44	18	40.9%	<5	9.1%
Putnam	206	126	61.2%	79	38.3%

	Treatment Episodes	Marijuana Use		Marijuana Dependence	
County	Total	Number	%	Number	%
Randolph	114	41	36.0%	14	12.3%
Ripley	83	36	43.4%	13	15.7%
Rush	142	70	49.3%	22	15.5%
Saint Joseph	759	365	48.1%	133	17.5%
Scott	213	62	29.1%	22	10.3%
Shelby	97	34	35.1%	10	10.3%
Spencer	97	16	16.5%	7	7.2%
Starke	181	77	42.5%	21	11.6%
Steuben	154	82	53.2%	34	22.1%
Sullivan	9	6	66.7%	<5	0.0%
Switzerland	54	26	48.1%	10	18.5%
Tippecanoe	566	233	41.2%	64	11.3%
Tipton	42	21	50.0%	<5	4.8%
Union	35	19	54.3%	5	14.3%
Vanderburgh	745	442	59.3%	193	25.9%
Vermillion	19	14	73.7%	8	42.1%
Vigo	208	118	56.7%	50	24.0%
Wabash	148	75	50.7%	20	13.5%
Warren	18	12	66.7%	<5	22.2%
Warrick	106	65	61.3%	30	28.3%
Washington	47	18	38.3%	5	10.6%
Wayne	500	223	44.6%	83	16.6%
Wells	111	52	46.8%	23	20.7%
White	121	66	54.5%	24	19.8%
Whitley	93	46	49.5%	24	25.8%
Indiana	21301	10360	48.6%	4013	18.8%

Source: Indiana Family and Social Services Administration, 2023

Notes: Marijuana dependence is defined as those receiving substance abuse treatment who at admission listed Marijuana as their primary substance.
The percentages are calculated by taking the count of reported marijuana use and dependence and dividing by the count of treatment episodes. As a result of confidentiality concerns, data was suppressed if the count of treatment episodes was less than 5.

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CHAPTER 05

Opioid Use in Indiana: Prevalence and Consequences

INTRODUCTION

Opioids are a class of pain-reducing drugs that include both legal and illegal substances. Legal prescription pain-relievers include hydrocodone (e.g., Vicodin®), oxycodone (e.g., OxyContin®, Percocet®), oxymorphone (e.g., Opana ®), codeine, morphine, and fentanyl. The use of fentanyl alone is 50 to 100 times more potent than morphine. Illegal opioids include heroin and illicitly manufactured versions of prescription opioids. The effect on the body is chemically similar across the entire drug class, as opioids block pain signals to the brain, which causes a release of dopamine that users often experience as 'euphoria' or a 'surge of pleasure' (NIDA, 2021a; 2021b; 2021c).

This sensation can lessen from frequent use due to tolerance to the drug class. As a result, stronger and more potent drug products have developed to counteract this tolerance while also addressing severe-pain cases. Prescribers have tried to curtail this dependence and addiction by only issuing these drugs to patients for short periods while under strict supervision. Despite these efforts, regular use, even as prescribed, can lead to patients needing stronger doses of medication to counteract the lessened effects.

Patients who develop addiction and dependence on these drug products pursue them through licit and illicit means. One of the more common semi-synthetic variations of morphine is heroin. It is often in the form of a white or brown powder, but it can also come in a 'black tar' variation. Due to its potency, street-made variations of fentanyl sell in the form of a powder mixed with several other drug products like heroin, cocaine, methamphetamine, and MDMA (NIDA, 2021a).

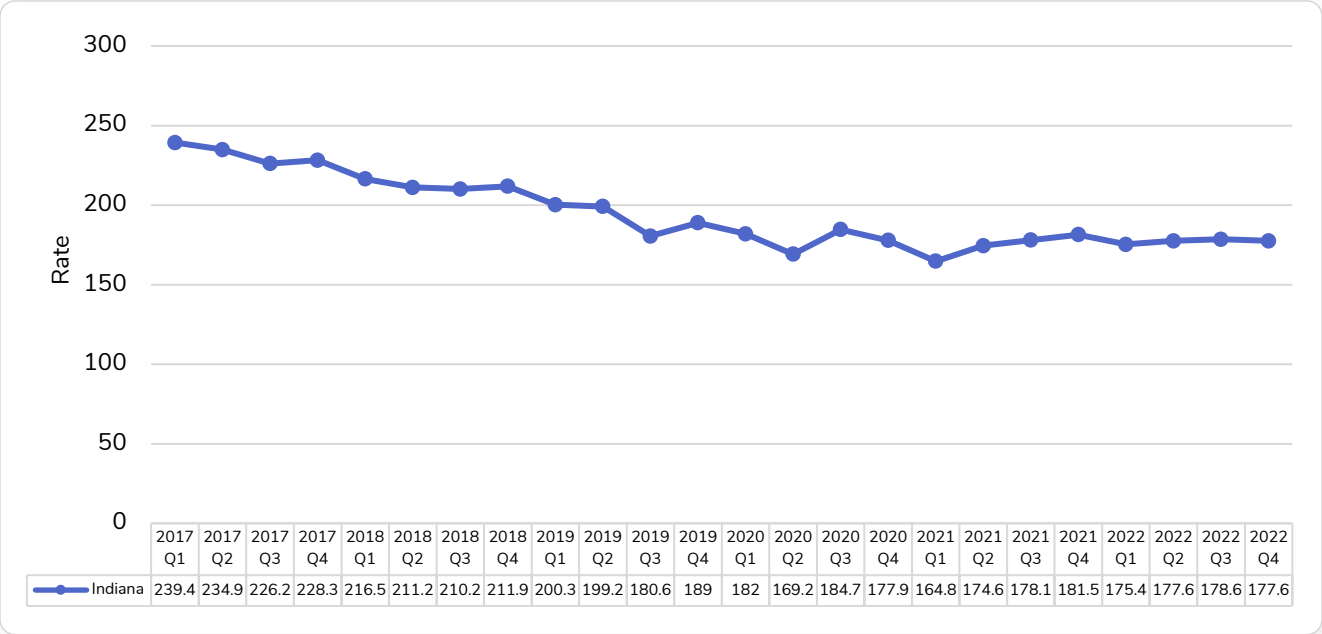
The advent of COVID-19 has further increased the dangers of opioid abuse. Patients who suffer from substance abuse are 1.5 times more likely to have a COVID-19 diagnosis than those who do not. The pandemic has also resulted in an increase in drug overdoses, possibly from a combination of social isolation, increased stress, and less access to treatment programs. A comparison of overdose deaths over a 12-month period showed that 2020 had a 30% increase versus 2019. Not only that, but 2020 had the highest number of drug overdose deaths ever recorded over a 12-month period at 93,000 (NIDA, 2021d).

PREVALENCE OF OPIOID CONSUMPTION IN THE GENERAL POPULATION

Prescription Drug Monitoring Program

Every state has a prescription drug monitoring program (PDMP) that collects data on all controlled substances (DEA Schedule II-V) dispensed within their respective states. The INSPECT system, Indiana's PDMP, has shown a steady decline in both the rate and number of opioid dispensations. Based on the Indiana Department of Health's most recent estimates, the state dispensed 177.6 opioid prescriptions per 1,000 population during the fourth quarter of 2022 (see Figure 5.1) (Indiana Department of Health [IDOH], 2022a). This opioid prescription includes opioid analgesics, opioid antidiarrheal/antitussives, and opioid antagonists and treatment addiction medications. For county-level information on annual dispensations, see Appendix 5A.

Figure 5.1 Number and Rate (per 1,000 Population) of Opioids Dispensed in Indiana per Quarter (INSPECT, 2017- 2022)



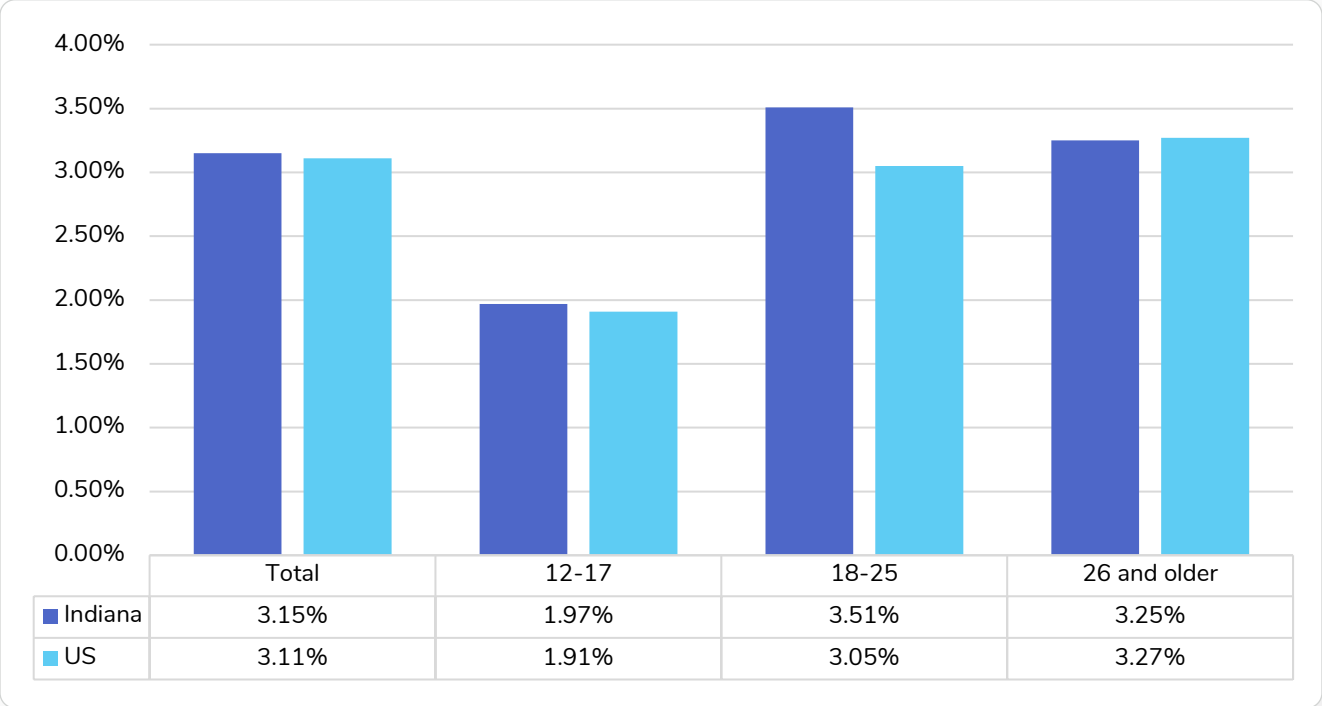
	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4
Indiana	239.4	234.9	226.2	228.3	216.5	211.2	210.2	211.9	200.3	199.2	180.6	189	182	169.2	184.7	177.9	164.8	174.6	178.1	181.5	175.4	177.6	178.6	177.6

Source: IDOH, 2022a and IDOH, 2022b

National Survey on Drug Use and Health

The Substance Abuse and Mental Health Services Administration (SAMHSA)'s National Survey on Drug Use and Health (NSDUH) calculated the 2021 averages for Indiana residents aged 12 and older. They found an estimated 3.2% (95% Confidence Interval [CI]: 2.3-4.3) of those within this population misused pain relievers in the past year (U.S.: 3.1%; 95% CI: 2.9-3.4). The highest rate of misuse was found in those aged 18 to 25 years, at 3.5% (95% CI: 2.4-5.2). This data was slightly higher than the national rate within that same age group (3.0%; 95% CI: 2.6-3.5) (SAMHSA, 2022). For additional rates by age group, see Figure 5.2.

Figure 5.2 Prevalence of Past-Year Pain Reliever Use in Indiana and the United States, by Age Group (National Survey on Drug Use and Health, 2021)

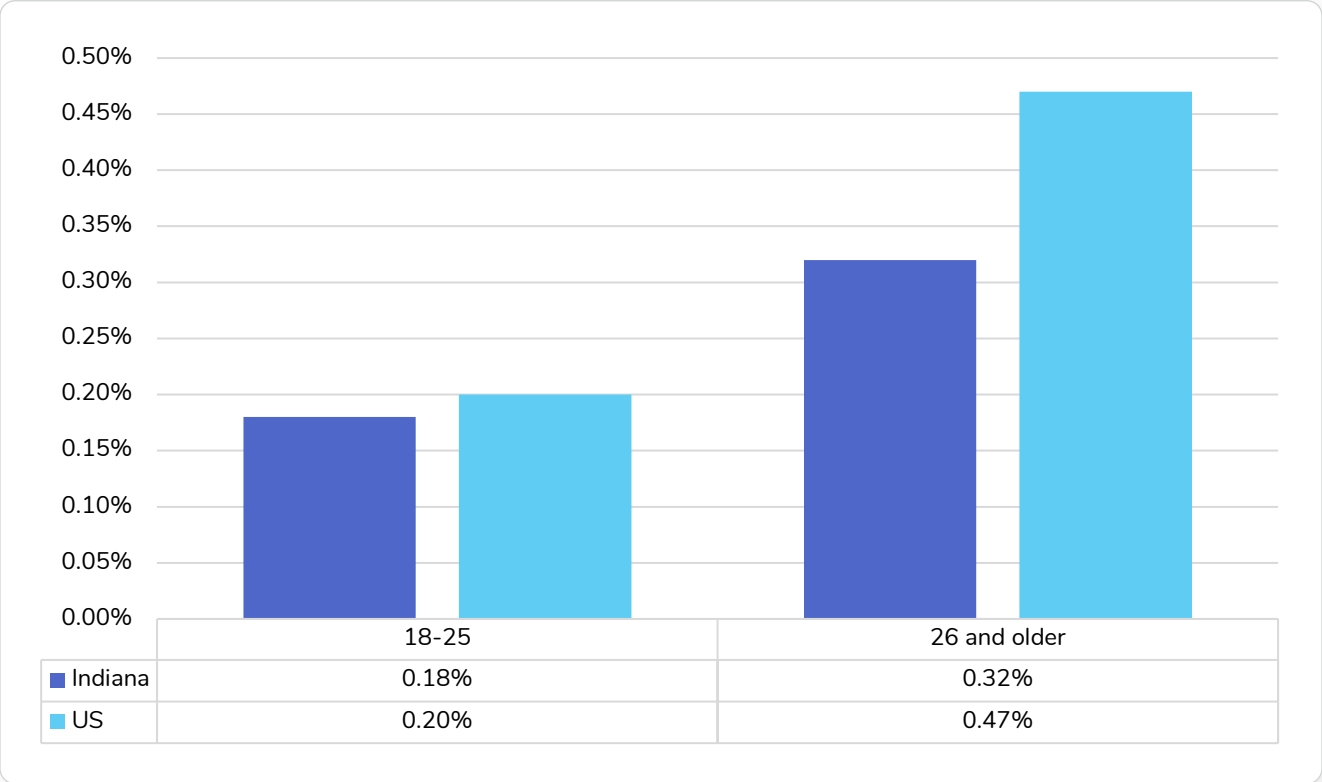


	Total	12-17	18-25	26 and older
Indiana	3.15%	1.97%	3.51%	3.25%
US	3.11%	1.91%	3.05%	3.27%

Source: SAMHSA-NSDUH, 2022

Indiana, in particular, has attempted to develop sources of state-specific data and surveillance to try and battle the increase in heroin overdose fatalities (Indiana Department of Health [IDOH], 2021b). Based on data collected from the 2021 NSDUH, heroin use in Indiana was at the highest rate among 26 years and older over the past year at 0.32% (95% CI: 0.1-0.9) (SAMHSA, 2022). The NSDUH could not provide the overall rate in 2021 due to the lack of a national estimate for the 12-17 age group. For heroin use rates by age group, see Figure 5.3.

Figure 5.3 Percentage of Indiana and U.S. Population (12 years and older) Reporting Past-Year Heroin Use, by Age Group (National Survey on Drug Use and Health, 2021)



	18-25	26 and older
Indiana	0.18%	0.32%
US	0.20%	0.47%

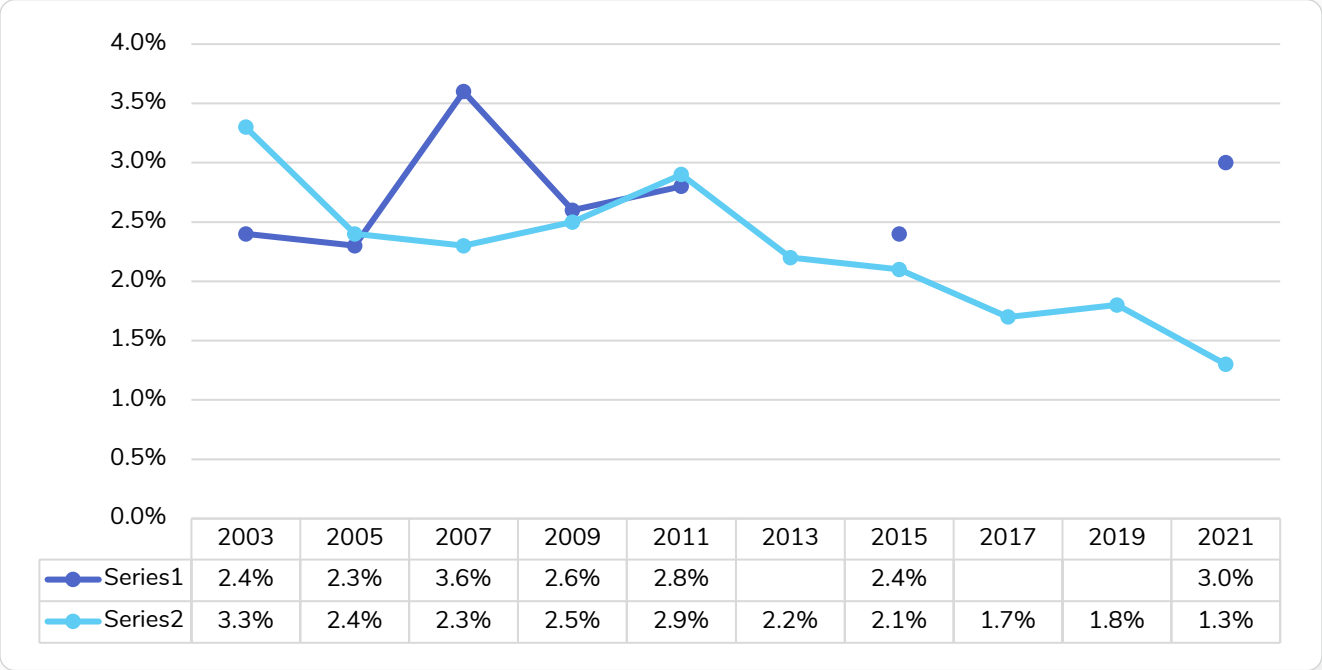
Source: SAMHSA-NSDUH, 2022

Youth Risk Behavior Surveillance System

According to the 2021 Youth Risk Behavior Surveillance System (YRBSS), Indiana high school students (grades 9-12) reported trying heroin at least once in their life at a rate of 3% (95% CI: 0.6-12.6), Compared to the national rate (1.3% with a 95% CI: 1.1-1.6) (See Figure 5.4), Indiana had a similar reported figure. According to the CDC, lifetime heroin usage among American high school students has been relatively stable from 2005 to 2021, with no statistically significant differences between race, gender, and grade level (Centers for Disease Control and Prevention [CDC], 1991–2021).

From the 2015 YRBSS data, both Indiana and the nation itself have statistically similar reports of high school students injecting illegal drugs into their bodies one or more times in their lives: (2.2%; 95% CI: 1.1–4.3) and (1.8%; 95% CI: 1.3–2.3) respectively (CDC-YRBSS, 1991–2019). The 2021 estimates were not available for Indiana. Additionally, the 2015 YRBSS that provided this information does not provide specific data on prescription pain reliever misuse.

Figure 5.4 Percentage of Indiana and U.S. High School Students (Grades 9 through 12) Who Have Used Heroin at Least Once During their Lifetime (Youth Risk Behavior Surveillance System, 2003–2021)



	2003	2005	2007	2009	2011	2013	2015	2017	2019	2021
Series1	2.4%	2.3%	3.6%	2.6%	2.8%		2.4%			3.0%
Series2	3.3%	2.4%	2.3%	2.5%	2.9%	2.2%	2.1%	1.7%	1.8%	1.3%

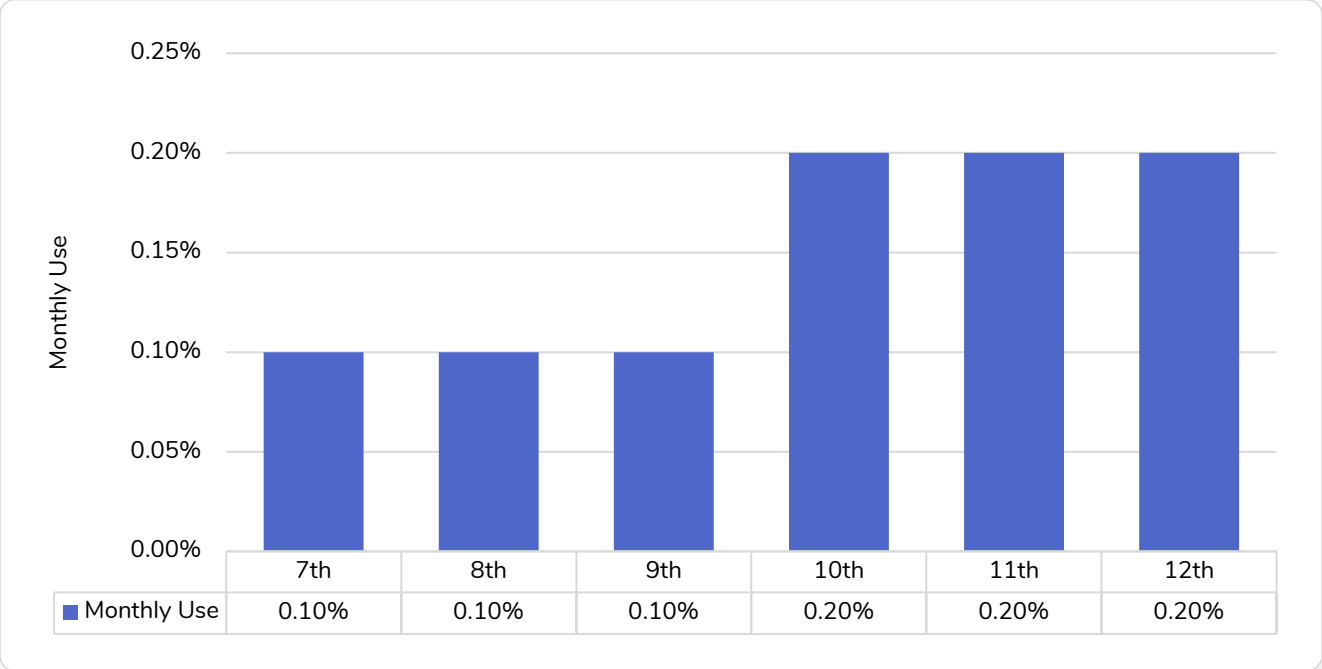
Source: CDC, 2003–2021

Note: 2013, 2017 and 2019 estimates are not available for Indiana due to low response rates.

Indiana Youth Survey

According to the 2022 Indiana Youth Survey (INYS), past-month heroin-use among children in grades 7th through 12th ranged between 0.1% and 0.2% (see Figure 5.5). For Indiana 12th graders, heroin use reached its peak in 2011 at 1.2%, but has now dropped to 0.2% (see Figure 5.6) (Gassman et al., 2022). See Appendix 5B for monthly heroin use rates in Indiana by region and grade level.

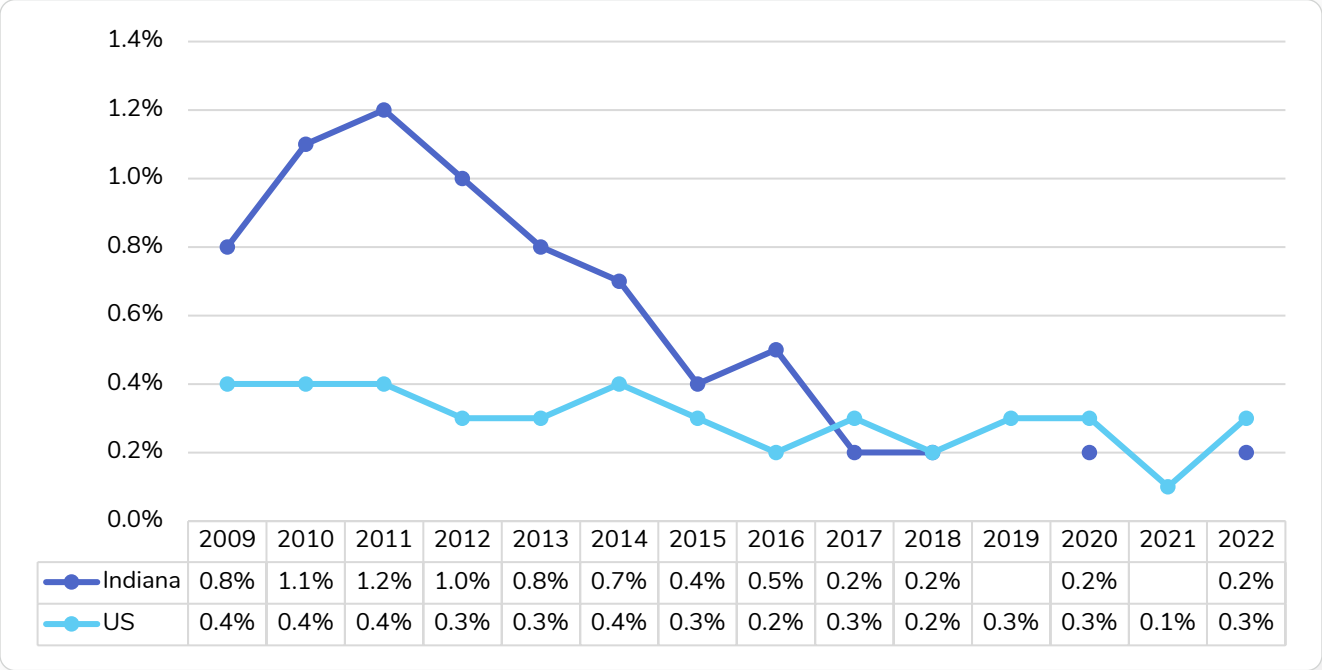
Figure 5.5 Percentage of Indiana 7th through 12th Grade Students Reporting Monthly Heroin Use (Indiana Youth Survey, 2022)



	7th	8th	9th	10th	11th	12th
Monthly Use	0.10%	0.10%	0.10%	0.20%	0.20%	0.20%

Source: Gassman et al., 2022

Figure 5.6 Percentage of Indiana and U.S. 12th Grade Students Reporting Monthly Heroin Use (Indiana Youth Survey and Monitoring the Future Survey, 2009–2022)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Indiana	0.8%	1.1%	1.2%	1.0%	0.8%	0.7%	0.4%	0.5%	0.2%	0.2%		0.2%		0.2%
US	0.4%	0.4%	0.4%	0.3%	0.3%	0.4%	0.3%	0.2%	0.3%	0.2%	0.3%	0.3%	0.1%	0.3%

Source: Gassman et al., 2022; Inter-university Consortium for Political and Social Research, University of Michigan, 2022
Note: The Indiana Youth Survey (INYS) switched to a biennial collection of data after 2018.

Indiana College Substance Use Survey

The Indiana College Substance Use Survey (ICSUS) includes questions on the past-month use of opioids and prescription painkillers not prescribed to the student. The result of the 2019 survey showed that 0.7% of Indiana college students misused a prescription of painkillers in the past month. These rates did not differ significantly by gender or age group. Regarding heroin abuse, the rate among college students was 0.1% in the past month. Similar to prescription painkillers, these rates did not differ significantly among gender or age groups (King & Jun, 2019).

USE OF OPIOIDS IN THE TREATMENT POPULATION

Treatment Episode Data Set

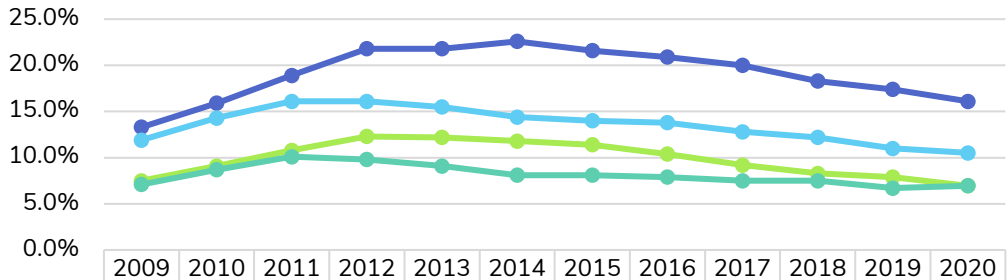
The Treatment Episode Data Set (TEDS) can track opioid misuse through individuals reporting either opioid misuse or heroin use at the time of substance use treatment admission. In 2020, the state of Indiana reported 16.1% prescription opioid misuse among treatment admissions, compared to 10.5% nationally. In 2020, 7.0% of cases reported dependence (SAMHDA, 2022). Women, whites, non-Hispanics, and adults between 25 and 44 were most likely to misuse or depend on substances (See Table 5.1). Between 2008 and 2020, prescription opioid misuse among treatment admissions increased and peaked in 2014. (See Figure 5.7) (County level data for SFY 2022 is available in Appendix 5C).

Table 5.1 Percentage of Indiana Treatment Episodes with Prescription Opioid Misuse and Dependence Reported at Treatment Admission, by Gender, Race, Ethnicity, and Age Group (Treatment Episode Data Set, 2020)

		Misuse	Dependence
Gender	Male	14.7%	5.8%
	Female	18.0%	8.5%
Race	White	17.5%	7.4%
	Black	7.3%	3.4%
	Other	14.5%	7.9%
Ethnicity	Hispanic	11.1%	5.1%
	Non-Hispanic	16.3%	7.0%
Age Group	Under 18	3.1%	1.3%
	18-24	11.1%	4.1%
	25-34	18.0%	7.2%
	35-44	18.9%	8.8%
	45-54	14.2%	6.8%
	55+	11.8%	6.4%
Total		**16.1%**	**7.0%**

Source: SAMHDA-Treatment Episode Data Set, 2022

Figure 5.7 Percentage of Indiana and U.S. Treatment Episodes with Prescription Opioid Misuse and Dependence Reported at Treatment Admission (Treatment Episode Data Set, 2009–2020)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
IN Rx Opiod Misuse	13.3%	15.9%	18.9%	21.8%	21.8%	22.6%	21.6%	20.9%	20.0%	18.3%	17.4%	16.1%
US Rx Opiod Misuse	11.9%	14.3%	16.1%	16.1%	15.5%	14.4%	14.0%	13.8%	12.8%	12.2%	11.0%	10.5%
IN Rx Opiod Dependence	7.5%	9.1%	10.8%	12.3%	12.2%	11.8%	11.4%	10.4%	9.2%	8.3%	7.9%	7.0%
US Rx Opiod Dependence	7.1%	8.7%	10.1%	9.8%	9.1%	8.1%	8.1%	7.9%	7.5%	7.5%	6.7%	7.0%

Source: SAMHDA-Treatment Episode Data Set, 2022

About 24.3% of Indiana treatment admissions were due to heroin in 2019, while dependence was 17.2% (SAMHDA 2021). Compared to the national average of heroin admissions, Indiana was still lower between 2009 and 2020, but there were significant increases in admissions for heroin within the state over this period (See Figure 5.8 for additional trends).

Based on the current data set, differences between gender, race, and age were noted within Indiana's treatment population.

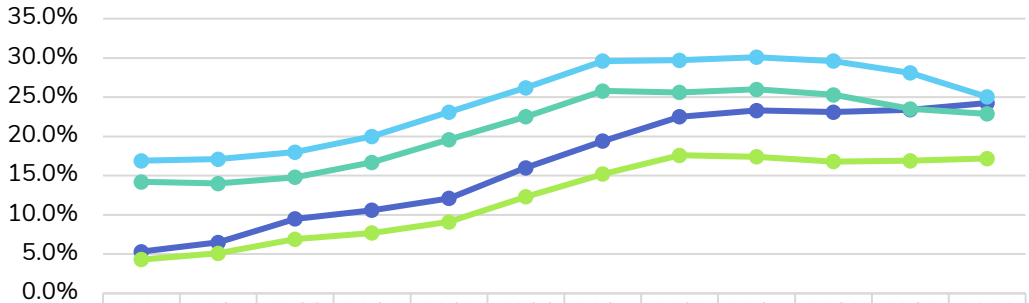
Gender: Heroin use and dependence were reported higher in females than males.

Race: Whites had the highest reported heroin use and dependence compared to the rest of the races.

Age: Between the ages of 25-44, heroin use and dependence were at its highest for Indiana's treatment population.

See Table 5.2 and county-level data in Appendix 5C

Figure 5.8 Percentage of Indiana and U.S. Treatment Episodes with Heroin Use and Dependence Reported at Treatment Admission (Treatment Episode Data Set, 2009–2020)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
IN Heroin Misuse	5.3%	6.5%	9.5%	10.6%	12.1%	16.0%	19.4%	22.5%	23.3%	23.1%	23.4%	24.3%
US Heroin Misuse	16.9%	17.1%	18.0%	20.0%	23.1%	26.2%	29.6%	29.7%	30.1%	29.6%	28.1%	25.0%
IN Heroin Dependence	4.3%	5.1%	6.9%	7.7%	9.1%	12.3%	15.2%	17.6%	17.4%	16.8%	16.9%	17.2%
US Heroin Dependence	14.2%	14.0%	14.8%	16.7%	19.6%	22.5%	25.8%	25.6%	26.0%	25.3%	23.5%	22.9%

Source: SAMHDA-Treatment Episode Data Set, 2022

Table 5.2 Percentage of Indiana Treatment Episodes with Heroin Use and Dependence Reported at Treatment Admission, by Gender, Race, Ethnicity, and Age Group (Treatment Episode Data Set, 2020)

		Misuse	Dependence
Gender	Male	23.53%	16.26%
	Female	25.22%	18.41%
Race	White	26.74%	18.73%
	Black	10.09%	7.71%
	Other	18.28%	14.43%
Ethnicity	Hispanic	18.90%	15.04%
	Non-Hispanic	24.36%	17.17%
Age Group	Under 18	0.87%	0.44%
	18-24	19.22%	13.66%
	25-34	32.92%	23.74%
	35-44	24.41%	16.79%
	45-54	14.94%	10.34%
	55+	9.94%	7.06%
Total		24.26%	17.18%

Source: SAMHDA-Treatment Episode Data Set, 2022

Opioid Treatment Programs

Opioid Treatment Programs (OTPs) are certified by SAMHSA, accredited by an independent SAMHSA-approved accrediting body, and licensed by the state they operate within. Their primary purpose is to provide medication-assisted treatment to opioid use disorder patients. Federal law requires their list of services to include medical, counseling, vocational, educational, and other assessments. In addition, OTPs provide prescription medication for therapy. A total of 14,397 unique patients received treatment in OTPs within Indiana in 2022, while the number of patients in 2021 was 15,123 and in 2020 was 14,739 (Indiana Family and Social Services Administration, 2023).

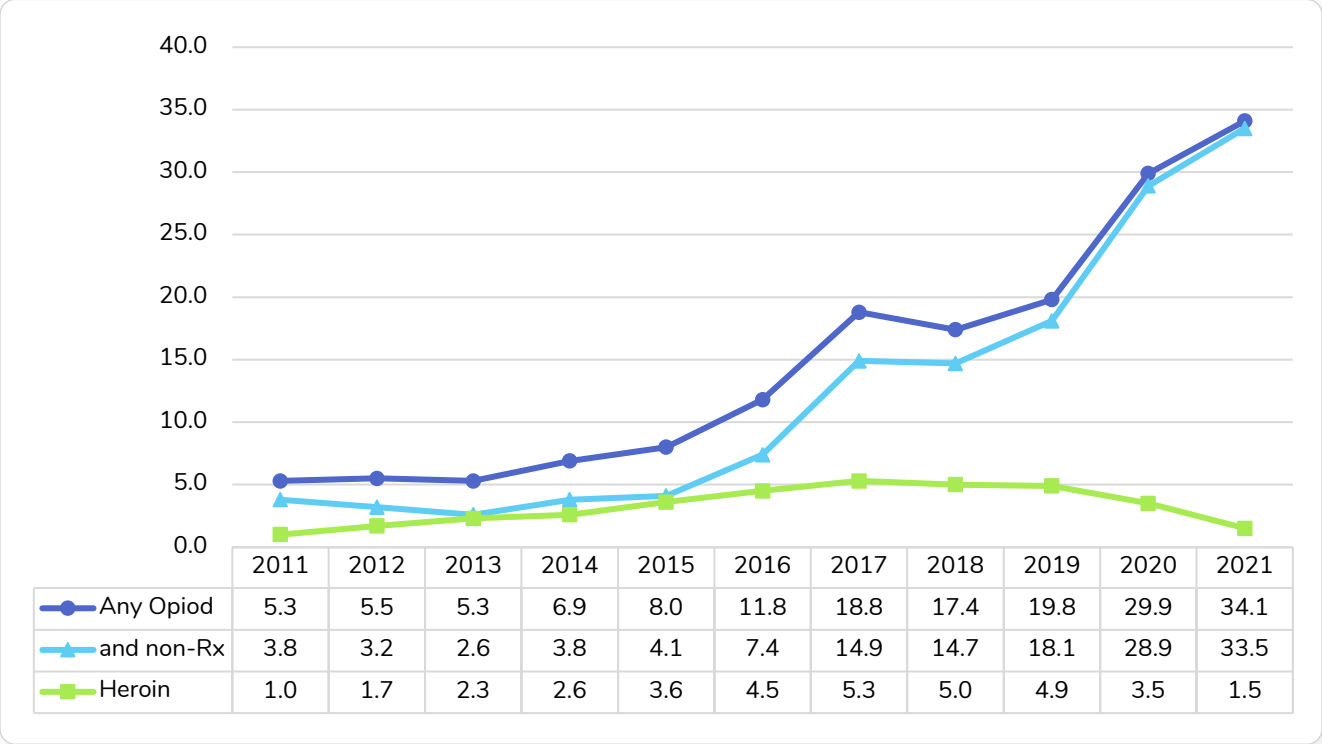
CONSEQUENCES OF OPIOID USE

Fatal and Non-Fatal Drug Overdoses

As a drug depressant, high doses of opioids can cause respiratory depression, leading to the user's death. When combined with alcohol and certain other drugs, the chances of death go up even higher (NIDA, 2021d). The CDC reported a ten-year increase in overdose deaths from all drugs in Indiana. In 2005, the age-adjusted rate for drug-induced causes of death (including unintentional/suicide/homicide/undetermined overdoses) was 10.7 (95 CI: 9.99-11.6) deaths per 100,000 population in Indiana, which was slightly lower than the national rate of 11.3 (95% CI: 11.2 – 11.4). By 2020, the age-adjusted death rate due to drug-induced causes jumped to 37.4 (95% CI: 35.9-38.9) per 100,000 population in Indiana, much higher than the national rate of 29.5 (95% CI: 29.3-29.7). In 2021, the age-adjusted death rate was 43.9 (95% CI: 42.3-45.6) per 100,000 population compared to the national rate of 33.6 (95% CI: 33.4-33.8) (CDC-wonder 2005 to 2021).

A large percentage of these drug overdoses involved opioids. The state of Indiana saw a rise in opioid overdose deaths between 2011 (347 deaths) and 2021 (2,205 deaths) (IDOH, 2022b). See Figure 5.9 for overdose mortality rates involving opioids over time (IDOH, 2022a). Regarding the emergency department (ED) visits, Indiana recorded 8,193 visits due to any opioid in 2021 (IDOH, 2022a).

Figure 5.9 Drug Overdose Deaths Involving Opioids, Rate per 100,000 Population (Indiana, 2011–2021)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Any Opiod	5.3	5.5	5.3	6.9	8.0	11.8	18.8	17.4	19.8	29.9	34.1
and non-Rx	3.8	3.2	2.6	3.8	4.1	7.4	14.9	14.7	18.1	28.9	33.5
Heroin	1.0	1.7	2.3	2.6	3.6	4.5	5.3	5.0	4.9	3.5	1.5

Source: IDOH, 2022a

Note: "Rx and non-Rx opioid" could include prescribed or illicitly prescribed/made opioid

COVID-19 and Consequences

The destructive consequences of opioid abuse are well documented. However, the advent of the COVID-19 pandemic has shown that this vice can become even deadlier. IDU can increase the likelihood of contracting HIV/AIDS and hepatitis B and C. These infectious disease states can leave patients severely ill if they were to contract COVID-19. COVID-19 infection, along with respiratory depression that can occur with opioid abuse, will likely leave a patient hospitalized or on a ventilator (CDC, 2022).

COVID-19's initial impact on opioid use and abuse was uneven in the early days of the U.S. pandemic. A recent study analyzed the prescriptions of opioid and buprenorphine products. By distinguishing between new and current patients receiving these drug products, the study found that the initial months of the pandemic period (March 2020-May 2020) hindered new patients from obtaining their opioid prescriptions. This trend was similar for buprenorphine, which may have contributed to the number of overdose cases, as patients did not receive adequate treatment for OUD. However, these drops returned to normal by May 2020. It was also noted that people currently receiving their prescription opioid and buprenorphine products did not see an overall change in the amount of drug products received over this initial period (Currie, et al, 2021).

Regarding illicit drug use, an analysis of urine sample tests was conducted during the 4 months leading into and 4 months following the start of the U.S. pandemic. The results demonstrated a statistically significant increase in positive test results for cocaine, methamphetamine, fentanyl, and heroin (Wainwright et al., 2020). Combined with the results from the previous study (Currie et al., 2021), and the record high in overdose deaths (NIDA, 2021b), COVID-19 resulted in a step backward in the U.S. for potential positive change in the opioid epidemic.

Opioid drug abuse, like all substance abuse, does not just affect the person abusing the drug products. Hospitalization and treatment for opioid abuse will cause a decrease in the workforce, as well as a financial burden for the patient's loved ones. Crime rates will increase, and the subsequent loss of life from this addiction will result in emotional turmoil. It is important, now more than ever, to monitor opioid abuse, not just for patients, but for the population around them.

APPENDIX 5A

Number and Rate (per 1,000 Population) of Opioid Dispensations in Indiana, by County of Patient's Residence (INSPECT, 2022)

County	Rate of Opioid Dispensations per 1,000
Adams	440.3
Allen	552.6
Bartholomew	834.1
Benton	573.2
Blackford	1128.8
Boone	574.1
Brown	896.3
Carroll	565.5
Cass	670.5
Clark	914.8
Clay	645.4
Clinton	682.2
Crawford	995.1
Daviess	805.4
Dearborn	860.7
Decatur	823.9
DeKalb	592.6
Delaware	951.7
Dubois	620.8
Elkhart	446.3
Fayette	1542.0
Floyd	788.9
Fountain	778.1
Franklin	757.4
Fulton	762.2
Gibson	764.5
Grant	1061.8
Greene	921.4
Hamilton	419.3
Hancock	677.9
Harrison	764.7
Hendricks	535.0
Henry	1291.2

County	Rate of Opioid Dispensations per 1,000
Howard	1057.2
Huntington	729.3
Jackson	797.8
Jasper	812.0
Jay	718.3
Jefferson	1048.3
Jennings	966.3
Johnson	702.7
Knox	1189.4
Kosciusko	610.1
LaGrange	304.3
Lake	566.0
LaPorte	783.2
Lawrence	506.1
Madison	1062.2
Marion	564.9
Marshall	541.8
Martin	1020.4
Miami	814.7
Monroe	543.5
Montgomery	753.2
Morgan	919.4
Newton	688.6
Noble	635.9
Ohio	988.4
Orange	957.8
Owen	1021.2
Parke	630.9
Perry	611.5
Pike	1042.3
Porter	683.3
Posey	934.3
Pulaski	876.4

County	Rate of Opioid Dispensations per 1,000
Putnam	731.9
Randolph	820.1
Ripley	808.6
Rush	889.8
Scott	1304.3
Shelby	776.0
Spencer	665.9
St. Joseph	487.5
Starke	984.9
Steuben	500.7
Sullivan	692.6
Switzerland	932.6
Tippecanoe	439.4
Tipton	904.6
Union	700.9
Vanderburgh	905.3
Vermillion	751.2
Vigo	667.6
Wabash	936.3
Warren	569.6
Warrick	752.5
Washington	1004.9
Wayne	1041.3
Wells	766.5
White	582.5
Whitley	644.3
INDIANA	585.0

Source: Indiana PDMP Dashboard (INSPECT, 2022)

Notes: Dispensation data includes three opioid prescription categories: (1) opioid analgesics, (2) opioid antidiarrheals/ antitussives, and (3) opioid antagonists and treatment addiction medications.

APPENDIX 5B

Percentage of Indiana Students Reporting Monthly Heroin Use, by Region and Grade (Indiana Youth Survey, 2022)

	Indiana	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
7th Grade	0.1%	0.1%	0.0%	0.2%	0.0%	0.0%	0.2%	0.3%	0.0%	0.0%	0.1%
8th Grade	0.1%	0.1%	0.0%	0.3%	0.1%	0.2%	0.2%	0.2%	0.0%	0.1%	0.0%
9th Grade	0.1%	0.0%	0.1%	0.2%	0.5%	0.0%	0.2%	0.0%	0.1%	0.0%	0.1%
10th Grade	0.2%	0.1%	0.0%	0.1%	0.0%	0.3%	0.2%	0.4%	0.1%	0.2%	0.1%
11th Grade	0.2%	0.3%	0.4%	0.1%	0.0%	0.3%	0.1%	0.0%	0.1%	0.2%	0.1%
12th Grade	0.2%	0.2%	0.2%	0.4%	0.0%	0.0%	0.1%	0.3%	0.4%	0.1%	0.0%

Source: Gassman et al., 2022

Notes: * is used to indicate local rate that varies significantly from the state rate (P<.05).

Data from INYS at the state and regional levels is provided. Until 2018, there were 8 regions. DMHA changed the number of regions to 10 in 2020. The counties in these regions include:

Region 1: Lake, LaPorte, Porter

Region 2: Cass, Elkhart, Fulton, Howard, Kosciusko, Marshall, Miami, Pulaski, St. Joseph, Starke, Wabash

Region 3: Adams, Allen, DeKalb, Huntington, Lagrange, Noble, Steuben, Wells, Whitley

Region 4: Benton, Boone, Carroll, Clinton, Fountain, Jasper, Montgomery, Newton, Tippecanoe, Warren, White

Region 5: Blackford, Delaware, Grant, Hamilton, Hancock, Henry, Jay, Madison, Randolph, Tipton, Wayne

Region 6: Clay, Hendricks, Monroe, Morgan, Owen, Parke, Putnam, Sullivan, Vermillion, Vigo

Region 7: Marion

Region 8: Daviess, Dubois, Gibson, Greene, Knox, Martin, Perry, Pike, Posey, Spencer, Vanderburgh, Warrick

Region 9: Bartholomew, Brown, Clark, Crawford, Floyd, Harrison, Jackson, Johnson, Lawrence, Orange, Scott, Washington

Region 10: Dearborn, Decatur, Fayette, Franklin, Jefferson, Jennings, Ohio, Ripley, Rush, Shelby, Switzerland, Union

APPENDIX 5C

Number of Treatment Episodes with Prescription (Rx) Opioid Misuse and Dependence and Heroin Use and Dependence Reported at Treatment Admission in Indiana, by County (Treatment Episode Data Set, SFY 2022)

	Treatment Episodes	Rx Opioid Misuse		Rx Opioid Dependence		Heroin Use		Heroin Dependence	
County	Total	Number	%	Number	%	Number	%	Number	%
Adams	56	17	30.4%	10	17.9%	6	10.7%	<5	5.4%
Allen	926	164	17.7%	100	10.8%	121	13.1%	74	8.0%
Bartholomew	281	42	14.9%	15	5.3%	71	25.3%	47	16.7%
Benton	34	<5	8.8%	<5	0.0%	<5	5.9%	<5	5.9%
Blackford	49	11	22.4%	<5	8.2%	15	30.6%	9	18.4%
Boone	240	42	17.5%	15	6.3%	72	30.0%	36	15.0%
Brown	35	<5	2.9%	<5	0.0%	10	28.6%	7	20.0%
Carroll	41	<5	7.3%	<5	0.0%	<5	9.8%	<5	4.9%
Cass	57	10	17.5%	<5	7.0%	19	33.3%	13	22.8%
Clark	393	65	16.5%	35	8.9%	95	24.2%	76	19.3%
Clay	55	7	12.7%	5	9.1%	<5	7.3%	<5	0.0%
Clinton	81	23	28.4%	11	13.6%	19	23.5%	7	8.6%
Crawford	10	<5	10.0%	<5	0.0%	<5	10.0%	<5	10.0%
Daviess	45	11	24.4%	<5	2.2%	10	22.2%	<5	8.9%
Dearborn	284	81	28.5%	39	13.7%	80	28.2%	46	16.2%
Decatur	122	18	14.8%	9	7.4%	16	13.1%	10	8.2%
DeKalb	192	24	12.5%	6	3.1%	15	7.8%	<5	1.6%
Delaware	496	108	21.8%	46	9.3%	143	28.8%	94	19.0%
Dubois	241	28	11.6%	9	3.7%	29	12.0%	19	7.9%
Elkhart	317	43	13.6%	17	5.4%	26	8.2%	14	4.4%
Fayette	251	56	22.3%	31	12.4%	110	43.8%	80	31.9%
Floyd	160	33	20.6%	17	10.6%	41	25.6%	27	16.9%
Fountain	51	6	11.8%	5	9.8%	8	15.7%	<5	7.8%
Franklin	38	8	21.1%	5	13.2%	5	13.2%	<5	5.3%
Fulton	38	5	13.2%	<5	5.3%	12	31.6%	7	18.4%
Gibson	106	17	16.0%	10	9.4%	<5	1.9%	<5	0.0%
Grant	315	66	21.0%	26	8.3%	125	39.7%	87	27.6%
Greene	34	<5	11.8%	<5	5.9%	6	17.6%	<5	5.9%
Hamilton	528	64	12.1%	25	4.7%	122	23.1%	81	15.3%
Hancock	114	25	21.9%	11	9.6%	34	29.8%	26	22.8%
Harrison	35	8	22.9%	<5	11.4%	5	14.3%	5	14.3%

	Treatment Episodes	Rx Opioid Misuse		Rx Opioid Dependence		Heroin Use		Heroin Dependence	
County	Total	Number	%	Number	%	Number	%	Number	%
Hendricks	525	95	18.1%	31	5.9%	135	25.7%	96	18.3%
Henry	305	125	41.0%	57	18.7%	35	11.5%	20	6.6%
Howard	476	81	17.0%	24	5.0%	162	34.0%	96	20.2%
Huntington	225	46	20.4%	27	12.0%	44	19.6%	26	11.6%
Jackson	149	15	10.1%	6	4.0%	26	17.4%	15	10.1%
Jasper	80	19	23.8%	15	18.8%	19	23.8%	14	17.5%
Jay	140	17	12.1%	<5	2.1%	42	30.0%	32	22.9%
Jefferson	265	54	20.4%	31	11.7%	41	15.5%	16	6.0%
Jennings	150	28	18.7%	10	6.7%	41	27.3%	23	15.3%
Johnson	228	32	14.0%	10	4.4%	57	25.0%	41	18.0%
Knox	91	22	24.2%	10	11.0%	8	8.8%	7	7.7%
Kosciusko	250	42	16.8%	20	8.0%	58	23.2%	27	10.8%
LaGrange	98	7	7.1%	<5	3.1%	<5	4.1%	<5	1.0%
Lake	956	62	6.5%	34	3.6%	166	17.4%	139	14.5%
LaPorte	392	65	16.6%	48	12.2%	118	30.1%	100	25.5%
Lawrence	224	41	18.3%	11	4.9%	49	21.9%	27	12.1%
Madison	1066	341	32.0%	107	10.0%	211	19.8%	101	9.5%
Marion	2885	380	13.2%	166	5.8%	715	24.8%	551	19.1%
Marshall	122	19	15.6%	12	9.8%	31	25.4%	23	18.9%
Martin	6	<5	0.0%	<5	0.0%	<5	33.3%	<5	33.3%
Miami	82	8	9.8%	<5	3.7%	21	25.6%	17	20.7%
Monroe	547	102	18.6%	23	4.2%	162	29.6%	103	18.8%
Montgomery	348	36	10.3%	11	3.2%	94	27.0%	56	16.1%
Morgan	324	50	15.4%	18	5.6%	55	17.0%	35	10.8%
Newton	17	<5	0.0%	<5	0.0%	<5	5.9%	<5	5.9%
Noble	202	19	9.4%	10	5.0%	12	5.9%	7	3.5%
Ohio	18	8	44.4%	5	27.8%	<5	16.7%	<5	5.6%
Orange	31	8	25.8%	<5	12.9%	<5	3.2%	<5	3.2%
Owen	42	7	16.7%	<5	7.1%	7	16.7%	<5	9.5%
Parke	22	<5	4.5%	<5	0.0%	<5	9.1%	<5	4.5%
Perry	72	8	11.1%	<5	4.2%	<5	1.4%	<5	1.4%
Pike	10	<5	10.0%	<5	10.0%	<5	10.0%	<5	10.0%
Porter	343	63	18.4%	38	11.1%	128	37.3%	99	28.9%
Posey	73	10	13.7%	5	6.8%	<5	5.5%	<5	1.4%

	Treatment Episodes	Rx Opioid Misuse		Rx Opioid Dependence		Heroin Use		Heroin Dependence	
County	Total	Number	%	Number	%	Number	%	Number	%
Pulaski	44	10	22.7%	8	18.2%	19	43.2%	13	29.5%
Putnam	206	22	10.7%	<5	1.5%	19	9.2%	16	7.8%
Randolph	114	32	28.1%	14	12.3%	34	29.8%	28	24.6%
Ripley	83	27	32.5%	14	16.9%	18	21.7%	10	12.0%
Rush	142	19	13.4%	7	4.9%	21	14.8%	13	9.2%
Saint Joseph	759	53	7.0%	25	3.3%	170	22.4%	122	16.1%
Scott	213	68	31.9%	42	19.7%	63	29.6%	49	23.0%
Shelby	97	13	13.4%	<5	1.0%	23	23.7%	21	21.6%
Spencer	97	<5	4.1%	<5	2.1%	<5	1.0%	<5	1.0%
Starke	181	59	32.6%	44	24.3%	66	36.5%	52	28.7%
Steuben	154	19	12.3%	12	7.8%	8	5.2%	<5	1.3%
Sullivan	9	<5	22.2%	<5	11.1%	<5	22.2%	<5	11.1%
Switzerland	54	16	29.6%	8	14.8%	9	16.7%	6	11.1%
Tippecanoe	566	88	15.5%	30	5.3%	135	23.9%	86	15.2%
Tipton	42	13	31.0%	5	11.9%	7	16.7%	<5	9.5%
Union	35	<5	11.4%	<5	5.7%	11	31.4%	7	20.0%
Vanderburgh	745	122	16.4%	53	7.1%	62	8.3%	38	5.1%
Vermillion	19	<5	21.1%	<5	10.5%	<5	15.8%	<5	5.3%
Vigo	208	15	7.2%	<5	1.9%	24	11.5%	11	5.3%
Wabash	148	31	20.9%	12	8.1%	38	25.7%	26	17.6%
Warren	18	<5	0.0%	<5	0.0%	<5	16.7%	<5	16.7%
Warrick	106	14	13.2%	5	4.7%	<5	1.9%	<5	0.0%
Washington	47	13	27.7%	7	14.9%	5	10.6%	<5	8.5%
Wayne	500	71	14.2%	37	7.4%	170	34.0%	116	23.2%
Wells	111	33	29.7%	12	10.8%	25	22.5%	13	11.7%
White	121	5	4.1%	<5	1.7%	<5	3.3%	<5	0.8%
Whitley	93	10	10.8%	7	7.5%	11	11.8%	6	6.5%
Indiana	21301	3573	16.8%	1572	7.4%	4637	21.8%	3123	14.7%

Source: Indiana Family and Social Services Administration, 2023

Notes: We defined prescription opioid dependence as "individuals in substance use treatment listing prescription opioids as their primary substance at admission."

The percentages are calculated by taking the count of reported drug use and dependence and dividing by the count of treatment episodes. As a result of confidentiality concerns, data was suppressed if the count of treatment episodes was less than 5.

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CHAPTER 06

Stimulant Use in Indiana: Prevalence and Consequences

INTRODUCTION

Stimulants, much like opioids, are a group of drug substances that include both legal and illegal products. What these two drug class have in common is a physiological mechanism of action that creates a rush of euphoria and pleasure. This sensation comes from a surge of dopamine in the brain, which is a chemical often associated with the reinforcement of rewarding behaviors, movement, and motivation. Other commonly reported side effects include increased wakefulness/alertness, motivation, mental focus, and libido. There are a number of drug products that qualify as stimulants, but the ones known for being abused the most include illicit products like cocaine/crack and methamphetamine, along with legal drug products like prescription stimulants.

Cocaine, derived from the leaves of the coca plant, is a highly addictive stimulant that is often associated with illicit use. While cocaine does have some legal, medicinal use, the majority of its presence is through abuse. The product generally comes in two forms: a fine, white powder called 'cocaine,' and the processed, crystalized form called 'crack.' The powdered form can be inhaled or snorted, while the crack form is heated to inhale the vapors. When consumed, the dopamine increase results in short-lived, intense highs dependent on the form. The powdered form lasts between 15 and 30 minutes, whereas crack only produces 5 to 10 minutes of increased dopamine (NIDA, 2021a).

Methamphetamine (referred to as 'meth,' 'crystal,' or 'ice') is derived from the chemical substance amphetamine. Meth is taken in through a variety of methods, but injection and inhalation are the more popular means of administration. Whereas cocaine has a short, intense 'rush,' meth has an additional high that extends up to 12 hours due to the drug's lengthy half-life. While the body's response to these drug products can be dependent on the person, oral/nasal ingestion can have a longer-lasting, but less intense high compared to smoking/injecting. The latter produces a brief, but stronger rush (NIDA, 2021b).

Prescription stimulants cover several, legal drug products, including dextroamphetamine (Dexedrine®), methylphenidate (Ritalin®), amphetamine sulfate (Adderall®), and lisdexamfetamine (Vyvanse®). As these are prescription medications, their primary function is to treat conditions such as narcolepsy and attention deficit hyperactivity disorder (ADHD). They are designed to increase alertness, attention, and energy. However, abuse of this drug product is not limited to just achieving a high. There have been reports of people inappropriately using these drugs to improve school/work performance or improve their memory (NIDA, 2021c).

As with all other addictive substances, the advent of the COVID-19 pandemic has made stimulant abuse even more dangerous. One recent study found that those with a recent diagnosis of substance use disorder (SUD) were more likely to be diagnosed with COVID-19, with cocaine use disorder having a 6.5 higher instance of catching the virus. Likewise, lifetime SUD diagnoses were 1.5 times more likely to contract COVID-19, with lifetime cocaine use disorder patients having 1.6 times higher chance (Wang et al., 2020). Perhaps the most dangerous aspect of stimulant abuse is that the chemicals can damage the lungs if they were to be inhaled. Combined with the way that COVID-19 targets affects the respiratory system, stimulant abuse patients can worsen their diagnosis.

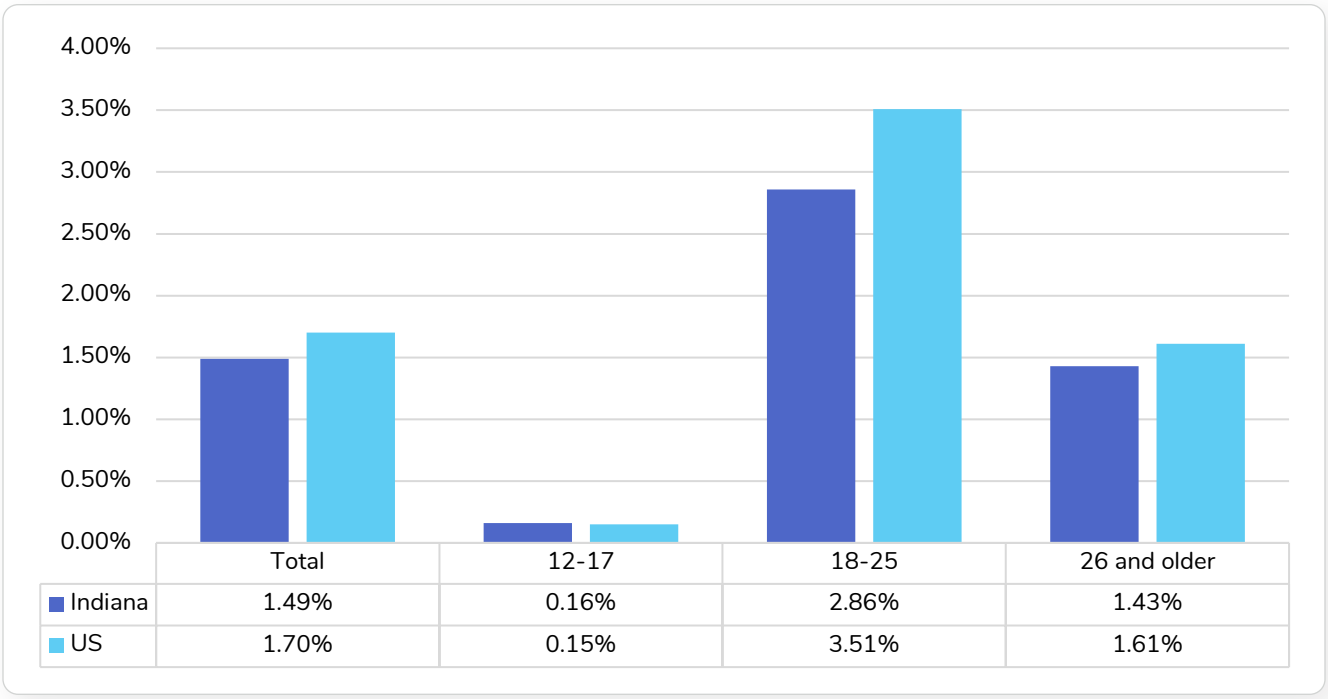
PREVALENCE OF STIMULANT CONSUMPTION IN THE GENERAL POPULATION

National Survey on Drug Use and Health (NSDUH)

When analyzing children 12 years and older on the use of cocaine in the past year, the state of Indiana had a slightly lower rate of abuse when compared to the nation in 2021. Indiana estimated a rate 1.5% (95% CI: 1.1-2.1) versus the country's rate of 1.7% (95% CI: 1.5-1.9). Both the U.S. and Indiana found that cocaine use was highest among people

aged 18-25 years. Estimated rates were 2.9% (95% CI: 1.8-4.5) in Indiana and 3.5% (95% CI: 3.0-4.1) in the U.S. (See Figure 6.1). The past-year cocaine use rate in both the U.S. and Indiana has remained mostly stable over the past decade (See Figure 6.2) (Substance Abuse and Mental Health Services Administration [SAMHSA], 2022).

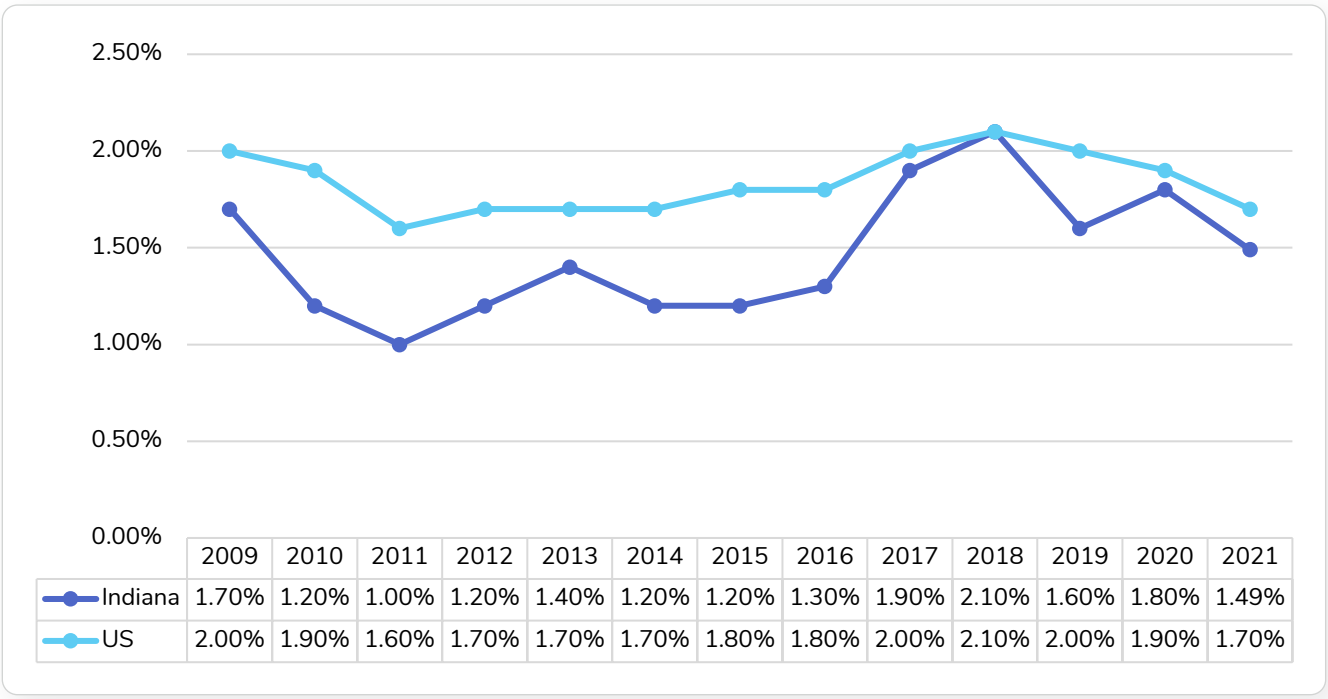
Figure 6.1 Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cocaine Use in the Past Year, by Age Group (National Survey on Drug Use and Health, 2021)



	Total	12-17	18-25	26 and older
Indiana	1.49%	0.16%	2.86%	1.43%
US	1.70%	0.15%	3.51%	1.61%

Source: SAMSHA-NSDUH, 2022

Figure 6.2 Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cocaine Use in the Past Year (National Survey on Drug Use and Health, 2009-2021)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	1.70%	1.20%	1.00%	1.20%	1.40%	1.20%	1.20%	1.30%	1.90%	2.10%	1.60%	1.80%	1.49%
US	2.00%	1.90%	1.60%	1.70%	1.70%	1.70%	1.80%	1.80%	2.00%	2.10%	2.00%	1.90%	1.70%

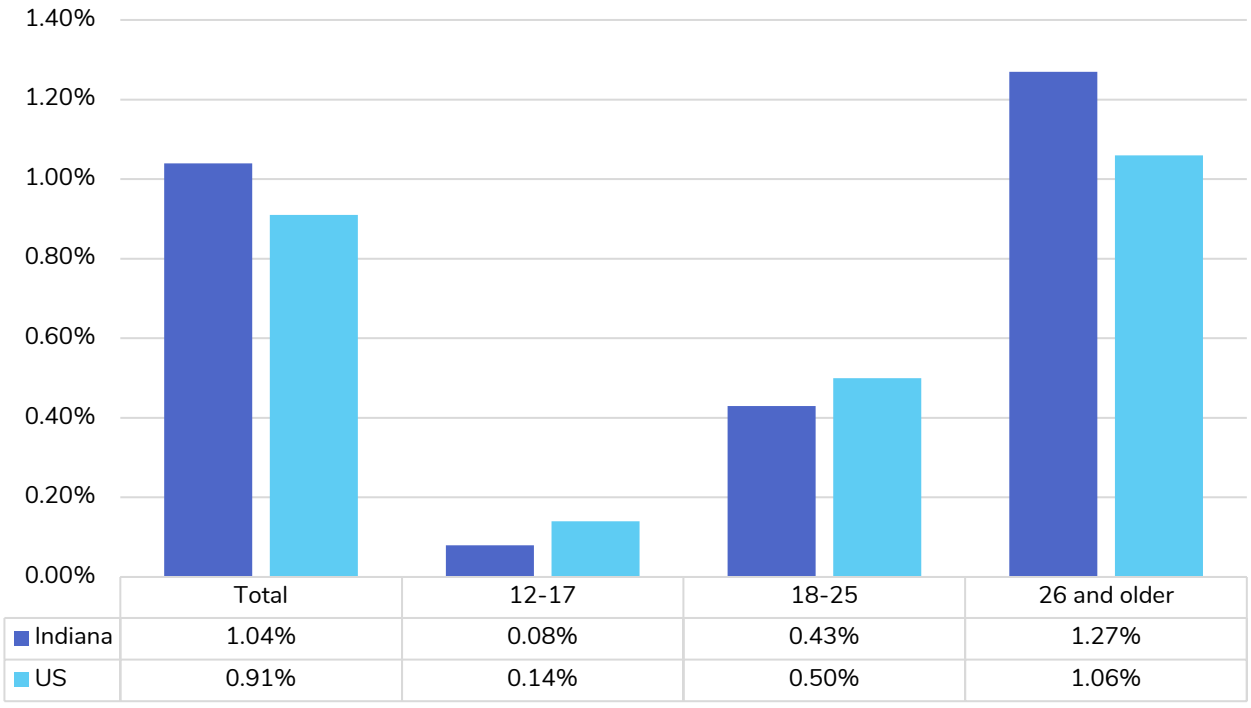
Source: SAMSHA-NSDUH, 2022

In 2021, Indiana-state residents reported using meth over the past year at a rate of 1.0% (95% CI: 0.6-1.9). Similar rates were found across the whole of the United States at a rate of 0.9% (95% CI: 0.8-1.1). Prevalence rates by age group are found in Figure 6.3 (SAMHSA, 2022).

Youth Risk Behavior Surveillance Survey

The Youth Risk Behavior Surveillance System (YRBSS) surveyed Indiana high school students from grades 9 to 12 regarding cocaine use in their lifetime. The 2021 data for Indiana shows that the rate among high school students in the state was 5.0% (9.5% CI: 1.3-16.9). When compared to the national rate of 2.5% (95% CI: 2-3.1), the state's prevalence rates of cocaine was higher. Differences in Indiana prevalence rates by gender, race/ethnicity, or grade level were not found to be statistically significant (See Table 6.1)(CDC, 1991-2021). According to the YRBSS in 2021, meth usage among high school students within Indiana was higher compared to the U.S. [3.7% (95% CI: 0.8-15.4) versus 1.8% (95% CI: 1.5-2.1), respectively]. The usage of cocaine and meth had steadily declined among Indiana high school students since 2003 till 2015 and then the rates increased in 2021. (see Figure 6.4). The YRBSS did not ask any of the students to describe any prescription stimulant abuse.

Figure 6.3 Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Methamphetamine Use in the Past Year, by Age Group (National Survey on Drug Use and Health, 2021)



	Total	12-17	18-25	26 and older
Indiana	1.04%	0.08%	0.43%	1.27%
US	0.91%	0.14%	0.50%	1.06%

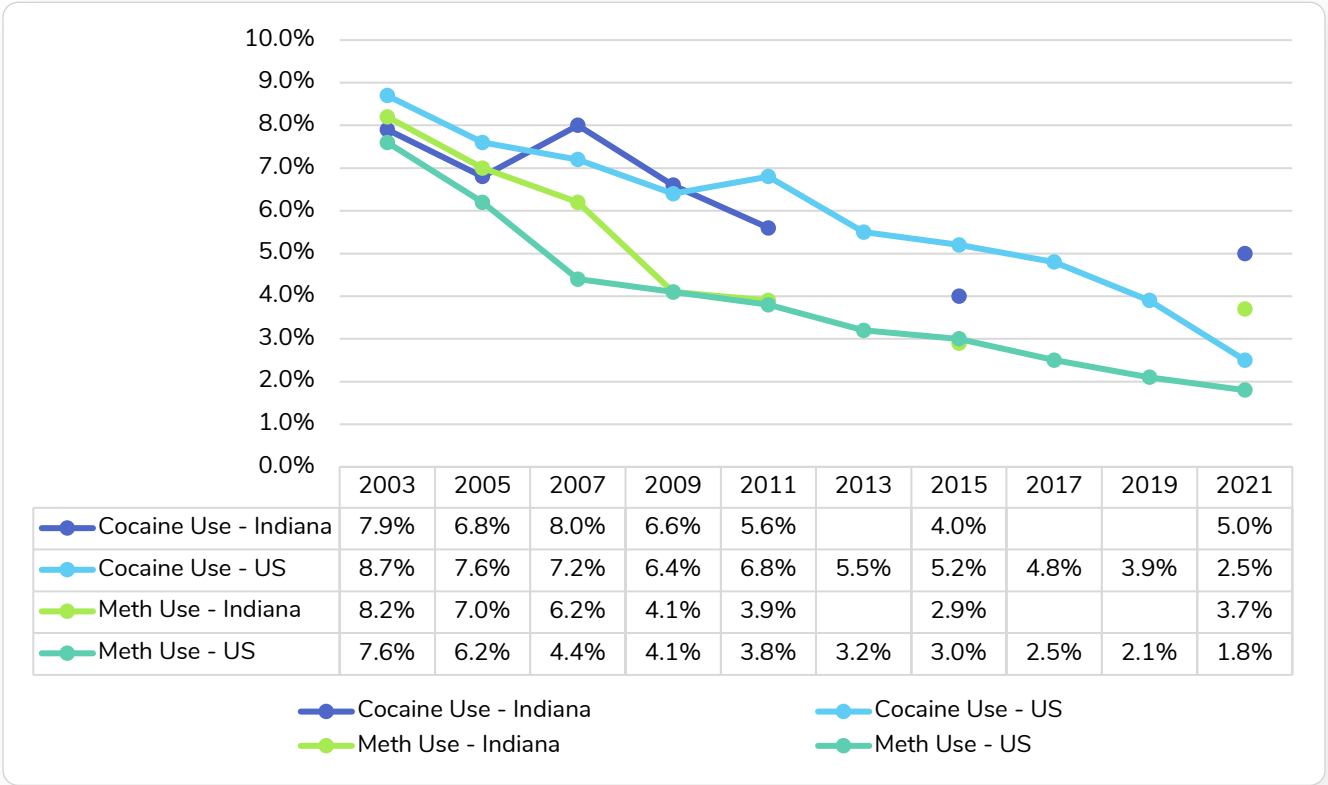
Source: SAMSHA-NSDUH, 2022

Table 6.1 Percentage of Indiana and U.S. High School Students (Grades 9 through 12) Reporting Lifetime Cocaine or Methamphetamine Use in 2021, by Gender, Race/Ethnicity, and Grade (Youth Risk Behavior Surveillance System, 2021)

		Cocaine		Methamphetamine	
		Indiana	U.S.	Indiana	U.S.
		4.9% (1.6 - 14.4)	2.6% (2.0 - 3.2)	3.5% (1.0 - 11.7)	1.9% (1.4 - 2.4)
Gender	Male	5% (1.0 - 21.4)	2.2% (1.6 - 3.1)	4.1% (0.7 - 20.9)	1.4% (1.1 - 1.8)
	Female	4% (0.7 - 18.7)	2.4% (1.9 - 2.9)	2.9% (0.4 - 19.0)	1.4% (1.1 - 1.8)
Race/Ethnicity	White	3.5% (1.0 - 11.1)	1.9% (1.3 - 2.8)	3.6% (1.1 - 11.6)	2% (1.4 - 2.9)
	Black	7.6% (3.2 - 17.0)	2.9% (1.9 - 4.3)	3.8% (1.0 - 13.9)	2.3% (1.8 - 2.9)
	Hispanic	1.7% (0.7 - 4.2)	1.7% (1.2 - 2.5)	0.9% (0.2 - 3.3)	2% (1.4 - 2.9)
Grade	9	5.3% (1.3 - 18.8)	1.9% (1.3 - 3.0)	2.8% (0.5 - 13.8)	1.5% (1.0 - 2.2)
	10	5.7% (1.0 - 27.0)	2.4% (1.8 - 3.1)	5.8% (1.0 - 27.3)	1.9% (1.3 - 2.8)
	11	7.4% (1.9 - 24.6)	3.4% (2.7 - 4.4)	5.8% (1.3 - 22.6)	1.9% (1.4 - 2.4)
	12	5% (1.3 - 16.9)	2.5% (2.0 - 3.1)	3.7% (0.8 - 15.4)	1.8% (1.5 - 2.1)
Total		**4.0% (2.9–5.7)**	**5.2% (4.3–6.2)**	**2.9% (1.5–5.4)**	**3.0% (2.4–3.8)**

Source: CDC, 2022

Figure 6.4 Percentage of Indiana and U.S. High School Students (9th-12th Grade) Reporting Lifetime Methamphetamine Use (Youth Risk Behavior Surveillance System, 2003-2021)



	2003	2005	2007	2009	2011	2013	2015	2017	2019	2021
Cocaine Use - Indiana	7.9%	6.8%	8.0%	6.6%	5.6%		4.0%			5.0%
Cocaine Use - US	8.7%	7.6%	7.2%	6.4%	6.8%	5.5%	5.2%	4.8%	3.9%	2.5%
Meth Use - Indiana	8.2%	7.0%	6.2%	4.1%	3.9%		2.9%			3.7%
Meth Use - US	7.6%	6.2%	4.4%	4.1%	3.8%	3.2%	3.0%	2.5%	2.1%	1.8%

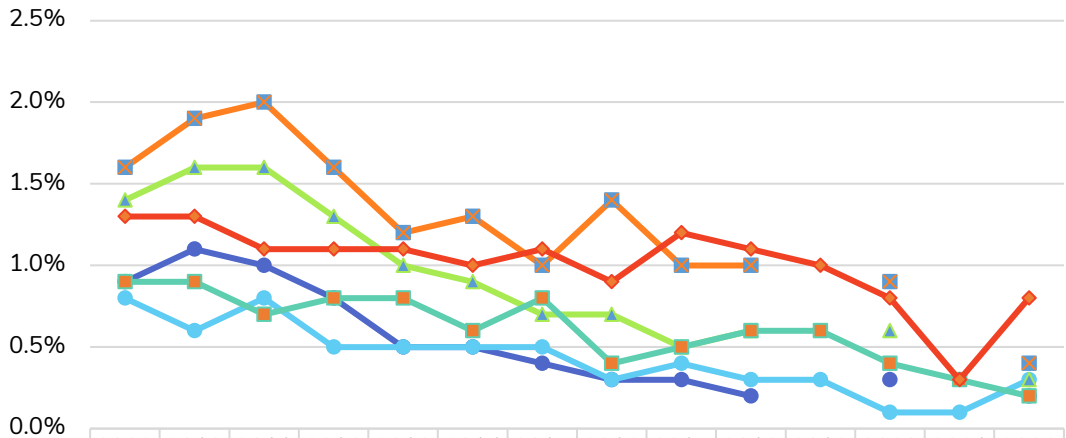
Source: CDC, 2003-2021

Note: Indiana estimates are not available for for 2013, 2017, and 2019 due to low response rates.

Indiana Youth Survey and Monitoring the Future Survey

The Indiana Youth Survey (INYS) and Monitoring the Future Survey (MTF) both provide estimates of cocaine and meth use among 8th, 10th, and 12th graders. The INYS focuses on Indiana state rates, whereas the MTF handles national rates. Neither of them report current inappropriate use of prescription stimulants. Based on the 2022 INYS survey results, only a few share of Indiana's youth reported any current use of cocaine or meth. The prevalence of both substances among youth in Indiana has been declining over the past decade, which is consistent with trends over the United States (see Figures 6.5 and 6.6)(Gassman et al., 2022, Inter-university Consortium for Political and Social Research [ICPSR], 2020-2022). The latest available 2022 data on cocaine/crack and meth use among students (grades 7-12) by Indiana region can be found in Appendix 6A.

Figure 6.5 Percentage of 8th, 10th, and 12th Grade Students Reporting Current Cocaine/Crack Use (Indiana Youth Survey and Monitoring the Future Survey, 2009-2022)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
8th Grade Indiana	0.9%	1.1%	1.0%	0.8%	0.5%	0.5%	0.4%	0.3%	0.3%	0.2%		0.3%		0.2%
8th Grade US	0.8%	0.6%	0.8%	0.5%	0.5%	0.5%	0.5%	0.3%	0.4%	0.3%	0.3%	0.1%	0.1%	0.3%
10th Grade Indiana	1.4%	1.6%	1.6%	1.3%	1.0%	0.9%	0.7%	0.7%	0.5%	0.6%		0.6%		0.3%
10th Grade US	0.9%	0.9%	0.7%	0.8%	0.8%	0.6%	0.8%	0.4%	0.5%	0.6%	0.6%	0.4%	0.3%	0.2%
12th Grade Indiana	1.6%	1.9%	2.0%	1.6%	1.2%	1.3%	1.0%	1.4%	1.0%	1.0%		0.9%		0.4%
12th Grade US	1.3%	1.3%	1.1%	1.1%	1.1%	1.0%	1.1%	0.9%	1.2%	1.1%	1.0%	0.8%	0.3%	0.8%

Source: Gassman et al., 2022; ICPSR, 2022

Note: The data for year 2019 and 2021 is not available because the Indiana Youth Survey (INYS) changed the data collection to biennial after 2018.

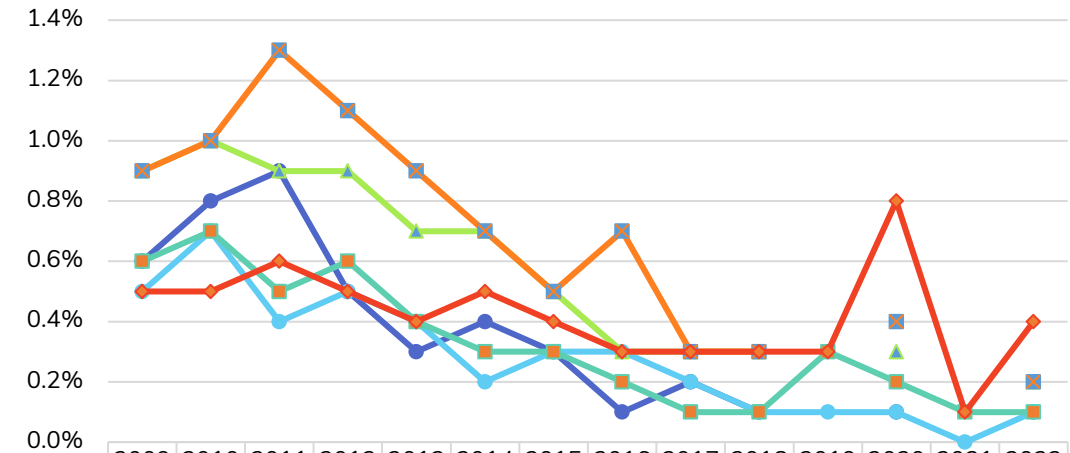
The Indiana College Substance Use Survey

The Indiana College Substance Use Survey (ICSUS) estimates alcohol, tobacco, and other such drug use within the population of Indiana college students. The 2021 survey on 23 participating colleges and universities found the following:

- 1.1% of Indiana college student had reportedly used cocaine within the past month.
- 0.2% reported the use of methamphetamines.
- 2.6% reported the use prescription stimulants that weren't prescribed for them.

The highest percentage of students started abusing cocaine after beginning college (67.1%). This same pattern was seen with prescription stimulants as well (57.9%). With regards to meth use, the percentage was reported as 46%. Prescription stimulants saw higher use among those aged 21 to 25 years when compared to students under 21 years old. Major gender disparities among college students were found in cocaine use (males: 1.4%, females: 0.8%) and prescription stimulant use (males: 3.5%, females: 2.0%) (King & Jun, 2019).

Figure 6.6 Percentage of 8th, 10th, and 12th Grade Students Reporting Current Meth Use (Indiana Youth Survey and Monitoring the Future Survey, 2009-2022)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
8th Grade Indiana	0.6%	0.8%	0.9%	0.5%	0.3%	0.4%	0.3%	0.1%	0.2%	0.1%		0.1%		0.1%
8th Grade US	0.5%	0.7%	0.4%	0.5%	0.4%	0.2%	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	0.0%	0.1%
10th Grade Indiana	0.9%	1.0%	0.9%	0.9%	0.7%	0.7%	0.5%	0.3%	0.3%	0.3%		0.3%		0.2%
10th Grade US	0.6%	0.7%	0.5%	0.6%	0.4%	0.3%	0.3%	0.2%	0.1%	0.1%	0.3%	0.2%	0.1%	0.1%
12th Grade Indiana	0.9%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%	0.7%	0.3%	0.3%		0.4%		0.2%
12th Grade US	0.5%	0.5%	0.6%	0.5%	0.4%	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%	0.8%	0.1%	0.4%

Source: Gassman et al., 2022; ICPSR, 2022

Note: Data collection for the INYS has shifted in 2018 from annual to biennial random sampling.

USE OF STIMULANTS IN THE TREATMENT POPULATION

Treatment Episode Data Set

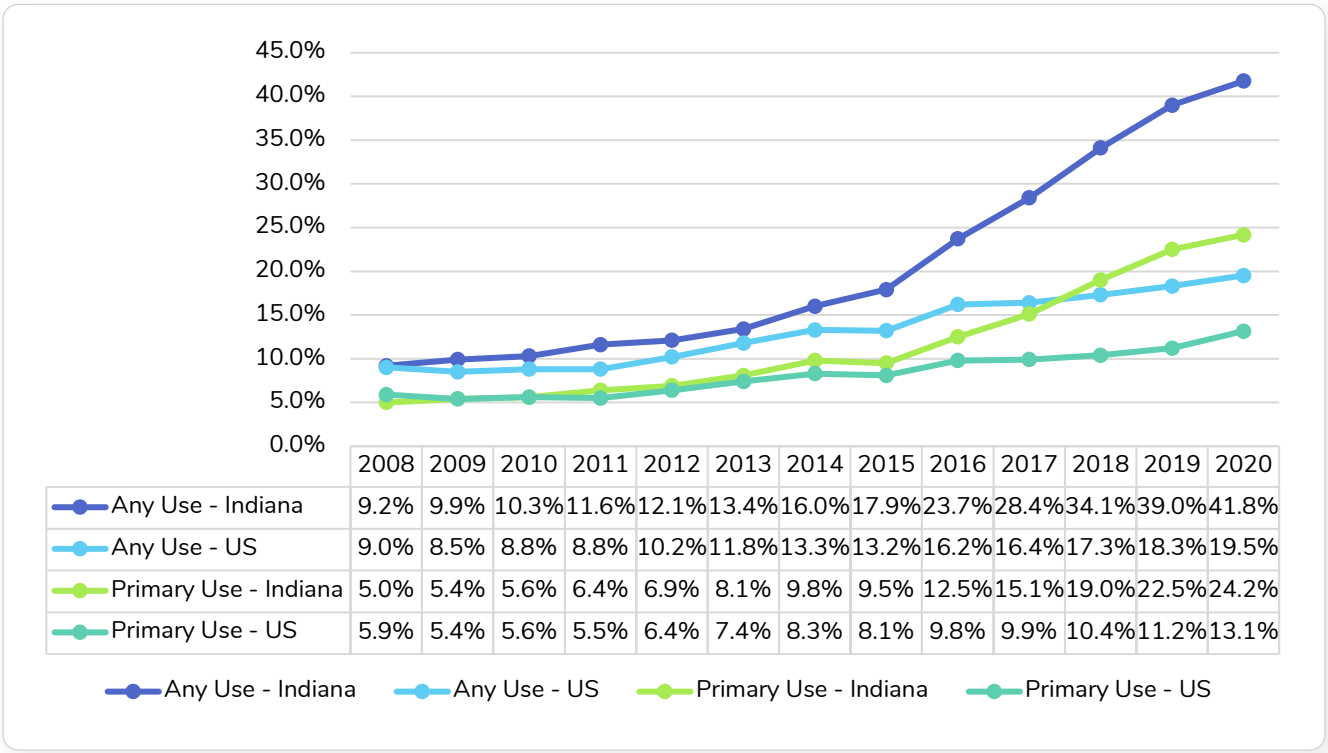
Methamphetamine was the most widely used stimulant among Indiana's treatment population, according to the Treatment Episode Data Set. In 2020, 41.8% of Indiana treatment admissions had reported methamphetamine use. This percentage was noticeably higher when compared to the United States (19.5%). Meth use was also seen more among certain demographics. Most notably, this was seen in women, white people, and adults between the ages of 18 to 44 (See Table 6.2). Meth use among the Indiana treatment population has tripled since 2008 (see Figure 6.7). The second most frequently used stimulant among the state's treatment population was cocaine at 10.7%, based on treatment admissions in 2020. By comparison, the U.S. statistic was higher at 17.3%. The key demographics for cocaine use were different compared to meth. Cocaine use was seen more among black people and those aged 45 and above (see Table 6.2). In contrast to meth use, cocaine use has dropped since 2008 until 2015 followed by slight increases till 2019 regarding treatment patients (see Figure 6.8). Abuse of prescription stimulants was lower by comparison, as only 1.5% of Indiana treatment admissions reported misuse of them in 2020. This percentage was lower than that reported on a national level (2.2%). Misuse of these prescription stimulants within the state's treatment population has changed little over the past 11 years. The only noticeable change was a spike from 2011-2012, but otherwise the data has remained consistent (See Figure 6.9). Treatment patients under the age of 45 were more likely to report misuse (see Table 6.2)(Substance Abuse and Mental Health Data Archive [SAMHDA], 2022). See Appendix B for the distribution of treatment episodes by county for cocaine, meth, and prescription stimulant use and dependence for the SFY 2022.

Table 6.2 Stimulant Misuse and Dependence (Primary Use) Reported at Substance Use Treatment Admission in Indiana, by Gender, Race, Ethnicity, and Age Group (Treatment Episode Data Set, 2020)

		Methamphetamine		Cocaine		Prescription Stimulants	
		Any Use	Dependence	Any Use	Dependence	Any Use	Dependence
Gender	Male	39.1%	22.5%	10.6%	3.3%	1.4%	0.5%
	Female	45.3%	26.4%	10.9%	3.6%	1.6%	0.4%
Race	White	47.6%	27.7%	8.3%	2.0%	1.5%	0.5%
	Black	10.9%	5.5%	26.1%	12.5%	0.9%	0.1%
	Other	25.0%	14.2%	13.1%	4.2%	2.6%	0.7%
Ethnicity	Hispanic	26.7%	14.7%	12.7%	2.7%	1.1%	0.3%
	Non-Hispanic	42.3%	24.6%	10.6%	3.4%	1.5%	0.5%
Age	Under 18	5.4%	2.6%	1.5%	0.2%	2.4%	0.0%
	18 to 24	35.8%	21.9%	7.0%	1.7%	1.9%	0.4%
	25 to 34	48.1%	26.1%	8.3%	2.0%	1.4%	0.5%
	35 to 44	47.5%	28.6%	11.0%	3.1%	1.8%	0.6%
	45 to 54	35.4%	21.6%	17.2%	7.0%	0.9%	0.3%
	55 or Older	19.4%	12.7%	19.9%	9.1%	0.8%	0.2%
Total		41.8%	24.2%	10.7%	3.4%	1.5%	0.4%

Source: SAMHDA-Treatment Episode Data Set, 2022

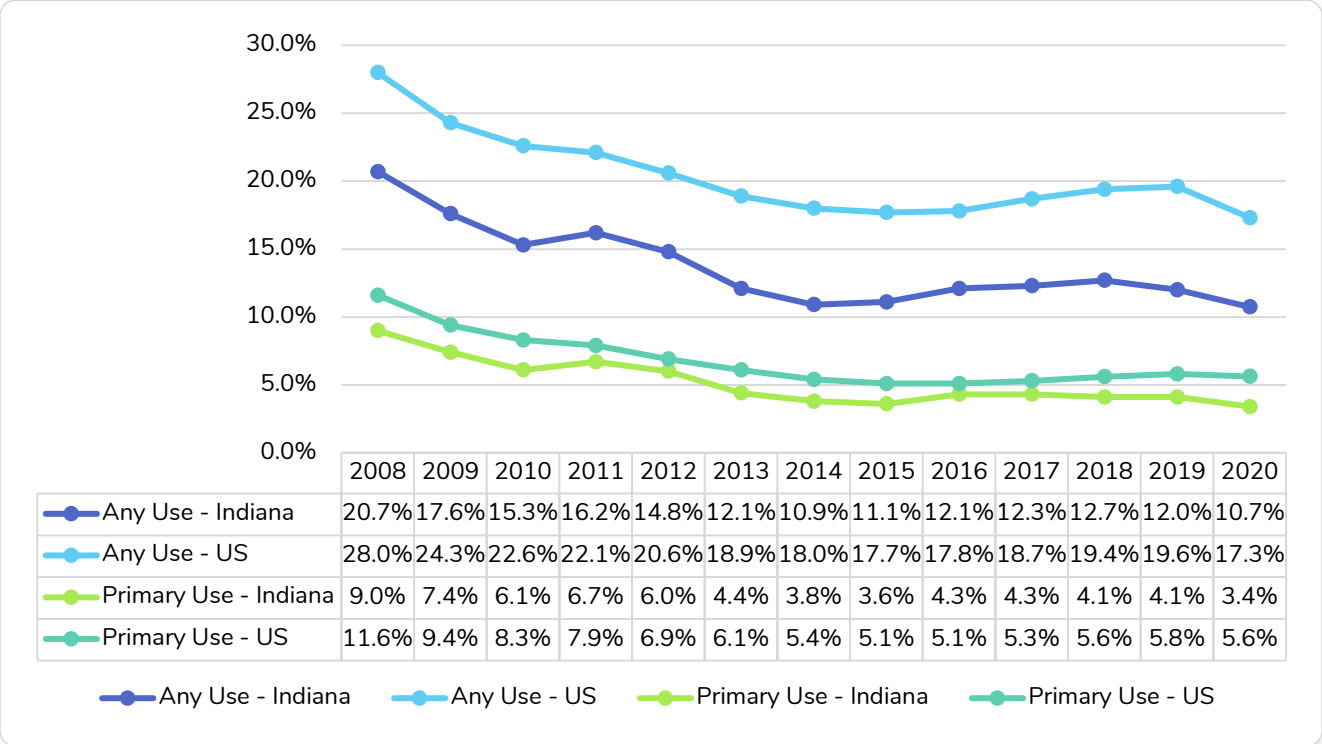
Figure 6.7 Percentage of Treatment Episodes with Reported Meth Use and Dependence, Indiana and the United States (Treatment Episode Data Set, 2008-2020)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Any Use - Indiana	9.2%	9.9%	10.3%	11.6%	12.1%	13.4%	16.0%	17.9%	23.7%	28.4%	34.1%	39.0%	41.8%
Any Use - US	9.0%	8.5%	8.8%	8.8%	10.2%	11.8%	13.3%	13.2%	16.2%	16.4%	17.3%	18.3%	19.5%
Primary Use - Indiana	5.0%	5.4%	5.6%	6.4%	6.9%	8.1%	9.8%	9.5%	12.5%	15.1%	19.0%	22.5%	24.2%
Primary Use - US	5.9%	5.4%	5.6%	5.5%	6.4%	7.4%	8.3%	8.1%	9.8%	9.9%	10.4%	11.2%	13.1%

Source: SAMHDA-Treatment Episode Data Set, 2022

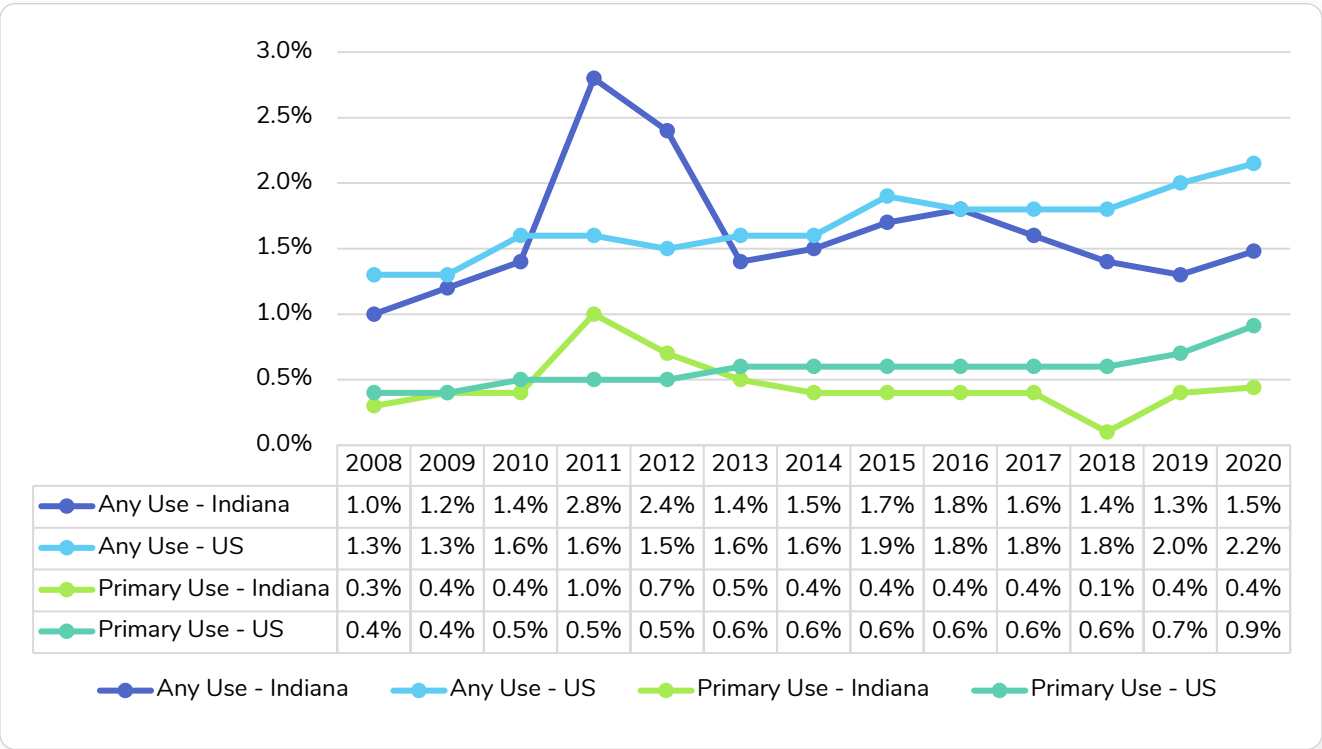
Figure 6.8 Percentage of Treatment Episodes with Reported Cocaine Use and Dependence, Indiana and the United States (Treatment Episode Data Set, 2008-2020)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Any Use - Indiana	20.7%	17.6%	15.3%	16.2%	14.8%	12.1%	10.9%	11.1%	12.1%	12.3%	12.7%	12.0%	10.7%
Any Use - US	28.0%	24.3%	22.6%	22.1%	20.6%	18.9%	18.0%	17.7%	17.8%	18.7%	19.4%	19.6%	17.3%
Primary Use - Indiana	9.0%	7.4%	6.1%	6.7%	6.0%	4.4%	3.8%	3.6%	4.3%	4.3%	4.1%	4.1%	3.4%
Primary Use - US	11.6%	9.4%	8.3%	7.9%	6.9%	6.1%	5.4%	5.1%	5.1%	5.3%	5.6%	5.8%	5.6%

Source: *SAMHDA-Treatment Episode Data Set, 2022*

Figure 6.9 Percentage of Treatment Episodes with Reported Prescription Stimulant Use and Dependence, Indiana and the United States (Treatment Episode Data Set, 2008-2020)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Any Use - Indiana	1.0%	1.2%	1.4%	2.8%	2.4%	1.4%	1.5%	1.7%	1.8%	1.6%	1.4%	1.3%	1.5%
Any Use - US	1.3%	1.3%	1.6%	1.6%	1.5%	1.6%	1.6%	1.9%	1.8%	1.8%	1.8%	2.0%	2.2%
Primary Use - Indiana	0.3%	0.4%	0.4%	1.0%	0.7%	0.5%	0.4%	0.4%	0.4%	0.4%	0.1%	0.4%	0.4%
Primary Use - US	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.7%	0.9%

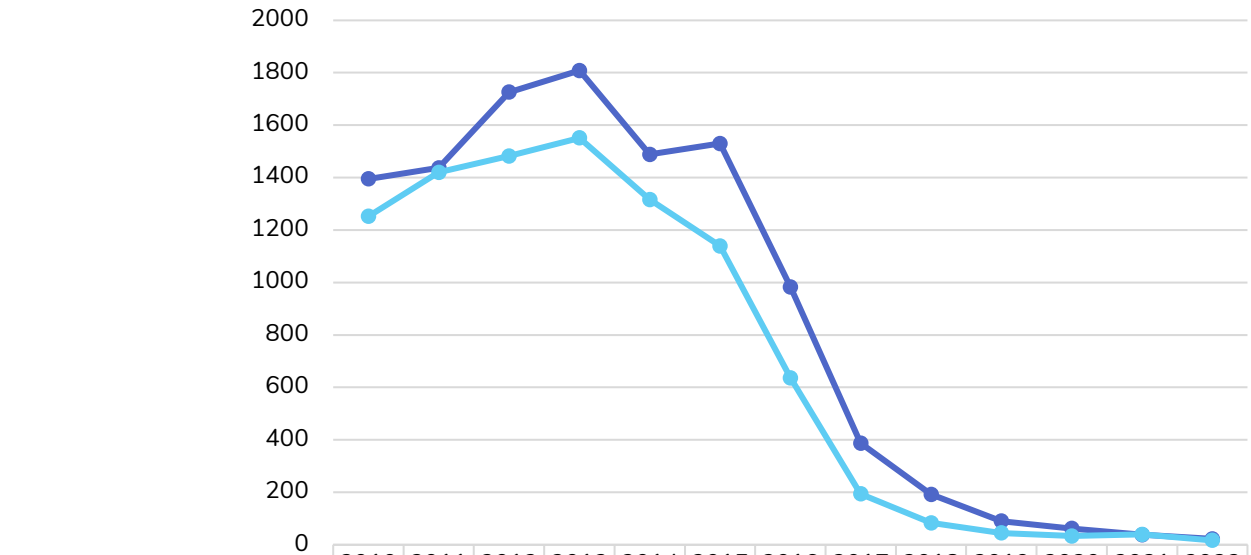
Source: *SAMHDA-Treatment Episode Data Set, 2022*

LEGAL CONSEQUENCES

Indiana State Police Meth Lab Seizures

While the vast majority of meth in the U.S. is made at 'superlabs' in Mexico, smaller, clandestine labs are sometimes formed to create the illicit material. These smaller labs gather the ingredients (pseudoephedrine, lithium batteries, fertilizer, etc) to create meth, or the drug can be created with one-pot/'shake and bake' methods that combine all of the substances into one container to shake together. As these labs are not sterile or monitored by any regulatory body, there is a significant risk to people within the labs or around them. Toxic fumes, chemical contamination, fires/explosions, and other such dangers are commonplace in this form of meth production. Not only that, but the bottles used for the 'shake and bake' method would be cast aside to become a potential harm to the environment. Indiana State Police (ISP) made 17 meth lab related arrests along with seizing 22 clandestine labs in 2022. The one-pot method was used on majority of these labs, with 82% (n=31) reported to have used this method. The state has seen a noticeable decline in lab seizures after the peak in 2013 (1,808 lab seizures)(see Figure 6.10) (ISP, 2022).

Figure 6.10 Number of Clandestine Methamphetamine Labs Seized and Number of Arrests Made at Methamphetamine Labs by the Indiana Law Enforcement Agencies (Indiana Meth Lab Statistics, 2010-2022)



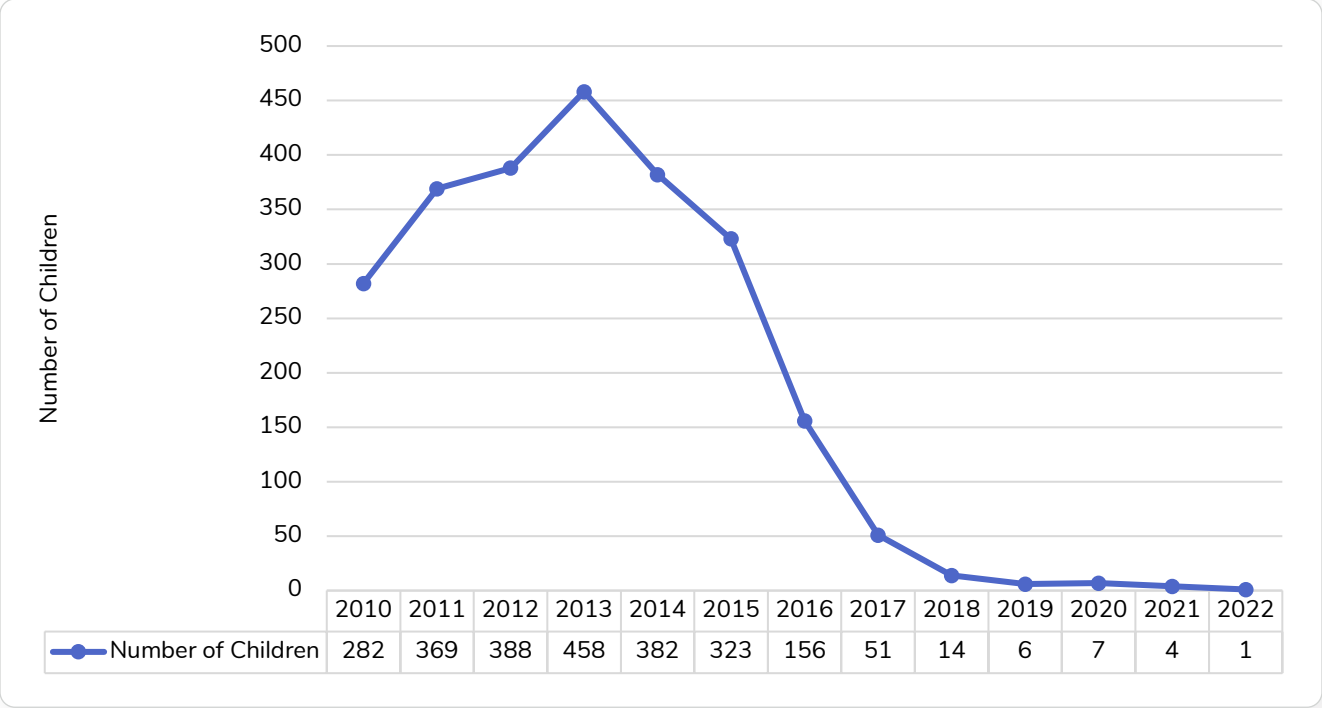
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of Lab Seizures	1395	1437	1726	1808	1488	1530	983	387	192	90	62	38	22
Number of Arrests	1252	1420	1482	1551	1316	1139	636	194	83	45	33	39	17

Source: ISP, 2023

Children Taken from Methamphetamine Lab Homes

The social consequences that come with substance abuse is prevalent. This is especially so when examining the impact of meth lab homes on the children and families related to them. Interpersonal conflicts, violence, financial issues, and poor parenting are just a small number of possible, negative consequences. The family unit is also disrupted by the incarceration of the parents and the placement of children in protective custody. Much like with lab seizures, 2013 was the peak of ISP removing children from meth lab homes (458 children). The number has since dropped to 1 in 2022 (See Figure 6.11)(ISP, 2021).

Figure 6.11 Number of Indiana Children Taken by the Indiana State Police from Methamphetamine Lab Homes (Indiana Meth Lab Statistics, 2010-2022)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of Children	282	369	388	458	382	323	156	51	14	6	7	4	1

Source: ISP, 2023

HEALTH CONSEQUENCES

Stimulant Abuse Health Issues

Meth abuse can create short-term highs, but the long-term consequences can leave a negative impact for many years to come. Meth users demonstrate severe weight loss, dental problems, anxiety, memory loss, paranoia, hallucinations, and violent behavior (NIDA, 2021c). These effects can create destructive behavior that affects not only themselves, but the people around them. With cocaine, the long-term problems depend on the means of ingestion. Snorting creates loss of smell, nosebleeds, and a plethora of other nasal issues. Smoking leads to asthma, respiratory distress, and an increased risk of lung infections (NIDA, 2021a). Misuse of prescription stimulants, much like meth, can create instances of psychosis, anger, and paranoia (NIDA, 2021b). All of these stimulants are highly addictive, making withdrawal difficult. This is made especially worse as those recovering experience depression, fatigue, and slowed thinking.

COVID-19 and Further Consequences

COVID-19 impacts those with substance use disorders at a statistically higher rate than those without it. Cocaine users, both lifetime and new users, have markedly higher risks. Meth abusers in particular alter the functionality of their immune system, as well as the health of their lungs. The innate and adaptive immune systems can be inhibited, making the person more susceptible to infections. This is further compounded by the accumulation of meth in the lungs, as well as the inflammation that can arise from inhalation (Hossain HK et al., 2020). The overall weakness of the lungs will make COVID-19 more detrimental to a person's health, and it can lead to hospitalizations, ventilators, and possibly death.

While all illegal drug use has a criminal element, stimulant abuse has noted problems with meth labs that lead to higher incidences of incarcerations for its users. Given that prisons and detention centers place numerous people in tight spaces, the chances of catching COVID-19 can be higher (CDC, 2021). With the COVID-19 pandemic demonstrating increased usage of drugs like cocaine and meth (Wainwright, J. et al., 2020), these prison populations could potentially increase COVID-19 infection numbers. Between the legal and social calamities that come with imprisonment, the addition of worsening health paints a picture of drug abuse with far-reaching consequences not perceived by those that seek out the short-term highs with stimulant drugs.

APPENDIX 6A

Percentage of Indiana Students Reporting Monthly Cocaine and Methamphetamine Use, by Region and Grade (Indiana Youth Survey, 2022)

Cocaine											
	Indiana	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
7th Grade	0.3%	0.2%	0.2%	0.4%	0.2%	0.0%	0.2%	0.7%*	0.1%	0.0%	0.3%
8th Grade	0.2%	0.3%	0.2%	0.3%	0.1%	0.2%	0.1%	0.5%*	0.0%	0.1%	0.3%
9th Grade	0.2%	0.3%	0.1%	0.2%	0.3%	0.1%	0.2%	0.7%	0.2%	0.2%	0.3%
10th Grade	0.3%	0.3%	0.4%	0.3%	0.3%	0.4%	0.5%	0.3%	0.1%	0.2%	0.5%
11th Grade	0.4%	0.6%	0.4%	0.5%	0.6%	0.0%	0.2%	0.4%	0.6%	0.5%	0.3%
12th Grade	0.4%	0.7%	0.0%	0.9%	0.5%	0.2%	0.0%	0.6%	0.6%	0.1%	0.2%

Methamphetamine											
	Indiana	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
7th Grade	0.2%	0.2%	0.3%	0.5%*	0.0%	0.0%	0.2%	0.2%	0.2%	0.3%	0.0%
8th Grade	0.1%	0.2%	0.1%	0.3%	0.0%	0.0%	0.1%	0.2%	0.0%	0.2%	0.0%
9th Grade	0.2%	0.1%	0.1%	0.2%	0.3%	0.1%	0.2%	0.3%	0.2%	0.0%	0.2%
10th Grade	0.2%	0.1%	0.1%	0.4%	0.3%	0.2%	0.5%	0.4%	0.1%	0.1%	0.2%
11th Grade	0.2%	0.0%	0.3%	0.2%	0.0%	0.1%	0.3%	0.0%	0.2%	0.5%	0.1%
12th Grade	0.2%	0.2%	0.2%	0.3%	0.3%	0.0%	0.0%	0.0%	0.3%	0.1%	0.1%

Source: Gassman et al., 2022

Notes: * is used to indicate local rate that varies significantly from the state rate (P<.05).

Data from INYS at the state and regional levels is provided. Until 2018, there were 8 regions. DMHA changed the number of regions to 10 in 2020. The counties in each region include:

Region 1: Lake, LaPorte, Porter

Region 2: Cass, Elkhart, Fulton, Howard, Kosciusko, Marshall, Miami, Pulaski, St. Joseph, Starke, Wabash

Region 3: Adams, Allen, DeKalb, Huntington, Lagrange, Noble, Steuben, Wells, Whitley

Region 4: Benton, Boone, Carroll, Clinton, Fountain, Jasper, Montgomery, Newton, Tippecanoe, Warren, White

Region 5: Blackford, Delaware, Grant, Hamilton, Hancock, Henry, Jay, Madison, Randolph, Tipton, Wayne

Region 6: Clay, Hendricks, Monroe, Morgan, Owen, Parke, Putnam, Sullivan, Vermillion, Vigo

Region 7: Marion

Region 8: Daviess, Dubois, Gibson, Greene, Knox, Martin, Perry, Pike, Posey, Spencer, Vanderburgh, Warrick

Region 9: Bartholomew, Brown, Clark, Crawford, Floyd, Harrison, Jackson, Johnson, Lawrence, Orange, Scott, Washington

Region 10: Dearborn, Decatur, Fayette, Franklin, Jefferson, Jennings, Ohio, Ripley, Rush, Shelby, Switzerland, Union

APPENDIX 6B

Number of Treatment Episodes with Cocaine, Meth, and Prescription Stimulant Use and Dependence Reported at Treatment Admission in Indiana, by County (Treatment Episode Data Set, SFY 2022)

	Treatment Episodes	Cocaine Use		Cocaine Dependence		Meth Use		Meth Dependence		Rx Stimulant Use		Rx Stimulant Dependence	
County	Total	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Adams	56	9	16.1%	<5	7.1%	25	44.6%	11	19.6%	<5	1.8%	<5	1.8%
Allen	926	181	19.5%	73	7.9%	264	28.5%	140	15.1%	11	1.2%	<5	0.3%
Bartholomew	281	11	3.9%	<5	1.1%	170	60.5%	101	35.9%	<5	1.4%	<5	0.0%
Benton	34	<5	5.9%	<5	0.0%	13	38.2%	13	38.2%	<5	0.0%	<5	0.0%
Blackford	49	<5	6.1%	<5	0.0%	38	77.6%	21	42.9%	<5	2.0%	<5	2.0%
Boone	240	14	5.8%	5	2.1%	113	47.1%	58	24.2%	<5	0.4%	<5	0.4%
Brown	35	<5	2.9%	<5	0.0%	16	45.7%	6	17.1%	<5	0.0%	<5	0.0%
Carroll	41	<5	9.8%	<5	4.9%	27	65.9%	17	41.5%	<5	4.9%	<5	2.4%
Cass	57	<5	1.8%	<5	0.0%	35	61.4%	18	31.6%	<5	1.8%	<5	0.0%
Clark	393	28	7.1%	11	2.8%	165	42.0%	113	28.8%	6	1.5%	<5	1.0%
Clay	55	<5	5.5%	<5	0.0%	39	70.9%	22	40.0%	<5	5.5%	<5	0.0%
Clinton	81	<5	4.9%	<5	0.0%	40	49.4%	21	25.9%	<5	0.0%	<5	0.0%
Crawford	10	<5	0.0%	<5	0.0%	5	50.0%	<5	30.0%	<5	0.0%	<5	0.0%
Daviess	45	<5	6.7%	<5	4.4%	36	80.0%	27	60.0%	<5	0.0%	<5	0.0%
Dearborn	284	34	12.0%	13	4.6%	120	42.3%	57	20.1%	<5	1.1%	<5	0.4%
Decatur	122	<5	0.8%	<5	0.0%	64	52.5%	43	35.2%	<5	1.6%	<5	0.0%
DeKalb	192	18	9.4%	<5	1.0%	111	57.8%	81	42.2%	<5	0.0%	<5	0.0%
Delaware	496	66	13.3%	25	5.0%	220	44.4%	132	26.6%	9	1.8%	<5	0.4%
Dubois	241	<5	1.2%	<5	0.0%	106	44.0%	65	27.0%	5	2.1%	<5	0.4%
Elkhart	317	37	11.7%	10	3.2%	154	48.6%	114	36.0%	11	3.5%	5	1.6%
Fayette	251	8	3.2%	<5	0.4%	165	65.7%	97	38.6%	<5	0.0%	<5	0.0%
Floyd	160	<5	1.9%	<5	1.3%	74	46.3%	51	31.9%	6	3.8%	<5	0.6%
Fountain	51	<5	5.9%	<5	0.0%	29	56.9%	14	27.5%	<5	2.0%	<5	0.0%
Franklin	38	<5	5.3%	<5	0.0%	19	50.0%	15	39.5%	<5	0.0%	<5	0.0%
Fulton	38	<5	5.3%	<5	0.0%	22	57.9%	18	47.4%	<5	2.6%	<5	0.0%
Gibson	106	<5	1.9%	<5	0.0%	61	57.5%	41	38.7%	<5	0.9%	<5	0.0%
Grant	315	27	8.6%	9	2.9%	172	54.6%	86	27.3%	9	2.9%	<5	0.3%
Greene	34	<5	2.9%	<5	0.0%	23	67.6%	16	47.1%	<5	0.0%	<5	0.0%
Hamilton	528	62	11.7%	14	2.7%	140	26.5%	54	10.2%	7	1.3%	<5	0.4%
Hancock	114	16	14.0%	8	7.0%	44	38.6%	19	16.7%	<5	1.8%	<5	0.0%
Harrison	35	<5	2.9%	<5	0.0%	18	51.4%	15	42.9%	<5	0.0%	<5	0.0%
Hendricks	525	54	10.3%	14	2.7%	183	34.9%	92	17.5%	9	1.7%	<5	0.4%
Henry	305	27	8.9%	8	2.6%	158	51.8%	94	30.8%	11	3.6%	<5	0.3%
Howard	476	54	11.3%	19	4.0%	275	57.8%	154	32.4%	<5	0.6%	<5	0.2%

	Treatment Episodes	Cocaine Use		Cocaine Dependence		Meth Use		Meth Dependence		Rx Stimulant Use		Rx Stimulant Dependence	
County	Total	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Huntington	225	12	5.3%	<5	1.8%	100	44.4%	67	29.8%	<5	1.3%	<5	0.9%
Jackson	149	<5	1.3%	<5	0.0%	110	73.8%	80	53.7%	<5	0.7%	<5	0.0%
Jasper	80	7	8.8%	<5	3.8%	34	42.5%	21	26.3%	<5	2.5%	<5	0.0%
Jay	140	<5	2.9%	<5	2.1%	74	52.9%	50	35.7%	<5	0.7%	<5	0.0%
Jefferson	265	10	3.8%	<5	1.1%	169	63.8%	124	46.8%	7	2.6%	<5	0.4%
Jennings	150	<5	2.0%	<5	0.7%	106	70.7%	70	46.7%	<5	0.0%	<5	0.0%
Johnson	228	22	9.6%	5	2.2%	92	40.4%	56	24.6%	<5	1.8%	<5	0.9%
Knox	91	<5	0.0%	<5	0.0%	51	56.0%	31	34.1%	<5	0.0%	<5	0.0%
Kosciusko	250	13	5.2%	<5	1.2%	132	52.8%	86	34.4%	<5	1.2%	<5	0.0%
LaGrange	98	6	6.1%	<5	3.1%	45	45.9%	34	34.7%	<5	1.0%	<5	0.0%
Lake	956	247	25.8%	125	13.1%	57	6.0%	29	3.0%	15	1.6%	<5	0.3%
LaPorte	392	52	13.3%	23	5.9%	86	21.9%	59	15.1%	6	1.5%	<5	0.3%
Lawrence	224	10	4.5%	<5	0.9%	159	71.0%	108	48.2%	<5	1.8%	<5	0.4%
Madison	1066	145	13.6%	55	5.2%	585	54.9%	320	30.0%	24	2.3%	<5	0.3%
Marion	2885	546	18.9%	212	7.3%	729	25.3%	313	10.8%	30	1.0%	9	0.3%
Marshall	122	8	6.6%	<5	1.6%	48	39.3%	25	20.5%	<5	1.6%	<5	0.8%
Martin	6	<5	0.0%	<5	0.0%	<5	33.3%	<5	33.3%	<5	0.0%	<5	0.0%
Miami	82	<5	4.9%	<5	0.0%	35	42.7%	15	18.3%	<5	1.2%	<5	0.0%
Monroe	547	40	7.3%	12	2.2%	328	60.0%	184	33.6%	13	2.4%	<5	0.2%
Montgomery	348	12	3.4%	<5	0.3%	221	63.5%	117	33.6%	<5	0.9%	<5	0.3%
Morgan	324	11	3.4%	<5	1.2%	184	56.8%	119	36.7%	<5	0.6%	<5	0.0%
Newton	17	<5	11.8%	<5	11.8%	5	29.4%	<5	17.6%	<5	0.0%	<5	0.0%
Noble	202	11	5.4%	<5	1.0%	109	54.0%	76	37.6%	<5	0.5%	<5	0.5%
Ohio	18	<5	5.6%	<5	0.0%	10	55.6%	7	38.9%	<5	5.6%	<5	0.0%
Orange	31	<5	0.0%	<5	0.0%	14	45.2%	11	35.5%	<5	0.0%	<5	0.0%
Owen	42	<5	7.1%	<5	2.4%	18	42.9%	11	26.2%	<5	0.0%	<5	0.0%
Parke	22	<5	13.6%	<5	0.0%	15	68.2%	6	27.3%	<5	0.0%	<5	0.0%
Perry	72	<5	1.4%	<5	0.0%	29	40.3%	25	34.7%	<5	0.0%	<5	0.0%
Pike	10	<5	0.0%	<5	0.0%	6	60.0%	<5	30.0%	<5	0.0%	<5	0.0%
Porter	343	73	21.3%	21	6.1%	82	23.9%	52	15.2%	<5	1.2%	<5	0.0%
Posey	73	<5	4.1%	<5	0.0%	40	54.8%	28	38.4%	<5	2.7%	<5	0.0%
Pulaski	44	<5	6.8%	<5	0.0%	26	59.1%	16	36.4%	<5	2.3%	<5	2.3%
Putnam	206	10	4.9%	<5	1.5%	94	45.6%	53	25.7%	<5	1.5%	<5	0.5%
Randolph	114	9	7.9%	<5	2.6%	49	43.0%	28	24.6%	<5	0.0%	<5	0.0%
Ripley	83	5	6.0%	<5	1.2%	39	47.0%	21	25.3%	<5	1.2%	<5	0.0%
Rush	142	5	3.5%	<5	0.0%	79	55.6%	60	42.3%	<5	1.4%	<5	0.0%
Saint Joseph	759	145	19.1%	76	10.0%	250	32.9%	167	22.0%	21	2.8%	6	0.8%

	Treatment Episodes	Cocaine Use		Cocaine Dependence		Meth Use		Meth Dependence		Rx Stimulant Use		Rx Stimulant Dependence	
County	Total	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Scott	213	6	2.8%	<5	0.0%	120	56.3%	65	30.5%	<5	1.9%	<5	1.4%
Shelby	97	8	8.2%	<5	2.1%	61	62.9%	35	36.1%	<5	1.0%	<5	0.0%
Spencer	97	<5	1.0%	<5	1.0%	50	51.5%	49	50.5%	<5	0.0%	<5	0.0%
Starke	181	11	6.1%	<5	0.6%	70	38.7%	30	16.6%	<5	2.2%	<5	1.1%
Steuben	154	<5	1.3%	<5	0.0%	64	41.6%	45	29.2%	<5	0.6%	<5	0.0%
Sullivan	9	<5	11.1%	<5	0.0%	<5	44.4%	<5	33.3%	<5	0.0%	<5	0.0%
Switzerland	54	<5	5.6%	<5	0.0%	22	40.7%	11	20.4%	<5	1.9%	<5	0.0%
Tippecanoe	566	48	8.5%	16	2.8%	268	47.3%	175	30.9%	13	2.3%	<5	0.2%
Tipton	42	<5	0.0%	<5	0.0%	26	61.9%	20	47.6%	<5	2.4%	<5	0.0%
Union	35	<5	0.0%	<5	0.0%	18	51.4%	13	37.1%	<5	0.0%	<5	0.0%
Vanderburgh	745	39	5.2%	8	1.1%	394	52.9%	254	34.1%	14	1.9%	6	0.8%
Vermillion	19	<5	5.3%	<5	0.0%	9	47.4%	5	26.3%	<5	0.0%	<5	0.0%
Vigo	208	16	7.7%	<5	0.5%	147	70.7%	83	39.9%	<5	0.5%	<5	0.0%
Wabash	148	5	3.4%	<5	0.0%	86	58.1%	55	37.2%	<5	0.7%	<5	0.0%
Warren	18	<5	0.0%	<5	0.0%	7	38.9%	<5	5.6%	<5	0.0%	<5	0.0%
Warrick	106	<5	2.8%	<5	1.9%	49	46.2%	26	24.5%	<5	3.8%	<5	1.9%
Washington	47	<5	4.3%	<5	2.1%	21	44.7%	13	27.7%	<5	0.0%	<5	0.0%
Wayne	500	67	13.4%	30	6.0%	220	44.0%	125	25.0%	<5	0.6%	<5	0.2%
Wells	111	9	8.1%	<5	1.8%	43	38.7%	23	20.7%	<5	0.9%	<5	0.0%
White	121	9	7.4%	<5	0.8%	63	52.1%	48	39.7%	<5	2.5%	<5	0.0%
Whitley	93	7	7.5%	<5	2.2%	37	39.8%	29	31.2%	<5	2.2%	<5	2.2%
Indiana	21301	2351	11.0%	862	4.0%	9135	42.9%	5414	25.4%	322	1.5%	79	0.4%

Source: Indiana Family and Social Services Administration, 2023
Notes: We defined dependence as "individuals in substance abuse treatment listing cocaine/meth/prescription stimulants as their primary substance at admission."

The percentages are calculated by taking the count of reported Cocaine/Meth/Prescription stimulant use and dependence and dividing by the count of treatment episodes. As a result of confidentiality concerns, data was suppressed if the count of treatment episodes was less than 5.

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CHAPTER 07

Mental Health Prevalence and Suicide in Indiana

INTRODUCTION

Mental illness is one of the most common conditions worldwide. More than 50% of Americans will be diagnosed with a mental illness or disorder at some point in their lifetime. Poor mental and physical health can lead to mental illness, as well as trauma, substance abuse and feelings of loneliness or isolation. Untreated mental illness can increase the risk of other conditions like diabetes and heart disease (CDC, 2021a).

There are several different mental disorders, and there is no one cause for any mental illness. Anxiety disorders and depression are the most common mental illnesses, and eating disorders are also considered mental illness. Another potential consequence of mental illness is the risk of suicide, which is the second leading cause of death in ages 10-34, and is in the top 10 leading causes of death for all ages in the U.S (Hedgegaard et al., 2021).

One of the many consequences the COVID-19 pandemic was the decline of mental health among Americans, as more than half reported that COVID-19 had a negative impact on their mental health (Robbins et al., 2020). In 2021, 38.5% of Indiana adults reported symptoms of anxiety or depression, while the U.S. rate was reported at 41% of adults (Kirzinger, et. al., 2020; CDC, 2021a). The COVID-19 pandemic and safety measures affected many Americans' mental health; 47% of those who were sheltered in place reported experiencing negative mental health effects related to COVID-19 (Kirkzinger et al., 2020). A 2020 survey on college students in a U.S. university found that 71% of participants reported increased stress and anxiety due to the COVID-19 pandemic. In 2021, emergency department visits for suspected suicide attempts among 12- to 25-year-olds dramatically increased up to 50% higher than the data from 2019 (Yard et al., 2021). During the height of the COVID-19 pandemic, 40% of U.S. adults reported struggling with mental health and substances, while 11% reported seriously considering suicide (Czeisler, 2020).

PREVALENCE OF MENTAL ILLNESS AND PSYCHOLOGICAL DISTRESS

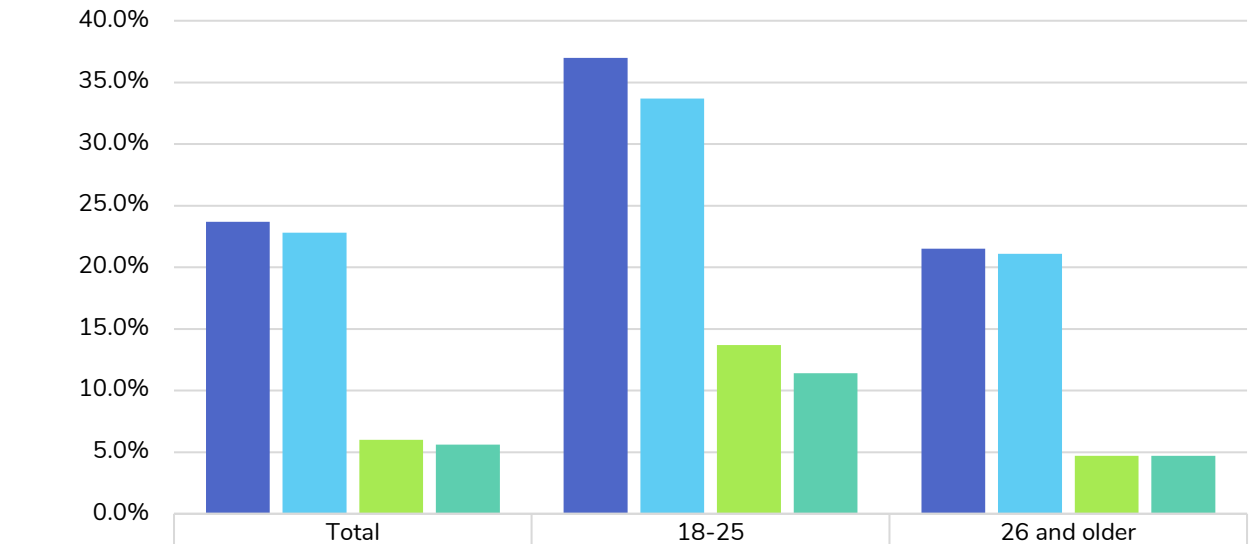
National Survey on Drug Use and Health

The prevalence of mental illness in the U.S is reported by the National Survey on Drug Use and Health (NSDUH). The following definitions are used in the collection of survey data:

- Any mental illness (AMI): a diagnosable mental, behavioral, or emotional disorder, other than a developmental or substance use disorder.
- Serious mental illness (SMI): having a mental illness that results in serious functional impairment (NSDUH).

The 2021 NSDUH data estimated that 57.8 million U.S. adults over 18 years lived with AMI, accounting for 22.8% of all U.S. adults. An estimated 22.8% (95% CI: 22.1 - 23.5) of U.S. adults reported having AMI in the past year. In Indiana, an estimated 23.7% (95% CI: 21.0-26.6) reported having AMI in the past year. The reported prevalence of SMI in Indiana (6.0%; 95% CI: 5.0-7.2) is closely followed by the U.S. reported prevalence rates (5.6%; 95% CI: 5.2-5.9). See Figure 7.1 for the distribution of AMI and SMI by age group. Figure 7.2 shows the AMI and SMI trends.

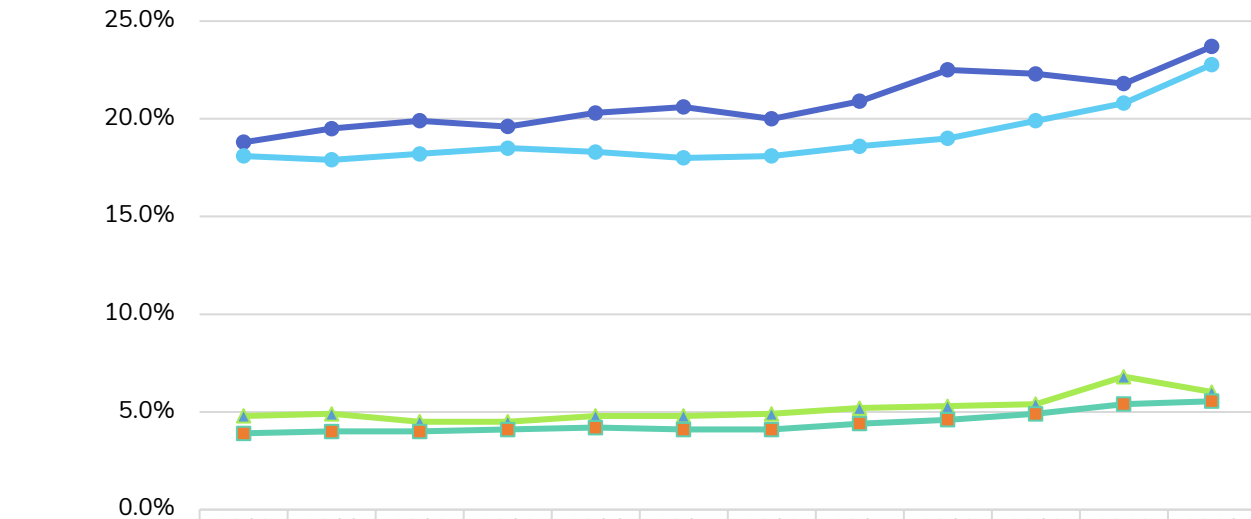
Figure 7.1 Percentage of Indiana and U.S. Population (18 Years and Older) Reporting Any Mental Illness (AMI) or Serious Mental Illness (SMI) in the Past Year, by Age Group (National Survey on Drug Use and Health, 2019-2021)



	Total	18-25	26 and older
Indiana AMI	23.7%	37.0%	21.5%
US AMI	22.8%	33.7%	21.1%
Indiana SMI	6.0%	13.7%	4.7%
US SMI	5.6%	11.4%	4.7%

Source: SAMHSA-NSDUH, 2022

Figure 7.2 Percentage of Indiana and U.S. Population (18 Years and Older) Reporting Any Mental Illness (AMI) or Serious Mental Illness (SMI) in the Past Year (National Survey on Drug Use and Health, 2010–2021)



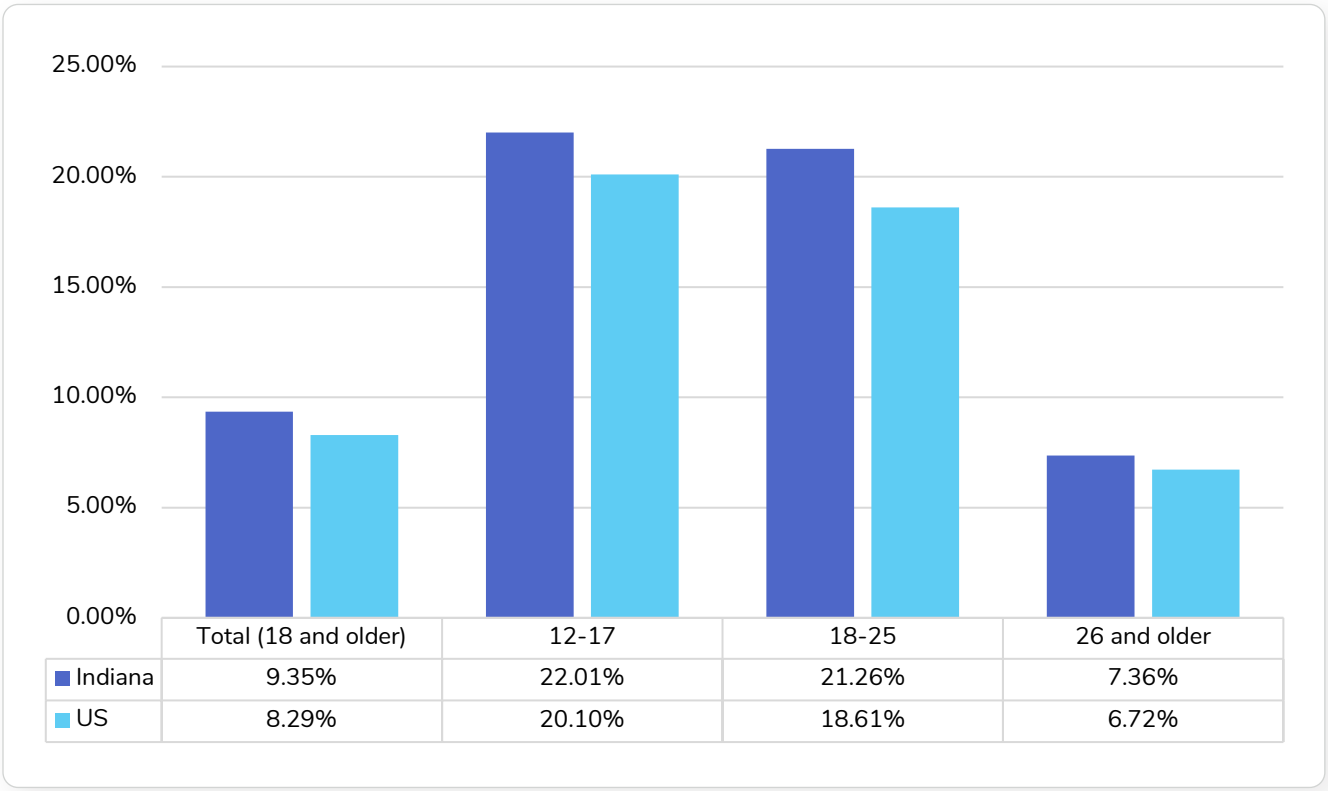
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana AMI	18.8%	19.5%	19.9%	19.6%	20.3%	20.6%	20.0%	20.9%	22.5%	22.3%	21.8%	23.7%
US AMI	18.1%	17.9%	18.2%	18.5%	18.3%	18.0%	18.1%	18.6%	19.0%	19.9%	20.8%	22.8%
Indiana SMI	4.8%	4.9%	4.5%	4.5%	4.8%	4.8%	4.9%	5.2%	5.3%	5.4%	6.8%	6.0%
US SMI	3.9%	4.0%	4.0%	4.1%	4.2%	4.1%	4.1%	4.4%	4.6%	4.9%	5.4%	5.6%

Source: SAMHSA-NSDUH, 2022

Major depressive episodes (MDE) occur when an individual experiences a depressed mood or loss of interest or pleasure in daily activities for at least two weeks (American Psychiatric Association, 2013). 9.4% of Indiana adults (95% CI:) reported having one MDE in the past year in 2020. The COVID-19 pandemic brought about even more mental stress, as more than half of Americans reported a negative impact on mental health stemming from the pandemic (NAMI, 2021).

Mental illness and substance abuse often co-occur, with one leading to another. According to SAMHSA 2021 data, 19.4 million U.S. adults had a co-occurring mental illness and substance use disorder. Co-occurring conditions are often more chronic, and typically have poorer responses to treatment. State-level estimates for co-occurring disorders are currently not available (SAMHSA, 2022). Figure 7.3 shows the share of the population reporting at least one MDE by age group. Figure 7.4 shows the MDE trends.

Figure 7.3 Percentage of Indiana and U.S. Population Reporting at Least One Major Depressive Episode in the Past Year, by Age Group (National Survey on Drug Use and Health, 2019-2021)

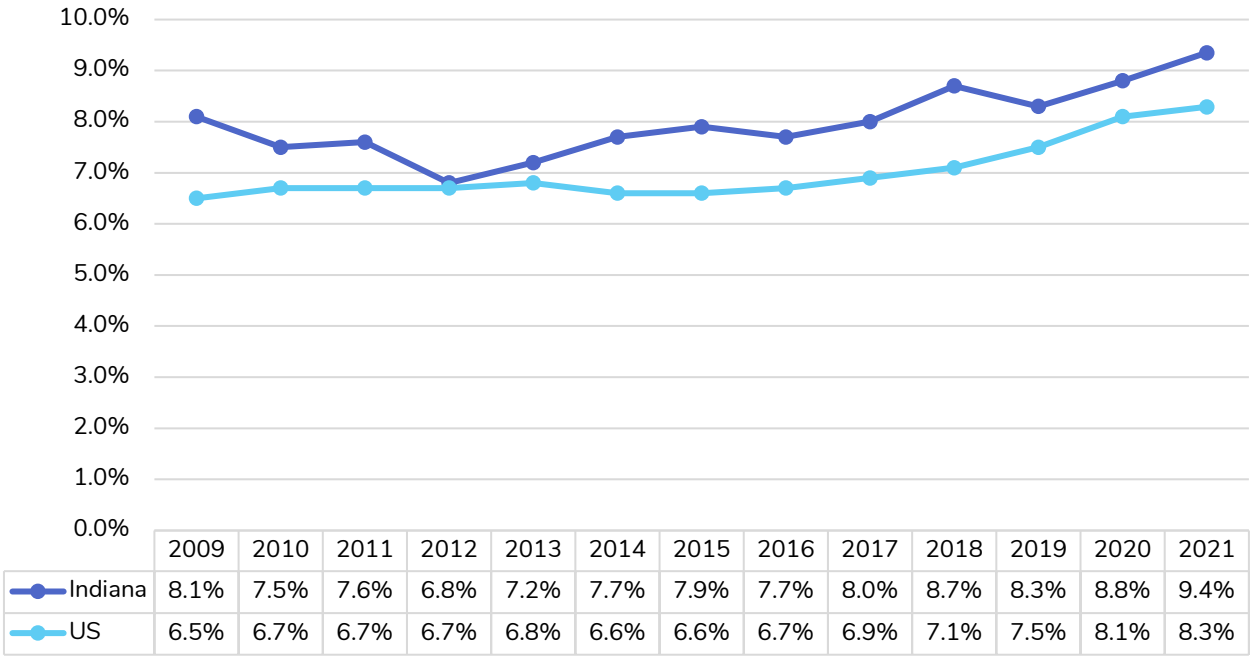


	Total (18 and older)	12-17	18-25	26 and older
Indiana	9.35%	22.01%	21.26%	7.36%
US	8.29%	20.10%	18.61%	6.72%

Source: SAMHSA-NSDUH, 2022

Note: There are minor wording differences in the questions in the adult and adolescent MDE modules. Therefore, data from youths ages 12 to 17 were not combined with data from persons ages 18 or older to produce the total MDE estimate.

Figure 7.4 Percentage of Indiana and U.S. Population (18 Years and Older) Reporting at Least One Major Depressive Episode in the Past Year (National Survey on Drug Use and Health, 2009–2021)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	8.1%	7.5%	7.6%	6.8%	7.2%	7.7%	7.9%	7.7%	8.0%	8.7%	8.3%	8.8%	9.4%
US	6.5%	6.7%	6.7%	6.7%	6.8%	6.6%	6.6%	6.7%	6.9%	7.1%	7.5%	8.1%	8.3%

Source: SAMHSA-NSDUH, 2022

Behavioral Risk Factor Surveillance System

Hoosiers identified as American Indians or Alaskan natives reported a history of depression higher than any other group at 33.2% (95% CI: 19.1 - 47.2) (CDC-BRFSS, 2022b). Between genders, a much higher percentage of females (31.8% (95% CI: 30.2 - 33.3)) reported a history of depression than males (16.2% (95% CI: 14.8 - 17.6)) (See Table 7.1).

Most adults in the age group 25-34 reported a history of depression, more than any other age group (30.2% (95% CI: 27.0 - 33.3)). Poor mental health days measure the average number of mentally unhealthy days reported in the past 30 days. According to the latest County Health Rankings using data from 2020, Indiana residents experience 4.9 (range between 3.9 and 5.8) poor mental health days in the past 30 days; U.S residents average 4.50 poor mental health days (County Health Rankings & Roadmaps, 2023). Further, in 2020, about 15.8% (range between 12.9% and 18.2%) of Indiana residents reported frequent mental distress, defined as 14 or more days of poor mental health per month. Appendix 7A shows the mental health indicators by county.

Table 7.1 Percentage of Indiana Population (18 Years and Older) Reporting a History of Depression (Behavioral Risk Factor Surveillance System, 2021)

		Indiana (95% CI)
Gender	Male	16.2% (14.8 - 17.6)
	Female	31.8% (30.2 - 33.3)
Race/ Ethnicity	White	25.3% (24.0 - 26.5)
	Black	18.9% (15.4 - 22.5)
	American Indian or Alaskan Native	33.2% (19.1 - 47.2)
	Multiracial	30.1% (21.6 - 38.6)
	Hispanic	18.5% (14.4 - 22.6)
Age Group	18-24	32.7% (28.1 - 37.2)
	25-34	30.2% (27.0 - 33.3)
	35-44	24.7% (22.1 - 27.4)
	45-54	22.6% (20.4 - 24.8)
	55-64	23.4% (21.3 - 25.6)
	65+	15.9% (14.4 - 17.3)
Total		**24.2% (23.0 - 25.2)**

Source: CDC, 2022

Youth Risk Behavior Surveillance System

The Youth Risk Behavior Surveillance System (YRBSS) data show that 46.9% of Indiana high school students (grades 9-12) reported feeling sad or hopeless in 2021, higher than the national average of 42.3% (CDC, 1991-2021). Female high school students reported much higher rates (60.4% (95% CI: 54.8-65.8) than male counterparts (34.1% (95% CI: 30.2 - 38.2), and rates were highest in students who self-identified as gay, lesbian, or bisexual (80.1% (95% CI: 72.1 - 86.2) (see Table 7.2) (CDC, 1991-2021).

Table 7.2 Percentage of Indiana and U.S. High School Students (Grades 9 through 12) Reporting Feeling Sad or Hopeless (Youth Risk Behavior Surveillance System, 2021)

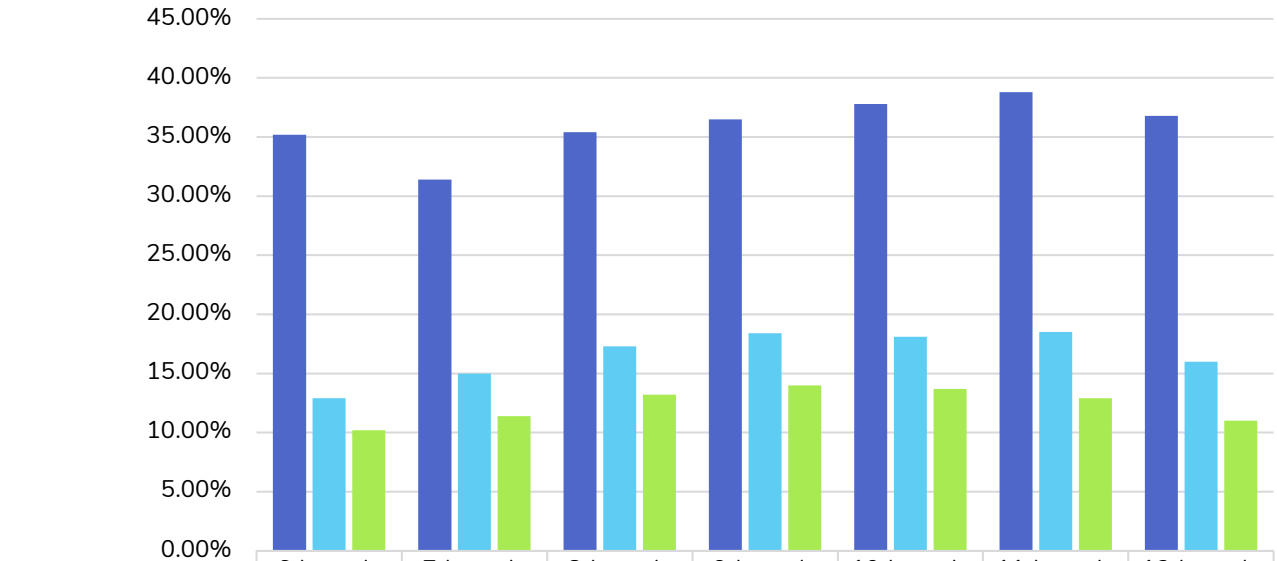
		Indiana (95% CI)	U.S. (95% CI)
Gender	Male	34.1% (30.2 - 38.2)	28.6% (27.1 - 30.0)
	Female	60.4% (54.8 - 65.8)	56.6% (54.6 - 58.5)
Race/Ethnicity	White	46.3% (40.8 - 51.9)	41.1% (39.0 - 43.3)
	Black	42.9% (35.4 - 50.7)	39.3% (36.3 - 42.5)
	Hispanic	51.6% (42.3 - 60.8)	46.4% (43.9 - 49.0)
Grade	9th	42.2% (36.5 - 48.2)	38.7% (36.2 - 41.2)
	10th	52.7% (46.0 - 59.2)	41.5% (39.1 - 43.9)
	11th	51.3% (39.7 - 62.7)	45.9% (43.6 - 48.1)
	12th	41.1% (29.6 - 53.6)	43.7% (41.7 - 45.8)
Sexual Identity	Heterosexual	38.7% (34.9 - 42.7)	34.7% (33.1 - 36.4)
	Gay, Lesbian, or Bisexual	80.1% (72.1 - 86.2)	70.1% (66.6 - 73.4)
	Not Sure	71.4% (57.5 - 82.1)	66% (62.0 - 69.8)
Total		46.9% (42.7 - 51.1)	42.3% (41.0 - 43.7)

Source: CDC, 2022

Indiana Youth Survey:

The Indiana Youth Survey is a biannual report that includes mental health assessments of students in grades 6-12 from the past 12 months. The 2020 survey found that over 30% of students in each grade reported feeling sad or hopeless. Each grade reported double-digit averages for students who reported considering attempting suicide and for making a plan about attempting suicide. In all grades and all categories, females reported higher averages than their male counterparts (See Figure 7.5) (Gassman et al., 2022).

Figure 7.5 Percentage of Students who Experienced Feeling Sad or Hopeless, Considered Suicide, or Made a Suicide Plan in the Past 12 Months, Grades 6 through 12 (Indiana Youth Survey, 2022)



	6th grade	7th grade	8th grade	9th grade	10th grade	11th grade	12th grade
Felt sad or hopeless	35.20%	31.40%	35.40%	36.50%	37.80%	38.80%	36.80%
Considered suicide	12.90%	15.00%	17.30%	18.40%	18.10%	18.50%	16.00%
Made suicide plan	10.20%	11.40%	13.20%	14.00%	13.70%	12.90%	11.00%

Source: Gassman et al., 2022

Indiana College Substance Use Survey

Over 8,000 college students from 23 Indiana colleges were surveyed in the 2021 Indiana College Substance Use Survey (King and Jun, 2021). About 38.7% of the students reported feeling sad or hopeless in the past year, and a majority of those students were female (42.7%). Unhealthy mental days are defined in the survey as days that include stress, depression, and problems with emotion. Students on average experienced 10.2 unhealthy mental days, with females reporting a higher number of days (11.7) versus their males (7.7) (Gassman, et.al., 2022).

TREATMENT UTILIZATION

National Survey on Drug Use and Health

Based on 2021 NSDUH data, an estimated 16.9% (95% CI: 16.2 - 17.5) of adult Americans received mental health services in the past year. The prevalence in Indiana was slightly higher; 18.2% of adults received mental health services in the past year (SAMHSA, 2022). In the U.S. more than half of all people with a mental health condition did not receive treatment in the last year (NAMI, 2021).

Uniform Reporting System

The Indiana Division of Mental Health and Addiction (DMHA) serves as the state's mental health authority. The DMHA serves children who meet the federal definition for severe emotional disturbance (SED) and adults who meet the federal definition for serious mental illness (SMI). In SFY 2022, 144,125 clients were served by the DMHA and nearly all were treated in community settings rather than state hospitals. See Table 7.3 for the demographic characteristics of clients served by DMHA.

Table 7.3 Demographic Characteristics of Adults with SMI and Children with SED Served by the Indiana Division of Mental Health and Addiction, FY 2022

		Indiana
Gender	Male	44.72%
	Female	55.28%
Race/ Ethnicity	White	74.46%
	Black	12.48%
	Other/Unknown	13.06%
	Hispanic	7.51%
Age Group	Children 0-17	39.68%
	Adults 18+	60.32%
Medicaid Status	Medicaid only	68.26%
	Both Medicaid and other funds	8.77%
	Non-Medicaid	22.43%
Total (N=138,697)		

Source: IN-DMHA, 2023

Suicide

In 2020, suicide was the 12th leading cause of death in the US, with a prevalence of 14% (rate derived from (the number of suicides/population) multiplied by 100,000) and 45,979 deaths. Currently, suicide is the third leading cause of death among people aged 15–24 years. On average, every 11.5 minutes, a person commits suicide. Males considered suicide 41.5 minutes sooner than females (i.e., one male died every 14.4 minutes, compared to one female who died every 55.9 minutes). In 2020, males were far more suicidal than females (22.5% versus 5.6%, respectively). Whites considered suicide at a higher rate than any other race (15.7% versus 7.8%, respectively), and white males accounted for over 32,000 deaths.

Suicide by firearm was the most common method (52.8%), followed by suffocation/hanging (27.2%) and poison (12.0%) (Drapeau and McIntosh, 2021). Indiana ranks 27th in the U.S. for suicide rates (14%). From 2000 to 2018, Indiana's crude suicide rate (total incidence of suicide per 100,000 people) was higher than the national crude rate. The state's confirmed suicide rate surpassed 1,000 in 2016 and remained above 1,000 until 2019 when the crude rate fell by 10.42%. From March 2020 to June 2021, the daily average of EMS/ED visits dealing with suicide/ harm increased; the daily average peaked in May 2021 at 195 visits per day. Whites made up the majority of EMS/ ED visits due to suicide/self-harm, and the total number of visits increased year by year from 2018 to 2020. The age group with the highest total number of EMS/ED visits was 25-44 years old, and the total number of visits increased from 2018 to 2020. This was followed by adults 45-64 and adults 18-24 years (Drapeau, 2021).

National Survey on Drug Use and Health

According to 2021 NSDUH data, In the U.S. 4.9% (95% CI: 4.6-5.2) of adults reported having serious thoughts of suicide in the past year. In Indiana, 5.7% of adults reported having serious thoughts of suicide in the past year; The highest rates were found in the age group 18-25 (15.4%; 95% CI: 12.1-19.4) (SAMHSA, 2022).

Youth Risk Behavior Surveillance System

Based on 2021 YRBSS data, about 22.2% (95% CI: 21.1 - 23.3) U.S high school students seriously consider suicide. In Indiana, the share of high school students who seriously considered attempting suicide is 27.7% (95% CI: 23.0-33.0). In the U.S, the rate of students who have attempted suicide has steadily climbed over the years, reaching its peak in 2021 at 10.2 (95% CI: 9.4-11.0) CDC, 2021. Data from 2021 YRBSS found that 11.8 (95% CI: 9.5-14.6) of Indiana students attempted suicide in the past year, See Table 7.4 for demographic information on high school students attempting suicide in Indiana.

Table 7.4 Percentage of Indiana and U.S. High School Students (Grades 9 through 12) Reporting Attempting Suicide in the Past Year (Youth Risk Behavior Surveillance System, 2021)

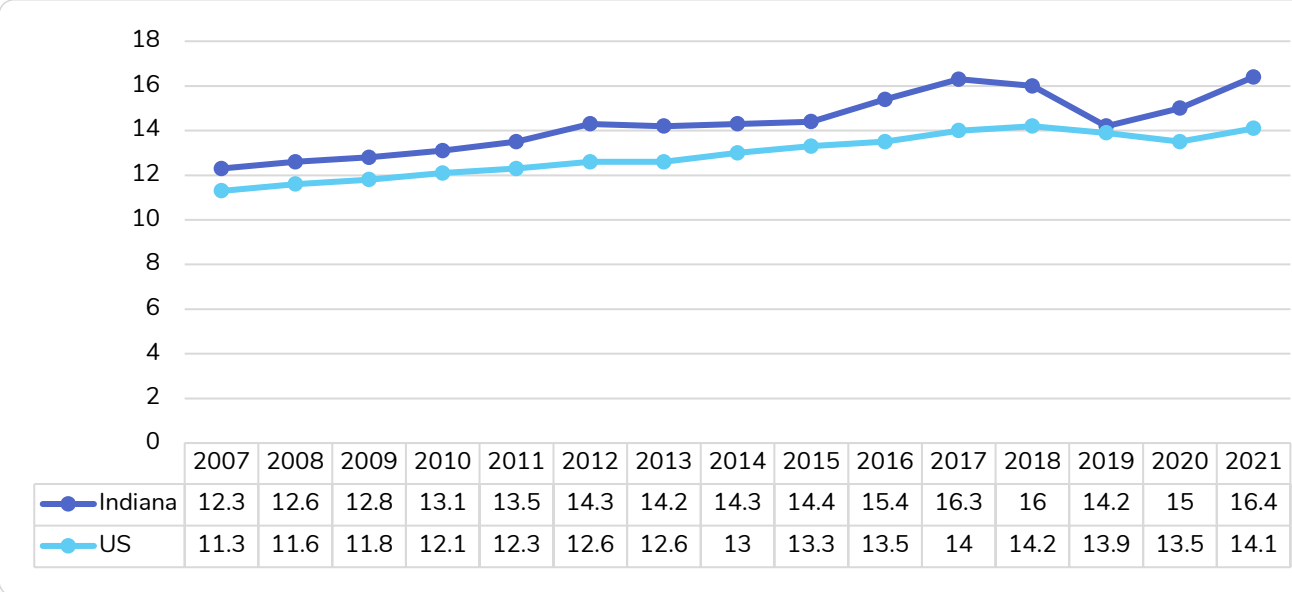
		Indiana (95% CI)	U.S. (95% CI)
Gender	Male	7.4% (4.9 - 10.8)	6.6% (5.8 - 7.5)
	Female	16.3% (11.7 - 22.2)	13.3% (12.0 - 14.7)
Race/Ethnicity	White	10.9% (8.3 - 14.1)	9% (7.8 - 10.5)
	Black	15.9% (10.5 - 23.2)	14.5% (11.9 - 17.5)
	Hispanic	13% (8.3 - 19.7)	10.7% (9.5 - 12.0)
Grade	9th	15.8% (12.5 - 20.0)	11.6% (10.3 - 13.0)
	10th	12.1% (7.9 - 18.0)	10.9% (9.5 - 12.4)
	11th	10% (6.0 - 16.3)	8.9% (7.5 - 10.5)
	12th	8.7% (4.8 - 15.5)	8.6% (7.7 - 9.6)
Sexual Identity	Heterosexual	9.1% (7.0 - 11.6)	6.3% (5.6 - 7.1)
	Gay, Lesbian, or Bisexual	22.5% (13.9 - 34.3)	24.1% (21.2 - 27.3)
	Not Sure	22.7% (15.2 - 32.5)	17.9% (14.7 - 21.6)
Total		**11.8% (9.5 - 14.6)**	**10.2% (9.4 - 11.0)**

Source: CDC, 2022

Suicide Mortality

The age-adjusted suicide mortality rates (per 100,000 population) have been rising over the past two decades in Indiana and the nation. The age-adjusted mortality rate in Indiana increased from 12.3 in 2007 to 16.3 in 2017, followed by a drop to 14.2 in 2019. The rate slightly increased to 16.4 (95% CI: 15.5-17.4) during the pandemic in Indiana compared to 14.1 (95% CI: 14.0-14.2) in the United States (See Figure 7.6 for trends). The higher share of deaths by suicide occurred among males, whites, and non-Hispanics. See Table 7.5 for pooled age-adjusted rate by demographic characteristics. Map 7.1 shows the regional distribution of suicide mortality rates across 2018-2021 pooled data.

Figure 7.6 Age-Adjusted Suicide Mortality Rate per 100,000 Population in Indiana and the United States (CDC WONDER, 2007-2021)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indiana	12.3	12.6	12.8	13.1	13.5	14.3	14.2	14.3	14.4	15.4	16.3	16	14.2	15	16.4
US	11.3	11.6	11.8	12.1	12.3	12.6	12.6	13	13.3	13.5	14	14.2	13.9	13.5	14.1

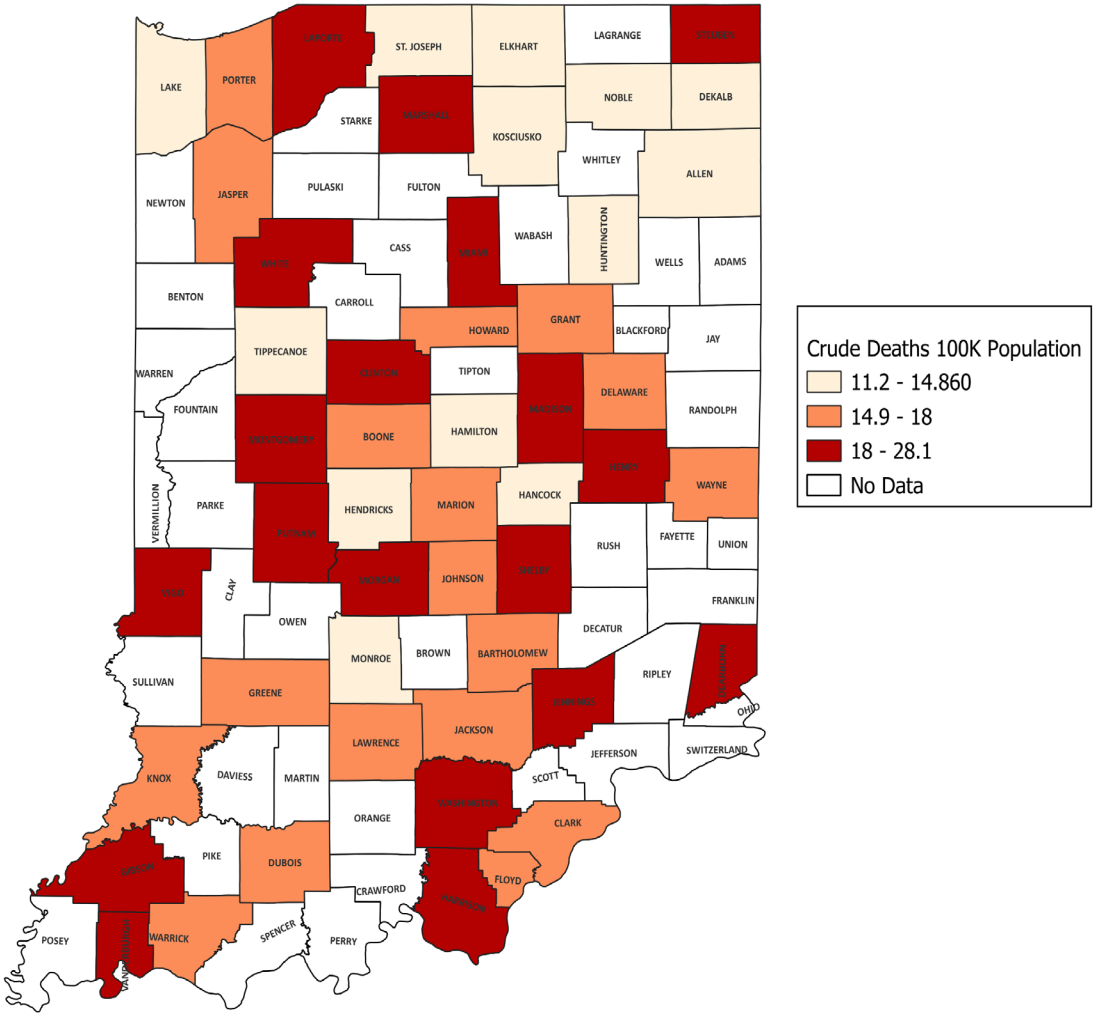
Source: CDC, 2007-2021

Table 7.5 Age-Adjusted Suicide Mortality Rate per 100,000 Population in Indiana and the United States (CDC WONDER, combined data from 2018-2021)

		Indiana (95% CI)	U.S. (95% CI)
Gender	Male	25.2 (24.3 - 26.1)	22.5 (22.3 - 22.6)
	Female	6.1 (5.7 - 6.6)	5.8 (5.8 - 5.9)
Race	White	16.5 (16.0 - 17.1)	15.7 (15.6 - 15.8)
	Black	9.7 (8.5 - 10.9)	7.5 (7.4 - 7.6)
	Asian or Pacific Islander	6.9 (5.1 - 9.2)	6.8 (6.6 - 7.0)
	American Indian or Alaska Native	NA	14.7 (14.1 - 15.3)
Ethnicity	Hispanic	6.5 (5.3 - 7.6)	7.5 (7.4 - 7.6)
	Not Hispanic	16 (15.5 - 16.5)	15.2 (15.1 - 15.3)
Total		15.4 (14.9 - 15.9)	13.9 (13.9 - 14.0)

Source: CDC, 2018-2021

Map 7.1 Crude Suicide Mortality Rates per 100,000 Population in Indiana, by County (CDC Wonder, pooled data from 2018-2021)



Source: CDC, 2018-2021

APPENDIX 7A

Mental Health Indicators in Indiana, by County (Behavioral Risk Factor Surveillance System, 2020)

County	Number of Poor Mental Health Days	% of Adults reporting Frequent Mental Distress
Adams	4.96	17.2
Allen	4.68	15.3
Bartholomew	4.57	15
Benton	5.10	17.2
Blackford	5.13	17.3
Boone	4.55	14
Brown	4.87	15.6
Carroll	4.99	16.5
Cass	5.00	16.5
Clark	5.23	16.2
Clay	4.74	16.5
Clinton	4.97	16.3
Crawford	5.40	17.9
Daviess	5.08	17.5
Dearborn	4.93	15.9
Decatur	4.70	16
DeKalb	4.81	16
Delaware	5.20	16.7
Dubois	5.08	15.5
Elkhart	4.88	16.1
Fayette	5.25	17.7
Floyd	4.88	15.6
Fountain	5.15	16.8
Franklin	4.89	16.1
Fulton	5.01	16.8
Gibson	4.84	16.2
Grant	5.23	17
Greene	5.14	17
Hamilton	3.94	12.9
Hancock	4.72	15.2
Harrison	5.00	16.3
Hendricks	4.56	14.4

County	Number of Poor Mental Health Days	% of Adults reporting Frequent Mental Distress
Henry	5.37	16.7
Howard	5.24	16.3
Huntington	4.85	16.1
Jackson	4.84	16.3
Jasper	4.78	16.1
Jay	5.11	17.2
Jefferson	5.24	16.9
Jennings	5.28	16.7
Johnson	4.66	15.2
Knox	4.56	16.6
Kosciusko	4.49	15.7
LaGrange	5.24	17.8
Lake	4.80	15.5
LaPorte	4.73	15.8
Lawrence	5.08	16.7
Madison	5.80	17.1
Marion	5.35	16.2
Marshall	4.95	16.4
Martin	4.94	16.7
Miami	4.70	16.5
Monroe	5.39	15.6
Montgomery	4.99	16.3
Morgan	5.02	16.4
Newton	5.12	16.6
Noble	4.62	16.2
Ohio	4.95	16.4
Orange	5.41	17.3
Owen	5.15	17.1
Parke	5.34	18.1
Perry	4.96	16.1
Pike	4.99	16.3
Porter	4.62	14.8

County	Number of Poor Mental Health Days	% of Adults reporting Frequent Mental Distress
Posey	4.92	15.9
Pulaski	4.97	16.6
Putnam	4.92	16.1
Randolph	5.12	16.8
Ripley	5.19	16.3
Rush	5.18	17
St. Joseph	4.81	15.9
Scott	5.54	18.2
Shelby	4.81	16.2
Spencer	4.90	16.5
Starke	5.24	17.5
Steuben	5.02	16
Sullivan	4.97	16.7
Switzerland	5.36	18.1
Tippecanoe	4.90	15.2
Tipton	4.82	15.8
Union	4.94	16.3
Vanderburgh	5.26	17
Vermillion	5.07	17
Vigo	4.78	16.7
Wabash	5.17	16.7
Warren	4.91	15.9
Warrick	4.49	14.6
Washington	5.21	17.2
Wayne	5.39	16.9
Wells	4.88	15.9
White	5.15	16.3
Whitley	4.76	15.9

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Source: County Health Rankings & Roadmaps 2023

Notes: The average age-adjusted number of mentally healthy days within the past 30 days was used to calculate number of poor mental health days. Percent of adults who reported within a month 14 or more poor mental health days was used to define the percent of adults who reported frequent mental distress.

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CHAPTER 08

Problem Gambling in Indiana

INTRODUCTION

Problem gambling is defined as repetitive, impulsive gambling behavior that causes severe difficulties with finances, emotional regulation, employment, and personal relationships. Problems with gambling are estimated to affect approximately 0.5 to 4% of the world's population (Ptery et al. 2017). The DSM-5 has classified problem gambling under substance-related and addictive disorder as compared to the previous classification of impulse-control disorder. The DSM-5 utilizes the following criteria to identify problem gambling (American Psychiatric Associate, 2013).

1) Needs to gamble with increasing amounts of money to achieve the desired achievement
2) Is restless or irritable when attempting to cut down or stop gambling
3) Has made repeated unsuccessful efforts to control, cut back, or stop gambling
4) Is often preoccupied with gambling
5) Often gambles when feeling distressed
6) After losing money gambling, often returns another day to get even
7) Lies to conceal the extent of involvement with gambling
8) Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
9) Relies on others to provide money to relieve desperate financial situations caused by gambling

If an individual exhibits 4 or more characteristics listed above, they are considered to be a problem gambler. Psychosocial factors associated with an increased risk of problem gambling including (Allami et al., 2021):

- Attempted suicide
- Suicidal thoughts
- Anxiety issues
- Family member with previous or current gambling problem
- Incarceration
- History of depression
- Previously arrested
- Substance use

Availability of Gambling Services

Access to gambling opportunities is relatively one of the most prominent factors that leads to subsequent gambling addiction. A composite measure study on gambling exposure notes that exposure to gambling can be directly attributed to the risk factors of problem gambling (Ofori Dei et. al., 2020). Exposure was assessed by the access and availability to gambling. Access and availability were described as the distance between residential communities and gambling venues and the amount of gambling venues in a particular area. There are several forms of gambling including, casino resorts, riverboat cacinos, racinos, racetracks, cardrooms, and bingo halls. Terrestrial gambling, another name for land-based gambling, is the most popular form of gambling containing the "highest number of gambling patrons" (Ofori Dei et. al., 2020). Living closely to gambling venues has been linked to problem gambling. Ofori Dei et. al. stated that "research has linked the proximity of residences to gambling venues with problem gambling rates" (2020). Accessibility and availability are also assessed through the number and variety of gambling machines found at the gambling venues. Gambling frequency can be determined by an individual's perceived chances of a greater payout.

Advertising is another key contributor to problem gambling. Casinos alone, bring in nearly $30 billion a year in revenue. Advertising has been debated as a potential public health issue, being that there could be a direct correlation between gambling advertisement and the potential subsequent development of problem gambling amongst susceptible populations. An article addressing the association between gambling advertisement and problem gambling mentions that advertising glamorize gambling by using images of ordinary people winning a great deal of money from simple slot machines, (Giffiths, 2005). These advertising mechanisms sell the idea that obtaining life-changing amounts of money is possible through gambling. Gambling advertisement reached nearly a billion dollars in recent years.

Impact of modern technology

Due to advances in technology and increased access to computers and the internet, public awareness of gambling venues and access to digital gambling platforms have both correspondingly increased. Knowledge of, and ease of access to gambling services is associated with the development of pathological gambling addiction, which is more commonly known as problem gambling. With the increased availability of gambling platforms, it is easier than ever before to develop problem gambling.

Gambling has become a glamorized recreational activity. As the prevalence of gambling rose, global gambling losses climbed dramatically from $250 billion in 2003 to $450 billion in 2013 (Markham and Young, 2014). Access to knowledge regarding how to gamble is easily accessible through the internet, TV, and other forms of advertising. To illustrate the effectiveness of advertising, Syvertsen et al. reported that repeated exposure to direct advertising was increased problem gambling rates (2021). The average age of gamblers appears to be decreasing because current youth now have significantly more exposure to gambling platforms (Calado et al. 2017). The findings of one study published in 2017 indicated that between 2000-2015 approximately 0.2-12.3% of adolescents exhibited gambling characteristics that met the criteria for problem gambling (Calado et al. 2017). The impact of advertising is clear, and individuals must be educated on the potential dangers of gambling. With the increase in advertising, individuals are more aware of the many types of gambling that are accessible to them.

Gambling and Behavioral Health

Although winning money is the most commonly considered motivation for individuals to gamble, there are numerous types of motivations that are at play. In a 2020 literature review, Mathieu et al. reported that the most commonly cited motivations were enhancement, coping, social, or financial motivations. Enhancement is considered to be the form of motivation that will provide positive emotion while gambling; coping motivations indicate that individuals gamble to avoid negative emotions; social motivations indicate that individuals gamble to increase their social status; financial motivations indicate that individuals gamble to win money (Mathieu et al. 2020). It has been postulated that the gambling motivation may be indicative of the gambling activity and its level of arousal. Low arousal games are considered to be games of chance, and high arousal games are considered to be skill games (Navas et al. 2017). Games that have low levels of arousal may be associated with individuals that use gambling to cope with negative emotions whereas games that have high levels of arousal are associated with gamblers hoping to achieve a sense of positive emotion (Navas et al. 2017). Age is also a contributing factor to the risk of developing a gambling addiction. Social and physical determinants such as isolation, health issues, and low activity or sedentary lifestyles make older adults susceptible to developing gambling related issues (Granero et al., 2020) Individuals that develop problem gambling are known to participate in multiple game types more frequently than non-problem gamblers (Mathieu et al. 2020). This may indicate that problem gamblers use gambling rather than other forms of recreational activity to satisfy emotional, social, and financial motivations (Mathieu et al. 2020). Regardless of motivation, it is easier than ever to access gambling games.

There were other factors that limited some people's desires to gamble. One was that sports were not occurring, and thus the lack of interest in gambling decreased overall (Hodgins and Stevens, 2021). Despite the predicted decrease in gambling frequency and expenditure that occurred when the world entered lockdown, there is a concern that a rebound effect may occur post-pandemic and result in increased prevalence of gambling and problem gambling.

Gambling in Indiana

Indiana's legal gambling history dates to 1988. In Indiana on November 8, 1988, a lottery referendum was passed to create the first legal gambling in Indiana. This was legalized through ratification of the Lottery Act in May of 1989. In 1993, the Indiana Gaming Commission was formed. The most recently legalized form of betting in Indiana was sports betting, which was approved in 2019. According to a 2021 report published by Jun et al., the forms of gambling in Indiana now include lotteries, scratch-offs, commercial casinos, tribal-based casinos, horse race betting, pull-tabs, number boards, sports gambling, bingo, and charitable gambling. In 2021 in Indiana, adults participated in all of the aforementioned forms of gambling (Jun et al. 2021). In Indiana adults in 2021, the most popular forms of gambling included the lottery (estimated 61%), scratch tickets (estimated 59%), raffle tickets (estimated 49.9%), and card games (estimated 44.2%). As of 2022, there are currently 17 casinos throughout the state of Indiana located across 14 cities throughout the state in total.

PREVALENCE OF GAMBLING AND PROBLEM GAMBLING IN INDIANA

Overview of Gambling and Problem Gambling Prevalence

Registered companies are allowed to market gambling services to the Indiana population through in person gambling facilities and mobile gambling capabilities,

greatly expanding access to gambling. In Indiana in 2021, an estimated 4.3 million adults reported gambling at least once in the past year, which corresponds to nearly 85% of the adult population (Table 1). The predominant form of gambling was participation in the lottery, in which nearly 72% of adults played at least once between the spring of 2020 and of 2021 (Table 1). Other major forms of gambling in Indiana include gambling at casinos and sports betting, where 46.2% and 20.5% of adults participated, respectively (Table 1). Regarding problem gambling, over 175,000 adults (3.4% of Indiana gamblers) are estimated to have developed problem gambling with approximately 600,000 (11.8% of Indiana gamblers) at risk of developing problem gambling (Jun et al., 2021).

Age Considerations

Although not statistically significant, there was a downward trend when considering participation in gambling when comparing younger adults (18-34) to middle-aged adults (35-54) to older adults (55+) at an estimated prevalence of 92.7% vs. 85% vs. 79.2%, respectively. However, when analyzing sports betting, younger adults (18-34) were estimated to be more likely to participate than middle aged (35-54) or older (55+) adults (36.7% vs. 18.9% vs. 9.3%, respectively, $p<0.05$). Overall, in most forms of betting, young adults appeared to gamble more frequently than middle aged or older adults. Some forms include dice games, card games, personal skill games, fantasy sports, online gambling, and high-risk trading. Overall, there appeared to be no significant differences in the prevalence of problem gambling between age groups (Jun et al., 2021).

Gender Considerations

Men and women did not significantly differ regarding estimated participation in any gambling (88.6% vs. 81.3%, respectively). However, Jun et al. reported that males were estimated to be more likely to participate than females (29.8% vs. 12.7%, respectively, $p<0.05$). More forms of gambling that men participated in as compared to women include table games, video poker, fantasy sports, and high-risk trading. Only one form of gambling was estimated to have less men participants than women, and that was bingo (7.1% vs. 16.8%, respectively, $p<0.05$). Overall, there appeared to be no significant differences in the prevalence of problem gambling between sexes (Jun et al., 2021).

Household Income Considerations

There appeared to be no significant differences in estimated prevalence of gambling between low-income (<$50k), mid-income ($50k-$99k), and high income (>$100k) households in Indiana (85.6% vs. 80.0% vs. 90.0%, respectively). Further, all income levels appeared to gamble in similar manners, but online gambling was significantly more prevalent in low-income households as compared to mid- and high- income households. Although not significant, adults with low and mid-in income households had a marginally higher risk of developing problem gambling as determined by the National Opinion Research Center DSM-IV Screen for Gambling Problems (NODS) (78.6% vs. 82.8% vs. 92.2%, respectively) (Jun et al., 2021). Table 8.1 Indicates that the majority of the population of Indiana adults participated in any form of gambling, and the lottery was the most popular form. Casino and sports gambling were reported to be the next most popular, respectively. Further, a majority of adults appeared to participate in other forms of gambling either in addition to or independent of the 3 primary forms of gambling reported.

Table 8.1 Reported gambling estimates in Indiana (Jun et al., 2021)

Type of Gambling	Population Estimate	Percentage (%)	95% CI
Any Gambling	4,305,550	84.8	79.7-88.9
Any Lottery	3,647,866	71.7	66.0-76.8
Any Casino	2,031,805	40.4	34.2-47.0
Any Sports Gambling	1,028,196	20.5	15.6-26.4
Other Gambling	3,673,708	72.3	66.3-77.6

Source: Jun at, el 2021

Table 8.2 Population estimates and percentages of Indiana adults at risk of developing problem gambling using DSM-V and NODS, 2021 (Jun et al., 2021)

	Population Estimate	Percentage (%)	95% CI
DSM-V			
Low Risk	4,886,658	95.9	91-98.2
Gambling disorder	206,554	4.1	1.8-9.0
NODS			
No risk	4,320,258	84.8	79.2-89.1
Mild risk	432,351	8.5	5.5-12.8
Moderate risk	165,279	3.3	1.3-8.6
Pathological gambling	175,324	3.4	1.3-8.6

Source: Jun at, el 2021

Notes: On the DSM-V, a score or 4 or higher indicates gambling disorder. The NORC DSM-IV Screen for Gambling Problems (NODS) is a 17-item self-report screening instrument. On the NODS, a score of 1 or 2 indicates mild risk for problem gambling, 3 or 4 indicates moderate risk of problem gambling, and 5 or more indicates a likely diagnosis of a pathological gambling.

Overall, Table 8.2 indicates that the majority of Indiana adults have low or no risk of developing problem gambling even though Table 8.1 indicates that the majority of adults have participated in gambling. According to the DMS-V and NODS, it is estimated that in 2021, less than 5% of Indiana adults were at moderate to high risk of developing or had developed problem gambling (Table 8.2).

Table 8.3 Population estimates and percentages of Indiana adults falling in problem gambling severity categories using the Problem Gambling Severity Index (PGSI), 2021 (Jun et al. 2021)

	Population Estimate	Percentage (%)	95% CI
Non-problematic	3,970,166	78	71.6-83.2
Low severity	784,377	15.4	11.0-21.2
Moderate severity	209,381	4.1	2.2-7.5
Problematic gambling	129,289	2.5	0.8-8.2

Source: Jun at, el 2021

In align with the DSM-V and NODS estimates, the PGSI estimated that, in 2021, less than 5% of Indiana adults presented with moderate to severe gambling practices (Tables 8.2 and 8.3). However, the PGSI estimated that more Indiana adults display low severity gambling practices than predicted by the NODS (Tables 8.2 and 8.3).

Table 8.4 Percentages of Indiana adults who used selected substances in the past month by problem gambling severity, 2021 (Jun et al., 2021)

p<.05	Alcohol	Cigarettes	Vaping Devices	Marijuana	Misuse of Prescription or Over the Counter Drugs
DSM-V					
Low risk	72.5	26.7	12.5	18.2	8.9
Gambling disorder	100	73.7	67.7	59.5	60.0
NODS					
No risk	71.3	23.1	12.4	16.4	8.0
Mild Risk	83.1	47.1	5.1	16.7	17.7
Moderate Risk	86.1	65.1	29.8	52.5	6.0
Pathological gambling	95.8	82.5	94.2	76.9	76.9
PGSI					
Non-problematic	71.3	21.6	11.6	14.5	8.6
Low severity	80.2	49.0	13.4	28.4	4.3
Moderate severity	83.6	63.0	42.4	62.7	39.1
Problematic gambling	100	85.4	74.5	74.5	74.5

Source: Jun at, el 2021

There appeared to be a trend regarding substance use and severity of gambling behavior. In 2021, Indiana adults that were at higher risk of problem gambling or demonstrate more severe gambling behaviors were more likely to use substances when compared to individuals at lower or no risk of problem gambling (Table 8.4). Alcohol appeared to be the most used substance and appears to be used by nearly all problem gamblers. Vaping devices, marijuana, and prescription drug use appeared to increase more with increasing gambling severity than use of cigarettes or alcohol. Misuse of prescription or over the counter drugs appeared to increase the most from low severity to problematic or pathological gambling disorders when compared to other substances (Table 8.4).

Table 8.5 Mean number of mentally unhealthy days reported in past month by problem gambling, 2021 (Jun et al., 2021)

p<.05	Mean	Standard Deviation
DSM-V		
Low risk	5.0	7.2
Gambling disorder	11.3	4.5
NODS		
No risk	4.7	7.0
Mild Risk	5.8	5.4
Moderate Risk	11.1	9.2
Pathological gambling	12.8	3.8
PGSI		
Non-problematic	4.7	7.3
Low severity	4.9	4.7
Moderate severity	10.9	7.9
Problematic gambling	14.5	3.1

Source: Jun at, el 2021

In 2021, it appeared that Indiana adults with no to low severity or risk of problem gambling displayed fewer mentally unhealthy days per month when compared to moderate or problematic gamblers (Table 8.5). Furthermore, a trend appeared indicating that individuals who gamble that are classified as having moderate risk or severity were at risk of having twice as many mentally unhealthy days per month than low or no risk individuals (Table 8.5). Further, individuals with gambling disorder or problematic gambling had the most mentally unhealthy days per month when compared to all others (Table 8.5).

Table 8.6 Population estimates and percentages of Indiana adults who had ever seen or heard of gambling hotline or sought treatment for gambling problem, 2021 (Jun et al., 2021)

	Population Estimate	Percentage	95% CI
Ever seen or heard of gambling helpline	2,262,506	44.8	38.6-51.1
Have thought of having a problem with, being dependent on, or being addicted to gambling	139,249	2.8	0.9-8.2
Ever sought treatment for a gambling problem	60,566	1.2	0.2-6.9

Source: Jun at, el 2021

A key issue that has been identified is that it was estimated that, in 2021, less than half of Indiana adults saw or heard of the gambling helpline (Table 8.6). This may be an issue with Indiana adults who have thought of having a problem with, being dependent on, or being addicted to gambling because it is possible that many of these adults may not be aware of the gambling help line. Further, in 2021, less than half of Indiana adults that have acknowledged potentially having problem gambling sought treatment (Table 8.6).

Table 8.7 Percentages of Indiana adults unaware of gambling hotlines or have sought treatment for gambling problem by problem gambling severity categories, 2021 (Jun et al., 2021)

p<.05	Ever seen or heard of gambling helpline	Have thought of having a problem with, being dependent on, or being addicted to gambling*	Ever sought treatment for a gambling problem*
DSM-V			
Low risk	44.4	0.0	0.0
Gambling disorder	53.4	65.7	29.3
NODS			
No risk	41.3	0.0	0.0
Mild Risk	66.4	0.0	0.0
Moderate Risk	74.8	2.1	0.0
Pathological gambling	48.6	77.4	34.6
PGSI			
Non-problematic	42.5	0.0	0.0
Low severity	50.0	0.0	0.0
Moderate severity	59.2	13.8	2.8
Problematic gambling	57.3	85.4	42.7

Source: Jun at, el 2021

In 2021, it appeared that most Indiana adults with problem gambling appear to be aware that they have problem gambling, but less than half of individuals with problem gambling sought help (Table 8.7). This may be attributed to the reported 49-57% of Indiana adults with problem gambling being aware of the gambling helpline (Table 8.7). This implies that a significant portion of these adults did not have enough information to know how to or where to seek treatment for gambling problems.

CONSEQUENCES

While gambling issues are typically considered to be financial, there are significant impacts on an individual's psychological and social circumstances.

Financial considerations

There is limited literature discussing the absolute financial impact of gambling within the United States; one estimate in 1999 indicated that the national social cost of problem gambling was $7 billion (National Council on Problem Gambling, 2022). By its nature, gambling can cause either financial profit or financial loss, and loss is more likely among problem gamblers. If an individual experiences a loss during gambling, they may find themselves engaging in "loss chasing behavior", which is engaging in an attempt to recover from an earlier loss (Koomson et al., 2022). Loss chasing behavior in gambling has the potential to lead to more losses and ultimately cause financial stress . These stressors can either prevent a person from gambling or cause a person to engage in more gambling in further loss chasing behavior, which leads to problem gambling. Problem gamblers that begin to experience financial stress may compensate with lifestyle adjustments instead of terminating their gambling habit (Koomson et al., 2022). Some lifestyle adjustments could include home downsizing, increasing work hours to increase income, or even sacrificing savings. If uncontrolled, this can even lead to significant debt that could even be accumulated through illegal means. is the financial stress that can occur due to financial loss can actually motivate a person to gamble as some believe that gambling allows them to have control, despite the low odds to win big (Koomson et al., 2022). As these illusions of control occur, it can be implicated that most individuals with this viewpoint are problem gamblers. This concept implicates that there are many psychological considerations that must be addressed when attempting to understand problem gamblers.

Psychological considerations

As more knowledge has been accumulated about problem gambling, experts have begun to recognize that gambling behaviors can resemble drug and alcohol dependence, termed a "behavioral" addiction (Yau and Potenza, 2016). The reason why problem gambling is now considered an addiction in the DSM-5 is that individuals experience side effects similar to substance addiction including tolerance effects (increased money gambled), withdrawal (irritability when attempting to quit gambling), impulsive decision-making, multiple unsuccessful attempts to stop the behavior, and the interference of the behavior with activities of daily living as well as social interactions (Yau and Potenza, 2016).

Individuals that are considered problem gamblers are likely to either develop or have co-current psychological disorders, and data from the United States Comorbidity Survey Replication indicated that an estimated 96% of individuals that are problem gamblers meet the criteria one or more psychiatric diagnoses (Kessler et al., 2008).Only 49% of these individuals received treatment for their psychiatric condition(s) and not necessarily for their problem gambling (Kessler et al., 2008). Furthermore, individuals that are at-risk of developing problem gambling have a higher chance of developing psychiatric conditions as compared to no-risk gamblers (Odlaug et al., 2011). One theory indicated that in individuals with mood or anxiety disorders, gambling can be used as a coping mechanism by individuals with these psychiatric conditions (Yau and Potenza, 2016).

There are known changes to neurocognition within individuals with problem gambling, and problem gamblers are known to display similar neurocognitive characteristics as individuals with substance use disorders (Odlaug et al., 2011).It has been reported that individuals with a familial history of addiction are at higher risk of developing problem gambling (Odlaug et al., 2011). Some neurocognition differences between problem gamblers and healthy or at-risk gamblers include deficiencies in motor impulse control, response speed, impaired response inhibition, and cognitive flexibility (Odlaug et al., 2011). Furthermore, neurochemical changes are also prevalent within problem gamblers and are similar to individuals with substance use disorders. A primary pathway affected is the dopamine release pathway, which is involved in decision making and may be maladapted in problem gamblers (Yau and Potenza, 2016). Dopamine release has been observed to correlate positively with higher degree of problem gambling (Yau and Potenza, 2016). These neurochemical changes are related to the findings observed by Odlaug et al., (2011). Interestingly, dopamine receptor antagonists have not demonstrated efficacy while selective serotonin reuptake inhibitors have

had mixed results in treating disordered gambling, which indicates another significant problem in the treatment of problem gambling (Yau and Potenza, 2016). As of 2016, there were no medications approved in the United States for treatment of problem gambling (Yau and Potenza, 2016). These changes in cognition and neural function may have down-stream effects on lifestyle in many individuals and may even have significant social impacts.

Social considerations

There are many social impacts that problem gambling can face. A primary concern is is thethe significant stigma associated with problem gambling, which can lead to isolation and feelings of shame. Problems with family relationships are common among individuals with problem gambling. Importantly, if a person has problems with gambling, it is more likely that they display significant levels of anger and poor communication. These persons are less likely to participate in other social or recreational activities, which can have significant impacts on interfamilial relationships. Children of individuals with problem gambling may experience abuse, neglect, physical isolation, ineffective or no discipline, and poor familial stability. The issues that children experience may contribute to later-life issues including depression, anxiety, and substance abuse. Furthermore, children that had a parent or sibling with gambling problems were 2-10 times more likely to develop problem gambling (Dowling 2014).

Family members of problem gamblers are required to find ways to cope, and some may not utilize appropriate methods. Therapy options have been slow to evolve since problem gambling has only recently become identified as a medical condition. It has been postulated that social support is a critical method in attempts to treat problem gambling, but there is limited evidence (Dowling 2014). In conclusion, there is a significant need to develop effective strategies to treat problem gambling through social methodology.

PROBLEM GAMBLING RECOVERY:

A previous report by Hong, Walton, and Kim (2022) examined adults with reported problem gambling who received behavioral health care. The study assessed whether problem gambling improved or declined in these adults from 2019 to 2020. It was reported that individuals were more likely to display improvements in gambling behavior if they did not exhibit issues with impulse control or depression and were abstaining from substance use. Barriers to improvement included substance use, poor use of resources, and lack of education on how to improve problem gambling behaviors (Hong, Walton, and Kim, 2022). A key issue regarding problem gambling recovery is the lack of awareness of resources to treat problem gambling, and in Indiana, only 50.4% of males and 40.9% of females have heard of gambling helplines (Jun et al., 2021). In Indiana, according to the PGSI, it has been reported that out of the 59.2% of adults with moderate severity of problem gambling, only 13.8% have thought they have a problem with gambling, and only 2.6% have sought out treatment (Jun et al., 2021). Finally, according to both the NODS and PGSI, less than half of individuals with problem gambling have sought treatment (34.6% and 42.7%, respectively) (Jun et al., 2021). These statistics indicate that adults either have little motivation or lack of access to or awareness of resources available.

There are numerous resources dedicated to problem gambling, and a review by Davor et al. (2021) found the most effective treatment of gambling disorders to be psychological interventions, like cognitive-behavioral therapy as well as motivational interviewing. Self-help interventions and mindfulness have also been noted to be effective treatment methodologies. Regarding adherence and compliance with treatment, support groups, like Gamblers Anonymous, and couples therapy could improve adherence and may reduce the likelihood of future relapses. In patients with comorbidities, the use of pharmacological interventions may be useful (Davor et al., 2021).

Impact of COVID-19

From lotteries to casinos to internet gambling, many adults participate in gambling, but when the COVID-19 pandemic occurred, accessibility to gambling formats changed significantly. COVID-19 forced many commercial, land-based gambling locations to close during lockdown thereby reducing access to commercial gambling throughout the world. Additionally, all sports betting was halted for months as sports were also halted. However, online gambling still allowed access to various gambling formats, and many sites included a full range of gambling types that could be seen at casinos. Some of these sites flourished with the increase in internet traffic as these sites were the most easily accessible source of gambling during lockdown. With the lack of constraints and ease of access, online gambling is known to be a to be highly problematic, and it has been postulated that those already engaging in online gambling may have increased their rate involvement, which may lead to problem gambling. There were some steps taken to limit potential negative effects including limiting advertising and imposing a betting cap (Hodgins and Stevens, 2021).

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CHAPTER 09

Viral Hepatitis, HIV, and AIDS in Indiana

INTRODUCTION

Viral hepatitis, human immunodeficiency virus (HIV), and acquired immunodeficiency syndrome (AIDS) are health conditions associated with intravenous drug use that cause significant burdens to individuals and nations across the globe. In the United States, there were 4,798 new cases of Hepatitis-C reported in 2020, with the actual number of new infections estimated to be far higher at 66,700 cases (CDC, 2020). Estimates also show that the annual rate of new cases has doubled since 2013. With regard to HIV, over 38 million people worldwide were reported to have HIV in 2021 (HIV.gov 2022). In the United States, there are currently 1.2 million people living with HIV, with an estimated 13% unaware that they have the virus (HIV.gov 2022). Rates of HIV in the United States dropped by 8% from 2015-2019, with the highest rates of new diagnoses occurring in southern states. Treatments for both HIV and Hepatis-C are available in the U.S. via Antiretroviral therapy. For Hepatitis-C, treatments have a 95% cure rate though only 1 in 3 individuals with insurance are estimated to receive timely treatment for Hepatitis-C in the U.S. (CDC Vital Signs, 2022). Currently, HIV does not have a cure, though available treatments can suppress the virus to a point that it is undetectable with a viral load test (NIH,2021). There is currently not a vaccine available for either HIV or Hepatitis-C, though vaccines are available and widely utilized for Hepatitis A and B.

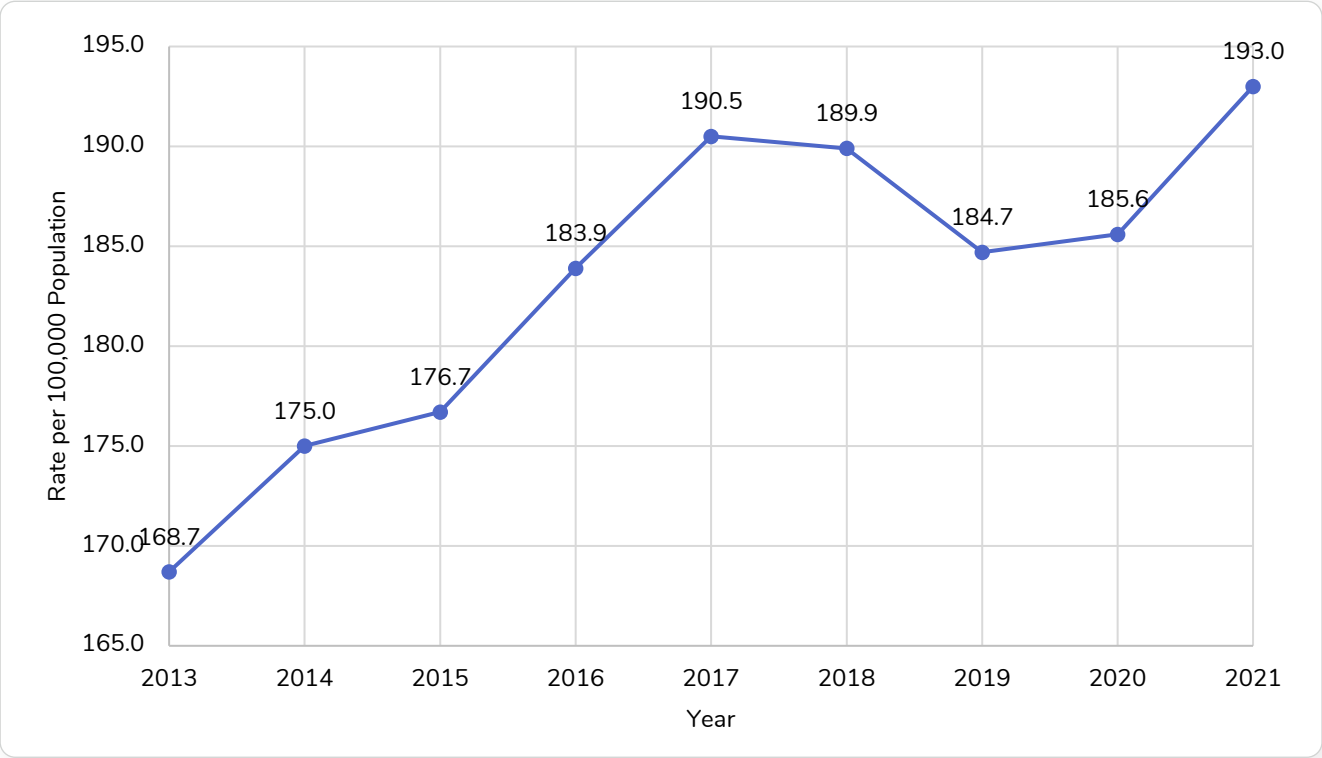
Demographics and Prevalence in Indiana

The most recent, publicly available, epidemiological data provided by the Indiana State Department of Health was published in March 2019 (Hillman 2019). The prevalence of HIV/AIDS appears to be relatively constant from 2016-2018 (Hillman 2019). The number of individuals with HIV/AIDS per 100,000 Indiana residents was 190.6 in 2018 (Hillman 2019). Some individuals under the age of 14 in Indiana have HIV/AIDS (3.9 per 100,000), and notably, young individuals may have been due to perinatal exposure in babies born to HIV positive mothers (Hillman 2019). The age groups that had the largest rate of HIV/AIDS was ages 50-59 (423.3 per 100,000) and 40-49 (367.1 per 100,000) (Hillman 2019).

When considering the prevalence of HIV/AIDS by racial or ethnic background in 2018, black populations had the highest prevalence of HIV/AIDS (751.1 per 100,000) followed by Hispanic (249.1 per 100,000) then non-Hispanic or black “other” (191.1 per 100,000) and white (106.2 per 100,000) (Hillman 2019). Furthermore, when separating by sex, men had appeared to have higher HIV/AIDS prevalence rates than women in 2018 (306.1 per 100,000 vs. 78.3 per 100,000, respectively) (Hillman 2019). When considering the mode of transmission, rates appeared to be higher in men who had sex with men (176.5 per 100,000) as compared to heterosexual individuals (38.3 per 100,000) or other sexual encounters (30.9 per 100,000) (Hillman 2019). In 2018, the Indiana county that reported the highest prevalence of HIV/AIDS was Marion County with a reported 5,213 individuals with HIV/AIDS with the county reporting the next highest prevalence being Allen County with 631 individuals with HIV/AIDS (IDOH 2019). These counties are more urban, and it must be considered that the counties with the largest number of individuals living with HIV/AIDS may be due to the large overall population.

In 2021, the five Indiana counties with the highest rates of new cases of HIV were Marion County (22.7 per 100,000 population), Montgomery County (18.2), Laporte County (11.9), Hancock County (10.1) and Lake County (8.6). For acute Hepatitis-C, Wabash County (16.2 per 100,000 population), Morgan County (11.1), Bartholomew County (8.5), Howard County (6), and Hendricks County (5) had the highest rates of new reported cases in 2021.

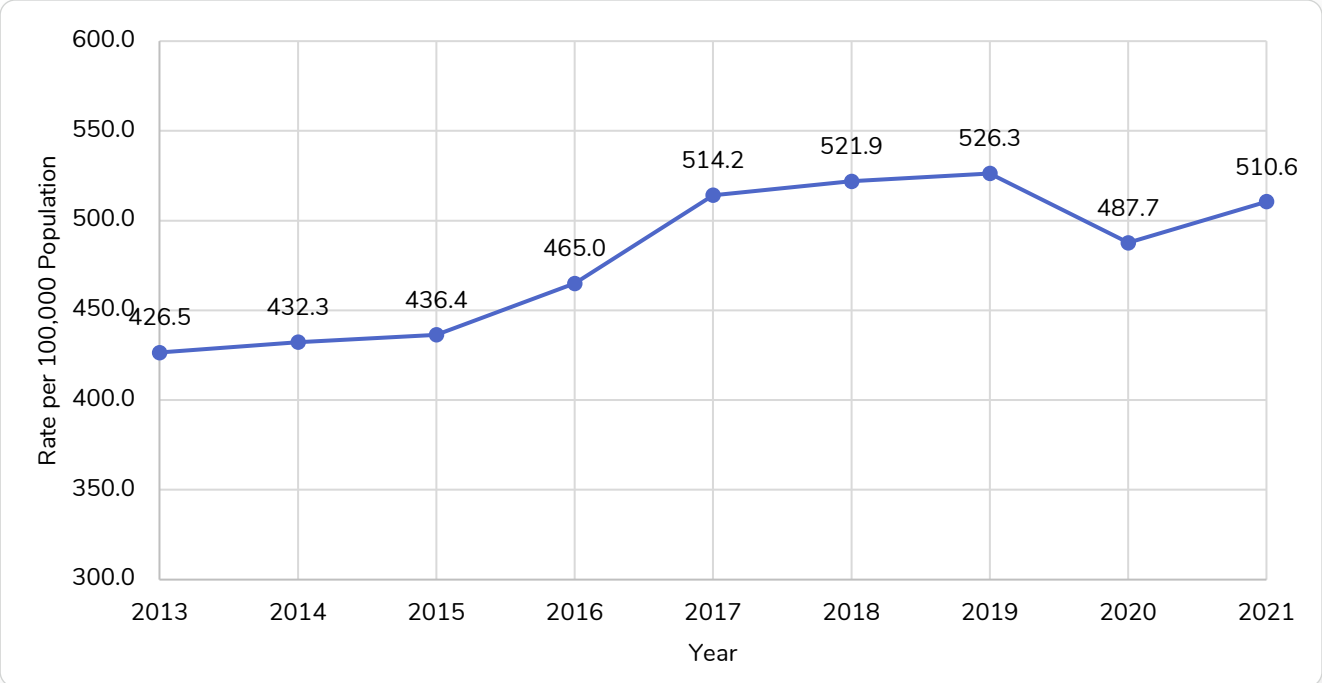
Figure 9.1 HIV/AIDS Prevalence rates in Indiana.



Source: (IDOH Stats Explorer, 2023)

Figure 1 shows that the HIV/AIDs prevalence rate in Indiana consistently increased from 2013 (168.7) to 2017 (190.5), before dropping for a few years until 2019 (184.7). The rate increased in 2020 (185.6) and 2021 (193.0).

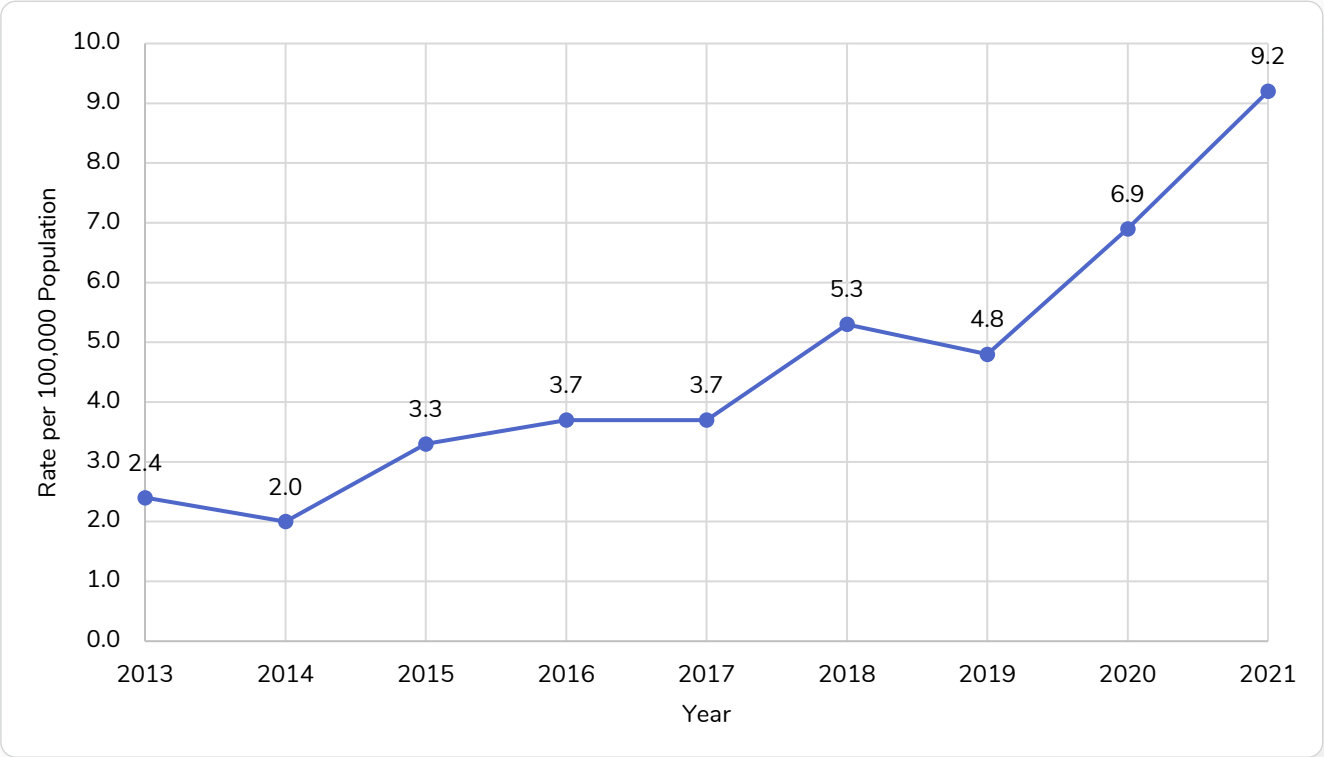
Figure 9.2 Chlamydia rates in Indiana.



Source: (IDOH Stats Explorer, 2023)

The rate of Chlamydia in Indiana increased for several years from 2013 (426.5) to 2019 (526.3). A decrease occurred in 2020 (487.7), before another increase in 2021 (See Figure 9.2).

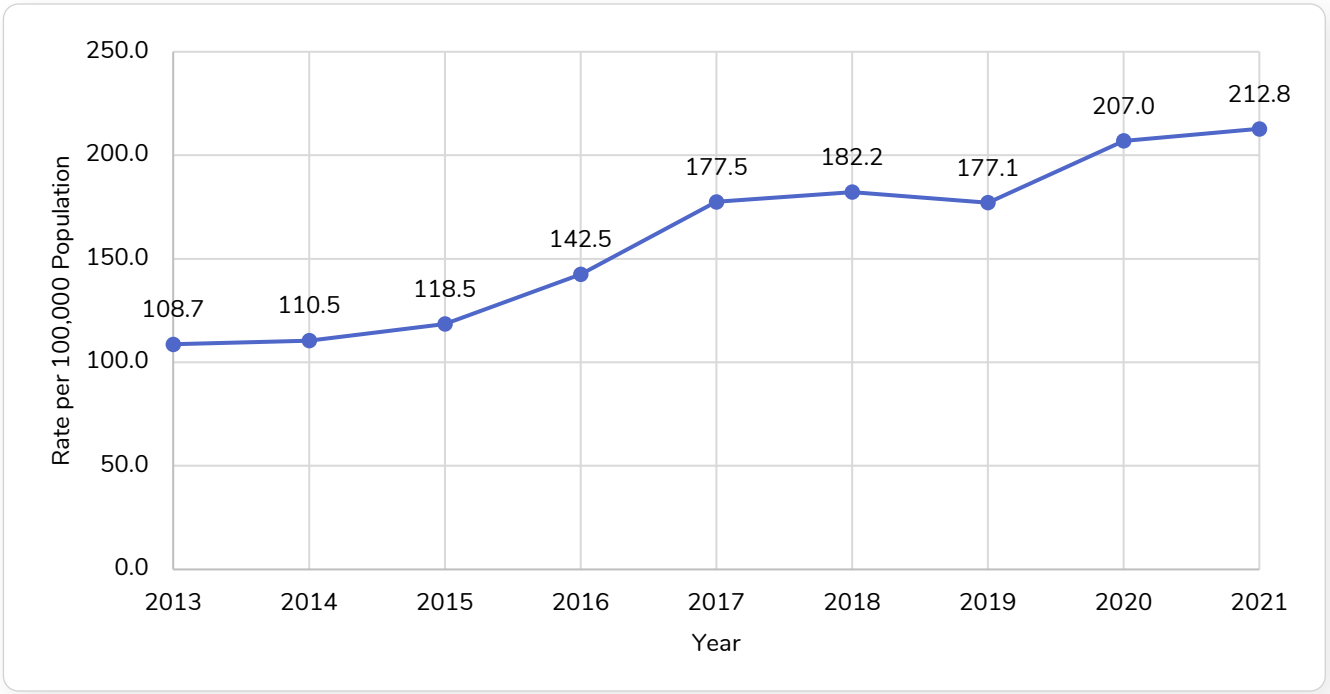
Figure 9.3 Early Non-Primary, Non-Secondary Syphilis rates in Indiana



Source: (IDOH Stats Explorer, 2023)

Early non-primary, non-secondary syphilis rates in Indiana decreased from 2013 (2.4) to 2014 (2.0), followed by an increase in 2015 (3.3) and 2016 (3.7). After steadying at 3.7 in 2017 and 4.8 in 2019, an increase occurred in in 2020 (6.9) and 2021 (9.2) (See Figure 9.3).

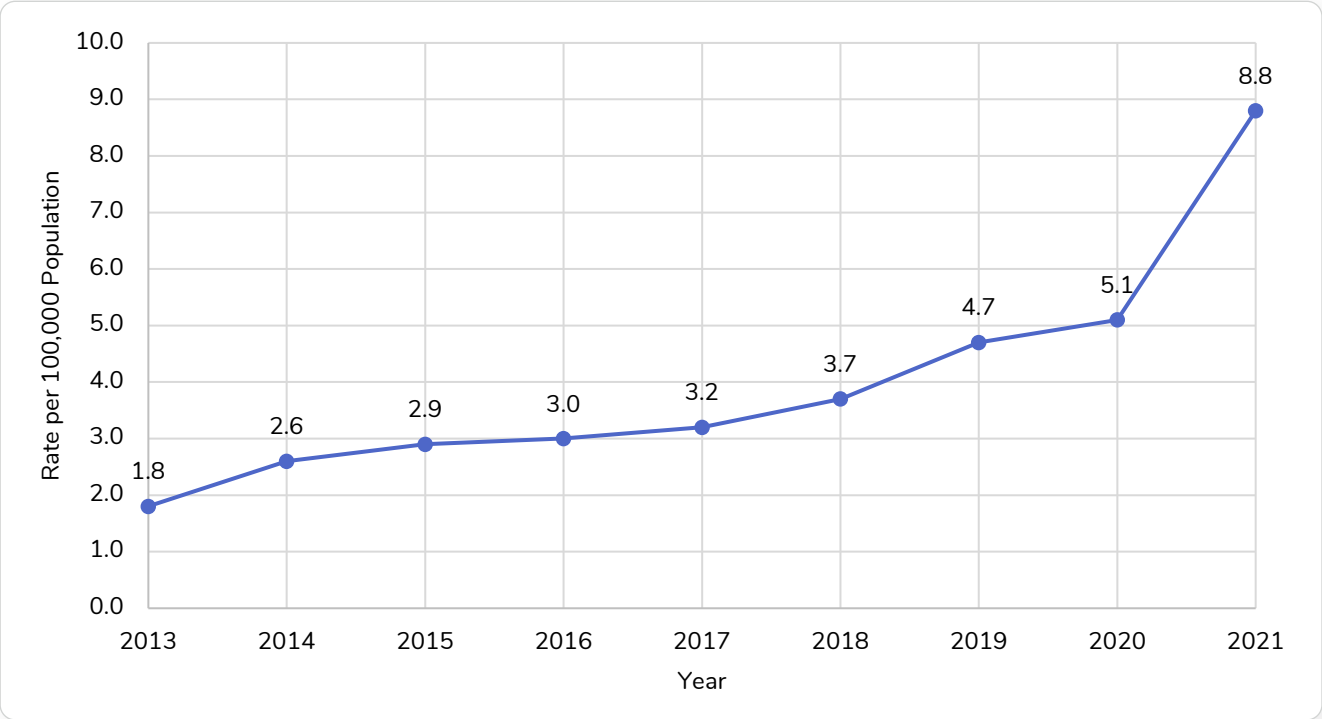
Figure 9.4 Gonorrhea rates in Indiana



Source: (IDOH Stats Explorer, 2023)

Gonorrhea rates in Indiana increased from 2013 (108.7) to 2018 (182.2), followed by a slight decrease in 2019 (177.1). Two increases followed in 2020 (207.0) and 2021 (212.8).

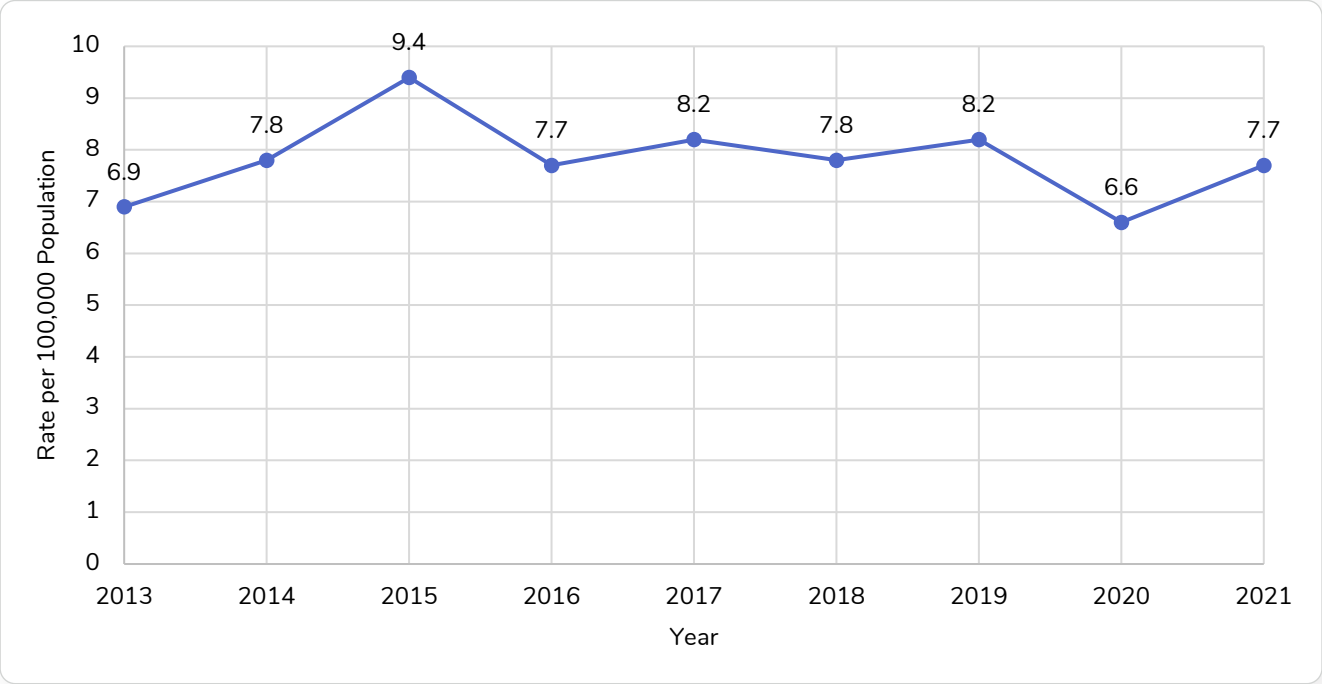
Figure 9.5 Late or Unknown Duration Syphilis rates in Indiana



Source: (IDOH Stats Explorer, 2023)

Rates of late or unknown duration syphilis in Indiana increased year over year from 2013 (1.8) to 2020 (5.1), followed by a relatively larger increase in 2021 (8.8) (See Figure 9.5).

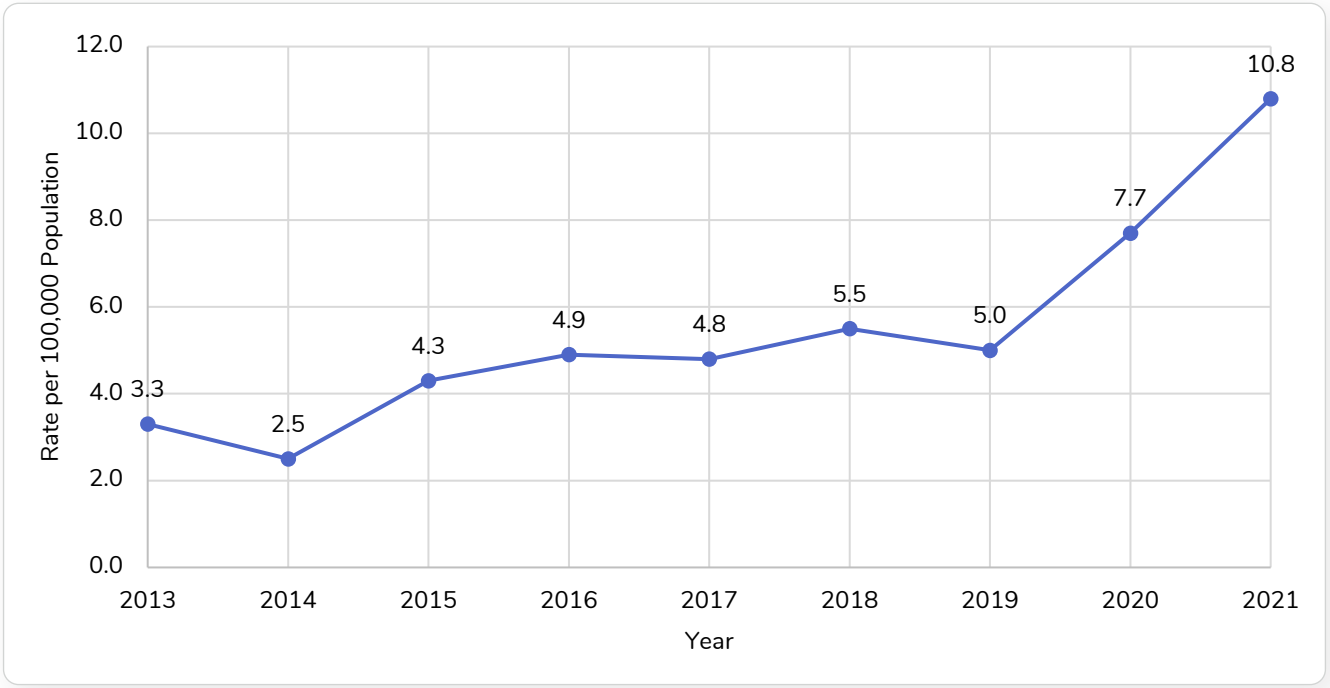
Figure 9.6 Newly Diagnosed HIV/AIDS rates in Indiana



Source: (IDOH Stats Explorer, 2023)

Rates of newly diagnosed HIV/AIDs increased from 2013 (6.9) to 2015 (9.4). Following a decrease in 2016 (7.7) and an increase in 2017 (8.2), a decrease occurred in 2018 (7.8), followed by yet another increase in 2019 (8.2). Rates dropped 6.6 in 2020 before increasing again in 2021 (7.7) (See Figure 9.6).

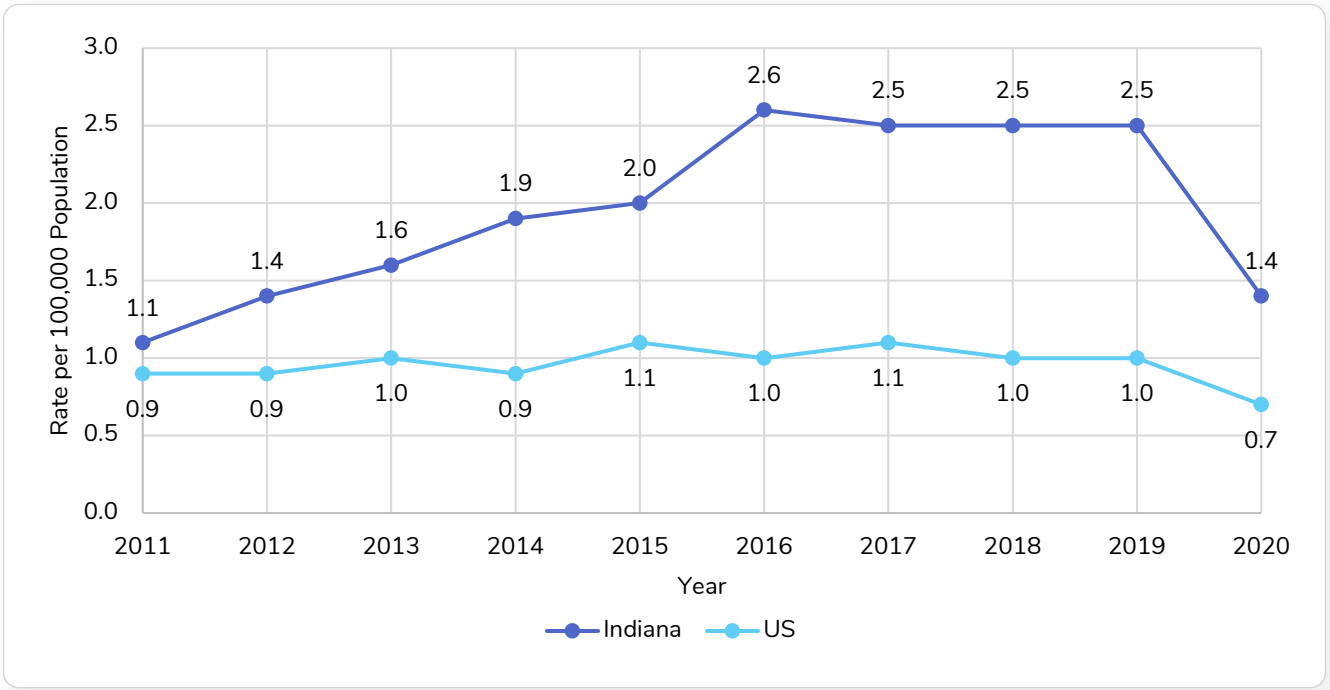
Figure 9.7 Primary and Secondary Syphilis, Indiana



Source: (IDOH Stats Explorer, 2023)

Rates in Indiana of primary and secondary syphilis decreased from 2013 (3.3) to 2014 (2.5), followed by two increases in 2015 (4.3) and 2016 (4.9). Following a decrease in 2017 (4.8) and an increase in 2018 (5.5), a decrease occurred 2019 (5.0). Two more increases occurred in 2020 (7.7) and 2021 (10.8) (See Figure 9.7).

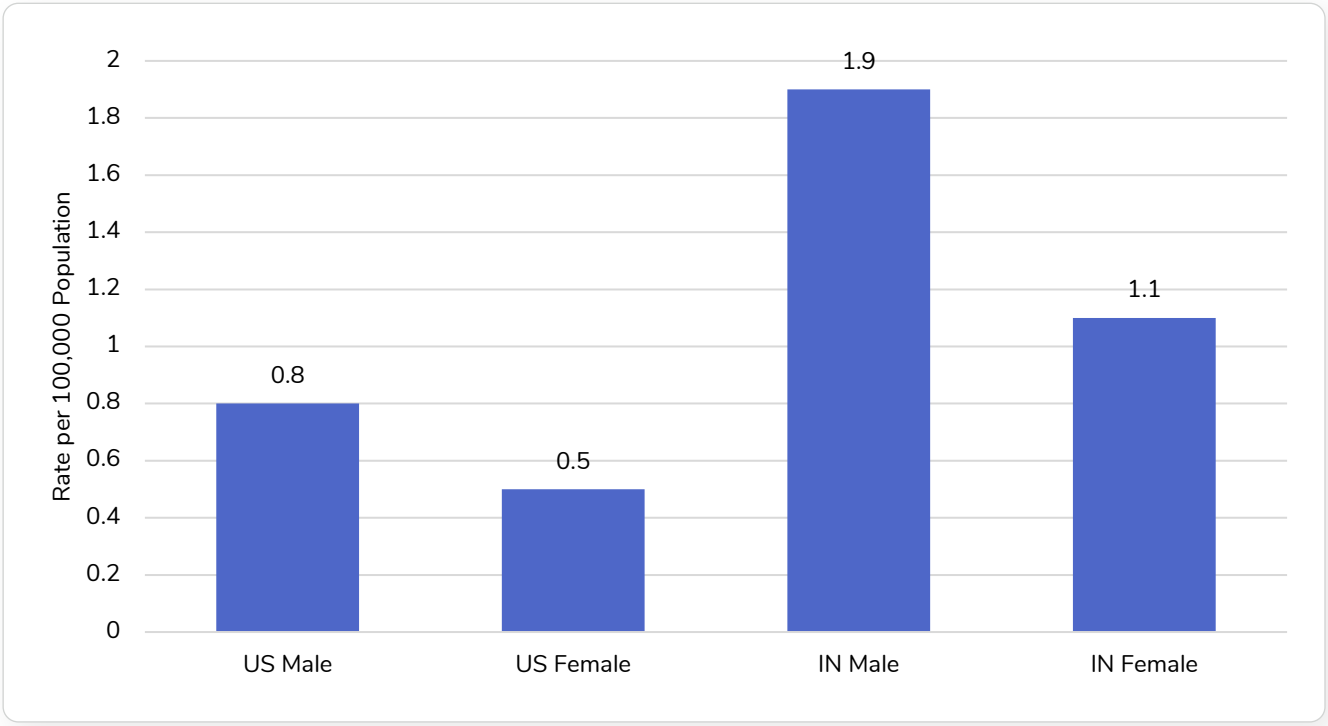
Figure 9.8 Rates of Newly Reported Acute Hepatitis B Cases, Indiana



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Throughout 2011 to 2020, rates of newly reported acute Hepatitis B were higher in Indiana than the United States as a whole. The rates in Indiana increased year over year from 2011 (0.9) to 2016 (2.6). A rate of 2.5 was maintained from 2017 to 2019, followed by a decrease in 2020 (1.4) (See Figure 9.8).

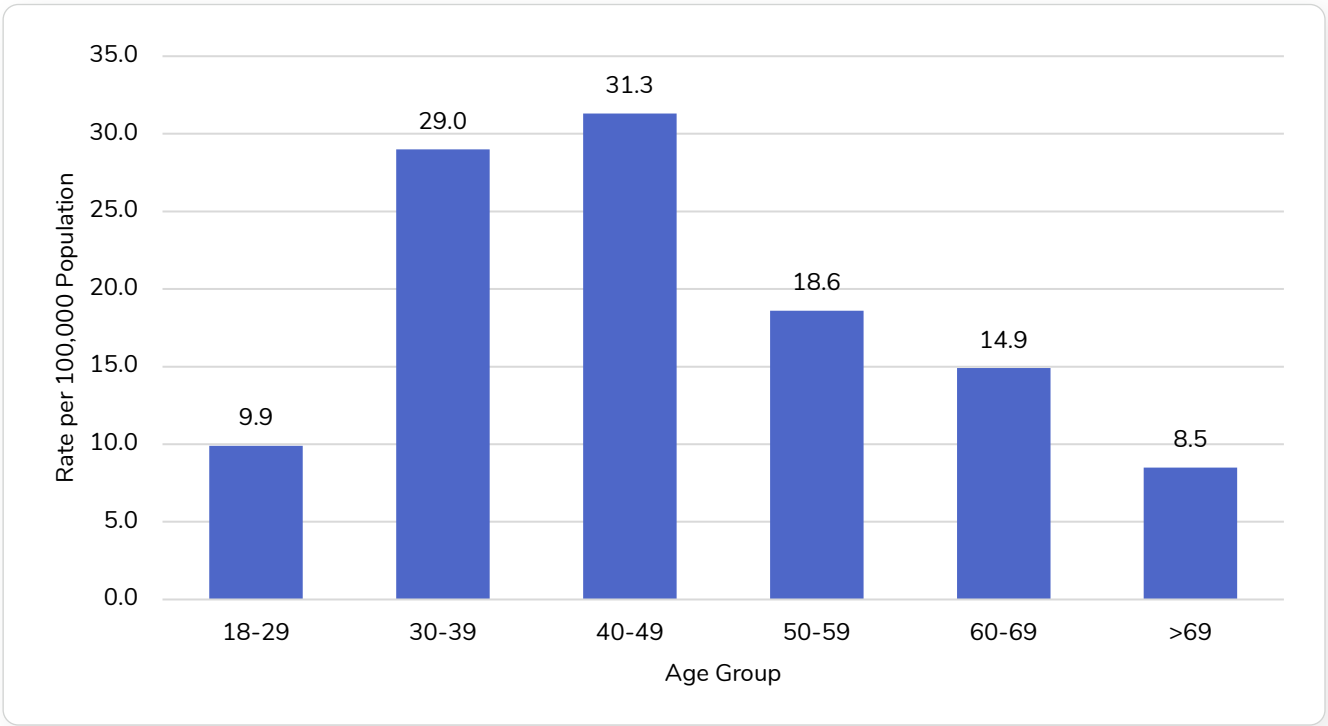
Figure 9.9 Rates (per 100,000 population) of Newly Reported Acute Hepatitis B Cases, by Gender, 2020



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates of newly reported acute Hepatitis B in 2020 were higher among males. Males in Indiana had a rate of 1.9, compared to Females of 1.1. Males in the United States had a rate of 0.8, compared to Females of 0.5 (See Figure 9.9).

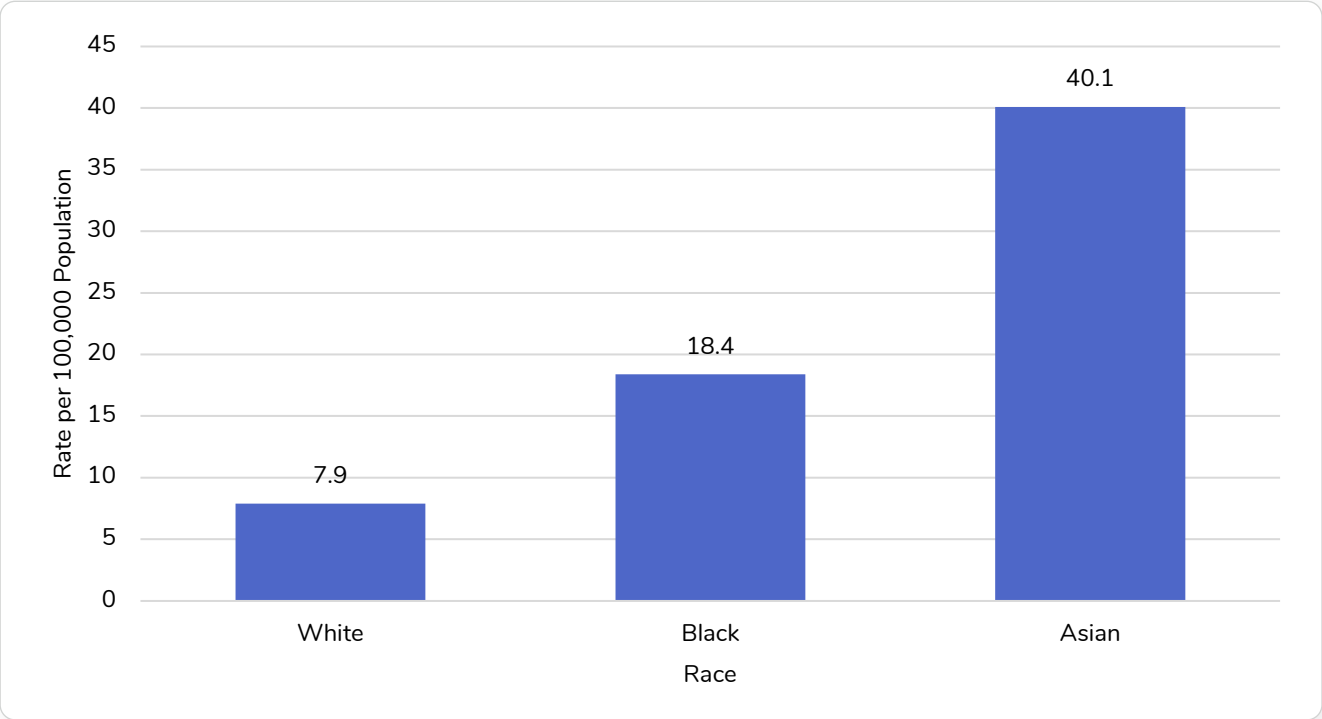
Figure 9.10 Rates (per 100,000 population) of Newly Reported Acute Hepatitis B Cases, by Age, Indiana, 2020



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Those aged 30-39 (29.0) and 40-49 (31.3) had higher rates of newly reported acute Hepatitis B in Indiana than other age groups. Those aged 50-59 (18.6) had higher rates than those aged 60-69 (14.9), 18-29 (9.9), and older than 69 (8.5) (See Figure 9.10).

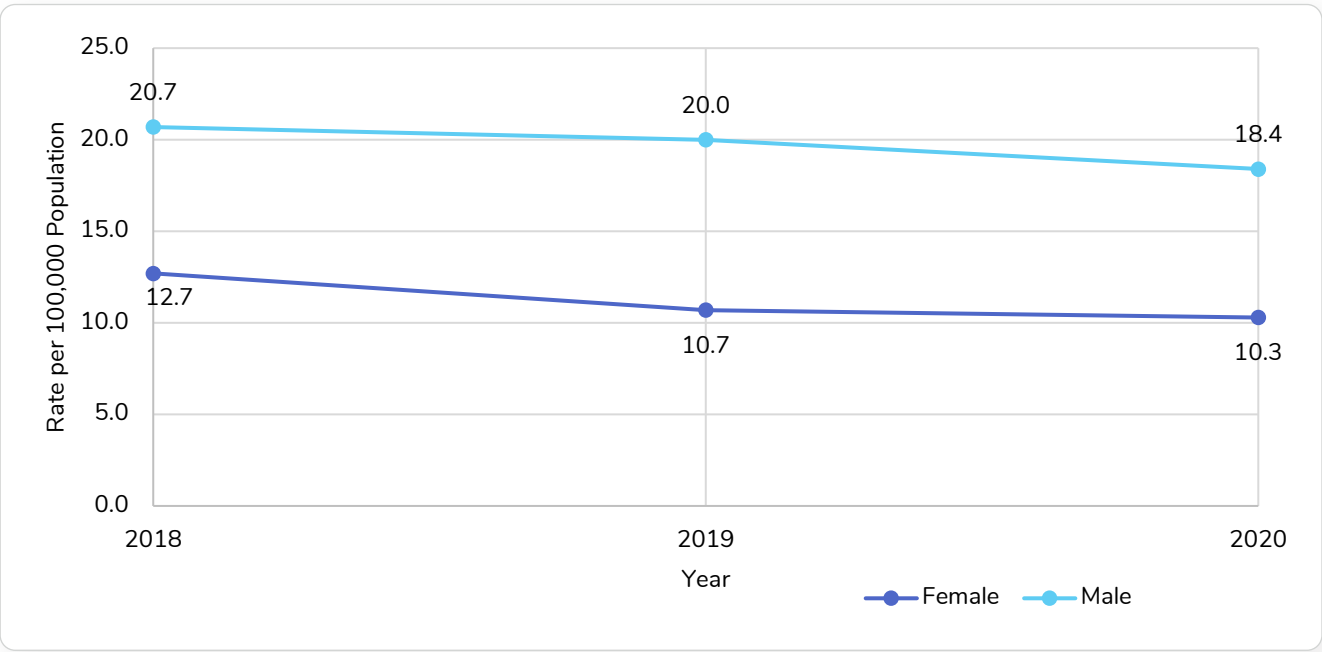
Figure 9.11 Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis B Cases, by Race, 2020



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rate of newly reported acute and chronic Hepatitis B cases for Indiana in 2020 were highest among the Asian population (40.1), followed by blacks (18.4) and whites (7.9) (See Figure 9.11).

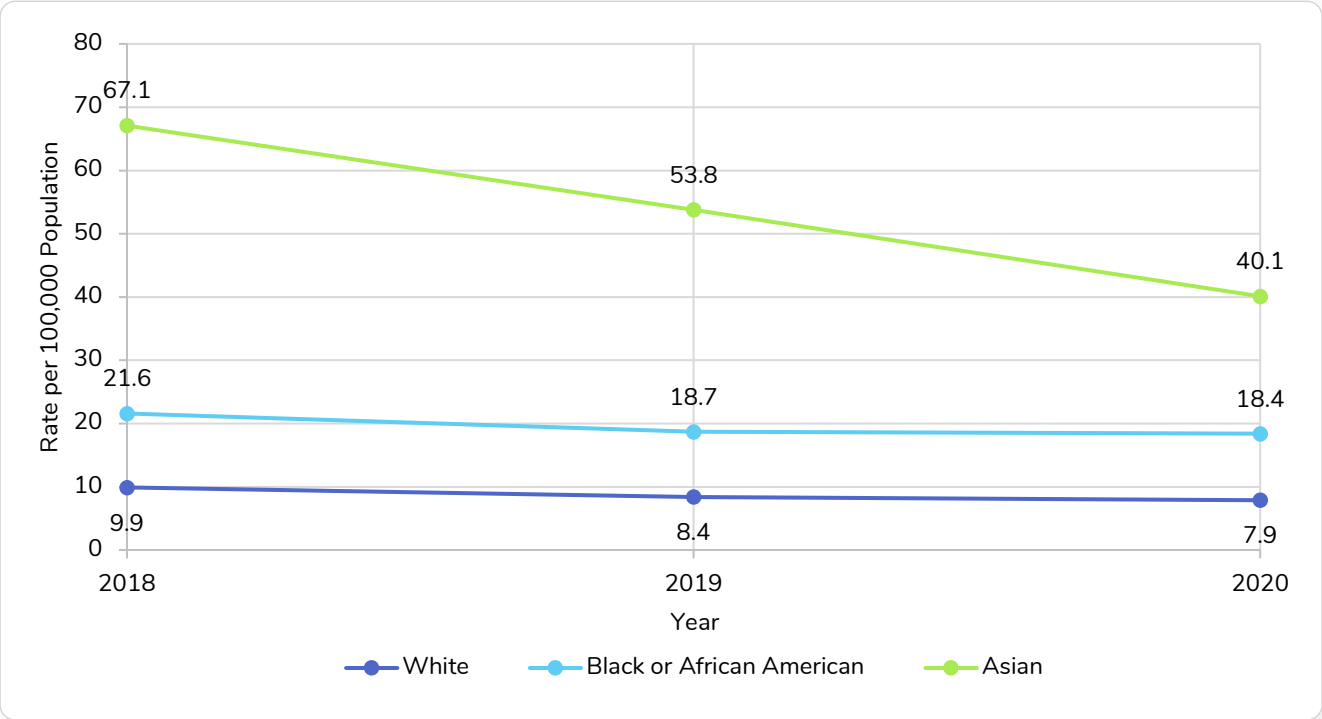
Figure 9.12 Rates of Newly Reported Acute and Chronic Hepatitis B Cases, Indiana



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Males in Indiana consistently had higher rates of newly reported acute and chronic Hepatitis B cases than Females from 2018 to 2019. In 2018, males had a rate of 20.7, compared to 12.7 for females. In 2019, males had a rate of 20.0 compared to 10.7 for females. In 2020, males (18.4) had a higher rate than females (10.3). Both males and females had decreasing rates from 2018 to 2020 (See Figure 9.12).

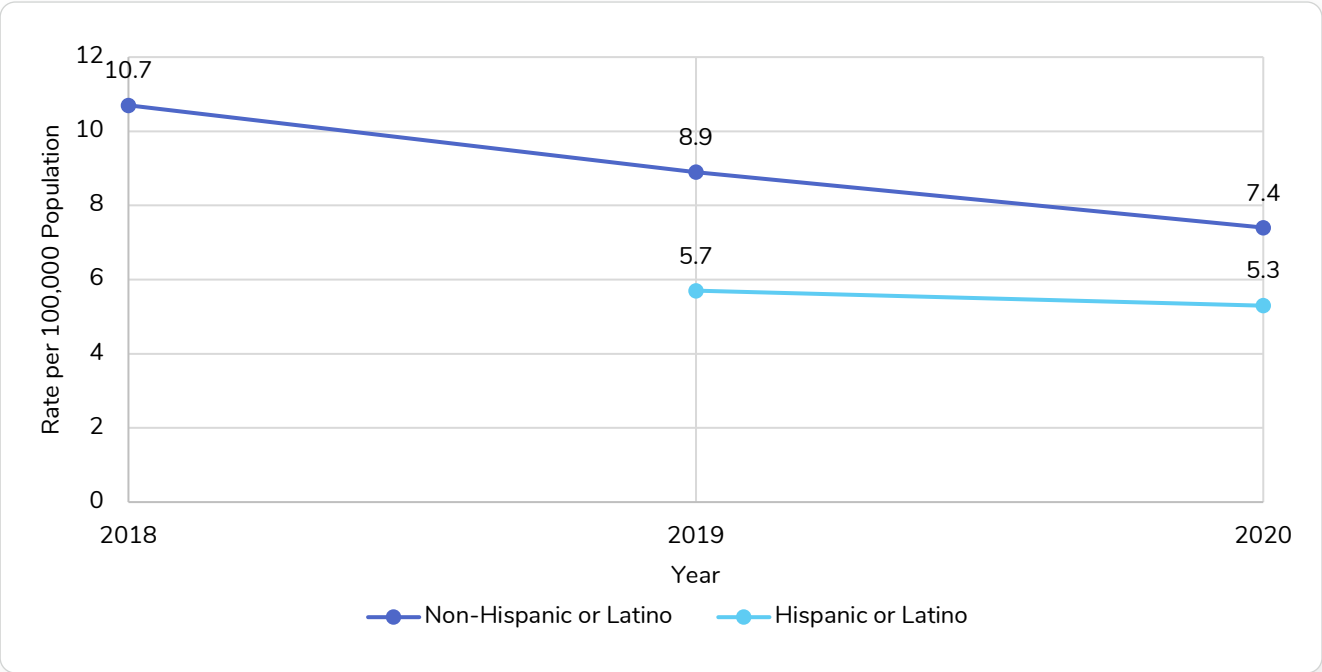
Figure 9.13 Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis B Cases, by Race, Indiana



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates of newly reported acute and chronic Hepatitis B cases in Indiana decreased from 2018 (white: 9.9; black or African American: 21.6; Asian: 67.1) to 2019 (white: 8.4; black or African American: 18.7; Asian: 53.8) to 2020 (white: 7.9; black or African American: 18.4; Asian: 40.1) (See Figure 9.13).

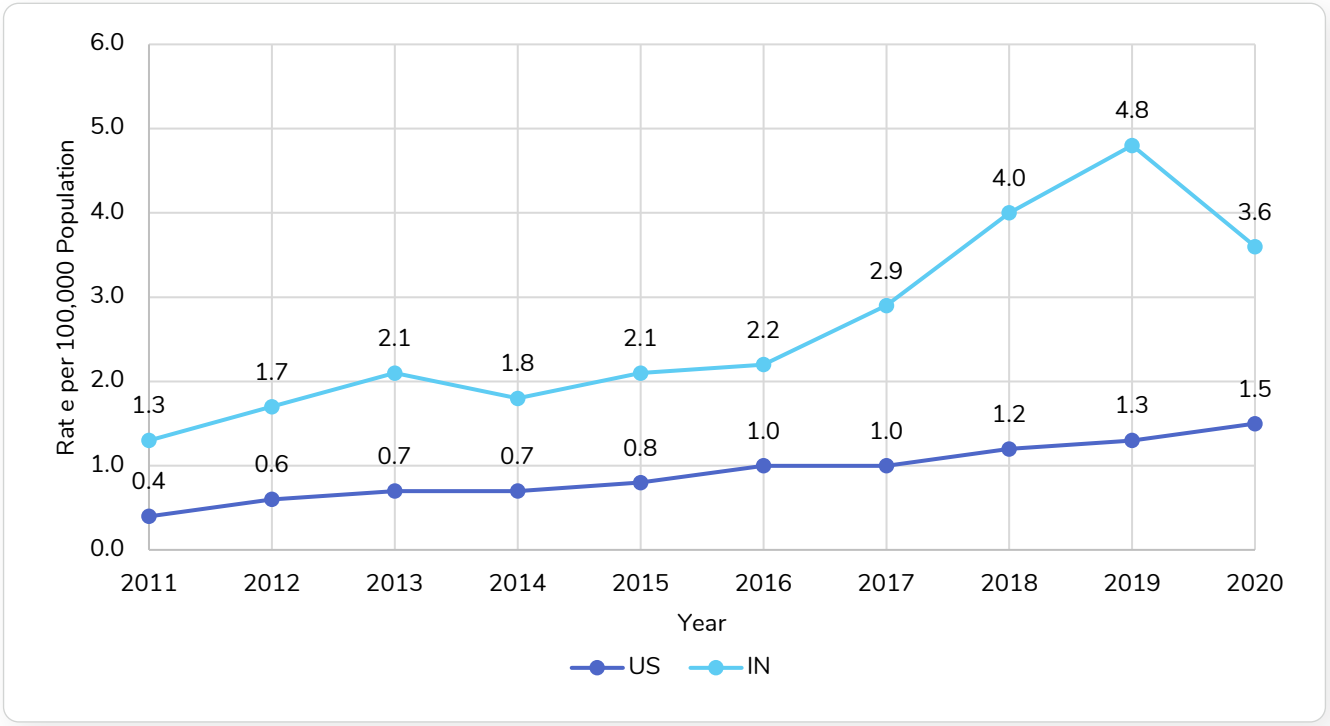
Figure 9.14 Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis B Cases, by Ethnicity, Indiana



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates of newly reported acute and chronic Hepatitis B cases in Indiana decreased for Hispanic or Latinos from 2019 (5.7) to 2020 (5.3). Non-Hispanic or Non-Latino had higher rates, but saw decreases from 2018 (10.7) to 2019 (8.9) to 2020 (7.4) (See Figure 9.14).

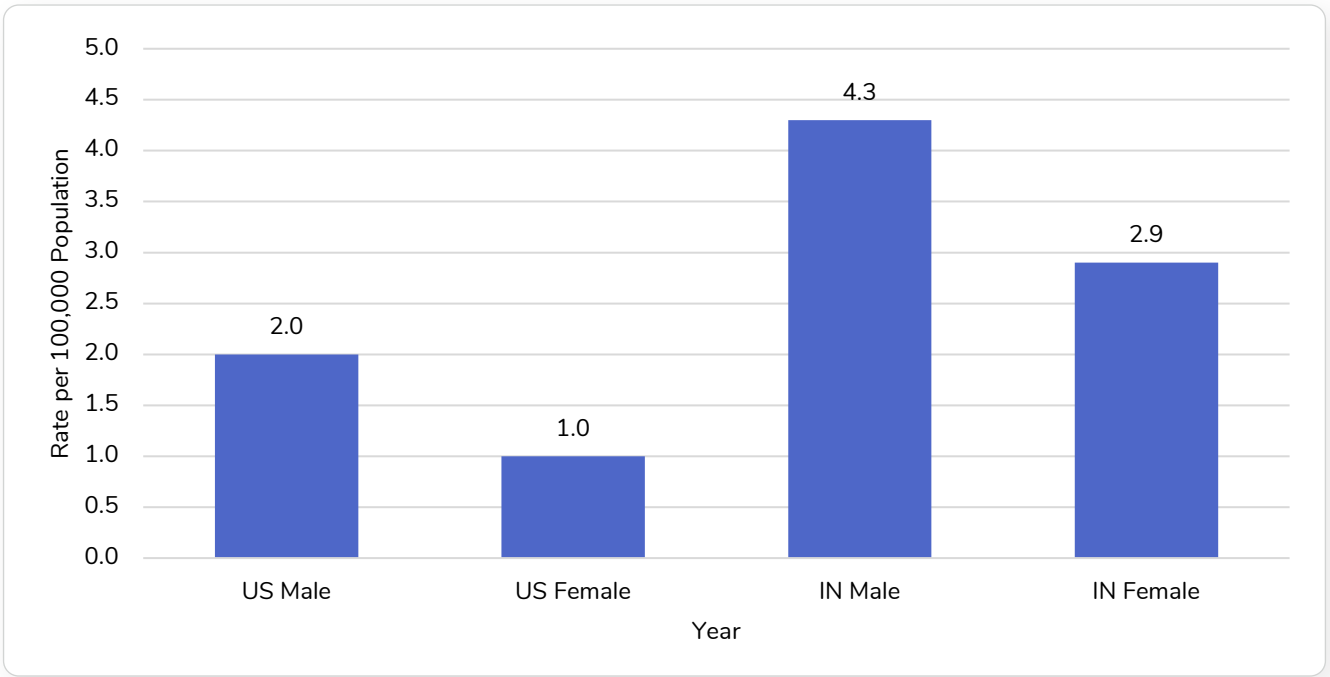
Figure 9.15 Rates (per 100,000 population) of Newly Reported Acute Hepatitis C Cases



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates of newly reported acute Hepatitis C were consistently higher in Indiana than the United States from 2011 to 2020. Rates in Indiana increased from 2011 (1.3) to 2013 (2.1), followed by a decrease in 2014 (1.8). Consecutive increases followed from 2015 (2.1) to 2019 (4.8), followed by a decrease in 2020 (3.6) (See Figure 9.15).

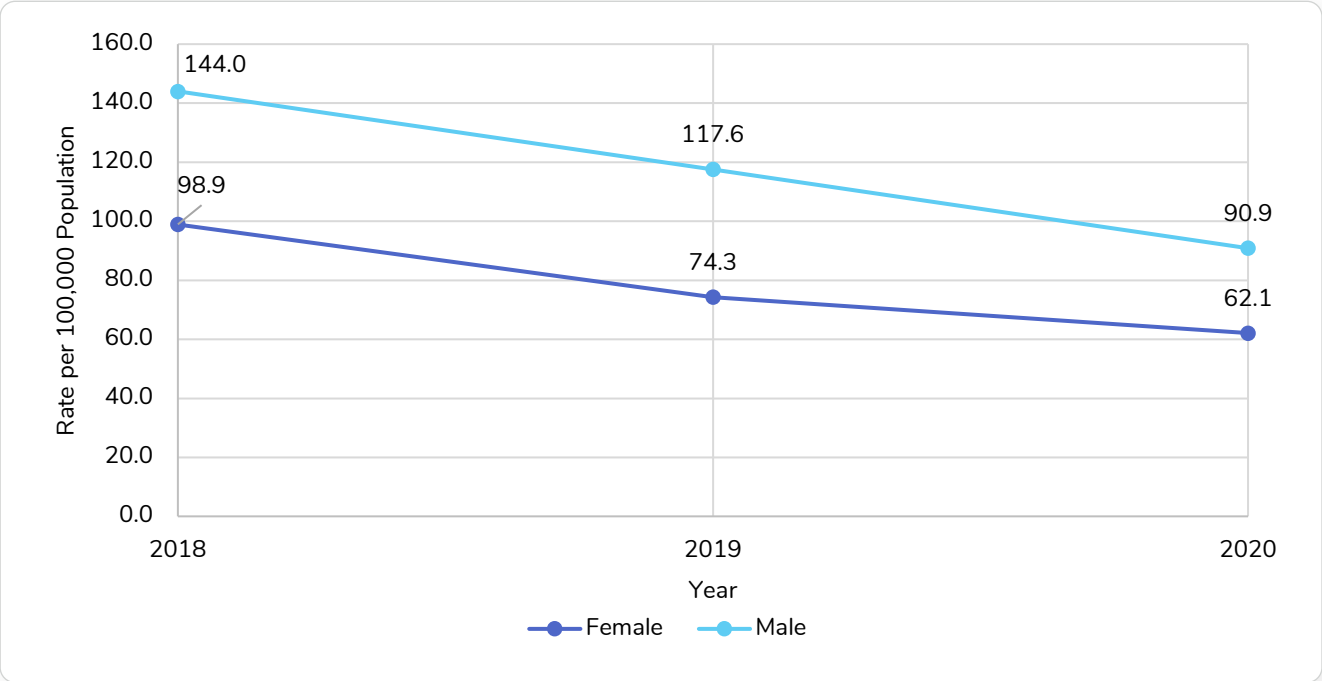
Figure 9.16 Rates of Newly Reported Acute Hepatitis C, 2020



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates of newly reported acute Hepatitis C in 2020 were higher among males in the US (2.0) than females (1.0). Additionally, males had a higher rate in Indiana (4.3) than females (2.9) (See Figure 9.16).

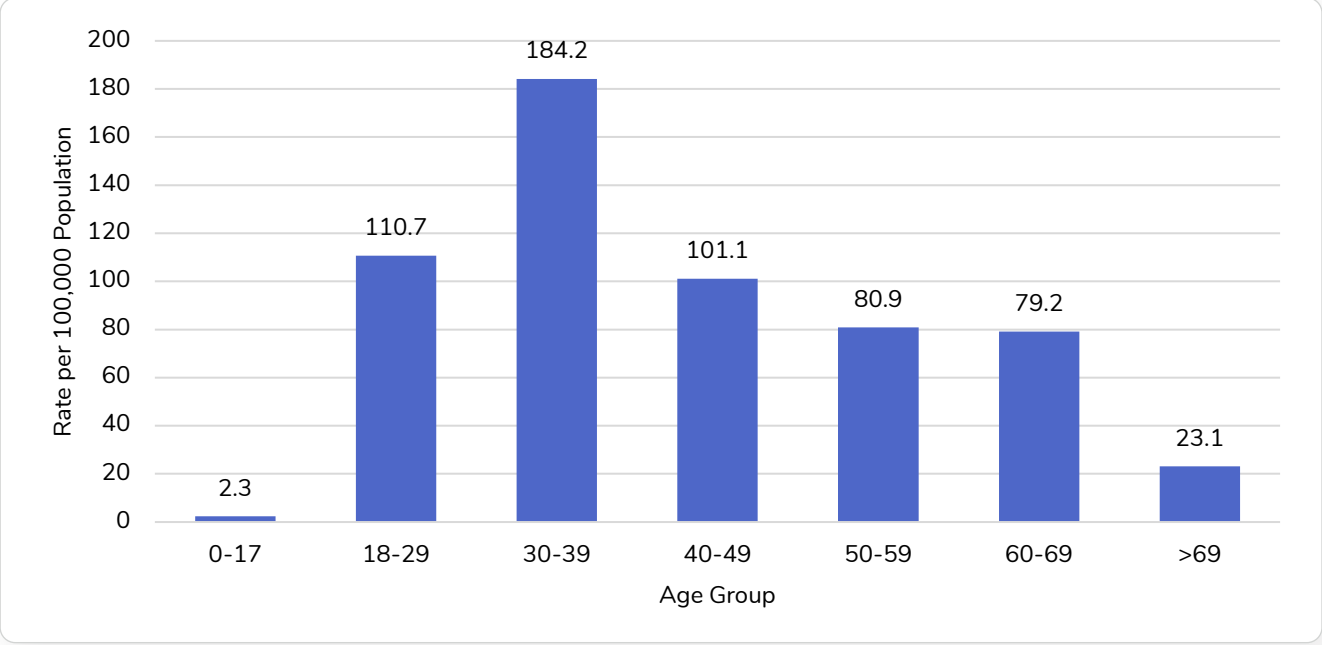
Figure 9.17 Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis C Cases, Indiana, by Gender



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

From 2018 to 2020, males in Indiana had consistently higher rates of newly reported acute and chronic Hepatitis C cases than females. Both males and females had consecutive decreases in their respective rates. Following a rate of 144.0 in 2018, males saw two decreases in 2019 (117.6) and 2020 (90.9). Following a rate of 98.9 in 2018, females had two decreases in 2019 (74.3) and 2020 (62.1) (See Figure 9.17).

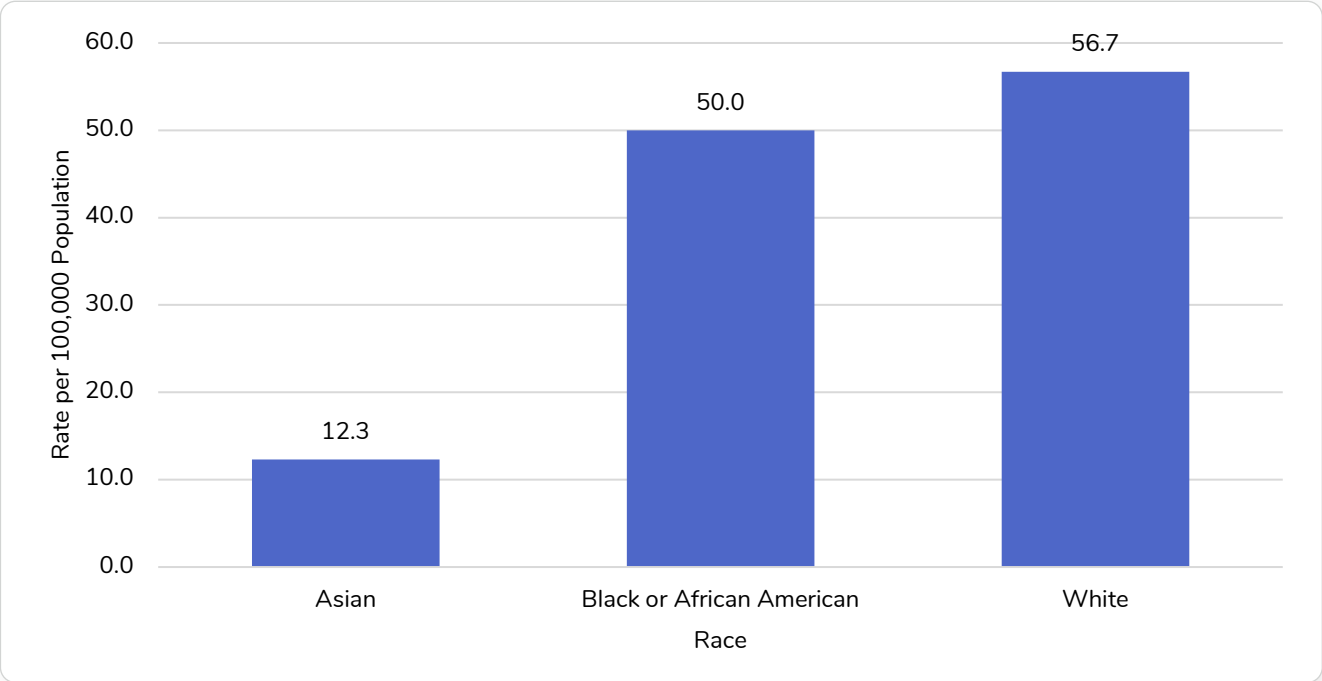
Figure 9.18 Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis C Cases, Indiana, by Age, 2020



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates in Indiana of newly reported acute and chronic Hepatitis C cases in 2020 were highest among those aged 30-39 (184.2) and 18-29 (110.7). Those aged 40-49 (101.1) had higher rates than those aged 50-59 (80.9) and 60-69 (79.2). The lowest rates were among those aged older than 69 (23.1) and younger than 18 (2.3) (See Figure 9.18).

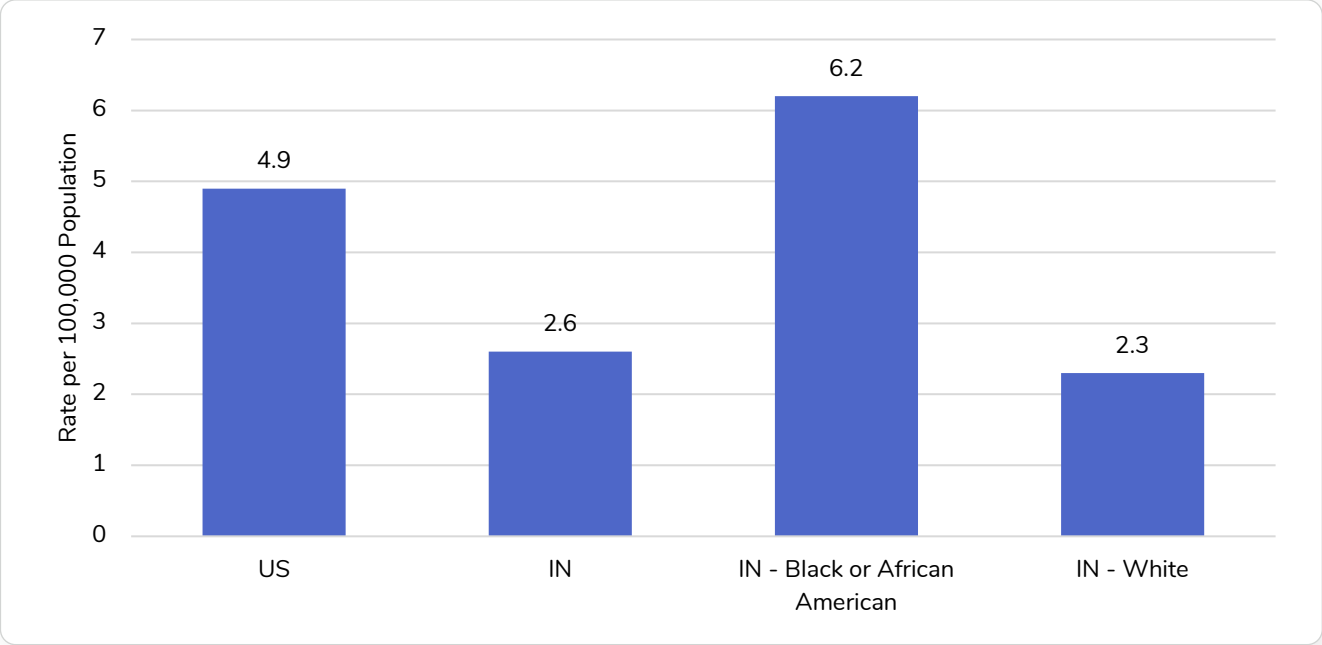
Figure 9.19 Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis C Cases, Indiana, by Race, 2020



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates of newly reported acute and chronic Hepatitis C cases in Indiana in 2020 were highest among White Race (56.7), followed by Blacks or African American Race (50.0) and Asians (12.3) (See Figure 9.19).

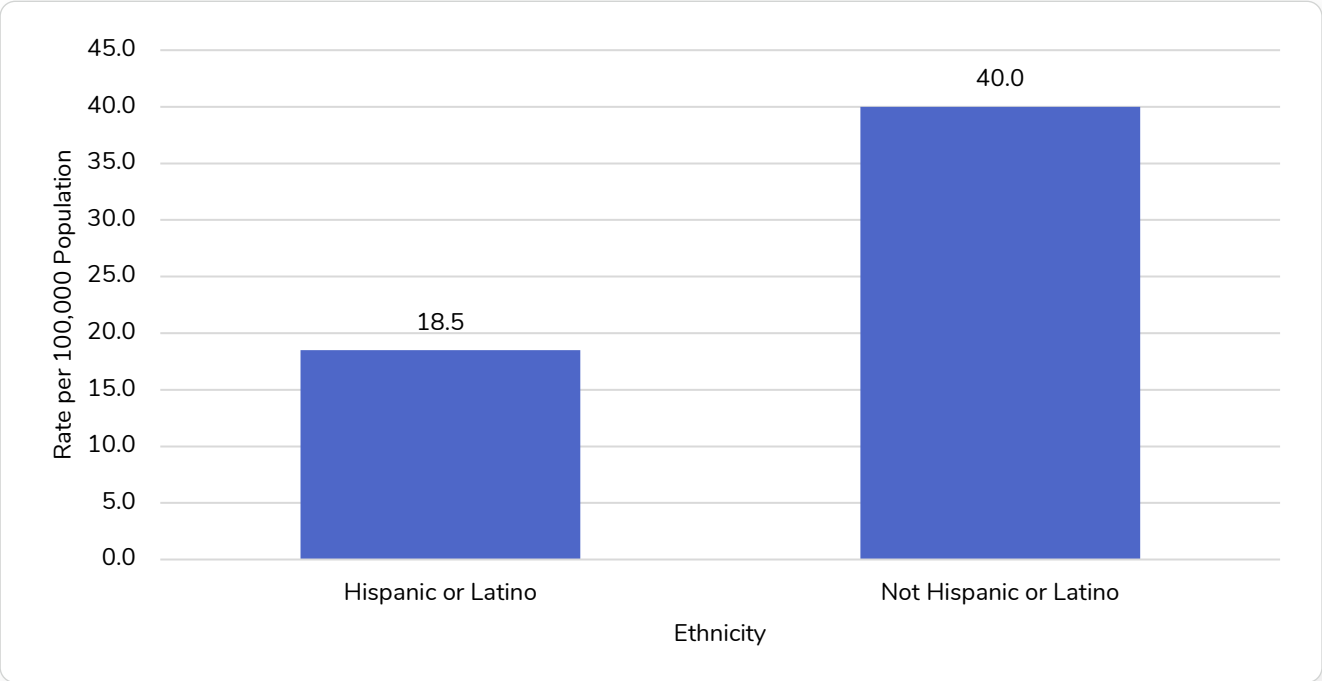
Figure 9.20 Rates (per 100,000 population) of Death with HCV Listed as a Cause of Death Among Residents, Indiana, 2020



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates of death with HCV listed as a cause of death in 2020 were higher in the United States (4.9) than Indiana (2.6). Within Indiana, Black or African American Race (6.2) had a higher rate than White race (2.3) (See Figure 9.20).

Figure 9.21 Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis C Cases, Indiana, by Ethnicity, 2020



Source: (IDOH, Indiana Viral Hepatitis Epidemiological Profile 2020)

Rates of newly reported acute and chronic Hepatitis C cases in 2020 for Indiana were higher among Non-Hispanic or Non-Latino (40.0) than for those who are Hispanic or Latino (18.5) (See Figure 9.21).

Health Consequences: Physical and Mental

There are various, far-reaching impacts of contracting viral hepatitis or HIV including physical health, mental health, and social interactions. The primary effects of viral hepatitis, HIV, and AIDS are how these viruses affect the physiologic systems of the human body. Viral hepatitis mainly targets the liver and causes inflammation with most occurrences being acute cases, but hepatitis forms B and C can cause chronic issues for individuals (Zarrin and Akhondi 2022). When this virus is contracted, it proliferates within the liver cells and causes systemic issues like fever, malaise, vomiting, jaundice, digestive issues, physical pain in the abdomen, and liver failure in the most severe cases (Zarrin and Akhondi 2022).

In regard to HIV and AIDS, there are numerous symptoms that indicate HIV, and these occur within about two to four weeks after infection (HIV.gov 2018). The symptoms are similar to the flu and include fever, rash, chills, sweats, aches and pains, sore throat, and fatigue which can last weeks (HIV.gov 2018). However, individuals that have contracted HIV may not actually have symptoms during early HIV (HIV.gov 2018). Another important consideration is that HIV may exhibit clinical latency, which is the stage, termed chronic HIV infection, where the virus has the capacity to proliferate but may not cause symptoms (HIV.gov 2018). Transmission of HIV is still possible during this stage if the viral load is detectable (HIV.gov 2018). The final stage of HIV is AIDS. During this stage, there are more severe symptoms as this stage has significantly damaged and compromised the body's immune response (HIV.gov 2018). These may include significant weight loss, recurring fever, extreme fatigue, significant swelling of lymphatic nodes, frequent sores around the mouth and genitals, and even neurologic disorders (HIV.gov 2018). With the progression of medicine, AIDS has become less likely to occur due to the effectiveness of antiretroviral therapy, which will be reviewed in the next section (HIV.gov 2018).

The final component discussed in this section regarding the contraction of viral hepatitis and HIV the interactions that these viruses have on an individual's mental health. Mental health status is known to affect outcomes and progression of HIV and viral hepatitis (Collins et al. 2021). Unfortunately, contracting viral hepatitis and/or HIV are known to increase the risk of developing mental health conditions like depression, anxiety, and other mood disorders (NIMH 2020). Furthermore, women living with HIV are known to have higher rates of depression, anxiety, and posttraumatic stress disorder when compared to men (Waldron et al. 2021).

The high rates of development of mental health

conditions within individuals with HIV or viral hepatitis can be attributed to several components. One major component is the level of stress that comes with HIV or viral hepatitis (NIMH 2020). There is mental stress due to the need to change behaviors, to inform family and sexual partners about viral hepatitis or HIV diagnosis, to access and manage medical treatment, and facing stigma and discrimination that can be associated with HIV and viral hepatitis (NIMH 2020). There is also physical stress that is caused by these viruses that can contribute to neurological impairments; the high level of inflammation in the body due to HIV can damage the central nervous system by affecting the spinal cord and brain (NIMH 2020). The neurological conditions that are associated with HIV include dementia, atrophy of the brain, and inflammation of the brain and may cause issues with cognitive and emotional processing (NIMH 2020). Fortunately, there is a reduction in the rates of these symptoms and conditions with use of antiretroviral therapy (HIV 2020).

There are many strategies that can alleviate some of the mental health challenges associated with contraction of HIV or viral hepatitis. Research indicates that social support is associated with better mental health among individuals with these conditions (Daida et al. 2020). Furthermore, for individuals with HIV, it has been noted that starting antiretroviral therapy can have several effects on mental health (NIMH 2020). Some positive effects include relieving anxiety because the individual is taking action to improve their condition and the decrease in viral load or severity (NIMH 2020). In contrast, there is a possibility that antiretroviral medication can cause certain symptoms of depression or anxiety (NIMH 2020). Regardless of the individual, seeking out and utilizing mental health support may significantly improve mental health.

Mental health's relationship to contraction of viral hepatitis and HIV

The relationship between mental health and sexual health has been increasingly studied over the past 30 years, and it has been reported that serious mental health conditions can be considered a risk factor for infection of sexually transmitted viruses like viral hepatitis and HIV (Hughes et al. 2016). The association between mental health and increased risk for sexually transmitted infection (STI) may be due to specific behaviors observed within individuals with mental health conditions. One such behavior in individuals with mental health conditions is engagement in risky activities (Hughes et al. 2016). Regarding risky sexual behavior, individuals with mental health conditions may be more likely to engage in unprotected sex with multiple partners and sex trading, which alone are both associated with increased risk of contracting and STI (Hughes et al. 2016).

Furthermore, it has been identified that within adolescents there have been increasing rates of mental health conditions and engagement in sexual activity at younger ages (Hipwell et al., 2010, Collins et al. 2021). This intersection of mental health and sexual activity during adolescence implicates that there may be greater risk of engagement in risky sexual behaviors in adolescents with mental health conditions, which could lead to a greater risk of contracting an STI (Collins et al. 2021). While risky sexual behavior is the most likely cause of contraction of an STI, like viral hepatitis or HIV, there are other forms of risky behavior that are linked to rates of contraction.

When considering risky behaviors and how they are related to contraction of blood-borne infections like HIV, a key behavior known to cause contraction of HIV is sharing needles for the injection of substances like opiates or amphetamines (Wang and Maher 2019). It has been well-documented that mental health conditions and substance use disorders are linked, and it is known that substance use and addiction are factors that can lead to the development of mental health conditions and vice versa (National Institute on Drug Abuse 2020). Within individuals with mental health conditions of any severity, use of substances can be a form of self-medication, and it is possible that the use of substances may exacerbate symptoms and lead to further behavior changes (National Institute of Drug Abuse 2020). As the severity of mental health condition increases, individuals may begin to display riskier behavior, and these types of behavior may include use of more risky substances, like injectable opiates or amphetamines (Wang and Maher 2019).

It has been reported that injection of substances is a risk factor for transmission of HIV and viral hepatitis (Degenhardt and Hall 2012). While injection alone is not the cause of transmission, needle sharing between individuals is how HIV and viral hepatitis are transmitted. Re-use of needles typically occurs in people with use of injectable drugs that inject multiple times a day and have limited resources (Wang and Maher 2019). Importantly, injectable drugs typically cause the most severe craving sensations, and individuals with severe craving symptoms are at a significantly higher risk of performing risky behaviors and may use drugs more impulsively than others (Wang and Maher 2019). When individuals experience severe cravings, their behavior may begin to solely focus on satisfying that craving. These risky behaviors may include trading sex for money or substances, and this type of behavior increases the risk of contracting viral hepatitis or HIV through poorer practice of safe sex and increased rates of sexual encounters (Hughes et al. 2016).

After viral hepatitis or HIV have been contracted, there are significant effects that occur within an individual's body but also within their social circles. The purpose of this chapter is to review the demographics of individuals that have contracted viral hepatitis or HIV, prevalence of these conditions within the state of Indiana, the consequences of contracting these conditions, and various methods for prevention of contracting viral hepatitis or HIV.

Prevention and Treatment

The prevention and treatment of HIV and Hepatitis-C are critical public health concerns for the state of Indiana. In the cases where contraction of these conditions occurs, there are many effective treatment methods that can be accessed. A predominant consideration is that individuals with mental health conditions are at higher risk for contracting STIs, and therefore, one prevention method is treatment of mental health conditions to prevent increased chance of these individuals engaging in risky behaviors (Collins et al. 2021). Overall, the prevention methods are similar between viral hepatitis and AIDS, but there are a few key differences that will be highlighted below.

Viral hepatitis is likely more preventable than HIV/AIDS for one key reason. That reason is there are widely available vaccines that result in nearly 100% protection against most forms of hepatitis (Zarrin and Akhondi 2022). The other predominant prevention technique individuals can engage in is behavioral prevention. This includes ensuring good hygiene and not exposing oneself to objects contaminated with bodily fluids (HIV.gov 2022). Furthermore, engaging in safe sex practices like wearing condoms and testing for STIs may also significantly reduce the risk of contracting viral hepatitis (HIV.gov 2022). Finally, syringe service programs are effective, evidence-based tools for preventing both Hepatitis and HIV that are currently highly underutilized in communities in Indiana.

Viral hepatitis is typically not treated with medical procedures as it frequently resolves without the need for medications (Zarrin and Akhondi 2022). However, when there are complications with recovery, there are treatments available. Some complications that may require treatment include elevated bilirubin for prolonged periods of time (>4 weeks), development of coagulopathy, and acute liver failure (Zarrin and Akhondi 2022). These treatments can typically include direct-acting antivirals and supplementation to replenish vitamins (Zarrin and Akhondi 2022). Social support is also a cornerstone of treatment of viral hepatitis as individuals will likely need assistance with activities of daily living when recovering (HIV.gov 2022 and Zarrin and Akhondi 2022). There is also variation in treatments across Hepatitis types.

As mentioned earlier, there are some similarities in prevention methods of HIV and viral hepatitis, but there is no widely available vaccine for HIV (HIV.gov 2022 and Zarrin and Akhondi 2022). However, there is a prevention treatment known as pre-exposure prophylaxis, which is commonly known as PrEP (HIV.gov 2019). PrEP has been reported to reduce the risk of getting HIV from sex by 99% and by 74% within individuals who inject substances (HIV.gov 2019). There have been no significant side effects in people that have taken PrEP for up to 5 years (HIV.gov 2019).

Furthermore, HIV/AIDS are preventable through the practice of safe sex and limiting exposure to contaminated objects (HIV.gov 2022 and Zarrin and Akhondi 2022). It is important to note that not all cases of HIV progress to AIDS. Therefore, testing for HIV may prevent AIDS by having treatment of HIV begin earlier to suppress viral buildup (HIV.gov 2019). Treating HIV as early as possible also decreases the chances of transmission by causing viral suppression to a level that viral load is so low that medical laboratory methods cannot detect it, which may occur 6 months after initiating the treatment (HIV.gov 2019). It has been reported that undetectable viral loads significantly reduce the chance of transmitting HIV from a HIV-positive mother to their child during pregnancy, labor, and delivery (HIV.gov 2019).

One key to successful treatment is to start HIV treatment as soon as possible as delaying HIV treatment will increase the risk of transmitting HIV to sexual partners, poorer outcomes form normal sicknesses, and developing AIDS (CDC 2022). There are two predominant forms of antiretroviral therapy treatment for HIV which include pills and shots (CDC 2022). The pills are for the initial treatment and the shots are given when individuals reach low viral loads (CDC 2022). A key to successful treatment of HIV in addition to initiating as soon as possible is the adherence to the prescribed dose schedule. Individuals that miss their shots or don't take their pills as prescribed are at risk for the virus to develop drug resistance (CDC 2022). This means that the virus has a greater chance of mutating and thus limiting successful HIV treatment, and importantly, if the virus does develop drug resistance, it is more likely that HIV will be transmitted by the individual (CDC 2022). Furthermore, if this HIV treatment is not effective, an individual will likely develop AIDS.

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CHAPTER 10

Methods

This report compiles behavioral and mental health data that are available publicly from various sources or upon request from the state agencies that conducted data collection. Specifically, the data on substance use and consequences, as well as data on mental health and suicide, were used to describe the epidemiological profile for the state of Indiana. All the graphics presented in this report can also be found on the Indiana State Epidemiological Profile Dashboard, accessed through https://www.in.gov/fssa/dmha/substance-misuse-prevention-and-mental-health-promotion/prevention-partners/state-epidemiological-outcomes-workgroup/.

The SEOW workgroup identified several indicators from various national and state data sources that were relevant to monitor substance use and mental health based on relevance, timeliness, validity, and representation. These measures allow us to identify emerging trends related to behavioral health. We analyzed patterns in type of drug choice, consumption and consequences of alcohol, tobacco, marijuana, opioids, and stimulants, in addition to the prevalence and consequences of mental illness. We prioritized data that allows for national comparisons and regional/sub-state comparisons were compiled if the data was available. We also examined trends over time and across demographic groups such as gender, race/ethnicity, and age. This report depicts substance use among Indiana youth as well as the adult population. We used the statistical software - STATA for analysis and data curation. The latest data available from all sources were obtained in each annual report. For missing data on intermittent years, we have indicated them as a note under the respective graphic.

Wherever possible, we use statistical significance to show if the estimates between two groups are statistically different from each other. In our report, the statistical significance was determined either by a p-value of 0.05 or less, or by 95% confidence interval (CI).

While we do provide a comprehensive outlook on substance abuse and mental health in the state of Indiana, limitations in data collection and usage restrict us from providing precise estimates. First, different data sources use different collection methods and definitions. Therefore, we may not be able to compare data across sources. Second, some measures used in this report are not available for certain geographies, such as national or county level data. Even when the data is available for sub-state populations, such as those at a county level, the small sample sizes can lead to unreliable estimates. Third, most of the survey data included in this report is derived from self-reported information. Although self-reported data is usually reliable, respondents may provide the responses based on their physical/mental status at the time of survey or may alter their answers for questions related to illegal substance abuse. Finally, there may not be representation from priority and special populations in several data sources due to small sample size or lack of information.

DATA SOURCE LIST

Alcohol Related Disease Impact (ARDI)

Source: Center for Disease Control and Prevention

Description: ARDI is an online system used to estimate national and state alcohol-related health impacts. This may include deaths and years of potential life lost (YPLL). ARDI calculates these estimates by using alcohol-attributable fractions for various acute and chronic causes. These data are reported by age and sex for years 2015-2019.

Link: https://nccd.cdc.gov/DPH_ARDI/default/Default.aspx

Type: Annual, national, state level

Latest year of data available: 2015-2019

Automated Reporting Information Exchange System (ARIES)

Source: Indiana State Police (ISP)

Description: ARIES is a database that stores information pertaining to fatal automotive collisions. This data includes whether the collisions involved the influence of alcohol.

Link: https://www.ariesportal.com/?icon=fa-home

Type: Annual, state-level

Latest year of data available: 2021

Behavioral Risk Factor Surveillance System (BRFSS)

Source: Center for Disease Control and Prevention/County Health Rankings & Roadmaps 2021

Description: BRFSS is a state-based survey conducted annually to observe health-related risk behaviors such as alcohol consumption and tobacco use in relation to disease, serious injuries, and death as well as access to and utilization of preventative services. BRFSS surveys American citizens in all 50 states by telephone. This survey is currently the largest survey system in the world, surveying a little less than half a million participants annually.

Link: https://www.cdc.gov/brfss/index.html

Type of data: Annual, state level

Latest year of data available: 2021

CDC Wonder

Source: Center for Disease Control and Prevention

Description: CDC Wonder is an online database and communication system where public health information is easily accessible to state and local health departments, as well as academic public health communities. The purpose of CDC Wonder is to provide the public with access to detailed and specific information from the CDC.

Link: https://wonder.cdc.gov/

Type: National, state level

Latest year of data available: 2021

Child Removals

Source: Indiana Department of Child Services

Description: Data includes number of child removals due to parental alcohol/drug abuse by county.

Link: On-request data from the agency

Type: State level

Latest year of data available: SFY 2021

Indiana Adult Tobacco Survey (IATS)

Source: IDOH/TPC

Description: IATS is a survey used to identify and monitor the prevalence of tobacco use amongst Indiana resident adults.

Link: https://www.in.gov/health/tpc/

Type: Biennial, state level

Last year of data Available: 2019

Indiana College Substance Use Survey (ICSUS)

Source: Institute for Research on Addiction Behavior (IRAB)

Description: ICSUS is administered online to college students throughout the state of Indiana. The survey is used to determine the trends of substance use and associated behaviors on college campuses in Indiana. The goal of the survey is to provide college administrations with data to assist in understanding the occurrence of substance use on campuses and implement preventative programs for reducing prevalence use amongst students.

Link: https://irab.indiana.edu/current-projects/college-survey/index.html

Type: Annual, state level

Last year of data available: 2021

Indiana Meth Lab Statistics

Source: Indiana State Police (ISP)

Description: Indiana State Police collects data on meth lab seizures throughout the state of Indiana. Data collected includes arrests during lab seizures, number of seizures, and number of children who were present at meth labs during the time of seizure/arrest.

Link: https://www.in.gov/meth/statistics/

Type: Annual, state level

Last year of data available: 2022

Indiana Scheduled Prescription Electronic Collection & Tracking (INSPECT)

Source: IDOH/ Indiana Professional Licensing Agency (IPLA)

Description: INSPECT is a prescription monitoring program used to observe when prescription drugs or other controlled substances are administered. The goal of the online tracking system is to observe the trends of prescription drug abuse in Indiana. The online database is used for both medical professionals and law enforcement.

Link: Data available upon request at: https://www.in.gov/pla/inspect/

Type: Annual, state level

Last year of data available: 2020

Indiana Youth Survey (INYS)

Source: The Institute for Research on Addictive Behavior (IRAB), Indiana Prevention Resource Center (IPRC).

Description: The Indiana Youth Survey was created to access the prevalence of behavior health issues such as alcohol, tobacco, and illegal drug use, as well as mental

illness and problems gambling amongst youth throughout the state of Indiana. The survey is administered to students from grades 6 through 12. School administrators utilize these data to implement preventative services and school policies to help mitigate rising trends.
Link: https://inys.indiana.edu/survey-results
Type of Data: Annual, state level
Latest year of data available: 2022

Monitoring the Future Survey (MTF)

Source: National Institute on Drug Abuse (NIDA)
Description: The MTF survey in administered annually to assess drug and alcohol use amongst adolescent students across the country. The survey asks students to report their drug and alcohol use history throughout their lifetime, in the past month, and over the past year.
Link: https://nida.nih.gov/research-topics/trends-statistics/monitoring-future
Type of Data: Annual, national, state level
Latest year of data available: 2022

Indiana Youth Tobacco Survey (IYTS)

Source: Center for Disease Control and Prevention; Indiana Department of Health; Indiana Department of Health (IDOH) Tobacco Prevention and Cessation
Description: Indiana Youth Tobacco Survey (IYTS) is conducted to capture tobacco use amongst the youth enrolled in Indiana public schools. The data observed in the IYTS include tobacco use and cessation, exposure to secondhand smoke, along with social and environmental factors that contribute to tobacco use. Within the recent years, data has been included to observe marijuana and e-cigarette use.
Link: http://www.in.gov/isdh/tpc/2343.htm. ; http://www.cdc.gov/tobacco/data_statistics/surveys/NYTS/
Type of Data: Annual, state level
Latest year of data available: 2018

National Survey on Drug Use and Health (NSDUH)

Source: Substance Abuse and Mental Health Services Administration
Description: National Survey on Drug Use and Health is a survey administered to observe data on the misuse of prescription drugs and the prevalence of alcohol, tobacco, illegal drug use, and mental health disorders. NSDUH survey is conducted on state, substate, and national levels with the goal to identify and monitor trends of substance use and assess the need to implement preventative services to at risk populations.
Link: https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health
Type of Data: Annual, national, state, and substate levels
Latest year of data available: 2021

School Suspensions or Expulsions Related to Alcohol, Tobacco, and/or Drug Use

Source: Indiana Department of Education
Description: Data includes in-school suspensions/expulsions due to tobacco, alcohol or drugs.
Link: On-request data from the agency
Type: State level
Latest year of data available: 2020

Treatment Episode Data Set (TEDS)

Source: Substance Abuse and Mental Health Data Archive, Indiana Family and Social Services Administration
Description: TEDS provides information on drug history and demographic information for individuals who currently receive or have received treatment for substance abuse. Data provided for individuals who are 12+ can include hospital admissions and discharge records, substance abuse characteristics, and demographic information such as age, sex, and race/ethnicity. The data are collected from facilities and compiled into state agency data systems.
Link:
Type of Data: Annual, national, state, region level
Latest year of data available: 2020

Youth Risk Behavior Surveillance System (YRBSS)

Source: Center for Disease Control and Prevention
Description: YRBSS is a system of multiple surveys conducted to determine and monitor the prevalence of health-related behaviors amongst youth which can lead to serious and potentially fatal outcomes. The survey is administered on a national level as a school-based survey as well as on a local/state level through education and health agencies. This system of survey focuses on six different categories including behaviors leading to intentional injuries or self-inflicted violence, sexual behaviors leading to unintentional pregnancy and sexually transmitted disease, alcohol, tobacco and drug use, reduced physical activity, and poor dietary behaviors.
Link: https://www.cdc.gov/healthyyouth/data/yrbs/overview.htm
Type: Biennially, national, state level
Last year of data available: 2021

Data Set	Source	Most Recent Data	How to Obtain
Alcohol-Related Disease Impact (ARDI) Database	CDC	2015-2019	https://nccd.cdc.gov/DPH_ARDI/default/Default.aspx
Automated Reporting Information Exchange System (ARIES)	ISP	2021	https://www.ariesportal.com/?icon=fa-home
Behavioral Risk Factor Surveillance System (BRFSS)	CDC	2021	https://www.cdc.gov/brfss/index.html
Indiana Youth Tobacco Survey (IATS)	IDOH/TPC	2019	https://www.in.gov/health/tpc/
Indiana College Substance Use Survey (ICSUS)	IRAB	2021	https://irab.indiana.edu/current-projects/college-survey/index.html
Indiana Youth Survey (INYS)	Indiana University Prevention Insights	2022	https://inys.indiana.edu/survey-results
Indiana Youth Tobacco Survey (IYTS)	IDOH/TPC	2018	http://www.in.gov/isdh/tpc/2343.htm.
Monitoring the Future (MTF) Survey	NIDA	2022	https://nida.nih.gov/research-topics/trends-statistics/monitoring-future
Child Removals	IDCS	SFY2022	On-request data
School Suspensions or Expulsions Related to Alcohol, Tobacco, and/or Drug Use	IDOE	2020	On-request data
National Survey on Drug Use and Health (NSDUH)	SAMHSA	2021	https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health
Treatment Episode Data Set (TEDS)	SAMHSA	2020	https://www.samhsa.gov/data/data-we-collect/teds-treatment-episode-data-set
Treatment Episode Data Set (TEDS)	DMHA	SFY2022	On-request data
Youth Risk Behavior Surveillance System (YRBSS)	CDC	2021	https://www.cdc.gov/healthyyouth/data/yrbs/overview.htm

CDC - Centers for Disease Control and Prevention
DMHA - Indiana Division of Mental Health and Addiction
IDCS - Indiana Department of Child Services
IDOE - Indiana Department of Education
IDOH - Indiana Department of Health
IDOH/TPC - Indiana Department of Health - Indiana Tobacco Prevention & Cessation
IRAB - Institute for Research on Addictive Behavior
ISP - Indiana State Police
NIDA - National Institute on Drug Abuse
SAMHSA - Substance Abuse and Mental Health Services Administration
SAMHDA - Substance Abuse and Mental Health Data Archive

APPENDIX I

Indicators

Category	Youth or Young Adults Indicators	Adult and Overall Indicators
Alcohol	- Middle and High School Current Alcohol Use (IYS and Montitoring the Future Survey) - Middle and High School Monthly and Binge Alcohol Use (IYS) - Child Removals Due to Parental Alcohol Abuse (Indiana DCS) - School Suspensions Related to Alcohol Use (Indiana DOE)	- Current Alcohol Use (NSDUH) - Alcohol Use Disorder (NSDUH) - Age-adjusted Alcohol-attributable Mortality Rates (CDC Wonder) - Treatment Episodes with Alcohol Use and Dependence at Treatment Admission (TEDS - Conditions Directly Attributable to Alcohol (ARDI) - Alcohol Use in Past 30 Days (CDC BRFSS) - Alcohol-related collisions - Binge Drinking in Past 30 Days (CDC BRFSS)
Tobacco	- Middle and High School Tobacco Use (IYTS) - High School Current Use of Cigarettes and Electronic Vapor Products (YBRSS) - Middle and High School Monthly Cigarette and Vaping (IYS and Monitoring the Future Survey) - Past Month Use of Nicotine College Students (ICSUS) - School Suspensions Related to Tobacco Use (Indiana DOE)	- Past Month Tobacco Use (NSDUH) - Past Month Cigarette Use (NSDUH) - Adult Smoking Prevalence (BRFSS) - Current Cigarette Use (BRFSS) - High School Current Tobacco Use - Adult Smoking Prevalence and Chronic Disease Outcomes (ATS)
Marijuana	- High School Current Marijuana Use (YRBSS) - Middle and High School Current Marijuana Use (IYS)	- Current Marijuana Use (NSDUH) - Treatment Episodes Marijuana Use and Dependence at Treatment Admission (TEDS)
Opioids	- High School Used Heroin at Least Once in Lifetime (YRBSS) - Middle and High School Monthly Heroin Use (IYS)	- Opioids Dispensed (INSPECT) - Treatment Episodes Prescription Opioid and Dependence at Treatment Admissions (TEDS) - Drug Overdose Deaths (IDOH) - Pain Reliever Use Past Year (NSDUH) - Heroin Use Past Year (NSDUH)
Stimulants	- Middle and High School Lifetime Use of Cocaine, Meth (YRBSS) - Middle and High School Current Meth and Cocaine Use (IYS and Monitoring the Future Survey) - Children Taken from Meth Lab Homes (Indiana Meth Lab Statistics)	- Cocaine Use Past Year (NSDUH) - Clandestine Meth Labs Seized and Arrests Made (Indiana Meth Lab Statistics) - Treatment Episodes Cocain, Meth, and Prescription Stimulant Use and Dependence at Treatment Admissions (TEDS) - Methamphetamine Use Past Year (NSDUH).

Category	Youth or Young Adults Indicators	Adult and Overall Indicators
Mental Health	- High School Sad or Hopeless (YRBSS) - Middle and High School Sad or Hopeless, Considered Suicide, or Made Suicide Plan in Past 12 Months (IYS) - High School Attempted Suicide in Past Year (YRBSS)"	- Demographics of SMI Adults and SED Children Served by Indiana DMHA (SAMHSA) - Age-adjusted Suicide Mortality Rate (CDC Wonder - Mental Illness or Serious Mental Illness in Past Year (NSDUH) - At Least One Major Depressive Episode in the Past Year (NSDUH) - History of Depression (BRFSS) - Mental Health Indicators (BRFSS)
Problem gambling		- Reported gambling estimates in Indiana - Population estimates and percentages of Indiana adults at risk of developing problem gambling using DSM-V and NODS - Population estimates and percentages of Indiana adults falling in problem gambling severity categories using the Problem Gambling Severity Index (PGSI) - Percentages of Indiana adults who used selected substances in the past month by problem gambling severity - Mean number of mentally unhealthy days reported in past month by problem gambling - Population estimates and percentages of Indiana adults who had ever seen or heard of gambling hotline or sought treatment for gambling problem - Percentages of Indiana adults unaware of gambling hotlines or have sought treatment for gambling problem by problem gambling severity categories
Viral Hepatitis, HIV, and AIDS		- HIV/AIDS Prevalence rates in Indiana - Chlamydia rates in Indiana - Early Non-Primary, Non-Secondary Syphilis rates in Indiana - Gonorrhea rates in Indiana - Late or Unknown Duration Syphilis rates in Indiana - Newly Diagnosed HIV/AIDS rates in Indiana - Primary and Secondary Syphilis, Indiana - Rates of Newly Reported Acute Hepatitis B Cases, Indiana - Rates (per 100,000 population) of Newly Reported Acute Hepatitis B Cases, by Gender - Rates (per 100,000 population) of Newly Reported Acute Hepatitis B Cases, by Age, Indiana - Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis B Cases, by Race

Category	Youth or Young Adults Indicators	Adult and Overall Indicators
Viral Hepatitis, HIV, and AIDS		- Rates of Newly Reported Acute and Chronic Hepatitis B Cases, Indiana - Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis B Cases, by Race, Indiana - Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis B Cases, by Ethnicity, Indiana - Rates (per 100,000 population) of Newly Reported Acute Hepatitis C Cases - Rates of Newly Reported Acute Hepatitis C - Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis C Cases, Indiana, by Gender - Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis C Cases, Indiana, by Age - Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis C Cases, Indiana, by Race - Rates (per 100,000 population) of Death with HCV Listed as a Cause of Death Among Residents - Rates (per 100,000 population) of Newly Reported Acute and Chronic Hepatitis C Cases, Indiana, by Ethnicity

APPENDIX II

Details of Indicators

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
2	Alcohol	Alcohol	Figure 2.1	Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Current Alcohol Use (National Survey on Drug Use and Health, 2009–2021)	SAMHSA-NSDUH, 2022	2020	10
2		Alcohol	Figure 2.2	"Percentage of Indiana Population Reporting Current Alcohol Use by Age Group (National Survey on Drug Use and Health, 2009–2021)"	SAMHSA-NSDUH, 2022	2020	10
2		Alcohol	Figure 2.3	Current Binge Drinking in Indiana and the U.S. by Age Group (National Survey on Drug Use and Health, 2021)	SAMHSA-NSDUH, 2022	2020	11
2		Alcohol	Table 2.1	"Percentage of Indiana Adults Having Used Alcohol in the Past 30 Days, by Gender, Race/Ethnicity, and Age Group in 2021 (Behavioral Risk Factor Surveillance System, 2021)"	CDC-BRFSS, 2022	2020	11
2		Alcohol	Figure 2.4	"Percentage of Indiana and U.S. Adults Reporting Binge Drinking in the Past 30 Days (Behavioral Risk Factor Surveillance System, 2012–2021)"	CDC-BRFSS, 2022	2020	12
2		Alcohol	Table 2.2	"Percentage of Indiana Residents Who Engaged in Binge Drinking in the Past 30 Days, by Gender, Race/Ethnicity, and Age Group (Behavioral Risk Factor Surveillance System, 2021)"	CDC-BRFSS, 2022	2020	12
2		Alcohol	Figure 2.5	"Percentage of Indiana and U.S. 8th, 10th, and 12th Grade Students Reporting Monthly Alcohol Use (Indiana Youth Survey and Monitoring the Future Survey, 2022)"	Gassman et al., 2022; Inter-university Consortium for Political and Social Research, University of Michigan, 2022	2020	13

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
2	Alcohol	Alcohol	Figure 2.6	Percentage of Indiana and U.S. High School Seniors (12th Grade) Reporting Monthly Alcohol Use (Indiana Youth Survey and Monitoring the Future Survey, 2011–2020)	Gassman et al., 2020; Inter-university Consortium for Political and Social Research, University of Michigan, 2020	2020	14
2		Alcohol	Figure 2.7	"Percentage of Indiana and U.S. Population Ages 12 and Older with Alcohol Use Disorder (National Survey on Drug Use and Health, 2009–2020)"	"Section 2 PE Tables," 2022	2020	15
2		Alcohol	Figure 2.8	"Percentage of Treatment Episodes in Indiana and the United States with Alcohol Use and Alcohol Dependence Reported at Treatment Admission (Treatment Episode Data Set, 2008–2020)"	"Treatment Episode Data Set," 2022	2019	15
2		Alcohol	Table 2.3	"Percentage of Treatment Episodes in Indiana with Alcohol Use and Alcohol Dependence Reported at Treatment Admission, by Gender, Race, Ethnicity, and Age Group (Treatment Episode Data Set, 2020)"	"Treatment Episode Data Set," 2022	2019	16
2		Alcohol	Figure 2.9	"Age-Adjusted Alcohol-attributable Mortality Rates per 100,000 Population in Indiana and the United States (CDC WONDER, 2009–2021)"	CDC, 1999-2021	2020	17
2		Alcohol	APPENDIX 2A	"Percentage of Indiana Students Reporting Monthly and Binge Alcohol Use, by Region and Grade (Indiana Youth Survey, 2022)"	Gassman et al., 2022	2020	19
2		Alcohol	APPENDIX 2B	"Number of Treatment Episodes with Alcohol Use and Dependence Reported at Treatment Admission in Indiana, by County (Treatment Episode Data Set, SFY 2022) Treatment Episodes"	Indiana Family and Social Services Administration, 2023	2021	20
2		Alcohol	APPENDIX 2C	"Conditions that are Directly Attributable to Alcohol in Indiana (Alcohol-Related Disease Impact, Based on Averages from 2015-2019)"	Centers for Disease Control and Prevention, 2015-2019	2019	23
2		Alcohol	APPENDIX 2D	"Number and Rate (per 1,000) of All and Fatal Alcohol-Related Collisions in Indiana, by County (Automated Reporting Information Exchange System, 2021)"	Indiana State Police, 2022	2020	24

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
2	Alcohol	Alcohol	APPENDIX 2E	Child Removals, Total and Due to Parental Alcohol Abuse, SFY 2022	Indiana Department of Child Services, 2023	2021	27
2		Alcohol	APPENDIX 2F	"School Suspensions or Expulsions Related to Alcohol, Tobacco, and/or Drug Use (2020)"	Indiana Department of Education, 2021	2020	28
3	Tobacco	Tobacco	Figure 3.1	"Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Any Tobacco Use in the Past Month (National Survey on Drug Use and Health, 2010–2021)"	SAMHSA, 2022	2020	34
3		Tobacco	Figure 3.2	"Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cigarette Use in the Past Month (National Survey on Drug Use and Health, 2010–2021)"	SAMHSA, 2022	2020	34
3		Tobacco	Figure 3.3	"Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cigarette Use in the Past Month (National Survey on Drug Use and Health, 2021)"	SAMHSA, 2022	2020	35
3		Tobacco	Figure 3.4	"Percentage of Indiana and U.S. Population (18 Years and Older) Reporting Current Cigarette Use (Behavioral Risk Factor Surveillance System, 2012–2021)"	CDC-BRFSS, 2022	2020	35
3		Tobacco	Table 3.1	"Adult Smoking Prevalence in Indiana, by Gender, Race/Ethnicity, Age Group, Educational Attainment, and Income Level (Behavioral Risk Factor Surveillance System, 2021)"	CDC-BRFSS, 2022	2020	36
3		Tobacco	Table 3.2	Intentions to Quit Smoking among Current Smokers (Indiana Adult Tobacco Survey, 2019)	IDOH/TPC, 2020	2019	37
3		Tobacco	Figure 3.5	Tobacco Use among Indiana High School Students (9th–12th Grade) (Indiana Youth Tobacco Survey, 2004-2018)	IDOH/TPC, 2020	2018	38
3		Tobacco	Figure 3.6	"Percentage of Indiana Middle School and High School Students Reporting Current Tobacco and Cigarette Use (Indiana Youth Tobacco Survey, 2004–2018)"	IDOH/TPC, 2020	2018	38

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
3	Tobacco	Tobacco	Table 3.3	"Current Use of Tobacco Products in Indiana and U.S. High School Students (Youth Risk Behavior Surveillance System, 2021)"	CDC, 1991-2021	2015	39
3		Tobacco	Figure 3.7	"Rates of Current Use of Cigarettes and Electronic Vapor Products in Indiana High School Students (9th–12th Grade), by Gender (Youth Risk Behavior Surveillance System, 2021)"	CDC, 1991-2021	2015	39
3		Tobacco	Figure 3.8	"Rates of Current Use of Cigarettes and Electronic Vapor Products in Indiana High School Students (9th–12th Grade), by Race/Ethnicity (Youth Risk Behavior Surveillance System, 2021)"	CDC, 1991-2021	2015	40
3		Tobacco	Figure 3.9	"Rates of Current Use of Cigarettes and Electronic Vapor Products in Indiana High School Students (9th– 12th Grade), by Grade (Youth Risk Behavior Surveillance System, 2021)"	CDC, 1991-2021	2015	40
3		Tobacco	Figure 3.10	"Monthly Cigarette Use and Vaping among 8th, 10th, and 12th Grade Students, Indiana and the United States (Indiana Youth Survey and Monitoring the Future Survey, 2022)"	Gassman et al., 2022; Inter-university Consortium for Political and Social Research, 2022	2020	41
3		Tobacco	Figure 3.11	"Monthly Cigarette Use and Vaping among 12th Grade Students in Indiana and the United States (Indiana Youth Survey: 2010–2022; and Monitoring the Future Survey, 2010–2022)"	Gassman et al., 2022; Inter-university Consortium for Political and Social Research, 2022	2020	42
3		Tobacco	Table 3.4	"Rates of Past-Month Use of Nicotine Products among Indiana College Students (Indiana College Substance Use Survey, 2021)"	King & Jun, 2021	2021	42
3		Tobacco	Figure 3.12	Percentage of Smoke-free Homes and Workplaces in Indiana (Adult Tobacco Survey, 2002–2019)	ISDH/TPC, 2020	2019	44
3		Tobacco	APPENDIX 3A	Percentage of Indiana Middle School and High School Students Who Currently Use Cigarettes, E-Cigarettes, or Smokeless Tobacco by Gender, Race/Ethnicity, and School Grade (Indiana Youth Tobacco Survey, 2020)	IDOH/TPC, 2019	2020	45

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
3	Tobacco	Tobacco	APPENDIX 3B - Part 1	Percentage of Indiana Students Reporting Monthly Cigarette Use, by Region and Grade (Indiana Youth Survey, 2022)	Gassman et al., 2022	2020	46
3		Tobacco	APPENDIX 3B - Part 2	Percentage of Indiana Students Reporting Monthly E-Cigarette Use, by Region and Grade (Indiana Youth Survey, 2022)	Gassman et al., 2022	2020	46
3		Tobacco	APPENDIX 3C	"Number of Incidents and Unique Students Involved in Suspensions/Expulsions due to Tobacco Use in Indiana, Academic Year 2019-20"	Indiana Department of Education, 2021	2020	47
3		Tobacco	APPENDIX 3D - Part 1	Adult Smoking Prevalence and Chronic Disease Outcomes, by County	IDOH/TPC, 2022	2020	49
3		Tobacco	APPENDIX 3D - Part 2	Adult Smoking Prevalence and Chronic Disease Outcomes, by County	IDOH/TPC, 2021	2020	52
4	Marijuana	Marijuana	Figure 4.1	"Percentage of Indiana and U.S. Population (Ages 12 and Older) Reporting Current Marijuana Use (National Survey on Drug Use and Health, 2021)"	SAMHSA, 2022	2020	58
4		Marijuana	Figure 4.2	"Percentage of Indiana Residents Reporting Current Marijuana Use, by Age Group (National Survey on Drug Use and Health, 2008–2021)"	SAMHSA, 2022	2020	58
4		Marijuana	Figure 4.3	"Percentage of Indiana and U.S. High School Students Currently Using Marijuana (Youth Risk Behavior Surveillance System, 2003–2021)"	CDC, 2021	2019	59
4		Marijuana	Table 4.1	"Percentage of Indiana and U.S. High School Students Reporting Current (Past Month) Marijuana Use, by Grade, Gender, and Race/Ethnicity (Youth Risk Behavior Surveillance System, 2021)"	CDC, 2022	2015	60
4		Marijuana	Figure 4.4	"Percentage of Indiana and U.S. 8th, 10th, and 12th Grade Students Reporting Current Marijuana Use (Indiana Youth Survey and Monitoring the Future Survey, 2009–2022)"	Gassman et al., 2022; ICPSR, 2022	2020	60
4		Marijuana	Firgure 4.5	"Percentage of Indiana and U.S. Treatment Episodes with Marijuana Use and Marijuana Dependence Reported at Treatment Admission (Treatment Episode Data Set, 2007–2020)"	SAMHDA, Treatment Episode Data Set 2022	2019	61

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
4	Marijuana	Marijuana	Table 4.2	"Percentage of Indiana Treatment Admissions with Reported Marijuana Use and Dependence, by Gender, Race, and Age Group (Treatment Episode Data Set, 2020)"	SAMHDA, Treatment Episode Data Set 2022	2019	62
4		Marijuana	APPENDIX 4A	Percentage of Indiana Students Reporting Monthly Marijuana Use, by Region and Grade (Indiana Youth Survey, 2022)	Gassman et al., 2022	2020	64
4		Marijuana	APPENDIX 4B	"Number of Treatment Admissions with Marijuana Use and Dependence Reported at Treatment Admission in Indiana, by County (Substance Abuse Population by County/Treatment Episode Data Set, SFY 2022)"	Indiana Family and Social Services Administration, 2023	2021	65
5	Opioids	Prescription Drugs	Figure 5.1	Number and Rate (per 1,000 Population) of Opioids Dispensed in Indiana per Quarter (INSPECT, 2017- 2022)	IDOH, 2022a and IDOH, 2022b	2021	72
5		Prescription Drugs	Figure 5.2	"Prevalence of Past-Year Pain Reliever Use in Indiana and the United States, by Age Group (National Survey on Drug Use and Health, 2021)"	SAMHSA-NSDUH, 2022	2020	72
5		Heroin	Figure 5.3	"Percentage of Indiana and U.S. Population (12 years and older) Reporting Past-Year Heroin Use, by Age Group (National Survey on Drug Use and Health, 2021)"	SAMHSA-NSDUH, 2022	2020	73
5		Heroin	Figure 5.4	"Percentage of Indiana and U.S. High School Students (Grades 9 through 12) Who Have Used Heroin at Least Once During their Lifetime (Youth Risk Behavior Surveillance System, 2003–2021)"	CDC, 2003–2021	2019	74
5		Heroin	Figure 5.5	Percentage of Indiana 7th through 12th Grade Students Reporting Monthly Heroin Use (Indiana Youth Survey, 2022)	Gassman et al., 2022	2020	74
5		Heroin	Figure 5.6	"Percentage of Indiana and U.S. 12th Grade Students Reporting Monthly Heroin Use (Indiana Youth Survey and Monitoring the Future Survey, 2009–2022)"	"Gassman et al., 2022; Inter-university Consortium for Political and Social Research, University of Michigan, 2022 "	2020	75

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
5	Opioids	Prescription Drugs	Table 5.1	"Percentage of Indiana Treatment Episodes with Prescription Opioid Misuse and Dependence Reported at Treatment Admission, by Gender, Race, Ethnicity, and Age Group (Treatment Episode Data Set, 2020)"	SAMHDA Treatment Episode Data Set, 2022	2019	76
5		Prescription Drugs	Figure 5.7	"Percentage of Indiana and U.S. Treatment Episodes with Prescription Opioid Misuse and Dependence Reported at Treatment Admission (Treatment Episode Data Set, 2009–2020)"	SAMHDA Treatment Episode Data Set, 2022	2019	77
5		Heroin	Figure 5.8	"Percentage of Indiana and U.S. Treatment Episodes with Heroin Use and Dependence Reported at Treatment Admission (Treatment Episode Data Set, 2009–2020)"	SAMHDA Treatment Episode Data Set, 2022	2019	77
5		Heroin	Table 5.2	"Percentage of Indiana Treatment Episodes with Heroin Use and Dependence Reported at Treatment Admission, by Gender, Race, Ethnicity, and Age Group (Treatment Episode Data Set, 2020)"	SAMHDA Treatment Episode Data Set, 2022	2019	78
5		All Opiods	Figure 5.9	Drug Overdose Deaths Involving Opioids, Rate per 100,000 Population (Indiana, 2011–2021)	IDOH, 2022a	2020	79
5		Prescription Drugs	APPENDIX 5A	"Number and Rate (per 1,000 Population) of Opioid Dispensations in Indiana, by County of Patient's Residence (INSPECT, 2022)"	Indiana PDMP Dashboard (INSPECT, 2022)	2021	80
5		Heroin	APPENDIX 5B	Percentage of Indiana Students Reporting Monthly Heroin Use, by Region and Grade (Indiana Youth Survey, 2022)	Gassman et al., 2022	2020	82
5		All Opiods	APPENDIX 5C	"Number of Treatment Episodes with Prescription (Rx) Opioid Misuse and Dependence and Heroin Use and Dependence Reported at Treatment Admission in Indiana, by County (Treatment Episode Data Set, SFY 2022)"	Indiana Family and Social Services Administration, 2023	2020	83
6	Stimulants	Cocaine	Figure 6.1	"Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cocaine Use in the Past Year, by Age Group (National Survey on Drug Use and Health, 2021)"	SAMHSA-NSDUH, 2022	2020	89

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
6	Stimulants	Cocaine	Figure 6.2	"Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cocaine Use in the Past Year (National Survey on Drug Use and Health, 2009-2021)"	SAMHSA-NSDUH, 2022	2020	89
6		Methamphetamine	Figure 6.3	"Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Methamphetamine Use in the Past Year, by Age Group (National Survey on Drug Use and Health, 2021)"	SAMHSA-NSDUH, 2022	2020	90
6		Cocaine and Methamphetamine	Table 6.1	"Percentage of Indiana and U.S. High School Students (Grades 9 through 12) Reporting Lifetime Cocaine or Methamphetamine Use, by Gender, Race/Ethnicity, and Grade (Youth Risk Behavior Surveillance System, 2021)"	CDC, 2022	2015	91
6		Cocaine and Methamphetamine	Figure 6.4	"Percentage of Indiana and U.S. High School Students (9th-12th Grade) Reporting Lifetime Methamphetamine Use (Youth Risk Behavior Surveillance System, 2003-2021)"	CDC, 2003-2021	2019	91
6		Cocaine	Figure 6.5	"Percentage of 8th, 10th, and 12th Grade Students Reporting Current Cocaine/Crack Use (Indiana Youth Survey and Monitoring the Future Survey, 2009-2022)"	Gassman et al., 2022; ICPSR, 2022	2020	92
6		Methamphetamine	Figure 6.6	"Percentage of 8th, 10th, and 12th Grade Students Reporting Current Meth Use (Indiana Youth Survey and Monitoring the Future Survey, 2009-2022)"	Gassman et al., 2022; ICPSR, 2022	2020	93
6		All Stimulants	Table 6.2	"Stimulant Misuse and Dependence (Primary Use) Reported at Substance Use Treatment Admission in Indiana, by Gender, Race, Ethnicity, and Age Group (Treatment Episode Data Set, 2020)"	SAMHDA Treatment Episode Data Set, 2022	2019	94
6		Methamphetamine	Figure 6.7	"Percentage of Treatment Episodes with Reported Meth Use and Dependence, Indiana and the United States (Treatment Episode Data Set, 2008-2020)"	SAMHDA Treatment Episode Data Set, 2022	2019	94
6		Cocaine	Figure 6.8	"Percentage of Treatment Episodes with Reported Cocaine Use and Dependence, Indiana and the United States (Treatment Episode Data Set, 2008-2020)"	SAMHDA Treatment Episode Data Set, 2022	2019	95

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
6		Prescription Drugs	Figure 6.9	"Percentage of Treatment Episodes with Reported Prescription Stimulant Use and Dependence, Indiana and the United States (Treatment Episode Data Set, 2008-2020)"	SAMHDA Treatment Episode Data Set, 2022	2019	95
6		Methamphetamine	Figure 6.10	"Number of Clandestine Methamphetamine Labs Seized and Number of Arrests Made at Methamphetamine Labs by the Indiana Law Enforcement Agencies (Indiana Meth Lab Statistics, 2010-2022)"	ISP, 2023	2021	96
6		Methamphetamine	Figure 6.11	"Number of Indiana Children Taken by the Indiana State Police from Methamphetamine Lab Homes (Indiana Meth Lab Statistics, 2010-2022)"	ISP, 2023	2021	97
6		Cocaine and Methamphetamine	APPENDIX 6A	"Percentage of Indiana Students Reporting Monthly Cocaine and Methamphetamine Use, by Region and Grade (Indiana Youth Survey, 2022)"	Gassman et al., 2022	2018	98
6		All Stimulants	APPENDIX 6B	"Number of Treatment Episodes with Cocaine, Meth, and Prescription Stimulant Use and Dependence Reported at Treatment Admission in Indiana, by County (Treatment Episode Data Set, SFY 2022)"	Indiana Family and Social Services Administration, 2023	2021	99
7	Mental Health		Figure 7.1	"Percentage of Indiana and U.S. Population (18 Years and Older) Reporting Any Mental Illness (AMI) or Serious Mental Illness (SMI) in the Past Year, by Age Group (National Survey on Drug Use and Health, 2019-2021)"	SAMHSA-NSDUH, 2022	2020	104
7			Figure 7.2	"Percentage of Indiana and U.S. Population (18 Years and Older) Reporting Any Mental Illness (AMI) or Serious Mental Illness (SMI) in the Past Year (National Survey on Drug Use and Health, 2010–2021)"	SAMHSA-NSDUH, 2022	2020	104
7			Figure 7.3	"Percentage of Indiana and U.S. Population Reporting at Least One Major Depressive Episode in the Past Year, by Age Group (National Survey on Drug Use and Health, 2019-2021)"	SAMHSA-NSDUH, 2022	2020	105
7			Figure 7.4	"Percentage of Indiana and U.S. Population (18 Years and Older) Reporting at Least One Major Depressive Episode in the Past Year (National Survey on Drug Use and Health, 2009–2021)"	SAMHSA-NSDUH, 2022	2020	106

Chapter	Category	Substance	Report Reference	Reference Name	Source	2022-23 Report Latest Year	Page number of report
7	Mental Health		Table 7.1	"Percentage of Indiana Population (18 Years and Older) Reporting a History of Depression (Behavioral Risk Factor Surveillance System, 2021)"	CDC, 2022	2020	106
7			Table 7.2	Percentage of Indiana and U.S. High School Students (Grades 9 through 12) Reporting Feeling Sad or Hopeless (Youth Risk Behavior Surveillance System, 2015)	CDC, 2022	2015	107
7			Figure 7.5	"Percentage of Students who Experienced Feeling Sad or Hopeless, Considered Suicide, or Made a Suicide Plan in the Past 12 Months, Grades 6 through 12 (Indiana Youth Survey, 2022)"	Gassman et al., 2022	2020	108
7			Table 7.3	"Demographic Characteristics of Adults with SMI and Children with SED Served by the Indiana Division of Mental Health and Addiction, FY 2022"	DMHA, 2023	2020	109
7			Table 7.4	"Percentage of Indiana and U.S. High School Students (Grades 9 through 12) Reporting Attempting Suicide in the Past Year (Youth Risk Behavior Surveillance System, 2021)"	CDC, 2022	2015	110
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APPENDIX III

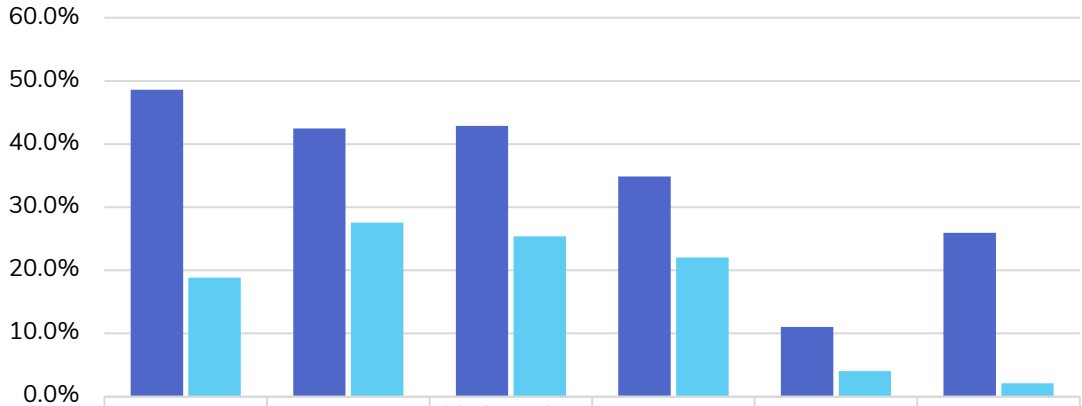
Polysubstance Use

Using the treatment episode dataset on admissions, we first estimate the usage of 11 categories of drugs/substances such as alcohol, marijuana, cocaine, methamphetamine, opioid (consists of heroin, nonprescription methadone, other opiates, and synthetics including fentanyl), prescription stimulants (other amphetamines and other stimulants), hallucinogens (consists of Phencyclidine and hallucinogens), sedatives (contains benzodiazepines, barbiturates, other sedatives or hypnotics), and other drugs (other tranquilizers, inhalants, over-the-counter medications).[1]

We then identify the top 5 substances that the patients used in the Indiana treatment episodes admission dataset in SFY 2022 either as a primary, secondary, or tertiary drug. Figure IIIA shows the top 5 substances used (primary, secondary or tertiary use) and their corresponding drug dependence (primary use). We find that from the 21,327-treatment episode admissions dataset, marijuana, alcohol, methamphetamine, opioid, and cocaine were among the top 5 substances reportedly used by the patients in terms of dependence (primary use) or any use (primary or secondary or tertiary).[1]

Next, for each of these top 5 substances, we estimate the polysubstance use across other drugs. Figures IIIB to IIIF show the substance use along with those reportedly using a particular substance as a primary/secondary/tertiary use. The figures also show the substance use among those who used a primary substance in the treatment episode data. We find that among those using marijuana, 37.9% of admissions reported consuming alcohol, followed by methamphetamine (39.6%) and opioids (24.5%). Among users of alcohol, about 43.3% of admissions reported marijuana use, 23.2% methamphetamine use and 14.9% opioid use. With methamphetamine users, the incidence of marijuana and opioid use was high with 44.9% and 42.9%, respectively, of admissions reporting their use, followed by 23% using alcohol. Among opioid users, 52.8% of admissions reported using methamphetamine, followed by marijuana (34.2%) and alcohol (18.2%). Finally, among cocaine users, 40.6% reported using marijuana, 40% used alcohol, and 31.5% used opioids.[1]

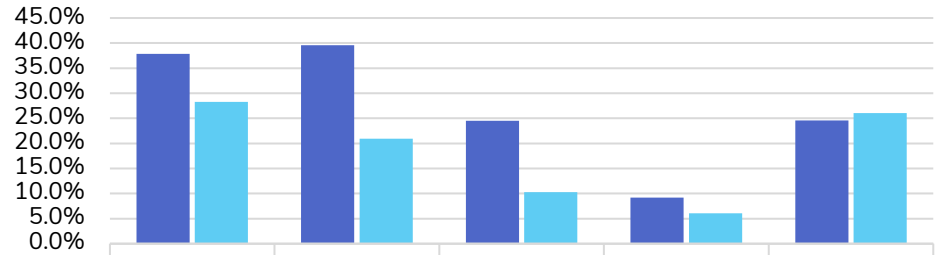
Figure IIIA. Top 5 substance use and dependence reported at Indiana treatment episode data (Treatment Episode Dataset, SFY 2022)



	Marijuana	Alcohol	Methamphetamine	Opioid	Cocaine	Others
Substance Use	48.6%	42.5%	42.9%	34.8%	11.0%	25.9%
Substance Dependence	18.8%	27.6%	25.4%	22.0%	4.0%	2.1%

Source: Indiana Family and Social Service Administration, 2023

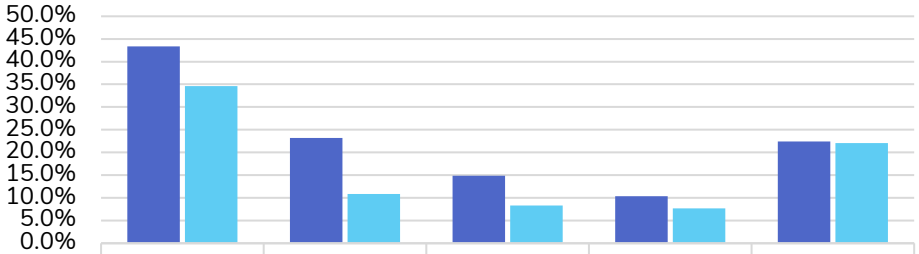
Figure IIIB. Substances involving marijuana-related polysubstance use (Treatment Episode Dataset, SFY 2022)



	Alcohol	Methamphetamine	Opioid	Cocaine	Others
Substance use along with those using Marijuana	37.9%	39.6%	24.5%	9.2%	24.6%
Substance use along with those who are Marijuana dependent	28.3%	20.9%	10.3%	6.1%	26.0%

Source: Indiana Family and Social Service Administration, 2023

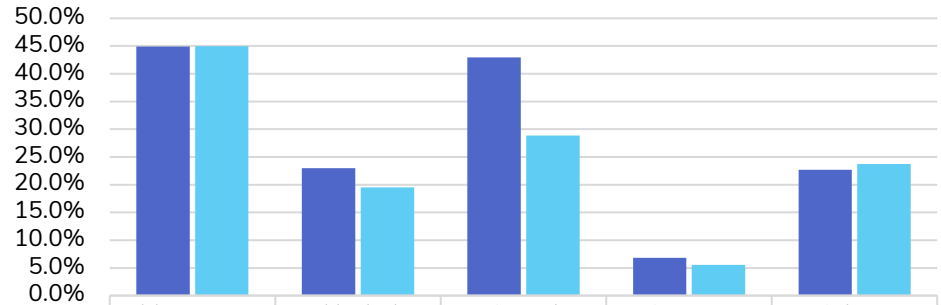
Figure IIIC. Substances involving alcohol-related polysubstance use (Treatment Episode Dataset, SFY 2022)



	Marijuana	Methamphetamine	Opioid	Cocaine	Others
Substance use along with those using Alcohol	43.3%	23.2%	14.9%	10.4%	22.4%
Substance use along with those who are Alcohol dependent	34.6%	10.9%	8.3%	7.7%	22.0%

Source: Indiana Family and Social Service Administration, 2023

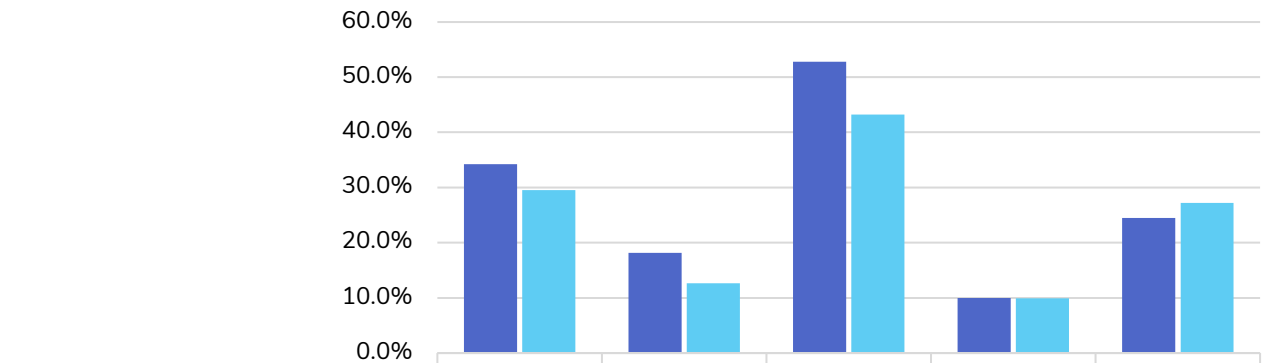
Figure IIID. Substances involving methamphetamine-related polysubstance use (Treatment Episode Dataset, SFY 2023)



	Marijuana	Alcohol	Opioid	Cocaine	Others
Substance use along with those using Methamphetamine	44.9%	23.0%	42.9%	6.8%	22.7%
Substance use along with those who are Methamphetamine dependent	45.0%	19.5%	28.8%	5.5%	23.7%

Source: Indiana Family and Social Service Administration, 2023

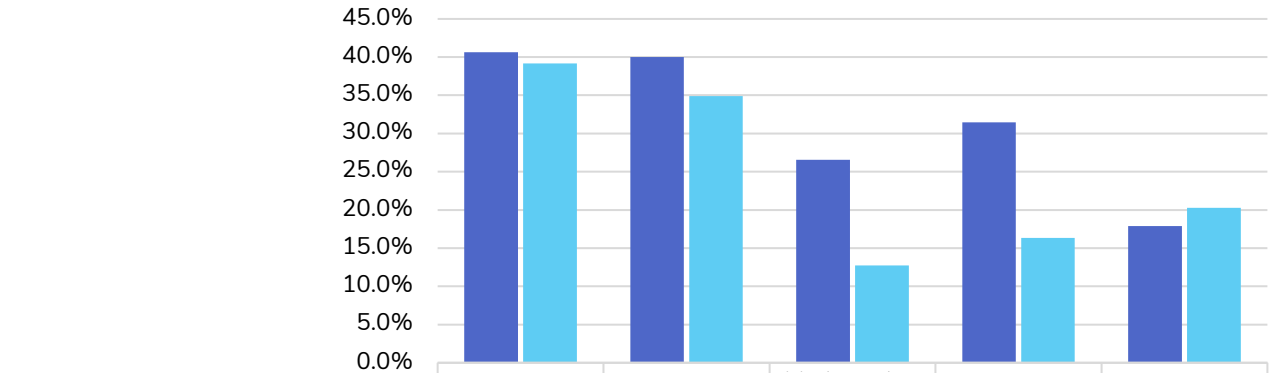
Figure IIIE. Substances involving opioid-related polysubstance use (Treatment Episode Dataset, SFY 2022)



	Marijuana	Alcohol	Methamphetamine	Cocaine	Others
Substance use along with those using Opioid	34.2%	18.2%	52.8%	10.0%	24.5%
Substance use along with those who are Opioid dependent	29.5%	12.6%	43.2%	9.9%	27.2%

Source: Indiana Family and Social Service Administration, 2023

Figure IIIF. Substances involving cocaine-related polysubstance use (Treatment Episode Dataset, SFY 2022)



	Marijuana	Alcohol	Methamphetamine	Opioid	Others
Substance use along with those using Cocaine	40.6%	40.0%	26.6%	31.5%	17.9%
Substance use along with those who are Cocaine dependent	39.2%	34.9%	12.7%	16.3%	20.3%

Source: Indiana Family and Social Service Administration, 2023

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Indiana Family and Social Services Administration. (2023). Treatment Episode Data Set SFY 2022, Indiana Division of Mental Health and Addiction, Family and Social Services Administration. DMHA. Retrieved June 9, 2023, from https://www.in.gov/fssa/dmha/

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