

An Epidemiological Overview of Alcohol, Tobacco, and Other Drug Use in Indiana

Substance abuse and addiction have a profound effect on our society, creating enormous social, legal, and financial burdens on families and communities. Its impact is prevalent in all sectors, contributing to domestic violence, child abuse and neglect, crime, homelessness, lost productivity at work, chronic health problems including increased mortality, and higher health care costs. The actual economic and social costs of substance abuse are difficult to determine due to the nature of the burden; measuring the indirect effects is hard, if not impossible. However, it is estimated that substance abuse is responsible for over a half a trillion dollars annually in health- and crime-related costs and loss of productivity, not including the cost of lost opportunities or the pain and suffering inflicted on families and friends [1].

Substance abuse can be defined as a maladaptive pattern of alcohol and other drug use that can lead to significant problems, including using alcohol or drugs in hazardous situations; failure to fulfill major obligations at work, school, or home; legal problems, such as arrest for public intoxication or possession of illicit drugs; and persistent or recurrent social problems, including argumentative and physically aggressive behavior [2]. Furthermore, substance abuse can progress to addiction or dependence, i.e., a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences, thus creating a serious public health concern that affects communities and families [3].

Because substance abuse and addiction are so pervasive, public policymakers have been interested in the direct effects of individuals' substance misuse and abuse, including the effects on fetuses, increases in cases of child abuse, the occurrences of diseases directly caused by chronic alcohol abuse, fatal overdoses, and deaths resulting from auto accidents caused by drivers under the influence.

Recently, prevention researchers have recognized that the impact of substance abuse extends beyond the direct effects and includes other more indirect consequences on both people and institutions. Family and friends, for example, often experience significant pain and suffering as well as lost productivity because of a loved one's substance abuse. Similarly, many government and social institutions must contend with the aftermath of substance abuse by providing support or taking care of children of parents with substance abuse problems. Furthermore, the loss of unrealized human potential makes substance abuse and addiction a major public health concern.



To address these concerns and provide Hoosiers a healthy, safe, and drug-free environment, the Indiana Office of the Governor received a grant in 2005 from the U.S.

Department of Health and Human Services' Center for Substance Abuse Prevention (CSAP) to engage in sub-

stance abuse prevention planning and grant making. A requirement of the initiative was to establish a State Epidemiology and Outcomes Workgroup (SEOW) to collect and analyze epidemiological data and facilitate data-based decision making regarding substance abuse prevention across Indiana. As of this date, the Indiana SEOW has published four annual comprehensive state epidemiological profiles on substance use. The complete reports are available at the Center for Health Policy website at www.healthpolicy.iupui.edu.

This issue brief provides a succinct, comprehensive overview of alcohol, tobacco, marijuana, cocaine, heroin, methamphetamine, nonmedical prescription drug, and polysubstance use in Indiana. For a more detailed analysis, refer to *The Consumption and Consequences of Alcohol, Tobacco, and Drugs in Indiana: A State Epidemiological Profile, 2009*.



ALCOHOL

Alcohol continues to be the most frequently used drug in both Indiana and the United States. In 2006, Hoosiers consumed 123.7 million gallons of beer, 9.8 million gallons of wine, and 8.2 million gallons of spirits. It is estimated that half of Indiana residents 12 years and older used alcohol in the past month, while 22.3 percent engaged in *binge drinking* (consumption of five or more alcoholic drinks on the same occasion). Hoosiers ages 18 to 25 had the highest rates of alcohol use: Within the past month, 60.8 percent drank alcohol and 41.5 percent engaged in binge drinking [4].

Another risky consumption pattern is *heavy drinking*, which is defined as men having more than two drinks per day and women having more than one drink per day. Almost five percent of Indiana adults reported heavy drinking in 2008 [5].

A statewide survey on substance use among Indiana adults conducted by the SEOW in 2008 found that:

- 86.1 percent have had at least one alcoholic beverage in their lifetime
- 62.1 percent have had five or more drinks within a few hours at least once in their lifetime
- 10.3 percent have driven a vehicle while under the influence of alcohol in the past 12 months
- 8.3 percent have been arrested because of drinking at least once in their lifetime
- 2.1 percent have gotten into trouble at work or school because of drinking at least once in their lifetime [6]

Underage drinking is still prevalent in Indiana: 26.4 percent of 12- to 20-year-olds reported using alcohol in the past month, and 18.5 percent confirmed that they had engaged in binge drinking [4]. Among high school students (grades 9 to 12), 43.9 percent reported drinking alcohol in the past month, and 28.2 percent admitted to binge drinking [7]. The rate for past-month alcohol use was greater among 12th grade students than students in lower grades, indicating that consumption appears to increase with age: 17.5 percent of 8th graders, 27.3 percent of 10th graders, and 35.7 percent of 12th graders have used alcohol in the past 30 days. Additionally, a small percentage of students reported drinking alcohol daily (i.e., on at least 20 occasions during the past month)—1.5 percent, 2.7 percent, and 4.0 percent, respectively [8].

Drinking can lead to alcohol abuse and dependence, increased morbidity and mortality, and legal problems.

According to the 2007 Treatment Episode Data Set (TEDS), alcohol was responsible for the largest percentage of admissions to substance abuse treatment facilities; even more so in Indiana (48.1 percent) than the nation (40.2 percent) [9].

Furthermore, 396 of Indiana mothers-to-be used alcohol during their pregnancy in 2006; this is a major concern since fetal alcohol spectrum disorders are a direct result of prenatal exposure to alcohol [10].

An estimated eight percent of deaths in the state were attributable to alcohol; this includes 34 percent of drowning accidents and 23 percent of suicides [11]. Between 2000 and 2006, a total of 2,284 Hoosiers died from alcohol-related diseases [12]. Also, alcohol use is a major factor in 47 percent of Indiana's homicides [11].

One of the most dangerous consequences of alcohol use continues to be motor vehicle accidents. The number of alcohol-related collisions in Indiana decreased from 13,911 in 2003 to 9,411 in 2008, and fatalities also declined from 242 to 218 during this period [13]. However, almost 12 percent of Indiana high school students reported drinking and driving in the past month, while 26.4 percent reported riding with a driver who had been drinking [7].

In 2007, approximately 32,000 Indiana residents were arrested for driving under the influence, 22,000 for public intoxication, and 15,000 for liquor law violations. The arrest rates in Indiana for these offenses (5.1, 3.5, and 2.4 per 1,000 population, respectively) were significantly higher than the nation's [14].

TOBACCO

Cigarette smoking remains the leading cause of preventable death in the United States, accounting for approximately one out of every five deaths. Currently in Indiana, one-third of the population ages 12 years and older said they used a tobacco product in the past month, a rate significantly higher than the U.S. rate of 29 percent. The age group with the highest rate was 18- to 25-year-olds (47 percent), and here too, Indiana's rate significantly exceeded the nation's (43 percent) [4].

Tobacco use continues to be high in Indiana. The state's adult smoking prevalence was the second highest in the nation at 26 percent, a rate significantly greater than the U.S. rate of 18.4 percent. Smoking was inversely associated with education and income level: Very high rates of use were found among individuals with less than a high school education (50.5 percent) and among people whose household income was below \$15,000 (40.3 percent) [5].

Underage smoking continues to be prevalent, even though rates have remained stable or declined from previous years among students in grades 6 through 12 [8]. The percentages of young Hoosiers ages 12 to 17 currently using a tobacco product (14.7 percent) and currently smoking cigarettes (11.8 percent) were similar for Indiana and the nation [4].

More than 18 percent of Indiana high school students currently smoke; white students (21.1 percent) significantly more than black students (12.5 percent) [15].

Tobacco causes serious health consequences, including lung cancer, respiratory illness, and heart disease. The Centers for Disease Control and Prevention (CDC) estimate that over 9,700 Hoosiers die annually from smoking-related causes. The age-adjusted annual mortality rate (per 100,000 population) for smokers was higher among Hoosiers (308.9) than the rest of the nation (248.5) [16]. In addition to the significant consequences associated with tobacco use, secondhand smoke from cigarettes and other tobacco products continues to be detrimental to Hoosiers' health and may cause many illnesses, especially in children.

MARIJUANA

Marijuana is the most commonly used illicit substance in the United States. In Indiana, almost 10 percent of the population ages 12 and older (512,000 residents) used marijuana in the past year and six percent (312,000 residents) used it in the past month. The highest prevalence was found among 18- to 25-year-olds; nearly 28 percent reporting past-year use and 16 percent past-month use [4].

In Indiana, six percent of 12- to 17-year-olds used marijuana for the first time in the past year, and 7.4 percent reported current use [4].

Among Indiana high school students, nearly 19 percent reported currently using marijuana. Freshmen displayed lower rates of use than older students. Furthermore, black students (31.2 percent) reported higher rates than white students (17.0 percent) [7].

Recent data show a decline in current marijuana use from 2002 through 2009 among 8th, 10th, and 12th grade students in Indiana; however, due to the nature of the data, it is unclear if the decline was statistically significant [8].

Harmful effects of marijuana include respiratory illnesses, a weakened immune system, and an increased risk of heart attack and cancer. Marijuana use is also associated with risky sexual behavior and may lead to other drug use [17]. In 2007, marijuana use was reported in more than half of Indiana's substance abuse treatment admissions; marijuana dependence was identified in about one-fourth. Marijuana users in treatment were primarily black, male, and under the age of 18 [9].

Marijuana use continues to impact Indiana's criminal justice system. Almost 1,900 pounds of marijuana were seized in Indiana in 2008 [18]. Law enforcement agencies also made more than 14,000 arrests for possession and roughly 1,900 for the sale and manufacture of marijuana in 2007; representing arrest rates of 2.3 and 0.3 per 1,000 population, respectively [14].

COCAINE

Prevalence of cocaine use is comparatively low within the general population: 2.2 percent of Hoosiers ages 12 and older, or 114,000 residents, reported past-year use. Rates were highest among 18- to 25-year-olds, at 6.4 percent [4].

Among Indiana's youth, 1.4 percent of 12- to 17-year-olds have used cocaine in the past year [4].

Eight percent of high school students have used a form of cocaine at least once in their life, and 3.8 percent used it in the past month [7].

Rates for current cocaine and crack use among high school seniors remained stable or even declined from 2000 through 2008 [8].

Cocaine can have a significant impact on health outcomes. It can lead to cardiovascular problems, respiratory difficulties, neurological effects, gastrointestinal complications, and even sudden death with first-time use. Babies born to mothers who abuse cocaine during pregnancy are often prematurely delivered, have low birth weight and smaller head circumference, and are shorter in length [19].

In 2007, almost one-fourth of Indiana's substance abuse treatment episodes involved cocaine use, and 11.8 percent indicated cocaine dependency. However, these percentages were significantly below the nation's. Cocaine users in treatment were primarily female, black, and between the ages of 35 and 44 [9].

¹The Uniform Crime Reporting (UCR) Program provides the number of arrests for offenses regarding cocaine and opiates combined; data on either drug category individually are currently not available.



Almost 96 pounds of cocaine were seized in Indiana in 2008 [18]. Also, Indiana law enforcement made more than 3,900 arrests for possession and almost 2,700 arrests for sale and manufacture of opiates and cocaine¹ in 2007, representing arrest rates of 0.6 and 0.4 per 1,000 population, respectively [14].

HEROIN

Heroin prevalence within the general population is very low. Survey findings suggest that 1.1 percent (54,000 residents) of Indiana's population ages 12 and older have used heroin at least once in their lifetime; 0.2 percent (9,000 residents) used it in the past year; and less than 0.1 percent (1,000 residents) are current users [4].

Among Indiana's high school students, 3.6 percent have tried heroin at least once; lifetime prevalence has not changed significantly from 2003 through 2007 [7].

In 2007, substance abuse treatment facilities reported that heroin use occurred in 2.9 percent and heroin dependence in 2.0 percent of treatment episodes—figures significantly lower than the U.S. percentages of 16.5 percent and 13.8 percent, respectively. Users typically were female, black, and 55 years or older [9].

Heroin abuse can cause fatal overdoses, spontaneous abortions, and collapsed veins. Heroin users who inject can contract infectious disease such as HIV/AIDS and hepatitis B and C from contaminated injection equipment [20]. By the end of 2008, 367 new HIV infections and 146 new AIDS cases were reported in Indiana; a total of 9,253 individuals were living with HIV disease, and 781 of these cases were attributable to injection drug use [21]. The 2007 incidence rates per 100,000 in Indiana were 1.0 for hepatitis B and 0.2 for hepatitis C; both rates have dropped in the past decades [22].

A little over 25 pounds of heroin were seized in Indiana in 2008 [18]. Also, Indiana law enforcement made more than 3,900 arrests for possession and almost 2,700 arrests for sale and manufacture of opiates and cocaine¹ in 2007, representing arrest rates of 0.6 and 0.4 per 1,000 population, respectively [14].

¹HIV disease includes both HIV infections and AIDS cases.

²Substances defined as "synthetic" in the Uniform Crime Reporting Program include a number of drugs in addition to methamphetamine, such as Demerol and methadone.

METHAMPHETAMINE (METH)

In Indiana, 4.5 percent (225,000 residents) of the population ages 12 and older used meth at least once in their life; 0.8 percent (40,000 residents) used it in the past year; and only 0.2 percent (10,000 residents) are current users [4].

More than six percent of Indiana high school students have tried meth at least once in their life [7]. And a small percentage of students reported current use of the drug: 0.7 percent of 8th graders, 1.0 percent of 10th graders, and 0.9 percent of 12th graders [8].

Health consequences of meth use include cardiovascular problems; stroke, brain, liver, and kidney damage; severe tooth decay ("meth mouth"); increased risk of contracting and transmitting HIV and other sexually transmitted diseases and hepatitis; mental illness; and death [23].

Reports of meth use at substance abuse treatment admission increased steadily from 4.0 percent in 2000 to 10.9 percent in 2005, but dropped to 9.2 percent by 2007. Similarly, meth dependence identified at treatment admission rose from 1.5 percent in 2000 to 4.8 percent in 2007, with its peak of 5.9 percent in 2005 [9]. However, these percentages were still significantly below the nation's. Meth use was mostly reported by females, whites, and residents ages 18 to 44 [9].

The Indiana State Police seized 1,059 clandestine methamphetamine labs in 2008, representing a nearly 30 percent increase from the 820 lab seizures in 2007 [24].

In Indiana, over 1,500 arrests were made for possession and 649 for the sale/manufacture of synthetic drugs in 2007, representing arrest rates of 0.2 and 0.1 per 1,000 population, respectively [14].

PRESCRIPTION DRUG ABUSE

Over a million Hoosiers (20.7 percent) ages 12 and older have misused psychotherapeutics at least once in their life. Additionally, 7.6 percent (383,000 residents) misused psychotherapeutics in the past year, and 2.7 percent (138,000 residents) are current users. Highest use was reported for pain relievers (opioids), including oxycodone, one of the most commonly abused prescription medications of this type [4].

Prevalence of past-year pain reliever abuse was significantly higher in Indiana (6.2 percent) than the United States (5.1 percent); Hoosiers ages 18 to 25 reported the highest rate of non-medical use (15.5 percent) [4].

Almost eight percent of Indiana's youth ages 12 to 17 used prescription pain medications for nonmedical purposes in the past year [4]. Other prescription drugs with high potential for abuse, especially among young people, are methylphenidate (Ritalin®) and Adderall®. Both substances are stimulants that enhance brain activity and increase alertness and energy. Almost 12 percent of Indiana high school seniors reported lifetime use of Ritalin® and Adderall®; seven percent reported annual use; and three percent reported current use [8].

Prescription drug use was reported in 16.5 percent of Indiana substance abuse treatment admissions, and prescription drug dependence was identified in 8.2 percent. Compared to the nation, Indiana's percentages were significantly higher. Typically within the treatment population, prescription drug abusers were white, female, and between 18 and 34 years old [9].

Law enforcement made more than 2,700 arrests for possession and almost 700 arrests for sale/manufacture of "other drugs" (including barbiturates and Benzedrine) in 2007, representing arrest rates of 0.4 and 0.1 per 1,000 population, respectively. U.S. arrest rates were significantly higher [14].

POLYSUBSTANCE ABUSE

Polysubstance abuse is a particularly serious pattern of drug use that involves consumption of two or more substances. The use of two or more substances was reported in 58.8 percent of Indiana treatment admissions in 2007, and the use of three or more substances was indicated in 25.3 percent. These percentages were significantly higher than U.S. figures and have shown a statistical increase over the past several years [9].

Individuals in the substance abuse treatment population who reported polysubstance use were primarily white and young adults; among those reporting three or more substances, females were more common than males [9].

Alcohol was the most common drug used among polysubstance users, followed by marijuana and cocaine. The drug clusters most frequently reported at treatment admission in Indiana (2006) were:

1. Alcohol and marijuana
2. Alcohol, marijuana, and cocaine
3. Alcohol and cocaine [9]





Thoughts for Policymakers

The use and abuse of alcohol, tobacco, and other drugs has a profound impact on all sectors of society. Assessing both direct and indirect costs, we found that substance use and its consequences burden the state with an estimated \$7.3 billion [25]. According to the Substance Abuse and Mental Health Services Administration, the cost of substance abuse could be offset by implementation of effective prevention policies and programs; if such programs were implemented nationwide, substance abuse initiation would decline for 1.5 million youth and be delayed for two years on average [1].

Studies have shown that comprehensive prevention programs involving families, schools, communities, and the media can be successful in reducing prevalence of use [26]. However, in order to develop effective programs, it is necessary to first determine causes of alcohol and other drug use [27]. Extensive research has been devoted to identifying individual risk factors; however, it has become increasingly clear that contextual factors, i.e., the social and economic environment, play an important role and need to be considered as well [28]. Comprehensive prevention strategies that address both individual and contextual factors simultaneously are the most effective in preventing and reducing prevalence of use.

Certain contextual elements, including permissive laws and community norms, economic deprivation, and neighborhood disorganization, have been identified as risk factors for substance abuse [29-31]. Policymakers can address some of these issues through legislation—laws regulating access to and availability of substances, such as collecting excise taxes for alcohol and tobacco products; establishing and maintaining a minimum legal drinking age; regulating how, when, and to whom liquor is sold; enforcing social host ordinances; and making drugs, such as cocaine, heroin, and methamphetamine, illegal.

Furthermore, allocation of prevention funding to implement evidence-based programs, i.e., programs that have been scientifically proven to be effective, is another way for policymakers to reduce substance abuse and decrease the economic burden of alcohol, tobacco, and other drug use on our state.

Economic deprivation and neighborhood disorganization are public health concerns in and of themselves that are not as easily changed, particularly in the current economic climate. However, support for communities and neighborhoods that have been hit especially hard by the recession seems crucial to getting Hoosiers back on their feet and to decreasing alcohol and drug use in Indiana.

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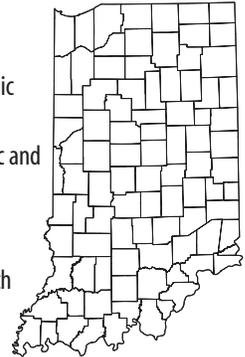


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