

**THE CONSUMPTION AND  
CONSEQUENCES OF ALCOHOL,  
TOBACCO, AND DRUGS IN INDIANA:  
A STATE EPIDEMIOLOGICAL PROFILE**

Indiana State Epidemiology and Outcomes Workgroup



# **THE CONSUMPTION AND CONSEQUENCES OF ALCOHOL, TOBACCO, AND DRUGS IN INDIANA: A STATE EPIDEMIOLOGICAL PROFILE**

Developed by the Indiana State Epidemiology and  
Outcomes Workgroup, 2006

## **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.”*

This document, written for state policy-makers and community leaders, presents data and analysis to support the development of a framework for advancing the mission of the Indiana Substance Abuse Prevention System.

This document and the efforts described herein were funded through a State Incentive Prevention Framework Grant (SPF SIG) from the Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration (SAMHSA), and the Center for Substance Abuse Prevention (CSAP).

For additional copies of this document, contact:

**The Center for Urban Policy and the Environment**

School of Public and Environmental Affairs  
Indiana University Purdue University Indianapolis  
342 N. Senate Avenue Suite 300  
Indianapolis, IN 46204  
Phone: 317-2663000  
Fax: 317-261-3050  
[www.urbancenter.iupui.edu](http://www.urbancenter.iupui.edu)

Printed in the United States of America

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# INDIANA STATE EPIDEMIOLOGICAL AND OUTCOMES WORKGROUP (SEOW)

August 2006

**Eric R. Wright, Ph.D., Chair\***

Director of Health Policy  
Center for Urban Policy and the Environment  
School of Public and Environmental Affairs  
Indiana University–Purdue University Indianapolis

**David Bozell**

Bureau Chief, Bureau for Mental Health Promotion and  
Addiction Prevention  
Division of Mental Health and Addiction  
Indiana Family and Social Services Administration

**Karla Carr**

Manager of Data Collection & Reporting  
Division of Educational Information Systems  
Indiana Department of Education

**Terry Cohen**

Community Consultant  
Counties: Clay, Vigo, Sullivan, Monroe, Greene, Pike,  
and Owen  
Indiana Criminal Justice Institute/Governor's  
Commission for a Drug Free Indiana

**Niki Crawford, Sergeant**

Methamphetamine Suppression Unit  
Indiana State Police

**Roland Gamache, Ph.D., M.B.A.**

Director  
State Health Data Center  
Indiana State Department of Health

**Ruth Gassman, Ph.D.**

Executive Director and Associate Professor  
Indiana Prevention Resource Center  
Indiana University Bloomington

**Maggie Lewis, M.P.A.**

Community Consultant  
Counties: Johnson, Shelby, Rush,  
Marion, and Hancock  
Indiana Criminal Justice Institute/Governor's  
Commission for a Drug Free Indiana

**Kathy Lisby**

Director, Planning/Research Division  
Indiana Department of Correction

**Barbara Lucas**

Director of Programs  
Indiana Youth Institute

**Miranda Spitznagle**

Director of Program Evaluation  
Indiana Tobacco Prevention & Cessation

**Robert Teclaw, D.V.M., Ph.D.**

State Epidemiologist  
Epidemiology Resource Center  
Indiana State Department of Health

**Amanda Thornton, MA, PhD (ABD)**

Director, Research and Planning Division  
Indiana Criminal Justice Institute

**Richard VanDyke**

Office of Medicaid and Public Policy  
Indiana Family and Social Services Administration

**Janet Whitfield-Hyduk**

Community Consultant  
Counties: LaPorte, St. Joseph, Elkhart, Starke, and  
Marshall  
Indiana Criminal Justice Institute/Governor's  
Commission for a Drug Free Indiana

**Diana Williams**

Director of Programs  
Department of Correction

**James Wolf, M.A.**

Director, Survey Research Center  
Clinical Associate Professor of Sociology  
Indiana University–Purdue University Indianapolis

## EX-OFFICIO MEMBERS

**R. Thomas DeLoe, Ph.D.\***

Team Leader, Central Region  
Substance Abuse and Mental Health Services  
Administration, Center for Substance Abuse  
Prevention

**Marcia M. French, LCSW**

Project Coordinator, Strategic Prevention  
Framework/State Incentive Grant  
Division of Mental Health and Addiction  
Indiana Family Social Services Administration

**Jeanette Grissom, M.Ed., LMHC, MAC, CCDC,  
CCJS\***

Assistant Deputy Director – Fairbanks Contractor  
Division of Mental Health and Addiction  
Indiana Family and Social Services Administration

**Mary A. Lay, M.P.H., C.H.E.S., C.P.P.\***

Research Associate, Coordinator-Indiana Problem  
Gambling Prevention Initiative  
Division of Mental Health and Addiction  
Indiana Family and Social Services Administration,  
and  
Research Associate, Indiana Prevention Resource  
Center  
Indiana University Bloomington

**Kim Manlove\***

SPF/SIG Project Director  
Division of Mental Health and Addiction  
Indiana Family Social Services Administration

*Continued on next page.*

**Sheila Nesbitt\***

Prevention Specialist  
Center for Substance Abuse Prevention's  
Central Center for the Application of Prevention  
Technologies

**Martha Payne, M.P.H.\***

SAMHSA/CSAP Indiana Prevention Fellow  
Division of Mental Health and Addiction  
Indiana Family and Social Services Administration

**Barbara Seitz de Martinez, Ph.D, M.L.S., C.P.P.\***

Deputy Director  
Indiana Prevention Resource Center  
Indiana University Bloomington

**John Viernes\***

Deputy Director  
Division of Mental Health and Addictions  
Indiana Family and Social Services Administration

**SEOW SUPPORT TEAM**

**Harold Kooreman, M.A.\***

Project Manager  
Center for Urban Policy and the Environment  
School of Public and Environmental Affairs  
Indiana University–Purdue University Indianapolis

**Marion Greene, MPH(c)\***

Master of Public Health Candidate  
Department of Public Health  
Indiana University School of Medicine, and  
Health Policy, Intern  
Center for Urban Policy and the Environment  
School of Public and Environmental Affairs  
Indiana University–Purdue University Indianapolis

**Rachel Thelin, MA\***

Policy Analyst  
Center for Urban Policy and the Environment  
School of Public and Environmental Affairs  
Indiana University–Purdue University Indianapolis

\* Indicates Non-Voting Member

## About the SEOW Support Team and the Center for Urban Policy and the Environment

This report was developed by the SEOW Support Team headed by Eric R. Wright, Ph.D. Dr. Wright is the director of health policy, Center for Urban Policy and the Environment; associate professor, School of Public and Environmental Affairs; and associate director, Indiana Consortium for Mental Health Services Research.

The other members of the SEOW Support Team are analysts at the Center for Urban Policy and the Environment, including:

**Harold Kooreman, M.A.**, Project Manager;  
**Marion Greene, MPH**, Health Policy, Intern; and  
**Rachel Thelin, MA**, Policy Analyst.

The Center for Urban Policy and the Environment is devoted to supporting economic success for Indiana and a high quality of life for all citizens. An applied research organization, the Center was created by the Indiana University School of Public and Environmental Affairs in 1992. It supplies research to help decision makers understand options and works with leaders to develop strategic plans and implement effective programs.

The Center works in partnership with community leaders, business and civic organizations, nonprofits, and state and local governments. It supplies clear analysis, conducts focus groups, develops surveys, and works closely with leaders to help them develop programs to improve organizations and communities. Much of the Center's work is focused on economic strategies to strengthen Indiana.

Dr. Wright and a team of specialists who study health policy issues are developing a Center for Health Policy that will soon operate as a highly focused research unit.

The members of the SEOW would like to thank Marilyn Yurk, Camilla Butcher, and Dona Sapp of the Center for Urban Policy and the Environment for their assistance and editorial skill in the production of this report.





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# INTRODUCTION

In July 2005, Indiana's Office of the Governor received a grant from the U.S. Department of Health and Human Services' Center for Substance Abuse and Prevention (CSAP) as part of CSAP's Strategic Prevention Framework State Incentive Grant (SPF SIG) Program. The SPF SIG grant program represents a continuation of ongoing CSAP initiatives to encourage states to engage in data-based decision-making in the area of substance abuse prevention planning and grant making.

The SPF SIG grant was made on the heels of an earlier CSAP State Incentive Grant (SIG) which helped to lay much of the groundwork for this new initiative. A great deal of work was completed under the first SIG to assess the condition of substance abuse prevention services and develop a strategic framework to guide policy making in this area for the 21st Century. The final report summarizing the outcomes of this work, entitled *Imagine Indiana Together: The Framework to Advance the Indiana Substance Abuse Prevention System*, was prepared by the Governor's Advisory Panel within the Division of Mental Health and Addiction (DMHA), Indiana Family and Social Services Administration. It is available from the DMHA and the Indiana Prevention Resource Center at Indiana University Bloomington ([www.prevention.indiana.edu/imagine](http://www.prevention.indiana.edu/imagine)).

For the first SIG, CSAP required that the Governor form a state advisory council to oversee all of the activities related to the grant. In late 2005, Governor Mitch Daniels appointed Sheriff Mark Frisbie to serve as chair of the Governor's Advisory Council (GAC) for the SPF SIG. A new requirement of the SPF SIG initiative, however, was that the state establish a **State Epidemiology and Outcomes Workgroup (SEOW)** to collate and analyze available epidemiological data and report findings to the GAC to facilitate data-based decision-making regarding prevention programming across the state. This report represents the first official SEOW report completed under this initiative and summarizes both the methodology used and the key findings.

Convened for the first time in April 2006, the SEOW has met regularly to complete its assigned tasks, and has been very productive in a short period of time. In addition to developing a general data analysis plan and a list of desired data sources, the SEOW and its Support Team

have completed a number of analyses based on data publicly available or readily available from various state agencies, including the Indiana State Police and the Indiana Criminal Justice Institute. The primary challenge facing the SEOW in this first year was the narrow window within which to complete analyses and develop priority recommendations. In order to have sufficient time to prepare the request for proposals and work with the communities interested in applying for grant support, the GAC requested that the SEOW submit its priority recommendations by mid-summer. To meet this deadline, the SEOW agreed to restrict the data analysis to readily available, public data sources and to concentrate on identifying priorities based on comparisons of state and national rates. While this strategy imposes some important limitations, the SEOW is confident that the patterns identified in this report reflect the most pressing substance use challenges in the state of Indiana. The SEOW will expand the scope of its analysis over the next few years and incorporate additional data sources in an effort to more carefully understand the nature of the consequences and consumption patterns of alcohol, tobacco, and illicit drugs.

Questions or comments about this report should be directed to:

**Eric R. Wright, Ph.D.**

Chair, Indiana State Epidemiology and Outcomes Workgroup  
Associate Professor and Director of Health Policy  
Center for Urban Policy and the Environment  
School of Public and Environmental Affairs  
Indiana University-Purdue University Indianapolis  
342 N. Senate Ave., Suite 300  
Indianapolis, IN 46204-1708

Phone: (317) 261-3031  
FAX: (317) 261-3050  
E-mail: [ewright@iupui.edu](mailto:ewright@iupui.edu)

# 1.

## EXECUTIVE SUMMARY

The Indiana State Epidemiology and Outcomes Workgroup (SEOW) was established in April 2006 to review epidemiological data on the patterns and consequences of substance use and abuse in Indiana and to make recommendations to the Governor's Strategic Prevention Framework (SPF) Advisory Council regarding priorities for prevention funding for 2007. The priorities were developed based on a systematic analysis of available data, the results of which are detailed in this report.

In developing these priorities, the SEOW reviewed data on the consumption and consequences of alcohol, tobacco, marijuana, cocaine, heroin, methamphetamine, prescription drug use, and polysubstance use. In evaluating the data and making comparisons across substances, the SEOW members considered three primary factors:

1. the overall current rate and estimated number of people affected by each substance,
2. the extent and nature of commonly identified short- and long-term consequences associated with the abuse of each substance, and
3. recent trends in patterns of consumption and consequences associated with each substance.

Because of differences in the nature of each substance and limitations in the available data, substance-to-substance comparisons were not possible. In general, the SEOW attempted to identify areas where Indiana exhibits significantly higher rates than the nation in consumption and/or negative consequences associated with each substance.

The SEOW relied on a number of publicly available and generally well-respected data sources. These include:

- the Alcohol, Tobacco and Other Drugs Use by Indiana Children and Adolescents Survey,
- the Behavioral Risk Factor Surveillance System,
- the Fatality Analysis Reporting System,
- the Monitoring the Future Survey,
- the National Survey on Drug Use and Health,
- the National Clandestine Laboratory Seizure System,
- the National Vital Statistics System,

- the National Youth Tobacco Survey,
- the Indiana Youth Tobacco Survey,
- the Treatment Episode Data System,
- the Uniform Criminal Report, and
- the Youth Risk Behavior Surveillance System.

The SEOW Chair and a team of data analysts conducted all the analyses under the supervision of the SEOW. Because of the timeline associated with the CSAP grant that funded this work, the analyses in this first year focused on publicly available data sets. As a result, there are significant limitations with the data. Most important, the ability of the data analysts to explore complex patterns was limited because of the de-identification required to make data available to the public.

Based on the careful analysis and review of these data, the SEOW identified a list of *prevention targets of significant epidemiological concern*. This initial list was examined carefully, discussed at length, and revised by the SEOW. To provide additional guidance to the Governor's Advisory Council, the SEOW evaluated this list of prevention targets in terms of the relative importance of each item. This was done using a balloting process in which voting members of the SEOW evaluated each target using a rating scale to evaluate its overall significance. Members were instructed to evaluate each potential target in terms of its overall magnitude, trend over time, severity, and changeability. At the SEOW meeting on July 21, 2006, members reviewed their collective ratings, discussed the rankings, and voted to approve the final list of recommendations. The final list includes six priorities. These six priorities are divided into two groups: those that clearly reflect statewide concerns, and those that reflect more localized concerns that are concentrated within certain sub-populations, communities, or regions of the state.

## STATEWIDE PREVENTION PRIORITIES

### Prevent and reduce underage drinking and binge drinking among 18- to 25-year-olds.

Alcohol is the most frequently used substance in Indiana, and it is often a "gateway" to more severe and life-long substance abuse problems (NIAAA, 2006). In terms of the number of Hoosiers affected, alcohol abuse is clearly the most significant substance abuse problem in Indiana.



Despite state law which dictates that any alcohol use by young people under age of 21 is illegal, underage drinking is a significant problem in Indiana (26.74% of Hoosiers between the ages of 12 and 20 used alcohol in the past month in 2004; p. 23). In addition, the high rate of binge drinking among 18- to 25-year-old Hoosiers is also significant (43.5% reported binge drinking in the past 30 days in 2004; Figure 3.4, page 28). While the challenges of underage drinking and youth binge drinking are significant in their own right, these patterns are of particular concern because they also contribute to Indiana's high arrest rates for driving under the influence (DUI, 6.17 per 1,000 population in 2003; Figure 3.14, page 33), public intoxication (3.29 per 1,000 population in 2003; Figure 3.15, page 34), and liquor law violations (2.66 per 1,000 in 2003; Figure 3.16, page 34).

**Prevent the first use of tobacco among 12- to 17-year-olds and reduce tobacco use among 18- to 24-year-olds, Blacks, and individuals with lower incomes and/or less than a high school education.**

Smoking also represents a significant problem in Indiana. Recent estimates suggest that the rates of smoking and/or using other tobacco products in Indiana are significantly higher than rates in the nation. In 2004, 27.4% of Hoosiers reported using cigarettes (compared with 25.2% in the nation; page 39) and 32.3% reported using any tobacco products (compared with 29.5% in the nation; page 39). Of greatest concern is the use of tobacco products among 18- to 25-year-olds, Blacks, and individuals with low household incomes and/or less than a high school education. Among 18- to 25-year olds, smoking prevalence in Indiana for 2004 was 42.5%, which is statistically significantly higher than the national prevalence of 39.9%; Figure 4.2, page 48). In 2005, the overall smoking rate for Blacks in Indiana was 36.8%, significantly higher both than the national rates for Blacks (20.7%) and for Whites in Indiana and the nation (Figure 4.5, page 49). It is important to note, however, that the increase in smoking among Blacks appears to occur in adulthood after high school, as the smoking rates for Black high school students in Indiana are significantly lower than for other racial/ethnic groups (Figure 4.10, page 52). In 2005, Hoosiers with less than a high school education had the highest smoking rate (49.3%), and 37.3% of

the Indiana population with household incomes less than \$15,000 reported smoking (page 41). Tobacco use has been shown to cause a variety of chronic health conditions and to be the second leading cause of death in the world. In Indiana, 10,000 people die annually due to tobacco use, and Indiana's high rate of tobacco use also contributes to Indiana's significantly high rate of chronic obstructive pulmonary disease (COPD, 42.5 per 100,000 population versus 35.9 per 100,000 population in the nation in 2002; Figure 4.18, page 56).

### **Prevent the first use of marijuana among 12- to 17-year-olds and reduce the use of marijuana among 18- to 25-year-olds.**

Marijuana represents the most commonly used illicit drug in Indiana, with approximately 10.4% of Hoosiers reporting consuming this drug in 2004 during the prior year (page 61). In general, the patterns of consumption and consequences mirror those of the nation. Rates for both Indiana and the nation suggest that the use of marijuana increases dramatically at each grade level beginning in middle school through high school, with the peak period of use occurring between 12th grade and the transition years of 18 to 25 (Figures 5.3 and 5.6, pages 69 and 70). In terms of negative social consequences, Indiana demonstrates significantly higher rates of substance abuse treatment admissions (Figure 5.11, page 73), as well as higher arrest rates for possession and manufacture of marijuana than the nation (Figures 5.13 and 5.14, page 74).

## **LOCAL, REGIONAL, AND COMMUNITY PREVENTION PRIORITIES**

### **Prevent the first use and reduce the use of cocaine among 18- to 25 year olds.**

Cocaine represents one of the most commonly used illicit drugs in Indiana—in 2004, approximately 2.37% of the adult population in the state reported consuming this drug during the prior year (page 85). In general, the patterns of consumption and consequences in Indiana mirror the nation's. The rate of cocaine use in Indiana increases dramatically at each grade level beginning in middle school through high school, with the peak period of use occurring between 12th grade and the transition years of 18 to 25 (Figure 6.1, page 90; Figure 6.12; page

95; and Figure 6.13, page 96). With regard to consequences of cocaine abuse, rates in Indiana for substance abuse treatment admissions and arrests for possession and/or production/sales offenses have typically been lower than the national rates. While overall trends in consumption have been fairly stable in recent years, there is concern about the recent increases in negative consequences associated with cocaine abuse, specifically increases in treatment admissions and arrests for possession and/or production/sales of cocaine (Figure 6.6, page 92; Figure 6.17, page 98; and Figure 6.18, page 98).

### **Prevent and reduce the abuse of prescription drugs among 12- to 25-year-olds.**

While much more difficult to monitor than illicit drug abuse, the abuse of prescription drugs appears to be a significant problem in the nation, and especially in Indiana. Using treatment admission data, Indiana's estimated rate of abuse exceeds that for the nation for prescription pain relievers (7.5% v. 6.0% respectively; Figure 9.2, page 158) and benzodiazepines (3.7% versus 2.2%; Figure 9.6, page 160). School surveys also indicate that abuse of Ritalin® is also a more common problem in Indiana than in the nation (3.8% v. 0.2%; Figure 9.8, page 161). The abuse of prescription drugs appears to be most severe among adolescents age 12 to 17 years of age (8.3% versus 7.5% in the United States; Figure 9.1, page 158) and especially young adults between the ages of 18 and 25 (14.4% versus 11.95% in the United States; Figure 9.1, page 158). In addition to being concentrated among younger age groups, prescription drug abuse is significantly more common among women and Whites (Figure 9.10, page 162 and Figure 9.11, page 163).

### **Prevent and reduce the use of methamphetamine among Black youth and among White women and men 18 to 44 years of age.**

Compared with alcohol, tobacco, marijuana, and cocaine, methamphetamine is not as significant a problem in Indiana. Special law enforcement efforts and new state laws regulating the sale and distribution of ephedrine or pseudoephedrine have been successful in slowing the production and availability of methamphetamine (e.g., the number of lab seizures dropped from 1,549 in 2004 to 1,300 in 2005;

Figure 8.13, page 133). There also has been a slight decline both nationally and in Indiana in the numbers of young people reporting having ever used methamphetamine (from 8.2% in 2003 to 7.0% in 2005; Figure 8.1, page 127). School surveys suggest that use among Hoosier students is generally on the decline, but there is evidence that methamphetamine use is rising among Black youth (from 2.7% in 2003 to 3.7% in 2005; page 121). There is, however, some indication that the negative consequences of methamphetamine abuse may be increasing. Specifically, treatment admissions for methamphetamine abuse, while slightly lower than national averages, have increased steadily in Indiana from 4.0% in 2000 to 9.2% in 2004 (Figure 8.6, page 129), with those between the ages of 18 and 44 having the most significant increases (Figure 8.11, page 132). This may suggest that, despite significant gains in efforts to curb the methamphetamine problem, those who continue to use into young adulthood are experiencing more significant problems associated with abuse and dependence.

## 2.

## METHODS

This report describes drug consumption and drug consequence patterns for Indiana residents overall, and specifically for Indiana's adults (residents age 18 and over) and youth (residents under age 18). We compare Indiana's overall, adult, and youth patterns statistically with the consumption and consequence patterns found in the entire United States. Based on discussions with the State Epidemiological and Outcomes Workshop (SEOW) and the Advisory Council for the Strategic Prevention Framework State Incentive Grant (SPF SIG), we have reviewed consumption and consequences patterns for the following drugs: alcohol, tobacco, marijuana, cocaine, heroin, methamphetamine, and prescription medication.

Our research team completed statistical analyses on publicly available local and national data sets using SPSS (Statistical Package for the Social Sciences) statistical analysis software. For national surveys that do not have publicly available data sets, we conducted statistical analyses using online analysis software and/or analysis tables provided by the agencies that conducted the data collection. Whenever possible, statistical comparisons were made across gender, racial, and age groups for both drug-consumption behaviors and drug-use consequences. For all comparisons, a  $p$  value of .05 or less was used to determine statistical significance.

The prevalence rates and other statistics reported in the individual chapters reflect the way these numbers are presented in the data sets, data tables, and documents that contain them. For this reason, prevalence rates and other statistics may be presented somewhat differently across the seven substance chapters.

We used two guidelines to determine potential intervention priorities. The first guideline was *statistical significance*. Specific drug consumption and consequence patterns that place Indiana statistically significantly higher than the United States were used as markers for areas that could potentially benefit from intervention. The second guideline was *clinical or substantive significance*. Consumption behaviors or drug-use consequences that show a trend toward increased

frequency within particular gender, racial, or age groups in Indiana were also used as priority indicators.

## DATA

The data for these analyses were gathered from various publicly available federal and local-level surveys and data sets. In order to compare Indiana with the rest of the nation and to determine trends in drug use and drug-related consequences over time, we selected surveys and data sources that had at least two years' worth of data available at the state and national levels. In all cases, the most recent versions of survey results and data were used.

All of the data sources have important strengths and weaknesses, and these were factored into the interpretations of the findings. In general, trends evident in multiple sources based on probability samples (rather than on nonrandom samples) were given more weight in the interpretation process. The following sections briefly describe the surveys and data sources used to complete these reports. An overview of these sources is also provided in the sources list on pages 14 to 18.

**Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents (ATOD) Survey.** The ATOD is a survey conducted annually by the Indiana Prevention Resource Center (IPRC, see <http://www.drugs.indiana.edu/>) to monitor patterns of alcohol, tobacco, and other drug use by Indiana's middle and high school students. Young people who complete the survey are asked to report on their *lifetime* (use of the drug at least once in the respondent's life), *annual* (use of the drug at least once during the year prior to the administration of the survey), and *monthly* (also known as *current use*, defined as use at least once in the 30 days prior to the survey) use of a wide range of drugs, including alcohol, tobacco, cocaine, heroin, methamphetamine, hallucinogens, etc. The ATOD data are released annually, and the data are available for all 14 years since 1991.

The ATOD survey results can be compared with results from the Monitoring the Future Survey (see below) conducted by the National Institute on Drug Abuse. With these two data sets, comparisons between Indiana and the nation can be completed only by grade level.

While the ATOD does provide local-level consumption information on a wide range of drugs, the results should be interpreted with caution as the ATOD survey is not completed by using a random sample of Indiana students. Additionally, statistical comparisons with the national data can only be made for the most recent two years of data.

**Behavioral Risk Factor Surveillance System (BRFSS) Survey.** The BRFSS is conducted annually by the Centers for Disease Control and Prevention with the assistance of the health departments in all 50 states and the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands. The BRFSS asks adults (18 and older) to respond to questions about health-related issues. Included in the BRFSS survey are questions about current alcohol consumption, heavy alcohol use, binge drinking, and current use of tobacco. Data from the BRFSS are available at both the national and local levels for all states and U.S. territories. County-level BRFSS data are based primarily on estimates. BRFSS data are released annually and are available for the most recent ten-year period. The BRFSS data allow for statistical comparisons across gender, age, and racial groups.

**Fatality Analysis Reporting System (FARS) Data.** The FARS is a national database of fatal motor vehicle accidents maintained by the National Highway Traffic Safety Administration. It includes information about fatal accidents in which alcohol was involved. Using the FARS, it is possible to calculate the rate of alcohol-related fatal motor vehicle accidents for the nation and for each state. Because of the data collection procedures used in the FARS, comparisons among gender, racial, and age groups would not be statistically valid. Raw FARS data are publicly available for four years, with a three-year lag from the end of the data collection period for a given year to the time when the data are made available. Though the FARS data are helpful in understanding the rate of alcohol-related motor vehicle deaths, any comparisons between Indiana and the nation should be interpreted with caution as data submissions to the FARS database are done on a voluntary basis and may not include all fatal motor vehicle accidents within a state or the nation.

**Monitoring the Future Survey (MTF).** The MTF is a national survey conducted annually by the National Institute on Drug Abuse in order to track changes in the drug consumption patterns of 8th, 10th, and 12th grade students throughout the United States. Student respondents report on their lifetime, annual, and monthly use of a wide variety of drugs, including alcohol, heroin, cocaine, marijuana, methamphetamine, etc. Results from the MTF are released annually and data sets are publicly available. Respondents are sampled randomly from schools throughout the country, and no state-level data are available. On a local level, the findings from the MTF can be compared with findings from the Indiana Prevention Resource Center's ATOD survey. Comparisons between the two surveys should be interpreted with caution as the ATOD survey is not completed using a random sample of Indiana schools.

**National Survey on Drug Use and Health (NSDUH).** The NSDUH is a national survey funded by the Substance Abuse and Mental Health Services Administration (SAMHSA) designed to track changes in substance use patterns for U.S. citizens 12 years of age and older. The survey asks respondents to describe their use of drugs such as alcohol, tobacco, marijuana, cocaine, and other illicit drugs during the past 30 days. Survey participants are also asked about drinking practices during the preceding month that can be interpreted as binge drinking. The NSDUH reports three calculated variables that indicate a participant's risk for monthly marijuana use, heavy alcohol use, and binge drinking. Additionally, the NSDUH asks respondents whether they had received treatment for drug abuse or drug dependence during the past year.

From year to year, the NSDUH addresses special topics related to substance abuse such as underage drinking and abuse of prescription pain relievers. Data for these special topic questions are typically available for only one point in time. Prevalence rates for alcohol, tobacco, and other drug use are provided for the nation and each state. State-level prevalence rates are based on statistical algorithms, not on data collected within specific states. Raw files from the NSDUH surveys are publicly available, however, they do not allow for comparisons among states because the NSDUH eliminates state identifiers in the process of preparing public-use data files. Comparisons of specific states with the nation are provided in analysis tables prepared by SAMHSA's



Office of Applied Studies. Comparisons can thus be made between Indiana and the nation for overall consumption and consumption by different age groups. Data tables are available for six years. There is usually a two-year delay between the time data are gathered and the time data are made available to the public.

**The National Clandestine Laboratory Seizure System (NCLSS).** The NCLSS database, maintained by the Drug Enforcement Agency, El Paso Intelligence Center, and the Indiana State Police, contains information on illicit drug lab seizures throughout the United States. Information in the database includes types, numbers, and locations of labs seized; precursor and chemical sources; the number of children involved (if any); and law enforcement officers affected. Data currently available at the local level include the number of labs seized by county and the total number of children affected by year. A total of three years' worth of data are available at the present time, with a one-year delay between the end of the data collection period and the availability of data.

**National Vital Statistics System (NVSS).** The NVSS is a data set maintained by the Centers for Disease Control that provides information on mortality rates by cause of death as coded in the World Health Organization's International Classification of Diseases, 10th Edition. Data on deaths throughout the country are provided to the Centers for Disease Control and Prevention (CDC) by health departments in the 50 states, the District of Columbia, and U.S. territories. Using statistical software provided by the CDC, age-adjusted death rates for deaths due to diseases or events associated with alcohol, tobacco, and other drug use (e.g., cirrhosis, lung cancer, heart disease, suicide, homicide, etc.) can be computed for the nation and each state and comparisons can be made across gender and racial groups. There is typically a four-year gap between the time data are collected and the time national and state death rates are made publicly available.

**The National Youth Tobacco Survey (NYTS).** The NYTS was developed and is conducted by the Centers for Disease Control and Prevention as a way to estimate the current use of tobacco products among middle school and high school students in the United States.

Student respondents are asked to describe their lifetime, annual, and current use of cigarettes and other tobacco products. Data from the NYTS are available only on a national level, and only for the years 1999 and 2004.

**The Indiana Youth Tobacco Survey (IYTS).** In order to compare Indiana with the rest of the nation, the Indiana Tobacco Prevention and Cessation Agency developed the IYTS. The IYTS includes all of the questions from the NYTS along with additional questions specific to the state of Indiana. The survey is conducted every other year. Using data from the NYTS and the IYTS, comparisons of tobacco consumption behaviors between Indiana and the United States, can be made across grade levels. However, comparisons based on race and gender groups cannot be made using the data that are publicly available.

**Treatment Episode Data System (TEDS).** The TEDS is a national database maintained by the Substance Abuse and Mental Health Services Administration (SAMHSA) which records information about individuals entering treatment for substance abuse and/or dependence. Data are submitted to the TEDS by state mental health departments on an annual basis. The information reported in the TEDS includes age, race, gender, and other demographic characteristics, as well as information on the use of various drugs. The TEDS data are publicly available with a one-year delay between the time data are gathered, and the time when data can be obtained. The format of the TEDS data allows for comparisons between Indiana and the United States by gender, race, and age groups.

County-level TEDS data are available for Indiana from the Indiana Department of Mental Health and Addiction. While the TEDS data can provide some information on drug use and abuse patterns both nationally and at the state level, the population on which data are reported is not representative of all individuals who receive drug and alcohol treatment. For Indiana, the TEDS data are limited to information about individuals entering substance abuse treatment who are 200% below the poverty level and who are receiving state-funded treatment.

**Uniform Crime Reporting Program (UCR).** The UCR is a national database maintained by the FBI that records information on the rates of property crime, violent crimes, and drug-related crimes throughout the United States. The UCR data are submitted by law enforcement agencies in the 50 states and the District of Columbia annually. Data are reported for each state on a county-by-county basis. UCR data sets are publicly available, however, there is a three-year lag from the time data are collected until they are made publicly available. The format of the UCR data sets allow for comparisons of overall crime rates between Indiana and the rest of the United States, and for comparisons of crime rates for juveniles versus adults. With this data, crime rates cannot be compared by gender or racial groups.

While the UCR does include data about drug possession and drug manufacturing arrests, the involvement of drugs or alcohol in the commission of other crimes such as rape, burglary, robbery, etc., is not recorded. Additionally, because states are not required to submit crime information to the FBI, the level of reporting from state to state and from county to county within a state varies considerably. Because of the variations in reporting, the FBI uses a statistical algorithm to estimate arrests for counties for which reporting is particularly poor. In Indiana, typically 50% of counties, on average, submit information to the FBI. Because Indiana has a rather low reporting rate, comparisons using the UCR should be interpreted with caution.

**Youth Risk Behavior Surveillance System (YRBSS).** The YRBSS is a national survey conducted every two years of the health-related behaviors of young people in the 9th through 12th grades. This survey is conducted by the CDC with the cooperation of state departments of health throughout the United States. Student respondents in the YRBSS are asked to describe whether they have engaged in numerous behaviors that could pose a danger to their health, including the use of alcohol, tobacco, and other drugs. YRBSS respondents are asked about their lifetime and current use of alcohol, their level of binge drinking, their lifetime and current use of tobacco, marijuana, and cocaine; and their lifetime use of methamphetamines, heroin, inhalants, steroids, and injection drugs. Using statistical software from the CDC, comparisons can be made between Indiana and the entire United States for gender,

racial, and age groups. Data for the YRBSS are available every other year, with a one-year lag between the end of data collection and the publication of results. Though YRBSS data are available from 1991 through 2005, Indiana participated in YRBSS data collection only in 2003 and 2005.

This report relies exclusively on these data sources. They are the publicly available sources that could be accessed and analyzed within the Indiana SPF SIG project timeline agreed upon by the state of Indiana and the federal Center for Substance Abuse Prevention CSAP. Because of the nature of the available data, there are significant limitations to the interpretations presented:

- Consistent comparisons across data sources are not always possible due to the nature of the questions asked and information gathered.
- Inconsistencies may occur in the classifications of demographic characteristics (e.g., age ranges, racial categories, grade levels).
- Timeframes may be inconsistent for comparisons across substances and data sources (e.g., some data have longer gaps than others before they are made publicly available).
- State-level prevalence rates presented in national-level surveys are often estimated using statistical algorithms.
- Due to the reporting requirements for national databases, the data may not be representative of the actual population of either the state or the nation.

In future editions of this report, we will expand the data analysis as additional data sources are made available to the SEOW data analysis team.

## SEOW DATA SOURCES LIST

Following is a list of the data sources used in this report in a format for comparison.

### **Alcohol and Drug Treatment Episodes and Admissions Data/Treatment Episodes Data Set (TEDS)**

- **Description:** The TEDS provides information on the demographic and substance abuse characteristics of annual admissions to treatment for abuse of alcohol and drugs in facilities that report to individual state administrative data systems. A treatment episode is defined as the period between the beginning of a treatment service

for a drug or alcohol problem (admission) and the termination of services.

- **Sponsoring Organization/Source:** Substance Abuse and Mental Health Services Administration (SAMHSA) and Indiana Division of Mental Health and Addiction (DMHA)
- **Geographic Level:** National and state; county-level data available from DMHA upon special request
- **Availability:** 1999–2004 TEDS data was acquired from the Inter-university Consortium for Political and Social Research (ICPSR)
- **Trend:** 1992–2004
- **Strengths/ Weaknesses:** In Indiana, these data are not considered representative of the state as a whole, as only individuals who are 200% below the poverty level are eligible for treatment at state-registered facilities.

#### Alcohol Tobacco and Other Drug Use by Indiana Children and Adolescents Survey (ATOD)

- **Description:** The Indiana Prevention Resource Center (IPRC) administers this survey regarding alcohol, tobacco, and other drug use among children and adolescents (6th through 12th graders) in a number of schools throughout Indiana.
- **Sponsoring Organization/Source:** IPRC and DMHA
- **Geographic Level:** State
- **Availability:** Reports with data tables are accessible from the IPRC website: <http://www.drugs.indiana.edu/survey/atod/index.html>
- **Trend:** 1996–2005
- **Strengths/ Weaknesses:** School-specific survey results are of value to participating schools. While county-level analysis is considered unreliable because randomized samples are not used, statewide results are viewed as more dependable.

#### Clandestine Methamphetamine Laboratory Seizures

- **Description:** The National Clandestine Laboratory Seizure System includes types, numbers, and locations of labs seized; precursor and chemical sources; and number of children and law enforcement officers affected. Data currently available include number of labs seized by county and total number of children affected by year.
- **Sponsoring Organization/Source:** Drug Enforcement Agency (DEA); El Paso Intelligence Center (EPIC); and Indiana State Police (ISP)
- **Geographic Level:** National, state, and county
- **Availability:** 2002–2005 data based on EPIC and ISP lab seizure data are provided by ISP, based on EPIC and ISP lab seizure data
- **Trend:** 2002–2005

### Behavioral Risk Factor Surveillance System (BRFSS)

- **Description:** The BRFSS is a state health survey that monitors risk behaviors related to chronic diseases, injuries, and death.
- **Sponsoring Organization/Source:** Centers for Disease Control and Prevention (CDC) and Indiana State Department of Health (ISDH)
- **Geographic Level:** National, state, county level data from ISDH on special request
- **Availability:** National and state data are available from the CDC website (<http://apps.nccd.cdc.gov/yrbss/>).
- **Trend:** 1995–2003
- **Strengths/ Weaknesses:** Availability at the county level, but minority data are available only for larger counties

### Fatality Analysis Reporting System (FARS)

- **Description:** The FARS contains data on fatal traffic crashes. These data include motor vehicle traffic crashes that resulted in the death of an occupant of a vehicle or a non-motorist within 30 days of the crash. Variables include annual numbers of crashes and vehicle deaths involving alcohol.
- **Sponsoring Organization/Source:** U.S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA)
- **Geographic Level:** National and state
- **Availability:** Data are available from the Substance Abuse and Mental Health Services Administration's (SAMHSA) State Epidemiological Data System (SEDS) and NHTSA at <ftp://ftp.nhtsa.dot.gov/fars/>
- **Trend:** 1990–2003

### Indiana Youth Tobacco Survey (YTS)

- **Description:** YTS was developed by the CDC for use by states to design, implement, and evaluate the youth component of comprehensive tobacco control programs. YTS collects data from students in grades 6–12 regarding all types of tobacco use, exposure to secondhand smoke, access to tobacco products, knowledge and attitudes, media and advertising, school curriculum and cessation. YTS is the established standard in youth tobacco surveillance in the U.S. and Indiana and is critical to state tobacco control programs.
- **Sponsoring Organization/Source:** Indiana Tobacco Prevention and Cessation Agency; Centers for Disease Control and Prevention
- **Geographic Level:** State

- **Availability:** Detailed reports and highlights are available from ITPC at [www.in.gov/itpc/research.asp](http://www.in.gov/itpc/research.asp)
- **Trend:** 2000, 2002, 2004, planned for Fall 2006
- **Strengths/ Weaknesses:** The YTS provides detailed statewide information regarding youth knowledge, attitudes, and behaviors. However, local-level data are not available.

### Mortality Data

- **Description:** Mortality data by multiple causes of death, including drug- and alcohol-induced factors.
- **Sponsoring Organization/Source:** CDC, ISDH, National Center for Health Statistics (NCHS), and National Vital Statistics System (NVSS)
- **Geographic Level:** National and state
- **Availability:** National data are available from SEDS and NCHS ([http://www.cdc.gov/nchs/products/elec\\_prods/subject/mortmcd.htm](http://www.cdc.gov/nchs/products/elec_prods/subject/mortmcd.htm)). State-level data are available from ISDH at [http://www.in.gov/isdh/dataandstats/mortality/mortality\\_index.htm](http://www.in.gov/isdh/dataandstats/mortality/mortality_index.htm) with special reports are available as needed.
- **Trend:** 1999–2003 Indiana data are on line. Data for other years are available on request.

### Monitoring the Future

- **Description:** Monitoring the Future is an ongoing study of youth behaviors, attitudes, and values. Annually, approximately 50,000 students in 8th, 10th, and 12th grades are surveyed. Follow-up surveys are distributed to a sample of each graduating class for a number of years after initial participation.
- **Sponsoring Organization/Source:** National Institute on Drug Abuse (NIDA), National Institutes of Health (NIH)
- **Geographic Level:** National
- **Availability:** Data tables are available at <http://www.monitoringthefuture.org/data/05data/pr05t1.pdf>
- **Trend:** 1975–2005
- **Strengths/ Weaknesses:** One limitation of the survey design is that the target population does not include students who drop out of high school before graduation.

### National Survey on Drug Use and Health (NSDUH)

- **Description:** This survey provides information on the prevalence, patterns, and consequences of alcohol, tobacco, and illegal drug use and abuse in the general population (age 12 and older).
- **Sponsoring Organization/Source:** SAMHSA, Office of Applied Studies (OAS)

- **Geographic Level:** National; sub-state data are available using small area estimation techniques
- **Availability:** National and state data tables available at the NSDUH website at <http://oas.samhsa.gov/nsduh.htm>
- **Trend:** 1994–2003; State estimates are available for 1999–2003
- **Strengths/ Weaknesses:** Publicly available NSDUH data sets do not include state indicators and therefore do not allow for in-depth comparisons of Indiana and U.S. patterns of consumption.

#### Uniform Crime Reporting (UCR) Program: County-Level Detailed Arrest and Offense Data

- **Description:** The UCR program provides a nationwide view of crime based on the submission of statistics by local law enforcement agencies throughout the country.
- **Sponsoring Organization/Source:** United State Department of Justice, Federal Bureau of Investigation (FBI)
- **Geographic Level:** National, state, and county
- **Availability:** County-level counts of reported crime are downloadable from the National Archive of Criminal Justice Data website (<http://www.icpsr.umich.edu/NACJD/ucr.html>).
- **Trend:** 1994–2002
- **Strengths/ Weaknesses:** Reporting of UCR data by jurisdictions across the state is often less than 100%.

#### Youth Risk Behavior Surveillance System (YRBSS)

- **Description:** This national survey monitors health risks and behaviors among youth in grades 9 through 12.
- **Sponsoring Organization/Source:** CDC and ISDH
- **Geographic Level:** National, state
- **Availability:** National and state-level data are downloadable from selected published tables on the CDC website at <http://apps.nccd.cdc.gov/yrbss/>
- **Trend:** Every other year from 1991 through 2005; Indiana data are available for 2003 and 2005
- **Strengths/ Weaknesses:** At the state level, data by ethnicity (Hispanic) are not available.



### 3.

## ALCOHOL USE IN INDIANA: CONSUMPTION PATTERNS AND CONSEQUENCES

### CONSUMPTION

#### General Consumption Patterns

Alcohol is the most frequently used drug in both Indiana and the United States. In 2004, the National Survey of Drug Use and Health, or NSDUH (Substance Abuse and Mental Health Services Administration, SAMHSA, 2006) estimated that 47.37% of Indiana residents 12 years of age or older had used alcohol during the past month. This translates to 2,403,000 Indiana residents. The estimated national average for current alcohol use is 50.71% of the population. While the percentage of Indiana residents 12 and older who report current use of alcohol has increased slightly over time, the state average has consistently been similar to or significantly lower than the national average (see Figure 3.1, page 27).

Two risky alcohol consumption patterns assessed by the NSDUH are binge drinking and risk for heavy drinking. According to the NSDUH, binge drinking is defined as consuming five or more alcoholic beverages over a very short time. Being at risk for heavy drinking refers to consuming five or more alcoholic beverages at one time at least once a week. Overall, the percentage of the Indiana population reporting either binge drinking and/or heavy drinking is similar to the national average (see Figures 3.2 and 3.3, pages 27 and 28).

#### Adult Consumption Patterns

Both the NSDUH (SAMHSA, 2006) and the Behavioral Risk Factor Surveillance System, or BRFSS (Centers for Disease Control and Prevention, CDC, 2005a) provide similar information on adult (individuals age 18 or older) alcohol consumption patterns. When current alcohol consumption rates of adults were compared for Indiana and the United States, Indiana adults reported consuming alcohol in the preceding 30

days at a rate equal to or less than adults in the rest of the United States (BRFSS, 2002–2005; NSDUH, 1999–2004).

The percentages of Indiana and U.S. adults reporting heavy drinking or binge drinking were compared on both the NSDUH and the BRFSS. It is important to note that binge and heavy drinking are defined somewhat differently in these surveys. The NSDUH defines *binge drinking* as the consumption of five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) at least once in the past 30 days (includes heavy use); *heavy use* is described as having five or more drinks on the same occasion on at least 5 different days in the past 30 days. The BRFSS defines *binge drinking* as having five or more drinks on one occasion (with no mention of a time period); *heavy use* referred to adult males who consume more than two drinks and adult females who consume more than one drink per day.

The rates of heavy drinking reported by adults locally and nationally in both the BRFSS (2002–2005) and the NSDUH (1999–2004) across all years studied are statistically identical. When adult binge drinking patterns (defined as having five or more alcoholic beverages in a short time period at least once in the past 30 days) were analyzed, Indiana was similar to the United States across all years and age groups studied with three exceptions:

- In 2002, the NSDUH reported that an estimated 327,000 or 46.84% (confidence interval = 42.08% to 51.66%) of Indiana residents ages 18 to 25 reported binge drinking in the past 30 days. This percentage was statistically significantly higher than the 2002 national average of 40.93%.
- Similarly in 2003, the NSDUH reported that 45.11% (C.I. = 41.45 % to 48.83%) or 318,000 Indiana residents 18 to 25 years old admitted to binge drinking at least once in the past 30 days. The estimated national rate for binge drinking by 18- to 25-year-olds during the same time period was 41.25%; again, Indiana's rate was statistically significantly higher than the nation's (see Figure 3.4, page 28). The levels of binge drinking reported by the BRFSS for Indiana were similar to or significantly lower than the national rates across all years and age groups reviewed with one exception:
  - In 2005, the BRFSS reported that the percentage of Indiana residents between the ages of 18 to 24 who reported binge drinking in the past 30 days (33.3%; C.I. = 27.5% to 39.1%) was significantly higher than the

percentage reported by 18- to 24-year-olds in the rest of the United States (26.1%) (see Figure 3.5, page 29).

We compared alcohol consumption patterns for both race and gender using data from the BRFSS. The rates of current alcohol consumption, binge drinking, and heavy alcohol use for Indiana residents describing themselves as White, Black, Hispanic, or of another racial group are statistically similar to those reported by these racial groups on a national level. Comparisons of consumption patterns among racial groups within Indiana are not possible because of the small number of non-White participants.

Gender is related to alcohol consumption patterns. In both Indiana and the nation, adult men (age 18 or older) are more likely than adult women (18 or older) to be current users of alcohol, to report heavy drinking, and to report binge drinking. When we compared the rates of current alcohol use, binge drinking, and heavy drinking for adult men and adult women in Indiana and the nation, we found no significant differences for any of the years reviewed. Because of the small number of Indiana residents participating in the BRFSS, it is not statistically valid to compare the consumption patterns of men and women from different racial groups at the local level with the national level (BRFSS, 2002–2005).

### Youth Consumption Patterns

The Youth Risk Behavior Surveillance System, or YRBSS (CDC, 2006), the NSDUH (SAMHSA, 2006), the Monitoring the Future survey, or MTF (Monitoring the Future, 2006), and the Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents Survey, or ATOD, a non-random survey of Indiana students modeled after the MTF (Indiana Prevention Resource Center, IPRC, 2006) all report on similar alcohol consumption behaviors in middle and high school students ages 12 to 18.

The 2003 and 2005 YRBSS reported that 44.9% and 41.4%, respectively, of student participants in Indiana had consumed at least one alcoholic beverage in the past 30 days. These percentages are similar to those reported for the nation in both 2003 (44.9%) and 2005 (44.9%). The NSDUH also provides an estimate of current alcohol use. For 2004, the NSDUH estimates that 16.20% of Indiana residents

between ages 12 and 17 (approximately 89,000 residents) had consumed an alcoholic beverage in the past 30 days. Indiana's rate of current alcohol consumption is statistically identical to the 2004 national estimate of 17.65%. Across all years for which NSDUH data are available, Indiana's estimated rate of current alcohol consumption is statistically similar to the estimated national average (NSDUH, 1999–2004). Information on alcohol consumption from both the MTF and the ATOD are based on responses by students in the 8th, 10th, and 12th grades. During 2005, a combined national average of 32.43% of students in the 8th, 10th, and 12th grades reported consuming alcohol in the past 30 days (MTF, 2005). The combined 2005 Indiana average for alcohol consumption in the past month for 8th, 10th, and 12th graders is 31.97% and approximately equal to the national average. The average past month drinking rates in both Indiana and the United States are statistically similar across all years reviewed (MTF, 2000–2005; ATOD, 2000–2005).

We compared the percentages of Indiana and U.S. youth who reported binge drinking using the YRBSS, NSDUH, MTF, and ATOD. The percentages of Indiana youth participating in the YRBSS who reported at least one episode of binge drinking in the past month were 28.9% and 24.6% for 2003 and 2005, respectively. The percentages of binge drinking reported by participants nationally (28.3%, 2004; 25.5%, 2005) were approximately equal to Indiana's percentages. We compared the NSDUH's estimated prevalence rates for binge drinking by Indiana youth with the national estimates for the years 1999 through 2004. Across all years, the estimated prevalence of binge drinking for 12- to 17-year-olds in Indiana is statistically identical to the nation's. We found no differences when comparing the average rates of binge drinking for Indiana students in the 8th, 10th, and 12th grades, as reported by the ATOD, to the national averages reported by the MTF for the years 2000 through 2005.

Both the MTF and ATOD provide information on lifetime alcohol use, annual alcohol use and daily alcohol use for 8th, 10th, and 12th grade students. *Lifetime alcohol use* is defined as a student having consumed at least one alcoholic beverage at any point in their life. *Annual use* is defined as consuming at least one alcoholic beverage in the past year. *Daily alcohol use* is defined as consuming at least one

alcoholic beverage on 20 or more days in the last month. Lifetime, annual, and daily use of alcohol by 8th, 10th, and 12th graders have been decreasing steadily since 2000, both on a local and national level. Indiana is very similar to the nation in the rates of reported lifetime and annual use. Still, over 50% of Indiana's middle and high school students reported having used alcohol at least once in the past year, while over 60% report having used alcohol at least once in their life. In terms of daily alcohol use, the reported rate of use by Indiana's middle and high school students is consistently higher than the nation across the years studied (see Figure 3.6, page 29)

When grade levels are considered separately from one another, there are clear differences in alcohol consumption patterns in Indiana when compared with the nation. Indiana's 8th graders report a higher rate of lifetime use, annual use, monthly use, daily use, and binge drinking than do 8th graders in the rest of the nation. Information to determine whether the differences are statistically significant is available for 2004 and 2005. For both years, the rates of lifetime, annual, monthly, daily, and binge drinking among Indiana's 8th graders are significantly higher than 8th graders in the rest of the nation (see Figure 3.7, page 30). Indiana's 10th and 12th graders reported higher rates of daily alcohol use than did their national counterparts. For the two years for which statistical significance could be assessed, Indiana's 10th and 12th graders reported statistically significantly higher rates of daily alcohol use than did 10th and 12th graders nationally (see Figure 3.8, page 30).

The 2004 NSDUH provided additional prevalence estimates for current alcohol use and binge drinking by individuals below the legal drinking age of 21. The NSDUH estimates that in 2004, 26.74% (C.I. = 24.12% to 29.54%) of young people (or 218,000) in Indiana between the ages of 12 and 20 had used alcohol in the past month and 18.60% (C.I. = 16.41% to 21.01%) of young people (or 151,000) had engaged in binge drinking at least once in the past 30 days. During 2004, the estimated rates of underage drinking and binge drinking in Indiana were statistically the same as the estimated national average of 28.85% and 19.38%, respectively. The typical Indiana resident first started using alcohol at 16.2 (C.I. = 15.8–16.6) years of age, which is significantly older than the national average of 15.7 years (NSDUH, 1999).

## CONSEQUENCES

Alcohol use is a major factor in homicides, suicides, violent crimes, and motor vehicle crash deaths. Heavy alcohol use can lead to serious patterns of abuse and/or dependence and is associated with other unsafe behaviors such as smoking cigarettes, illicit drug use, and risky sex. Chronic alcohol use can lead to the development of cirrhosis and other serious liver diseases.

### Alcohol Abuse and Dependence

The estimated prevalence for alcohol abuse and/or alcohol dependence in Indiana for 2004 was 7.51% (or 382,000 residents; C.I. = 6.37% to 8.85%). This estimate is very close to the estimated national average of 7.62% (NSDUH, 2004). Since 1999, the estimated prevalence of alcohol abuse and/or dependence in Indiana has been statistically similar to the estimated national average across both youth and adults (Figure 3.9, page 31). Of all age groups, adults between the ages of 18 to 25 reported the highest rates of lifetime alcohol abuse and/or dependence, both in Indiana and nationally across all years reviewed. Though the local and national rates of abuse and/or dependence were statistically similar, individuals from 18 to 25 years of age appear to be at greatest risk for developing problems with alcohol use.

According to the Treatment Episode Data Set (TEDS) series (Substance Abuse and Mental Health Data Archive, n.d.), alcohol accounted for the largest percentage of admissions to state-supported drug treatment facilities in Indiana over the five-year period from 2000 to 2004. When compared to the rest of the nation, the percentage of substance abuse treatment admissions for alcohol was statistically significantly higher in Indiana across all years reviewed (2000: Pearson chi-square = 1021.56,  $p < .001$ ; 2001: Pearson chi-square = 182.44,  $p < .001$ ; 2002: Pearson chi-square = 1201.61,  $p < .001$ ; 2003: Pearson chi-square = 111.20,  $p < .001$ ; 2004: Pearson chi-square = 1075.36,  $p < .001$ ) (see Figure 3.10, page 31).

In Indiana, age is related to the percentage of individuals entering treatment for alcohol abuse or dependence. Youth were significantly less likely than adults to report alcohol as the primary drug for which they were entering treatment (2000: Pearson chi-square = 690.82,  $p < .001$ ; 2001: Pearson chi-square = 731.87,  $p < .001$ ; 2002:

Pearson chi-square = 732.28,  $p < .001$ ; 2003: Pearson chi-square = 562.13,  $p < .001$ ; 2004: Pearson chi-square = 553.41,  $p < .001$ ). Regardless of age, Indiana residents entering alcohol treatment from 2000 to 2004 were significantly more likely to be White men or White women.

### Alcohol-Related Mortality

A serious but long-term consequence of chronic alcohol use is liver disease. Indiana's death rates for alcohol-related cirrhososes and other-related cirrhososes were statistically similar or lower than those of the nation for the years 2000–2002 (CDC, 2005b). The Alcohol-Related Disease Impact (ARDI) database (CDC, 2004) estimated that in 2001, 8.0% of all deaths in Indiana were alcohol-related. The 2001 ARDI estimate for alcohol-related deaths in the nation was also 8.0%.

Though alcohol use is not necessarily associated with every suicide and homicide, suicides and homicides often do involve individuals who have been using alcohol. For this reason, suicide and homicide rates may provide additional information on alcohol's impact in a community. Indiana's overall age-adjusted homicide rate is similar to the national average over the three years for which data are available. When age-adjusted homicide rates were evaluated by race, the overall rate for Blacks was significantly higher than the national average (see Figure 3.11, page 32). Significantly higher age-adjusted homicide rates were found for both Indiana's Black males and Black females (CDC, 2005b). The ARDI indicates that in 2001, 47.0% of the homicides in Indiana were related to alcohol. The percent of homicides in the United States in 2001 due to alcohol was also 47.0%.

The age-adjusted suicide rates in Indiana and the United States increased from 2000 to 2002. Regardless of the year, the age-adjusted overall suicide rate in Indiana was significantly higher than that of the nation (see Figure 3.12, page 32). Males had significantly higher suicide rates than females in Indiana and the United States. Whites had higher suicide rates than Blacks, both in Indiana and the nation. When looking at race and gender separately, the national suicide rates were significantly lower than those for Indiana. When race and gender were both taken into account, Indiana's Black males, Black females, and White males consistently had significantly higher age-adjusted suicide

rates than their national counterparts (see Figure 3.13, page 33) (CDC, 2005b). Of the suicides which occurred in Indiana during 2001, the ARDI system estimates that 23.0% were alcohol related. The estimate for the nation during 2001 was also 23.0%.

### **Alcohol-Related Fatal Motor Vehicle Accidents**

Alcohol is often a contributing factor to fatal motor vehicle accidents. According to the Fatality Analysis Reporting System, FARS (National Highway Traffic Safety Administration, NHTSA, n.d.), Indiana's death rate for fatal motor vehicle accidents that involved alcohol was .042 per 1,000 population in 2003. The national death rate for the same period was .059 per 1,000 population. Comparisons of death rates for the years from 2000 to 2003 show that regardless of age, race, or gender, Indiana's death rates were similar to or lower than those of the nation.

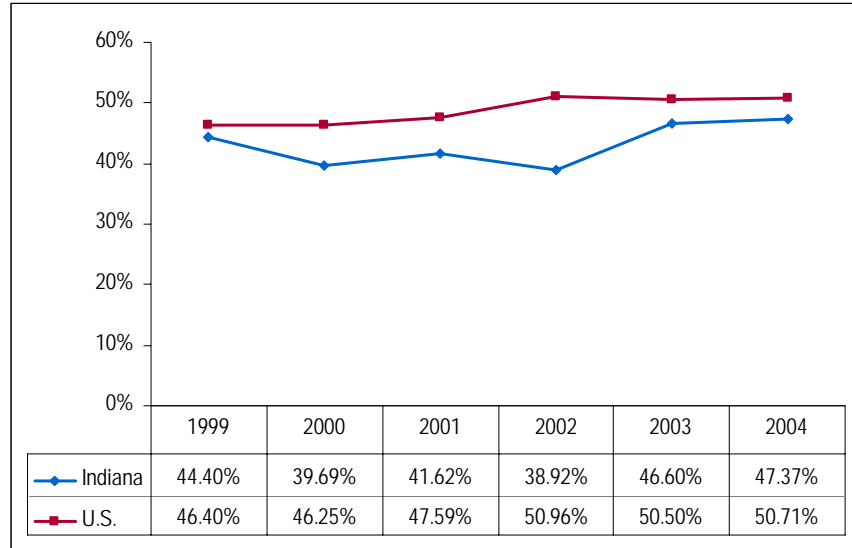
### **Alcohol-Related Crimes**

Using the Uniform Crime Record, or UCR (Federal Bureau of Investigation, FBI, n.d.), we compared Indiana's prevalence rates for aggravated assaults, sexual assaults, and robberies with the national rates for the years 1999 through 2002. Indiana's rates were similar to or lower than the national average for all years reviewed (UCR, 1999–2002). Other alcohol-related misdemeanors include driving under the influence, liquor law violations, and public intoxication. When compared with the national rates, Indiana's rates for driving under the influence, liquor law violations, and public intoxication were all higher for residents 18 and older (see Figures 3.14 through 3.16, pages 33 and 34). The rates for residents 17 and younger were higher in Indiana only for liquor law violations and public intoxication. Due to the nature of the data, statistical significance could not be determined. Alcohol-related crime rates were found to vary within the state somewhat by county. These county differences are presented in Maps 3.1 through 3.3, pages 35–37.



**Figure 3.1**

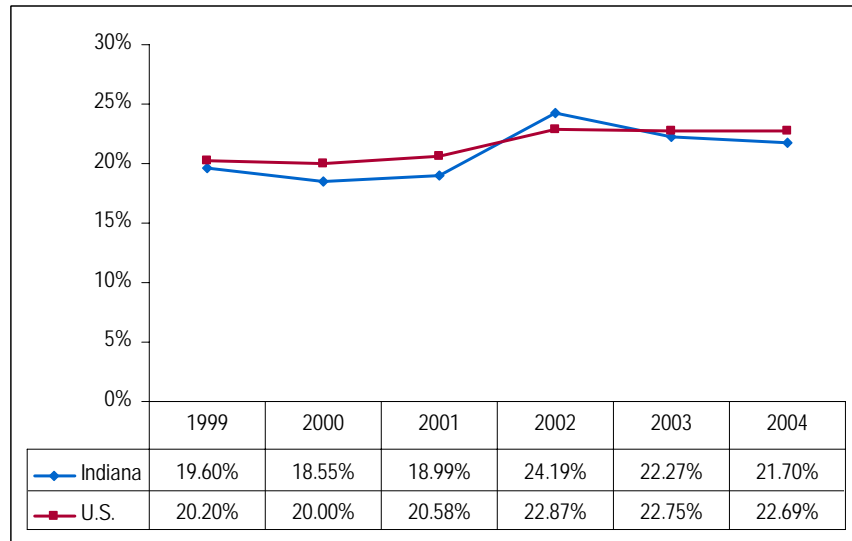
Percent of Indiana and U.S. Population (12 years and older) Reporting Current Alcohol Use, from 1999 to 2004 (National Survey on Drug Use and Health, 1999–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 3.2**

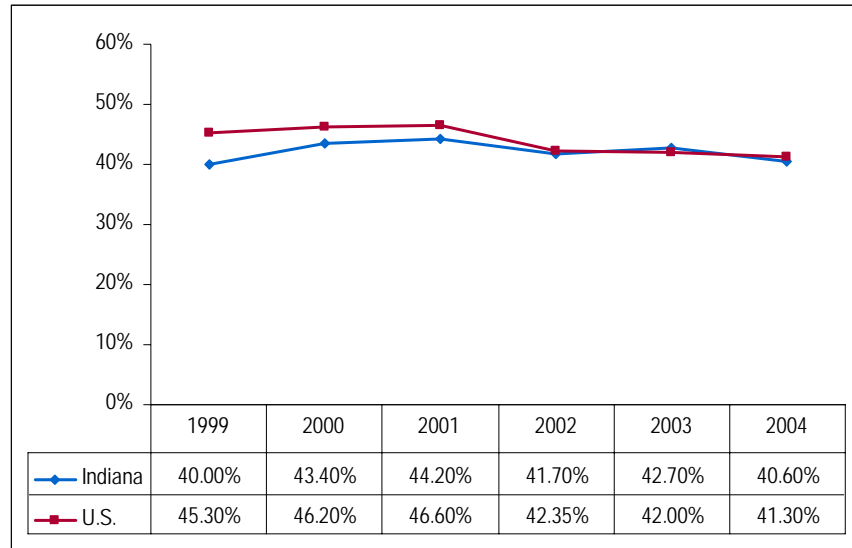
Percent of Indiana and U.S. Population (12 years and older) Reporting Binge Drinking in the Past 30 Days, from 1999 to 2004 (National Survey on Drug Use and Health, 1999–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 3.3**

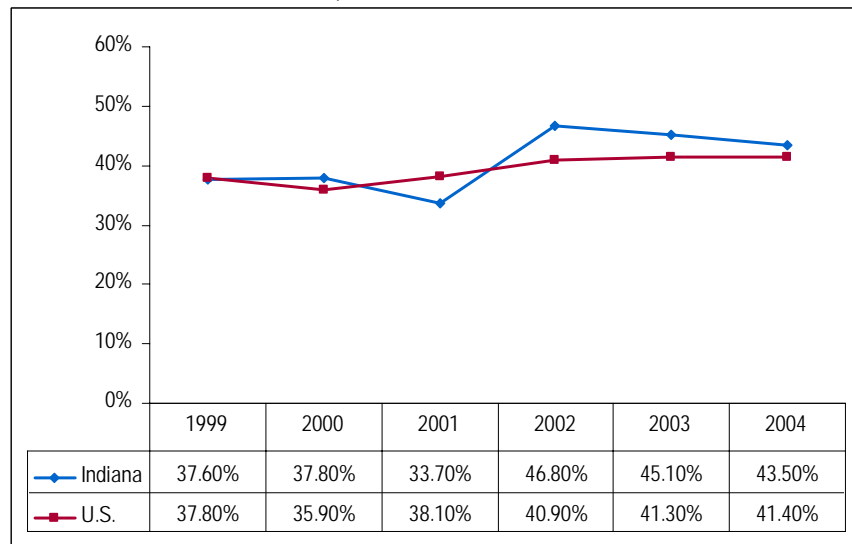
Percent of Indiana and U.S. Population (12 years and older) Reporting Heavy Alcohol Use in the Past 30 Days, 1999 to 2004 (National Survey on Drug Use and Health, 1999–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 3.4**

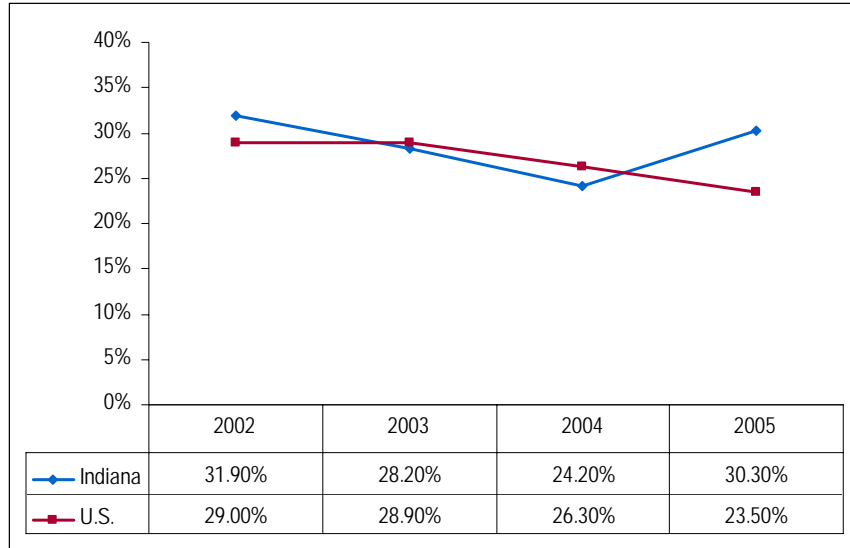
Percent of Indiana and U.S. 18- to 25-Year Olds Reporting Binge Drinking in the Past 30 Days, 1999 to 2004 (National Survey on Drug Use and Health, 1999–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 3.5**

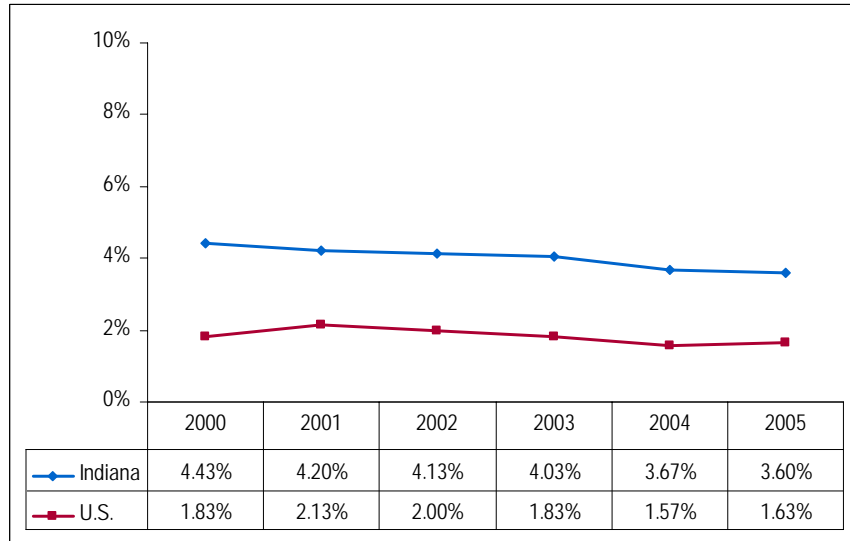
Percent of Indiana and U.S. Population (18 years and older) Reporting Binge Drinking in the Past 30 Days, 2002 to 2005 (Behavior and Risk Factor Surveillance System, 2002–2005)



Source: Centers for Disease Control and Prevention, 2005a

**Figure 3.6**

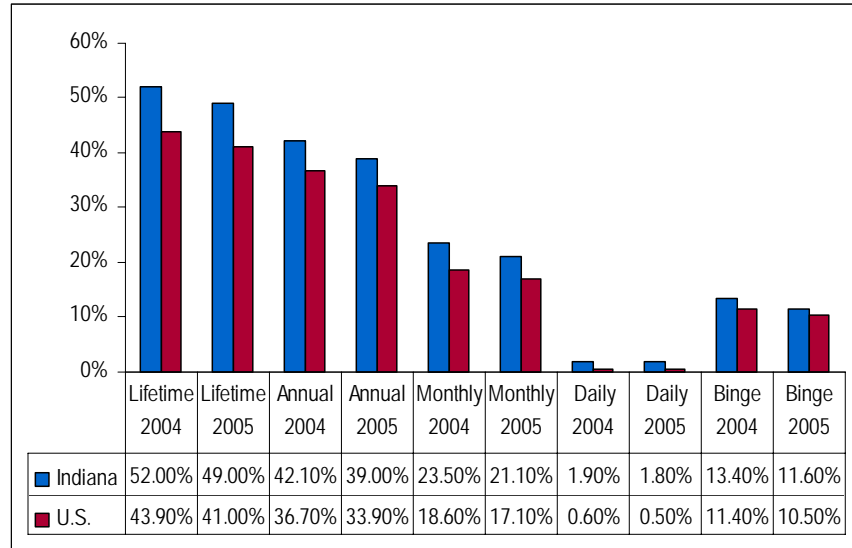
Percent of Indiana and U.S. Middle and High School Students (8th, 10th, and 12th Grades Combined) Reporting Daily Alcohol Use, 2000 to 2005 (Alcohol Tobacco and other Drug Use by Indiana Children and Adolescents Survey and Monitoring the Future Survey, 2000–2005)



Sources: Indiana Prevention Resource Center, 2006; Monitoring the Future, 2006

**Figure 3.7**

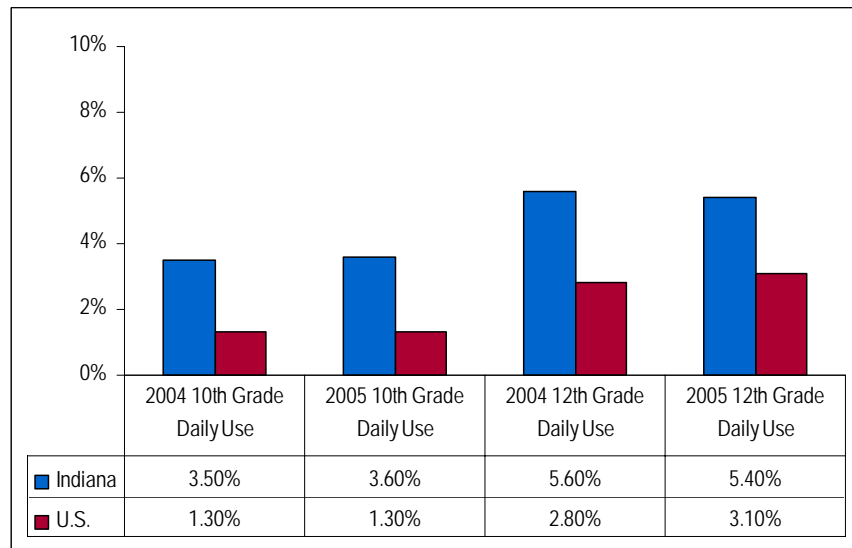
Percent of Indiana and U.S. Middle and High School Students (8th, 10th, and 12th Grades Combined) Reporting Alcohol Use, 2004 and 2005 (Alcohol Tobacco and other Drug Use by Indiana Children and Adolescents Survey and Monitoring the Future Survey, 2004–2005)



Sources: Indiana Prevention Resource Center, 2006; Monitoring the Future, 2006

**Figure 3.8**

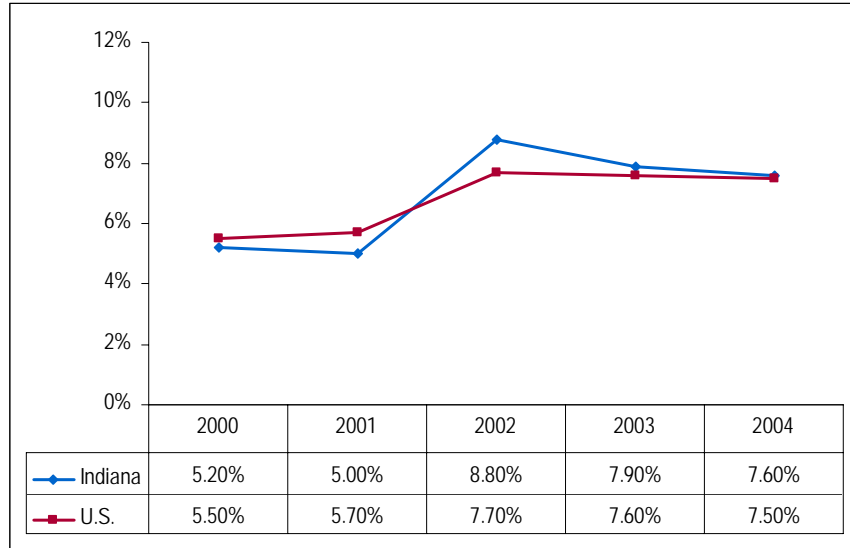
Percent of Indiana and U.S. 10th and 12th Grade Students Reporting Daily Alcohol Use, 2004 and 2005 (Alcohol Tobacco and other Drug Use by Indiana Children and Adolescents Survey and Monitoring the Future Survey, 2004–2005)



Sources: Indiana Prevention Resource Center, 2006; Monitoring the Future, 2006

**Figure 3.9**

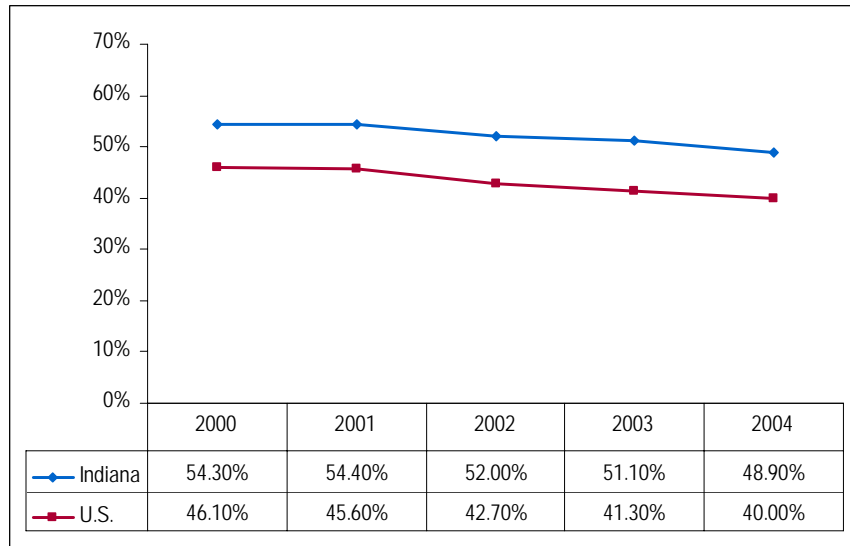
Percent of Indiana and U.S. Population with Alcohol Abuse and/or Dependence, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 3.10**

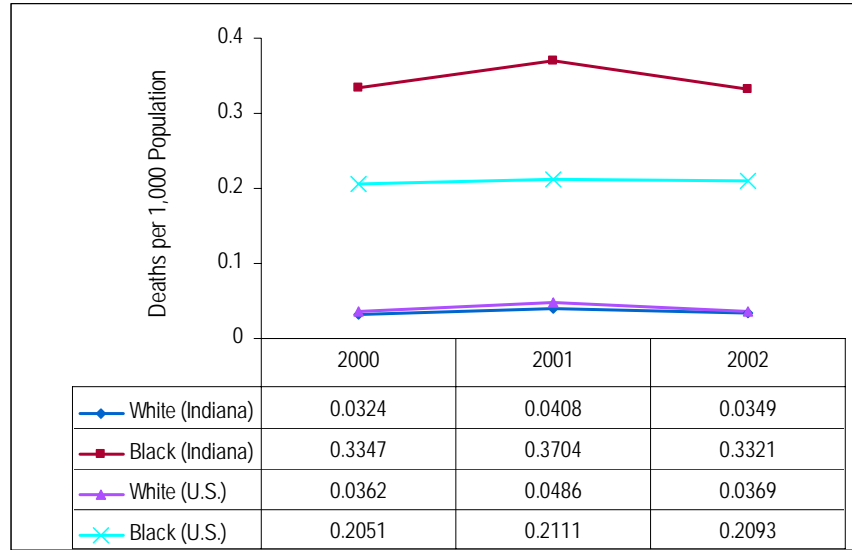
Substance Abuse Treatment Admissions for Alcohol (in percent) for Indiana and U.S. patients, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 3.11**

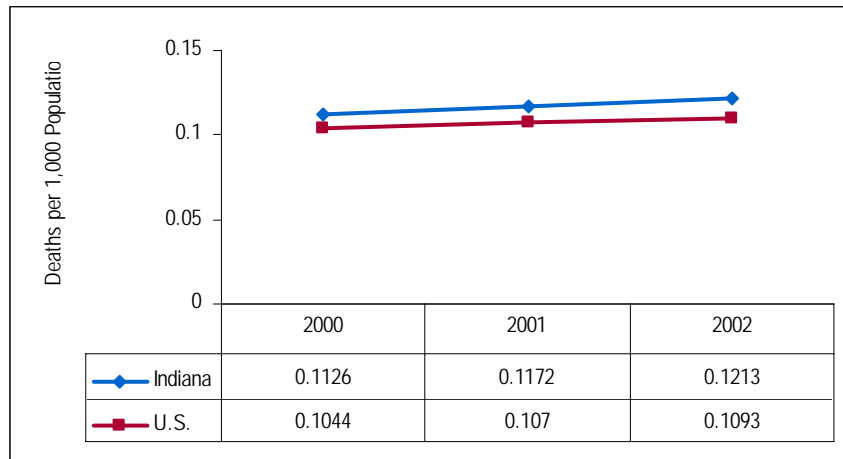
Homicide Death Rates per 1,000 Population for Indiana and the United States, by Race, 2000 to 2002 (CDC WONDER)



Source: Centers for Disease Control and Prevention, 2005b

**Figure 3.12**

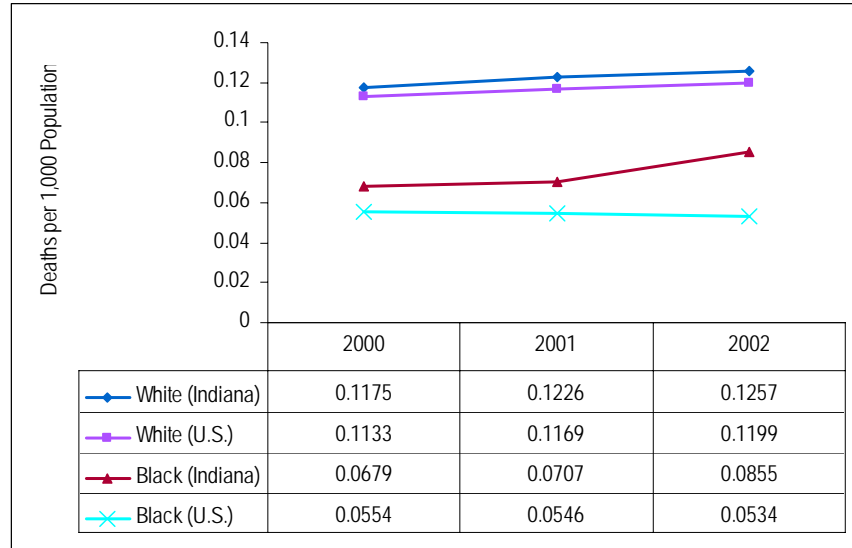
Age-Adjusted Suicide Rates per 1,000 Population for Indiana and the United States, 2000 to 2002 (CDC WONDER)



Source: Centers for Disease Control and Prevention, 2005b

**Figure 3.13**

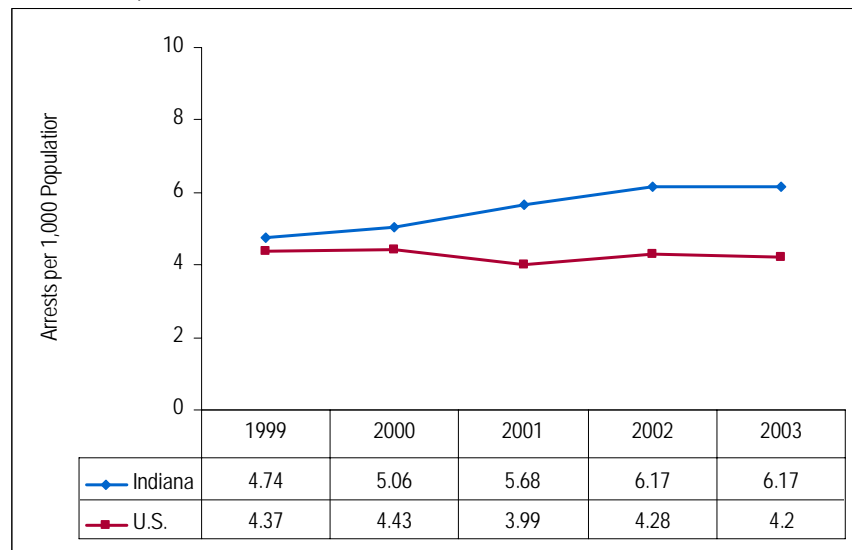
Age-Adjusted Suicide Rates per 1,000 Population for Indiana and the United States, by Race, 2000 to 2002 (CDC WONDER)



Source: Centers for Disease Control and Prevention, 2005b

**Figure 3.14**

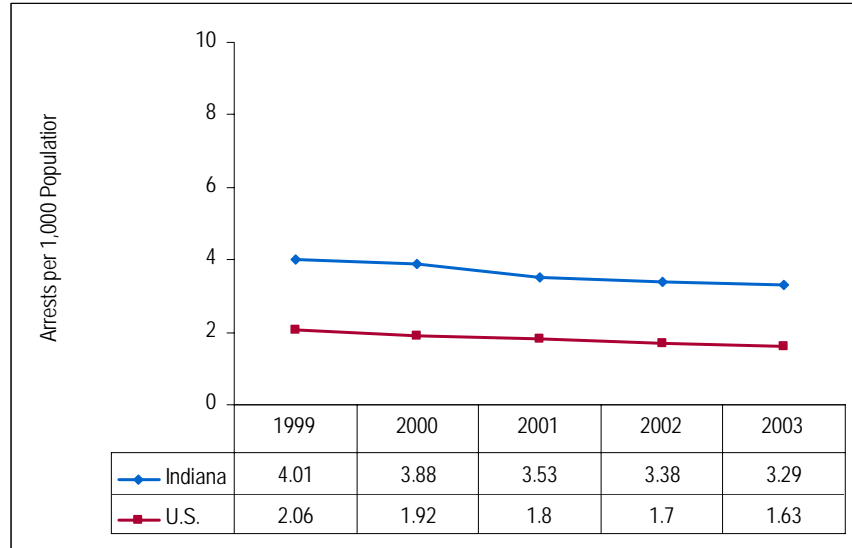
DUI Arrest Rates per 1,000 Population for Adults (18 and Older) in Indiana and the United States, 1999 to 2003 (Uniform Crime Reports, 1999–2003)



Source: Federal Bureau of Investigation, n.d.

**Figure 3.15**

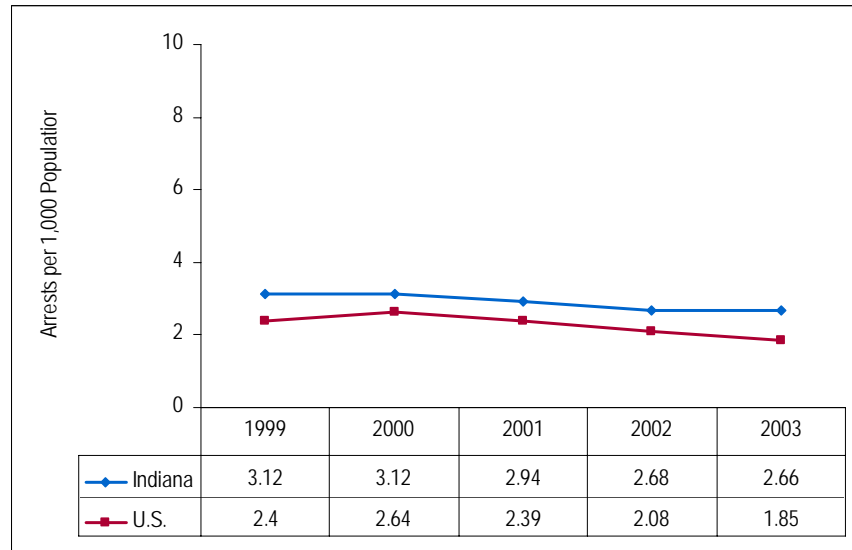
Public Intoxication Arrest Rates per 1,000 Population for Adults (18 or Older) in Indiana and the United States, 1999 to 2003 (Uniform Crime Reports, 1999–2003)



Source: Federal Bureau of Investigation, n.d.

**Figure 3.16**

Liquor Law Violation Rates per 1,000 Population for Adults (18 or Older) in Indiana and the United States, 1999 to 2003 (Uniform Crime Reports, 1999–2003)



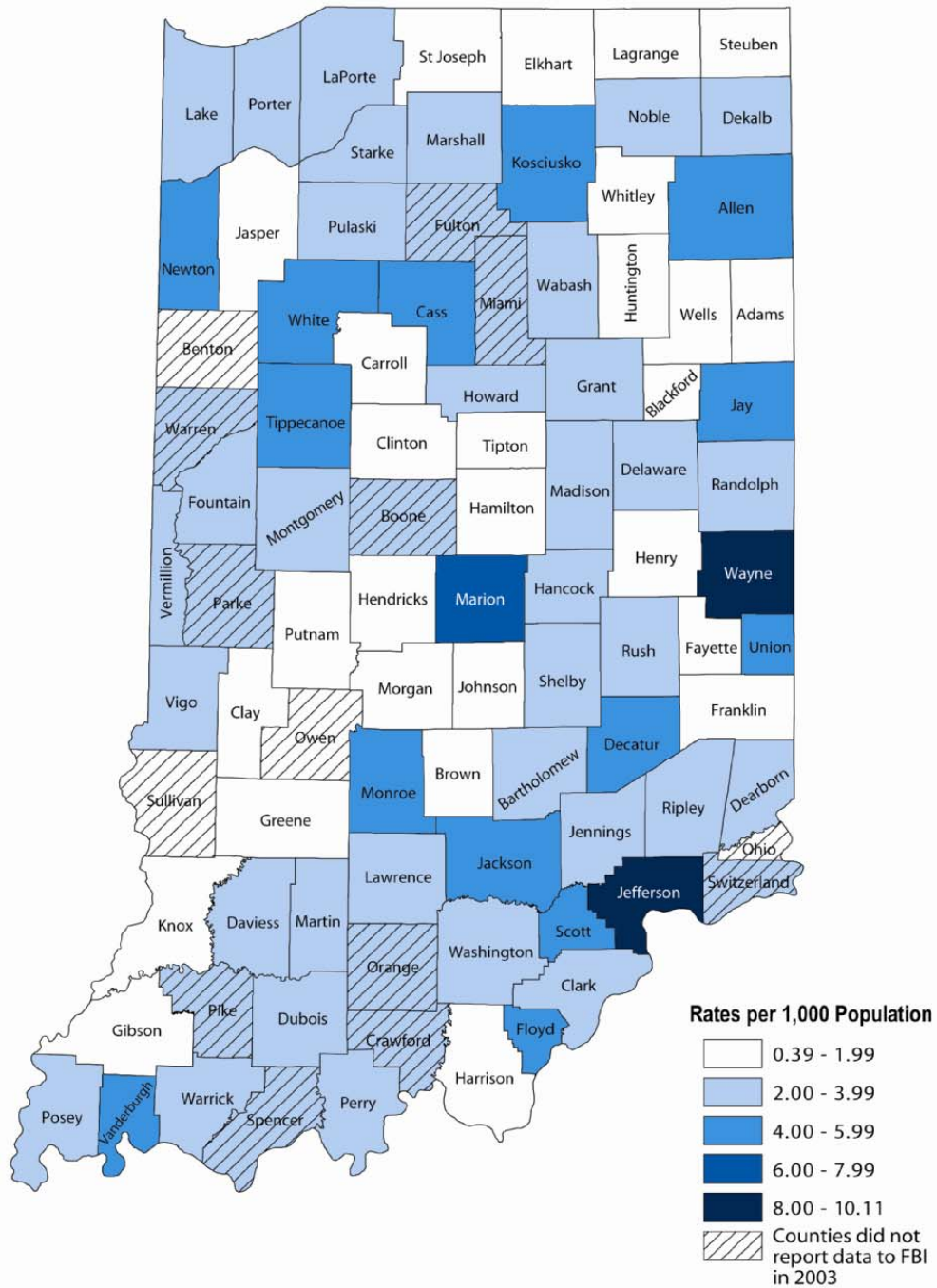
Source: Federal Bureau of Investigation, n.d.





Map 3.2

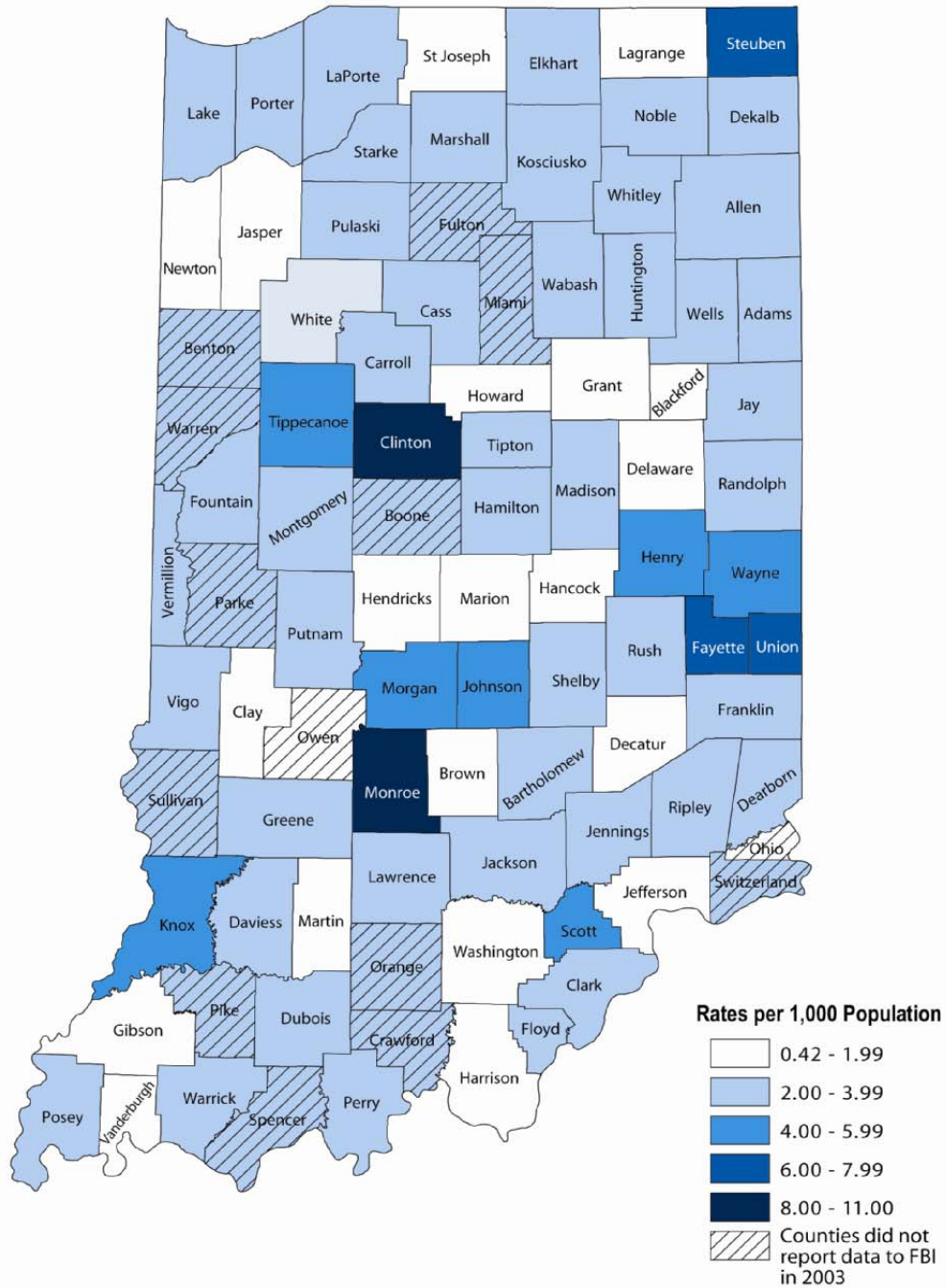
Public Intoxication Arrest Rates per 1,000 Population by Indiana Counties, 2003  
(Uniform Crime Reports, 2003)



Source: Federal Bureau of Investigation, n.d.

Map 3.3

Liquor Law Violation Arrest Rates per 1,000 Population by Indiana Counties, 2003 (Uniform Crime Reports, 2003)



Source: Federal Bureau of Investigation, n.d.

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## 4.

# TOBACCO USE IN INDIANA: CONSUMPTION PATTERNS AND CONSEQUENCES

## CONSUMPTION

### General Consumption Patterns

The harmful effects of tobacco on population health have been widely studied and the results published. Cigarette smoking remains the leading cause of preventable death in the United States, accounting for approximately one of every five deaths (Centers for Disease Control and Prevention, CDC, 2006b). The 2003–2004 National Surveys on Drug Use and Health, or NSDUH (Substance Abuse and Mental Health Services Administration, SAMHSA, 2006), showed that an estimated 32.32% (95% prediction interval:<sup>1</sup> 29.63%–35.13%) of the Indiana population, or 1,640,000 Hoosiers, 12 years and older, had used a tobacco product (including cigarettes, smokeless tobacco, cigars, or pipe tobacco) in the past month. Indiana’s rate was statistically significantly higher than the national rate of 29.49%. The highest rate of tobacco use was among 18- to 25-year-olds (IN: 48.20%; United States: 44.68%); in Indiana 343,000 people in this age group said they currently used a tobacco product (see Figure 4.1 on page 47).

The majority of tobacco consumers smoke cigarettes. In Indiana, 1,391,000 individuals 12 years and older admitted to having used cigarettes in the past month. The rates for Indiana, 27.40% (95% prediction interval: 24.90%–30.05%), and the United States (25.16%) were similar. The highest smoking rate was found among 18 to 25-year olds, with 42.48% (95% prediction interval: 38.68%–46.37%), followed by the age group 26 or older with 26.73% (95% prediction interval: 23.62%–30.08%). National rates were slightly lower, but the differences were statistically not significant (see Figure 4.2, page 48).

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<sup>1</sup> *Prediction intervals* are based on existing samples and refer to future values. By comparison, *confidence intervals*, used often in this report, refer to present population values.

From 2001 to 2004, past month cigarette use was consistently higher in Indiana than the United States, but does not seem to have changed significantly over the years (see Figure 4.3, page 48). Since publicly available data did not always display *p* values or confidence intervals, statistical significance could not be determined.

Publicly available NSDUH data currently do not include gender or race comparisons.

### **Adult Consumption Patterns**

The Behavioral and Risk Factor Surveillance System, or BRFSS (CDC, 2005a) focuses on behaviors and conditions that are linked with leading causes of death. The tobacco prevention community relies heavily on these data to assess adult smoking behaviors. According to the 2005 BRFSS, the prevalence rate for adult (people 18 years and older) smoking in Indiana was 27.3% (95% confidence interval: 25.9%–28.7%). Based on this rate, 1,712,249 Hoosiers 18 years and older are current smokers. Moreover, 20.8% of adults used cigarettes every day. Indiana's smoking prevalence is significantly higher than the national rate (20.6%). Currently, Indiana ranks second highest in adult smoking prevalence; only Kentucky has a higher rate (28.7%).

Smoking prevalence varies by gender. Males are more likely to smoke than females. In Indiana, the smoking prevalence for males was 29.7% (95% Confidence Interval: 27.4%–32.0%), which was statistically different than the rate for females of 25.0% (95% CI: 23.3%–26.7%) (see Figure 4.4, page 49).

On the national level, smoking rates do not vary greatly by race or ethnicity. In Indiana, however, race/ethnicity seems to have an impact. Hoosiers who identified themselves as Blacks demonstrated the highest rate of 36.8% (95% CI: 30.1%–43.5%), followed by Hispanics with 33.3% (95% CI: 24.5%–42.1%), and then Whites with 26.1% (95% CI: 24.6%–27.6%). The differences among the racial/ethnic groups in Indiana were statistically significant only for Blacks and Whites, but the differences between Indiana and the United States were statistically significant for all racial/ethnic groups analyzed (see Figure 4.5, page 49).

In 2005, 18- to 24-year olds exhibited the highest smoking prevalence of all age groups, with 39.0% (95% CI: 33.1%–44.9%) in Indiana. Rates decline as age increases. National smoking rates were

statistically significantly lower than Indiana rates for all age groups, except for seniors 65 years and older (see Figure 4.6, page 50). Furthermore, smoking prevalence increased in 18- to 24-year olds dramatically from 2004 to 2005. In 2004, only 28.2% (95% CI: 23.6%–32.8%) of Hoosiers in this age group were current smokers as compared with 39.0% in 2005.

Smoking prevalence in Indiana among adults has been above the national level for the last four years. Data show a steady decline in smoking rates from 2002 to 2005 for the U.S. population. In Indiana, current cigarette use decreased from 2002 to 2004, but increased again in 2005 (see Figure 4.7, page 50).

Additionally, high smoking rates were found for individuals with less than a high school education (49.3%) and persons whose household income is below \$15,000 (37.3%) (see Tables 4.1 and 4.2, page 57).

### Youth Consumption Patterns

Using data compiled from the 2003–2004 National Surveys on Drug Use and Health (SAMHSA, 2006), we can estimate that 79,000 Hoosiers between 12 and 17 years of age currently use tobacco. The rates for this age group were almost identical in Indiana, 14.45%, and the United States, 14.43% (see Figure 4.1, page 47).

Most tobacco consumption involves cigarette use. In Indiana, 12.59% of 12- to 17-year-olds (69,000 Hoosiers) admitted to smoking cigarettes in the past month. This rate is slightly higher than the nation's (12.03%), but statistically not different (see Figure 4.2, page 48). Publicly available NSDUH data currently do not include gender or race comparisons.

According to the 2005 Youth Risk Behavior Surveillance System, or YRBSS (CDC, 2006a), 56.9% (95% CI: 52.6%–61.2%) of high school students in Indiana have tried smoking a cigarette during their lifetime. In regard to current use (defined as use in the past 30 days), 29.2% (95% CI: 25.1%–33.3%) had used a tobacco product, 21.9% (95% CI: 17.9%–25.9%) had smoked cigarettes, 15.6% (95% CI: 12.8%–18.4%) had smoked cigars, and 8.6% (95% CI: 6.6%–10.6%) had used some type of smokeless tobacco. Indiana rates compare with national rates and are statistically the same (see Figure 4.8, page 51).

For the United States, smoking rates among high school students were almost identical for males (22.9%) and females (23.0%). However, in Indiana, male students (23.2%) reported higher rates than female students (20.5%). The differences among the groups were statistically not significant (see Figure 4.9, page 51).

Indiana's smoking rates for White (23.4%) and Black (9.4%) high school students were below the national rates (25.9% and 12.9% respectively); but the Indiana rate is higher than the U.S. rate (19.4%) for individuals belonging to other races (22.6%); however, the differences between these student groups in Indiana and their counterparts in the United States are statistically similar. Current use of cigarettes differs by race/ethnicity. White students reported the highest rate of current cigarette use, and Black students reported the lowest rate. In both Indiana and the United States, Black high school students reported current smoking rates far below the rates of their White counterparts. Data for Hispanic students in Indiana is currently not available (see Figure 4.10, page 52).

Smoking rates for high school students increase with age from 9th to 12th grade. Indiana rates are slightly higher for 9th graders (Indiana: 20.6%; United States: 19.7%) and 10th graders (Indiana: 21.8%; United States: 21.4%) and lower for 11th (Indiana: 22.7%; United States: 24.3%) and 12th graders (Indiana: 22.9%; United States: 27.6%). However, the differences are statistically not significant (see Figure 4.11, page 52).

Publicly available YRBSS data for Indiana do not include both gender and race comparisons.

YRBSS data for Indiana is available only for the years 2003 and 2005. Comparisons of tobacco consumption during these two years show slight decreases in lifetime (at least once in their life) cigarette use (2003: 60.4%; 2005: 56.9%), current cigarette use (2003: 25.6%; 2005: 21.9%), and current tobacco use (2003: 30.4%; 2005: 29.2%). However, these differences are statistically not significant (see Figure 4.12, page 53).

According to the Indiana Youth Tobacco Survey, IYTS (Indiana Tobacco Prevention and Cessation, ITPC, n.d.), and the National Youth Tobacco Survey (NYTS), the current smoking rates for Indiana's middle (7.8%) and high school students (21.3%) were below the national rates



(8.1% and 22.3% respectively) in 2004. The percentages of young people who use cigarettes increase as students progress through middle school and high school. High school students report much higher use than middle school students (see Figure 4.13, page 53). This represents a 32% decline among Indiana high school students and a 20% decline among middle school students. Indiana's youth smoking rates are currently lower than the national averages for the first time since 2000 (ITPC, n.d.). The publicly available data do not allow tests for statistical significance. Tables 2.3 and 2.4 show the percentage of Indiana middle and high school students who reported lifetime (see Table 4.3, page 58) or current (see Table 4.4, page 59) use of tobacco products, grouped by gender, race/ethnicity, and grade.

In Indiana, smoking rates for students who described themselves as White (middle school: 8.1%; high school: 22.3%) and Hispanic (middle school: 8.1%; high school: 22.7%) were similar to those of the nation among 6th to 8th graders and among 9th to 12th graders. Students who identified themselves as Black displayed the lowest smoking rate (middle school: 6.2%; high school: 12.6%). These differences between Black students on one side and White and Hispanic students on the other side are statistically not significant for middle school, but they show significance for high school students (see Figure 4.14, page 54).

Smoking rates increase for Indiana students as they progress in school, ranging from 4.9% in 6th grade to 25.6% in 12th grade in 2004 (see Figure 4.15, page 54).

Data from the 2000, 2002, and 2004 Indiana Youth Tobacco Survey show a decline in smoking for middle school students (from 9.9% to 7.8%) and, more significantly, for high school students (from 31.6% to 21.3%—see Figure 4.16, page 55).

The annual Survey of Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents (ATOD; Indiana Prevention Resource Center, IPRC, 2006) is based on a non-random sample and is, therefore, not truly representative of all 6th to 12th graders in the state. However, it provides us with a current estimate of substance use by this group.

According to these surveys, the use of cigarettes among students in grades 6 to 12 has declined over the past ten years. Monthly use (that is, use during the past month) decreased from 29.5% in 1996 to

15.9% in 2005, and daily use decreased from 18.7% in 1996 to 9.3% in 2005. Figure 4.17, page 55, illustrates lifetime, annual, and monthly cigarette use among middle and high school students for 2005. All use increased as students progressed in school; the highest smoking rate for students was found for 12th graders.

Data for gender or race/ethnicity comparisons are not publicly available.

## CONSEQUENCES

### Health Consequences

Tobacco is the second major cause of death in the world. It is responsible for approximately one in ten deaths among adults worldwide, or about 5 million deaths annually (World Health Organization, WHO, n.d.). In the United States, cigarette smoking is the single most preventable cause of disease and death, causing more deaths each year than AIDS, alcohol, cocaine, heroin, homicide, suicide, motor vehicle crashes, and fires combined. Tobacco use is responsible for more than 430,000 deaths per year among adults in the United States, representing more than 5 million years of potential life lost (U.S. Department of Health and Human Services, USDHHS, 2000). Indiana ranks second highest in smoking among the 50 states, and tobacco kills approximately 10,000 Hoosiers annually (Indiana State Department of Health, ISDH, n.d.). On average, smoking reduces adult life expectancy by approximately 14 years (CDC, 2006).

Furthermore, even second-hand smoke, also called environmental tobacco smoke (ETS), has serious consequences. An estimated 53,000 deaths are attributable to ETS breathed by nonsmokers, making it the third leading cause of preventable death in the United States (ITPC, 2005).

Smoking causes cancers of the oral cavity, pharynx, larynx, esophagus, lung, bladder, stomach, cervix, kidney, and pancreas, as well as acute myeloid leukemia. For smoking-attributable cancers, the risk generally increases with the number of cigarettes smoked and the number of years of smoking, and generally decreases after quitting completely. The leading cause of cancer deaths is lung cancer, and cigarette smoking causes most cases. In 2003, an estimated 171,900 new cases of lung cancer occurred and approximately 157,200 people

died from lung cancer (CDC, 2006b). However, any tobacco use can be detrimental. Smokeless tobacco has been shown to cause oral cancers (National Cancer Institute, 1992). Additionally, ETS is responsible for an estimated 3,000 lung cancer deaths each year among adult nonsmokers (USDHHS, 2000).

Coronary heart disease (CHD) is currently the leading cause of death in the United States, and smoking causes CHD. Cigarette smoking is also a major risk factor for cerebrovascular disease (stroke), which is the third leading cause of death in the United States. Smoking also causes abdominal aortic aneurysm (CDC, 2006b). Research has shown that ETS increases the risk of heart disease (USDHHS, 2000) and suggests that smokeless tobacco may be a risk factor for cardiovascular disease (NCI, 1992).

Smoking also affects respiratory health. It is related to chronic coughing and wheezing among adults. Smokers are more likely than nonsmokers to have upper and lower respiratory tract infections, perhaps because smoking suppresses the immune function. Generally, lung function declines in smokers faster than in nonsmokers. Moreover, smoking causes chronic obstructive pulmonary disease (COPD), the fourth leading cause of death in the United States. In 2001, COPD resulted in more than 118,000 deaths, and more than 90% of these deaths were attributed to smoking (CDC, 2006). The 2002 age-adjusted COPD mortality rate for Indiana, 42.5 per 100,000 population, exceeded the nation's rate, 35.9 per 100,000 population (see Figure 4.18)(CDC, 2005b). Children are heavily impacted by ETS, which increases their risk of developing significant lung conditions, especially asthma and bronchitis (USDHHS, 2000). Each year, ETS is associated with an estimated 8,000 to 26,000 new asthma cases in children (CDC, 2006b).

The effects of smoking can also be observed in unborn babies, infants, and children, and may influence women's reproductive health. Women who smoke have an increased risk for infertility and ectopic pregnancies. Smoking during pregnancy causes health problems for both mothers and babies, such as an increased risk of spontaneous abortions, pregnancy complications (e.g., placenta previa, placental abruption, and premature rupture of membranes before labor begins), premature delivery, low-birth-weight infants, stillbirth, and sudden infant death syndrome (SIDS). Mothers who smoke during pregnancy reduce

their babies' lung function (CDC, 2006b). Children of smoking mothers are twice as likely to have behavioral problems, including Attention Deficit Disorder. About 24% of pregnant women in Indiana smoke cigarettes. Children exposed to ETS also have an increased risk of chronic infections, fluid in the middle ear (which can lead to hearing loss and tubes to drain excess fluid in the middle ear), sore throats, chronic sore throats, stuffy noses, hoarseness, adenoidectomies, and tonsillectomies (ISDH, n.d.).

In addition, there are other health concerns associated with tobacco use. Smoking reduces bone density among postmenopausal women and is related to nuclear cataracts of the lens of the eye, the most common type of cataract in the United States (CDC, 2006b). Furthermore, use of smokeless tobacco can result in oral pathologies including leukoplakia, gingival recession, caries, abrasion, and staining (ISDH, n.d.), as well as tooth loss (CDC, 2006b).

The use of tobacco products has wide-ranging consequences for adolescents and young adults. The younger people start smoking cigarettes, the more likely they are to become strongly addicted to nicotine. Teens who smoke are three times more likely than nonsmokers to use alcohol, eight times more likely to use marijuana, and 22 times more likely to use cocaine. Smoking is associated with a host of other risky behaviors, such as fighting and engaging in unprotected sex. Furthermore, smoking is associated with poor overall health and a variety of short-term adverse health effects in young people and may also be a marker for underlying mental health problems, such as depression, among adolescents (CDC, 2006b). The vast majority of smoking begins in adolescence. About 89% of all persons who ever try a cigarette do so by age 18. The highest rate of initiation into daily smoking is among children ages 11 to 14 (ISDH, n.d.).

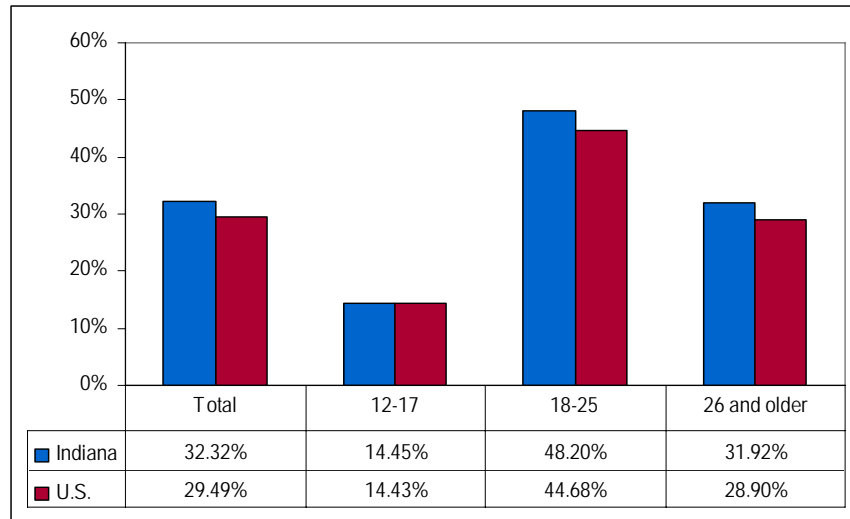
### **Economic Consequences**

The economic costs of smoking are more than \$167 billion, including \$75.5 billion in smoking-related medical expenditures and an estimated \$92 billion in productivity losses from deaths due to smoking (CDC, 2006b). Increased medical costs, higher insurance rates, added maintenance expenses, lower productivity, and higher rates of absenteeism from smoking cost American businesses billions every year. Economic

costs of smoking are estimated to be about \$3,391 per smoker per year: \$1,760 in lost productivity and \$1,623 in excess medical expenditures (ITPC, 2005). About 14% of all Medicaid expenditures are related to smoking (CDC, 2006b). Tobacco use costs Hoosiers \$1.9 billion each year in direct medical expenses (ITPC, 2005).

**Figure 4.1**

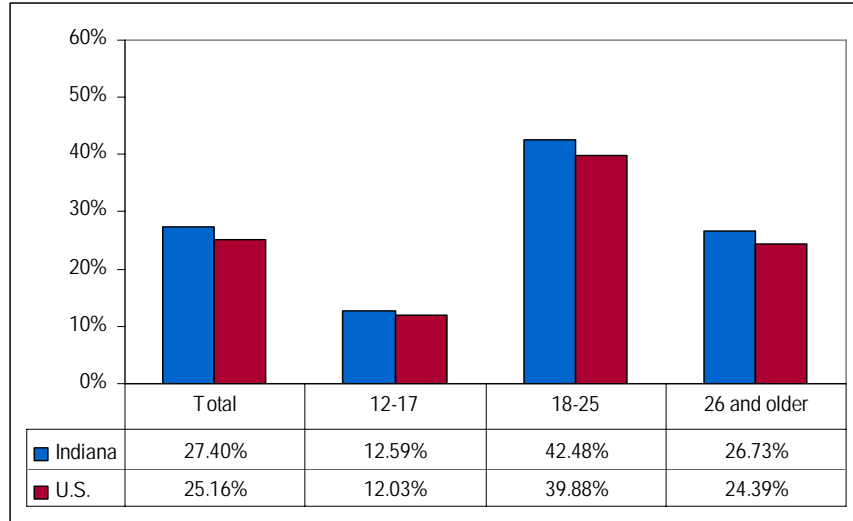
Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Any Tobacco Use in the Past Month, Average 2003 and 2004 (National Survey on Drug Use and Health, 2003–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 4.2**

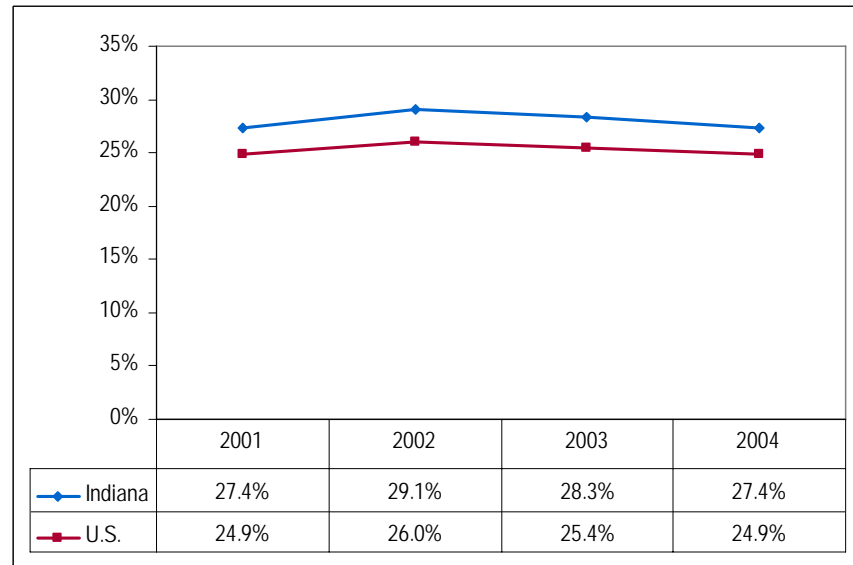
Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cigarette Use in the Past Month, Average 2003 and 2004 (National Survey on Drug Use and Health, 2003–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 4.3**

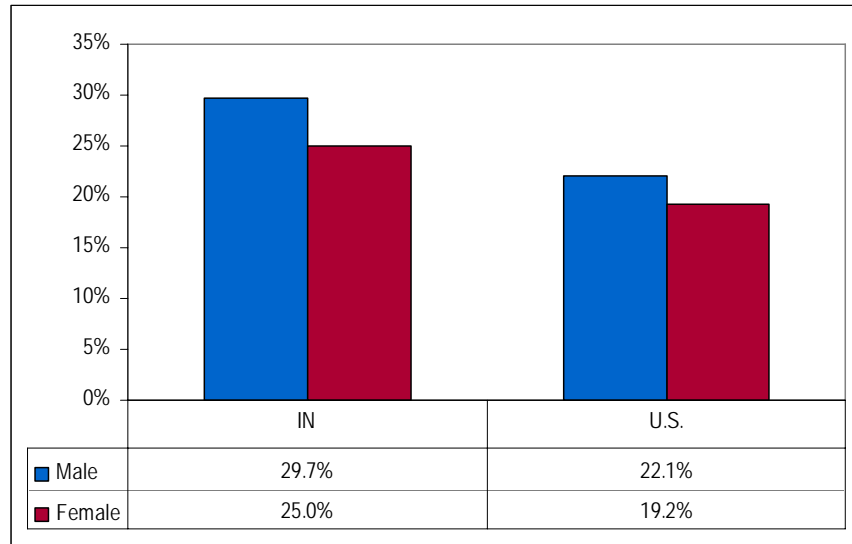
Percentage of Indiana and U.S. Population (12 Years and Older) Reporting Cigarette Use in the Past Month, from 2001 to 2004 (National Survey on Drug Use and Health, 2001–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 4.4**

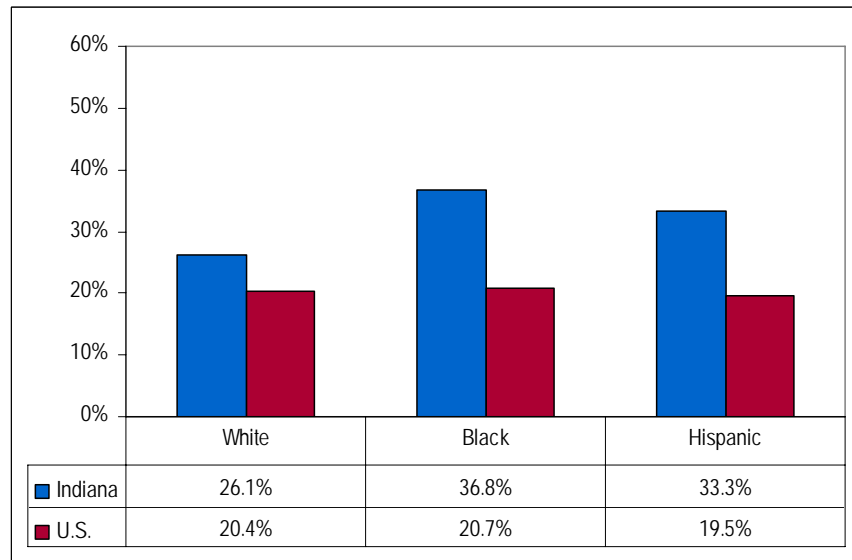
Adult (18 Years and Older) Smoking Prevalence in Indiana and the United States, by Gender, 2005 (Behavior and Risk Factor Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2005a

**Figure 4.5**

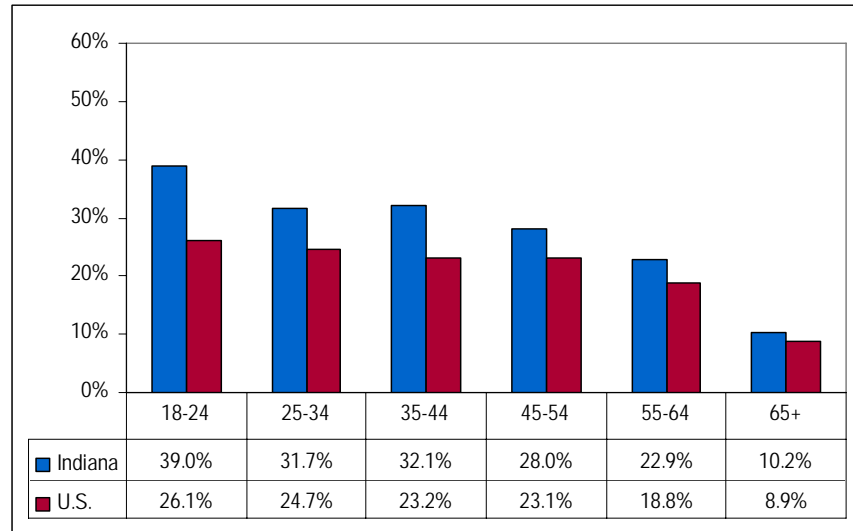
Adult (18 Years and Older) Smoking Prevalence in Indiana and the United States, by Race/Ethnicity, 2005 (Behavior and Risk Factor Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2005a

**Figure 4.6**

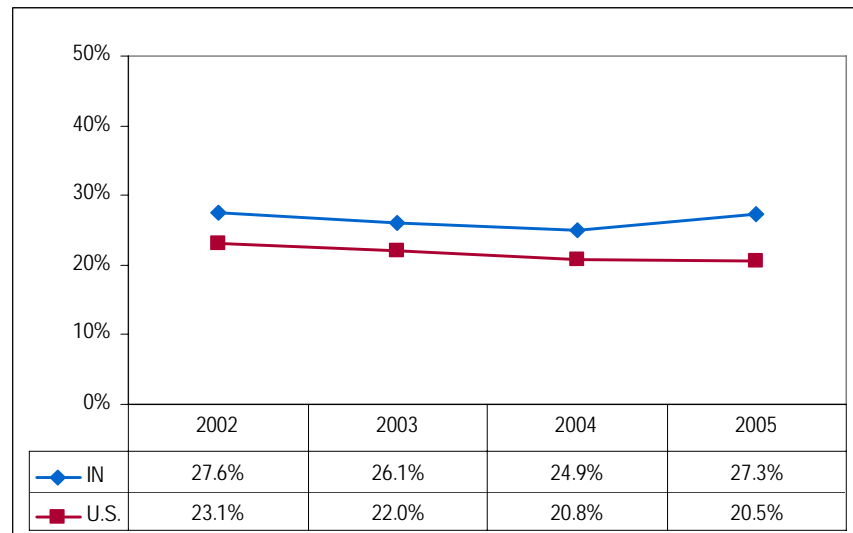
**Adult (18 Years and Older) Smoking Prevalence in Indiana and the United States, by Age Group, 2005 (Behavior and Risk Factor Surveillance System, 2005)**



Source: Centers for Disease Control and Prevention, 2005a

**Figure 4.7**

**Percentage of Indiana and U.S. Population (18 Years and Older) Reporting Current Cigarette Use, 2002 to 2005 (Behavior and Risk Factor Surveillance System, 2002–2005)**

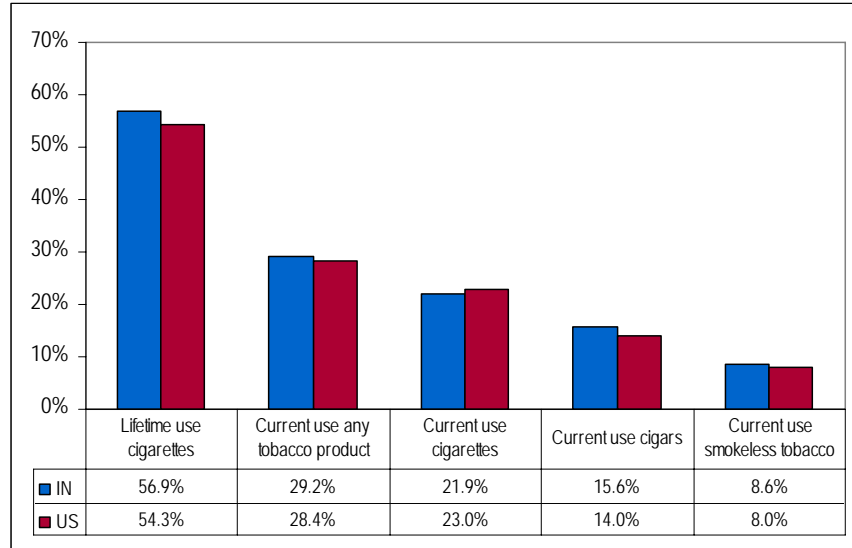


Source: Centers for Disease Control and Prevention, 2005a



**Figure 4.8**

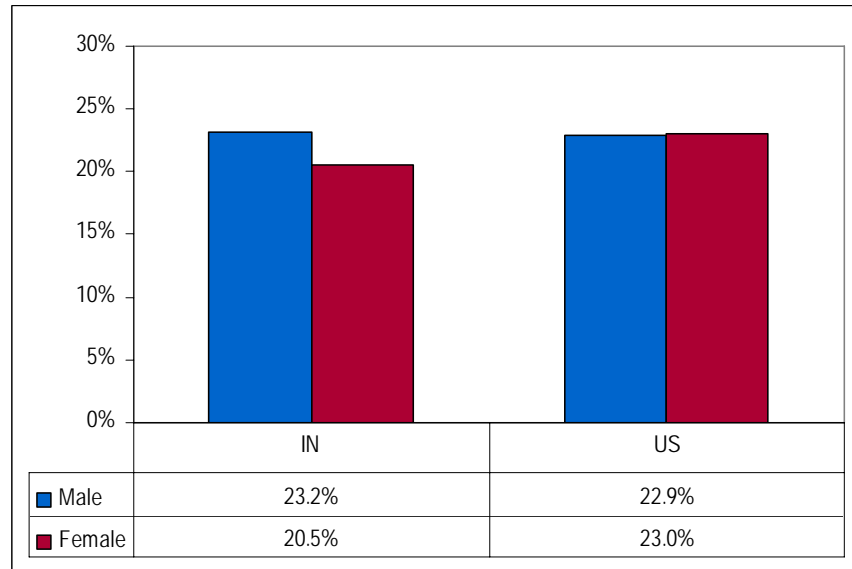
Percentage of Indiana and U.S. High School Students (9th–12th grade) Reporting Tobacco Consumption, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006a

**Figure 4.9**

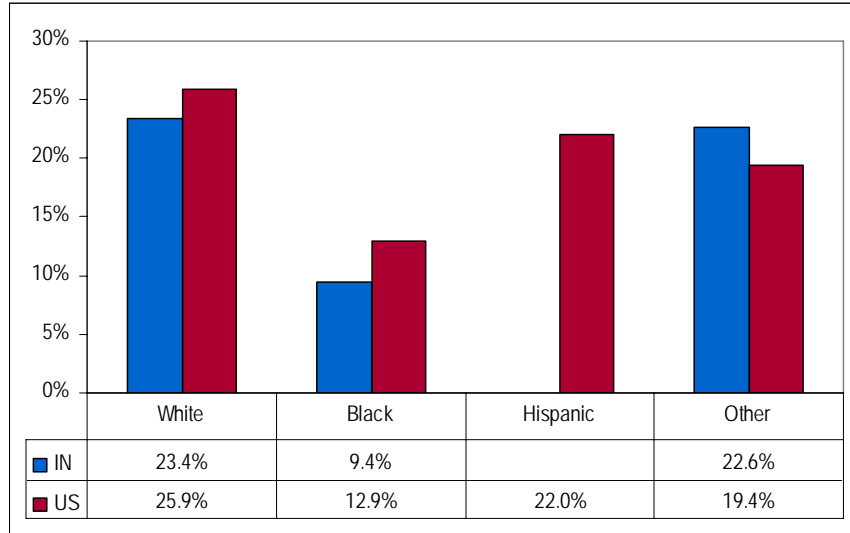
Smoking Rates in Indiana and U.S. High School Students (9th–12th grade), by Gender, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006a

**Figure 4.10**

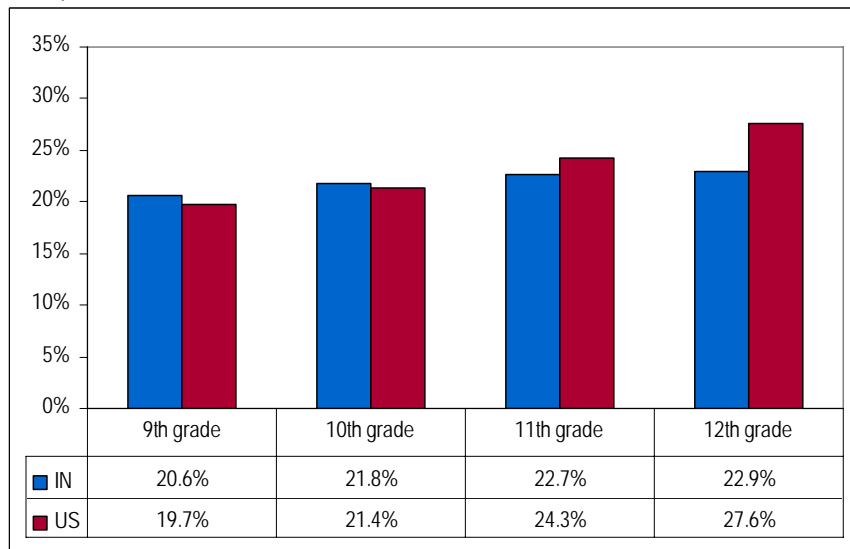
Smoking Rates in Indiana and U.S. High School Students (9th–12th grade), by Race/Ethnicity, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006a

**Figure 4.11**

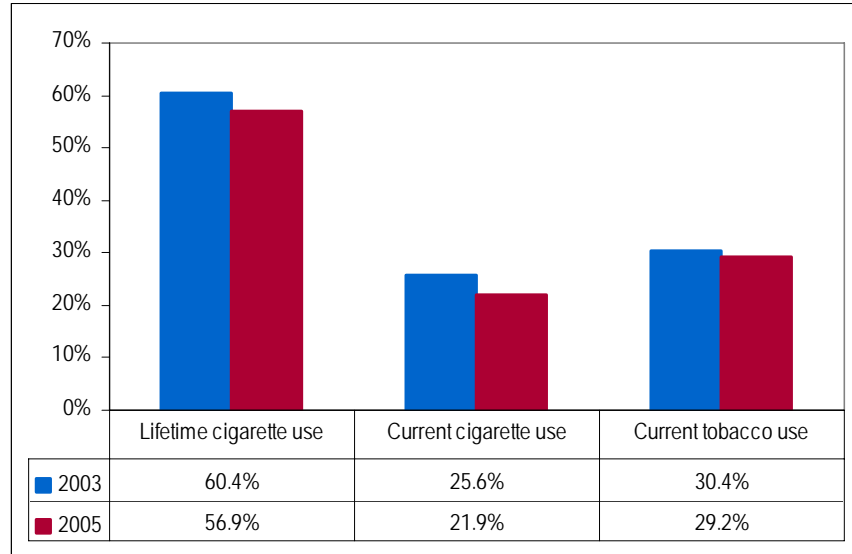
Smoking Rates for Indiana and U.S. High School Students (9th–12th grade), by Grade, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006a

**Figure 4.12**

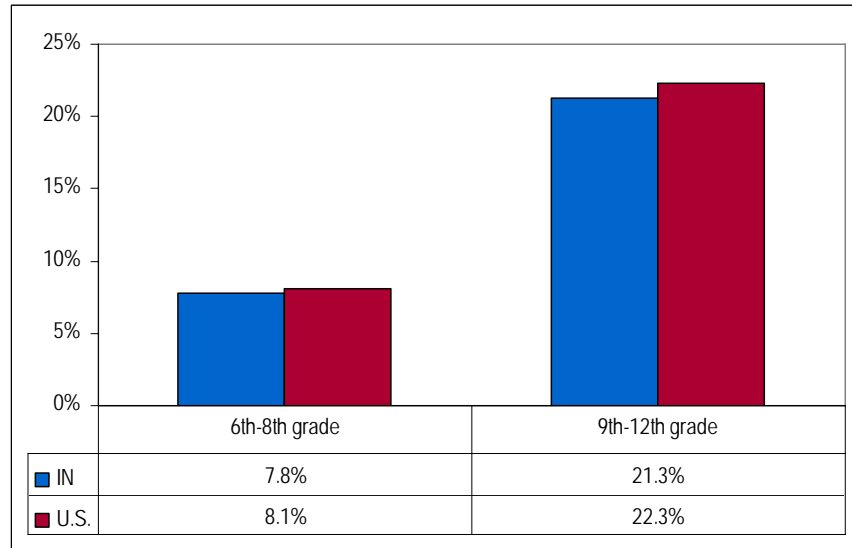
Tobacco Use among Indiana and U.S. High School Students (9th–12th Grade), 2003 and 2005 (Youth Risk Behavior Surveillance System, 2003 and 2005)



Source: Centers for Disease Control and Prevention, 2006a

**Figure 4.13**

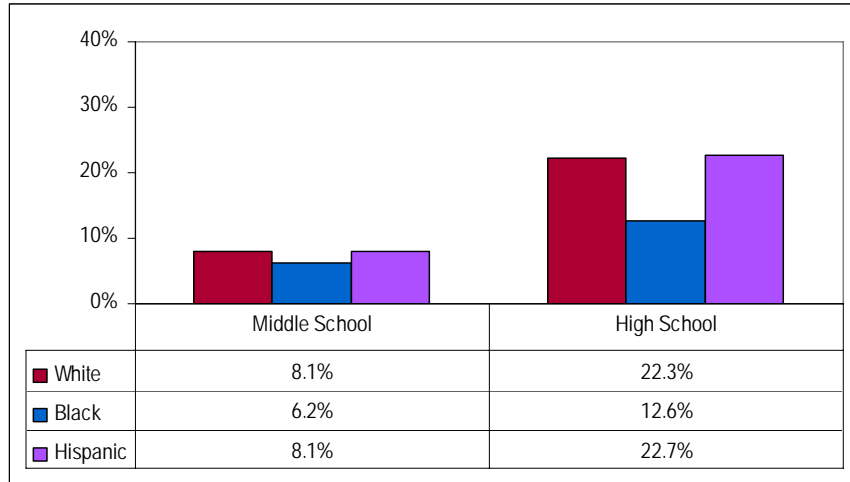
Youth Smoking Prevalence in Indiana and United States Middle (6th–8th Grade) and High School (9th–12th Grade) Students, for 2004 (Indiana Youth Tobacco Survey and National Youth Tobacco Survey, 2004)



Source: Indiana Tobacco Prevention and Cessation, n.d.

**Figure 4.14**

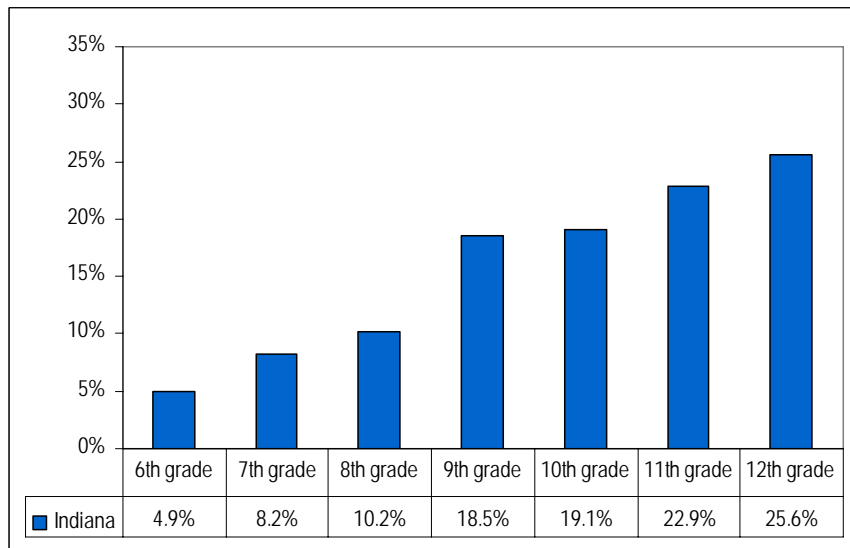
Youth Smoking Prevalence in Indiana and U.S. Middle (6th–8th grade) and High School (9th–12th grade) Students, by Race/Ethnicity, for 2004 (Indiana Youth Tobacco Survey and National Youth Tobacco Survey, 2004)



Source: Indiana Tobacco Prevention and Cessation, n.d.

**Figure 4.15**

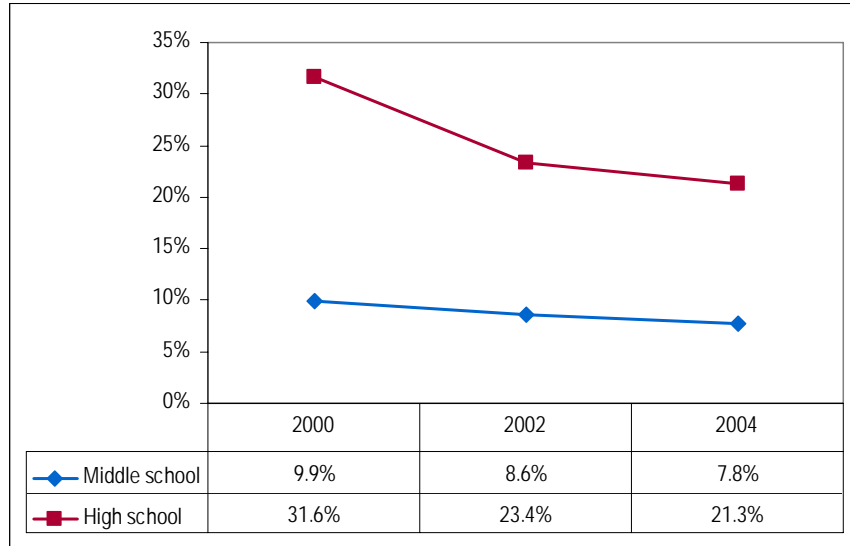
Youth Smoking Prevalence in Indiana, by Grade (Indiana Youth Tobacco Survey, 2004)



Source: Indiana Tobacco Prevention and Cessation, n.d.

**Figure 4.16**

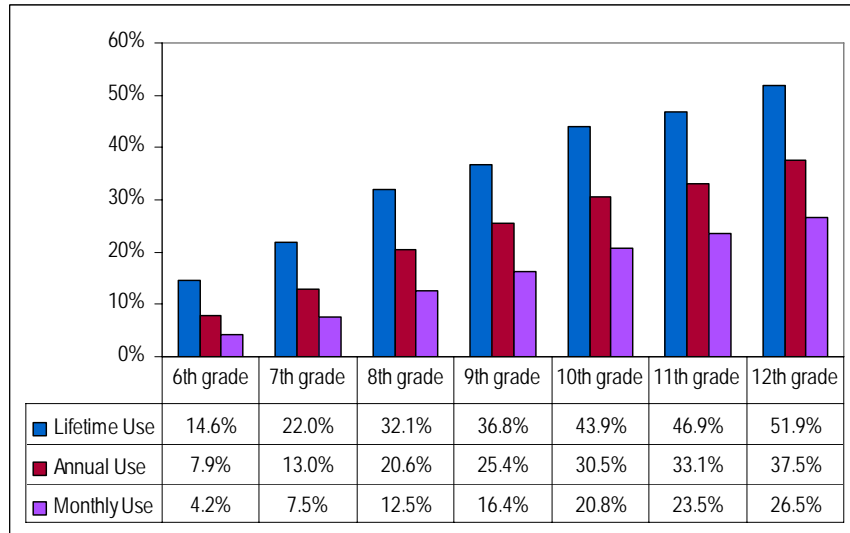
Smoking Rates in Indiana Middle (6th–8th Grade) and High School (9th–12th Grade) Students, 2000 to 2004 (Indiana Youth Tobacco Survey, 2000–2004)



Source: Indiana Tobacco Prevention and Cessation, n.d.

**Figure 4.17**

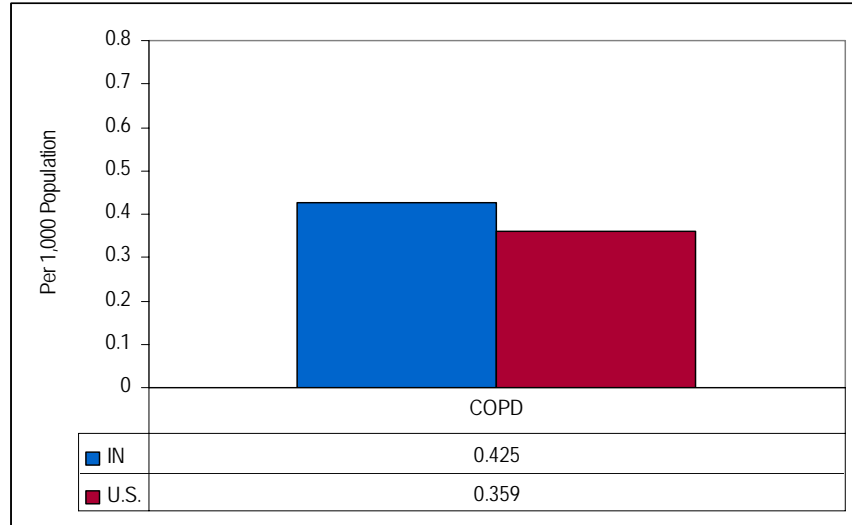
Cigarette Use Among Indiana 6th–12th Grade Students, for 2005 (Survey of Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents, 2005)



Source: Indiana Prevention Resource Center, 2006

**Figure 4.18**

Age-Adjusted Chronic Obstructive Pulmonary Disease (COPD) Mortality Rates, per 1,000 Population, 2002 (CDC WONDER)



Source: Centers for Disease Control and Prevention, 2005b

**Table 4.1**

Adult (18 Years and Older) Smoking Prevalence in Indiana, by Education, 2005 (Behavioral Risk Factor Surveillance System, 2005)

Income	Smoking Prevalence	95% Confidence Interval
Less than High School	49.3%	44.1%–54.5%
High School or GED	33.6%	31.1%–36.1%
Some post-High School	25.8%	23.1%–28.5%
College Graduate	10.9%	9.2%–12.6%

Source: Centers for Disease Control and Prevention, 2005a

**Table 4.2**

Adult (18 Years and Older) Smoking Prevalence in Indiana, by Household Income, for 2005 (Behavioral Risk Factor Surveillance System, 2005)

Income	Smoking Prevalence	95% Confidence Interval
Less than \$15,000	37.3%	31.9%–42.7%
\$15,000 – \$24,999	36.6%	32.6%–40.6%
\$25,000 – \$34,999	32.2%	27.6%–36.8%
\$35,000 – \$49,999	31.2%	27.6%–34.8%
\$50,000 and above	18.3%	16.3%–20.3%

Source: Centers for Disease Control and Prevention, 2005a

**Table 4.3** Percentage of Indiana middle school and high school respondents who ever used any tobacco product, cigarettes, cigars, smokeless tobacco, or bidis/kreteks, by gender, race/ethnicity, and school grade (Indiana Youth Tobacco Survey, 2000–2004)

	ANY						CIGARETTES						CIGARS						SMOKELESS TOBACCO						BIDIS/KRETEKS					
	2000		2002		2004		2000		2002		2004		2000		2002		2004		2000		2002		2004		2000		2002		2004	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>MIDDLE SCHOOL</b>																														
<b>Gender</b>																														
Male	43.0	7.1	41.8	5.4	35.7	4.0	35.5	6.6	31.9	4.7	24.5	3.0	21.5	5.1	22.2	4.0	18.0	3.0	14.7	4.0	13.8	3.9	10.5	3.2	7.8	2.1	6.2	2.0	6.5	2.5
Female	37.7	6.6	39.7	4.3	35.2	7.0	32.6	7.4	33.5	4.1	27.1	6.0	13.9	2.8	15.6	2.5	4.9	4.0	5.7	2.2	6.2	1.5	4.9	2.0	5.2	4.0	4.2	1.5	4.7	2.0
<b>Race/Ethnicity</b>																														
White	37.5	6.5	38.3	3.5	32.8	5.0	31.0	6.5	30.7	3.5	24.4	4.2	15.8	3.5	17.3	2.4	14.5	3.0	9.6	2.7	9.7	2.0	6.6	2.0	5.8	1.9	4.3	1.4	4.7	1.0
Black	51.1	9.0	58.4	5.1	46.2	7.0	45.0	10.1	48.6	5.1	29.0	9.2	25.9	8.7	31.2	4.4	23.7	4.5	8.7	7.5	11.1	2.5	14.1	4.0	11.7	6.9	12.3	2.9	9.6	3.0
Hispanic	59.2	11.3	52.5	7.3	50.8	8.0	57.1	9.3	41.4	6.9	40.3	9.0	29.4	15.2	26.5	5.6	20.2	5.0	19.6	14.6	12.2	4.2	9.0	5.0	7.4	4.7	6.5	5.1	6.0	3.0
Other	62.6	12.7	49.0	8.9	36.2	13.0	57.7	14.9	43.1	8.5	24.9	5.0	31.3	9.3	22.4	7.9	16.2	7.0	18.1	8.7	9.8	3.9	9.9	7.0	11.7	7.6	10.1	4.7	9.0	5.0
<b>Grade</b>																														
6	29.0	9.0	34.8	4.0	28.7	5.5	21.1	9.3	25.7	4.4	18.2	5.0	11.9	5.6	14.7	2.3	10.3	3.5	9.7	4.6	9.6	2.8	8.5	4.0	5.9	3.6	5.5	2.4	6.3	3.5
7	41.9	7.9	37.0	4.4	35.1	3.1	36.2	7.8	29.7	4.6	27.5	3.5	16.1	4.0	16.6	3.5	15.4	3.0	9.4	2.4	9.3	2.6	6.7	2.0	6.6	2.6	3.7	7.3	4.9	2.0
8	50.6	7.6	49.1	6.5	43.1	4.0	45.2	7.9	40.7	6.4	37.4	4.0	25.7	5.3	24.0	3.9	22.0	3.2	11.9	4.6	10.7	2.8	8.4	2.0	7.1	1.5	6.3	2.4	5.7	2.0
<b>Total</b>	40.4	6.0	40.7	3.3	35.7	4.5	34.1	6.3	32.7	3.1	25.9	4.0	18.0	3.4	18.8	2.3	16.1	3.0	10.4	2.5	9.9	1.8	7.9	1.5	6.5	1.7	5.2	1.5	5.6	1.0
<b>HIGH SCHOOL</b>																														
<b>Gender</b>																														
Male	73.4	4.8	65.5	4.4	61.0	2.6	67.8	4.5	58.0	5.2	49.6	3.1	56.0	6.5	46.5	4.4	42.3	3.0	31.8	7.0	27.0	2.7	25.3	3.0	16.5	3.2	12.8	2.8	12.2	1.7
Female	65.1	4.3	61.6	2.9	56.0	3.2	62.6	4.9	58.7	3.4	49.8	3.2	34.3	3.1	31.5	3.6	28.2	2.0	7.6	2.5	8.5	2.6	9.3	2.5	10.4	2.5	5.3	1.3	6.6	1.0
<b>Race/Ethnicity</b>																														
White	70.0	3.9	63.3	3.8	56.3	2.5	65.6	4.4	58.2	4.5	48.4	3.0	46.1	4.8	39.6	3.2	34.6	2.6	22.0	4.7	18.6	2.3	18.3	2.0	13.4	2.0	8.4	1.6	8.2	1.0
Black	64.0	8.2	65.7	4.2	63.3	6.0	61.6	8.0	58.7	4.1	53.3	5.0	33.8	8.0	34.9	4.0	35.1	6.0	3.5	2.9	11.5	2.5	10.8	2.5	11.6	7.1	14.2	2.4	10.6	2.5
Hispanic	77.0	12.8	64.2	6.7	68.8	7.0	71.5	14.7	63.6	6.4	56.5	7.0	55.9	12.6	36.7	7.6	43.1	7.0	11.3	6.8	6.5	3.7	17.5	6.1	16.5	9.3	5.8	3.5	16.7	5.6
Other	67.8	13.0	63.1	11.4	70.5	7.7	70.6	11.9	54.7	13.0	53.3	8.0	53.9	14.6	25.9	8.8	43.6	7.0	16.3	13.0	16.5	8.7	24.3	6.2	21.3	11.2	17.5	8.4	26.0	8.0
<b>Grade</b>																														
9	57.3	7.5	54.3	5.4	51.3	2.9	54.9	7.8	48.3	6.7	41.83	3.5	31.1	6.9	31.2	4.7	28.09	3.2	14.1	8.7	14.9	2.5	13.2	2.0	7.3	4.0	8.9	3.2	8.4	2.0
10	72.7	5.5	63.4	6.6	56.0	3.2	67.6	6.1	58.6	7.4	47.0	3.5	44.9	4.7	40.0	5.8	31.9	4.0	20.9	4.0	17.7	4.2	18.1	3.0	14.2	4.1	7.4	2.7	8.7	2.2
11	71.3	6.1	68.7	5.8	62.0	6.0	65.2	7.1	63.9	6.8	52.4	5.5	48.6	6.4	41.3	6.0	38.2	6.4	20.1	6.1	17.9	6.9	18.8	5.2	13.9	4.2	9.0	3.6	9.1	3.5
12	78.4	5.9	71.6	6.2	67.5	4.0	74.6	7.6	66.9	8.0	60.7	4.0	60.3	8.2	46.0	4.6	45.4	5.3	26.0	9.4	20.9	4.8	19.8	4.4	20.6	4.0	11.4	3.2	12.3	5.0
<b>Total</b>	69.4	4.1	63.5	3.1	58.6	2.1	65.3	4.1	58.3	3.9	49.6	2.3	45.4	4.5	38.8	2.8	35.4	2.2	20.0	4.8	17.5	2.1	17.4	2.0	13.6	2.1	9.0	1.5	9.6	1.2

Source: Indiana Tobacco Prevention and Cessation, n.d.



**Table 4.4** Percentage of Indiana middle school and high school respondents who currently (past month) use any tobacco product, cigarettes, cigars, smokeless tobacco, or bidis/kreteks, by gender, race/ethnicity, and school grade (Indiana Youth Tobacco Survey, 2000–2004)

	ANY						CIGARETTES						CIGARS						SMOKELESS TOBACCO						BIDIS/KRETEKS					
	2000		2002		2004		2000		2002		2004		2000		2002		2004		2000		2002		2004		2000		2002		2004	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>MIDDLE SCHOOL</b>																														
Gender																														
Male	16.3	3.8	13.6	3.1	10.8	2.0	9.3	2.6	6.9	2.0	5.7	2.0	6.7	2.3	6.9	2.1	4.9	1.5	6.3	2.5	3.6	1.3	3.1	1.5	5.5	1.1	4.9	1.4	2.9	1.0
Female	14.2	4.2	12.6	2.5	14.0	3.0	10.4	3.7	10.3	2.2	10.1	2.3	3.5	1.6	3.7	1.0	3.9	1.5	1.8	1.2	1.6	0.6	1.1	1.0	3.1	1.4	2.4	1.3	2.9	2.0
Race/Ethnicity																														
White	13.9	3.6	12.0	2.0	12.1	3.0	9.0	3.1	8.3	1.6	8.2	3.0	4.5	1.5	4.4	1.1	3.8	1.1	3.7	1.5	2.6	0.8	2.3	1.0	3.5	1.1	3.0	0.9	2.3	1.0
Black	19.6	8.1	19.9	4.9	14.4	4.1	12.3	6.3	10.0	2.6	6.3	3.0	6.4	3.2	10.4	2.5	6.6	2.3	3.8	4.4	2.5	1.3	3.0	2.0	7.9	4.6	6.8	2.5	4.9	3.0
Hispanic	30.5	13.3	20.6	6.8	13.0	6.0	24.6	12.9	11.0	4.8	7.6	7.0	12.0	10.8	10.4	5.0	7.0	5.0	8.1	8.1	2.7	3.7	0.4	2.0	5.6	4.5	8.0	6.6	1.1	1.0
Other	22.4	7.7	19.2	6.1	9.9	6.0	12.4	5.8	10.7	4.8	5.2	4.5	8.5	5.7	11.4	5.4	4.4	2.3	8.8	5.8	4.4	2.8	0.8	3.1	10.7	6.1	6.9	4.5	5.1	2.0
Grade																														
6	10.4	5.2	9.4	3.8	8.6	3.0	5.9	3.8	5.1	2.2	4.9	2.0	3.9	2.7	4.1	2.1	2.7	2.0	4.2	3.2	2.0	1.0	1.9	2.0	4.7	2.7	3.4	1.8	2.6	2.0
7	11.7	3.8	11.9	2.5	11.0	2.2	7.2	3.1	8.0	1.9	8.2	2.0	4.5	1.8	5.9	2.3	3.4	1.0	2.8	1.9	2.2	1.1	1.6	1.0	2.8	1.7	3.2	1.2	2.3	1.0
8	24.1	5.1	17.0	4.4	16.8	3.0	17.1	5.2	11.7	3.5	10.2	2.5	7.4	2.6	5.3	1.8	6.7	2.0	5.4	3.2	3.3	1.6	2.6	1.0	5.4	1.6	4.3	1.7	3.4	1.1
Total	15.3	3.3	13.1	2.1	12.4	2.2	9.9	2.7	8.6	1.5	7.8	2.0	5.2	1.4	5.3	1.2	4.4	1.0	4.1	1.4	2.6	0.7	2.2	1.0	4.4	1.0	3.6	1.0	2.9	1.0
<b>HIGH SCHOOL</b>																														
Gender																														
Male	41.1	5.4	31.8	4.2	33.0	3.2	32.8	4.9	24.0	3.2	22.9	2.6	22.3	3.6	17.2	3.0	18.3	3.0	12.2	3.7	7.9	2.3	11.8	2.2	5.3	1.7	3.7	1.1	6.1	1.1
Female	32.3	3.7	25.6	3.6	23.2	2.4	30.1	4.1	22.8	3.8	19.5	2.2	8.2	2.5	7.8	2.0	8.8	1.6	1.4	0.7	1.7	0.9	2.5	0.7	2.6	1.3	2.6	1.9	2.4	0.5
Race/Ethnicity																														
White	38.0	4.1	29.5	3.7	28.3	3.0	32.9	3.5	24.5	3.4	22.0	2.5	15.6	2.3	12.7	2.1	13.3	2.6	7.7	2.4	5.1	1.4	7.7	2.0	3.7	1.2	2.9	1.1	3.3	1.0
Black	23.0	5.7	23.6	3.7	23.3	5.0	15.2	4.9	14.6	3.1	12.7	4.0	10.7	5.4	11.8	2.7	12.6	4.3	1.2	1.6	2.2	1.5	2.4	2.0	4.5	3.4	6.0	2.3	5.2	2.5
Hispanic	40.2	12.6	23.1	8.3	34.0	10.0	32.7	14.4	17.5	8.3	23.3	9.0	19.5	10.4	11.2	4.9	19.1	9.0	0.0	0.0	0.0	1.5	7.0	6.0	6.5	7.6	0.0	0.0	11.8	6.0
Other	49.3	14.5	22.7	10.3	39.7	10.0	47.2	16.2	20.6	10.6	34.3	11.3	21.9	16.6	4.5	4.9	18.9	8.0	11.1	8.4	5.9	1.5	18.7	8.0	11.8	10.8	5.8	6.7	14.5	6.0
Grade																														
9	28.4	6.9	25.5	5.2	24.4	3.0	23.8	6.6	20.7	4.2	18.5	3.0	11.1	4.6	10.7	2.6	9.5	3.0	5.4	3.4	4.3	1.5	6.2	1.0	4.3	3.0	4.6	2.7	5.2	2.0
10	38.1	4.9	26.7	6.1	24.7	3.4	31.4	4.5	22.1	6.4	19.1	3.0	14.7	4.2	12.6	2.9	12.4	3.0	6.7	2.3	4.1	2.0	7.3	2.0	4.8	2.8	2.0	1.1	3.6	2.0
11	35.4	7.9	30.8	8.0	31.0	4.0	30.5	6.0	24.1	7.0	22.9	5.0	15.4	5.0	12.0	3.6	15.4	3.5	6.8	4.4	5.2	3.6	7.8	2.5	3.6	2.0	2.8	2.1	3.6	2.0
12	46.6	9.7	33.8	5.5	34.2	6.0	41.8	10.1	28.8	5.8	25.6	6.0	21.6	6.0	15.3	6.5	18.9	5.0	9.0	6.6	5.9	2.6	8.0	2.0	3.9	1.8	3.0	1.8	4.9	2.5
Total	36.9	3.7	28.6	3.3	28.3	2.4	31.6	3.3	23.4	3.0	21.3	2.0	15.4	2.2	12.4	1.8	13.7	2.0	6.9	2.2	4.7	1.2	7.3	1.3	4.1	1.3	3.1	1.1	4.4	0.6

Source: Indiana Tobacco Prevention and Cessation, n.d.

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## 5.

# MARIJUANA USE IN INDIANA: CONSUMPTION PATTERNS AND CONSEQUENCES

## CONSUMPTION

### General Consumption Patterns

Marijuana is the most commonly used illicit drug, both in the United States and Indiana. According to the 2004 National Survey on Drug Use and Health, or NSDUH (Substance Abuse and Mental Health Services Administration, SAMHSA, 2006), 6.1% (14.6 million) of the nation's population age 12 and older reported current (past 30 days) marijuana use. In Indiana, an estimated 5.6% reported current marijuana use, while 3.5% indicated current use of illicit drugs other than marijuana (U.S.: 3.6 %). Slightly more than approximately one-tenth (10.4%) of Indiana residents reported past year marijuana use. The estimated Indiana population affected for the most recent available data (2003–2004) is 285,000 current marijuana users.

According to 2002–2004 NSDUH data, approximately 2,015,000 Indiana residents (39.9%) age 12 or older have used marijuana once or more during their lifetime (SAMHSA, 2005). Trend data from the NSDUH demonstrate that the prevalence of current users of marijuana has risen from a rate of 4.8% nationally and 4.4% in Indiana for 1999–2000 to 6.1% and 5.6%, respectively, for 2003–2004 (see Figure 5.1, page 68). These use patterns in Indiana, while lower than U.S. levels, do not differ statistically from those of the nation (SAMHSA, 2006).

### Adult Consumption Patterns

Patterns of current marijuana use among Indiana residents age 18 to 25 and 26 or older, have been similar or lower than the nation's, with use most widespread among young adults. According to 2002–2003 NSDUH data, 17.2% of 18- to 25-year-olds reported current marijuana use, both in Indiana and nationally (see Figure 5.2, Indiana rates, page 68).

Among U.S. adults age 18 to 25 years, reported rates of past month marijuana use are slightly higher than rates in Indiana (U.S. rates:

1990–2000: 13.7%; 2000–2001: 14.6%; 2002–2003: 17.2%; 2003–2004: 16.6%). While rates of reported current, regular use among those age 26 or older have increased both in Indiana and at the national level, U.S. rates for this age group also are slightly higher than Indiana percentages (see Figure 5.2 for Indiana rates; page 68; U.S. rates: 1999–2000: 3.0%; 2000–2001: 3.1%; 2002–2003: 4.0%; 2003–2004: 4.1%). There is no statistically significant difference between Indiana and U.S. rates. According to average annual rates from the 2003 and 2004 NSDUH, among 18- to 25-year-olds, 7.3% reported first use during the past year. These rates are statistically similar to national rates of 6.6% for young adults age 18 to 25 (SAMHSA, 2006).

### Youth Consumption Patterns

According to average annual rates from the 2003 and 2004 NSDUH, among youths age 12 to 17 in Indiana, an estimated 5.8% had used marijuana for the first time during the past year. These rates are similar to national rates of 6.3% among 12- to 17-year-olds. Patterns of current marijuana use among Indiana residents age 12 to 17 tend to mirror national rates and have remained constant between 1999–2000 and 2003–2004 (see Figure 5.2, page 68).

According to the 2005 Youth Risk Behavior Surveillance System, or YRBSS (Centers for Disease Control and Prevention, CDC, 2005), among students in 9th through 12th grades, 18.9% in Indiana reported current (past 30 day) marijuana use compared with a national rate of 20.2%. Rates of use have declined slightly from 2003 levels when 22.1% of Indiana students and 22.4% of U.S. students indicated current use. As Figure 5.3 (page 69) shows, in 2005, reported current use of marijuana increases with grade level. However, use among students in 9th through 12th grades declined between 2003 and 2005, both at the state and national levels. Indiana's rates of marijuana use in all grades are slightly lower than the nation's, though these differences are not statistically significant (see Table 5.1, page 75).

Male students, both nationally and in Indiana, are more likely to report current marijuana use than their female counterparts (see Table 5.1, page 75). Indiana use rates are statistically similar to U.S. rates among both male and female students. Overall, reported rates of current marijuana use among Indiana students fell from 2003 to 2005 for both

male and female students, from 25.3% to 21.0% and from 18.9% to 16.7%, respectively. Similar declines were evident at the national level.

In Indiana, reported current marijuana use among Black students fell from 28.4% in 2003 to 19.9% in 2005. A similar trend can be observed at the national level, though differences between Indiana and U.S. rates are not statistically significant. Current marijuana use fell among all race categories between 2003 and 2005, both at the national and state levels.

The younger a person is when he or she first uses marijuana, the more likely that individual is to use harder drugs and to become dependent as an adult. Early initiation has been associated with problematic levels of marijuana and other substance use in adolescence and adulthood (SAMHSA, July 2002). In 2005, according to the YRBSS, 8.6% of Indiana students reported having tried marijuana before the age of 13, a slight decline from 8.8% of students that indicated such activity in 2003. Again, Indiana rates mirror the U.S. pattern (see Table 5.2, page 76). As shown in Figure 5.4 (page 69), in 2005, a higher percentage of 9th graders, both in Indiana (12.7%) and the United States (11.2%), reported trying marijuana for the first time, compared with students in 10th, 11th, and 12th grades.

Male students, both nationally and in Indiana, are more likely to have tried marijuana before age 13. Approximately one-tenth of the male students in Indiana and 11.0% in the nation reported early use, compared with 6.5% of the female students in Indiana and 6.3% of the female students in the United States (see Figure 5.5, page 70).

Results from the Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents Surveys (ATOD) (Indiana Prevention Resource Center, IPRC, 2005) and the National Institute on Drug Abuse's (NIDA) Monitoring the Future Surveys (National Institute on Drug Abuse, 2005), 2002 through 2005, reveal that Indiana students in 8th and 10th grades reported higher current marijuana use than the rest of the nation (see Table 5.3, page 76). In 2005, the percent of Indiana 8th graders that indicated lifetime use (17.6%) was slightly higher than the U.S. rate (16.5%). Indiana students in 10th and 12th grades reported lower rates of lifetime marijuana use—31.6% and 40.1%, respectively—compared with 34.1% and 44.8% rates of use by 10th and 12th graders in the United States. Since 2002, reported lifetime use among students

in all three grades has declined, both nationally and in Indiana (see Table 5.4, page 77). Caution should be exercised when interpreting the IPRC survey results, as these are based on a non-randomized sample of respondents.

According to the YRBSS, reported lifetime marijuana use among 9th–12th graders declined between 2003 and 2005. In 2005, among Indiana students, 38.2% reported lifetime use, a slight decline from the 43.4% who reported lifetime use in 2003. Indiana rates of lifetime marijuana use mirror U.S. patterns (see Table 5.5, page 77). Reported lifetime use also increases with grade level, both in Indiana and the United States. In 2005, in Indiana, 31.7% of 9th graders (compared with 29.3% in the United States) reported having used marijuana one or more times during their life, while 45.5% of 12th graders indicated such use (U.S.: 47.6%).

### **Consumption Patterns Associated with Treatment**

The SAMHSA Treatment Episode Data System, or TEDS (Substance Abuse and Mental Health Data Archive, n.d.) represents information gathered from clients at admission to each episode of substance abuse treatment. TEDS data from 2000 through 2004 show that Indiana residents entering treatment are statistically significantly more likely to report current marijuana use at admission than the rest of the nation; (2000: Pearson chi-square = 3179.454,  $p < .001$ ; 2001: Pearson chi-square = 4189.9162,  $p < .001$ ; 2002: Pearson chi-square = 4883.75,  $p < .001$ ; 2003: Pearson chi-square = 4664.497,  $p < .001$ ; 2004: Pearson chi-square = 4316.842,  $p < .001$ ). Between 2000 and 2004, roughly 50% or more of Indiana individuals entering treatment programs reported marijuana use at admission, compared with approximately one-third of the U.S. patients in this category (see Figure 5.7, page 71).

A statistically significant gender effect is observed with marijuana use for individuals entering substance abuse treatment in Indiana. With the exception of 2002, males were statistically significantly more likely to report marijuana use at admission than females; (2000: Pearson chi-square = 183.555,  $p < .001$ ; 2001: Pearson chi-square = 174.511,  $p < .001$ ; 2002: Pearson chi-square = 140.5045,  $p < .001$ ; 2003: Pearson chi-square = 164.289,  $p < .001$ ; 2004: Pearson chi-square = 155.7365,  $p < .001$ ) (see Figure 5.8, page 71).

As shown in Figure 5.9 (page 72), race also appears to be related to marijuana use. Black individuals entering treatment were more likely than Whites or other minority persons to report marijuana use (2000: Pearson chi-square = 156.691,  $p < .001$ ; 2001: Pearson chi-square = 19.4089087,  $p < .001$ ; 2002: Pearson chi-square = 51.9981,  $p < .001$ ; 2003: Pearson chi-square = 54.29463,  $p < .001$ ; 2004: Pearson chi-square = 37.67673,  $p < .001$ ). Both Black and White males are statistically significantly more likely than their female counterparts to report marijuana use at admission.

Marijuana use also is associated with age. As shown in Figure 5.10 (page 72), self-reported marijuana use by individuals entering substance abuse treatment steadily declines with age. Over 85% of admissions under age 18 in 2000 through 2004 reported marijuana use. Individuals under 18 were statistically significantly more likely to report marijuana use at admission; (2000: Pearson chi-square = 4532.566,  $p < .001$ ; 2001: Pearson chi-square = 3769.02276,  $p < .001$ ; 2002: Pearson chi-square = 3936.557,  $p < .001$ ; 2003: Pearson chi-square = 3859.735,  $p < .001$ ; 2004: Pearson chi-square = 4001.468,  $p < .001$ ).

## CONSEQUENCES

### Health-Related Consequences

Marijuana use can produce adverse physical, mental, emotional, and behavioral changes, and long-term use can lead to addiction. Short-term effects include memory impairment and learning problems, distorted perception, difficulty thinking and solving problems, loss of coordination, and increased heart rate. Harmful health effects also include respiratory illnesses, weakened immune systems, and increased risk of heart attack and cancer. Marijuana use also is associated with risky sexual behavior, and is considered a gateway to teen sex, and as such, it may result in increased unwanted pregnancies and STD transmission. In addition, babies born to women who used marijuana during their pregnancy exhibit altered responses to visual stimuli and increased tremulousness—indicating problems with neurological development. Marijuana use is also correlated with higher rates of “harder” drug use and higher rates of tobacco use (NIDA, 2005).

## Marijuana Dependence

Data from the TEDS demonstrate that the percent of admissions to substance abuse treatment programs for which marijuana is indicated as the primary drug has been statistically significantly higher in Indiana than the rest of the nation; (2000: Pearson chi-square = 1207.059,  $p < .001$ ; 2001: Pearson chi-square = 2058.69044,  $p < .001$ ; 2002: Pearson chi-square = 2208.172,  $p < .001$ ; 2003: Pearson chi-square = 2098.498,  $p < .001$ ; 2004: Pearson chi-square = 2168.166,  $p < .001$ ). In Indiana, between 2001 and 2004, nearly one-quarter of the population entering drug abuse treatment reported that marijuana was their primary drug of abuse, compared to roughly 15% in the nation (see Figure 5.11, page 73).

Younger individuals are more likely than older people to report marijuana as their primary drug of use at admission; (2000: Pearson chi-square = 6164.203,  $p < .001$ ; 2001: Pearson chi-square = 4686.69003,  $p < .001$ ; 2002: Pearson chi-square = 4767.687,  $p < .001$ ; 2003: Pearson chi-square = 4581.484,  $p < .001$ ; 2004: Pearson chi-square = 4905.873,  $p < .001$ ). Rates for all age categories have remained fairly constant between 2000 and 2004 (see Figure 5.12, page 73).

With regard to race and gender, both Black and White males are statistically significantly more likely than their female counterparts to report marijuana as their primary drug of use at admission.

## Criminal Consequences

The Uniform Crime Reports, or UCR (Federal Bureau of Investigation, FBI, n.d.), collect drug violation arrest data nationwide. Indiana arrest rates for marijuana possession, while moderately higher than those in the United States between 1999 and 2003, tend to mirror the national trend (see Figure 5.13, page 74). As figure 5.14 (page 74) illustrates, since 2000, Indiana arrest rates (per 1,000 population) for marijuana sale/manufacture have been slightly higher than U.S. rates. Indiana rates rose from 0.27 in 2002 to .034 in 2003, while U.S. rates remained fairly stable at .025 (2002) and .026 (2003).

Maps 5.1 and 5.2 (pages 78 and 79), portray the distribution by county of 2003 arrest rates (per 1,000 population) due to marijuana possession and dealing (sale/manufacture) and are based on UCR data. While geographic/regional arrest patterns are not immediately apparent,



these data demonstrate that arrest rates for possession exceed those for dealing in most counties. (See Table 5.6, the County Data Table following the maps for county-specific figures, page 80.) Caution should be exercised when interpreting these data due to variations in reporting procedures. In Indiana, reporting coverage by county and local law enforcement jurisdictions is sometimes incomplete, and therefore, a portion of these data are based on estimates. (For further details, see the discussion of UCR data in the Methodology section.)

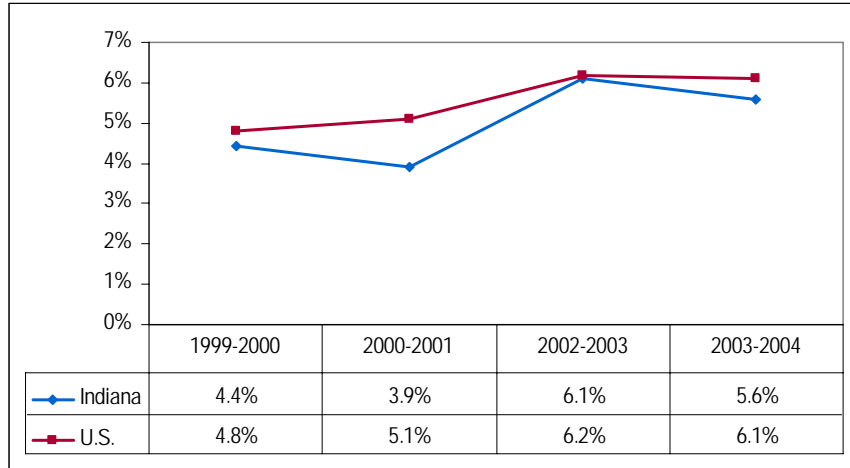
According to the U.S. Sentencing Commission (2003), during 2003, 47.3% of the federally sentenced defendants in Indiana had committed a drug offense. Approximately 15% of these offenses involved marijuana (2003). Additional legal consequences associated with marijuana pertain to drug-related property crimes, such as burglary and larceny, and other crimes associated with acquiring drugs.

### **Social Consequences**

In terms of social consequences, depression, anxiety, and personality disturbances are associated with chronic marijuana use. Marijuana use compromises the ability to learn and retain information, and heavy use leads to loss of critical intellectual, job, and social skills. Students who smoke marijuana exhibit lower academic performance and are less likely to graduate from high school, relative to their nonsmoking peers. Higher rates of absenteeism also are found among students who use marijuana. Individuals who use marijuana are more likely to have problems at work—including accidents, injuries, and absenteeism. Marijuana use also impacts children and families by contributing to increased interpersonal conflicts, financial problems, poor parenting, parental incarceration, and children being placed in protective custody (NIDA, 2005).

**Figure 5.1**

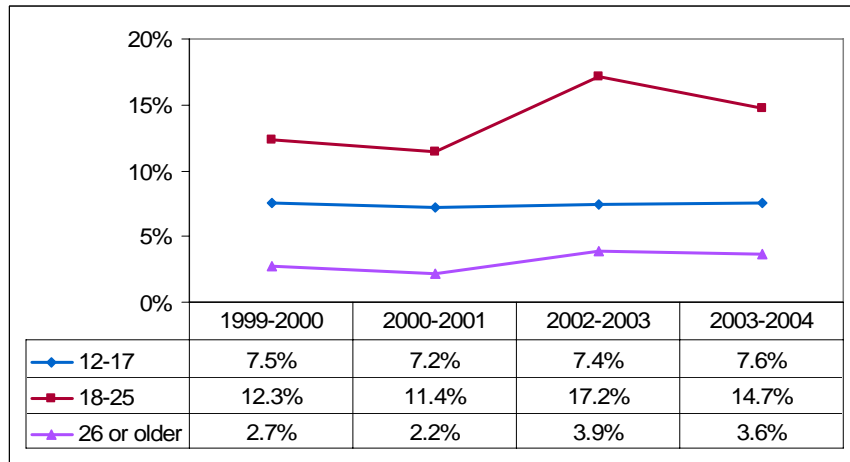
Percentage of Indiana and U.S. Population (Age 12 and Older) Reporting Current (Past Month) Marijuana Use, from 1999 to 2004 (National Survey on Drug Use and Health, 1999–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 5.2**

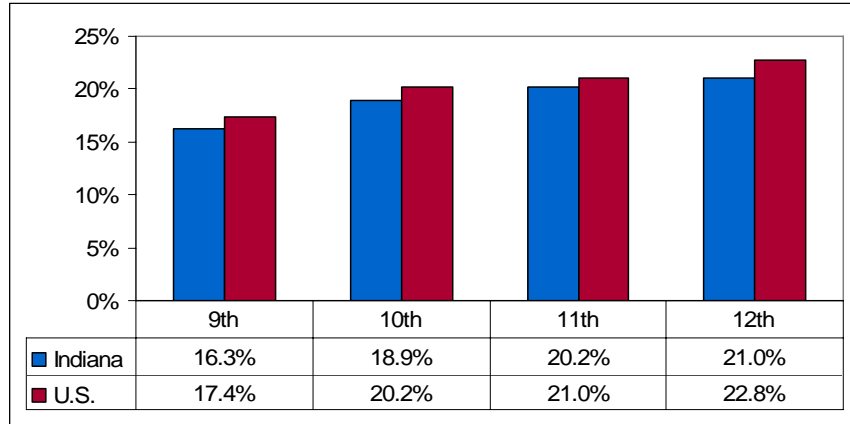
Percentage of Indiana Residents Reporting Current (Past Month) Marijuana Use, by Age Group, from 1999–2004 (National Survey on Drug Use and Health, 1999–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 5.3**

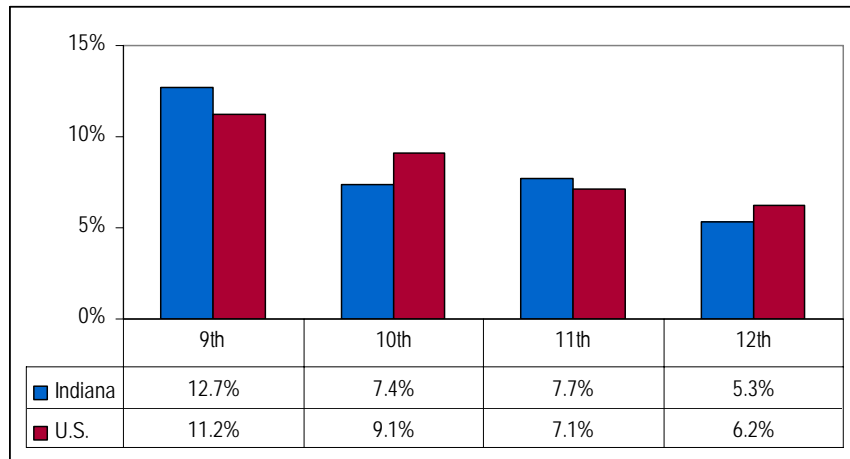
Percentage of Indiana and U.S. High School Students (9th–12th grade) Reporting Current Marijuana Use, by Grade, for 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2005

**Figure 5.4**

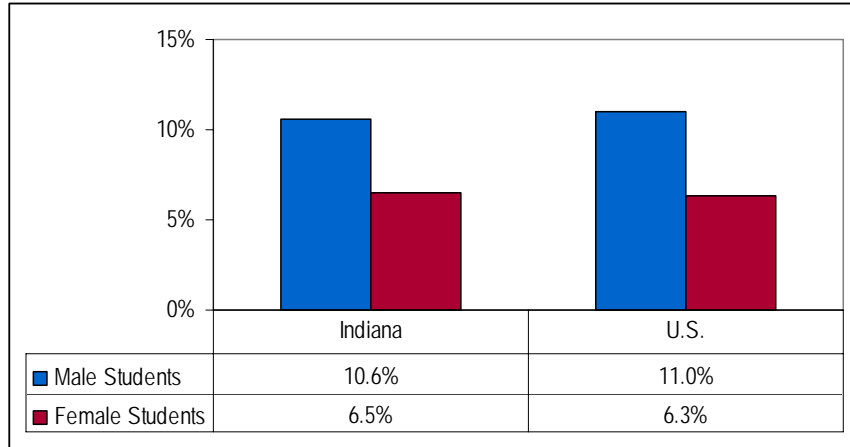
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Who Report Having Tried Marijuana for the First Time before Age 13, by Grade, for 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2005

**Figure 5.5**

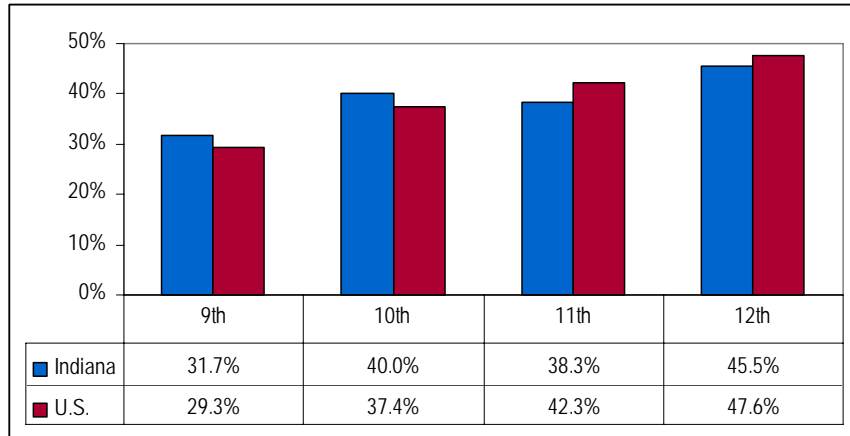
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Who Report Having Tried Marijuana for the First Time before Age 13, by Gender, 2005 (Youth Risk Behavior Surveillance System)



Source: Centers for Disease Control and Prevention, 2005

**Figure 5.6**

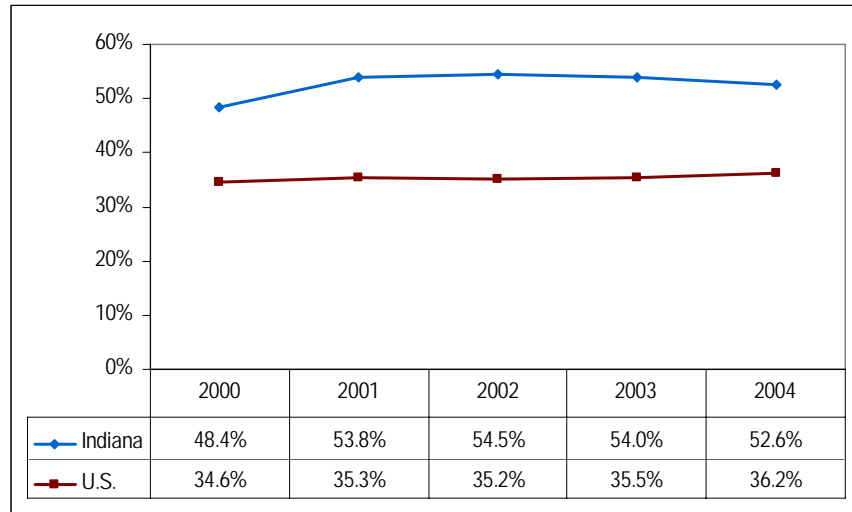
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Who Report Using Marijuana One or More Times during Their Life, by Grade, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2005

**Figure 5.7**

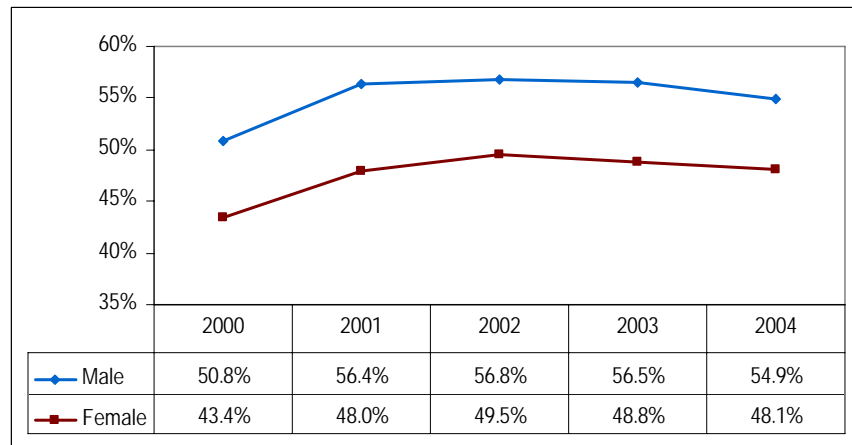
Percentage of Indiana and U.S. Treatment Admissions Reporting Marijuana Use at Admission, from 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 5.8**

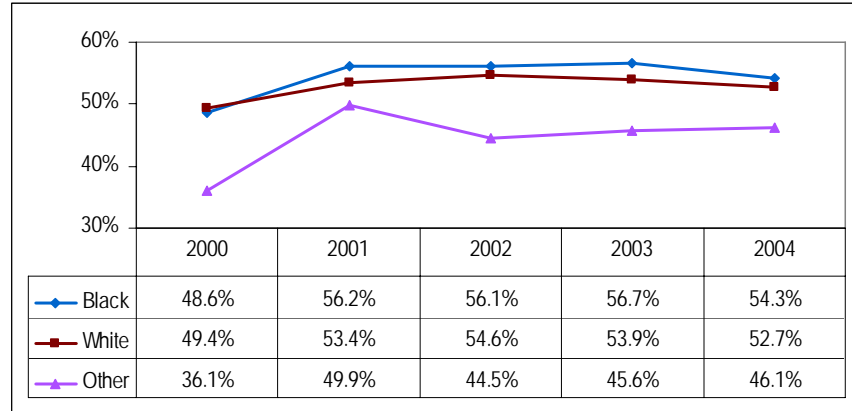
Percentage of Indiana Treatment Admissions Reporting Marijuana Use at Admission, by Gender, from 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 5.9**

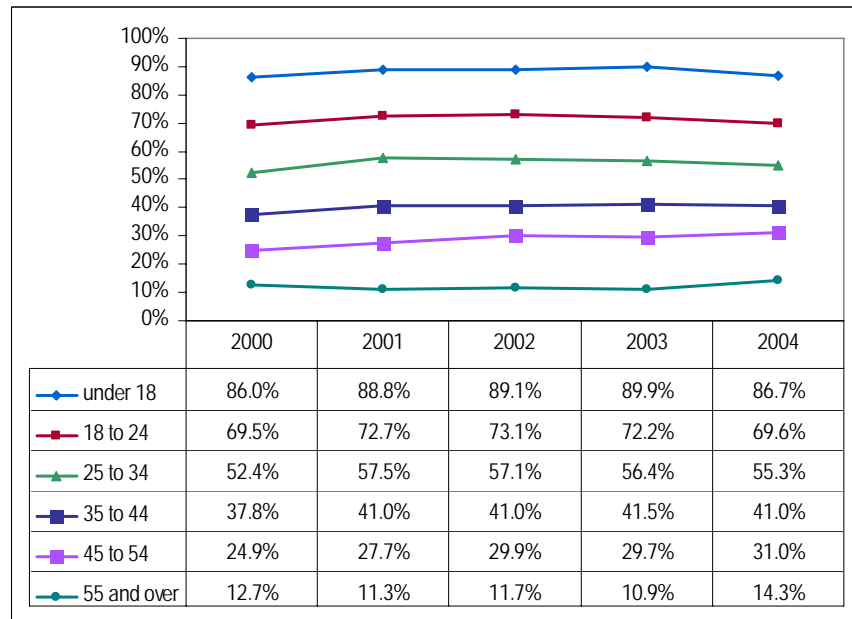
Percentage of Indiana Treatment Admissions Reporting Marijuana Use at Admission, by Race, from 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 5.10**

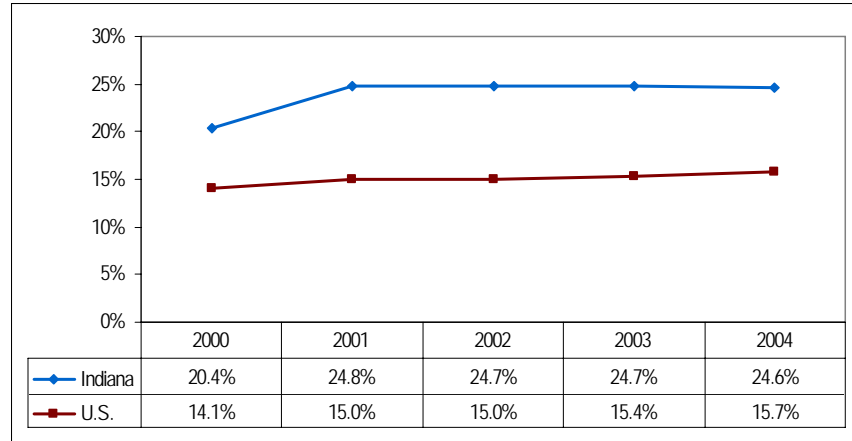
Percentage of Indiana Treatment Admissions Reporting Marijuana Use at Admission, by Age, from 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 5.11**

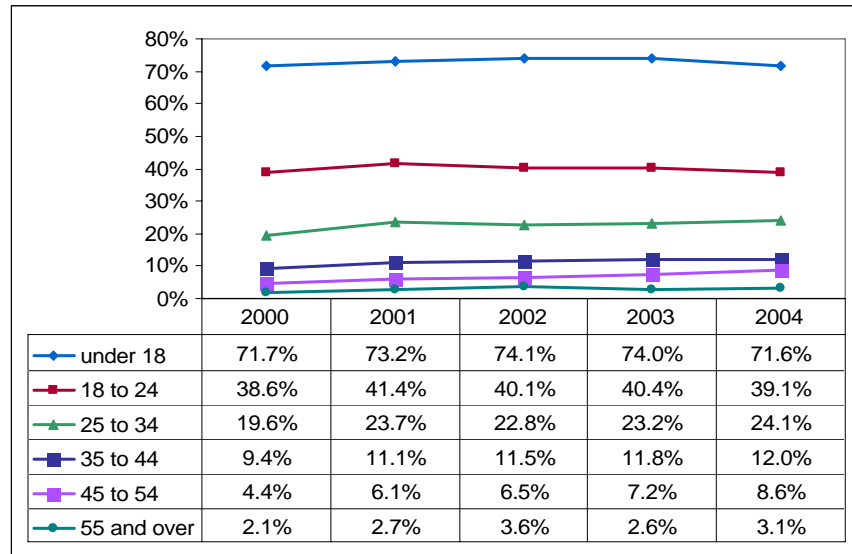
Percentage of Indiana and U.S. Treatment Admissions Reporting Marijuana as Their Primary Drug, from 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 5.12**

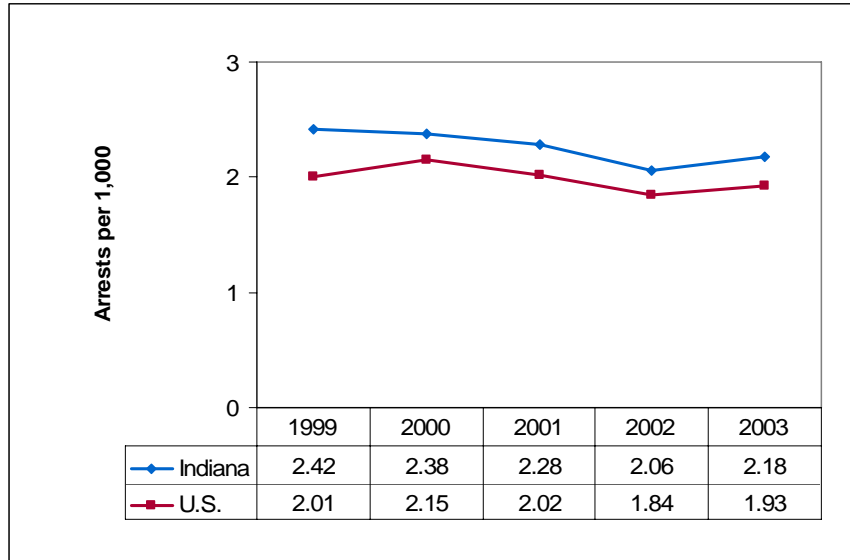
Percentage of Indiana Treatment Admissions Reporting Marijuana as Their Primary Drug, by Age, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 5.13**

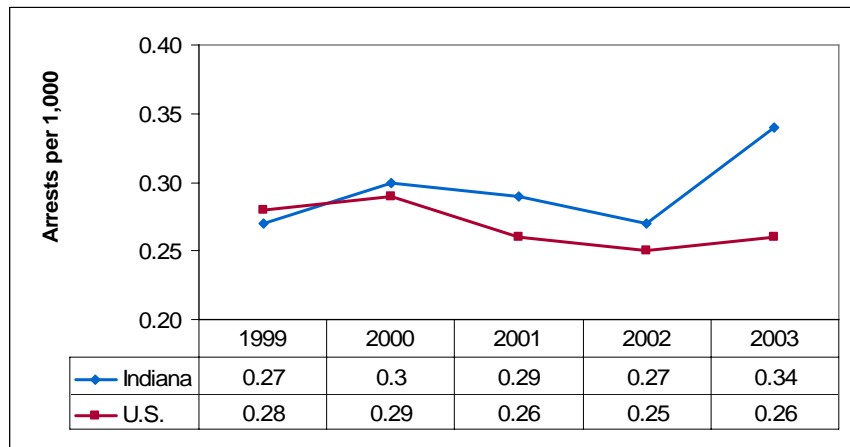
Indiana and U.S. Marijuana Possession Arrest Rates, per 1,000 Population, 1999 to 2003 (Uniform Crime Reports, 1999–2003)



Source: Federal Bureau of Investigation, n.d.

**Figure 5.14**

Indiana and U.S. Marijuana Sale/Manufacture Arrest Rates, per 1,000 Population, from 1999 to 2003 (Uniform Crime Reports, 1999–2003)



Source: Federal Bureau of Investigation, n.d.



**Table 5.1**

Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Current (Past Month) Marijuana Use, by Grade, Gender, and Race, 2003 and 2005 (Youth Risk Behavior Surveillance System, 2003 and 2005)

Grade	Year	Indiana	U.S.
9th	2003	18.9%	18.5%
	2005	16.3%	17.4%
10th	2003	22.1%	22.0%
	2005	18.9%	20.2%
11th	2003	23.9%	24.1%
	2005	20.2%	21.0%
12th	2003	24.6%	25.8%
	2005	21.0%	22.8%
Gender	Year	Indiana	U.S.
Male Students	2003	25.3%	25.1%
	2005	21.0%	22.1%
Female Students	2003	18.9%	19.3%
	2005	16.7%	18.2%
Race	Year	Indiana	U.S.
Black Students	2003	28.4%	23.9%
	2005	19.9%	20.4%
White Students	2003	21.1%	21.7%
	2005	18.8%	20.3%
Hispanic Students	2003	N/A	23.8%
	2005	N/A	23.0%
Other	2003	N/A	21.2%
	2005	14.9%	13.9%

Source: Centers for Disease Control and Prevention, 2005

**Table 5.2**

Percentage of Indiana and U.S. High School Students (9th–12th Grade) Who Report Having Tried Marijuana before the Age 13, by Grade, Gender, and Race, 2003 and 2005 (Youth Risk Behavior Surveillance System, 2003 and 2005)

Grade	Year	Indiana	U.S.
9th	2003	9.8%	11.7%
	2005	12.7%	11.2%
10th	2003	7.9%	10.8%
	2005	7.4%	9.1%
11th	2003	11.5%	8.1%
	2005	7.7%	7.1%
12th	2003	5.8%	7.8%
	2005	5.3%	6.2%
Gender	Year	Indiana	U.S.
Male Students	2003	11.6%	12.6%
	2005	10.6%	11.0%
Female Students	2003	5.9%	6.9%
	2005	6.5%	6.3%
Race	Year	Indiana	U.S.
Black Students	2003	14.4%	12.1%
	2005	7.2%	9.1%
White Students	2003	7.5%	8.7%
	2005	8.7%	7.7%
Other	2003	N/A	13.0%
	2005	7.4	8.2

Source: Centers for Disease Control and Prevention, 2005

**Table 5.3**

Percentage of Indiana and U.S. 8th, 10th, and 12th Grade Students Reporting Current (Past Month) Marijuana Use, by Grade, 2002 to 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents Survey and Monitoring the Future Survey, 2002–2005)

Grade	Geography	2002	2003	2004	2005
8th	Indiana	11.1%	10.6%	9.8%	9.3%
	U.S.	8.3%	7.5%	6.4%	6.6%
10th	Indiana	19.2%	18.2%	17.2%	16.0%
	U.S.	17.8%	17.0%	15.9%	15.2%
12th	Indiana	20.5%	19.8%	18.3%	17.8%
	U.S.	21.5%	21.2%	19.9%	19.8%

Source: Indiana Prevention Resource Center, 2005; National Institute on Drug Abuse, 2005

**Table 5.4**

Percentage of Indiana and U.S. 8th, 10th, and 12th Grade Students Reporting Lifetime Marijuana Use, by Grade, 2002 to 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents Survey and Monitoring the Future Survey, 2002–2005)

Grade	Geography	2002	2003	2004	2005
8th	Indiana	20.0%	19.1%	18.6%	17.6%
	U.S.	19.2%	17.5%	16.3%	16.5%
10th	Indiana	36.9%	34.8%	33.5%	31.6%
	U.S.	38.7%	36.4%	35.1%	34.1%
12th	Indiana	44.8%	42.3%	40.5%	40.1%
	U.S.	47.8%	46.1%	45.7%	44.8%

Source: Indiana Prevention Resource Center, 2005; National Institute on Drug Abuse, 2005

**Table 5.5**

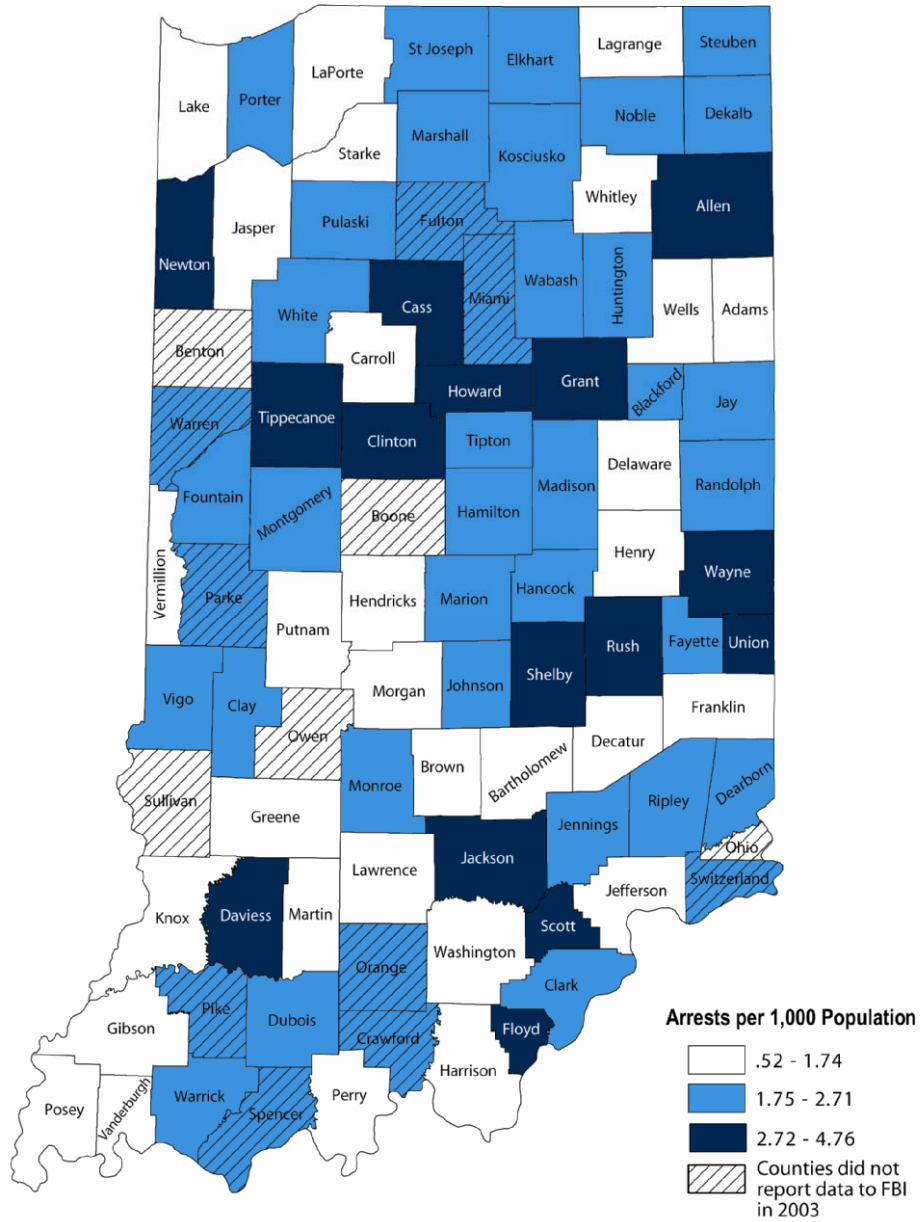
Percentage of Students Who Used Marijuana One or More Times during Their Life, by Grade, Gender, and Race, 2003 and 2005 (Youth Risk Behavior Surveillance System, 2003 and 2005)

Grade	Year	Indiana	U.S.
9th	2003	34.2%	30.7%
	2005	31.7%	29.3%
10th	2003	41.4%	40.4%
	2005	40.0%	37.4%
11th	2003	48.1%	44.5%
	2005	38.3%	42.3%
12th	2003	52.4%	48.5%
	2005	45.5%	47.6%
Gender	Year	Indiana	U.S.
Male Students	2003	48.8%	42.7%
	2005	41.3%	40.9%
Female Students	2003	37.7%	37.6%
	2005	35.1%	35.9%
Race	Year	Indiana	U.S.
Black Students	2003	55.4%	43.3%
	2005	41.0%	40.7%
White Students	2003	41.0%	39.8%
	2005	38.2%	38.0%
Other	2003	N/A	34.2%
	2005	32.2%	30.6%

Source: Centers for Disease Control and Prevention, 2005

**Map 5.1**

**Indiana Marijuana Possession Arrest Rates, per 1,000 Population, by County, 2003 (Uniform Crime Reports, 2003)**



Source: Federal Bureau of Investigation, n.d.



## COUNTY DATA TABLE

**Table 5.6**

County Data Table—Indiana Marijuana Possession Arrest Rates and Marijuana Sale/Manufacture Arrest Rates, per 1,000 Population, by County, 2003 (Uniform Crime Reports, 2003)

Indiana County	Rate of Marijuana Possession Arrests per 1,000 Population (2003)	Rate of Marijuana Sale/Manufacture Arrests per 1,000 Population (2003)
Adams	1.37	0.12
Allen	2.79	0.14
Bartholomew	1.71	0.07
Benton	1.63	0.22
Blackford	2.16	0.86
Boone	1.70	0.28
Brown	1.24	0.07
Carroll	1.27	0.24
Cass	3.09	0.32
Clark	1.83	0.21
Clay	2.35	0.22
Clinton	3.27	0.21
Crawford	1.97	0.18
Daviess	3.16	0.20
Dearborn	2.30	0.15
Decatur	1.29	0.85
DeKalb	1.92	0.17
Delaware	0.94	0.03
Dubois	2.71	0.12
Elkhart	2.52	0.16
Fayette	2.56	0.28
Floyd	2.90	0.34
Fountain	2.70	0.39
Franklin	0.88	0.13
Fulton	2.24	0.29
Gibson	1.12	0.18
Grant	3.27	0.10
Greene	1.56	0.15
Hamilton	1.98	0.18
Hancock	2.19	0.13
Harrison	1.12	0.11
Hendricks	1.02	0.46
Henry	0.52	0.86
Howard	2.90	0.12
Huntington	1.81	0.10
Jackson	4.76	0.31
Jasper	1.06	1.29
Jay	2.12	0.28
Jefferson	1.30	0.03

Indiana County	Rate of Marijuana Possession Arrests per 1,000 Population (2003)	Rate of Marijuana Sale/Manufacture Arrests per 1,000 Population (2003)
Jennings	2.31	0.14
Johnson	2.00	0.75
Knox	1.29	2.01
Kosciusko	2.16	0.20
LaGrange	0.78	0.08
Lake	1.57	0.95
LaPorte	1.40	0.05
Lawrence	1.69	0.09
Madison	2.63	0.37
Marion	2.45	0.35
Marshall	2.37	0.17
Martin	1.45	0.10
Miami	2.24	0.33
Monroe	2.13	0.24
Montgomery	2.59	0.26
Morgan	1.47	0.57
Newton	3.05	0.14
Noble	2.44	0.17
Ohio	1.22	0.17
Orange	1.94	0.20
Owen	1.27	0.18
Parke	1.96	0.17
Perry	1.66	0.11
Pike	2.09	0.23
Porter	2.55	0.26
Posey	1.23	0.26
Pulaski	2.39	0.00
Putnam	1.74	0.30
Randolph	1.86	0.15
Ripley	1.79	0.15
Rush	3.05	0.11
St. Joseph	2.45	0.23
Scott	3.18	0.42
Shelby	3.11	0.39
Spencer	1.97	0.20
Starke	1.51	0.00
Steuben	2.40	0.12
Sullivan	1.60	0.23
Switzerland	1.91	0.21
Tippecanoe	3.89	0.64
Tipton	1.95	0.12
Union	3.32	0.83
Vanderburgh	1.56	0.17
Vermillion	1.57	0.18
Vigo	2.18	0.39

Indiana County	Rate of Marijuana Possession Arrests per 1,000 Population (2003)	Rate of Marijuana Sale/Manufacture Arrests per 1,000 Population (2003)
Wabash	2.15	0.35
Warren	1.95	0.23
Warrick	2.21	0.26
Washington	1.59	0.22
Wayne	4.27	0.46
Wells	0.97	0.21
White	2.29	0.16
Whitley	1.64	0.44

Source: Federal Bureau of Investigation, n.d.



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## 6.

# COCAINE USE IN INDIANA: CONSUMPTION PATTERNS AND CONSEQUENCES

## CONSUMPTION

### General Consumption Patterns

The National Survey on Drug Use and Health, or NSDUH (Substance Abuse and Mental Health Services Administration, SAMHSA, 2006), provides national- and state-level estimates of alcohol, tobacco, and other drug use. According to the most recent NSDUH estimates, 121,000 Hoosiers, or 2.37% (95% Confidence Interval: 1.85%–3.04%) of Indiana’s population, used cocaine in the past year. This rate is comparable to the nation’s rate (2.42%). Cocaine use in the past year was highest among 18- to 25-year-old people, 6.68% (95% C.I.: 5.13%–8.67%), which was statistically significantly higher than any other age group. Indiana’s cocaine use among the age groups corresponded with the national pattern and was statistically the same (see Figure 6.1, page 90).

NSDUH data for 2001–2004 show that cocaine use in the past year was lowest in 2001 (IN: 1.46%; U.S.: 1.70%) and remained fairly stable from 2002 (IN: 2.55%; U.S.: 2.51%) to 2004 (IN: 2.37%; U.S. 2.42%). The differences in rates between Indiana and the United States, as well as the differences between the years, were statistically not significant (see Figure 6.2, page 90).

Publicly available NSDUH data currently do not include gender or race comparisons.

### Adult Consumption Patterns

The Treatment Episode Data Set, or TEDS (Substance Abuse and Mental Health Data Archive, n.d.), for 2004 shows that 11.6% of Hoosiers admitted to substance abuse treatment programs reported cocaine as their primary substance problem at the time of admission. In comparison, the U.S. rate of 13.7% was higher (Pearson chi square = 139.128;  $p < 0.001$ ). The groups with the highest percentages in Indiana

were Blacks with 27.1% (Pearson chi square = 1783.659;  $p < 0.001$ ), 35- to 44-year-olds with 18.3% (Pearson chi square = 1091.143;  $p < 0.001$ ), and females with 16.4% (Pearson chi square = 419.350;  $p < 0.001$ ) (see Figures 6.3 to 6.5, pages 91 and 92).

Comparison of TEDS from 2000 to 2004 between Indiana and the United States demonstrated that in 2000, the percentage of patients reporting cocaine as their primary substance problem was almost identical between Indiana (13.6%) and the United States (13.5%). However, in the following years, Indiana's rate declined. The differences between Indiana and the United States from 2001 to 2004 are statistically significant (see Figure 6.6, page 92).

### Youth Consumption Patterns

According to the 2005 Youth Risk Behavior Survey System, or YRBSS (CDC, 2006), 6.8% (95% C.I.: 4.8%–8.8%) of Indiana high school students (grades 9 through 12) reported that they had used any form of cocaine, including powder, crack, or freebase, once or more during their life, and 3.0% (95% C.I.: 1.9%–4.1%) stated that they currently (within the past 30 days) use cocaine. The national rates for lifetime use (use at least once in their life) and current use were slightly higher, 7.6% (95% C.I.: 6.6%–8.6%) and 3.4% (95% C.I.: 2.8%–4.0%), respectively. The rate differences between Indiana and the United States were statistically not significant (see Figure 6.7, page 93).

Males in Indiana and the entire United States had higher rates of lifetime and current cocaine use than females. In Indiana, 7.8% (95% C.I.: 5.5%–10.1%) of males and 5.8% (95% C.I.: 3.4%–8.2%) of females reported lifetime use, and 3.6% (95% C.I.: 2.1%–5.1%) of males and 2.3% (95% C.I.: 1.1%–3.5%) of females reported current use of the substance. National rates were comparable. Neither the differences between the genders nor between Indiana and the United States were statistically significant (see Figures 6.8 and 6.9, pages 93 and 94).

Hispanics reported the highest rate of cocaine use in the United States, with 12.2% (95% C.I.: 9.6%–14.8%) reporting lifetime use and 6.1% (95% C.I.: 4.3%–7.9%) reporting current use. These rates were statistically significantly higher than the rates for individuals who identified themselves as White or Black. Unfortunately, no assumptions can be made for Indiana, because data on Hispanics are currently not

available. Individuals who described themselves as Black reported the lowest rates of cocaine use. In Indiana, 2.6% (95% C.I.: 0.4%–4.8%) of Blacks reported lifetime use, and 2.6% (95% C.I.: 0.4%–4.8%) reported current use. The differences between Blacks, Whites, and other races in Indiana were statistically not significant (see Figures 6.10 and 6.11, pages 94 and 95).

The lowest rate of lifetime cocaine use among high school students was found among 9th graders (IN: 5.2%; U.S.: 6.0%), with rates generally increasing with age, except for 11th graders in Indiana (6.6%), whose rate was lower than the rate of 10th grade students (7.2%). High school seniors displayed the highest rate (IN: 9.0%; U.S.: 8.9%). The rates for lifetime cocaine use between Indiana and the United States and between the grades (9 through 12) were statistically the same (see Figure 6.12, page 95).

Among U.S. high school students, current cocaine use was lowest among 9th grade students (3.0%) and consistently increased with higher grade levels through grade 12. Current cocaine use in Indiana differed from the national pattern. Data for Indiana show some differences from the national pattern: while in Indiana, 12th graders also had the highest rate of use (4.5%), students in the 11th grade reported the lowest rate for high school students (1.9%). High school freshmen and sophomores both reported the same rate of use (2.9%). The differences between the grades and between Indiana and the United States are statistically non-significant (see Figure 6.13, page 96).

A comparison of lifetime and current cocaine use among high school students in Indiana between 2003 and 2005 shows that current use remained stable with 3.1% (95% C.I.: 2.1%–4.1%) in 2003 and 3.0% (95% C.I.: 1.9%–4.1%) in 2005, and lifetime use declined from 7.9% (95% C.I.: 6.5%–9.3%) in 2003 to 6.8% (95% C.I.: 4.8%–8.8%) in 2005. However, the decline was statistically not significant (see Figure 6.14, page 96).

The annual Survey of Alcohol, Tobacco and Other Drug Use by Children and Adolescents in the State of Indiana (ATOD; Indiana Prevention Resource Center, IPRC, 2006) is based on a non-random sample and may not be representative. However, the survey provides us with a good estimate of substance use among Hoosier children, grades 6 to 12. The 2005 survey shows that lifetime, annual, and monthly cocaine

and crack use in middle and high school students generally increases with age. Lowest rates of use were found among 6th graders, the youngest students surveyed. Furthermore, crack use is more prominent than cocaine use in grades 6 and 7, but cocaine seems to gain popularity as students move on through high school (see Figures 6.15 and 6.16, page 97).

## CONSEQUENCES

### Health Consequences

Cocaine is an addictive drug and powerful stimulant. It can be taken orally, intranasally, rubbed onto mucous tissues, dissolved in water, and injected intravenously, and smoked in its freebase form known as crack (NIDA, 2005).

The effects of cocaine depend on the amount of the drug taken and the route of administration. Taken in small amounts, it can make the user feel euphoric, energetic, talkative, mentally alert, and may temporarily decrease the need for food and sleep. Short-term physiological effects of cocaine include constricted blood vessels, dilated pupils, and increased temperature, heart rate, and blood pressure. Large amounts may lead to bizarre, erratic, and violent behavior. Users may experience tremors, vertigo, muscle twitches, paranoia, or, with repeated doses, a toxic reaction closely resembling amphetamine poisoning. Use of crack/cocaine may result in feelings of restlessness, irritability, and anxiety. Sudden death may occur with the first use of cocaine or unexpectedly during any use thereafter. Long-term effects of cocaine use include addiction, irritability and mood disturbances, restlessness, paranoia, and auditory hallucinations (NIDA, 2005).

The medical consequences of cocaine abuse are primarily cardiovascular problems (such as disturbances in heart rhythm and heart attacks), respiratory difficulties (such as chest pain and respiratory failure), neurological effects (such as strokes, seizures, and headaches), and gastrointestinal complications (such as abdominal pain and nausea). Babies born to mothers who abuse cocaine during pregnancy are often prematurely delivered, have low birth weights and smaller head circumferences, and are often shorter in length (NIDA, 2005). Additionally, users who inject cocaine intravenously are at higher risk for acquiring and/or transmitting sexually transmitted diseases, if needles or

other injection equipment are shared (Office of National Drug Control Policy, 2006).

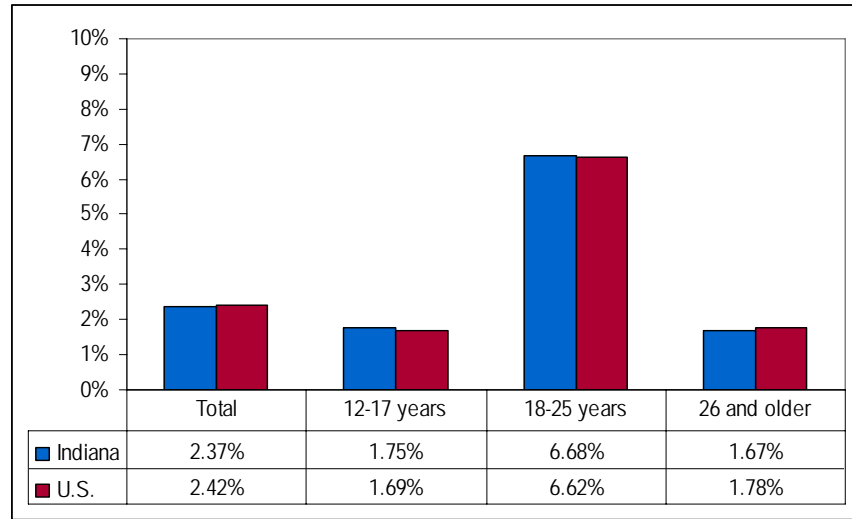
### **Legal and Criminal Consequences**

Legal consequences include drug arrests. During federal fiscal year 2003, cocaine was the primary drug involved in federal arrests (11,794 federal drug arrests for cocaine). The Drug Enforcement Administration (DEA) made 6,522 arrests for powder cocaine and 3,842 arrests for crack cocaine during federal fiscal year 2003. Of the 26,023 federal drug defendants sentenced during federal fiscal year 2003, powder cocaine was involved in 5,867 (22.9%) and crack cocaine was involved in 5,166 (20.17%) of the cases (Office of National Drug Control Policy, 2006).

The Uniform Crime Reports, or UCR (FBI, n.d.), for the years from 2001 to 2003 show an increase in the Indiana arrest rate for cocaine and opiates productions/sales offenses (from 0.29 to 0.36 per 1,000 population) and a decrease on the national level (from 0.49 to 0.41 per 1,000 population). However, Indiana's rate still falls below the U.S. rate (see Figure 6.17, page 98). In regard to arrests for cocaine and opiates possession offenses for the years 2001 to 2003, Indiana experienced an increase in arrests from 0.55 to 0.62 per 1,000 population, but still falls below the national rate of 1.03 to 1.00 per 1,000 population (see Figure 6.18, page 98). The UCR only reports arrest rates for cocaine and opiates offenses combined; individual data on either drug category are publicly not available. Maps 6.1 and 6.2, pages 99 and 100, show Indiana cocaine/opiates possession arrest rates and sales arrest rates by county.

**Figure 6.1**

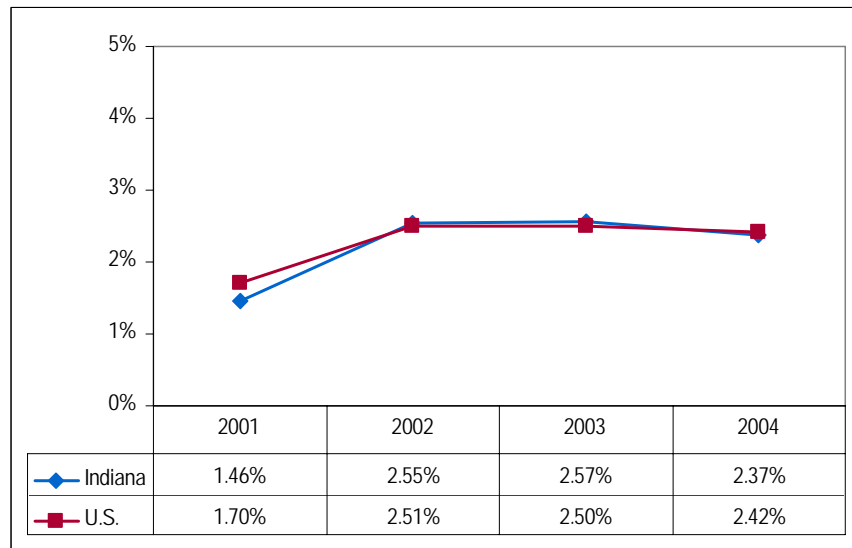
Percentage of Indiana and U.S. Population (12 years and older) Reporting Cocaine Use in the Past Year, by Age Group, Average, 2003 and 2004 (National Survey on Drug Use and Health, 2003–2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 6.2**

Percentage of Indiana and U.S. Population (12 years and older) Reporting Cocaine Use in the Past Year, 2001 to 2003 (National Survey on Drug Use and Health, 2001–2003)

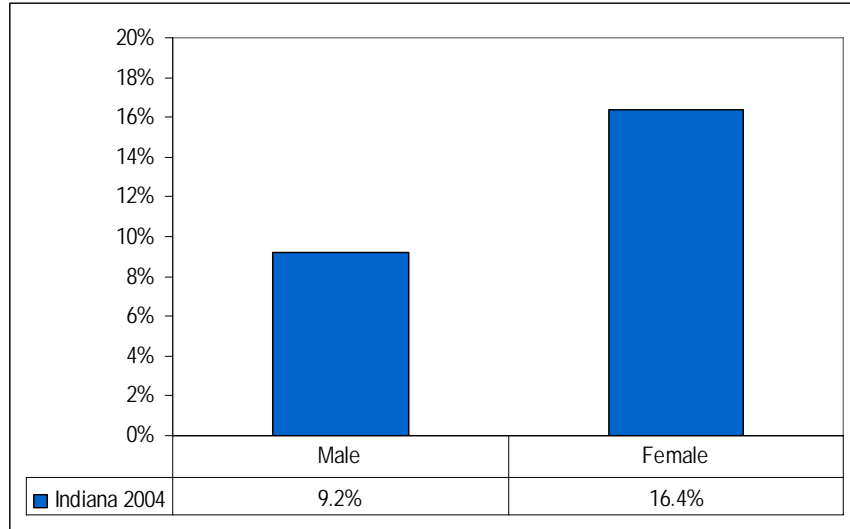


Source: Substance Abuse and Mental Health Services Administration, 2006



**Figure 6.3**

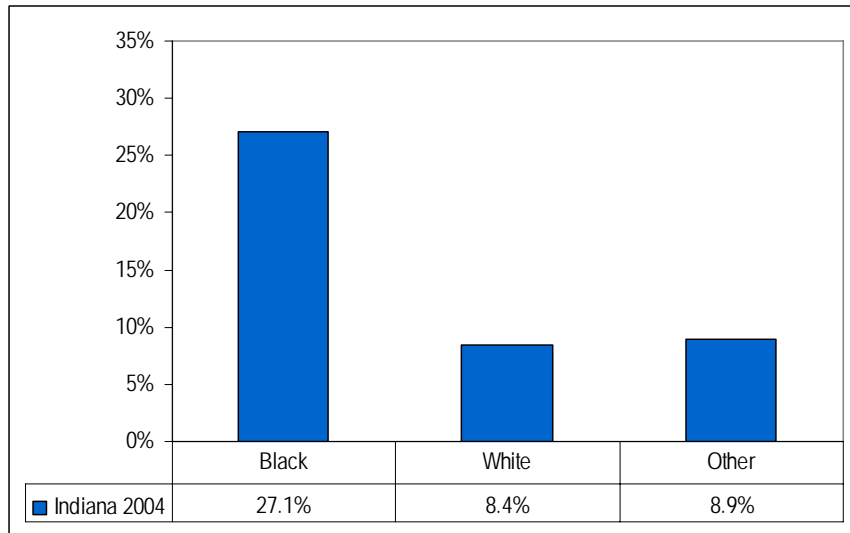
Percentage of Indiana Patients Reporting Cocaine as Their Primary Substance Problem at Admission to Substance Abuse Programs, by Gender, 2004 (Treatment Episode Data Set, 2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 6.4**

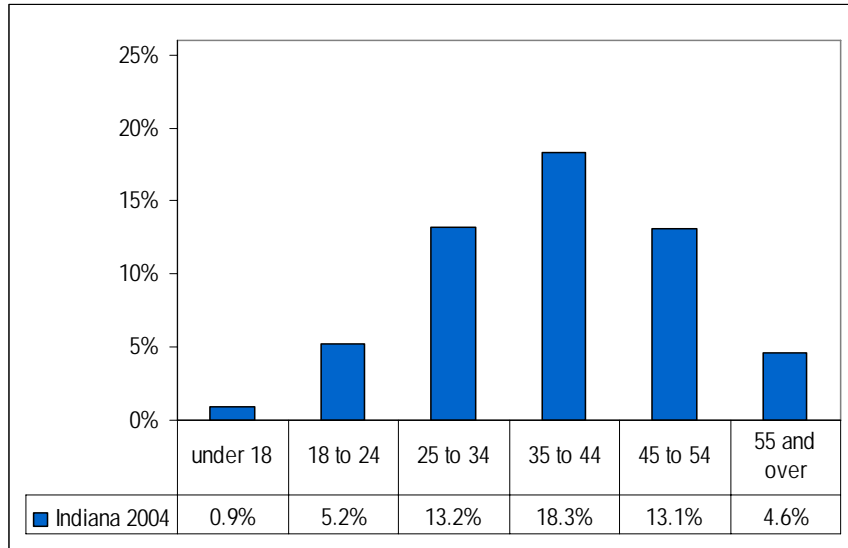
Percentage of Indiana Patients Reporting Cocaine as Their Primary Substance Problem at Admission to Substance Abuse Programs, by Race, 2004 (Treatment Episode Data Set, 2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 6.5**

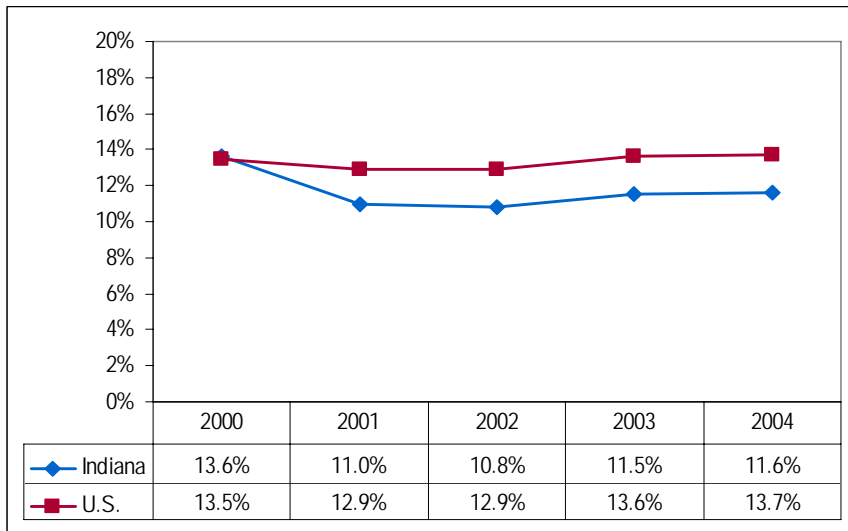
Percentage of Indiana Substance Abuse Patients Reporting Cocaine as Their Primary Substance Problem at Admission to Substance Abuse Programs, by Age Group, 2004 (Treatment Episode Data Set, 2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 6.6**

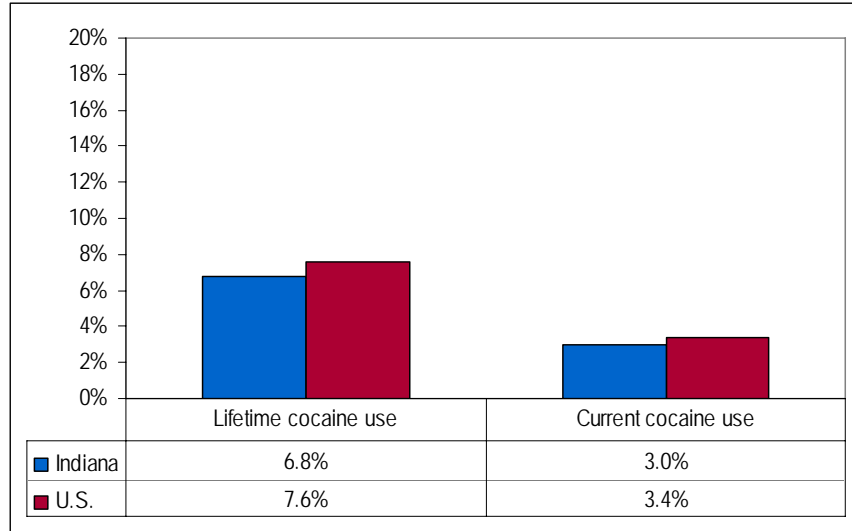
Percentage of Indiana and U.S. Substance Abuse Patients Reporting Cocaine as Their Primary Substance Problem at Admission to Substance Abuse Programs, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 6.7**

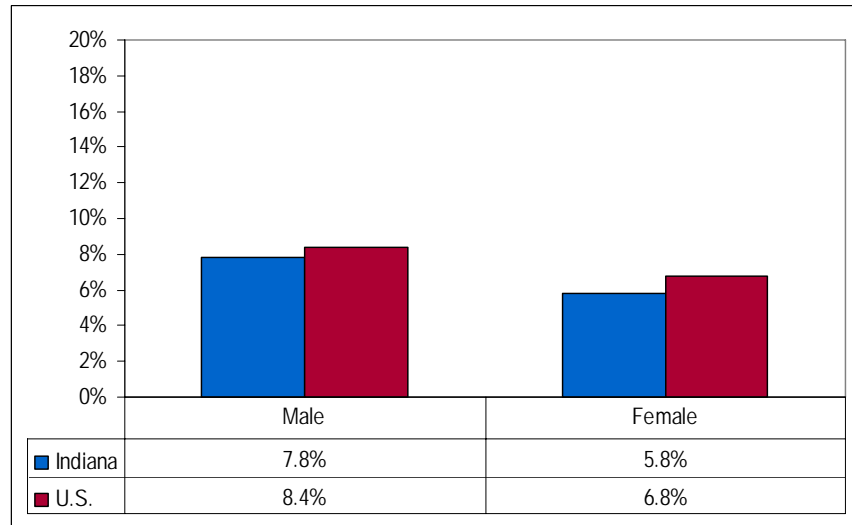
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Cocaine Lifetime (at Least Once) and Current (Past Month) Use, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006

**Figure 6.8**

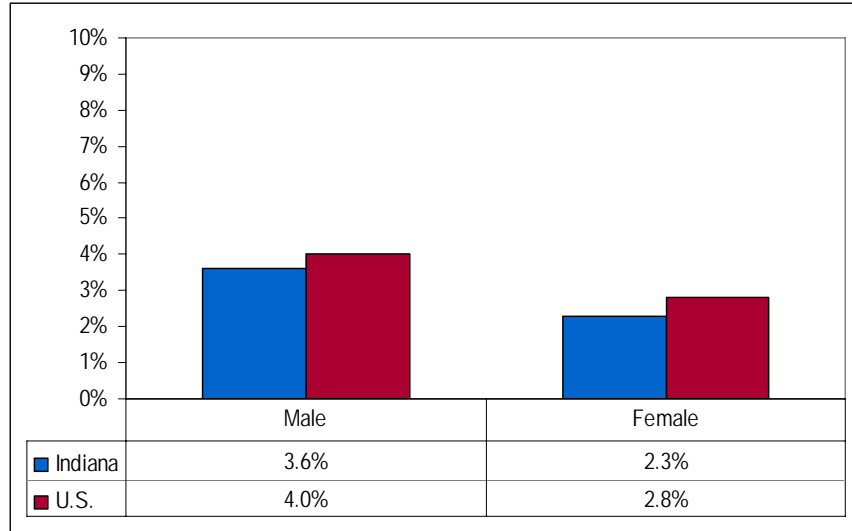
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Lifetime (at Least Once) Cocaine Use, by Gender, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006

**Figure 6.9**

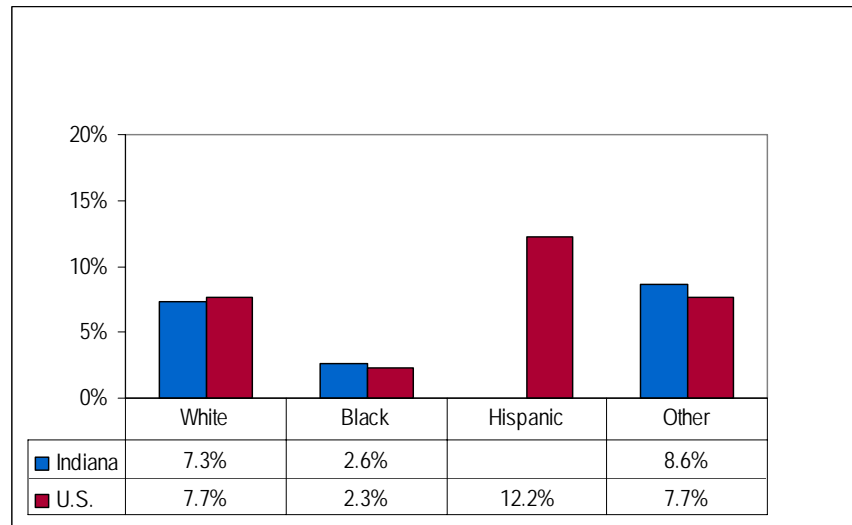
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Current (Past Month) Cocaine Use, by Gender, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006

**Figure 6.10**

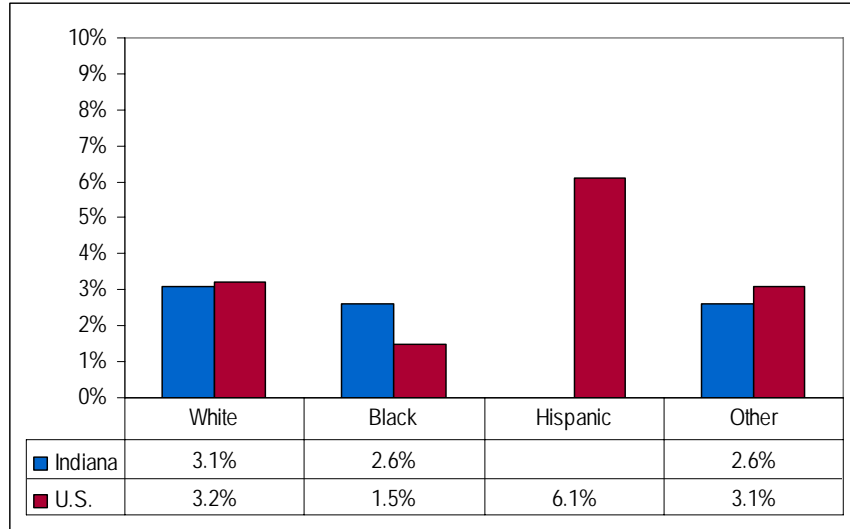
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Lifetime (at Least Once) Cocaine Use, by Race/Ethnicity, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006

**Figure 6.11**

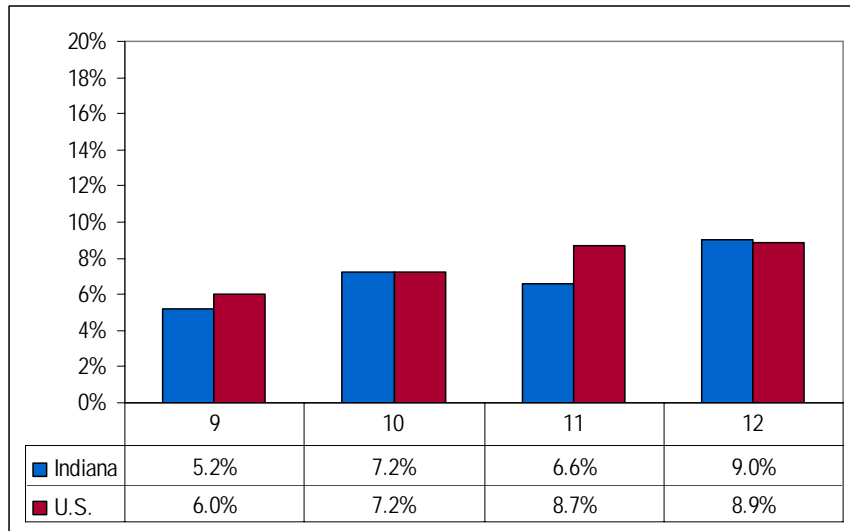
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Current (Past Month) Cocaine Use, by Race/Ethnicity, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006

**Figure 6.12**

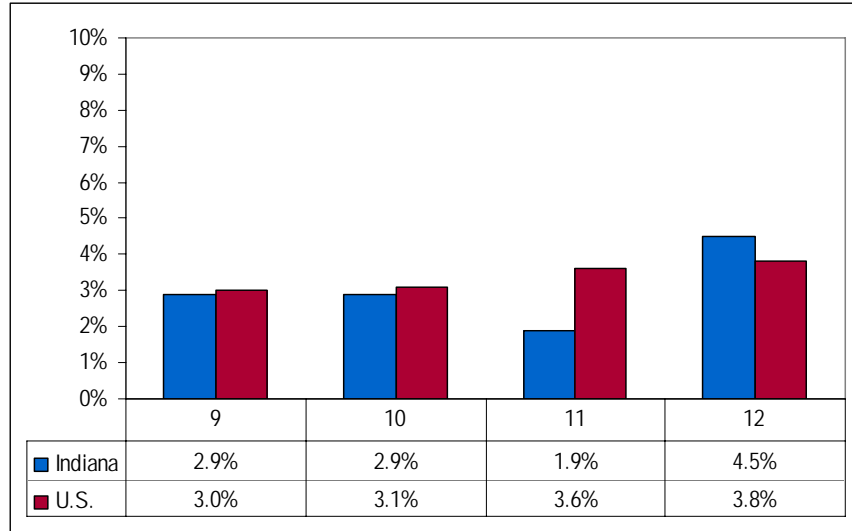
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Lifetime (at Least Once) Cocaine Use, by Grade, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006

**Figure 6.13**

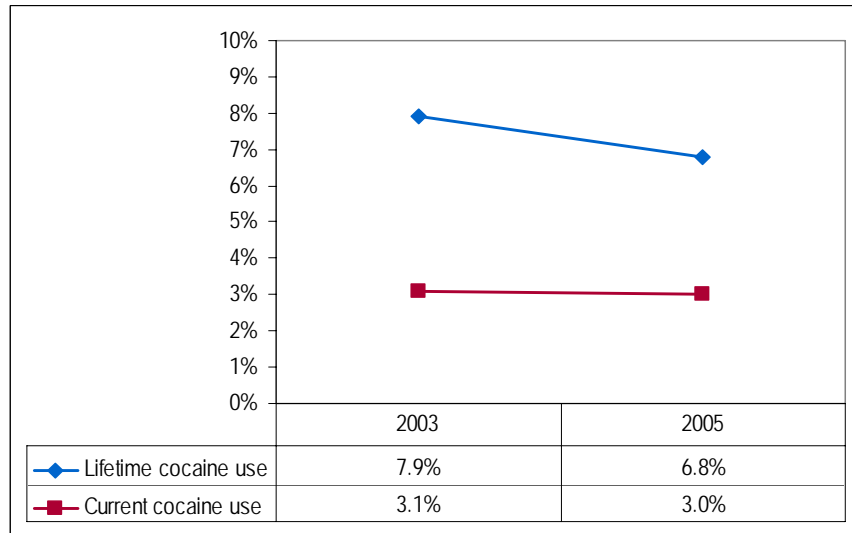
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Current (Past Month) Cocaine Use, by Grade, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2006

**Figure 6.14**

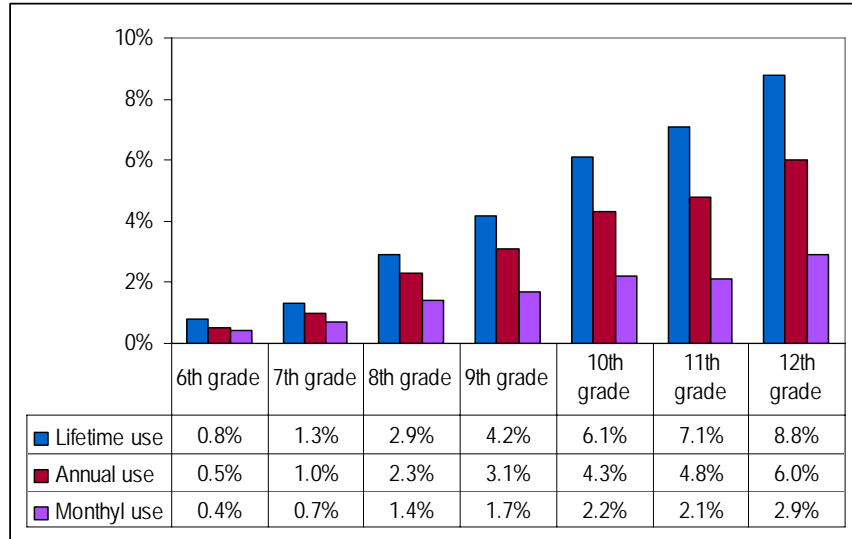
Percentage of Indiana High School Students (9th–12th Grade) Reporting Cocaine Lifetime (at Least Once) and Current (Past Month) Use, 2003 and 2005 (Youth Risk Behavior Surveillance System, 2003 and 2005)



Source: Centers for Disease Control and Prevention, 2006

**Figure 6.15**

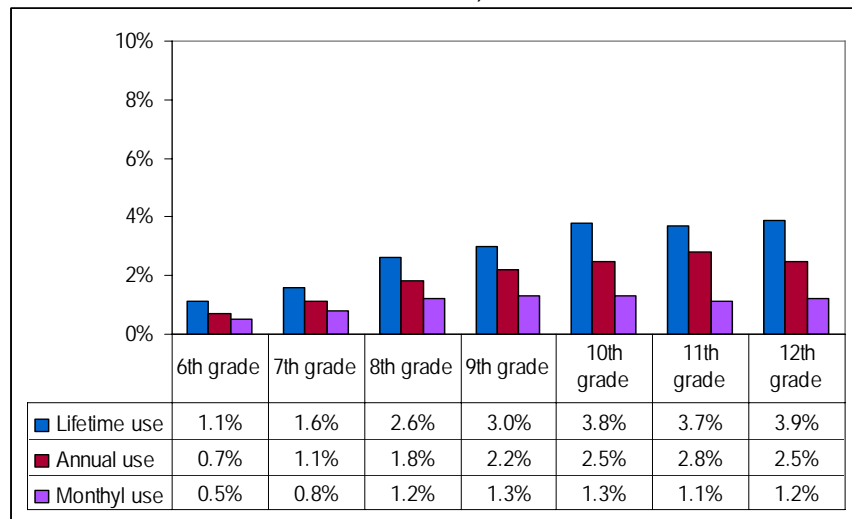
Percentage of Indiana 6th–12th Grade Students Reporting Lifetime (at Least Once), Annual (in the Past Year), and Monthly (in the Past Month) Cocaine Use, by Grade, 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents, 2005)



Source: Indiana Prevention Resource Center, 2006

**Figure 6.16**

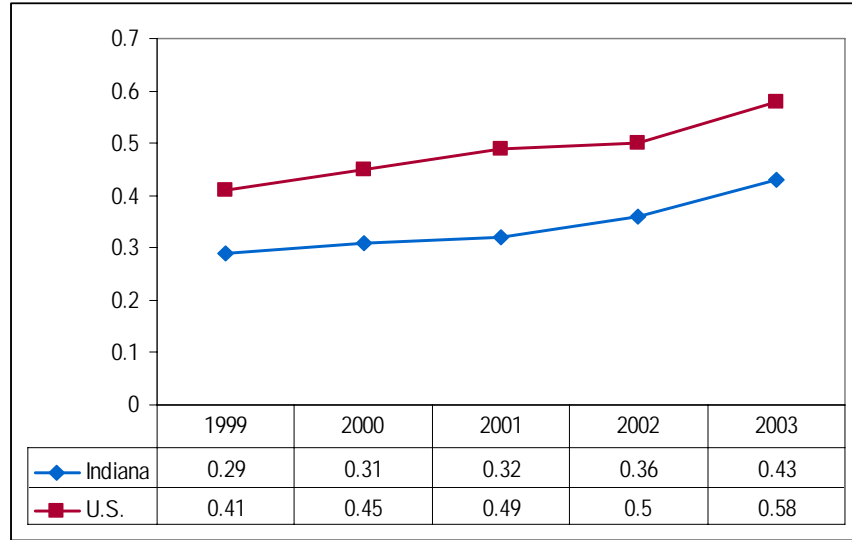
Percentage of Indiana 6th–12th Grade Students Reporting Lifetime (at Least Once), Annual (in the Past Year), and Monthly (in the Past Month) Crack Use, by Grade, 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents, 2005)



Source: Indiana Prevention Resource Center, 2006

**Figure 6.17**

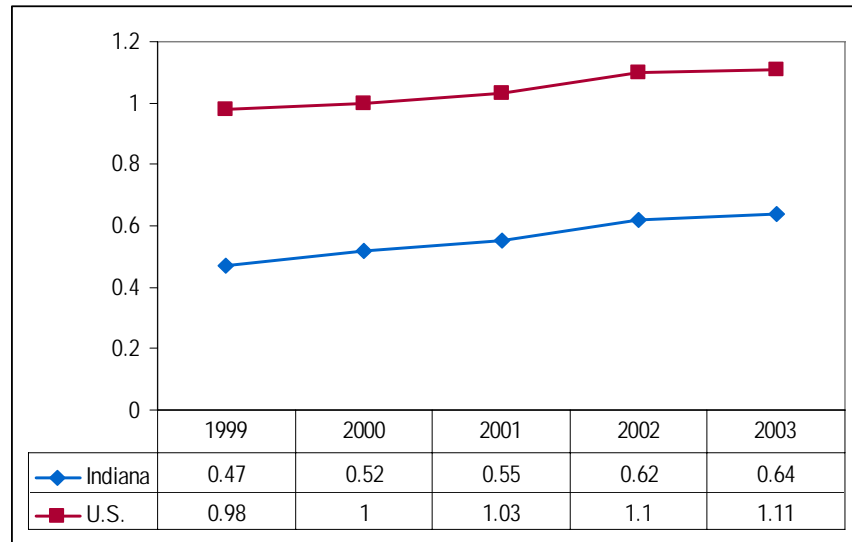
Indiana and U.S. Arrest Rates for Cocaine and Opiates Productions/Sales Offenses, 1999 to 2003 (Uniform Crime Reports, 1999–2003)



Source: Federal Bureau of Investigation, n.d.

**Figure 6.18**

Indiana and U.S. Arrest Rates for Cocaine and Opiates Possession Offenses, from 1999 to 2003 (Uniform Crime Reports, 1999–2003)

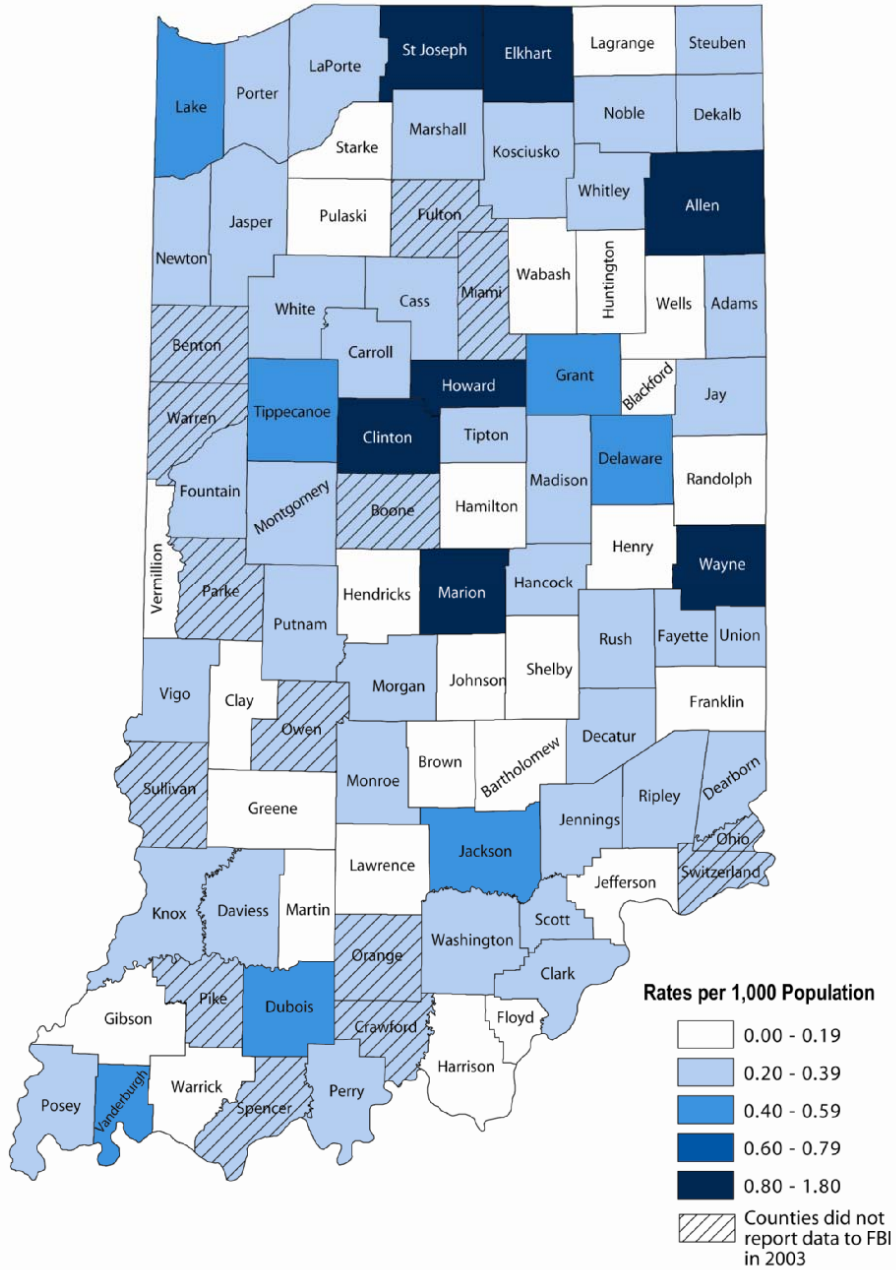


Source: Federal Bureau of Investigation, n.d.



Map 6.1

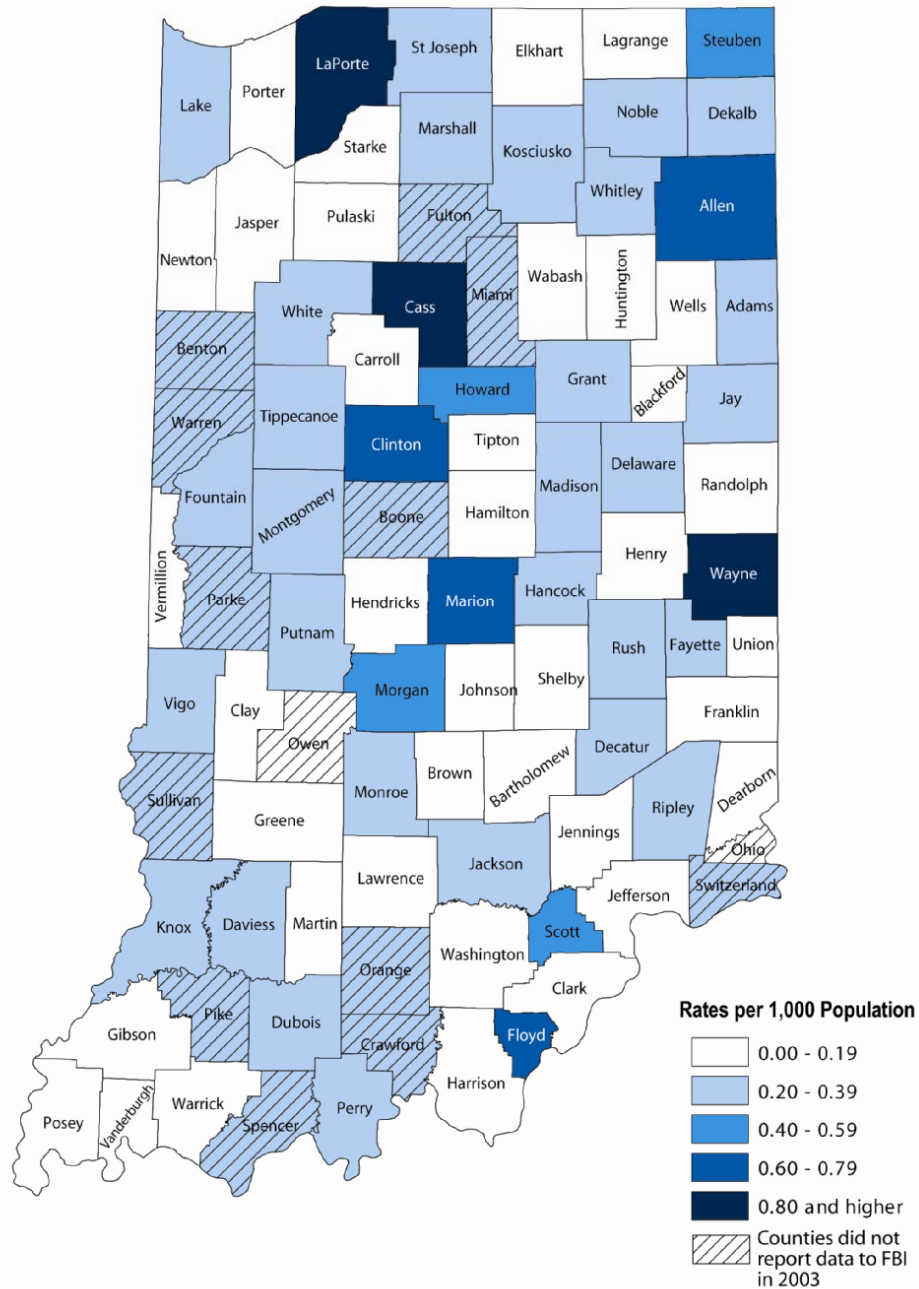
Indiana Cocaine/Opiate Possession Arrest Rates, by County, 2003  
(Uniform Crime Reports, 2003)



Source: Federal Bureau of Investigation, n.d.

**Map 6.2**

**Indiana Cocaine/Opiate Sales Arrest Rates, by County, 2003 (Uniform Crime Reports, 2003)**



Source: Federal Bureau of Investigation, n.d.

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# 7.

## HEROIN USE IN INDIANA: CONSUMPTION PATTERNS AND CONSEQUENCES

Heroin is an illegal, highly addictive drug. It is both the most abused and the most rapidly acting of the opiate-type drugs. It is typically sold as a white or brownish powder or as a black sticky substance known on the streets as “black tar heroin” (National Institute on Drug Abuse, 2005).

According to the Drug Enforcement Agency (DEA), heroin does not present a major threat to Indiana as it is not readily available in central and southern Indiana. However, in both its brown powder or black tar forms, heroin can be found more easily in northern Indiana.

In 2006, the DEA seized approximately 0.6 kilograms of heroin in Indiana, considerably less than the amount seized in the surrounding states of Ohio, Illinois, Kentucky, or Michigan (DEA, 2006).

### CONSUMPTION

#### General Consumption Patterns

Limited information exists on the overall use of heroin, both in Indiana and the United States. In 2003, the National Survey on Drug Use and Health, or NSDUH (Substance Abuse and Mental Health Services Administration, 2006) provided estimates for heroin use for all states and the nation as a whole. The NSDUH estimated that 1.6% of U.S. citizens age 12 or older have tried heroin at least once in their lifetime. The estimated percentage of Indiana residents age 12 or older who have tried heroin at least once was 1.1% (approximately 54,000 residents). This Indiana rate is statistically very similar to the national average.

Data from the Treatment Episode Data System, or TEDS (Substance Abuse and Mental Health Data Archive, n.d.), for the years from 2000 to 2004, show that a statistically significantly smaller percentage of Indiana residents entering substance abuse treatment reported current heroin use than did individuals entering treatment in the rest of the United States (2000: Pearson chi-square = 4192.95,  $p < .001$ ; 2001: Pearson chi-square = 4806.57,  $p < .001$ ; 2002: Pearson chi-

square = 4898.67,  $p < .001$ ; 2003: Pearson chi-square = 5026.88,  $p < .001$ ; 2004: Pearson chi-square = 5245.79,  $p < .001$ ) (see Figure 7.1, page 110).

### Adult Consumption Patterns

Currently, data on adult heroin consumption patterns are limited to the data available from the TEDS. Nearly all of the individuals locally and nationally who report currently using heroin at the time of their admission for substance abuse treatment are 18 or older.

A gender effect was observed in heroin use for adults entering substance abuse treatment. From 2000 through 2004, males were statistically significantly more likely to report current use of heroin than were females in both Indiana and the United States (2000: Males = 67.9%, Females = 32.1%; 2001: Males = 68.4%, Females = 31.6%; 2002: Males = 68.4%, Females = 31.6%; 2003: Males = 68.0%, Females = 32.0%; 2004: Males = 68.1%, Females = 31.9%), (2000: Pearson chi-square = 28.98,  $p = .001$ ; 2001: Pearson chi-square = 18.68,  $p < .001$ ; 2002: Pearson chi-square = 10.16,  $p = .001$ ; 2003: Pearson chi-square = 20.23,  $p < .001$ ; 2004: Pearson chi-square = 31.07,  $p < .001$ ) (see Figure 7.2, page 111).

Race is related to heroin use at admission. In Indiana, Whites were more likely to report heroin use, followed by Blacks, and then individuals from other racial groups. Nationally, Whites were also more likely to report heroin use upon their admission to treatment than either Blacks or individuals from other racial groups. Blacks reported current heroin use rates that were very similar to the rates of other racial groups (2000: Pearson chi-square = 22.25,  $p < .001$ ; 2001: Pearson chi-square = 153.89,  $p < .001$ ; 2002: Pearson chi-square = 187.86,  $p < .001$ ; 2003: Pearson chi-square = 156.46,  $p < .001$ ; 2004: Pearson chi-square = 156.41,  $p < .001$ ) (see Figure 7.3, page 111).

Age is also related to heroin use at admission. The percentage of individuals entering substance abuse treatment who report currently using heroin is highest for individuals between the ages of 25 to 54. Nationally, from 2000 to 2004, people age 35 to 44 reported the highest level of current heroin use. Locally, the highest use level was reported by Indiana residents between the ages of 45 and 54. The difference in heroin use across age groups was statistically significant over all years

reviewed (2000: Pearson chi-square = 468.98,  $p < .001$ ; 2001: Pearson chi-square = 129.87,  $p < .001$ ; 2002: Pearson chi-square = 115.73,  $p < .001$ ; 2003: Pearson chi-square = 74.65,  $p < .001$ ; 2004: Pearson chi-square = 99.58,  $p < .001$ ) (see Figure 7.4, page 112).

## Youth Consumption Patterns

Information on the consumption patterns of youth (middle and high school students) is available from three sources:

- Youth Risk Behavior Surveillance System, or YRBSS (Centers for Disease Control and Prevention, 2006),
- Monitoring the Future survey, or MTF (National Institute on Drug Abuse, 2006c), and
- Alcohol, Tobacco, and Other Drug Use of Indiana Children and Adolescents Survey, or ATOD (Indiana Prevention Resource Center, IPRC, 2006), an Indiana-specific non-random survey modeled after the MTF.

All three of these surveys ask respondents to report on their lifetime heroin use, defined as having tried heroin at least once in their life. Additionally, the ATOD and MTF ask survey participants to report whether they have used heroin at least once in the past year and at least once in the past month. Two years of data are available from the YRBSS for the state of Indiana. In 2003 and 2005, 2.4% (C.I. = 1.6% to 3.2%) and 2.3% (C.I. = 1.2% to 3.4%), respectively, of YRBSS participants in Indiana reported having tried heroin at least once in their life. Indiana's percentages were statistically identical to those reported for lifetime heroin use by YRBSS participants in the rest of the nation (3.3%, CI = 2.6% to 4.0%, 2003; 2.4%, CI = 2.0% to 2.8%, 2005).

Gender is related to lifetime heroin use. During 2003 and 2005, males in Indiana and the nation reported a higher incidence of lifetime heroin use than did females. The percent of both males and females in Indiana reporting any heroin use is statistically similar to males and females in the rest of the United States.

According to YRBSS results, race is not related to heroin use rates. The difference between the percentages of young Whites and Blacks who had tried heroin at least once in their lifetime, as reported by Indiana's YRBSS participants in both 2003 and 2005, were not statistically significant. Also, the rates for lifetime heroin use among both

Black and White participants for Indiana are statistically similar to the nation's rates.

In 2005, a total of 1.90% of the ATOD participants in the 8th, 10th, and 12th grades reported that they had used heroin at least once in their life. The average percentage of students reporting annual use was 1.27%. Only a small percentage of participants (.80%), said they had used heroin in the past month.

When we compared the average rates of lifetime, annual, and monthly use of heroin reported on the ATOD to the average national rates for these consumption patterns reported by the 2005 MTF (1.5%, lifetime use; .83%, monthly use; .50%, daily use), Indiana was found to be higher on all three use indicators. Because of the nature of the currently available data, it is not possible to determine whether Indiana's average rates for lifetime, annual, or monthly use are statistically higher than the rest of the United States.

Across most years from 2000 to 2005, the percentage of Indiana students reporting lifetime, annual, or monthly heroin use has been higher in Indiana than in the nation (see figures 7.5, 7.6, and 7.7, pages 112 and 113). When we examined heroin use patterns for 8th, 10th, and 12th grade participants, we found distinct differences between Indiana and the rest of the nation. For the years 2000 through 2005, Indiana 8th graders reported higher rates of annual and monthly heroin use across all years. Statistical significance could only be determined for 2004 and 2005. The percentage of 8th graders reporting annual heroin use in Indiana (1.2%) was higher than the percentage reported nationally on the MTF (.8%; C.I. = .70% to 1.0%). The rate of monthly heroin use reported by Indiana 8th graders in 2004 (.8%) and 2005 (.8%) was significantly higher than the national rate for both years (.5%, 2004; CI = .40% to .60%; .5%, 2005; CI = .40% to .60%). Tenth graders participating in Indiana's ATOD reported lifetime and annual heroin use rates that were higher than the MTF national rates for the five years from 2001 through 2005. The rates of daily use reported by Indiana's 10th graders were higher than the national rates for all six years from 2000 through 2005. When we compared the 2004 and 2005 rates of heroin use patterns by 10th graders in Indiana with the national rates, we found Indiana's rates to be statistically significantly higher than those of the nation. The percentages of Indiana 12th graders reporting lifetime, annual, or



monthly heroin use on the ATOD were higher than the percentages reported by their counterparts on the MTF survey for all years from 2000 through 2005, with the exception of lifetime use in 2000 where Indiana's 12th graders reported a lower rate of use than the nation. The differences between the percentage of Indiana 12th graders admitting lifetime, annual, or monthly use of heroin in 2004 and 2005 were statistically significantly higher than the percentages reported for the nation. The results of the ATOD survey, however, should be interpreted with caution as they are based on a non-random sample of Indiana students.

## CONSEQUENCES

Heroin abuse is associated with serious health conditions, including heroin dependence, fatal overdose, spontaneous abortion, collapsed veins, and, particularly in users who inject the drug, infectious diseases, including HIV/AIDS and Hepatitis C. Other health problems that have been reported in heroin abusers are infections of the heart lining and valves, abscesses, cellulitis, liver disease, and pulmonary complications. Because street heroin often contains toxic additives that do not easily dissolve, blood vessels leading to the heart, lungs, liver, kidneys, or brain can get clogged. Clogs of this nature can lead to infection or death of small parts of cells in vital organs (NIDA, 2006a). The Drug Abuse Warning Network reports that approximately 8.0% of drug-related emergency room visits nationally in both 2003 and 2004 involved heroin (NIDA, 2006a).

### Heroin Dependence

A comparison of data available in the Treatment Episode Data System (TEDS) from 2000 through 2004 shows that the percentage of heroin-related drug treatment admissions has consistently been lower in Indiana than the rest of the United States. (2000: Pearson chi-square = 4314.08,  $p < .001$ ; 2001: Pearson chi-square = 4346.04,  $p < .001$ ; 2002: Pearson chi-square = 4391.24,  $p < .001$ ; 2003: Pearson chi-square = 4619.74,  $p < .001$ ; 2004: Pearson chi-square = 4842.01,  $p < .001$ ) (see Figure 7.8, page 114).

As with heroin consumption, heroin dependence is reported almost exclusively by individuals 18 years of age or older. In Indiana, heroin dependence accounted for less than 1.0 percent of admissions to substance abuse treatment programs for residents under age 18. In the rest of the United States, approximately 1.0% of admissions for substance abuse treatment were due to heroin dependence. The differences in admissions for heroin dependence between Indiana and the United States are statistically significantly different across all years reviewed.

Gender is significantly associated with heroin-related treatment admissions. Regardless of the year, in both Indiana and the nation as a whole, men are more likely to enter treatment for heroin dependence or abuse than are women (2000: Pearson chi-square = 11.82,  $p = .001$ ; 2001: Pearson chi-square = 16.92,  $p < .001$ ; 2002: Pearson chi-square = 9.66,  $p = .002$ ; 2003: Pearson chi-square = 18.38,  $p < .001$ ; 2004: Pearson chi-square = 28.59,  $p < .001$ ) (see Figure 7.9, page 114).

A relationship has been found between race and admissions for heroin dependency. From 2000 through 2004, Whites entering substance abuse treatment were significantly more likely to report heroin as their primary drug of abuse. Individuals describing themselves as coming from a race other than either White or Black were second most likely to report heroin as their primary drug of abuse. Blacks entering substance abuse treatment were the least likely to report heroin as the primary drug that they were abusing.

In Indiana, the relationship between race and heroin-related admissions was somewhat different. During 2001 through 2004, admissions to treatment for heroin were significantly more likely to be sought by White Indiana residents, followed by Blacks, and finally by individuals from other racial groups. The percentage of Indiana residents entering treatment who were White or Black was statistically significantly higher than the percentage reported by the rest of the nation. The percentage of Indiana residents entering treatment for heroin who were from some other racial group was lower than the percentage reported nationally. These differences are most likely a result of the low numbers of people from racial groups other than White and Black who live in Indiana (2001: Pearson chi-square = 119.40,  $p < .001$ ; 2002: Pearson chi-square = 4391.24,

$p < .001$ ; 2003: Pearson chi-square = 4619.74,  $p < .001$ ; 2004: Pearson chi-square = 4842.01,  $p < .001$ ) (see Figure 7.10, page 115).<sup>2</sup>

Age is associated with heroin-related admissions to substance abuse treatment. As age increases, so does the percentage of heroin-related admissions. Nationally, the percentage of admissions for heroin abuse/dependence is highest for people in the age group 35 to 44. Locally, Indiana residents age 45 to 54 were reported as having the highest percentage of admissions for heroin abuse or dependence. These patterns are consistent across all years reviewed (2000: Pearson chi-square = 640.46,  $p < .001$ ; 2001: Pearson chi-square = 147.09,  $p < .001$ ; 2002: Pearson chi-square = 106.43,  $p < .001$ ; 2003: Pearson chi-square = 92.37,  $p < .001$ ; 2004: Pearson chi-square = 119.13,  $p < .001$ ) (see Figure 7.11, page 115).

Because only a very small number of individuals under age 18 are admitted for heroin treatment (5 admissions or less per year), analyses of race and gender rates for this group would not be statistically valid.

## HIV/AIDS

One of the most serious consequences of heroin abuse is contraction of HIV from contaminated needles. Nationally, the percentage of HIV infections caused by injection drug use has decreased since 2001 from 19.5% to 15.4% of all cases (CDC, 2004). Information from the Indiana State Department of Health (ISDH) indicates a similar decrease over time in the percentage of HIV cases in Indiana caused by injection drugs such as heroin. The Indiana rates decreased from 13.0% in 2001 to 11.0% in 2004. Indiana is significantly lower than the nation in the percentage of HIV infections caused by injection drug use (ISDH, 2001, 2002, 2003, 2004). Comparisons for age, race, and gender could not be made due to the nature of the data currently available. Additionally, it could not be determined whether the differences observed are statistically significant (see Figure 7.12, page 116).

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<sup>2</sup>

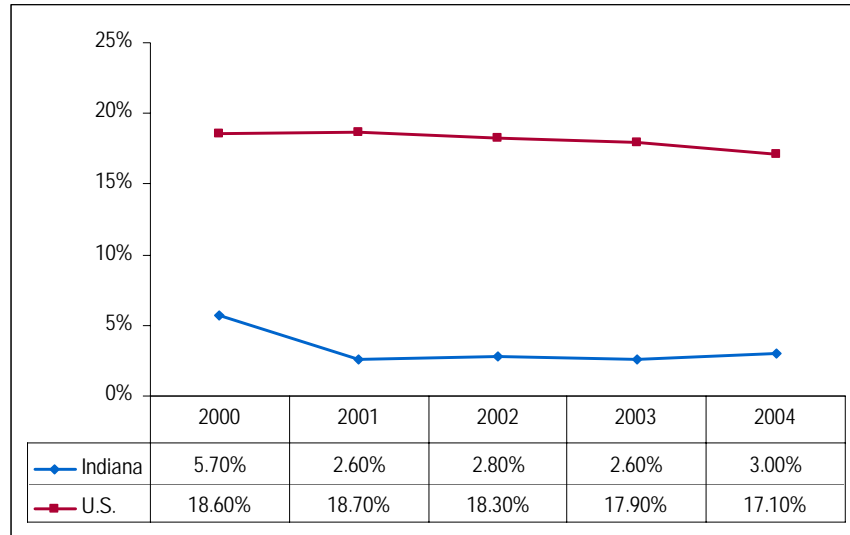
Due to possible problems related to the coding of race in the 2000 TEDS, the data for 2000 were not included in this part of the analysis.

## Hepatitis C

With an estimated 2.7 million chronically infected persons nationwide, hepatitis C virus (HCV) infection is the most common chronic blood-borne infection in the United States. No effective vaccine against this infection is available. Incidence of hepatitis C has been declining since the late 1980s. This decline is largely the result of a decrease in cases reported among injecting drug users (IDU). The majority of hepatitis C cases continue to occur in adult age groups over 25 years of age, and the most commonly identified risk factor for infection is injecting drug use. Among cases for which information about exposures during the incubation period was determined, the most common risk factor for hepatitis C in 2003 was injection drug use. The proportion of cases reporting injection drug use has increased over the past decade—from 31% in 1994, to 38% in 1999, and then a further increase to 45% in 2003 (CDC, 2005). Data for Indiana currently are not available.

**Figure 7.1**

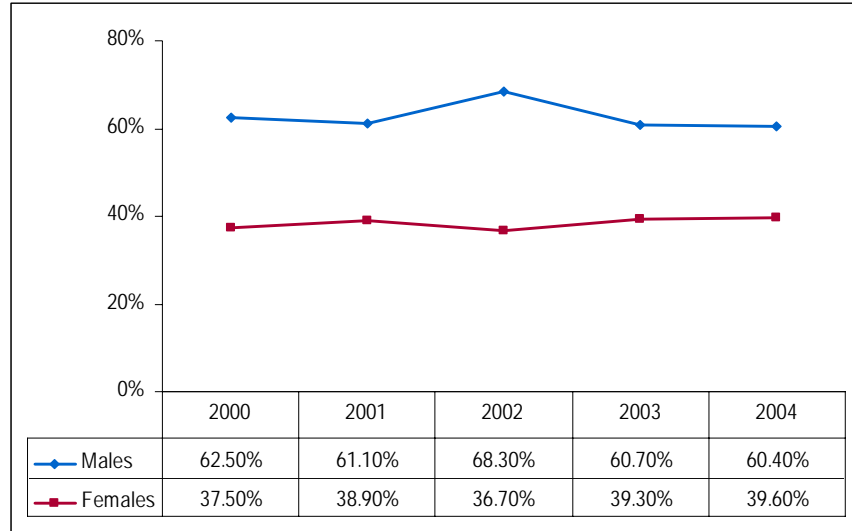
Percentages of Indiana and U.S. Patients Reporting Heroin Use at Time of Treatment Admission, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 7.2**

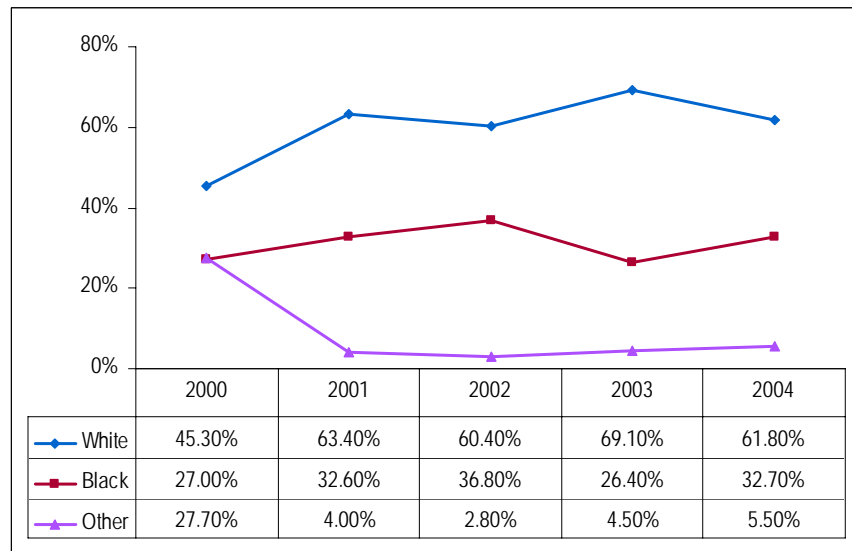
Percentages of Indiana Adults Reporting Heroin Use at Time of Treatment Admission, by Gender, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 7.3**

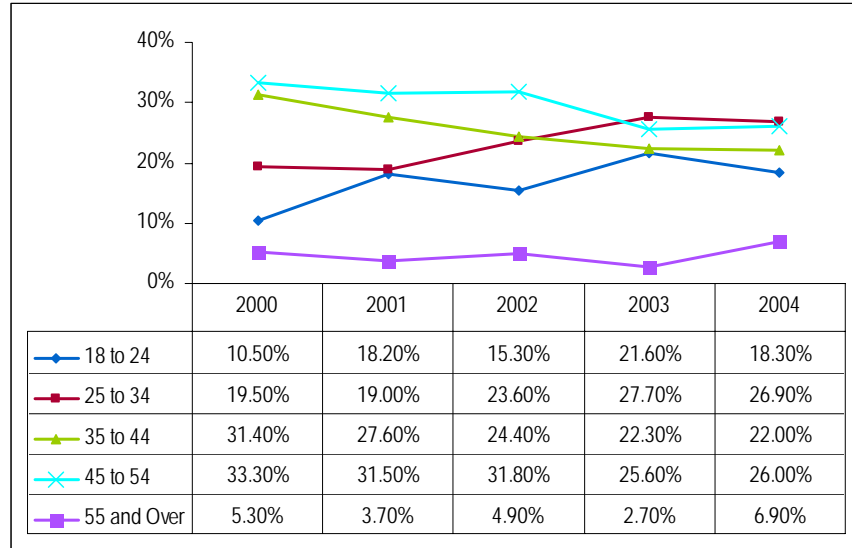
Percentage of Indiana Adults Reporting Heroin Use at Time of Treatment Admission, by Race, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 7.4**

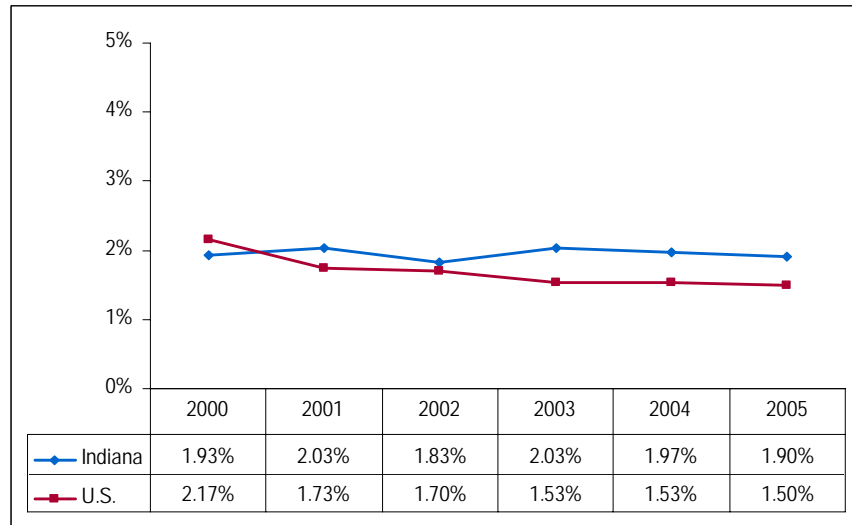
Percentages of Indiana Adults Reporting Heroin Use at Time of Treatment Admission, by Age, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 7.5**

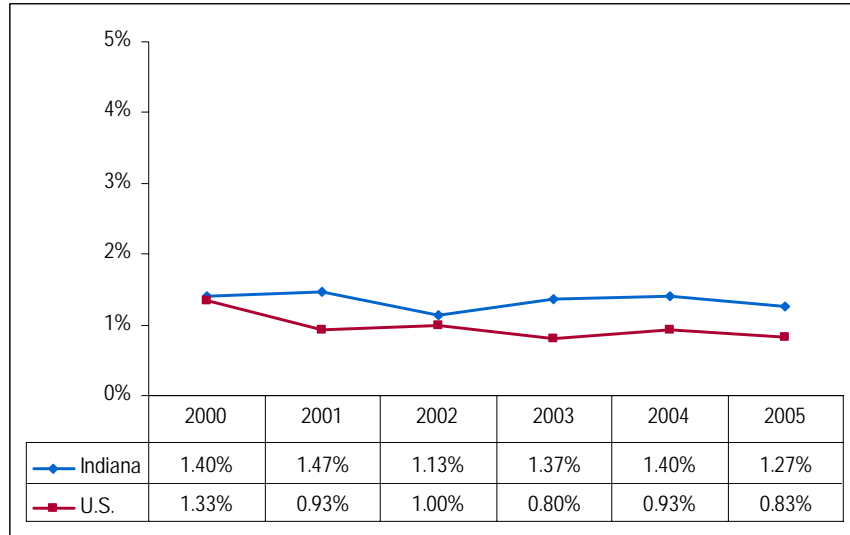
Percentages of Indiana and U.S. Students (8th, 10th, and 12th Graders Combined) Reporting Lifetime Heroin Use, 2000 to 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents and Monitoring the Future Survey, 2000–2005)



Source: Indiana Prevention Resource Center, 2006; National Institute on Drug Abuse, 2006c

**Figure 7.6**

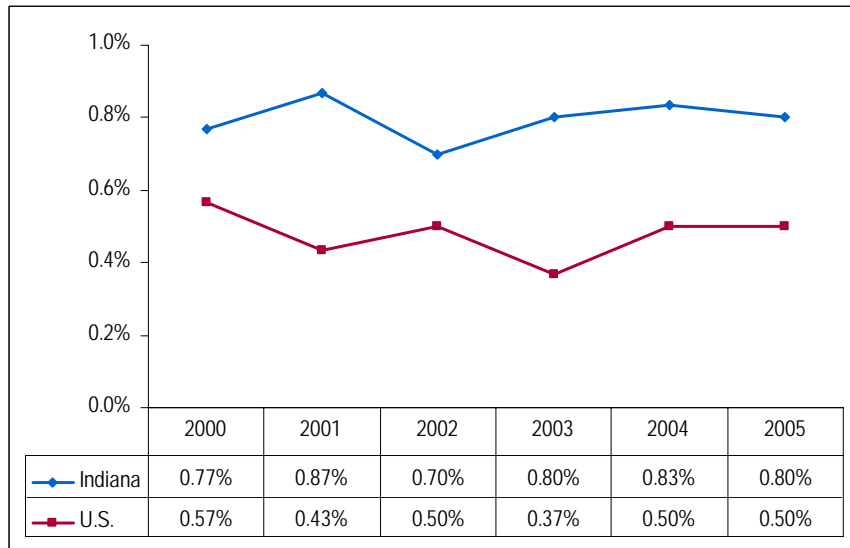
Percentages of Indiana and U.S. Students (8th, 10th, and 12th Graders Combined) Reporting Annual Heroin Use, 2000 to 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents and Monitoring the Future Survey, 2000–2005)



Source: Indiana Prevention Resource Center, 2006; National Institute on Drug Abuse, 2006c

**Figure 7.7**

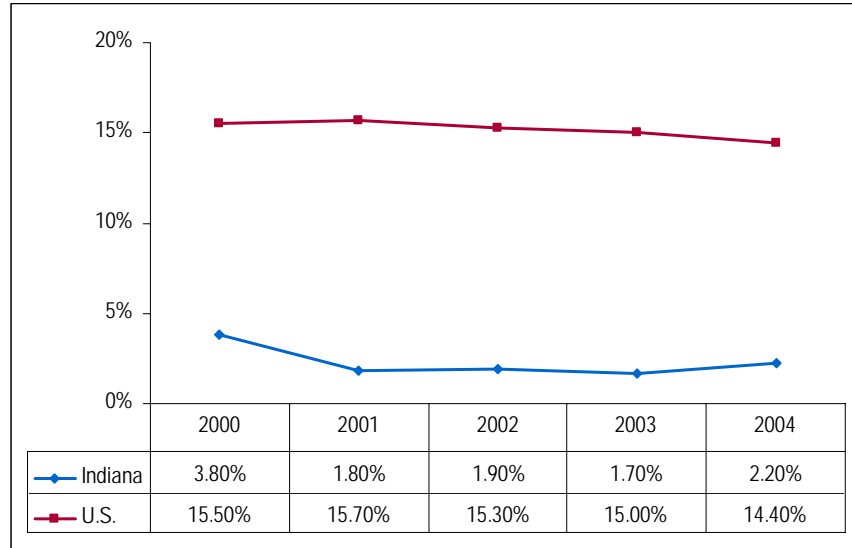
Percentages of Indiana and U.S. Students (8th, 10th, and 12th Graders Combined) Reporting Monthly Heroin Use, from 2000 to 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents and Monitoring the Future Survey, 2000–2005)



Source: Indiana Prevention Resource Center, 2006; National Institute on Drug Abuse, 2006c

**Figure 7.8**

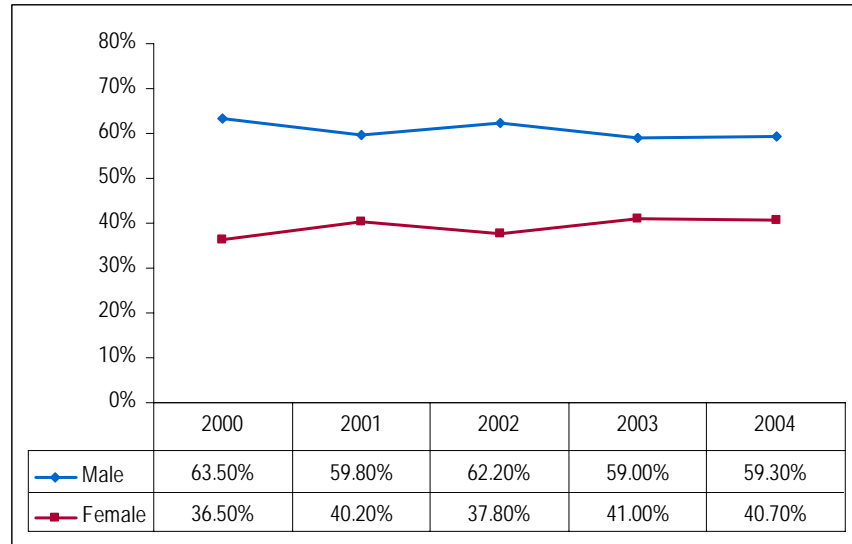
Percentages of Indiana and U.S. Treatment Admissions due to Heroin, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 7.9**

Percentages of Adult Treatment Admissions in Indiana due to Heroin, by Gender, 2000 to 2004 (Treatment Episode Data System, 2000–2004)

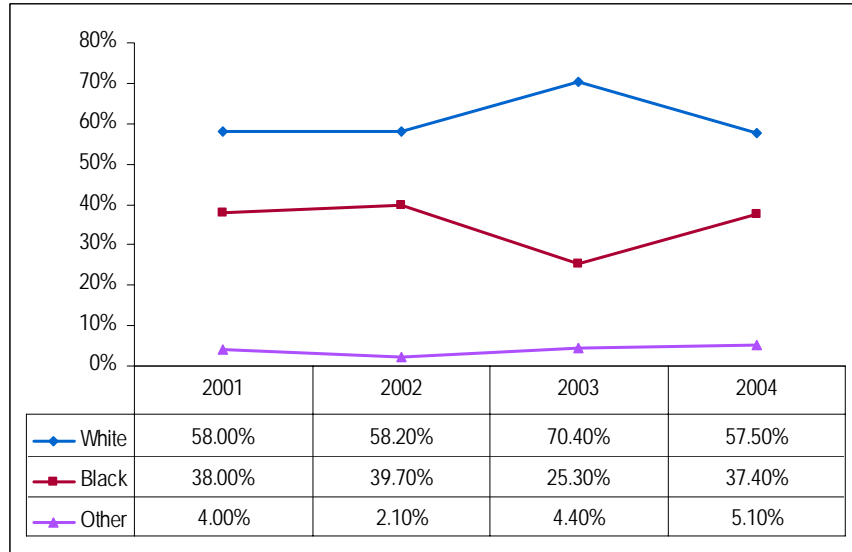


Source: Substance Abuse and Mental Health Data Archive, n.d.



**Figure 7.10**

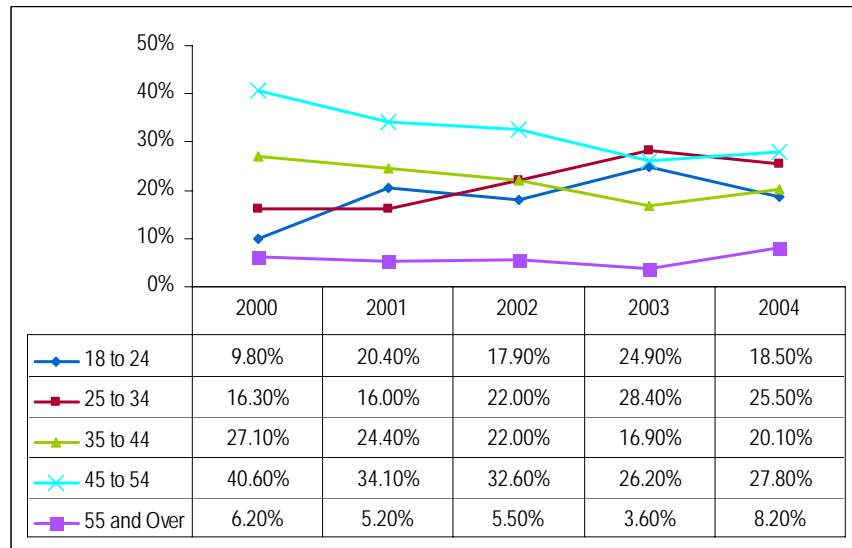
Percentage of Adult Treatment Admissions in Indiana due to Heroin, by Race, 2001 to 2004 (Treatment Episode Data System, 2001–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 7.11**

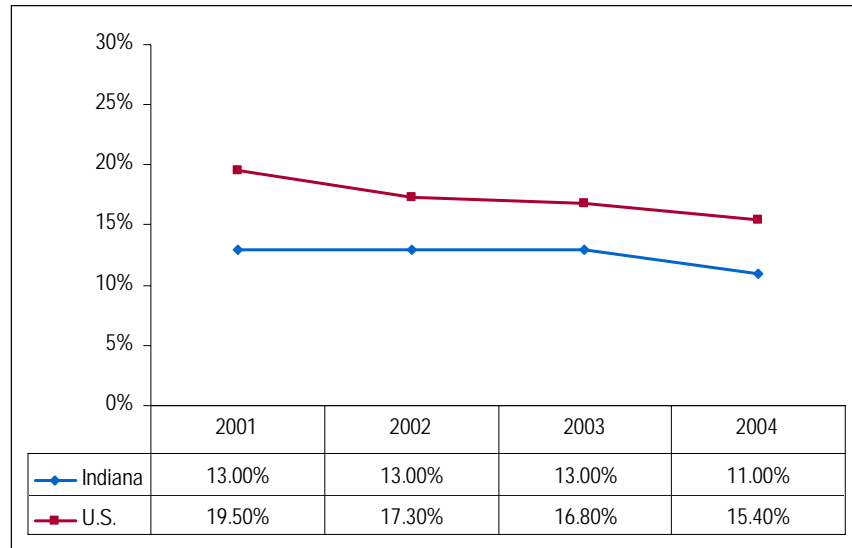
Percentage of Adult Treatment Admissions in Indiana due to Heroin, by Age, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 7.12**

Percentage of Cumulative HIV/AIDS Cases in Indiana and the United States, Attributable to Injection Drug Use, 2001 to 2004



Source: Indiana State Department of Health, 2001–2004; Centers for Disease Control and Prevention, 2004

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## 8.

# METHAMPHETAMINE USE IN INDIANA: CONSUMPTION PATTERNS AND CONSEQUENCES

## CONSUMPTION

### General Consumption Patterns

Methamphetamine (meth) is a powerful, highly addictive stimulant that affects the central nervous system. Meth is similar to amphetamine, but it has a more pronounced effect. The drug is easily made in clandestine laboratories with over-the-counter ingredients.

Meth's relative ease of manufacture and highly addictive potential are thought to contribute to its increased use across the nation. According to the 2004 National Survey on Drug Use and Health (NSDUH), approximately 11.7 million Americans (4.9% of the population) ages 12 and older had tried meth at least once during their lifetimes (Substance Abuse and Mental Health Services Administration, 2005). While self-reported lifetime meth use has been on the rise, its use rates remain lower than marijuana and cocaine. According to NSDUH results, lifetime use rose from 2% among the adult population in 1994 to just over 5% in 2003.

In 2004, an estimated 1.4 million persons (0.6% of the population) had used meth in the past year, and 600,000 people (0.2% of the population) indicated current (past month) meth use. Self-reported current, regular meth use among individuals 12 and older remained steady at either 0.2% or 0.3% between 1999 and 2004.

In 2002, the average age of first meth use was 18.9 years; 20.4 years in 2003; and 22.1 years of age in 2004 (SAMHSA, 2005). Publicly available NSDUH data do not include state indicators, and therefore do not allow for comparisons of Indiana and U.S. consumption patterns.

### Adult Consumption Patterns

Results from the 2004 NSDUH indicate that the rate of past year meth use was highest for young adults age 18 to 25 (1.6%). By comparison,

past year usage rate for youth ages 12 to 17 was 0.7%, and for adults age 26 or older, the rate was 0.4%. Rates of past year use were slightly higher among males (0.7%) than females (0.5%). Self-reported rates of lifetime use (2002: 5.7%; 2003: 5.2%; 2004: 5.2%), past year use (2002: 1.7%; 2003: 1.6%; 2004: 1.6%), and current usage (2002: 0.5; 2003: 0.6%; 2004: 0.6%) among 18- to 25-year-olds remained constant between 2002 and 2004. Similarly, among individuals age 26 or older, reported use remained steady across the same time period—lifetime use (2002: 5.7%; 2003: 5.7%; 2004: 5.3%) past year use (0.4% for 2002 through 2004), and current use (0.2% for 2002 through 2004) (SAMHSA, 2006).

### Youth Consumption Patterns

Findings from the NSDUH demonstrate that reported rates of meth use (lifetime, past year, and past month) among 12- to 17-year-olds remained constant or declined slightly between 2002 and 2004. Reported lifetime use was 1.5% in 2002 and fell to 1.2% in 2004. Past year use among 12- to 17-year-olds fell between 2002 (0.9%) and 2004 (0.5%), while past month use remained steady during the time period (2002: 0.3%; 2003: 0.3%; 2004: 0.2%).

According to the 2005 Youth Risk Behavior Surveillance System, or YRBSS (Centers for Disease Control and Prevention, 2005), among students in the 9th through the 12th grades, 7.0% in Indiana reported having used meth once or more in their lifetime, compared with a national rate of 6.2%. Rates of use declined slightly from 2003 levels, when 8.2% of Indiana students and 7.6% of U.S. students indicating lifetime use (see Figure 8.1, page 127). Reported lifetime meth use among students in the 9th through 12th grades declined between 2003 and 2005 at the national and state level, with the exception of Indiana 10th graders (see Table 8.1, page 136). In 2005 in Indiana, 6.9% of 10th graders indicated lifetime use, a very slight increase over the 2003 rate of 6.6%. Lifetime meth use among Indiana high school students parallels U.S. rates (see Figure 8.2, page 127). While Indiana rates of meth use in all grades are slightly higher than the nation's, these differences are not statistically significant.

Two surveys of young people include a question about current (past 30 days) meth use. The first, a survey of Indiana students, is the

Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents Survey (ATOD), which is conducted among Indiana students in the 6th through 12th grades by the Indiana Prevention Resource Center (IPRC, 2005). The second, a national survey, is the Monitoring the Future Survey, or MTF (National Institute on Drug Abuse, NIDA, 2005) that is administered nationally among 8th, 10th, and 12th graders. Comparable results for 2005 are shown in Figure 8.3, page 128.

MTF has tracked meth use for a number of years, but a meth question was first added to the ATOD survey for 2005, thus comparisons using these datasets are possible only for 2005. For all grades in Indiana, reported rates of current meth use surpass U.S. rates. (Caution should be exercised when interpreting the ATOD survey results, as these are based on a non-randomized sample of respondents.)

Male students, both nationally and in Indiana, are more likely to report lifetime meth use than their female counterparts (see Table 8.1, page 136, and Figure 8.4, page 128). While Indiana usage rates among both male and female students exceed U.S. rates among the same groups, these differences are not statistically significant. In Indiana, reported rates of lifetime meth use fell between 2003 and 2005 among both male and female students, from 9.4% to 7.9% for males and 7.0% to 6.1% for females. Similar declines in reported use are evident at the national level (see Table 8.1, page 136). Differences between Indiana and U.S. rates are not statistically significant.

White students appear more likely than Black students to report meth use. In 2005 in the nation, 6.5% of White students indicated lifetime meth use, compared with 1.7% of Black students. Similarly, in Indiana, 7.7% of White students reported use, while only 3.7% of Black students said that they had used meth at least once (see Table 8.1, page 142, and Figure 8.5, page 129). While use rates among Black and White students in Indiana exceed U.S. rates and are lower for “other” minority students in Indiana, these differences are not statistically significant. As shown in Table 8.1, lifetime use fell among all groups, both at the state and national level, with the exception of Black students in Indiana which rose from 2.7% in 2003 to 3.7% in 2005.

## Consumption Patterns Associated with Treatment

The SAMHSA Treatment Episode Data System, or TEDS (Substance Abuse Mental Health Data Archive, n.d.), includes information gathered from patients at admission for each episode of substance abuse treatment. TEDS data from 2000 through 2004 show a steady increase, both nationally and in Indiana, in the reported rate of meth use at admission (see Figure 8.6, page 129). However, Indiana treatment admissions are statistically significantly less likely to report current meth use at admission than patients in the United States (2000: Pearson chi-square = 387.1431,  $p < .001$ ; 2001: Pearson chi-square = 174.6157,  $p < .001$ ; 2002: Pearson chi-square = 73.35293,  $p < .001$ ; 2003: Pearson chi-square = 46.52112,  $p < .001$ ; 2004: Pearson chi-square = 40.59716,  $p < .001$ ). From 2000 to 2004, the rate of treatment admissions reporting meth use in Indiana more than doubled from 4.0% to 9.2%.

Meth use also appears to be associated with age. As shown in Figure 8.7 (page 130), self-reported meth use is statistically significantly higher among those in their mid 20s and 30s (25–34 years old), young adults (18–24 years old), and adults in their mid 30s and 40s (35–44 years old) than other age categories; (2000: Pearson chi-square = 185.011,  $p < .001$ ; 2001: Pearson chi-square = 226.166,  $p < .001$ ; 2002: Pearson chi-square = 265.485,  $p < .001$ ; 2003: Pearson chi-square = 313.8793,  $p < .001$ ; 2004: Pearson chi-square = 489.7509,  $p < .001$ ). In addition, reported rates of meth use among 18- to 24-year-olds and 25- to 34-year-olds, in particular, steadily increased between 2000 and 2004, while use among other groups appears to be leveling off.

Unlike other illicit drugs, meth seems to appeal to both men and women. TEDS data from 2000 through 2004 tend to bear this out, (see Figure 8.8, page 130). A statistically significant gender effect is observed with meth use among individuals entering substance abuse treatment in Indiana. Across all data points, female clients were statistically significantly more likely to report meth use at admission than males; (2000: Pearson chi-square = 43.005,  $p < .001$ ; 2001: Pearson chi-square = 72.966,  $p < .001$ ; 2002: Pearson chi-square = 117.992,  $p < .001$ ; 2003: Pearson chi-square = 109.7947,  $p < .001$ ; 2004: Pearson chi-square = 175.134,  $p < .001$ ).

A statistically significant race effect also is observed with meth use among individuals entering substance abuse treatment (see Figure



8.9, page 131). White persons were statistically significantly more likely than Black or other minority individuals to report meth use at admission; (2000: Pearson chi-square = 429.282,  $p < .001$ ; 2001: Pearson chi-square = 345.093,  $p < .001$ ; 2002: Pearson chi-square = 491.194,  $p < .001$ ; 2003: Pearson chi-square = 616.4803,  $p < .001$ ; 2004: Pearson chi-square = 858.458,  $p < .001$ ). While rates of use among White patients at treatment admission increased between 2000 and 2004, from 5.1% to 11.5%, respectively, reported meth use by Black individuals in treatment has remained steady at 0.5% or less.

## CONSEQUENCES

### Health-Related Consequences

The health consequences of meth use include both short-term and chronic impacts. Short-term effects include increased wakefulness, physical activity, and decreased appetite, as well as cardiac problems, hyperthermia, depression, and confusion. When used chronically, meth causes long-term changes that result in impaired memory, mood alterations, diminished motor coordination, and psychiatric problems. Chronic, long-term use can lead to insomnia, violent behavior, hallucinations, weight loss, and stroke. Other health consequences of prolonged meth use include cardiovascular collapse; brain, liver, and kidney damage; severe tooth decay (or “meth mouth”); hepatitis; extreme weight loss; mental illness; increased risk of unsafe sex and risky sexual behavior; increased risk of STD/HIV transmission; unwanted pregnancy; and death (U.S. Office of National Drug Control Policy, ONDCP, 2005; NIDA, 2002 and 2005).

Meth labs and parental addiction pose serious risks to children due to the highly toxic fumes generated during production and because users often sleep for long periods of time, neglecting their children. Children who are present during or after meth production may face severe health and safety risks, including medical neglect, and physical, emotional, and sexual abuse (National Drug Intelligence Center, NDIC, 2002).

## Meth Dependence

As previously mentioned, meth is considered a highly addictive substance resulting in drug dependence. Data from the TEDS demonstrate that the percent of admissions for which meth is indicated as the primary drug has been statistically significantly lower in Indiana than the rest of the nation; (2000: Pearson chi-square = 540.6527,  $p < .001$ ; 2001: Pearson chi-square = 294.3018,  $p < .001$ ; 2002: Pearson chi-square = 222.206,  $p < .001$ ; 2003: Pearson chi-square = 212.3768,  $p < .001$ ; 2004: Pearson chi-square = 219.966,  $p < .001$ ). In Indiana, between 2000 and 2004, the percentage of admissions for which meth was reported as the primary substance of use increased from 1.5% to 5.0% (see Figure 8.10, page 131).

Age, as with meth use, appears to be associated with reporting of meth as primary substance at admission in Indiana. Younger adults are statistically significantly more likely than those under 18 and over 45 to report meth as their primary drug (2000: Pearson chi-square = 59.42743,  $p < .001$ ; 2001: Pearson chi-square = 120.2645,  $p < .001$ ; 2002: Pearson chi-square = 141.5925,  $p < .001$ ; 2003: Pearson chi-square = 185.5802,  $p < .001$ ; 2004: Pearson chi-square = 285.7319,  $p < .001$ ). Rates among 18-to 24-year-olds increased between 2000 (1.9%) and 2004 (5.0%), and similarly among 25- to 34-year-olds and 35 to 44-year-olds (see Figure 8.11, page 132).

With regard to race and gender, as demonstrated in Figure 8.12, page 133, White women are statistically significantly more likely than White men to report meth as their primary drug of use at admission for substance abuse treatment, with rates for both gender groups showing a steady increase from 2002 to 2004 (2000: Pearson chi-square = 55.14122,  $p < .001$ ; 2001: Pearson chi-square = 80.05861,  $p < .001$ ; 2002: Pearson chi-square = 132.1269,  $p < .001$ ; 2003: Pearson chi-square = 89.23324,  $p < .001$ ; 2004: Pearson chi-square = 111.4426,  $p < .001$ ). Rates for Black men and Black women do not differ, are extremely low compared to other groups, and remained constant during the five-year period (2000-2004).

## Criminal Consequences

According to the U.S. Drug Enforcement Agency (DEA), Indiana has become an area of high drug trafficking and distribution. Meth

manufactured in Mexico and the southwestern states is increasingly being transported into Indiana. Meth labs in Indiana produce higher purity (30 to 40 percent) meth, but do not generate large quantities for distribution, (U.S. DEA, 2006). Over the last four years, Indiana has ranked in the top 10 states in the number of clandestine meth labs seized. In 2004, Indiana was ranked 10th, and rose to 3rd in 2005 (U.S. DEA, 2006).

The DEA El Paso Intelligence Center (EPIC) National Clandestine Laboratory Seizure System houses the central repository for data pertaining to clandestine labs seized in the United States by local, state, and federal law enforcement agencies. The National Clandestine Laboratory Seizure report includes types, numbers, and locations of labs seized; precursor and chemical sources; and number of children and law enforcement officers affected. The Indiana State Police (ISP) and a few local law enforcement agencies report clandestine meth lab seizures directly to EPIC. These data describe seizures of drug labs in the state and lab-related arrest rates. ISP responded to 1,300 labs in 2005, down from 1,549 clandestine labs in 2004 (see Figure 8.13, page 133). In 2004 and 2005, ISP made 885 and 650 drug lab arrests, respectively. As of June 2006, ISP had made 296 drug lab arrests. During 2003, according to the U.S. Sentencing Commission, 47.3% of the federally sentenced defendants in Indiana had committed a drug offense, and approximately 25% of these offenses involved meth (2003).

Map 8.1 (page 137) shows the average number of meth labs seized per county from 2002 through 2005. As this map shows, six of the top ten Indiana counties with the highest mean number of lab seizures are located in the southwest portion of the state. According to the NSDUH, the rate of past-year meth use was slightly higher in rural counties (September, 2005).

Map 8.2 (page 138) presents the percent change from 2002 to 2005 in the number of meth labs seized. With the exception of Gibson and Posey counties, the counties in this region show a stable or negative percentage change (fewer labs) in lab seizures. The most recent statistics (2005) for lab disassemblies are shown in Map 8.3, page 139. (see Table 8.2, page 142, for county-specific numbers).

Meth is considered a synthetic stimulant. The Uniform Crime Reports, or UCR (Federal Bureau of Investigation, FBI, n.d.) describe

crimes associated with synthetic drug possession and sale (i.e., part II offense data from the UCR). Substances defined as “synthetic” include a number of drugs in addition to meth, such as Demerol and methadone. According to UCR data, arrest rates for synthetic drug possession rose between 1999 and 2003 for both Indiana and the United States, with Indiana’s rates exceeding the nation’s in 2001 (IN: 0.15; U.S. 0.12) and 2003 (IN: 0.21; U.S.: 0.16) (see Figure 8.14, page 134). While U.S. arrest rates for synthetic drug sale/manufacture remained relatively stable between 1999 and 2003, Indiana rates steadily increased from 0.01 in 1999 to 0.11 in 2003 (see Figure 8.15, page 134).

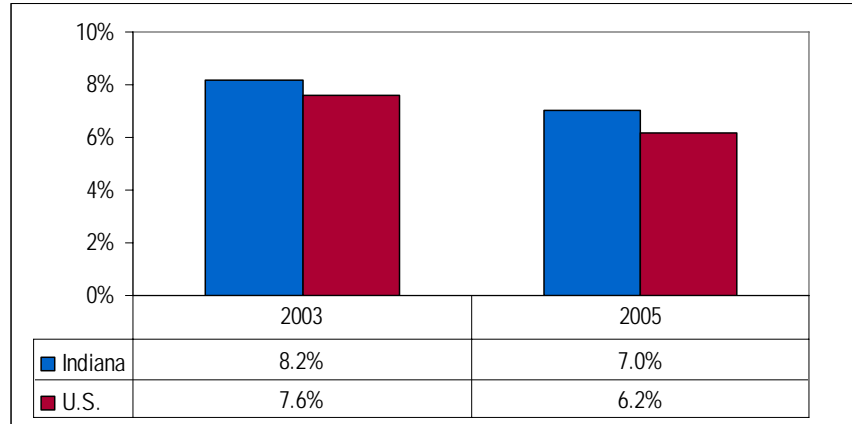
Maps 8.4 and 8.5, pages 140 and 141, show the distribution, by county, of the arrest rates per 1,000 population for synthetic drug possession and dealing (sale/manufacture) based on data from the FBI and UCR program. A number of southwestern Indiana counties have higher rates (between 0.57 and 1.79) than most other areas of the state. (See the County Data Table 8.2 on page 142 for county-specific figures.) Caution should be exercised when interpreting these data, due to variations in reporting procedures and a lack of data to identify meth-specific arrests. In Indiana, reporting by county and local law enforcement jurisdictions is sometimes incomplete, and therefore, a portion of these data are based on estimates. (For further details, see the discussion of UCR data in the Methodology section.)

### **Social Consequences**

In addition to the consequences discussed above, meth use and abuse can have serious social impacts. Students who use meth are more likely to exhibit lower academic performance, higher rates of absenteeism, and are less likely to graduate from high school. Individuals who use meth are more likely to have problems at work. Meth use also impacts children and families, in ways similar to other forms of substance abuse, by contributing to increased interpersonal conflicts, financial problems, poor parenting, incarceration (of parents), and placement of children in protective custody (NIDA, 2005). According to data from ISP and EPIC, the number of children affected by meth labs in Indiana rose from 182 in 2002 to 217 in 2004, and fell to 180 in 2005 (see Figure 8.16, page 135)

**Figure 8.1**

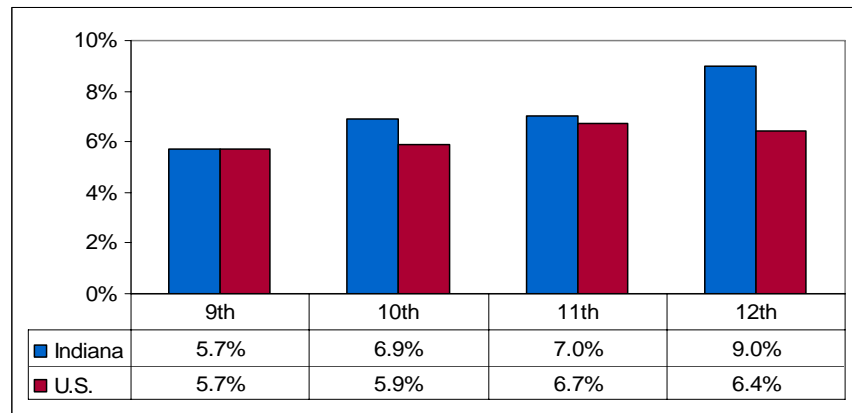
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Lifetime Methamphetamine Use, 2003 and 2005, (Youth Risk Behavior Surveillance System, 2003 and 2005)



Source: Centers for Disease Control and Prevention, 2005

**Figure 8.2**

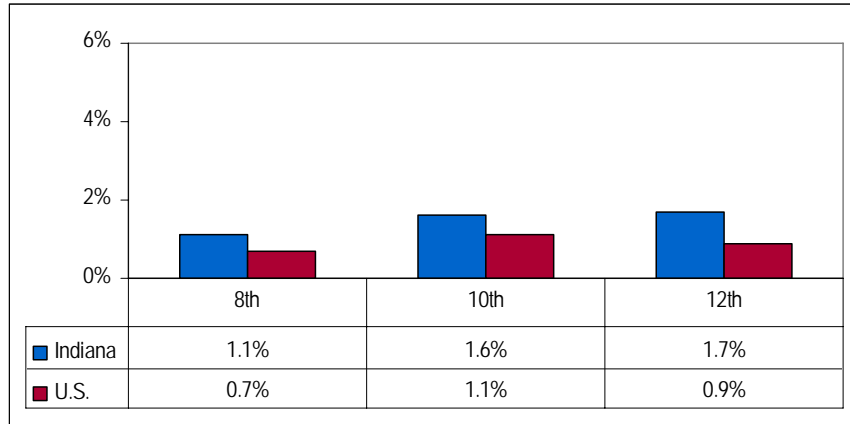
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Lifetime Methamphetamine Use, by Grade, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2005

**Figure 8.3**

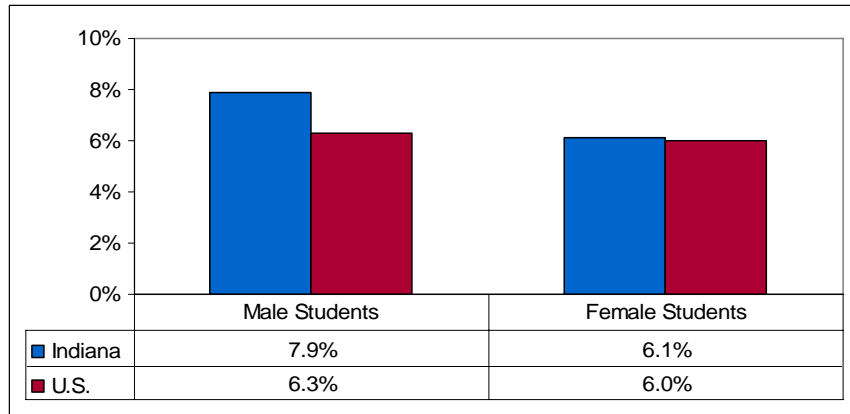
Percentage of Indiana and U.S. 8th, 10th, and 12th Grade Students Reporting Current (Past Month) Meth Use, by Grade, 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents Survey and Monitoring the Future Survey, 2005)



Sources: Indiana Prevention Resource Center, 2005; National Institute on Drug Abuse, 2005

**Figure 8.4**

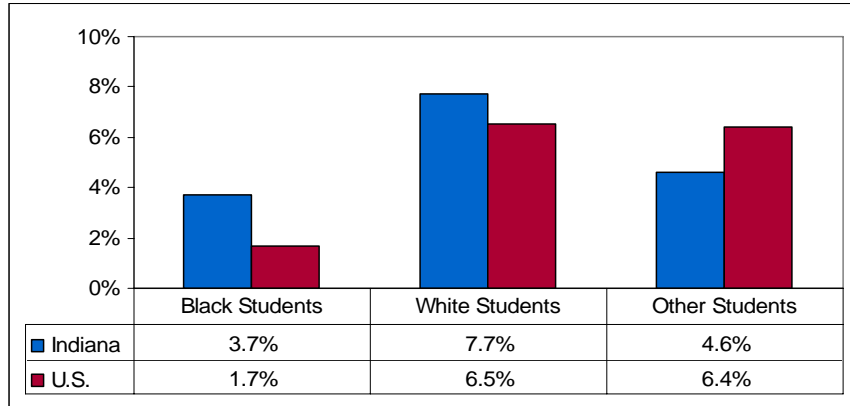
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Lifetime Methamphetamine Use, by Gender, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2005

**Figure 8.5**

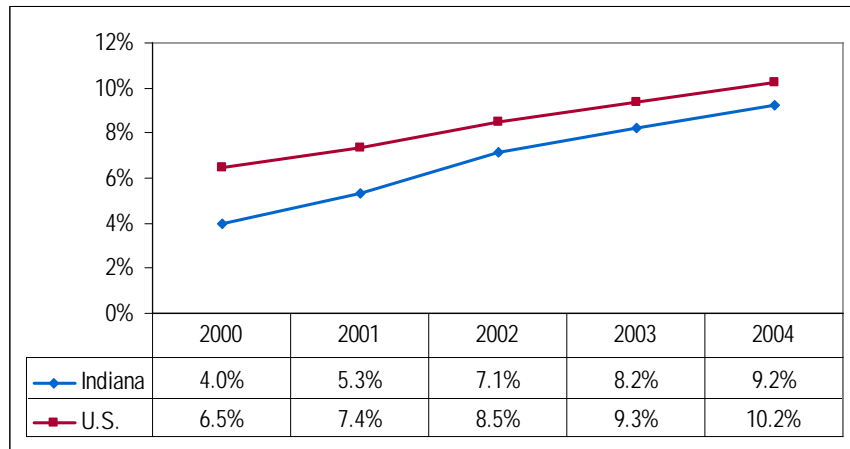
Percentage of Indiana and U.S. High School Students (9th–12th Grade) Reporting Lifetime Methamphetamine Use, by Race, 2005 (Youth Risk Behavior Surveillance System, 2005)



Source: Centers for Disease Control and Prevention, 2005

**Figure 8.6**

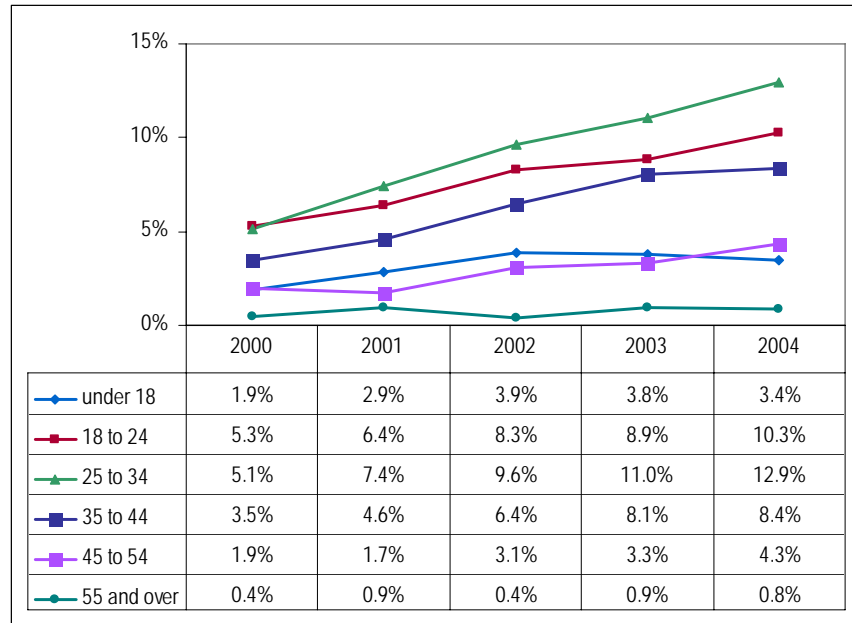
Percentage of Indiana and U.S. Treatment Admissions Reporting Methamphetamine Use at Admission, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 8.7**

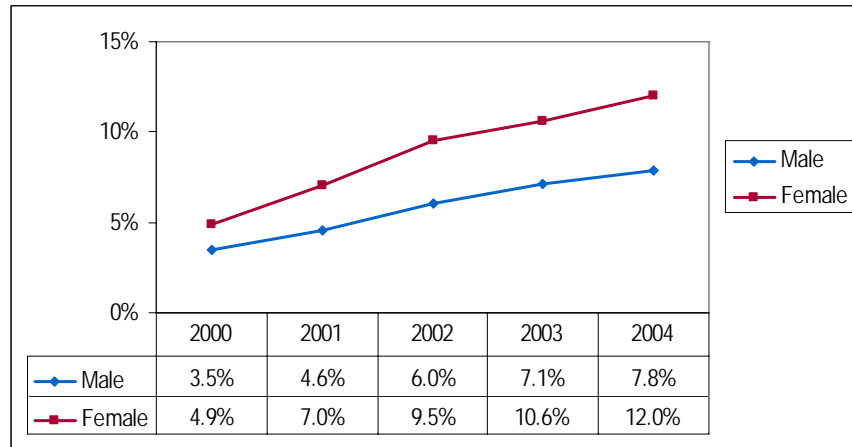
Percentage of Indiana Treatment Admissions Reporting Methamphetamine Use at Admission, by Age, 2000 to 2004 (Treatment Episode Data System, 2000 – 2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 8.8**

Percentage of Indiana Treatment Admissions Reporting Methamphetamine Use at Admission, by Gender, from 2000 to 2004 (Treatment Episode Data System, 2000 – 2004)

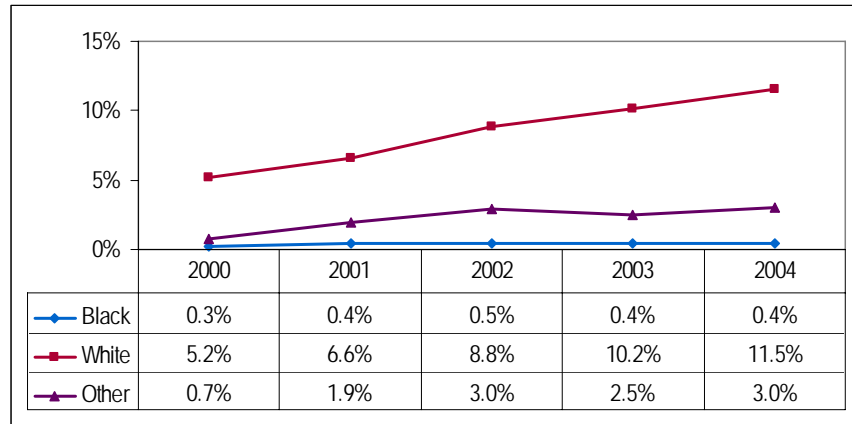


Source: Substance Abuse and Mental Health Data Archive, n.d.



**Figure 8.9**

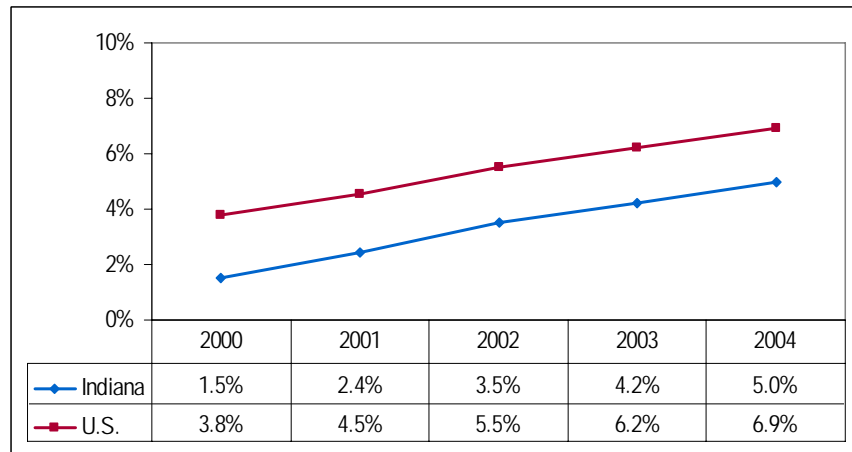
Percentage of Indiana Treatment Admissions Reporting Methamphetamine Use at Admission, by Race, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 8.10**

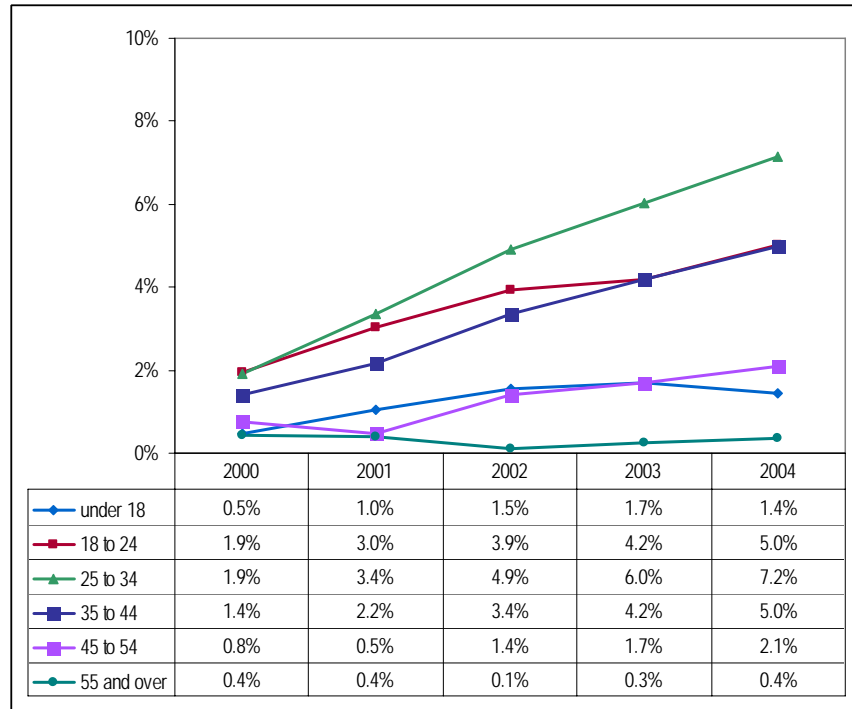
Percentage of Indiana and U.S. Treatment Admissions Reporting Methamphetamine as Primary Drug, Indiana and United States, 2000 to 2004 (Treatment Episode Data System, 2000 – 2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 8.11**

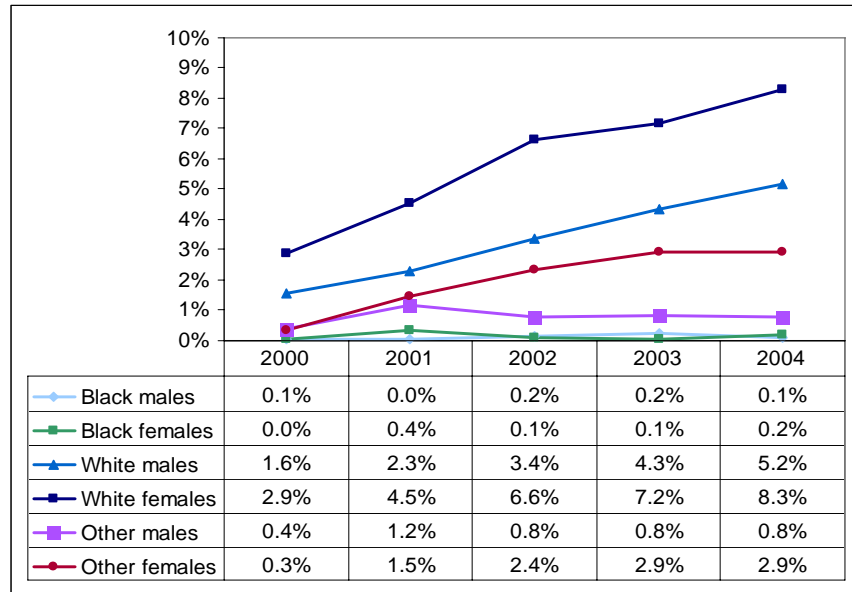
Percentage of Indiana Treatment Admissions Reporting Methamphetamine as Primary Drug, by Age, from 2000 to 2004 (Treatment Episode Data System, 2000 – 2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 8.12**

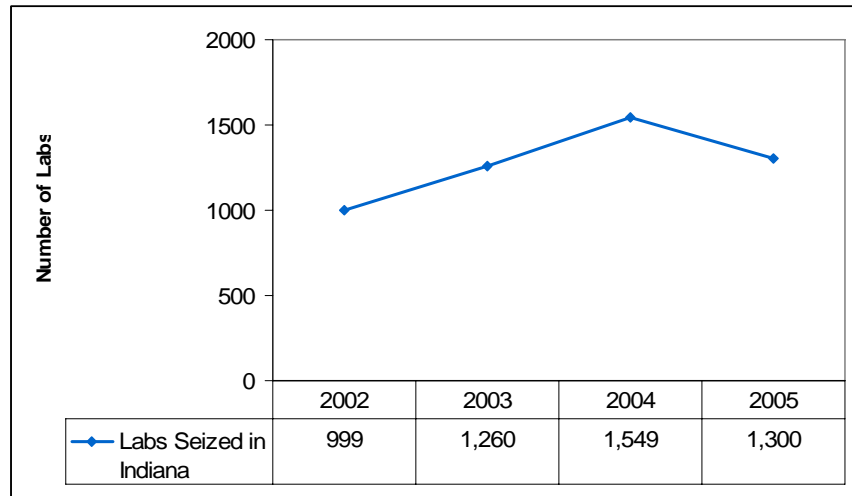
Percentage of Indiana Treatment Admissions Reporting Methamphetamine as Primary Drug, by Race and Gender, 2000 to 2004 (Treatment Episode Data System, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 8.13**

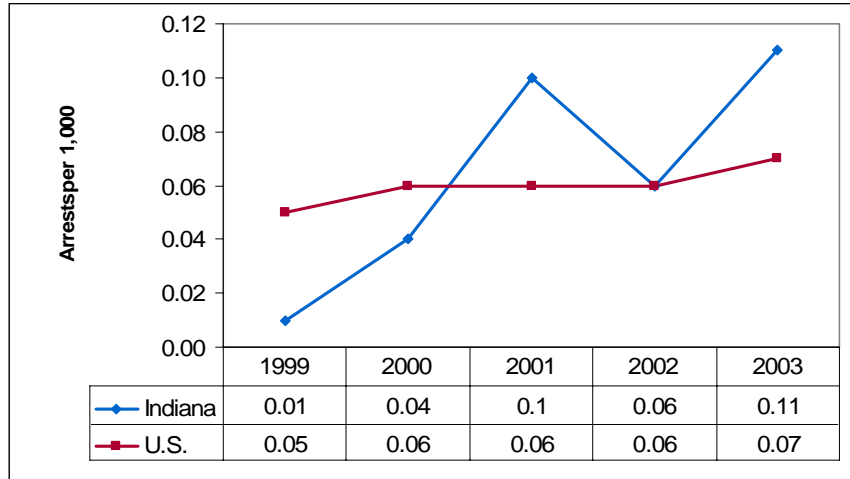
Number of Clandestine Labs Seized in Indiana, 2002 to 2005 (El Paso Intelligence Center, 2002–2005)



Source: U.S. Drug Enforcement Administration; Indiana State Police, July 2, 2006

**Figure 8.14**

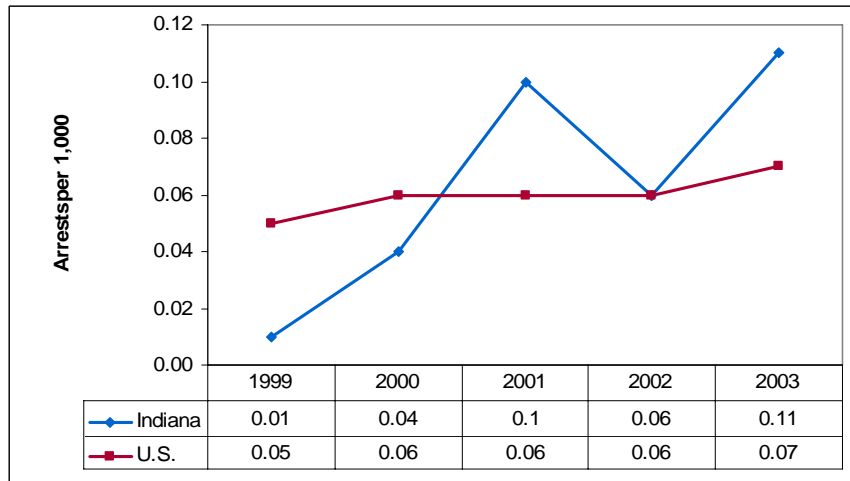
Arrest Rates for Synthetic Drug Possession per 1,000 Population, Indiana and United States, 1999 to 2003, (Uniform Crime Reports, 1999–2003)



Source: Federal Bureau of Investigation, n.d.

**Figure 8.15**

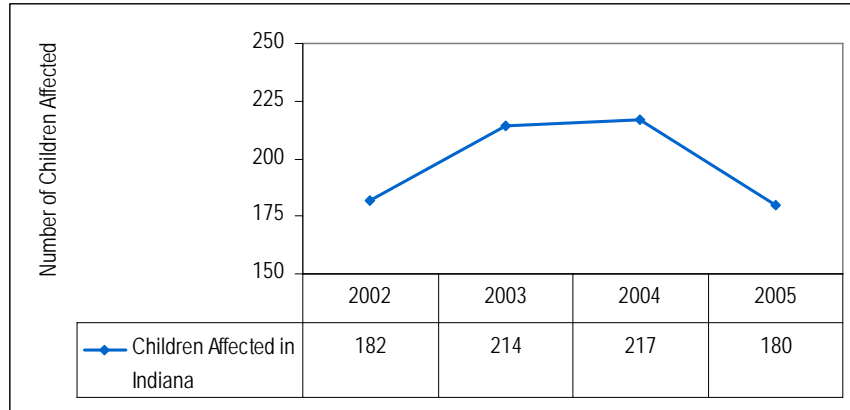
Arrest Rates for Synthetic Drug Sale/Manufacture, per 1,000 Population, Indiana and United States, 1999 to 2003 (Uniform Crime Reports, 1999–2003)



Source: Federal Bureau of Investigation, n.d.

**Figure 8.16**

Number of Indiana Children Affected by Meth, 2002 to 2005 (El Paso Intelligence Center, 2002–2005)



Source: U.S. Drug Enforcement Administration; Indiana State Police, July 2, 2006

**Table 8.1**

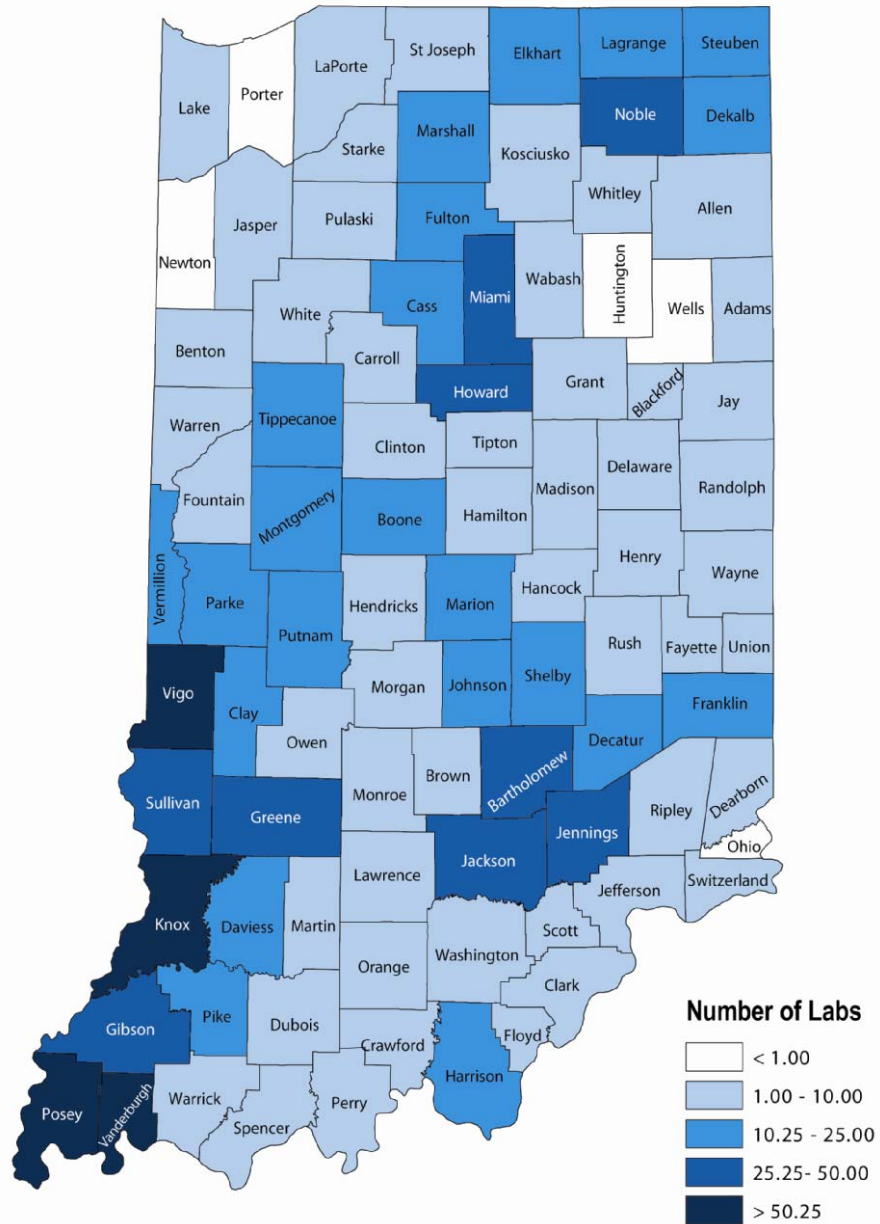
Percentage of High School Students (9th–12th Grade) Reporting Lifetime Methamphetamine Use, by Grade, Gender, and Race, Indiana and United States, 2003 and 2005 (Youth Risk Behavior Surveillance System, 2003 and 2005)

Grade	Year	Indiana	U.S.
9th	2003	7.0%	6.7%
	2005	5.7%	5.7%
10th	2003	6.6%	7.5%
	2005	6.9%	5.9%
11th	2003	8.0%	8.0%
	2005	7.0%	6.7%
12th	2003	12.0%	8.0%
	2005	9.0%	6.4%
Gender	Year	Indiana	U.S.
Male Students	2003	9.4%	8.3%
	2005	7.9%	6.3%
Female Students	2003	7.0%	6.8%
	2005	6.1%	6.0%
Race	Year	Indiana	U.S.
Black Students	2003	2.7%	3.1%
	2005	3.7%	1.7%
White Students	2003	8.6%	8.1%
	2005	7.7%	6.5%
Other	2003	12.8%	10.4%
	2005	4.6%	6.4%

Source: Centers for Disease Control and Prevention, 2005

**Map 8.1**

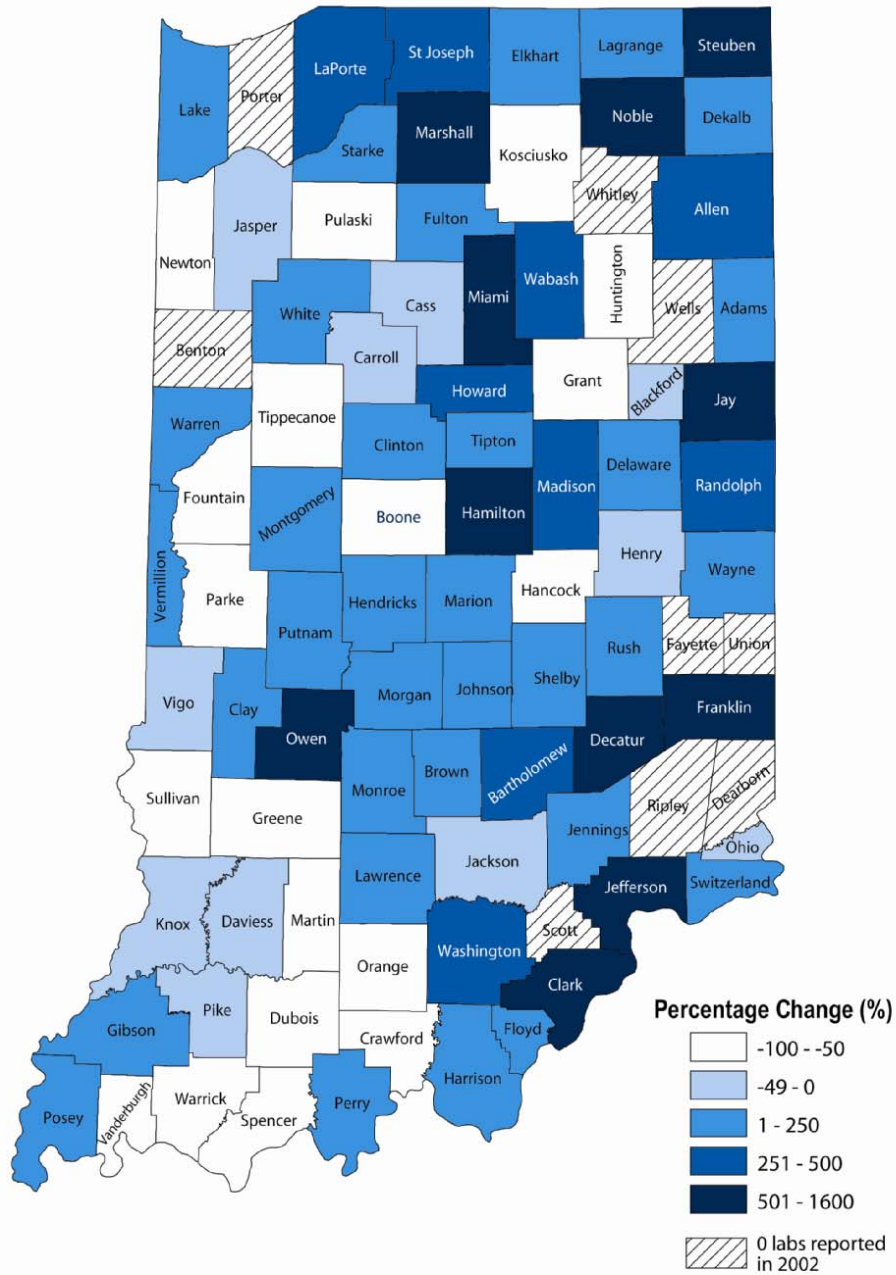
Average Number of Meth Labs Seized in Indiana, by County, from 2002 to 2005 (El Paso Intelligence Center, 2002–2005)



Source: Drug Enforcement Agency, n.d., Indiana State Police

**Map 8.2**

Percentage of Change in Number of Meth Labs Seized in Indiana, by County, from 2002 to 2005 (EI Paso Intelligence Center, 2002 through 2005)

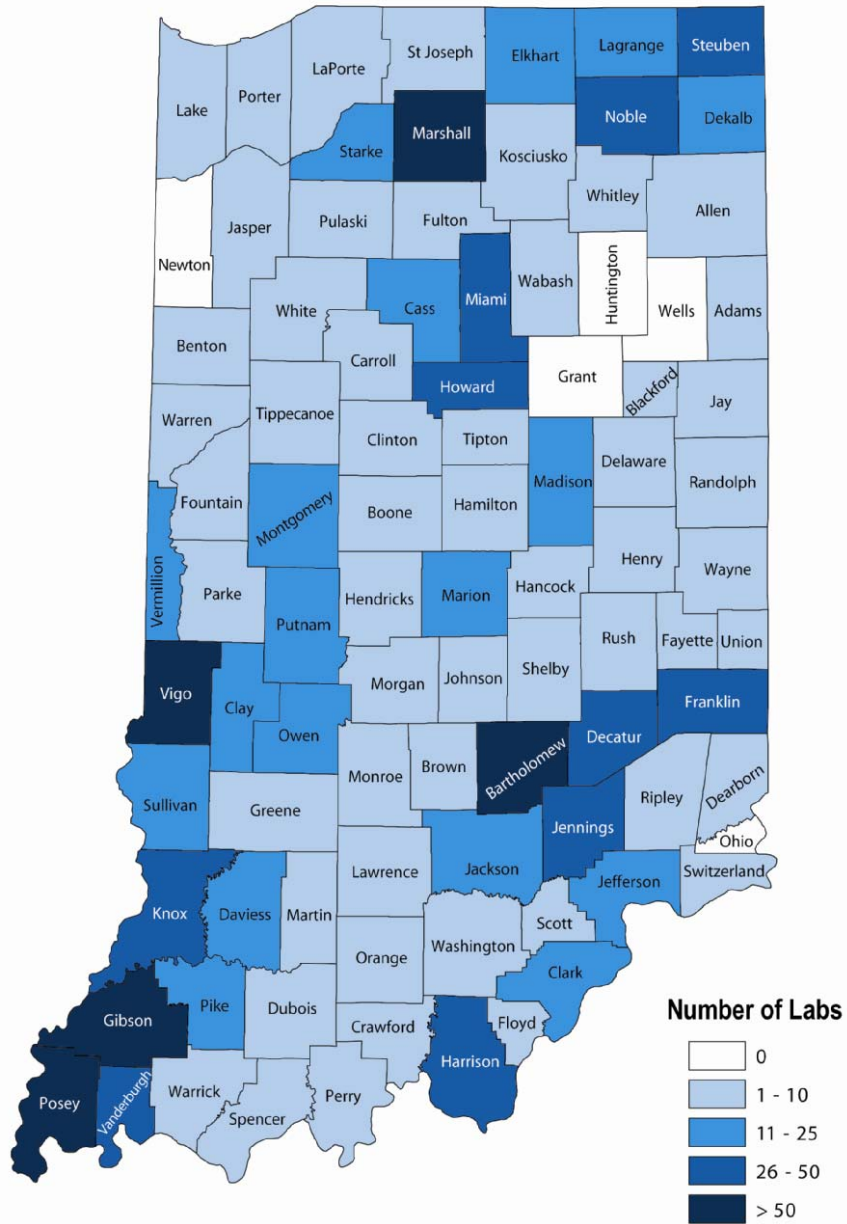


Source: Drug Enforcement Agency, n.d., Indiana State Police



**Map 8.3**

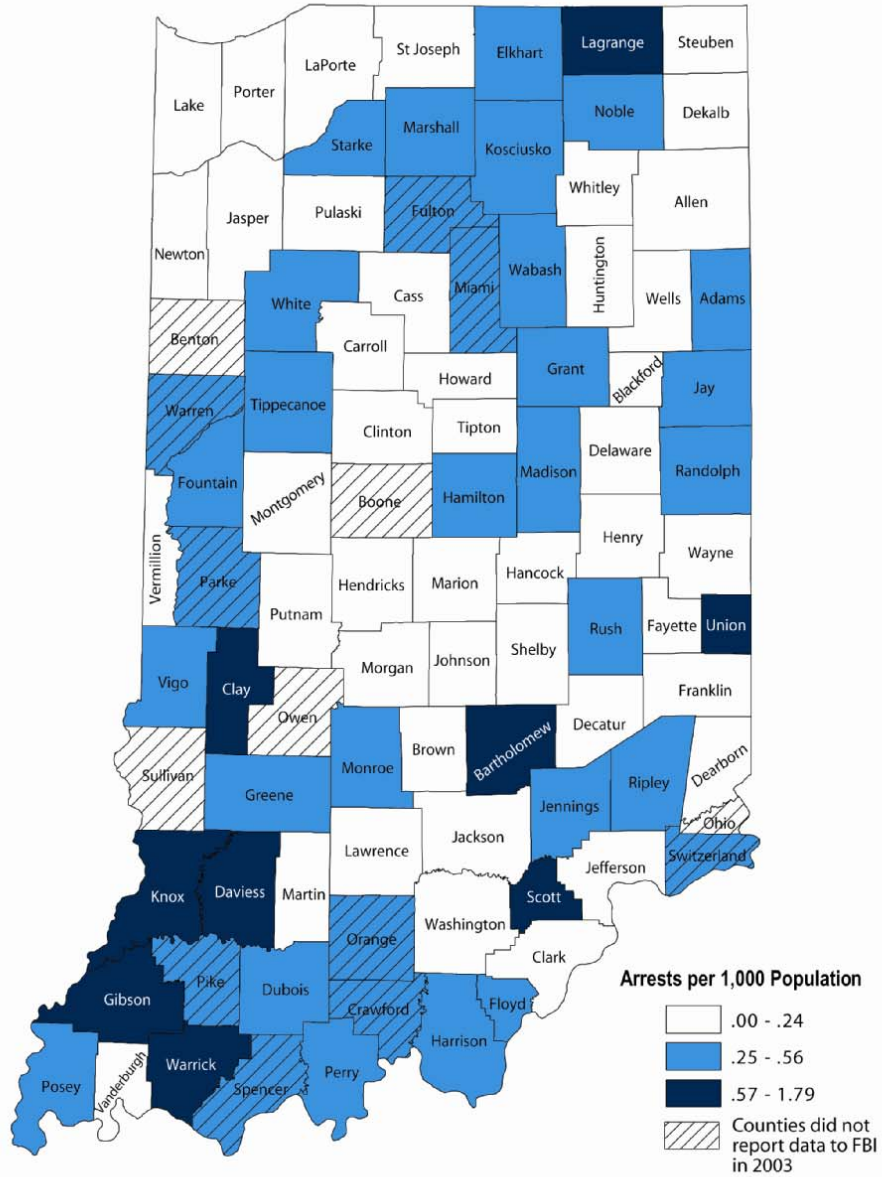
**Number of Clandestine Meth Labs Seized in Indiana, by County, 2005**  
(El Paso Intelligence Center, 2005)



Source: Drug Enforcement Agency, n.d., Indiana State Police

**Map 8.4**

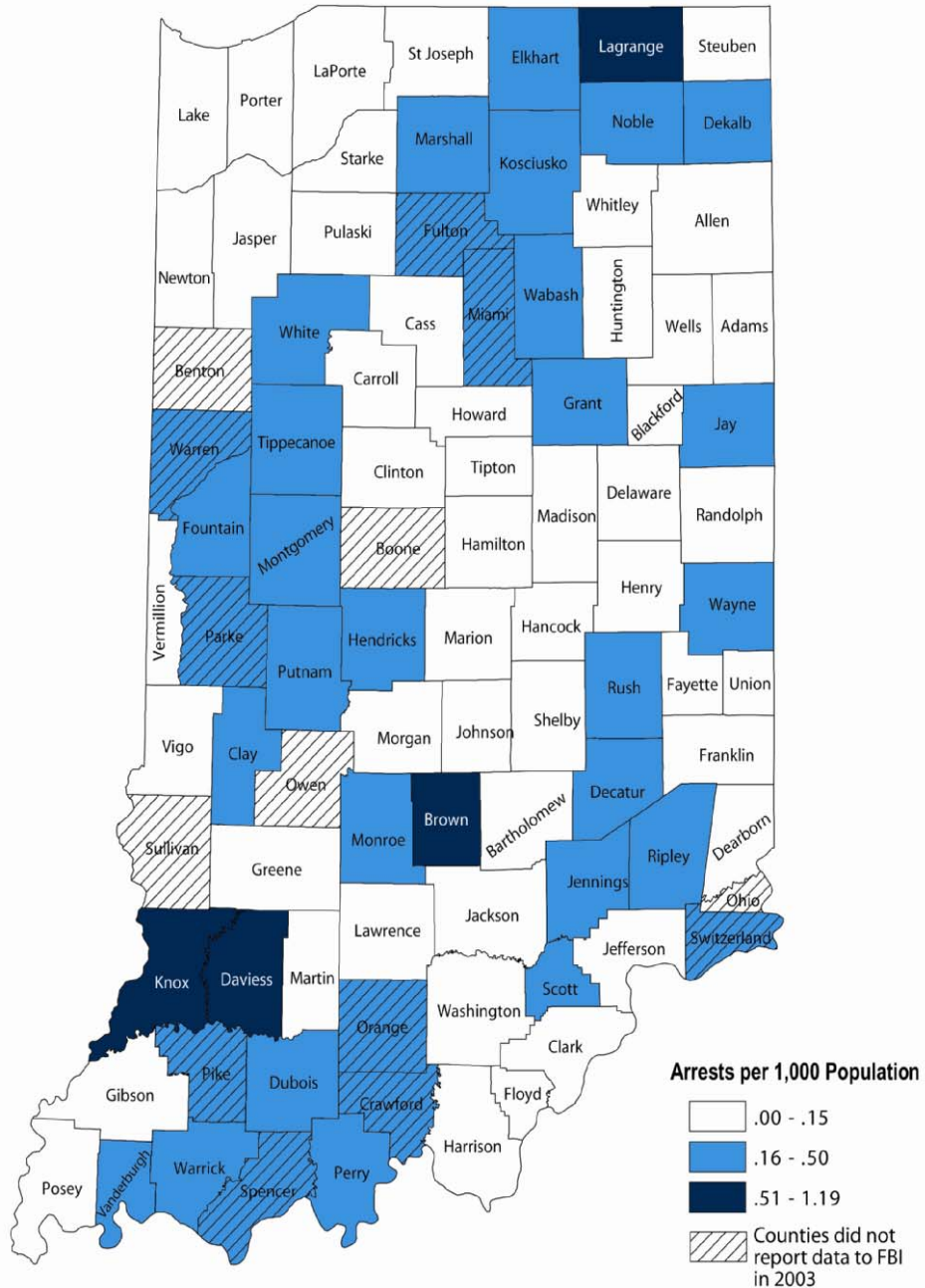
Arrest Rates for Synthetic Drug Possession, per 1,000 Population, by County, 2003 (Uniform Crime Reports, 2003)



Source: Federal Bureau of Investigation, n.d.

**Map 8.5**

**Arrest Rates for Synthetic Drug Sale/Manufacture Arrest, per 1,000 Population, by County, 2003 (Uniform Crime Reports, 2003)**



Source: Federal Bureau of Investigation, n.d.

**TABLE 8.2****Meth Lab Seizures and Arrest Data per Indiana County**

Indiana County	Average Number of Labs Seized 2002–2005	Percentage Change in Number of Labs Seized, 2002–2005	Labs Seized, 2005	Arrest Rates for Synthetic Drug Possession per 1,000 Population, 2003	Arrest Rates for Synthetic Drug Sale/Manufacture per 1,000 Population, 2003
Adams	1.50	50%	3	0.27	0.15
Allen	3.25	500%	6	0.00	0.00
Bartholomew	44.75	300%	76	0.98	0.00
Benton	1.00		1	0.22	0.11
Blackford	1.00	0%	1	0.22	0.14
Boone	12.75	-80%	3	0.18	0.08
Brown	6.50	167%	8	0.20	0.78
Carroll	7.25	-38%	5	0.10	0.15
Cass	13.00	0%	14	0.20	0.15
Clark	6.75	1200%	13	0.19	0.04
Clay	18.75	7%	15	1.79	0.30
Clinton	6.75	20%	6	0.12	0.15
Crawford	8.00	-78%	2	0.36	0.27
Daviess	17.00	-26%	14	1.20	0.93
Dearborn	2.50		4	0.17	0.02
Decatur	13.00	767%	26	0.24	0.16
DeKalb	19.00	120%	22	0.24	0.19
Delaware	4.00	150%	5	0.23	0.08
Dubois	6.25	-91%	1	0.40	0.22
Elkhart	12.75	217%	19	0.37	0.19
Fayette	2.75		7	0.16	0.12
Floyd	5.00	100%	10	0.42	0.11
Fountain	6.75	-75%	3	0.56	0.39
Franklin	15.75	800%	27	0.04	0.00
Fulton	10.50	29%	9	0.39	0.20
Gibson	46.50	76%	72	0.79	0.09
Grant	2.75	-100%	0	0.38	0.24
Greene	30.25	-75%	10	0.54	0.09
Hamilton	3.25	700%	8	0.29	0.03
Hancock	2.25	-50%	2	0.20	0.07
Harrison	15.75	115%	28	0.31	0.11

Indiana County	Average Number of Labs Seized 2002–2005	Percentage Change in Number of Labs Seized, 2002–2005	Labs Seized, 2005	Arrest Rates for Synthetic Drug Possession per 1,000 Population, 2003	Arrest Rates for Synthetic Drug Sale/Manufacture per 1,000 Population, 2003
Hendricks	6.50	100%	6	0.08	0.27
Henry	3.25	-40%	3	0.00	0.00
Howard	26.75	309%	45	0.05	0.01
Huntington	0.50	-100%	0	0.00	0.03
Jackson	40.75	-4%	22	0.22	0.14
Jasper	2.75	-25%	3	0.10	0.06
Jay	2.75	600%	7	0.32	0.18
Jefferson	8.00	1000%	11	0.03	0.00
Jennings	30.75	171%	38	0.43	0.18
Johnson	14.50	233%	10	0.03	0.01
Knox	53.25	-32%	30	0.72	1.19
Kosciusko	8.75	-50%	4	0.32	0.21
LaGrange	12.00	10%	11	0.83	0.61
Lake	2.50	150%	5	0.05	0.02
LaPorte	2.00	300%	4	0.05	0.01
Lawrence	2.50	200%	3	0.22	0.09
Madison	9.00	260%	18	0.36	0.10
Marion	18.50	21%	23	0.01	0.05
Marshall	24.50	1600%	51	0.47	0.19
Martin	2.50	-50%	1	0.19	0.10
Miami	26.25	529%	44	0.36	0.22
Monroe	6.50	50%	6	0.29	0.20
Montgomery	15.50	50%	18	0.24	0.16
Morgan	5.25	67%	5	0.09	0.04
Newton	0.50	-100%	0	0.00	0.14
Noble	37.75	571%	47	0.51	0.19
Ohio	0.00	0%	0	0.17	0.00
Orange	9.75	-80%	3	0.41	0.25
Owen	6.50	550%	13	0.13	0.09
Parke	17.50	-58%	5	0.40	0.29
Perry	9.75	33%	8	0.27	0.27
Pike	12.50	-48%	12	0.39	0.23

Indiana County	Average Number of Labs Seized 2002–2005	Percentage Change in Number of Labs Seized, 2002–2005	Labs Seized, 2005	Arrest Rates for Synthetic Drug Possession per 1,000 Population, 2003	Arrest Rates for Synthetic Drug Sale/Manufacture per 1,000 Population, 2003
Porter	0.75		2	0.12	0.01
Posey	85.00	8%	78	0.30	0.11
Pulaski	5.25	-67%	2	0.00	0.00
Putnam	15.50	44%	23	0.19	0.19
Randolph	2.50	300%	4	0.26	0.00
Ripley	3.75		8	0.33	0.22
Rush	4.25	200%	6	0.50	0.17
St. Joseph	3.50	500%	6	0.08	0.01
Scott	3.75		6	0.72	0.38
Shelby	11.75	80%	9	0.14	0.05
Spencer	10.00	-67%	4	0.39	0.25
Starke	9.50	83%	11	0.48	0.00
Steuben	24.50	675%	31	0.06	0.12
Sullivan	46.75	-76%	14	0.18	0.09
Switzerland	3.25	100%	2	0.42	0.32
Tippecanoe	16.50	-56%	8	0.52	0.17
Tipton	6.75	250%	7	0.12	0.06
Union	2.75		7	0.69	0.14
Vanderburgh	86.75	-65%	46	0.22	0.20
Vermillion	16.00	233%	20	0.12	0.06
Vigo	115.50	-21%	83	0.35	0.10
Wabash	6.50	400%	10	0.32	0.35
Warren	3.25	167%	8	0.34	0.23
Warrick	6.00	-50%	4	1.02	0.46
Washington	7.25	300%	8	0.14	0.04
Wayne	3.25	33%	4	0.23	0.16
Wells	0.25		0	0.04	0.00
White	6.75	25%	5	0.32	0.20
Whitley	3.50	0%	8	0.16	0.06

Sources: Uniform Crime Reporting Program Data: County-Level Detailed Arrest and Offense Data, 2003 United States Department of Justice, Federal Bureau of Investigation retrieved from Inter-university Consortium for Political and Social Research ([www.icpsr.umich.edu](http://www.icpsr.umich.edu)) and 2003 population data retrieved from U.S. Census Bureau.

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## 9.

# PRESCRIPTION DRUG ABUSE IN INDIANA: CONSUMPTION PATTERNS AND CONSEQUENCES

Abuse of prescription drugs is a serious and growing public health problem in the United States. The National Institute on Drug Abuse (NIDA) estimates that nationally, 48 million people ages 12 and older have used prescription drugs for non-medical purposes at least once in their lifetime (NIDA, 2005). According to the U.S. Drug Enforcement Administration (2006), pain-relieving opioids such as Oxycodone (Oxycontin) and Hydrocodone (Vicodin) and benzodiazepines (e.g., Alprazolam/Xanax, Clonazepam/Klonopin, and Diazepam/Valium) are the most commonly abused prescription drugs in Indiana. The abuse of Ritalin by young people in high school and college settings is also an area of increasing concern.

## PRESCRIPTION PAIN RELIEVERS CONSUMPTION

### General Consumption Patterns

According to the most recent National Survey on Drug Use and Health, NSDUH (Substance Abuse and Mental Health Services Administration, SAMHSA, 2006), an estimated 11,463,000 people in the United States used prescription pain relievers for non-medical purposes in 2004. In Indiana, the estimated percent of the population using prescription pain relievers inappropriately is 5.44%, or approximately 277,000 residents ages 12 or older (NSDUH, 2004). Indiana's rate is slightly higher than the estimated national average of 4.79%, but the difference is not statistically significant.

Another method of tracking consumption is to track the percentage of individuals who report currently using pain medication or morphine-like drugs at the time they are admitted for substance abuse treatment. A review of data available in the Treatment Episode Data System or TEDS (Substance Abuse and Mental Health Data Archive, n.d.) shows that both in Indiana and the nation, there has been an

increase over time in the number of patients who report current use of pain medication or morphine-like drugs upon admission to treatment programs. Across all years reviewed, a statistically significantly higher percentage of patients in Indiana reported using pain medication or morphine-like drugs upon admission for treatment (2000: Pearson chi-square = 806.44,  $p < .001$ ; 2001: Pearson chi-square = 302.25,  $p < .001$ ; 2002: Pearson chi-square = 242.28,  $p < .001$ ; 2003: Pearson chi-square = 325.99,  $p < .001$ ; 2004: Pearson chi-square = 159.13,  $p < .001$ ) (see Figure 9.2, page 158).

### **Adult Consumption Patterns**

According to the NSDUH (2004), young people between the ages of 18 and 25 are estimated to have the highest rate of prescription pain medication abuse in the nation. An estimated 14.4% (confidence interval = 11.99 to 17.20) or approximately 102,000 young people in Indiana between ages 18 and 25 reported using prescription pain relievers for non-medical purposes in the past year. When this percentage is compared with the national estimate of 11.95%, the rate of use by 18 to 25-year-olds is statistically significantly higher in Indiana (see Figure 9.1, page 158).

Data from the TEDS indicate that for individuals presenting for substance abuse treatment, those who report currently using prescription pain relievers and other morphine-type drugs are predominately 18 years of age or older, both in Indiana and the rest of the United States.

Gender, race, and age are all related to the rates of use of prescription pain relievers and similar morphine-type drugs. Nationally, from 2000 through 2004, men entering substance abuse treatment were found to be statistically significantly more likely than women to report that they were current users of prescription pain relievers or similar drugs. The same use pattern was seen in Indiana for all years reviewed except 2000. In 2000, a statistically significantly larger percentage of Indiana women than men reported using these substances at the time of their admission to treatment (2000: Pearson chi-square = 362.53,  $p < .001$ ; 2001: Pearson chi-square = 245.22,  $p < .001$ ; 2002: Pearson chi-square = 200.39,  $p < .001$ ; 2003: Pearson chi-square = 184.27,  $p < .001$ ; 2004: Pearson chi-square = 248.00,  $p < .001$ ) (see Figure 9.3, page 159).

In terms of race, persons entering substance abuse treatment in Indiana and in the rest of the United States who said they were currently using prescription pain medication or similar drugs were statistically significantly more likely to be White (2000: Pearson chi-square = 167.02,  $p < .001$ ; 2001: Pearson chi-square = 248.00,  $p < .001$ ; 2002: Pearson chi-square = 272.63,  $p < .001$ ; 2003: Pearson chi-square = 391.62,  $p < .001$ ; 2004: Pearson chi-square = 442.13,  $p < .001$ ). White individuals entering treatment accounted for at least 85% of current prescription pain medication users across all years for which data were available both in Indiana and in the rest of the United States (see Figure 9.4, page 159).

In regard to age, the general pattern both in Indiana and nationally was for the highest use to be reported by individuals between 18 to 44 years of age. Over time, the percentage of individuals between ages 18 and 24 in Indiana entering substance abuse treatment who reported using prescription pain relievers increased from a low of 12.9% in 2000 (13.7% for the nation) to a high of over 26% in 2003 and 2004 (2003 U.S., 21.8%; 2004 U.S. 23.9%). During the same period, the percentage of people between 35 and 44 years of age showed decreasing rates of pain reliever use at the time of their admission for substance abuse treatment.

### Youth Consumption Patterns

The 2004 NSDUH estimates that 8.31% (C.I. = 6.61 to 10.40) of Indiana's young people between ages 12 and 17 (approximately 45,000 residents) have used prescription pain medications for non-medical purposes at least once in their lives. In the rest of the United States, the rate of prescription drug use by 12- to 17-year-olds is 7.53%, which is similar to the Indiana rate (see Figure 9.1, page 158). NIDA's 2004 Monitoring the Future survey reported that 9.3% of 12th graders had used Hydrocodone without a prescription in the past year, and 5.0% had used Oxycodone—making these the two most commonly abused prescription drugs by adolescents (NIDA, 2006a). Unfortunately, data are currently not available at the local level which would allow for comparison.

The other available data source regarding consumption of pain medications and similar morphine-type drugs by youth is the TEDS.

Only a very small percentage of young people in Indiana (less than 3.0%) are reporting current use of prescription pain medication or other morphine-type drugs upon entering substance abuse treatment. When compared with the rest of the nation, Indiana's youth have regularly reported less use of these substances.

Gender and race are associated with current prescription pain reliever or morphine-like drug use at admission. As with adults 18 or older, young people who report this use at admission, both nationally and in Indiana, are statistically significantly more likely to be male and White.

## **BENZODIAZEPINE CONSUMPTION**

### **General Consumption Patterns**

The TEDS is currently the only source of information regarding benzodiazepine consumption that is available for both local and national levels. A review of the available TEDS data for the years 2000 to 2004 indicate that nationally, the percentage of individuals reporting benzodiazepine use at the time of their admission to treatment increased slightly over the five years studied. When compared with the national rates, the percentage of individuals entering substance abuse treatment in Indiana who report benzodiazepine use was statistically significantly higher over all years studied (2000: Pearson chi-square = 1361.37,  $p < .001$ ; 2001: Pearson chi-square = 472.30,  $p < .001$ ; 2002: Pearson chi-square = 539.56,  $p < .001$ ; 2003: Pearson chi-square = 532.15,  $p < .001$ ; 2004: Pearson chi-square = 389.49,  $p < .001$ ) (see Figure 9.6, page 160).

### **Adult Consumption Patterns**

As with prescription pain relieving drugs, the majority of people entering substance abuse treatment who state that they currently use benzodiazepines are overwhelmingly 18 years of age or older. The Indiana TEDS data for 2000 through 2004 show that at least 95% of the people who reported currently using benzodiazepines when they entered treatment were at least 18 years old. The pattern in the rest of the nation is very similar.

Nationally, the use of benzodiazepines is related to gender. According to the available data for 2000 through 2004, at the time of

admission for treatment, males were significantly more likely than females to state that they were currently using benzodiazepines. The relationship of gender to benzodiazepine use in Indiana is the same as that seen with prescription pain relievers. For the years 2001 through 2004, males were statistically significantly more likely than females to report currently using benzodiazepines at the time of their admission for substance abuse treatment. In 2000, however, Indiana females were statistically significantly more likely to admit using benzodiazepines when entering substance abuse treatment than were Indiana males (2000: Pearson chi-square = 15.76,  $p < .001$ ; 2001: Pearson chi-square = 9.65,  $p = .002$ ; 2002: Pearson chi-square = 2.65,  $p = .104$ ; 2003: Pearson chi-square = .36,  $p = .548$ ; 2004: Pearson chi-square = 5.39,  $p = .020$ ).

Race was also found to be associated with the consumption of benzodiazepines. The TEDS data from 2000 through 2004 indicate that across all years, both in the nation and in Indiana, White individuals entering substance abuse treatment were statistically significantly more likely than either Blacks or members of races other than Black or White to report current benzodiazepine use. Blacks entering substance abuse treatment were statistically significantly less likely than either Whites or individuals of another race to report current use of benzodiazepines (2000: Pearson chi-square = 16.51,  $p < .001$ ; 2001: Pearson chi-square = 66.05,  $p < .001$ ; 2002: Pearson chi-square = 77.23,  $p < .001$ ; 2003: Pearson chi-square = 83.56,  $p < .001$ ; 2004: Pearson chi-square = 86.69,  $p < .001$ ). The pattern of benzodiazepine use by race in Indiana is the same as the pattern for prescription pain reliever use by race.

Benzodiazepine use is also associated with age. The data available in the TEDS from 2000 through 2004 show that self-reported benzodiazepine use at admission is highest in people age 18 to 44. The pattern of use by age groups in Indiana parallels the pattern found for the nation. Since 2000, the percent of 18- to 24-year-olds reporting benzodiazepine use at admission for treatment has shown a steady increase, while the use of benzodiazepines by individuals 25 to 34 and 35 to 44 has remained relatively stable over time (2000: Pearson chi-square = 31.75,  $p < .001$ ; 2001: Pearson chi-square = 74.08,  $p < .001$ ; 2002: Pearson chi-square = 89.79,  $p < .001$ ; 2003: Pearson chi-square = 138.17,  $p < .001$ ; 2004: Pearson chi-square = 143.38,  $p < .001$ ) (see Figure 9.7, page 161).

### Youth Consumption Patterns

As indicated in the previous section, TEDS data for 2000 through 2004 show that young people age 17 or younger who are entering treatment for substance abuse report very little use of benzodiazepines. Both in Indiana and the rest of the nation, approximately 5% or less of young people under age 18 coming for drug treatment said that they were currently using benzodiazepines.

Gender was also related to benzodiazepine consumption in young people age 17 or younger. As with adults, the national pattern was for a statistically significantly higher percentage of males than females to report benzodiazepine use at treatment admission. In Indiana, the same pattern was seen except for the year 2000. In 2000, a significantly higher percentage of females were using benzodiazepines when they entered drug abuse treatment (2000: Pearson chi-square = 13.67,  $p < .001$ ; 2001: Pearson chi-square = 5.07,  $p = .024$ ; 2002: Pearson chi-square = .000,  $p = 1.00$ ; 2003: Pearson chi-square = .237,  $p = .626$ ; 2004: Pearson chi-square = .053,  $p = .818$ ).

The relationship of race to benzodiazepine consumption for young people age 17 or younger was also similar to the relationship noted in adults. White youth, both nationally and in Indiana, had significantly higher percentages of current benzodiazepine use at admission than Black youth or those from races other than White or Black. This difference in usage rates by race was consistent across all five years of TEDS data that are available.

## RITALIN CONSUMPTION

Information on general and adult consumption of Ritalin for non-medical purposes is not currently available on either national or local-level surveys of substance use and/or abuse. Data on the consequences of non-medical Ritalin use are also not available.

### Youth Consumption Patterns

Methylphenidate (Ritalin®) is a stimulant that enhances brain activity and increases alertness and energy. It is used in the treatment of Attention Deficit Hyperactivity Disorder (ADHD), Attention Deficit Disorder (ADD)

and narcolepsy. When Ritalin is taken by an individual without ADD/ADHD; it creates a stimulant-like effect by increasing focus and attentiveness, making it an attractive drug to teenagers. According to the National Institute on Drug Abuse, teenagers of middle- and upper-class socioeconomic status are most likely to abuse the drug by crushing and snorting the tablets. Some intravenous drug users combine heroin with Ritalin to strengthen the effect.

Limited data on national Ritalin use are available from the Monitoring the Future Survey, MTF (NIDA, 2006a). The MTF asks 12th graders whether they have ever used Ritalin for non-medical purposes during the past year. Comparable local level data are available from the Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents Survey, or ATOD (Indiana Prevention Resource Center, IPRC, 2006). In 2005, the MTF reported that 0.2% of 12th graders nationally had used Ritalin at least once for non-medical purposes during the past year. The ATOD indicated that 3.8% of Indiana's 12th graders had used Ritalin in the past year for non-medical purposes. For the years from 2001 through 2005, the reported rate of non-medical Ritalin use by Indiana 12th graders was higher than the rate reported for the rest of the nation. Due to the nature of the data, whether this difference was statistically significant could not be determined. The results of the ATOD survey should be interpreted with caution as this survey is based on a non-random sample of Indiana students (see Figure 9.8, page 161).

## **PRESCRIPTION DRUG CONSEQUENCES**

### **Pain Reliever Dependence**

The most common consequences of prescription drug misuse are addiction and/or dependence. One approach to determining whether prescription drug abuse is a growing problem both nationally and in Indiana is to use the Treatment Episode Data System (TEDS) to track the percentage of admissions to substance abuse treatment centers that are due to prescription and morphine-like pain medication. Both nationally and in Indiana, the percentage of individuals receiving substance abuse treatment primarily for using pain medication or morphine-like drugs has gradually been increasing. In 2000, the percentage of admission related to such medication nationally and in

Indiana, was 2.70% and 3.10% respectively. By 2004, the percentage of pain medication and morphine-like medication related admissions had climbed to 3.20% nationally and to 3.80% in Indiana. Across all years, the percentage of admissions for pain and morphine-like drugs was significantly higher in Indiana compared to the rest of the United States (2000: Pearson chi-square = 717.57,  $p < .001$ ; 2001: Pearson chi-square = 195.48,  $p < .001$ ; 2002: Pearson chi-square = 86.85,  $p < .001$ ; 2003: Pearson chi-square = 146.72,  $p < .001$ ; 2004: Pearson chi-square = 44.24,  $p < .001$ ) (see Figure 9.9, page 162).

For adults 18 and older, gender, race, and age were associated with rates of pain reliever dependence. The relation between gender and dependence on pain relievers and similar drugs is different in Indiana than in the rest of the nation. The 2000 to 2004 TEDS data indicates that female Indiana residents entering substance abuse treatment are significantly more likely than their male counterparts to report that their primary drug problem is pain relievers or similar morphine-type drugs. However, the TEDS data for the rest of the nation shows the reverse—that males were statistically significantly more likely than women to enter substance abuse treatment for pain relievers (2000: Pearson chi-square = 37.01,  $p < .001$ ; 2001: Pearson chi-square = 21.76,  $p < .001$ ; 2002: Pearson chi-square = 7.56,  $p = .006$ ; 2003: Pearson chi-square = 5.04,  $p = .025$ ; 2004: Pearson chi-square = 22.07,  $p < .001$ ) (see Figure 9.10, page 162).

For the period 2000 through 2004, Whites in Indiana and in the nation were statistically significantly more likely than Blacks or people from other races to report pain relievers and morphine-like drugs as the main reason they were entering drug treatment (2000: Pearson chi-square = 101.16,  $p < .001$ ; 2001: Pearson chi-square = 136.09,  $p < .001$ ; 2002: Pearson chi-square = 153.74,  $p < .001$ ; 2003: Pearson chi-square = 220.24,  $p < .001$ ; 2004: Pearson chi-square = 233.04,  $p < .001$ ) (see Figure 9.11, page 163.).

The Indiana TEDS data for 2000 through 2004 indicates that overall, individuals between ages 18 and 44 report the highest percentages of admissions to drug treatment centers for abuse of pain relievers. Over time, a steadily increasing percentage of Indiana residents between ages 18 and 34 have reported these drugs as their primary reason for entering substance abuse treatment. However, the



trend for individuals 35 and older has been a decrease in this percentage. These trends in pain reliever dependence rates in Indiana are similar to national trends. The differences between the percentages of people in each age group who have indicated pain reliever dependence is statistically significant (2000: Pearson chi-square = 248.09,  $p < .001$ ; 2001: Pearson chi-square = 80.75,  $p < .001$ ; 2002: Pearson chi-square = 65.37,  $p < .001$ ; 2003: Pearson chi-square = 74.49,  $p < .001$ ; 2004: Pearson chi-square = 79.75,  $p < .001$ ) (see Figure 9.12, page 163).

Nationally, from 2000 to 2004, less than 2.0% of the admissions to substance abuse treatment facilities for pain-reliever medications are youth 17 or younger. The percentage of Indiana residents age 17 or younger admitted for pain reliever dependency or abuse has been 1.0% or less over the five years for which TEDS data is available. As with adults, gender and race are related to treatment admissions for pain relievers and similar drugs in youth. Nationally, young men are significantly more likely to report pain relievers as the primary reason for entering substance abuse treatment. However, no clear gender pattern is evident in Indiana. In 2000 and 2004, young men in Indiana were statistically significantly more likely than young women to say that pain relievers or a similar drug was the primary reason they were entering treatment. In the years 2001, 2002, and 2003, young women in Indiana were statistically significantly more likely to report pain relievers and other morphine-like drugs to be the main reason they were entering treatment (2000: Pearson chi-square = 366.12,  $p < .001$ ; 2001: Pearson chi-square = 270.90,  $p < .001$ ; 2002: Pearson chi-square = 180.34,  $p < .001$ ; 2003: Pearson chi-square = 195.07,  $p < .001$ ; 2004: Pearson chi-square = 259.94,  $p < .001$ ).

Race was significantly related to pain reliever dependence. Both in Indiana and in the nation, White young people age 17 or younger were significantly more likely to state that pain relievers or similar drugs were the reason they were being admitted for substance abuse treatment (2000: Pearson chi-square = ,  $p = .001$ ; 2001: Pearson chi-square = 23.89,  $p < .001$ ; 2002: Pearson chi-square = 32.94,  $p < .001$ ; 2003: Pearson chi-square = 45.92,  $p < .001$ ; 2004: Pearson chi-square = 30.79,  $p < .001$ ). Due to the very small number of Indiana youth reporting

primary pain reliever dependence, these results should be interpreted with caution.

### **Benzodiazepine Dependence**

As with pain relievers, the primary consequence related to abuse and long-term use of benzodiazepines is dependence on the drug. Both nationally and in Indiana, benzodiazepine dependence accounts for a very small percentage of substance abuse treatment admissions. However, data from the TEDS for the years 2000 to 2004 do indicate that Indiana has had a statistically significantly higher percentage of admissions for benzodiazepine dependence than the rest of the country for the years reviewed (2000: Pearson chi-square = 411.67,  $p < .001$ ; 2001: Pearson chi-square = 101.46,  $p < .001$ ; 2002: Pearson chi-square = 205.72,  $p < .001$ ; 2003: Pearson chi-square = 148.69,  $p < .001$ ; 2004: Pearson chi-square = 104.35,  $p < .001$ ). Despite the difference, benzodiazepine use has consistently accounted for less than 1.0% of substance abuse treatment admissions in Indiana (see Figure 9.13, page 164).

The majority of individuals reporting benzodiazepine dependence are adults age 18 or older. Among adults, gender, race, and age are associated with benzodiazepine dependence. The data from the TEDS for 2000 through 2004 indicate that women, both in Indiana and the nation, are statistically significantly more likely than men to report benzodiazepines as the primary drug for which they are seeking treatment (2000: Pearson chi-square = 183.07,  $p < .001$ ; 2001: Pearson chi-square = 89.77,  $p < .001$ ; 2002: Pearson chi-square = 104.04,  $p < .001$ ; 2003: Pearson chi-square = 73.87,  $p < .001$ ; 2004: Pearson chi-square = 94.17,  $p < .001$ ). This finding is similar to that seen for prescription pain reliever dependence.

In terms of race, during the years 2000 to 2004, White residents of both Indiana and the United States were significantly more likely than Blacks or members of other races to endorse benzodiazepines as the primary drug for which they were requesting substance abuse treatment (2000: Pearson chi-square = 95.94,  $p < .001$ ; 2001: Pearson chi-square = 43.48,  $p < .001$ ; 2002: Pearson chi-square = 52.72,  $p < .001$ ; 2003: Pearson chi-square = 44.57,  $p < .001$ ; 2004: Pearson chi-square = 55.61,  $p < .001$ ). The relationship between race and benzodiazepine

dependence is the same as that seen for race and pain reliever dependence.

Benzodiazepine dependence is also associated with age. The TEDS data for 2000 through 2004 indicate that Indiana residents who seek treatment for benzodiazepine abuse are significantly more likely to be between the ages of 18 and 44 (2000: Pearson chi-square = 27.40,  $p < .001$ ; 2001: Pearson chi-square = 20.94,  $p = .001$ ; 2002: Pearson chi-square = 27.29,  $p < .001$ ; 2003: Pearson chi-square = 13.57,  $p = .019$ ; 2004: Pearson chi-square = 11.37,  $p = .045$ ). The ages found to be most likely to abuse benzodiazepines were similar to the ages found to be most likely to abuse prescription pain relievers. For the rest of the nation during the same years, the pattern of benzodiazepine abuse was similar to that seen in Indiana with one exception. In the nation, individuals between ages 45 to 54 were more likely than their counterparts in Indiana to say that they were entering treatment for benzodiazepine use.

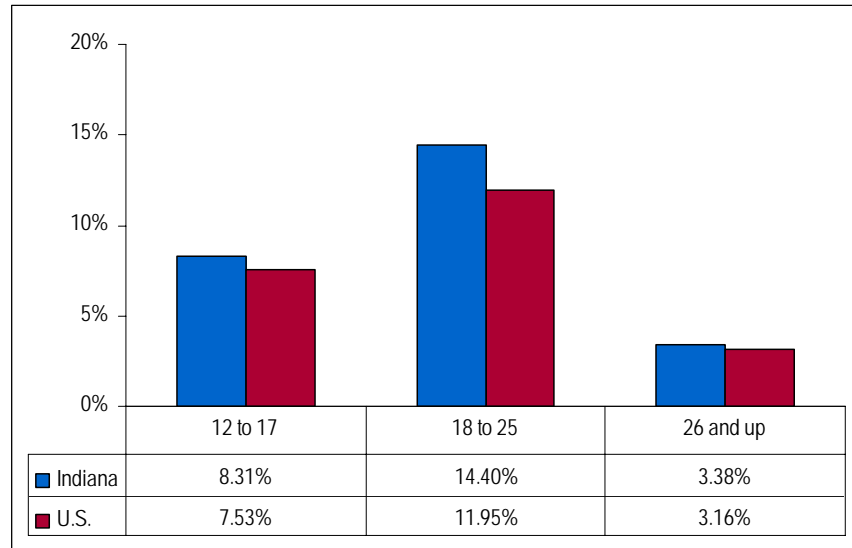
As benzodiazepine dependence is relatively rare in Indiana for young people under age 18, statistical comparisons between Indiana and the rest of the nation were not completed. However, a review of the trends in the TEDS data for 2000 through 2004 indicated that across all years, gender and race were related to benzodiazepine dependence in a manner identical to that found for adults age 18 or older.

### **Law Enforcement Contact**

Data from the 2003 UCR for Indiana show that arrest rates for “other” drug possession and manufacture are quite small for Indiana. Maps 9.1 and 9.2 (pages 165 and 166) show the rates of other drug possession and manufacture arrests by county for Indiana.

**Figure 9.1**

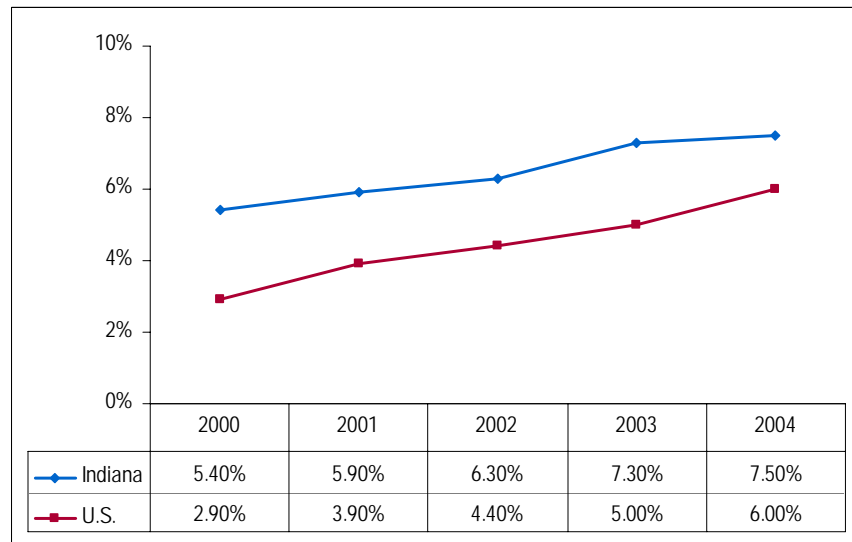
Prevalence of Lifetime Pain Reliever Use in Indiana and the United States, by Age Group, 2004 (National Survey on Drug Use and Health, 2004)



Source: Substance Abuse and Mental Health Services Administration, 2006

**Figure 9.2**

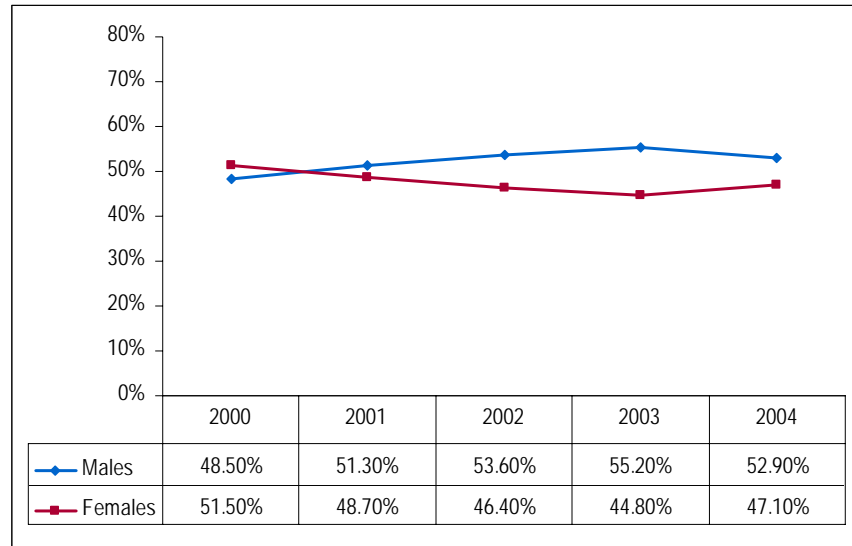
Percentage of Indiana and U.S. Patients Reporting Any Pain Reliever or Other Morphine-like Drug Use at Admission, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.3**

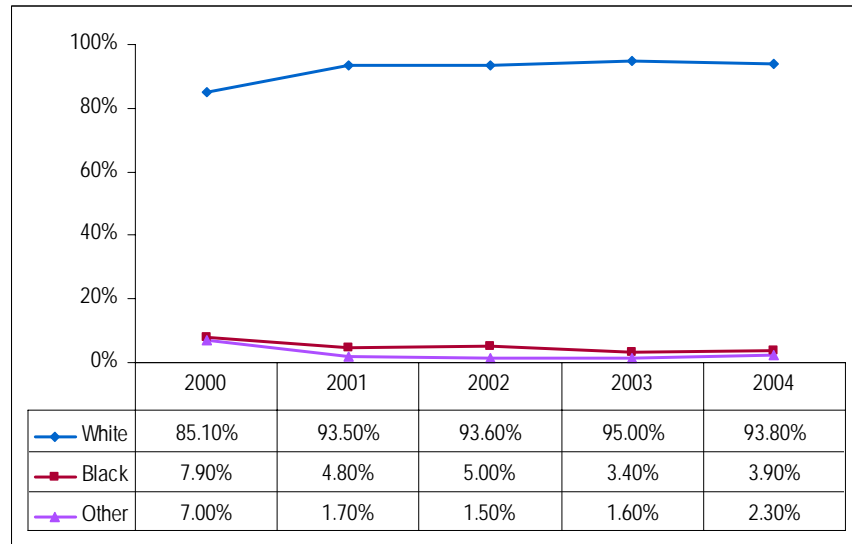
Percentage of Indiana Adults Reporting Any Pain Reliever or Other Morphine-like Drug Use at Admission, by Gender, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.4**

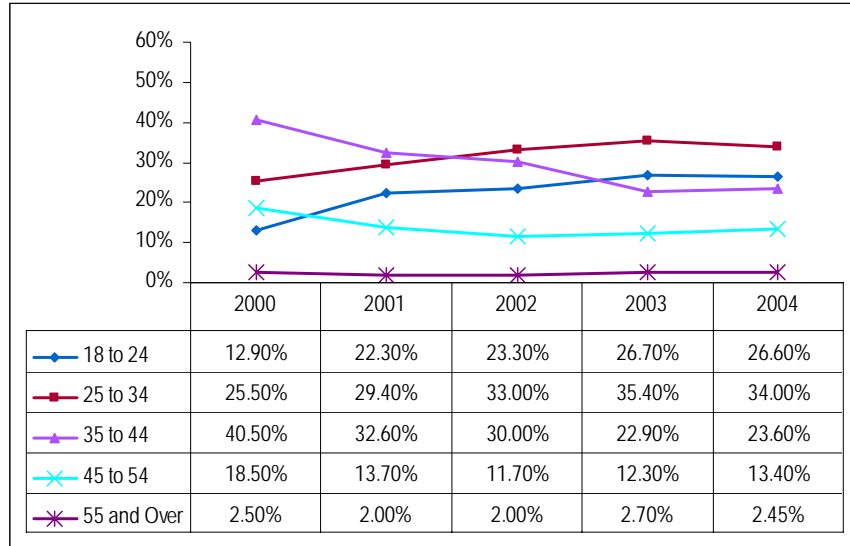
Percentage of Indiana Adults Reporting Any Pain Reliever or Other Morphine-Like Drug Use at Admission, by Race (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.5**

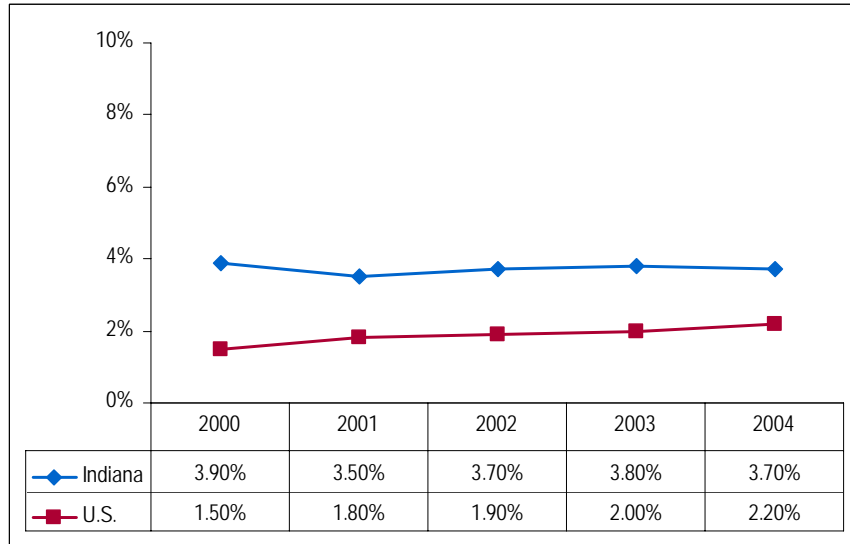
Percentage of Indiana Adults Reporting Any Pain Reliever or Other Morphine-Like Drug Use at Admission, by Age, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.6**

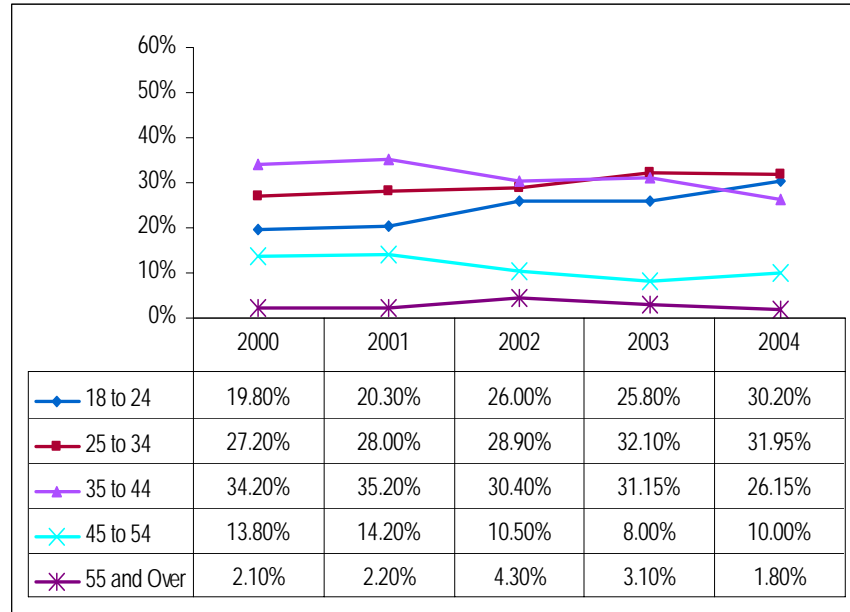
Percentage of Indiana and U.S. Patients Reporting any Benzodiazepine Use at Admission, from 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.7**

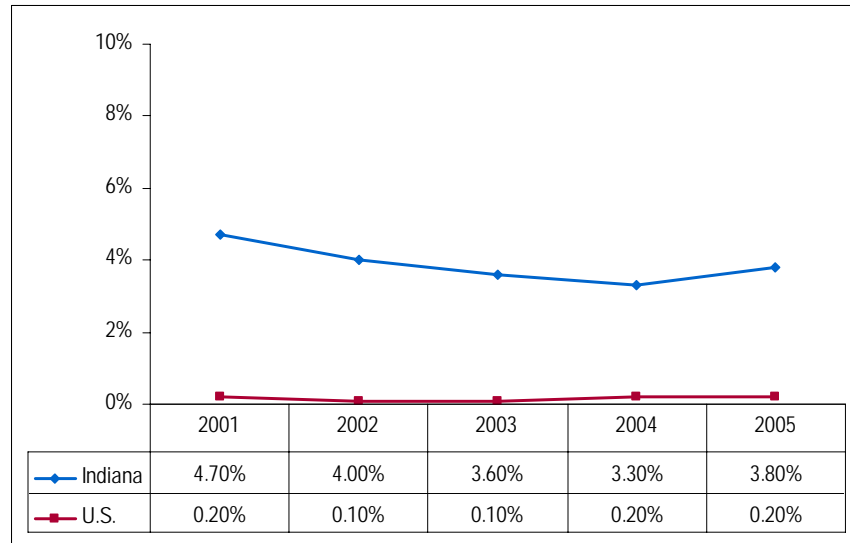
Percentage of Indiana Adults Reporting any Benzodiazepine Use at Admission, by Age, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.8**

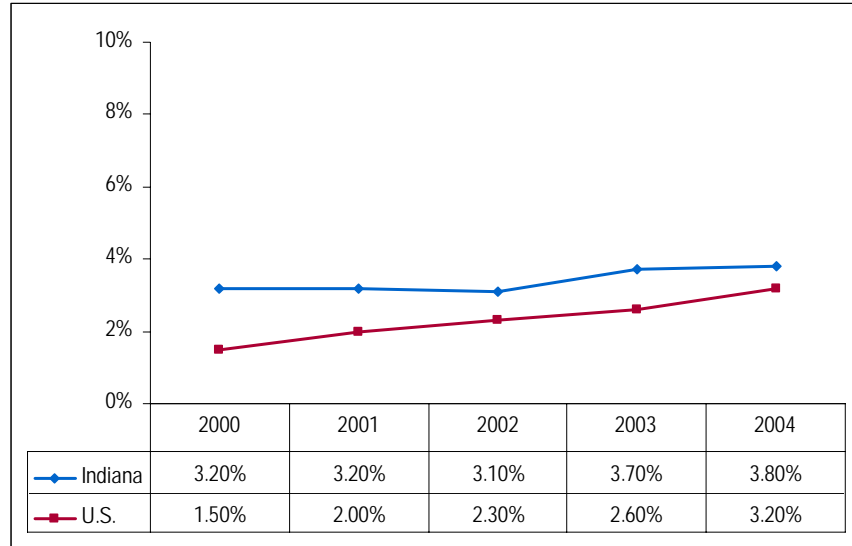
Percentage of Indiana and U.S. 12th Grade Students Reporting Annual Ritalin Use, 2001 to 2005 (Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents Survey and Monitoring the Future Survey, 2001–2005)



Source: Indiana Prevention Resource Center, 2006; National Institute on Drug Abuse, 2006a

**Figure 9.9**

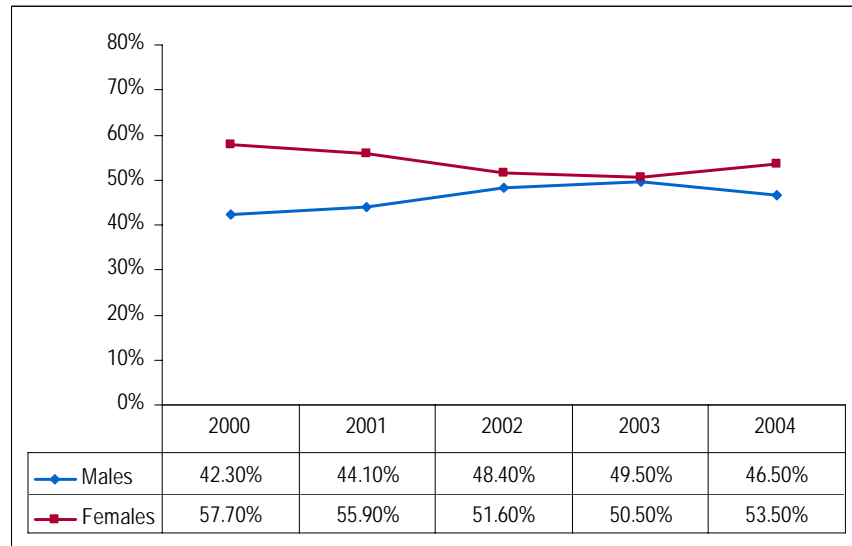
Percentage of Indiana and U.S. Treatment Admissions for Pain Relievers and Other Morphine-like Drugs, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.10**

Percentage of Indiana Adult Treatment Admissions for Pain Relievers and Other Morphine-Like Drugs, by Gender, from 2000 to 2004 (Treatment Episode Data Set, 2000–2004)

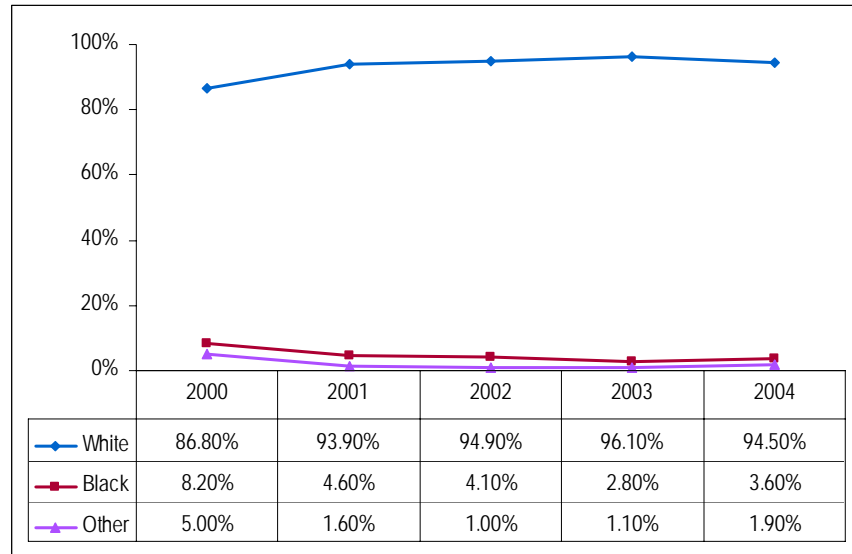


Source: Substance Abuse and Mental Health Data Archive, n.d.



**Figure 9.11**

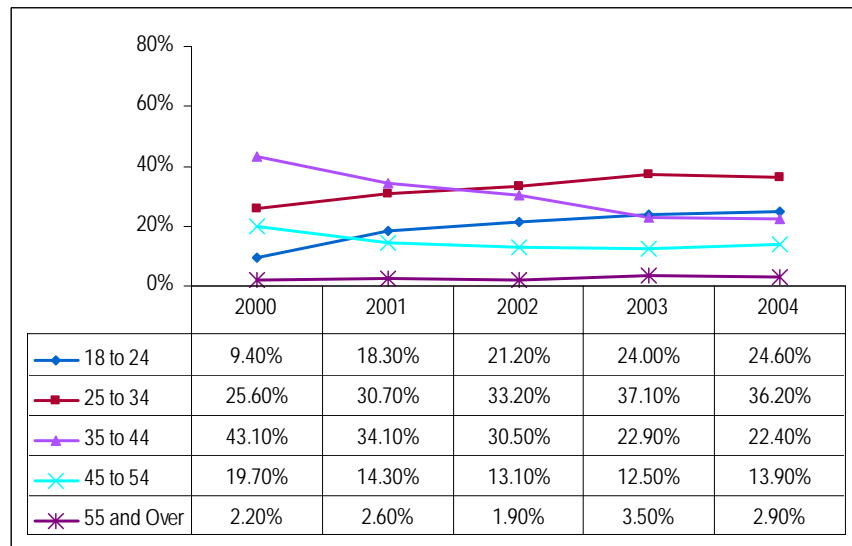
Percentage of Indiana Adult Treatment Admissions for Pain Relievers and Other Morphine-Like Drugs, by Race, from 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.12**

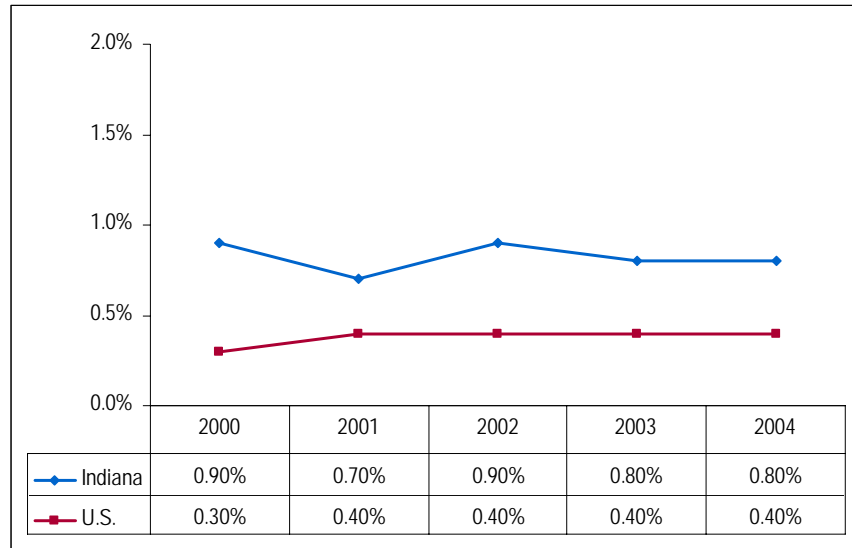
Percentage of Indiana Adult Treatment Admissions for Pain Relievers and Other Morphine-Like Drugs, by Age, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

**Figure 9.13**

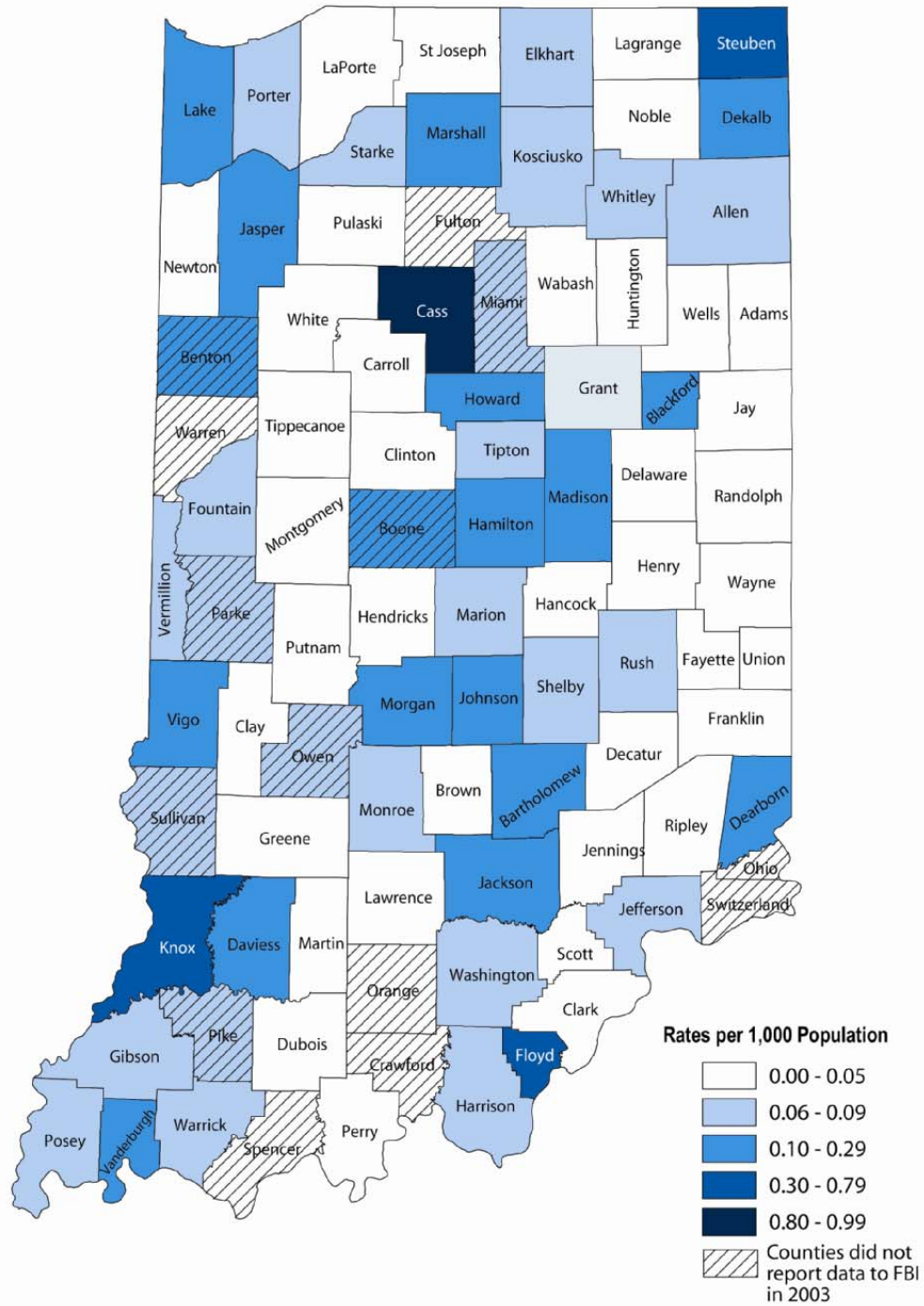
Percentage of Indiana and U.S. Treatment Admissions for Benzodiazepines, 2000 to 2004 (Treatment Episode Data Set, 2000–2004)



Source: Substance Abuse and Mental Health Data Archive, n.d.

Map 9.1

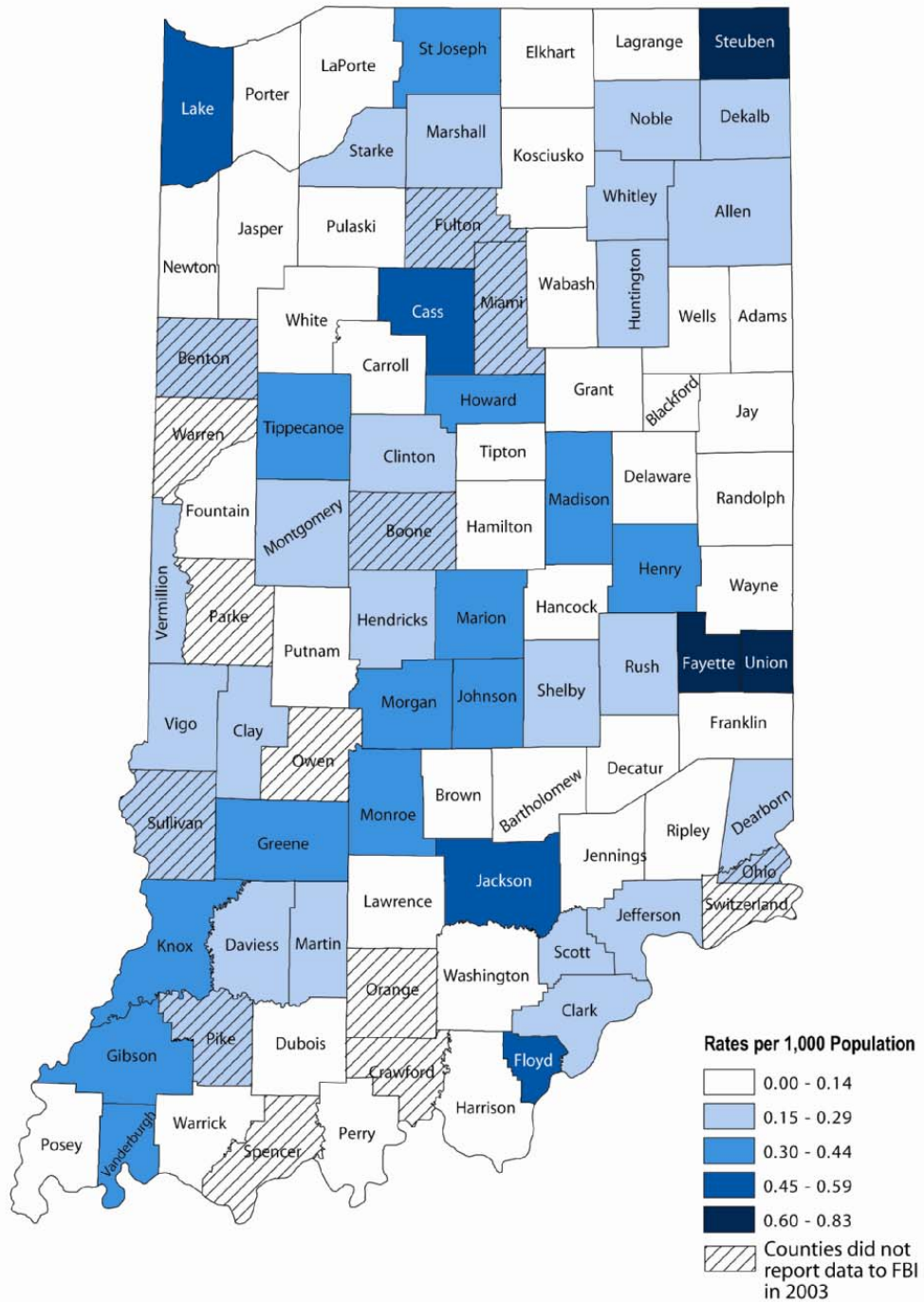
Other Drug Sales/Manufacturing Arrest Rates, per 1,000 Population, by Indiana Counties, 2003 (Uniform Crime Reports, 2003)



Source: Federal Bureau of Investigation, n.d.

**Map 9.2**

Other Drug Possession Arrest Rates, per 1,000 Population, by Indiana Counties, 2003  
(Uniform Crime Reports, 2003)



Source: Federal Bureau of Investigation, n.d.

## REFERENCES, CHAPTER 9

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# 10.

## POLYSUBSTANCE ABUSE IN INDIANA: CONSUMPTION PATTERNS

Polysubstance abuse refers to substance abuse during which two or more substances in combination are used. It is a particularly serious pattern of drug abuse that appears to be generally established by late adolescence (Collins, Ellickson, & Bell, 1999).

The primary source of data regarding polysubstance abuse is the Treatment Episode Data Set (TEDS). A review of the TEDS data for Indiana and the United States for the years 2000 through 2004 shows that over 50% of the individuals seeking substance abuse treatment report using at least two drugs at the time they enter treatment. When Indiana is compared with the rest of the United States, the percentage of individuals reporting polysubstance abuse is significantly higher in Indiana (2000: Pearson chi-square = 113.45,  $p < .001$ ; 2001: Pearson chi-square = 62.26,  $p < .001$ ; 2002: Pearson chi-square = 166.29,  $p < .001$ ; 2003: 175.19;  $p < .001$ ; 2004: Pearson chi-square = 385.03,  $p < .001$ ) (see Figure 10.1, page 172).

### Demographic Characteristics of Polysubstance Users

Gender, race, and age are all related to polysubstance use in both Indiana and the rest of the nation.

Across all years reviewed, men were significantly more likely than women to report using multiple substances at the time of their admission to substance abuse treatment (2000: Pearson chi-square = 1949.07,  $p < .001$ ; 2001: Pearson chi-square = 1240.63,  $p < .001$ ; 2002: Pearson chi-square = 1332.66,  $p < .001$ ; 2003: Pearson chi-square = 727.94;  $p < .001$ ; 2004: Pearson chi-square = 408.22,  $p < .001$ ) (see Figure 10.2, page 172).

In terms of race, from 2000 through 2004, polysubstance abusers in Indiana and in the rest of the United States were significantly more likely to be White than Black or from another racial group (2000: Pearson chi-square = 13768.44,  $p < .000$ ; 2001: Pearson chi-square = 12000.34,  $p < .001$ ; 2002: Pearson chi-square = 10994.65,  $p < .001$ ; 2003: Pearson chi-square = 8935.40,  $p < .001$ ; 2004: Pearson chi-

square = 9530.83;  $p < .001$ ) (see Figure 10.3, page 173). Regarding age, the majority of polysubstance abusers were significantly more likely to be between the ages of 18 and 44. This pattern is apparent across all years of available TEDS data reviewed both in Indiana and the rest of the nation (2000: Pearson chi-square = 1168.31,  $p < .001$ ; 2001: Pearson chi-square = 1185.38,  $p < .001$ ; 2002: Pearson chi-square = 1738.05,  $p < .001$ ; 2003: Pearson chi-square = 1955.47,  $p < .001$ ; 2004: 1911.19;  $p < .001$ ) (see Figure 10.4, page 173).

### **Polysubstance Abuse Clusters in Indiana**

We used cluster analysis of Indiana TEDS data for 2005 to determine the combinations of drugs that polysubstance abusers within the state are currently using. The cluster analysis was completed in two steps following standardized methods (Hair, Anderson, Tatham, & Black, 1995).

In the first step, hierarchical cluster analysis specifying solutions with 2 to 20 clusters was done using Ward's method (Hair et al., 1995). Second, the results of the hierarchical cluster analysis were used to create "seed points" to serve as cluster centroids for follow-up K-Means cluster analyses, specifying 2 to 20 clusters. This two-step method was used as it produces clusters that are more easily interpretable (Hair et al., 1995).

We next compared the cubic clustering criteria (the expected value of the within-sum of squares, with a value greater than 3, indicating good structure in the data, and the face-validity of the set of drugs across the clusters to select the final classification solution (Hair et al., 1995). An examination of the results of the K-Means cluster analyses indicated that an 11-cluster solution best fit the available data. Table 10.1, page 174, shows the image and identity matrix for the 11-cluster solution.

The most frequently occurring drug clusters in Indiana were clusters 1, 2, 3, and 4. These clusters accounted for more than two-thirds of polysubstance users in the analysis (66.9%). Individuals in cluster 1 reported using a combination of alcohol and marijuana. Polysubstance users in cluster 2 reported using a combination of alcohol, marijuana, and cocaine. Cluster 3 included individuals who reported using alcohol and cocaine, while polysubstance users in cluster 4 reported currently using alcohol, marijuana, and methamphetamine.



Alcohol and marijuana were the most commonly reported drugs, each appearing in 7 of the 11 clusters. Cocaine was the third most frequently reported drug, and it was included in 4 of the 11 clusters. Methamphetamines and opiates/synthetic drugs each appeared in 2 clusters, while heroin, benzodiazepines, and hallucinogens were each represented in 1 cluster.

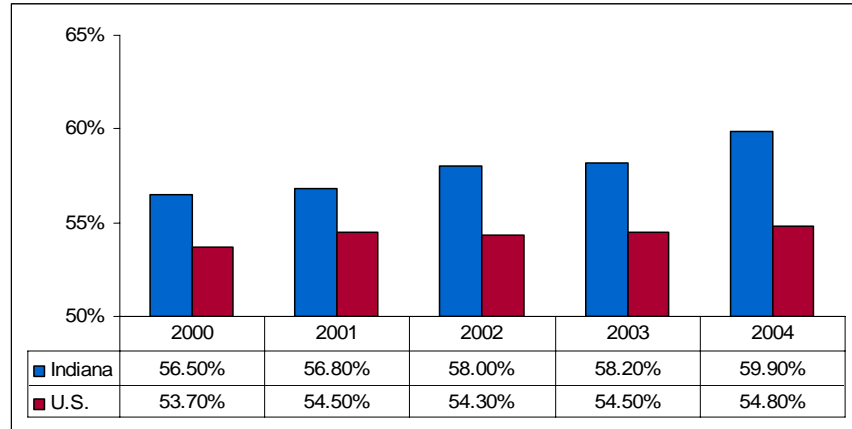
Table 10.2 (page 175) breaks down the clusters by demographic characteristics. In terms of gender, men accounted for 50% or more of the individuals within each cluster. The difference in the percentages of men to women were smaller, however, in clusters 3 (alcohol/cocaine), 7 (marijuana/cocaine), 9 (marijuana/opiates and synthetics), 10 (marijuana/methamphetamine), and 11 (alcohol, marijuana, benzodiazepines), indicating that women may be more likely to use these combinations of drugs. Clusters 1 (alcohol/marijuana) and 6 (alcohol/hallucinogens) were the most male-oriented clusters.

Racially, Whites composed the largest percentage of polysubstance abusers within each cluster. Blacks, however, were more strongly represented in clusters 2 (alcohol/marijuana/cocaine), 3, 7, and 8. These four clusters were similar in that all included cocaine. Whites represented more than 90% of the population in clusters 4 (alcohol/marijuana/methamphetamine), 5 (alcohol/opiates and synthetics), 9, 10, and 11. These five clusters included less commonly used drugs, including methamphetamine, opiates/synthetics, or benzodiazepines.

Polysubstance abuse was primarily reported by individuals 18 years of age or older. Younger polysubstance users were more likely to be found in clusters 1, 5, 6, 9, 10, and 11. These six clusters contained potentially more easily available drugs such as alcohol, marijuana, methamphetamine, hallucinogens, opiates/synthetics, and benzodiazepines. Clusters 2, 3, and 8 included the largest percentages of older polysubstance users. The common drug within these three clusters was cocaine.

**Figure 10.1**

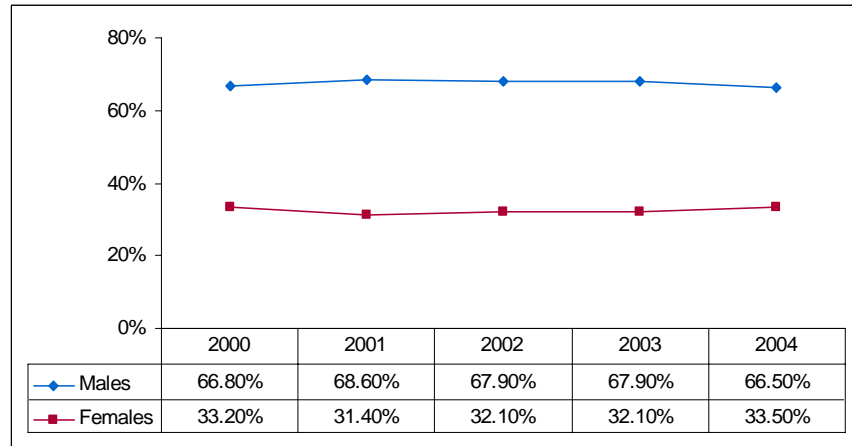
Percentage of Individuals Reporting Polysubstance Abuse at Admission to Substance Abuse Treatment, Indiana and United States, 2000–2004



Source: Treatment Episode Data Set (TEDS), 2000–2004

**Figure 10.2**

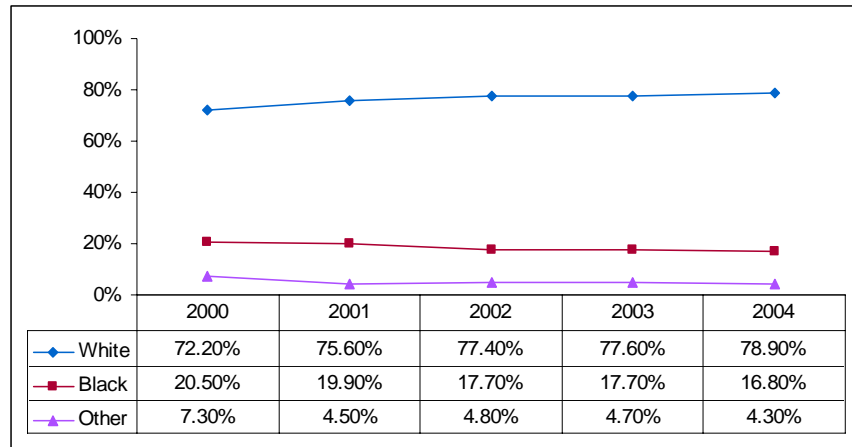
Percentage of Individuals in Indiana Reporting Polysubstance Abuse at Admission by Gender, 2000–2004



Source: Treatment Episode Data Set (TEDS), 2000–2004

**Figure 10.3**

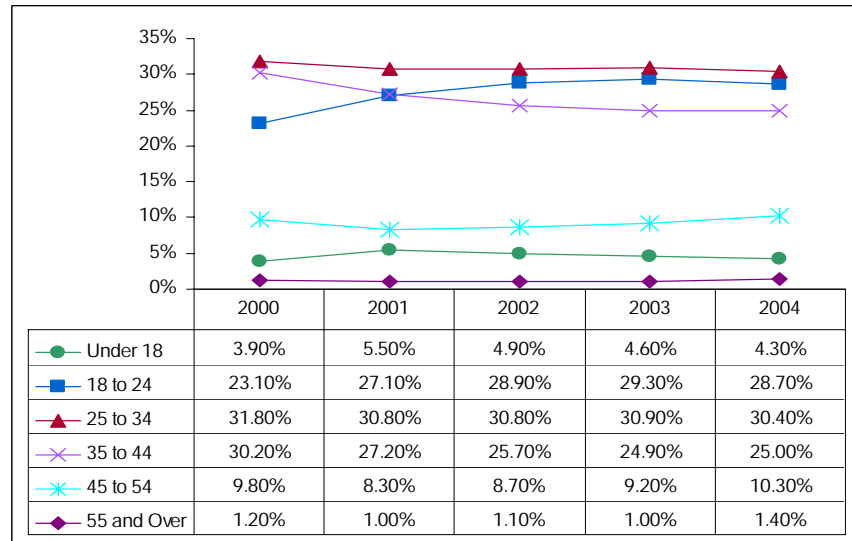
Percentage of Individuals in Indiana Reporting Polysubstance Abuse at Admission by Race, 2000–2004



Source: Treatment Episode Data Set (TEDS), 2000–2004

**Figure 10.4**

Percentage of Individuals in Indiana Reporting Polysubstance Abuse at Admission by Age, 2000–2004



Source: Treatment Episode Data Set (TEDS), 2000–2004

**Table 10.1** Image and Identity Matrix for Polysubstance Abuse Clusters

Image Matrix	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
<b>Drug</b>											
alcohol	1	1	.97	1	1	.86	0	.33	0	0	.77
marijuana	1	1	0	.78	.44	.18	1	.23	.61	.93	.71
cocaine	0	1	1	0	.15	.01	.93	.68	.32	.27	0
methamphetamine	0	0	.10	1	.03	.01	0	.03	.17	1	.06
opiates/synthetics	0	0	0	0	1	0	0	.13	1	0	0
heroin	.01	0	0	.01	.02	.01	0	1	.05	.01	.02
benzodiazepines	0	0	.04	.0	.10	.01	.05	.04	.28	.07	1
hallucinogens	0	0	.01	0	0	.74	.02	.01	.01	.02	.01
Identity Matrix	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
<b>Drug</b>											
alcohol	1	1	1	1	1	1	0	0	0	0	1
marijuana	1	1	0	1	0	0	1	0	1	1	1
cocaine	0	1	1	0	0	0	1	1	0	0	0
methamphetamine	0	0	0	1	0	0	0	0	0	1	0
opiates/synthetics	0	0	0	0	1	0	0	0	1	0	0
heroin	0	0	0	0	0	0	0	1	0	0	0
benzodiazepines	0	0	0	0	0	0	0	0	0	0	1
hallucinogens	0	0	0	0	0	1	0	0	0	0	0

**Table 10.2** Demographic Characteristics of Polysubstance Abusers within Clusters

	Cluster 1		Cluster 2		Cluster 3		Cluster 4	
	<i>n</i> = 5573	%	<i>n</i> = 2263	%	<i>n</i> = 1787	%	<i>n</i> = 1152	%
<b>Gender</b>								
Male	4334	77.8	1533	67.7	1039	58.1	747	64.8
Female	1239	22.2	730	32.3	748	41.9	405	35.2
<b>Race</b>								
White	4496	80.7	1431	63.2	978	54.7	1124	97.6
Black	834	15.0	723	31.9	731	40.9	8	.7
Other	243	4.4	109	4.8	78	4.4	20	1.7
<b>Race by Gender</b>								
White Male	3465	62.2	955	42.2	548	30.7	728	63.2
Black Male	663	11.9	493	21.8	442	24.7	5	.4
Other Male	206	3.7	85	3.8	49	2.7	14	1.2
White Female	1031	18.5	476	21.0	430	24.1	396	34.4
Black Female	171	3.1	230	10.2	289	16.2	3	.3
Other Female	37	.7	24	1.1	29	1.6	6	.5
<b>Age</b>								
Under 18	482	8.6	33	1.5	7	.4	21	1.8
18 – 24	2166	38.9	418	18.5	139	7.8	358	31.1
25 – 34	1450	26.0	781	34.5	476	26.6	430	37.3
35 – 44	988	17.7	732	32.3	795	44.5	273	23.7
45 – 54	429	7.7	272	12.0	345	19.3	68	5.9
55 – 64	54	1.0	25	1.1	23	1.3	2	.2
65 and Over	4	.1	2	.1	2	.1	0	.0
	Cluster 5		Cluster 6		Cluster 7		Cluster 8	
	<i>n</i> = 900	%	<i>n</i> = 759	%	<i>n</i> = 779	%	<i>n</i> = 606	%
<b>Gender</b>								
Male	564	62.7	558	73.5	401	51.5	368	60.7
Female	336	37.3	201	26.5	378	48.5	238	39.3
<b>Race</b>								
White	843	93.7	636	83.8	481	61.7	360	59.4
Black	39	4.3	65	8.6	273	35.0	213	35.1
Other	18	2.0	58	7.6	25	3.2	33	5.4
<b>Race by Gender</b>								
White Male	529	58.8	465	61.3	240	30.8	208	34.3
Black Male	20	2.2	51	6.7	147	18.9	138	22.8
Other Male	15	1.7	42	5.5	14	1.8	22	3.6
White Female	314	34.9	171	22.5	241	30.9	152	25.1
Black Female	19	2.1	14	1.8	126	16.2	75	12.4
Other Female	3	.3	16	2.1	11	1.4	11	1.8
<b>Age</b>								
Under 18	28	3.1	26	3.4	13	1.7	4	.7
18 – 24	232	25.8	284	37.4	191	24.5	92	15.2
25 – 34	283	31.4	205	27.0	312	40.1	171	28.2
35 – 44	206	22.9	159	20.9	195	25.0	135	22.3
45 – 54	135	15.0	72	9.5	64	8.2	170	28.1
55 – 64	11	1.2	11	1.4	4	.5	29	4.8
65 and Over	5	.6	2	.3	0	.0	5	.8

Table 10.2 continued

	Cluster 9		Cluster 10		Cluster 11	
	<i>n</i> = 810	%	<i>n</i> = 954	%	<i>n</i> = 515	%
<b>Gender</b>						
Male	431	53.2	504	52.8	301	58.4
Female	379	46.8	450	47.2	214	41.6
<b>Race</b>						
White	772	95.3	936	98.1	505	98.1
Black	24	3.0	5	.5	5	1.0
Other	14	1.7	13	1.4	5	1.0
<b>Race by Gender</b>						
White Male	415	51.2	498	52.2	295	57.3
Black Male	11	1.4	2	.2	4	.8
Other Male	5	.6	4	.4	2	.4
White Female	357	44.1	438	45.9	210	40.8
Black Female	13	1.6	3	.3	1	.2
Other Female	9	1.1	9	.9	3	.6
<b>Age</b>						
Under 18	17	2.1	21	2.2	42	8.2
18 – 24	258	31.9	308	32.3	191	37.1
25 – 34	315	38.9	408	42.8	141	27.4
35 – 44	154	19.0	172	18.0	104	20.2
45 – 54	61	7.5	44	4.6	33	6.4
55 – 64	5	.6	1	.1	4	.8
65 and Over	0	.0	0	.0	0	.0

## REFERENCES, CHAPTER 10

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# 11.

## CONCLUSION

Based on the careful analysis and review of the data summarized in this report, the SEOW identified a list of prevention targets of significant epidemiological concern. This initial list was examined carefully, discussed at length, and revised by the SEOW. To provide additional guidance to the Governor's Advisory Council, the SEOW evaluated the initial list of prevention targets in terms of their relative importance. This was done using a balloting process in which voting members of the SEOW evaluated each target using a rating scale to evaluate its overall significance. Members were instructed to evaluate each potential target in terms of its overall magnitude, trend over time, severity, and changeability. At the July 21, 2006, SEOW meeting, members reviewed their collective ratings, discussed the rankings, and voted to approve the final list of recommendations. The final list includes six priorities. Those six priorities are organized into two groups, those that clearly reflect statewide concerns and those that reflect more localized concerns that are concentrated within certain sub-populations, communities, or regions of the state.

### STATEWIDE PREVENTION PRIORITIES

#### **Prevent and reduce underage drinking and binge drinking among 18- to 25-year-olds.**

Alcohol is the most frequently used substance in Indiana, and it is often a "gateway" to more severe and life-long substance abuse problems (NIAAA, 2006). In terms of the number of Hoosiers affected, alcohol abuse is clearly the most significant substance abuse problem in Indiana. Despite state law which dictates that any alcohol use by young people under age of 21 is illegal, underage drinking is a significant problem in Indiana (26.74% of Hoosiers between the ages of 12 and 20 used alcohol in the past month in 2004; p. 23). In addition, the high rate of binge drinking among 18- to 25-year-old Hoosiers is also significant (43.5% reported binge drinking in the past 30 days in 2004; Figure 3.4, page 28). While the challenges of underage drinking and youth binge drinking are significant in their own right, these patterns are of particular

concern because they also contribute to Indiana's high arrest rates for driving under the influence (DUI, 6.17 per 1,000 population in 2003; Figure 3.14, page 33), public intoxication (3.29 per 1,000 population in 2003; Figure 3.15, page 34), and liquor law violations (2.66 per 1,000 in 2003; Figure 3.16, page 34).

**Prevent the first use of tobacco among 12- to 17-year-olds and reduce tobacco use among 18- to 24-year-olds, Blacks, and individuals with lower incomes and/or less than a high school education.**

Smoking also represents a significant problem in Indiana. Recent estimates suggest that the rates of smoking and/or using other tobacco products in Indiana are significantly higher than rates in the nation. In 2004, 27.4% of Hoosiers reported using cigarettes (compared with 25.2% in the nation; page 39) and 32.3% reported using any tobacco products (compared with 29.5% in the nation; page 39). Of greatest concern is the use of tobacco products among 18- to 25-year-olds, Blacks, and individuals with low household incomes and/or less than a high school education. Among 18- to 25-year olds, smoking prevalence in Indiana for 2004 was 42.5%, which is statistically significantly higher than the national prevalence of 39.9%; Figure 4.2, page 48). In 2005, the overall smoking rate for Blacks in Indiana was 36.8%, significantly higher both than the national rates for Blacks (20.7%) and for Whites in Indiana and the nation (Figure 4.5, page 49). It is important to note, however, that the increase in smoking among Blacks appears to occur in adulthood after high school, as the smoking rates for Black high school students in Indiana are significantly lower than for other racial/ethnic groups (Figure 4.10, page 52). In 2005, Hoosiers with less than a high school education had the highest smoking rate (49.3%), and 37.3% of the Indiana population with household incomes less than \$15,000 reported smoking (page 41). Tobacco use has been shown to cause a variety of chronic health conditions and to be the second leading cause of death in the world. In Indiana, 10,000 people die annually due to tobacco use, and Indiana's high rate of tobacco use also contributes to Indiana's significantly high rate of chronic obstructive pulmonary disease (COPD, 42.5 per 100,000 population versus 35.9 per 100,000 population in the nation in 2002; Figure 4.18, page 56).

## **Prevent the first use of marijuana among 12- to 17-year-olds and reduce the use of marijuana among 18- to 25-year-olds.**

Marijuana represents the most commonly used illicit drug in Indiana, with approximately 10.4% of Hoosiers reporting consuming this drug in 2004 during the prior year (page 61). In general, the patterns of consumption and consequences mirror those of the nation. Rates for both Indiana and the nation suggest that the use of marijuana increases dramatically at each grade level beginning in middle school through high school, with the peak period of use occurring between 12th grade and the transition years of 18 to 25 (Figures 5.3 and 5.6, pages 69 and 70). In terms of negative social consequences, Indiana demonstrates significantly higher rates of substance abuse treatment admissions (Figure 5.11, page 73), as well as higher arrest rates for possession and manufacture of marijuana than the nation (Figures 5.13 and 5.14, page 74).

### **LOCAL, REGIONAL, AND COMMUNITY PREVENTION PRIORITIES**

## **Prevent the first use and reduce the use of cocaine among 18- to 25 year olds.**

Cocaine represents one of the most commonly used illicit drugs in Indiana—in 2004, approximately 2.37% of the adult population in the state reported consuming this drug during the prior year (page 85). In general, the patterns of consumption and consequences in Indiana mirror the nation's. The rate of cocaine use in Indiana increases dramatically at each grade level beginning in middle school through high school, with the peak period of use occurring between 12th grade and the transition years of 18 to 25 (Figure 6.1, page 90; Figure 6.12; page 95; and Figure 6.13, page 96). With regard to consequences of cocaine abuse, rates in Indiana for substance abuse treatment admissions and arrests for possession and/or production/sales offenses have typically been lower than the national rates. While overall trends in consumption have been fairly stable in recent years, there is concern about the recent increases in negative consequences associated with cocaine abuse, specifically increases in treatment admissions and arrests for possession and/or production/sales of cocaine (Figure 6.6, page 92; Figure 6.17, page 98; and Figure 6.18, page 98).

## **Prevent and reduce the abuse of prescription drugs among 12- to 25-year-olds.**

While much more difficult to monitor than illicit drug abuse, the abuse of prescription drugs appears to be a significant problem in the nation, and especially in Indiana. Using treatment admission data, Indiana's estimated rate of abuse exceeds that for the nation for prescription pain relievers (7.5% v. 6.0% respectively; Figure 9.2, page 158) and benzodiazepines (3.7% versus 2.2%; Figure 9.6, page 160). School surveys also indicate that abuse of Ritalin® is also a more common problem in Indiana than in the nation (3.8% v. 0.2%; Figure 9.8, page 161). The abuse of prescription drugs appears to be most severe among adolescents age 12 to 17 years of age (8.3% versus 7.5% in the United States; Figure 9.1, page 158) and especially young adults between the ages of 18 and 25 (14.4% versus 11.95% in the United States; Figure 9.1, page 158). In addition to being concentrated among younger age groups, prescription drug abuse is significantly more common among women and Whites (Figure 9.10, page 162 and Figure 9.11, page 163).

## **Prevent and reduce the use of methamphetamine among Black youth and among White women and men 18 to 44 years of age.**

Compared with alcohol, tobacco, marijuana, and cocaine, methamphetamine is not as significant a problem in Indiana. Special law enforcement efforts and new state laws regulating the sale and distribution of ephedrine or pseudoephedrine have been successful in slowing the production and availability of methamphetamine (e.g., the number of lab seizures dropped from 1,549 in 2004 to 1,300 in 2005; Figure 8.13, page 133). There also has been a slight decline both nationally and in Indiana in the numbers of young people reporting having ever used methamphetamine (from 8.2% in 2003 to 7.0% in 2005; Figure 8.1, page 127). School surveys suggest that use among Hoosier students is generally on the decline, but there is evidence that methamphetamine use is rising among Black youth (from 2.7% in 2003 to 3.7% in 2005; page 121). There is, however, some indication that the negative consequences of methamphetamine abuse may be increasing. Specifically, treatment admissions for methamphetamine abuse, while slightly lower than national averages, have increased steadily in Indiana

from 4.0% in 2000 to 9.2% in 2004 (Figure 8.6, page 129), with those between the ages of 18 and 44 having the most significant increases (Figure 8.11, page 132). This may suggest that, despite significant gains in efforts to curb the methamphetamine problem, those who continue to use into young adulthood are experiencing more significant problems associated with abuse and dependence.

Together, these priorities outline the most pressing substance use prevention challenges facing our state and provide the foundation of a strategic framework within which to focus prevention planning and program development. While the data clearly highlight these specific concerns, the SEOW also observed that these patterns are highly inter-related. As discussed in detail in Chapter 10, a majority of those admitted for treatment in Indiana report abusing two or more substance at admission, with alcohol, tobacco, and marijuana being the substances most frequently mentioned among polysubstance abusers. This pattern of polysubstance abuse is significantly higher in Indiana than the nation and suggests the possibility that our substance abuse problems may, in fact, be having a mutually reinforcing or synergistic effect on one another. Indeed, while polysubstance abuse is most common in Indiana among Whites and men admitted for treatment, the rates of polysubstance abuse actually increase nearly seven-fold between the under 18 and the 18 to 24-year-old age groups. This observation is particularly important given that late adolescence and early adulthood stand out in most of the priorities as the target age group of greatest epidemiological concern. Clearly, the interconnected-nature of these epidemiological priorities should be considered carefully in the development of Indiana's strategic prevention plan.

