I. REPORT

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INTRODUCTION

Overview

In spring, 2011, the Indiana Prevention Resource Center (IPRC) conducted the 21st Annual Survey of Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents, referred to hereafter as the Indiana Survey. The IPRC has conducted the Indiana Survey, and has managed and reported the resulting data, since 1991. This project is administered through a contract with the Division of Mental Health and Addiction (DMHA) of the Indiana Family and Social Services Administration (FSSA). The purpose of this project is to provide data for state and local planning with respect to the use of alcohol, tobacco, and other drugs (ATOD), gambling behaviors, and risk and protective factors.

In February, March, and April, 2011, local school officials administered surveys to students in Grades 6 through 12 in 478 schools throughout Indiana. A total of 168,801 youth from both public and nonpublic schools completed a written survey that asked about their use of various drugs, their age of first use of various drugs, and risk and protective factors. This process resulted in 152,678 usable surveys, the primary source of the data reported here. The Methodology section describes this process in more detail. The instrument is located in the appendix.

This report summarizes the findings of the 2011 Indiana Survey. These findings include statistics and other information about the prevalence of ATOD use, gambling behaviors, and risk and protective factors. Statewide prevalence-of-use data are shown for previous years to help distinguish trends and facilitate comparisons among years. National prevalence estimates, reported by Monitoring the Future (MTF) (Johnston, O'Malley, Bachman, & Schulenberg, 2011) and the US Centers for Disease Control and Prevention (CDC, 2009), are provided to facilitate comparison with the United States as a whole. For a summary of findings, see the Results section.

Other surveys, such as the Youth Risk Behavior survey (YRBS) (CDC, 2009) and MTF, collect representative state-level data for Indiana. However, the results of these data are not reported for sub-state regions, nor are local results available to local participants. The strength of the Indiana Survey is its ability to describe reported ATOD use at the local level. This reporting facilitates local needs assessment, planning, and evaluation of drug abuse prevention activities. The IPRC provides a report of local results to each participating school corporation free of charge. Data from an individual school corporation is the property of that corporation. Local data may neither be released nor obtained without the written permission of the corporation where the survey was conducted.

National Outcome Measures (NOMs)

The Government Performance and Results Act of 1993 requires government agencies to report the results of their activities. In response, the United States Department of Health and Human Services' Substance Abuse and Mental Health Services Administration (SAMHSA) designated a set of measures, called the National Outcome Measures (NOMs), for substance abuse prevention (Substance Abuse and Mental Health Services Administration [SAMHSA], 2008). SAMHSA collects the NOMs through its National Survey on Drug Use and Health (NSDUH) for all states, and it reports these data for states and sub-state regions (SAMHSA, 2008). The Indiana Survey collects data on the majority of the substance abuse prevention NOMs for youth, and the IPRC also reports that data for Indiana as a whole and for the sub-state regions.

Increasingly, federal and state agencies require the NOMs for needs assessments and evaluations of local prevention programs that they fund. To compete for grants and to measure outcomes without developing new surveillance capacity, communities will need to be able to capture, track, and analyze the NOMs at the local level.

A unique benefit of participating in the Indiana Survey is that participants receive NOMs data on their own schools and communities. The Indiana Survey collects NOMs data on alcohol, tobacco, marijuana and a variety of other illicit drugs for the following measures:

- thirty day prevalence of use,
- perceived risk of harm,
- age of first use, and
- perception of peer disapproval.

Communities That Care (CTC)

Since 2005, Indiana has received funding through the Strategic Prevention Framework State Incentive Grant (SPF-SIG) to expand its prevention infrastructure and decrease substance use and related consequences. A total of 20 communities were sub-recipients of these funds. With the end of this grant funding in sight, the State has adopted an evidence-based planning model, called Communities That Care (CTC), to facilitate further expansion of the Strategic Prevention Framework (SPF) across Indiana's fourteen Defined Service Areas (DSAs). The CTC complements the SPF through its focus on risk and protective factors among youth and adolescents, and its promotion of data-driven decision-making and evaluation. This year, for the second time, the item content in the Indiana Survey has been modified to align

with the essential risk & protective factors from the CTC Survey. The 2011 Indiana Survey results will provide DSAs with additional data needed to assess prevention needs and to identify appropriate evidence-based programs, policies, and practices.

Changes to the Survey Instrument

Where applicable, the category of influence that an item belongs to according to CTC is identified in brackets [ ] in the right margin.

Changes to Existing Items

The following items were modified in the 2011 survey. Words added this year appear in *italics*.

■ How easy would it be for you to get…

Cigarettes?
Beer, wine or liquor *(for example, vodka, whiskey or gin)?*
Marijuana?
A drug like cocaine, LSD or amphetamines?

- Very difficult
- Fairly difficult
- Fairly easy
- Easy

■ During the past year, did you attend or participate in an *"Afternoons R.O.C.K. in Indiana" after-school prevention program, L.E.A.D. Initiative, SADD or other prevention group at your school?*

- Yes
- No

New Items

We added the following items to the 2011 survey. Response choices follow the item in a bulleted list.

■ The next few questions ask about your family and friends. [Family]

My parents ask me what I think before most family decisions affecting me are made.
If I had a personal problem, I could ask my mom or dad for help.
My parents give me lots of chances to do fun things with them.

- YES!
- yes
- no
- NO!

■ Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have… [Peer-Individual]

Been members of a gang?
Participated in clubs, organization, or activities at school?
Made a commitment to stay drug-free?
Liked school?
Regularly attended religious services?
Tried to do well in school?

- None of my friends
- 1 of my friends
- 2 of my friends
- 3 of my friends
- 4 of my friends

■ Please answer the following questions: [School]

In my school, students have lots of chances to help decide things like class activities and rules.
Teachers ask me to work on special classroom projects.
My teacher(s) notices when I am doing a good job and lets me know about it.
There are lots of chances for students in my school to get involved in sports, clubs, and other school activities outside of class.
There are lots of chances for students in my school to talk with a teacher one-on-one.
I feel safe at my school.
The school lets my parents know when I have done something well.
My teachers praise me when I work hard in school.
I have lots of chances to be part of class discussions or activities.

- YES!
- yes
- no
- NO!

■ These questions ask about the neighborhood and community where you live. [Community]

My neighbors notice when I am doing a good job and let me know.
There are people in my neighborhood who are proud of me when I do something well.
There are people in my neighborhood who encourage me to do my best.

- YES!
- yes
- no
- NO!

Regional Reporting

This year, for the fifth time, this report presents prevalence data broken out at the level of FSSA's sub-state planning regions. These eight regions are aggregates of the State's 92 counties, as indicated in Table 1. Prevalence data for sub-state planning regions provides more targeted information than statewide data. Regional results are detailed in the Results section.

Table 1. *Indiana Family and Social Services Administration Planning Regions*

Sub-state Regions	Counties
Central	Boone, Hamilton, Hancock, Hendricks, Johnson, Marion, Morgan, Shelby
East	Blackford, Delaware, Fayette, Grant, Henry, Jay, Madison, Randolph, Rush, Union, Wayne
North Central	Cass, Elkhart, Fulton, Howard, Kosciusko, La Porte, Marshall, Miami, St. Joseph, Tipton, Wabash
Northeast	Adams, Allen, De Kalb, Huntington, LaGrange, Noble, Steuben, Wells, Whitley
Northwest	Jasper, Lake, Newton, Porter, Pulaski, Starke
West	Benton, Carroll, Clay, Clinton, Fountain, Monroe, Montgomery, Owen, Parke, Putnam, Sullivan, Tippecanoe, Vermillion, Vigo, Warren, White
Southeast	Brown, Bartholomew, Decatur, Franklin, Lawrence, Jackson, Jennings, Ripley, Dearborn, Orange, Washington, Scott, Jefferson, Ohio, Switzerland, Crawford, Clark, Harrison, Floyd
Southwest	Greene, Knox, Daviess, Martin, Gibson, Pike, Dubois, Posey, Vanderburgh, Warrick, Spencer, Perry

Defined Service Area Reporting

This year, for the second time, this report presents prevalence data broken out at the level of defined service areas (DSAs). The DSAs are predefined geographic areas with a minimum of approximately 10,000 targeted youth, consisting of one or more counties in Indiana, and served by a single "Local Prevention Services Coalition." These fourteen areas are aggregates of the State's 92 counties, as indicated in Table 2. DSAs will continue to be the units for direct service implementation of Afternoons R.O.C.K. in Indiana afterschool programs. In 2010, DMHA initiated the expansion of the SPF and CTC at the DSA level. Prevalence, risk and protective factor data for DSAs provide more targeted information than statewide or regional data. DSA results are detailed in the Results section.

Table 2. *Defined Service Areas*

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

RESULTS

This section of the monograph summarizes

- statistically significant changes in statewide prevalence measures from 2010 to 2011
- regional findings
- Defined Service Area findings
- important patterns relating risk and protective factors to substance use, and
- consequences of use

Alcohol, Tobacco, and Other Drugs

Statewide Prevalence Rates

For many measures and grades, the Indiana Survey results yielded no statistically significant differences between this year and last year. Because this section focuses on changes, prevalence rates for certain grades and drugs may not be mentioned in this section. Complete results from the Indiana Survey appear in subsequent sections of this report.

Gateway Drugs

Research has shown that the majority of individuals' illicit drug use occurs only after they use cigarettes, alcohol, or marijuana. These three substances are known as the "gateway drugs" (Bailey, 1992; Donovan & Jessor, 1983; Fleming, Leventhal, Glynn, & Ershler, 1989; Golub & Johnson, 2001; Kandel & Yamaguchi, 1993).

Gateway Drug Use in Grades 6 to 8

Tobacco use in Grades 6 to 8

The lifetime use of cigarettes deceased among youth in Grades 6 to 8. Monthly use of cigarettes decreased among youth in Grades 6 and 8, and held steady among youth in Grade 7. While this year's prevalence rates of cigarette use may be compared with last year's rates, they should not be compared with those previous to 2010. Last year, the response options to the cigarette item were modified to give respondents the option of having smoked at least 1 time (i.e. "1-5 times"), whereas previously the lowest level of smoking possible to select was "a few times."

The lifetime use of cigars decreased for youth in Grades 6 and 8, and held steady for youth in Grade 7, while monthly use of cigars decreased among youth in Grades 6 to

8. Lifetime use of smokeless tobacco decreased among youth in Grades 6 and 8, and monthly use of smokeless tobacco decreased among students in Grade 6. However, lifetime use of tobacco in pipes increased among students in Grade 7.

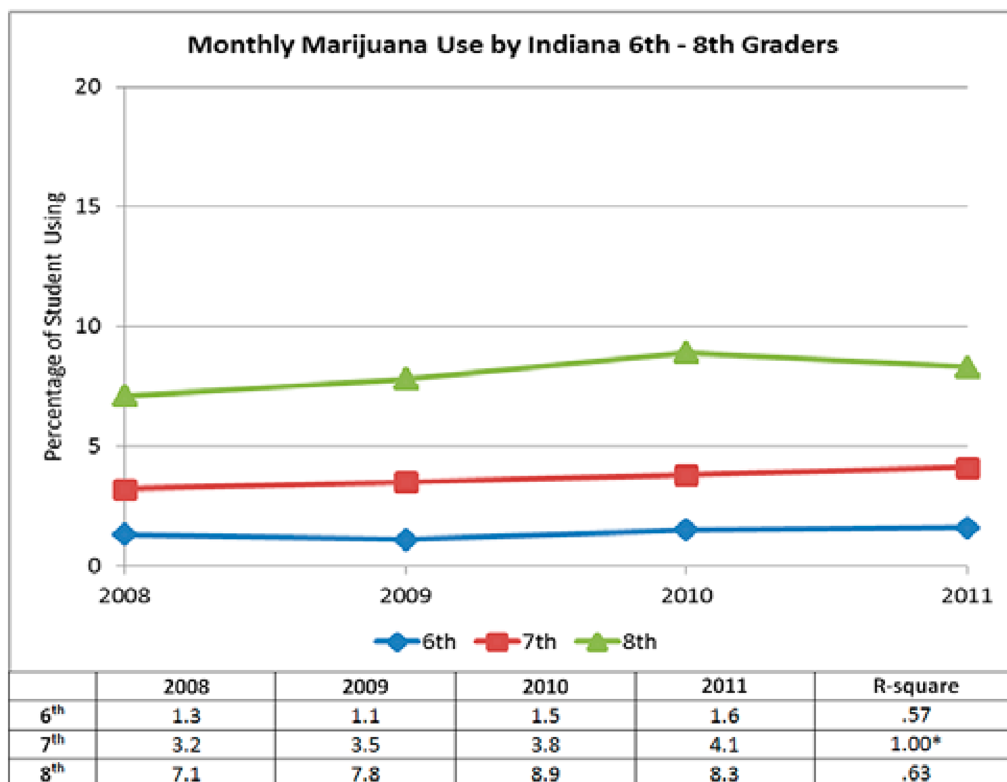
Alcohol use in Grades 6 to 8

The reported lifetime and monthly use of alcohol among youth in Grades 6 to 8 decreased compared to last year's data. These changes continue a downward trend in lifetime use of alcohol since the early 1990s.

The reported prevalence of binge drinking decreased among students in Grade 8 and held steady among students in Grades 6 and 7.

Marijuana use in Grades 6 to 8

Reported lifetime use of marijuana increased for youth in Grades 6 and 7, and decreased for youth in Grade 8. In addition, the past-month prevalence rates for marijuana use held steady for youth in Grades 6 and 7, and decreased for youth in Grade 8. Among youth in Grade 8, this change marks the end of an upward trend in monthly use of marijuana that occurred between 2008 and 2010 (see Figure 1). However, a non-significant increase among youth in Grade 7 continues a significant upward trend in monthly marijuana use (see Figure 1). The prevalence rate for past 30-day marijuana use among Indiana's eighth-grade youth is higher than the 2010 national prevalence rate (Johnston, O'Malley, Bachman, & Schulenberg, 2011).



	2008	2009	2010	2011	R-square
6th	1.3	1.1	1.5	1.6	.57
7th	3.2	3.5	3.8	4.1	1.00*
8th	7.1	7.8	8.9	8.3	.63

Figure 1. Monthly use of marijuana by Indiana 6th through 8th graders

Note. * Statistically significant (R-square > .80).

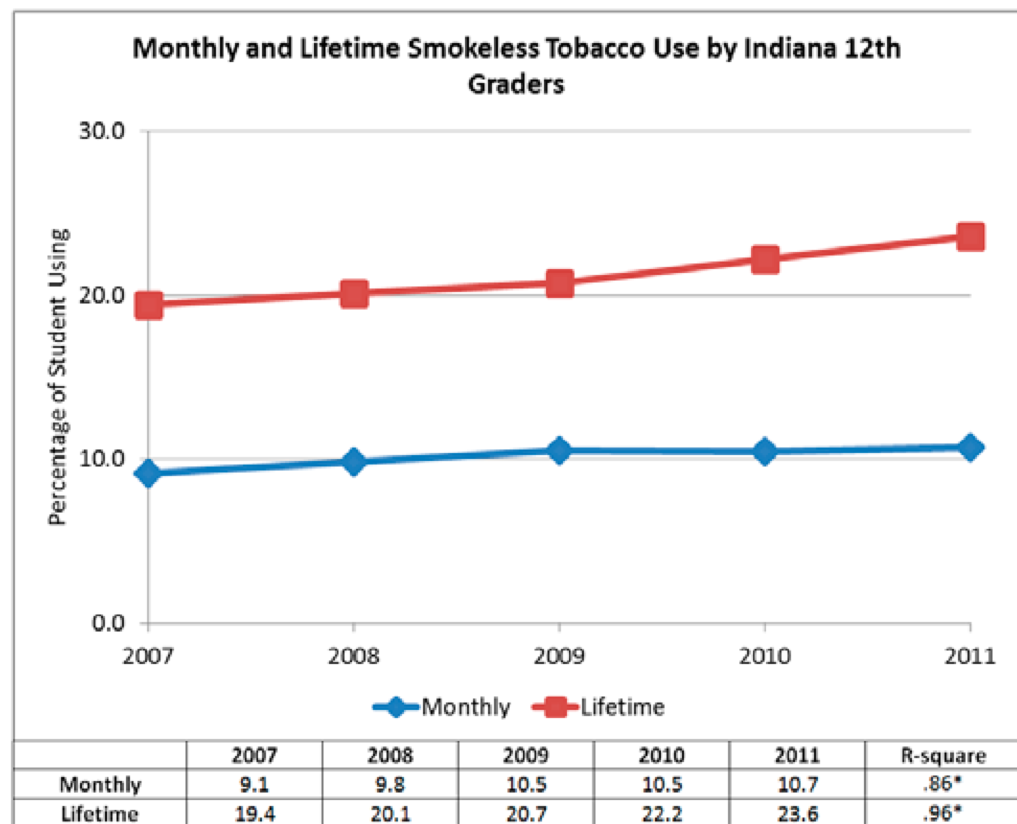
Gateway Drug Use in Grades 9 to 12

Tobacco use in Grades 9 to 12

Reported lifetime use of cigarettes among youth in Grades 9 to 12 decreased in a manner consistent with the trend observed in previous years. Reported monthly use of cigarettes among youth in Grades 9 to 11 decreased, but the monthly prevalence rate held steady among youth in Grade 12.

Lifetime use of cigars decreased for youth in Grades 10 and 11, and monthly use decreased for youth in Grade 10. Lifetime and monthly use of tobacco in pipes held steady for youth in Grades 9 to 12, except for a decrease in monthly pipe use among youth in Grade 9.

In addition, lifetime smokeless tobacco use increased for youth in Grade 12, and held steady for youth in Grades 9 to 11. Monthly use of smokeless tobacco decreased among youth in Grade 9, and held steady for youth in Grades 10 to 12. These changes, which include a non-significant increase in monthly use among youth in Grade 12, mark an upward trend in lifetime and monthly use of smokeless tobacco among 12th graders observed since 2007 (see Figure 2).



	2007	2008	2009	2010	2011	R-square
Monthly	9.1	9.8	10.5	10.5	10.7	.86*
Lifetime	19.4	20.1	20.7	22.2	23.6	.96*

Figure 2. Monthly and lifetime use of smokeless tobacco by Indiana 12th graders
Note. * Statistically significant (R-square > .80).

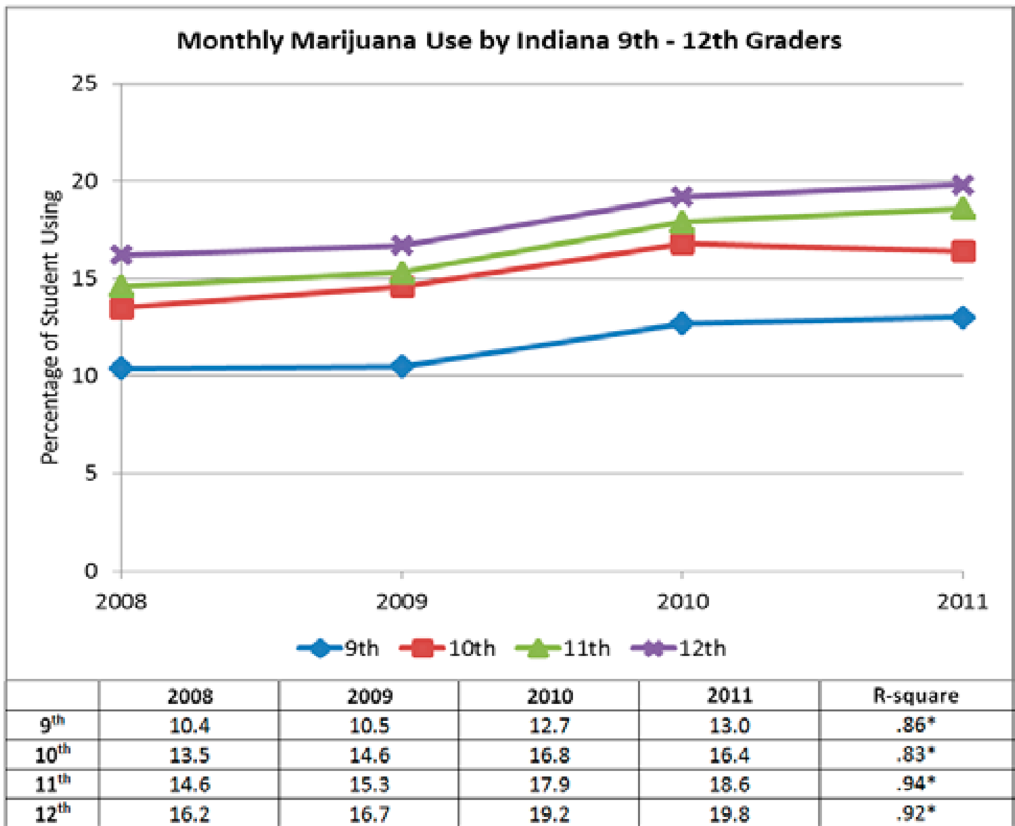
Alcohol use in Grades 9 to 12

The reported lifetime prevalence of alcohol use among students in Grades 9 to 12 decreased, as did monthly alcohol use among youth in Grades 10 and 12. These changes continue a downward trend in lifetime use of alcohol since the early 1990s.

The reported prevalence of binge drinking held steady for students in Grades 9 to 12.

Marijuana use in Grades 9 to 12

The reported prevalence of lifetime and past-month use of marijuana held steady among youth in Grades 9 to 12. While these rates are not significantly different from those reported last year, they represent a continuation of the increasing trend of monthly marijuana use that was observed beginning in 2008 (see Figure 3). Prevalence rates of past 30-day marijuana use among Indiana's tenth and twelfth-grade youth are lower than the 2010 national prevalence rates (Johnston, O'Malley, Bachman, & Schulenberg, 2011).



	2008	2009	2010	2011	R-square
9th	10.4	10.5	12.7	13.0	.86*
10th	13.5	14.6	16.8	16.4	.83*
11th	14.6	15.3	17.9	18.6	.94*
12th	16.2	16.7	19.2	19.8	.92*

Figure 3. Monthly use of marijuana by Indiana 9th through 12th graders

Note. * Statistically significant (R-square > .80).

Methamphetamine

This is the seventh year that the Indiana Survey included questions about methamphetamine.

Compared to last year, the reported prevalence rates of lifetime use of methamphetamine held steady for youth in Grades 6 to 12, and monthly use increased only for youth in Grade 12 (see Table 3). Prevalence rates of monthly methamphetamine use among Indiana's eighth, tenth, and twelfth-grade youth are higher than 2010 national prevalence rates reported in Monitoring the Future (Johnston, O'Malley, Bachman, & Schulenberg, 2011).

Table 3. *Methamphetamine use by youth in grades 6 to 12*

Grade	2006	2007	2008	2009	2010	2011	Nation 2010#
6							
Lifetime	0.5	0.4	0.4	0.4	0.5	0.5	
Monthly	0.2	0.1	0.2	0.2	0.3	0.3	
7							
Lifetime	1.2	1.0	0.9	0.9	0.9	1.0	
Monthly	0.6	0.5	0.4	0.5	0.5	0.5	
8							
Lifetime	2.0	1.6	1.5	1.5	1.5	1.5	1.8
Monthly	0.9	0.7	0.7	0.6	0.8	0.9	0.7
9							
Lifetime	3.0	2.2	2.0	2.1	2.0	1.9	
Monthly	1.2	0.8	0.9	0.8	0.9	0.9	
10							
Lifetime	3.5	3.0	2.5	2.3	2.2	2.2	2.5
Monthly	1.2	1.0	1.0	0.9	1.0	0.9	0.7
11							
Lifetime	4.2	3.3	2.8	2.6	2.6	2.7	
Monthly	1.5	1.1	0.9	0.9	1.2	1.3	
12							
Lifetime	5.0	3.4	2.7	2.7	2.5	2.8	2.3
Monthly	1.5	1.0	0.9	0.9	1.0	1.3*	0.5

* Statistically significant changes between 2010 and 2011 prevalence rates ($p<.05$).
# Johnston, O'Malley, Bachman, & Schulenberg, 2011.

Other Drugs

In the 2008 Survey, the word "Adderall" was added to the item that had previously contained only "Ritalin," so that the item would measure the use of either Ritalin or Adderall. In the 2010 Survey, this item was changed to "Prescription drugs (such as Ritalin, Adderall, Xanax) to get high." This wording was adopted from the CTC survey. Compared to 2010, the lifetime prevalence of prescription drug use to get

high decreased for youth in Grades 8 to 11, and monthly use decreased for youth in Grades 8, 10, and 11. Because of the change to the survey instrument, these rates are not comparable with those observed prior to 2010.

The reported lifetime use of over-the-counter drugs to get high decreased for youth in Grades 6 and 8 to 10. Because the item was modified in 2010 to include the wording "…to get high," in place of the wording "non-medical use," the 2011 rates are not comparable with those observed prior to 2010.

The lifetime and monthly prevalence rates of hallucinogen drug use increased compared to last year for Grade 12. However, this finding should be interpreted with caution. This item was consolidated in the 2010 Survey to "Hallucinogens (LSD, PCP)," from two items in previous year's surveys: "LSD (acid)" and "Other Psychedelics (psilocybin, mescaline, etc.)." Therefore, prevalence rates obtained this year (2011) are not comparable with those observed prior to 2010.

Monthly use of several other substances, including cocaine, crack, and amphetamines, held steady among youth across all grade levels.

The reported lifetime and monthly prevalence rates of heroin use held steady among youth across all grade levels. However, the prevalence of monthly heroin use among Indiana's twelfth-grade youth is three times higher than the 2010 national prevalence rate reported in Monitoring the Future (Johnston, O'Malley, Bachman, & Schulenberg, 2011).

The reported lifetime and monthly prevalence of ecstasy decreased or held steady among youth in all grade levels. This item was modified to read "Ecstasy (MDMA, X, XTC)," whereas in previous years it appeared as "MDMA (ecstasy, XTC, X)." As such, the 2011 rates are not comparable with those observed prior to 2010.

The lifetime and monthly prevalence of tranquilizer use held steady or decreased among students in all grade levels. This item was modified to read "Tranquilizers (downers)" in 2010, whereas it previously appeared as "Tranquilizers or Sleeping Pills (downers) (non-prescribed)," thus the 2011 rates are not comparable with those observed prior to 2010.

Lifetime and monthly prevalence of inhalant use decreased or held steady among youth in all grade levels. Among youth in Grades 6 to 8, these rates represent a continuation of a downward trend observed for at least a decade.

This was the second year that the survey contained an item about "Prescription painkillers (Vicodin, OxyContin, Percocet) to get high." Lifetime and monthly prevalence of prescription painkillers decreased or held steady among youth in all grade levels. This new item is not comparable to the item about "narcotics (opium,

morphine, codeine, oxycontin) (non-prescribed)" used in years prior to 2010.

Race and Ethnicity

We report past 30-day prevalence rates for selected drugs for three race/ethnicity categories: Non-Hispanic White, Non-Hispanic Black or African-American, and Hispanic. We provide national data for comparison. Complete prevalence rates for each of these race/ethnicity categories by grade of respondent are reported in the tables section of this monograph.

For this section of the report, we used the Youth Risk Behavior Survey (YRBS) for national comparison data. The national survey to which we usually compare prevalence measures, Monitoring the Future, was less appropriate for comparison since it provides only approximate weights for race/ethnicity subgroups; it reports data only for non-Hispanic Whites, non-Hispanic Blacks, and Hispanics, and it provides only two-year averages—rather than single-year estimates—for prevalence measures. The YRBS dataset is readily available (CDC, 2009), allowing for the calculation of the statistical significance of differences. The YRBS uses a race/ethnicity categorization similar to ours. Though YRBS questions are worded differently from ours, we chose to report in this section a concept (any use in the past 30 days) that is common to both instruments.

Table 4 shows the average prevalence of past 30-day use for respondents in Grades 9 to 12 by race/ethnicity category. YRBS national prevalence rates are provided for comparison. Statistically significant differences between Indiana prevalence rates and national prevalence rates ($p<.05$) are denoted with an asterisk (*). The substances shown were those common to both surveys for past 30-day use.

The following statistically significant differences may be observed: Prevalence of use for Indiana Whites was lower than that of US Whites for all of these drugs. Indiana Blacks' prevalence of use was lower than US Blacks' for alcohol and cigars, but higher for binge drinking. Indiana Hispanics' prevalence of use was lower than US Hispanics' for alcohol and cigars, but higher for smokeless tobacco. These comparisons are generally, but not entirely, consistent with the comparisons made in last year's monograph. What differs from last year is that Indiana Blacks' prevalence rates of cigarette and cocaine use are no longer significantly higher than rates for US Blacks. In addition, Indiana Hispanics' prevalence rates of marijuana use is no longer significantly lower than the rate for US Hispanics. It is notable that the Indiana Survey and the YRBS found very different prevalence rates for alcohol use across all race/ethnic groups. While we cannot explain this difference, it has appeared in the data from the two studies for many years.

Table 4. *Prevalence of past 30-day use of substances by race/ethnicity, students in Grades 9 to 12, Indiana Survey and United States (YRBS 2009)*

Substance	IN	US	Substance	IN	US
Cigarettes*	18.8	19.5	Alcohol*	29.9	41.8
White*	18.9	22.5	White*	29.4	44.7
Black	10.9	9.5	Black*	28.2	33.4
Hispanic	19.5	18.0	Hispanic*	32.8	42.9
Smokeless tobacco*	8.3	8.9	Binge drinking *#	19.7	24.2
White*	8.7	11.9	White*	18.7	27.8
Black	2.5	3.3	Black*	19.1	13.7
Hispanic*	6.4	5.1	Hispanic	25.1	24.1
Cigars*	10.2	14.0	Marijuana*	16.7	20.8
White*	10.1	14.9	White*	14.9	20.7
Black*	7.7	12.8	Black	22.9	22.2
Hispanic*	10.1	12.7	Hispanic	21.3	21.6
Cocaine*	1.7	2.8			
White*	1.2	2.4			
Black	2.4	1.9			
Hispanic	3.9	4.3			

Notes.
IN = Indiana Survey by Indiana Prevention Resource Center, 2011.
US =Youth Risk Behavior Survey (YRBS) by CDC, 2009.
* $p < .05$
# Binge drinking was measured during the past 2 weeks for the Indiana Survey.

Gender

This year, for the fourth time, we present an analysis of differences in substance use prevalence between males and females. For this analysis, we calculated the difference between male and female past 30-day prevalence rates for each drug (see Table 5). We analyzed differences that were statistically significant ($p<.05$). An additional table (see Table 6) provides all prevalence periods for alcohol.

For most drugs and across all grades surveyed, the majority of users were male, and the male majority was usually larger in each successive grade.

However, six drugs had majority-female use in one or more grades in one or more prevalence periods. These drugs were: cigarettes, over-the-counter drugs, prescription drugs (such as Ritalin, Adderall, Xanax), inhalants, prescription painkillers (Vicodin, OxyContin, Percocet), and alcohol. These differences were observed only between Grade 7 and Grade 10, and the extent to which the majority of users statistically are female typically peaks in Grade 8.

Reported prevalence rates for alcohol use for binge drinking (past 2 weeks), past month, and lifetime generally were mixed between male and female majorities, with no clear pattern emerging.

Table 5. *Significant differences (p<.05) between male and female prevalence rates for any use in the past month*

Where females' prevalence is higher, the cell is black with white text; where males' prevalence is higher, the cell is white with black text. Differences of zero and non-significant differences between genders are indicated by a dash (-).

	Grade						
	6	7	8	9	10	11	12
Cigarettes	--	--	1.2	--	2.4	2.6	6.5
Over the counter drugs	--	0.4	1.1	1.1	--	--	1.6
Prescription drugs	--	--	0.6	0.6	--	--	2.0
Inhalants	--	--	0.5	--	0.7	1.7	3.4
Prescription painkillers	--	--	0.4	--	0.5	0.6	1.4
Amphetamines	--	--	--	--	--	0.5	0.8
Tranquilizers	--	0.3	--	--	0.5	--	1.3
Cocaine	--	0.2	--	0.3	0.7	1.2	1.0
Methamphetamines	--	0.4	0.3	0.6	0.8	1.2	1.1
Heroin	0.2	0.3	0.3	0.4	0.8	1.1	1.2
Crack	0.1	0.2	0.4	0.7	1.2	1.7	2.3
Ecstasy	--	0.2	0.4	0.5	0.9	1.2	1.8
Hallucinogens	0.5	0.8	--	2.3	4.2	5.8	7.7
Steroids	0.2	0.5	0.5	1.0	1.1	1.7	1.7
Marijuana	0.3	0.5	0.6	1.7	2.8	3.2	5.2
Pipe	0.2	0.4	0.6	0.7	0.9	1.2	1.3
Cigars	0.5	1.1	2.2	5.0	7.9	10.7	16.7
Smokeless tobacco	1.1	2.4	4.6	8.2	11.7	12.9	16.8

Table 6. *Significant differences (p<.05) between male and female prevalence rates alcohol use*

Where females' prevalence is higher, the cell is black with white text; where males' prevalence is higher, the cell is white with black text. Differences of zero and non-significant differences between genders are indicated by a dash (-).

	Grade						
	6	7	8	9	10	11	12
Past 2-week binge drinking	0.9	--	1.2	--	3.2	5.6	6.9
Past Month	0.9	--	3.5	2.3	--	3.0	4.9
Lifetime	5.1	2.7	2.3	3.0	1.6	--	--

Regional Prevalence Rates

This is the fourth year that this report presents the Indiana Survey results for Indiana's Family and Social Service Administration's sub-state planning regions (see Figure 4). Regional data provide more targeted information for local analyses. For the drugs studied, prevalence rates varied considerably among regions and between any given region and the state. This summary does not attempt to capture the extent of this variation; however, a few examples are provided.

Compared to all respondents, statewide, in the…

- Southeast Region, sixth through twelfth graders were more likely to report lifetime use of cigarettes and smokeless tobacco, and tenth through twelfth graders were more likely to report lifetime use of a variety of other substances.
- Northwest Region, sixth through tenth and twelfth graders were less likely to report lifetime use of smokeless tobacco, but students in seventh through twelfth grades were more likely to report lifetime use of a variety of other substances.
- Central Region, students in many grades were less likely to report lifetime use of cigarettes, smokeless tobacco, but students also reported higher prevalence rates for a variety of substances.
- Southwest Region, sixth through twelfth graders were less likely to report lifetime use of a variety of substances, such as marijuana.
- East Region, sixth through twelfth graders were more likely to report lifetime use of a variety of substances, including cigarettes and alcohol.

The reasons for the regional variation are not addressed in this report. Communities may gain a better understanding of their own youth drug use by comparing their prevalence rates (in their local report) to the regional rates presented in this report.

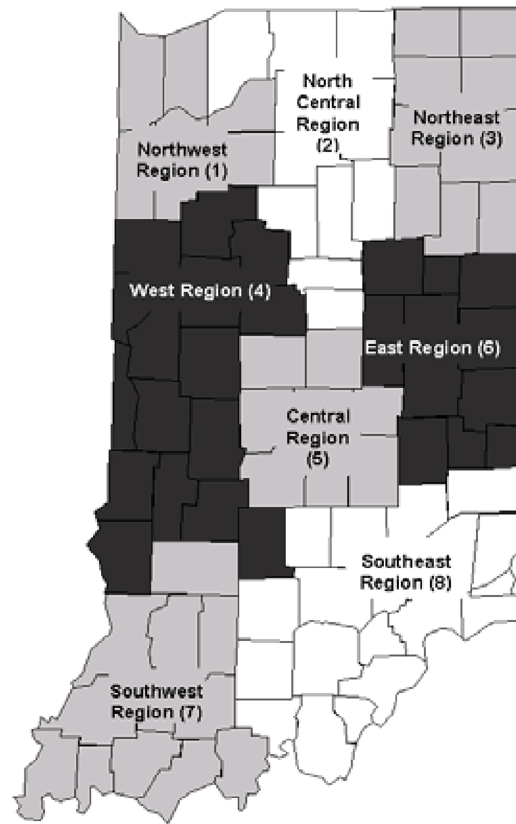


Figure 4. Indiana's Family and Social Service Administration's sub-state planning regions.

Defined Service Area Prevalence Rates

For the second time this year, the Indiana Survey presents results for Indiana's Defined Service Area's (DSAs) (see Figure 5). DSA data provide more targeted information for local analysis. For the drugs studied, prevalence rates varied considerably among DSAs and between any given DSA and the state. This summary does not attempt to capture the extent of this variation; however, a few examples are provided.

Compared to all respondents statewide, in …

- DSA 5, sixth through twelfth grade students were less likely to report lifetime use of a variety of substances, including cigarettes.
- DSA 7, sixth through twelfth graders were more likely to report lifetime use of cigarettes, and sixth through eighth graders were more likely to report lifetime use of alcohol.
- DSA 10, sixth through ninth graders were less likely to report lifetime use of alcohol.
- DSA 12, sixth, seventh, tenth, and eleventh grade students were more likely to report lifetime use of cigarettes.

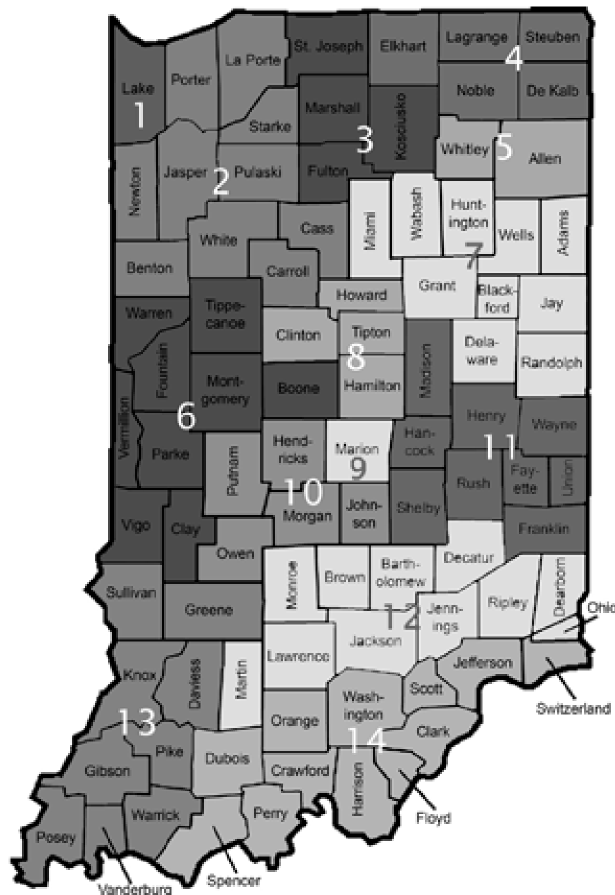


Figure 5. Indiana's Defined Service Areas

Risk and Protective Factors

Age of First Use

Research has shown that the younger a person is when she or he begins using alcohol, the more likely the person is to experience alcohol dependence and abuse (Grant, Stinson, & Harford, 2001; Warner & White, 2003). A recent study found that, compared to persons who began drinking at age 21 or older, those who began drinking before age 14 were more likely to experience alcohol dependence later in life (Hingson, Heeren, & Winter, 2006).

In the Indiana Survey data, age of first use was measured by asking, "At what age did you first use …? " From 1993 to 2006, response options for this question consisted of two-year intervals for ages 8 through 17 (i.e., 8-9 years, 10-11 years, etc.) and open-ended ranges for extreme responses ("7 or less years" and "18 or more years"). From 1993-2006, average age of first use was calculated using the midpoints of the intervals and the upper and lower endpoints for the extreme responses. Starting in 2007, responses included open-ended ranges at the extremes ("7 or younger" and "18 or older") and one-year intervals representing discrete ages (e.g., "8 yrs," "9 yrs," etc.). Average age of first use from 2007 to 2009 was calculated, as

before, with the endpoints of the extreme responses, and with the actual age of first use given for ages 8-17 years. In 2010, response options were changed to broaden the open-ended ranges at the extremes (“10 or younger” and “17 or older”), with one-year intervals representing discrete ages (e.g., “11 yrs,” “12 yrs,” etc.).

Over the years of Indiana Survey data, the average age of first use of gateway drugs (cigarettes, alcohol, and marijuana) has ranged consistently from 12 to 14 years (see Figure 6). Reported initiation of the gateway drugs exhibits a nearly consistent pattern: cigarettes first, then alcohol, followed by marijuana. There were no significant changes between 2010 and 2011 in the reported age of initiation for cigarettes (from 13.02 to 13.04), alcohol (from 13.21 to 13.20), or marijuana (from 13.92 to 13.89).

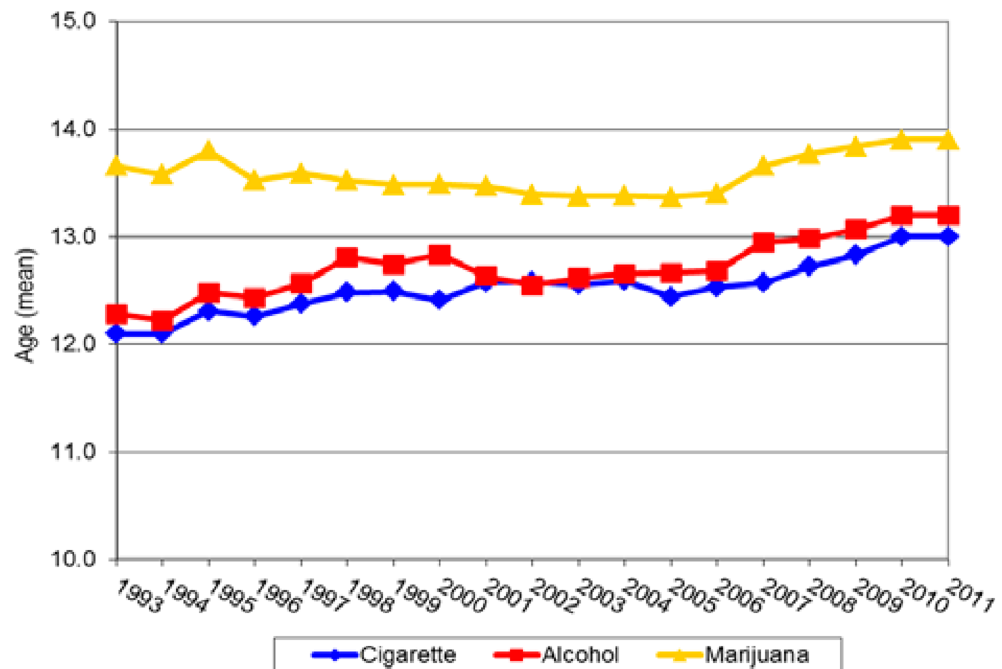


Figure 6. Trends in average reported age of first use of cigarettes, alcohol, and marijuana.

Perceived Risk of Harm

Prior research has demonstrated that perceived risk of harm of using drugs negatively is related to prevalence of use (Millstein & Halpern-Felsher, 2002; Wild, Hinson, Cunningham, & Bacchiochi, 2001). To examine this relationship in the Indiana Survey data, respondents’ perceived harm of using gateway drugs was correlated with reported monthly use of gateway drugs (see Table 7 for definitions of monthly use of gateway drugs). Perceived risk of harm was measured for the three gateway substances using this question: “How much do you think people risk harming themselves (physically or in other ways) if they… (a) smoke one or more packs of cigarettes per day, (b) smoke marijuana regularly, (c) have five or more drinks once or twice a week.”

Table 7. *Glossary of prevalence of monthly gateway drug use for all correlation analyses*

Monthly Use	
Cigarettes	How many times in the last month (30 days) have you used cigarettes?
Alcohol	How many times in the last month (30 days) have you used alcohol (beer, wine, liquor, wine coolers)?
Marijuana	How many times in the last month (30 days) have you used marijuana (pot, hash, weed)?

The results show that higher perceived risk of harm was associated with lower monthly use of cigarettes, marijuana, and alcohol (see Figure 7).

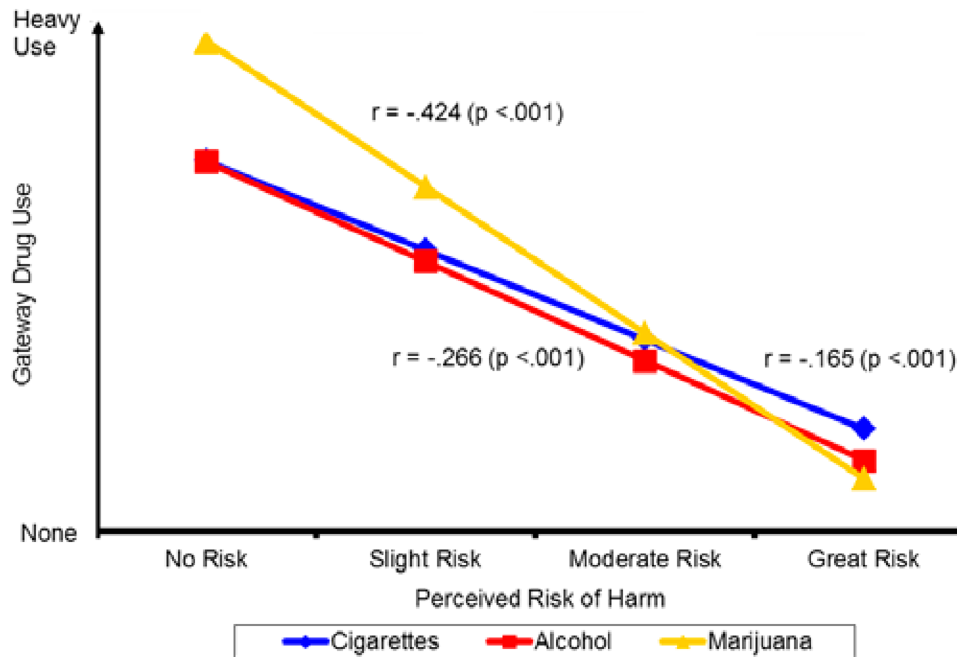


Figure 7. Line of best fit for the correlation of perceived risk of harm and monthly prevalence of gateway drugs.

Perceptions of Peer Disapproval

Research has demonstrated that peer perceptions of disapproval exert an influence that lowers drug use (Butters, 2004; Chassin, Presson, & Sherman, 1984). To examine this relationship in the Indiana Survey data, respondents' perceptions of peer approval were correlated with reported use of gateway drugs (see Table 7 for a definition of monthly use of gateway drugs).

Perceived peer approval was measured for three gateway drugs with the survey items: "How do you think your close friends feel (or would feel) about you doing each of the following things… (a) smoke one or more packs of cigarettes per day; (b) smoke marijuana regularly, (c) have five or more drinks once or twice a week."

The results illustrate that when reported perception of peer disapproval for a particular behavior is stronger, the reported level of the behavior is lower (see Figure 8).

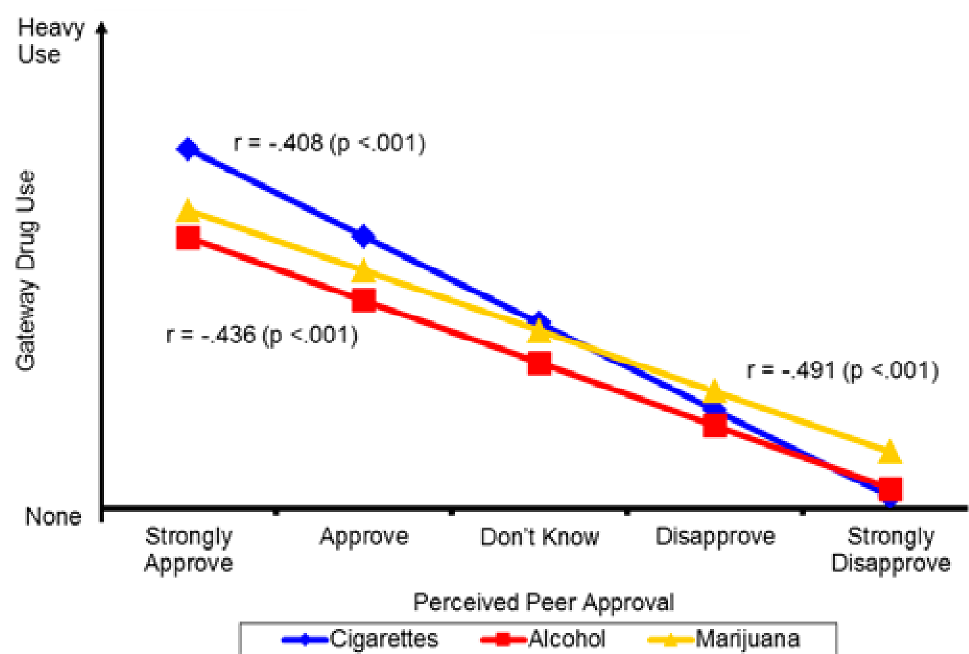


Figure 8. Line of best fit for the correlation of perceived peer approval and monthly prevalence of gateway drugs.

Perceptions of Parents' and Guardians' Approval

The Indiana Survey data measured perceived parental approval for the use of three gateway drugs with the following items: “How wrong do your parents feel it would be for you to… (a) smoke one or more packs of cigarettes per day; (b) smoke marijuana regularly, (c) have five or more drinks once or twice a week.” The results appear in the prevalence tables.

Adolescents’ perceptions of parental approval of substance use are positively related to the frequency of adolescents’ use of alcohol, tobacco and marijuana (McMaster & Wintre, 1996; Lee et al., 2000; Jessor & Donovan, 1978; Barnes & Welte, 1986). To examine this relationship in the Indiana Survey data, respondents’ perceptions of parents’ and guardians’ approval were correlated with reported use of gateway drugs in the previous month. Respondents tended to report engaging in these behaviors more often when they also reported stronger perceived parental approval for the behavior (see Figure 9). These findings are consistent with the research cited.

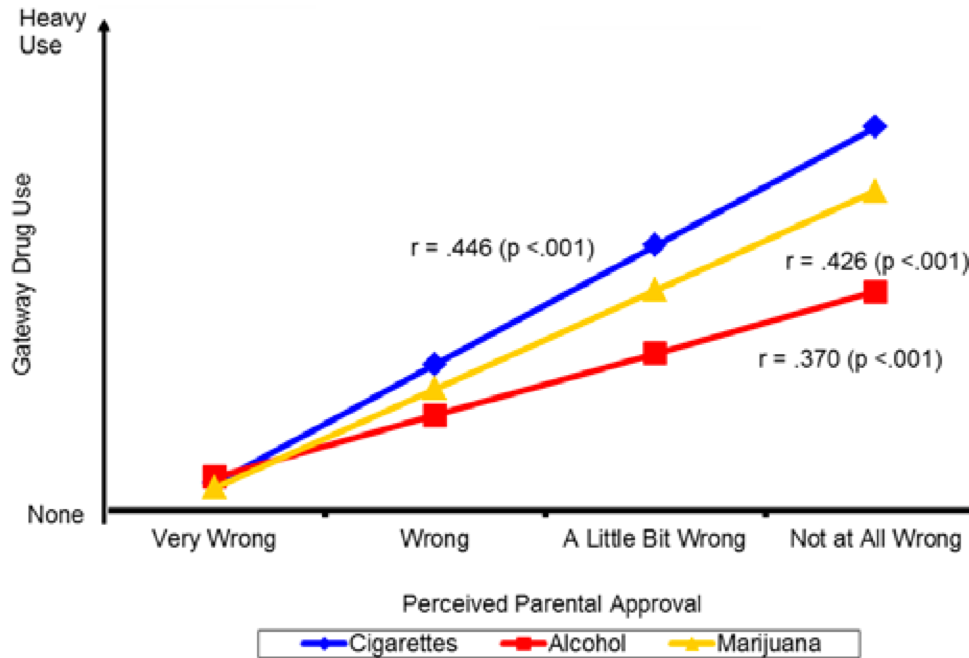


Figure 9. Line of best fit for the correlation of perceived parental approval and monthly prevalence of gateway drugs.

After-School Activities

Research has demonstrated that supervised after-school activities protect adolescents from using alcohol and other drugs (Grossman, et al., 2002; Riggs & Greenberg, 2004). To determine if this relationship exists in the Indiana Survey data, prevalence of monthly use of the gateway drugs was correlated with an item on student participation in after-school activities such as Afternoons R.O.C.K. in Indiana, L.E.A.D. Initiative, SADD, etc. The results illustrate that participation in after-school activities is associated with lower prevalence of gateway drug use (see Figure 10). These findings support the value of after-school programming as a strategy to prevent or reduce substance use among adolescent populations.

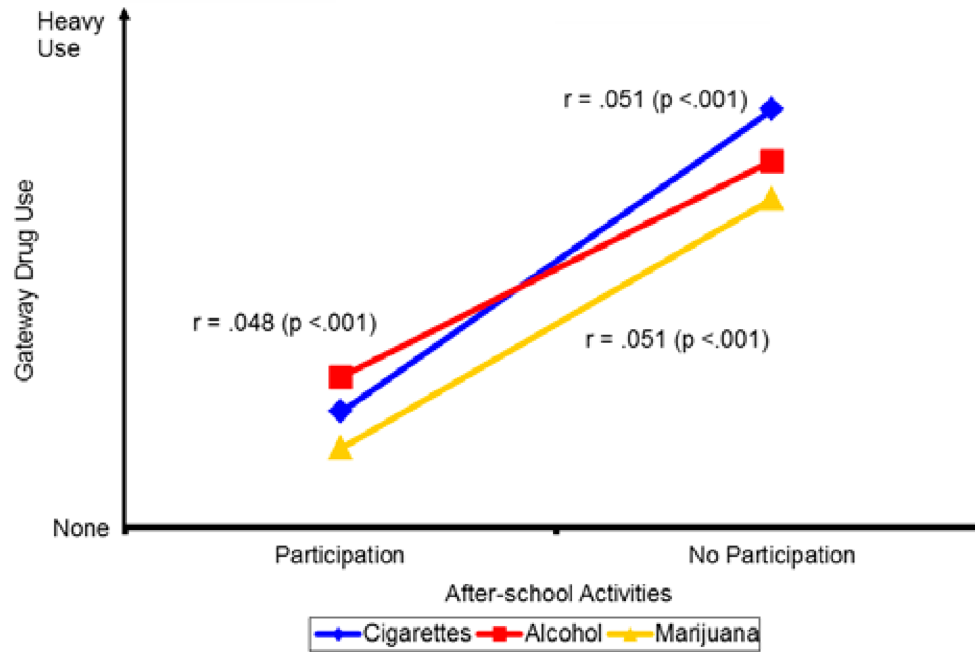


Figure 10. Line of best fit for the correlation of after-school activities and monthly prevalence of gateway drugs.

Perceived Availability of Drugs

Studies have shown that youth perceptions of available access to alcohol and other drugs puts them at risk for use of tobacco, alcohol, and marijuana (Kuntsche & Gmel, 2008; Gillespie, Neale, & Kendler, 2008; Lipperman-Kreda & Grube, 2009).

Perceived availability of drugs was measured by the following items: "How easy would it be for you to get… (a) Cigarettes, (b) Beer, wine or liquor (for example, vodka, whiskey or gin), (c) Marijuana, (d) A drug like cocaine, LSD or amphetamines."

The results indicate that perceptions of ease of access were associated with higher monthly use of tobacco products, alcohol, and marijuana (see Figure 11). These findings support the value of prevention actions that take into account the social acceptance of drinking and drug use and the physical availability of these drugs in the community.

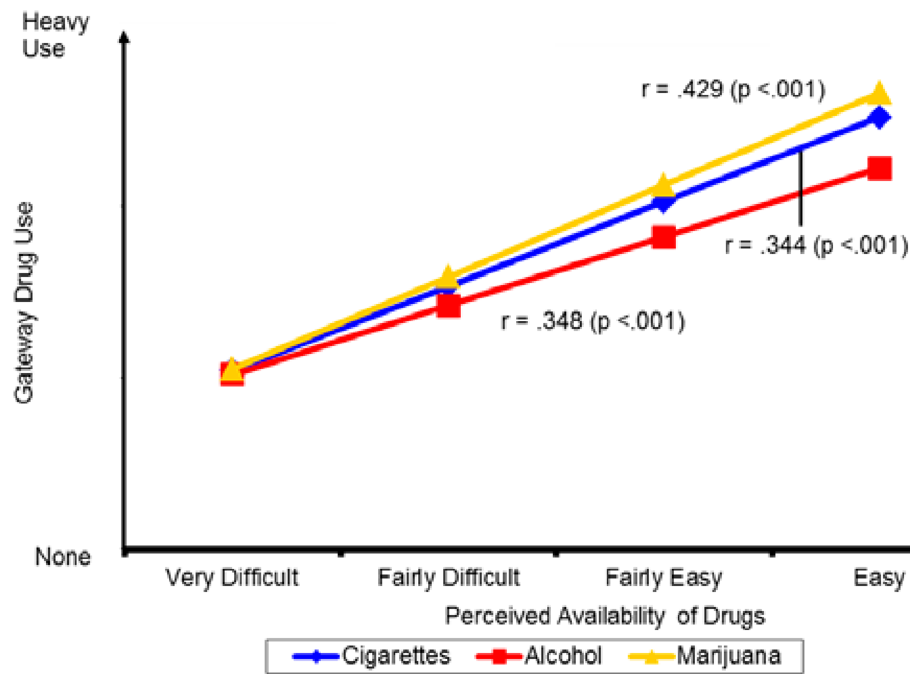


Figure 11. Line of best fit for the correlation of perceived availability of gateway drugs and monthly prevalence of gateway drugs.

Access to Alcohol

A public health strategy to reduce alcohol abuse by youth is to identify the primary sources of alcohol access and to target interventions to eliminate access at those points (Dent, et al., 2005). Adults over the age of 21 are common sources of alcohol access for youth (Wagenaar, et al., 1996; Jones-Webb, et al., 1997). However, the sources tend to vary by age. Younger adolescents tend to get alcohol from their homes and families, while older adolescents tend to get alcohol from friends and commercial sources (Harrison, et al., 2000; Hearst, et al., 2007).

The percentage of respondents who reported accessing alcohol from specific sources is shown for each grade in Table 8. The results are consistent with the research cited above. Family members were the primary source of alcohol for youth in Grades 6 to 9, excluding the “other ways” category, which potentially encompasses multiple other methods. The higher a respondent’s grade, the more likely the respondent was to report either (1) having had someone buy it for him or her or (2) having received it from a person aged 21 or older. Respondents in higher grades reported obtaining alcohol from commercial outlets at higher rates than did those in lower grades.

These results suggest that youth drinking could be reduced if parents and family members better understood the risk of harm to youth that alcohol presents, as well as ways to prevent youth from accessing alcohol kept in the home. In addition, the results suggest that persons age 21 and older may need to be informed of the laws and penalties that apply to purchasing and/or otherwise supplying alcohol to minors.

Table 8. *Main sources of alcoholic beverages in the past month (percentages)*

	Grade						
	6	7	8	9	10	11	12
No Answer	6.5	5.7	5.1	5.7	6.0	6.2	7.0
No drink	88.0	84.3	78.7	71.9	67.4	64.4	57.6
Restaurants/bars/clubs	0.1	0.0	0.1	0.1	0.2	0.2	0.3
Public events	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Had someone else buy it	0.3	0.9	1.9	4.3	6.9	9.3	12.6
Liquor stores/convenience stores/supermarkets	0.1	0.1	0.1	0.2	0.3	0.5	0.9
Received from person 21 or older	0.8	1.4	2.4	3.7	5.4	6.9	9.9
Took it from a store	0.1	0.2	0.3	0.3	0.3	0.5	0.3
Family members	2.0	3.4	5.0	5.4	5.0	4.4	4.1
Other ways	2.0	4.0	6.5	8.3	8.5	7.6	7.2
N	21,640	21,623	27,745	21,562	26,006	16,542	17,560

Reasons for Drinking Alcoholic Beverages

The percentages of respondents who reported specific reasons for drinking alcoholic beverages are shown in Table 9. Note that the majority of adolescents in Grades 6 to 9 reported no consumption of alcoholic beverages. Of those who did drink alcoholic beverages, the leading reasons reported were "to have a good time with friends," "to experiment," "because it tastes good," and "to relax or relieve tension."

Table 9. *Most important reasons for drinking (percentages; multiple responses allowed)*

Reason	Grade						
	6	7	8	9	10	11	12
Did not drink alcoholic beverages	81.4	73.7	63.4	53.9	47.3	43.4	37.6
To experiment	10.8	16.1	22.1	23.9	24.6	22.6	21.8
To relax or relieve tension	1.3	3.4	7.2	11.3	15.2	18.6	21.4
To feel good or get high	1.1	2.7	5.2	8.9	12.1	14.6	17.1
To seek deeper insights and understanding	0.5	0.8	1.5	2.3	2.3	2.7	3.3
To have a good time with friends	2.0	5.6	11.5	20.6	27.8	33.3	39.7
To fit in with a group I like	0.9	1.6	2.1	2.4	2.6	2.8	2.9
To get away from my problems	1.8	4.1	7.0	9.4	10.8	11.4	11.2
Because of boredom	1.9	4.3	7.3	9.2	11.3	11.9	12.6
Because of anger	1.6	2.9	5.0	6.2	6.8	7.2	6.9
To get through the day	0.6	1.2	1.9	2.5	2.5	2.5	2.4
To increase the effects of other drugs	0.3	0.5	1.0	1.7	2.2	2.5	2.8
To decrease the effects of other drugs	0.2	0.2	0.3	0.4	0.4	0.4	0.5
To get to sleep	0.6	0.9	1.7	2.2	2.5	2.9	3.6
Because it tastes good	2.7	5.9	9.9	13.6	15.5	17.3	18.9
Because I am hooked	0.5	0.8	1.0	1.2	1.2	1.2	1.4
N	21,640	21,623	27,745	21,562	26,006	16,542	17,560

In the Indiana Survey, respondents were instructed to mark as many reasons for drinking alcoholic beverages as apply. Figure 12 shows that, across grade levels, greater numbers of reasons given for drinking were associated with greater frequency of drinking alcoholic beverages during their lifetime.

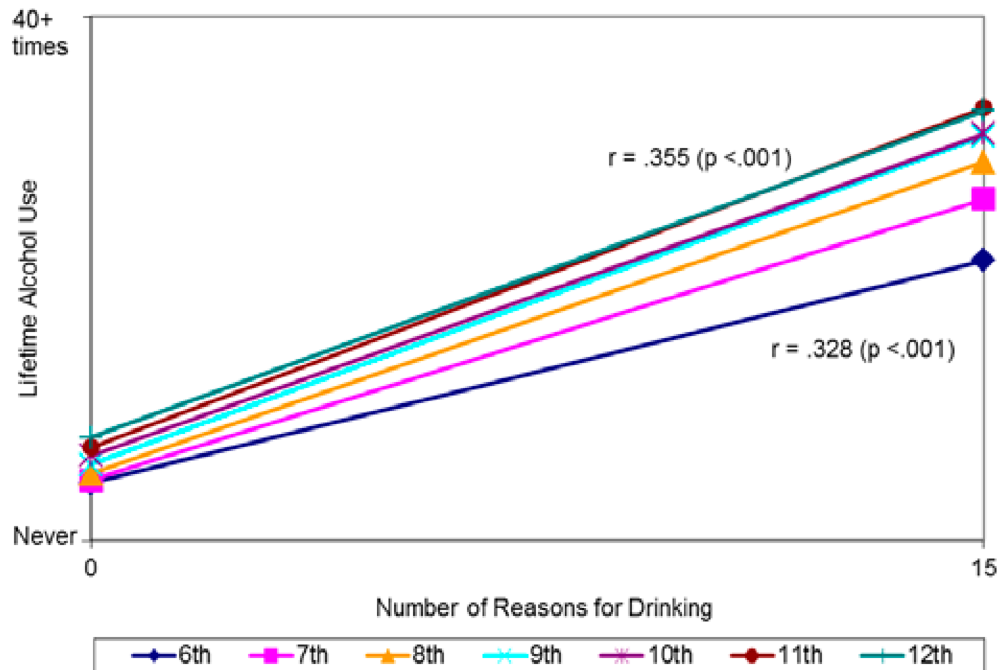


Figure 12. Number of reasons for drinking versus frequency of drinking during their lifetime.

To analyze the relationship between frequency of drinking and reasons given for drinking, respondents who reported any drinking during their lifetime were divided into three groups: least-frequent drinkers, intermediate-frequency drinkers, and highest-frequency drinkers. Figure 13 shows the relative frequency with which these three groups gave various reasons for their drinking.

Compared to the more frequent drinkers, the least frequent drinkers were markedly more likely to report drinking for experimentation or to fit into a group. The most frequent drinkers were the most likely to report drinking because they were hooked and to increase or reduce the effects of other drugs. Intermediate-frequency drinkers selected most reasons at about as often as did the lowest frequency drinkers. However, these two groups were distinguished from one another by their likelihood of reporting drinking to experiment (to see what it's like). The least frequent drinking group chose these options, respectively, about three times as often as the intermediate frequency drinkers.

Overall, the data suggest that infrequent drinkers tend to drink for social, recreational or coping reasons (e.g. to experiment; to fit into a group; boredom); whereas the most frequent drinkers do so to manage the physiological effects of alcohol or other drugs.

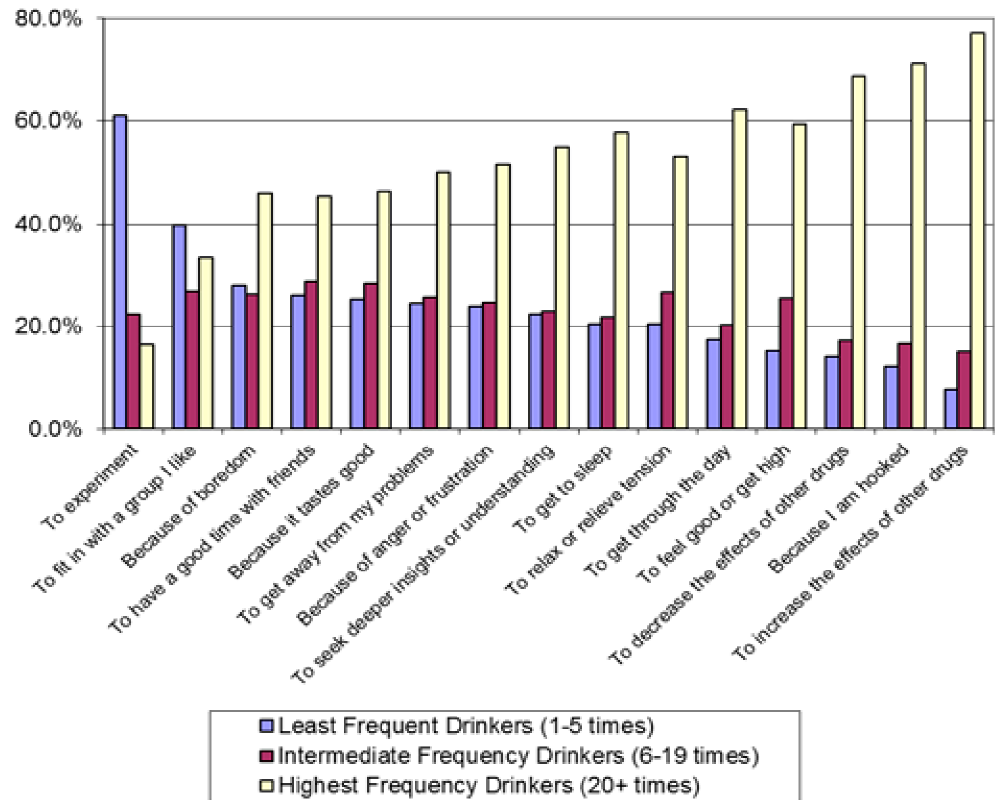


Figure 13. Lifetime alcohol use and reasons for drinking.

Communities That Care Risk and Protective Factors

Risk factors are conditions that increase the chances that children will become involved in problem behaviors in adolescence and young adulthood (Hawkins & Catalano, 2005). Measures included in the Indiana Survey from the Communities That Care (CTC) System can predict alcohol and other drug use, as well as delinquency, dropping out of school, teen pregnancy, violence, depression, and anxiety. Students with elevated risk factor scores have a higher likelihood of substance use and problem behaviors compared to those with low risk factor scores.

CTC is based on the Social Development Strategy that has as its principal focus the strengthening of protective factors. Protective factors are conditions that have a positive influence and “protect” or “buffer” against the negative influences associated with risk factors. The research-based Social Development Model has shown that positive social development in youth is promoted by the following basic factors: 1) opportunities for developmentally appropriate involvement; 2) skills; 3) recognition for effort, improvement and achievement; 4) strong social bonds; and 5) clear consistent standards for behavior. Though closely related, protective factors are not the opposite of risk factors but rather reduce the effects of existing risk factors.

A national study determined optimal cut points to define high and low risk and protective factor scores for students in Grades 6, 8, 10 and 12 (Arthur, Briney,

Hawkins, Abbott, Brooke-Weiss, et al., 2007). Although not shown, those cut points were used in Table 10 and Table 11 to calculate the percentages of Indiana students with high and low risk and protective factor scores, respectively, by grade.

CTC categorizes risk and protective factors into four domains of socialization: Community, Family, School and Peer-Individual (see Table 10 and Table 11). For six of the risk factor scales, the percentage of youth considered high risk increased by successive grades: parental attitudes favorable toward drug use, parental attitudes toward anti-social behavior, low school commitment, attitudes favorable to drug use, perceived risk of drug use, and rewards for antisocial involvement. The percentage of youth who were at high risk between grade levels was generally mixed, with no clear pattern emerging.

All the percentages in Table 10 represent youth who were at/below or above the national cutpoints in terms of risk. For instance, in the Family domain, 41.2 to 51.9 percent of Indiana students in Grades 6, 8, 10 and 12 were at high risk for family conflict. In addition, 31.3 to 44.6 percent of Indiana youth in these grades were at high risk for parental attitudes favorable towards anti-social behavior. In the School domain, 35.3 to 43.6 percent of Indiana students in Grades 6, 8, 10 and 12 were at high risk for low school commitment. In the Peer-Individual domain, 27.5 to 41.2 percent of Indiana students in these grades were at high risk for anti-social peers and 24.4 to 42.7 percent were at high risk for reward for antisocial involvement.

Table 10. *Percentage of students with CTC risk factor scores at/below (low risk) or above (high risk) the national standard#*

		Grade			
		6th	8th	10th	12th
Community Domain					
Law and norms favorable to drug use	Low risk	66.3	68.1	60.0	64.5
	High risk	33.7	31.9	40.0	35.5
Perceived availability of drugs	Low risk	74.9	73.5	64.8	61.2
	High risk	25.1	26.5	35.2	38.8
Family Domain					
Poor family management	Low risk	75.3	73.8	75.3	71.5
	High risk	24.7	26.2	24.7	28.5
Family conflict	Low risk	58.8	48.1	57.0	61.4
	High risk	41.2	51.9	43.0	38.6
Parental attitudes favorable towards drug use	Low risk	86.3	75.9	62.8	57.2
	High risk	13.7	24.1	37.2	42.8
Parental attitudes favorable towards anti-social behavior	Low risk	68.7	58.8	56.1	55.4
	High risk	31.3	41.2	43.9	44.6
School Domain					
School academic failure	Low risk	70.0	67.0	66.0	70.0
	High risk	30.0	33.0	34.0	30.0
Low school commitment	Low risk	64.7	64.5	60.9	56.4
	High risk	35.3	35.5	39.1	43.6
Peer-Individual Domain					
Rebelliousness	Low risk	69.9	74.5	72.3	72.1
	High risk	30.1	25.5	27.7	27.9
Early initiation of drug use†	Low risk	80.9	73.4	74.2	74.9
	High risk	19.1	26.6	25.8	25.1
Attitudes favorable towards antisocial behavior	Low risk	72.3	73.3	69.0	70.7
	High risk	27.7	26.7	31.0	29.3
Attitudes favorable towards drug use	Low risk	84.9	76.7	67.4	67.0
	High risk	15.1	23.3	32.6	33.0
Perceived risk of drug use	Low risk	72.3	66.9	66.4	60.5
	High risk	27.7	33.1	33.6	39.5
Anti-social peers	Low risk	72.5	61.7	58.8	59.0
	High risk	27.5	38.3	41.2	41.0
Rewards for antisocial involvement	Low risk	75.6	64.6	64.6	57.3
	High risk	24.4	35.4	35.4	42.7

Notes. # The national standards (cut-off points) are provided by the Social Development Research Group at the University of Washington.
† The scale is missing one item out of four items from the original CTC scale.

For four scales, the percentage of youth considered at low protection increased between Grades 6 and 12: community rewards for prosocial behavior, family opportunities for prosocial behavior, school opportunities for prosocial behavior, and school rewards for prosocial involvement.

All the percentages in Table 11 represent youth who were at/below or above the national cutpoints for protective factors. For example, in the Community domain,

42.7 to 56.9 percent of Indiana students in Grades 6, 8, 10 and 12 were at or below low protection for community rewards for prosocial behavior. In addition, in the Family domain 35.2 to 40.1 percent of Indiana students in these grades were at or below low protection for family opportunities for prosocial behavior. In the School domain, 35.4 to 46.4 percent of Indiana youth were at or below low protection for school rewards for prosocial involvement. Finally, in the Peer-Individual domain, 49.8 to 53 percent of Indiana youth were at or below low protection for peer-individual interaction with prosocial peers.

Table 11. *Percentage of students with CTC protective factor scores at/below (low protection) or above (high protection) the national standard#*

		Grade			
		6th	8th	10th	12th
Community Domain					
Community rewards for prosocial involvement	Low protection	42.7	56.3	56.1	56.9
	High protection	57.3	43.7	43.9	43.1
Family Domain					
Family opportunities for prosocial involvement	Low protection	36.9	35.2	40.0	40.1
	High protection	63.1	64.8	60.0	59.9
School Domain					
School opportunities for prosocial involvement	Low protection	31.9	30.5	34.8	34.0
	High protection	68.1	69.5	65.2	66.0
School rewards for prosocial involvement	Low protection	38.0	40.1	35.4	46.4
	High protection	62.0	59.9	64.6	53.6
Peer-Individual Domain					
Peer-individual interaction with prosocial peers	Low protection	53.0	49.8	50.3	52.1
	High protection	47.0	50.2	49.7	47.9

Notes. # The national standards (cut-off points) are provided by the Social Development Research Group at the University of Washington.

Consequences of Use

Research has shown that prevention and/or reduction of alcohol and drug use among student populations leads to a decrease in related problems (Hingson, et al., 1996; Wodarski, 1988). Communities are better positioned to address substance use if they understand the relationship of that use to its consequences; these include, for example, poor performance on tests, missing school, and being hung over.

The percentages of respondents who reported specific consequences of alcohol or other drug use are shown for each grade in Table 12. The most commonly reported consequences averaged across grades were having a hangover, nausea and vomiting, and having a memory loss.

Table 12. *Consequences of alcohol, tobacco, and other drug use*

Consequences of Use	Grade						
	6	7	8	9	10	11	12
Had a hangover	3.4	8.2	14.9	22.3	27.9	32.0	37.5
Got nauseated or vomited	3.3	6.8	11.5	17.4	23.0	28.4	34.0
Had a memory loss	2.1	4.3	8.1	13.0	18.0	20.9	24.8
Performed poorly on a test or project	2.7	4.3	5.8	6.9	7.3	7.3	7.1
Missed school	2.5	3.4	4.8	5.8	6.2	6.5	7.7
Got into a fight or argument	4.3	6.4	9.0	10.7	12.1	12.5	14.0
Damaged property, pulled fire alarms, etc.	1.4	2.4	3.7	4.4	4.5	4.5	5.2
N	21,640	21,623	27,745	21,562	26,006	16,542	17,560

Substance Abuse Problems

About the CRAFFT Screening Instrument

This is the fourth year the Indiana Survey has included the items from the CRAFFT Screening Instrument. The CRAFFT may be used clinically to detect whether an individual is likely to have problem use or a substance use disorder (Knight, Shrier, Bravender, Farrell, Bilt, et al., 1999). The purpose of including the CRAFFT in the Indiana Survey is to measure the prevalence of substance use-related problems among adolescents. This has been done previously with an adolescent population in Ontario, Canada (Adlaf & Paglia-Boak, 2007).

CRAFFT is a screening instrument. Screening instruments cost little to administer but do a good job of identifying people who are at risk for having a disorder. According to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV), there are two substance use disorders: substance abuse and substance dependence. Substance abuse is characterized by recurrent or continued use accompanied by substantial problems resulting from use. Substance dependence is characterized by abuse that is accompanied by "tolerance, withdrawal, and compulsive drug-taking behavior" (American Psychiatric Association, 1994, p. 176). If someone were to screen positive on the CRAFFT in a clinical setting, the clinician would likely refer the patient for a more resource-intensive assessment to diagnose substance use disorder. In the case of substance use disorder, the criteria for such an assessment are specified in the DSM-IV.

Other validated substance use disorder screening instruments, such as the CAGE and AUDIT, ask only about alcohol and were not developed specifically for youth.

In contrast, the CRAFFT was designed for youth, and the CRAFFT asks about both alcohol and other drugs (Knight, et al., 1999).

The CRAFFT has six items; these are presented in Table 13. Response options for each are limited to "yes" and "no." The items in the CRAFFT scale reflect consequences, patterns, and rationales of use. Affirmative responses to two or more CRAFFT items constitute a positive screen (Knight, Sherritt, Harris, Gates, & Chang, 2003). The CRAFFT was validated for use with people aged 14 to 19 (Knight, Sherritt, Shrier, Harris, & Chang, 2002).

What the CRAFFT measures

We want to emphasize strongly that **the CRAFFT *does not diagnose* a substance use disorder** and that **the data presented below are *not* estimates of the prevalence of substance use disorders in Indiana.** However, the results do suggest problem use among those who screened positive.

The proportion of Indiana Survey respondents aged 14 to 18 who screened positive on the CRAFFT correspond to estimates of dependence and abuse that are substantially similar to those found by the 2006 National Survey on Drug Use and Health for these ages; in 2006, the rate of substance abuse or dependence among persons aged 12 to 17 in the United States was 8.0 percent (SAMHSA, 2007; predictive power estimates for the CRAFFT are described in Knight, et al., 2002).

Results

These analyses are based on data from the 109,128 students (age 14+) who responded to at least one of the CRAFFT items. Of these students, 97,412 responded to all six CRAFFT items. Of the complete responses, 48.3%, or 47,003, had a CRAFT score of zero; 22.3%, or 21,767, had a CRAFFT score of one; and 29.4%, or 28,642, had a CRAFFT score of two or more. These numbers are mostly consistent with the results reported in last year's monograph.

Table 13 presents the percentages of all respondents age 14 to 17 and older who responded "yes" to each of the CRAFFT items (corresponding to the ages for which the CRAFFT was validated). Results for individual CRAFFT items by grade of respondent are presented in the tables section of this report.

Table 13. *Percentage of respondents, age 14 to 17 and older, indicating "yes" to each of the CRAFFT items (n = 109,128)*

Item	%
Have you ever ridden in a car driven by someone (including yourself) who was high or had been using alcohol or drugs?	43.8
Do you use alcohol or drugs to relax, feel better about yourself, or fit in?	18.0
Do you ever use alcohol or drugs while you are alone?	19.3
Do you ever forget things you did while using alcohol or drugs?	17.6
Do your family or friends ever tell you that you should cut down on your drinking or drug use?	8.0
Have you ever gotten into trouble while you were using alcohol or drugs?	10.9

Table 14 shows a breakout of CRAFFT scores by age of respondent. A Pearson's Chi-Square test indicates significant differences among age groups for the scores ($p < .001$). The prevalence of a score of two or greater was higher for older respondents.

Table 14. *CRAFFT scores of respondents, percentages by age*

CRAFFT Score	Age of respondent (number (n) of respondents in each group)				
	14 (n=23,270)	15 (n=20,717)	16 (n=22,542)	17 (n=16,691)	18+ (n=14,192)
0	59.2	51.4	45.1	40.9	39.4
1	22.6	22.6	22.7	22.0	21.3
2+	18.2	26.0	32.2	37.0	39.2

Table 15 presents the CRAFFT results by race and Hispanic ethnicity for respondents age 14 to 17 and older. Race and ethnicity data were collapsed into four categories to facilitate statistical tests of differences among categories. The construction of these categories is explained in the Data section of this monograph (see Tables 25 and 26).

A Pearson's Chi-Square test of differences indicated significant differences among the four race/ethnicity categories ($p<.001$).

Table 15. *CRAFFT scores of respondents, age 14 to 17 and older, percentages by race and ethnic group*

CRAFFT Score	Race or ethnicity (number (n) of respondents in each group)			
	White or Caucasian (n=73,396)	Black or African-American (n=4,426)	Hispanic Ethnicity (any race) (n=7,447)	Other (n=11,881)
0	49.7	42.3	42.3	45.1
1	22.3	25.9	22.3	21.5
2+	28.0	31.7	35.5	33.4

Table 16 shows the CRAFFT results by gender of respondent for respondents age 14 to 17 and older. A Pearson's Chi-Square test indicated significant differences between genders (p<.001).

Table 16. *CRAFFT scores of respondents, age 14 to 17 and older, percentages by gender*

CRAFFT Score	Gender (number (n) of respondents)	
	Male (n=47,177)	Female (n=50,235)
0	49.6	47.0
1	20.7	23.9
2+	29.7	29.1

Understanding the prevalence of problem substance use among sub-populations of youth is critical for targeting effective prevention efforts. Selective or indicated prevention strategies are likely to be more appropriate for adolescents who screen positive than are universal prevention approaches.

Gambling

As gambling options and venues in the state expand, monitoring the prevalence of gambling activities among children and adolescents is increasingly important for planning prevention efforts. This is the sixth year that the Indiana Survey has included gambling prevalence items. All gambling-related questions asked about behavior and experiences in the past year. The Indiana Survey included questions about playing cards for money, betting on games, betting on sports, buying lottery tickets, gambling in a casino, and playing online for money.

Gambling Behavior

Compared to last year, the proportion of respondents who reported any gambling behavior increased significantly in Grades 6, 7, and 9 (see Table 17). Gambling behaviors decreased significantly among adolescents in Grade 10. Gambling behaviors included playing cards for money, lottery tickets or scratch offs, at a casino or online and betting on sports teams. Twelfth graders were the most likely to report having gambled, and sixth graders were least likely to report having gambled, though there is no linear pattern; for example, eighth and ninth graders reported having gambled the second-most frequently. Significantly more males reported gambling than females (not shown; Male = 47.0%, Female= 29.6%, $\chi 2 = 4905.754$, $p < .001$).

Table 17. *Any gambling behavior by Indiana adolescents in the past year, percentages*

Grade	2005	2006	2007	2008	2009	2010	2011	Change 2010-2011	
6	36.3	35.4	33.6	30.3	27.3	29.9	31.2	1.3	**
7	40.7	39.1	38.6	33.9	33.0	34.9	36.1	1.2	**
8	47.4	45.3	43.3	39.4	37.5	40.0	39.3	-0.7	
9	47.5	45.3	42.2	38.5	35.3	38.2	39.6	1.4	**
10	48.0	45.2	42.5	39.0	35.4	40.0	38.4	-1.6	***
11	47.1	45.1	41.1	37.6	34.4	38.1	37.5	-0.6	
12	55.1	55.0	50.8	47.1	44.3	47.4	46.6	-0.8	

** $p < .01$ *** $p < .001$

Problem Gambling

Problem gambling items were “During the last 12 months, have you ever felt…? (a) bad about the amount you bet, or about what happens when you bet money, (b) that you would like to stop betting money but didn’t think you could.” These items, used with the permission of the Minnesota Department of Education, help identify gambling problems (Johnson, Hamer, & Nora, 1998; Johnson, et al., 1997). The findings indicate that, compared to 2010, there were no statistically significant changes in the proportion of students in Grades 6 to 12 who reported feeling bad about the amount of money they bet (see Table 18). Also, compared to 2010, a greater proportion of students in Grade 9 reported that they would like to stop betting money but could not (see Table 19).

Table 18. *Trend in “felt bad about the amount bet” among respondents reporting any gambling in the past year, percentages*

Grade	2005	2006	2007	2008	2009	2010	2011	Change 2010-2011
6	5.6	5.2	5.6	4.6	4.3	3.2	3.1	-0.1
7	5.5	5.0	5.1	4.4	4.2	2.8	2.9	0.1
8	5.4	5.4	5.0	4.6	4.0	2.8	2.6	-0.2
9	5.4	4.6	4.1	3.6	3.1	2.5	2.5	0.0
10	5.2	4.6	3.9	3.2	2.8	2.5	2.3	-0.2
11	4.8	4.1	3.4	3.1	2.4	2.2	2.2	0.0
12	5.4	4.5	3.7	3.4	2.6	2.7	2.6	-0.1

Table 19. *Trend in "would like to stop betting but could not" among respondents reporting any gambling in the past year, percentages*

Grade	2005	2006	2007	2008	2009	2010	2011	Change 2010-2011
6	4.9	4.5	4.9	3.8	3.8	2.5	2.4	-0.1
7	3.7	3.6	4.0	3.2	3.1	1.9	2.0	0.1
8	3.4	3.2	3.5	3.0	2.8	1.9	2.0	0.1
9	2.6	2.3	2.6	2.2	2.1	1.5	1.7	0.2 *
10	2.2	1.9	2.1	1.9	1.6	1.6	1.4	-0.2
11	1.8	1.6	1.7	1.6	1.3	1.3	1.4	0.1
12	1.7	1.6	1.5	1.5	1.5	1.3	1.4	0.1

* $p < .05$

METHODOLOGY

The methodological history of the *Indiana Survey* can be read about in previous reports. The 2010 report can be found at http://www.drugs.indiana.edu/indianasurvey.

Sample

The sampling frame of the Indiana Survey is the universe of all Indiana school corporations and dioceses. The IPRC obtained from the Indiana Department of Education a list of names and addresses of principals, superintendents, and Safe and Drug-Free School Coordinators in all 2,193 public and nonpublic schools. In November 2010, recruitment materials were sent to all school superintendents, principals, and Safe and Drug-Free School Coordinators. The recruitment packet consisted of:

- an invitation letter
- a memorandum of understanding (MOU)
- a statement on parental consent
- an application form
- a list of frequently asked questions
- a stamped addressed return envelope and
- a blank survey form.

The corporations and dioceses had at least seven weeks to respond by sending back an application and a signed MOU to the IPRC. In order to participate, a school or corporation was required to:

- identify a designated coordinator at each public school corporation or multiple coordinators if schools are scattered in several locations
- describe its policy on parental consent
- identify its spring break period
- identify desired survey administration date(s) and
- convey the number of students scheduled to participate in each grade level.

Schools were responsible for obtaining parental consent for students to participate in the Indiana Survey. Information about whether a particular school or corporation participated in any year is strictly confidential. The MOU designated the results of school and corporation-level surveys as the property of the participating school or corporation. These results are released to third parties only with the explicit written permission of the school or corporation's survey coordinator or other appropriate authority.

Participation

Since 1993, participation in the Indiana Survey has been open to all Indiana school corporations, public and nonpublic. The number of usable surveys, shown in Table 20, has fluctuated from year to year. While it is not possible to explain all of the fluctuation, the causes are likely to include:

- The exclusion from participation of fifth-grade students since 1994
- The participation of some schools on biennial and triennial bases
- The arbitrary selection by some schools of the grade levels surveyed
- Variation in the interpretation of parental consent requirements and
- The growing length of the *Indiana Survey* instrument.

Table 20. *Number of usable surveys (1993-2011)*

Year	Usable Surveys	Year	Usable Surveys
1993	90,586	2003	141,342
1994	81,732	2004	91,577
1995	63,631	2005	136,782
1996	36,586	2006	120,914
1997	72,571	2007	158,632
1998	44,232	2008	152,732
1999	81,685	2009	182,496
2000	72,523	2010	169,059
2001	89,861	2011	152,678
2002	77,068		

The rates of participation for school corporations, schools and students statewide, and for each FSSA Planning Region, are shown in Table 21. 'Rate of participation' is the proportion of corporations, schools and students scheduled to participate in the survey out of the entire student population. There is wide variation in rates of participation across regions. The South West Region had the highest rate of participation among corporations (75.8 percent), schools (46.7 percent) and students (48.5 percent). The East Region had the lowest rate of participation among corporations (44.7 percent), the North East Region had the lowest rate among schools (12.7 percent), and the Central Region had the lowest rate among students (22.4 percent).

This year, for the second time, we report the rate of participation for each Defined Service Area (DSA) (see Table 22). There is wide variation in rates of participation across DSAs. DSA 3 had the highest rate of participation among corporations (84.6 percent), DSA 13 had the highest rate among schools (56.2 percent), and DSA 12 had the highest rate among students (48.1 percent). DSA 4 had the lowest rate of participation among corporations (42.1 percent) and schools (8.4 percent), and DSA 9 had the lowest rate among students (11.2 percent).

Table 21. *Participation rates for students, schools, and corporations by region*

	State	North West	North Central	North East	West	Central	East	South West	South East
Students									
Participants	168,801	20,078	19,503	16,438	17,465	35,968	13,146	19,748	26,455
Total Population	559,503	70,139	77,740	54,713	56,999	160,788	32,609	40,728	65787
Participation Rate[1]	30.2	28.6	25.1	30.0	30.6	22.4	40.3	48.5	40.2
Schools									
Participants	478	38	56	31	54	94	45	77	83
Total Population	1,929	188	313	245	179	374	178	165	287
Participation Rate[2]	24.8	20.2	17.9	12.7	30.2	25.1	25.3	46.7	28.9
Corporations									
Participants	177	19	24	15	23	26	17	25	28
Total Population	308	33	49	27	39	47	38	33	42
Participation Rate[3]	57.5	57.6	49.0	55.6	59.0	55.3	44.7	75.8	66.7

[1] The percentage of student participants out of the total population, Grades 6 to 12.
[2] The percentage of schools that participated out of the total population of schools.
[3] The percentage of school corporations that participated out of the total population of school corporations.

Table 22. *Participation rates for students, schools, and corporations by DSA*

	State	DSA1	DSA2	DSA3	DSA4	DSA5	DSA6	DSA7
Students								
Participants	168,801	8,768	14,373	7,110	6,362	10,025	6,239	11,273
Total Population	559,503	47,082	41,535	33,573	32,699	32,147	36,452	35,509
Participation Rate[1]	30.2	18.6	30.6	23.0	19.5	31.2	17.1	31.8
Schools								
Participants	478	18	35	28	14	15	27	34
Total Population	1,929	134	95	260	167	162	68	147
Participation Rate[2]	24.8	13.4	36.8	10.8	8.4	9.3	39.7	23.1
Corporations								
Participants	177	9	19	11	8	5	9	18
Total Population	308	16	33	13	19	6	20	37
Participation Rate[3]	57.5	56.3	57.6	84.6	42.1	83.3	45.0	48.6

	State	DSA8	DSA9	DSA10	DSA11	DSA12	DSA13	DSA14
Students								
Participants	168,801	13,146	8,196	11,668	10,781	18,174	12,930	13,633
Total Population	559,503	40,005	73,042	39,658	33,712	37,779	34,045	42,265
Participation Rate[1]	30.2	32.9	11.2	29.4	32.0	48.1	38.0	32.3
Schools								
Participants	478	30	48	23	44	57	59	46
Total Population	1,929	84	278	71	109	145	105	104
Participation Rate[2]	24.78	35.7	17.3	32.4	40.4	39.3	56.2	44.2
Corporations								
Participants	177	11	8	12	14	18	18	17
Total Population	308	18	15	21	29	26	24	31
Participation Rate[3]	57.5	61.1	53.3	57.1	48.3	69.2	75.0	54.8

[1] The percentage of student participants out of the total population, Grades 6 to 12.
[2] The percentage of schools that participated out of the total population of schools.
[3] The percentage of school corporations that participated out of the total population of school corporations.

Administration of the Survey

Two weeks before the designated survey date, the IPRC mailed to participant schools a packet containing:

- the machine-readable survey forms,
- return shipping labels through the FedEx Package Return Program,
- written instructions for administering the survey, and
- a 7.47 minute survey administration training DVD produced by the IPRC.

The training video describes and demonstrates for school personnel each step of administering the survey to a group of students. The video and the written instructions were provided to improve the consistency of cross-site survey administration. The video is also available for download at http://www.drugs.indiana.edu/data-survey_monograph.html.

The written and video documentation included the following instructions for school personnel who administered the survey:

1. Inform students that:
   - their participation in the survey is completely voluntary,
   - the results are confidential, and
   - there are no penalties for deciding not to participate or for not responding to specific items.

2. Students will need about 30 minutes to complete the survey.

3. Remain seated while students fill out the survey.

4. Instruct the students that, when they complete the survey, they should place their survey forms into the single envelope that the IPRC has provided and which is labeled with a school and classroom code.

No individually identifying information is collected, except gender, grade level, ethnic background and school code. Indiana Survey staff members are available to provide support and answer questions through a toll-free 800 telephone number from Monday through Friday. Schools had a ten-week window to administer the surveys between February 16 and April 24 and were asked to return them immediately to the IPRC.

Survey Instrument

Origin and Relevance of the Questions

Year-to-year changes in the Indiana Survey instrument are documented in the reports corresponding to the years in which they occur. In general, survey items have been derived from a variety of sources for purposes of comparability with national and other state survey data. All items use multiple choice response options.

Alcohol and drug use prevalence items were based on those in the MTF (Johnston, Bachman, & O'Malley, 1989), conducted by the University of Michigan. The Indiana Survey asked respondents about their use of nineteen different types of drugs or drug classifications (see the Indiana Survey instrument in appendix). In some instances, examples and/or slang descriptions appeared in parentheses next to the name of the drug or drug classification. The purpose of this was to elicit responses about the use of a single substance that might be a common ingredient in multiple products (i.e., alcohol in beer, wine, and liquor) or that might have multiple common names, some of them distributed geographically within the state. Other examples include "ecstasy," "XTC" and "X" for MDMA, and "meth," "crank," and "crystal" for methamphetamine.

Prevalence of alcohol, tobacco, and a variety of other drug use is a primary focus of the Indiana Survey. Prevalence refers to the rate of total cases of a condition in a population. For the Indiana Survey, prevalence is the percentage of reported drug use among child and adolescent populations over specified time frames. Definitions for the various prevalence-of-use measures used in this report are listed below.

> *Lifetime prevalence*: the percentage of respondents who report using a particular drug at least once in their lifetime.
>
> *Current use or monthly prevalence*: the percentage of respondents who report using a particular drug at least once in the 30 days prior to the administration of the survey.
>
> *Binge drinking prevalence*: the percentage of respondents who report drinking at least five (for males) / four (for females) alcoholic drinks at a sitting in the two weeks prior to administration of the survey.

The perceived risk of harm items have origins in both MTF and the National Survey on Drug Use and Health. The perceived parental approval items recently have become performance measurement requirements for SAMHSA Drug-Free Communities Support Program grantees. The item set for age of first use is similar

to that in the NHSDA. However, in the Indiana Survey these items are closed ended. The access to alcohol and the reasons for drinking items both have origins in the Youth Risk Behavior Survey.

Several risk and protective factor items are from the Communities that Care Survey (SAMHSA, 2009). These items belong to one of four categories of influence: Family, Community, Peer-Individual, School. An example of an item from the Family category is, "How wrong do your parents feel it would be for you to drink beer, wine or hard liquor (vodka, whiskey, or gin) regularly (at least once or twice each month)?" An item from the Community category is, "How easy is it to get cigarettes, smokeless tobacco, cigars, or other tobacco products?" An item from the Peer-Individual category is, "What are the chances you would be seen as cool if you smoked marijuana?" An example from the School category is, "How important do you think the things you learn in school are going to be for you later in life?"

The set of gambling items, added in 2005, were taken from the Minnesota Student Survey (Stinchfield, Kushner, & Winters, 2005; Winters & Anderson, 2000).

Data

The IPRC entered the Indiana Survey data in-house using Pearson optical scanner equipment. The data were cleaned using multiple criteria. A survey could be eliminated from the analysis for three reasons: failure of the respondent to report a grade level, failure of the respondent to answer a majority of the questions, or failure of the error check protocol. Table 23 shows the frequency and proportions of surveys eliminated for these reasons.

Table 23. *Reasons for excluding respondents from the analysis*

	Frequency	Percent	Cumulative %
Rejected Surveys			
Reported no gender	3,228	1.9	1.9
Reported no grade level	921	.5	2.5
Refused to answer majority of questions	5,970	3.5	6.0
Failed error check protocol	6,004	3.6	9.6
Total number of usable surveys	152,678	90.4	100.0
Total	168,801	100.0	

The error check protocol eliminated surveys that met any one of four conditions:

- Respondent provided a substantially inconsistent pattern of responses to prevalence questions (i.e., reported "never used" a particular drug in her or his lifetime and also reported using that drug in the past year or month).
- Pattern of responses was pharmacologically implausible (i.e., a combination of

drugs and frequencies of use whose cumulative effect would be lethal).

- Combination of age and grade was implausible (i.e., a ten-year-old in the eleventh grade.)
- Respondent indicated that he or she did not respond truthfully at all (Item 40). Measurement of this criterion is explained below.

The final item of the Indiana Survey asks students, "How truthfully have you answered these questions," with response options, (a) "not truthfully at all", (b) "somewhat truthfully", and (c) "completely truthfully." Those who responded "not truthfully at all" were eliminated from the analysis. The distribution of responses to this item is shown in Table 24. Variation, ranging from 1.4 to 2.0 percent (95% confidence interval), was found across regions for students who reported they did not answer truthfully at all.

Table 24. *Response to item on truthful completion of the Indiana Survey by region*

Region	No Answer		Not Truthfully at all		Somewhat Truthfully		Completely Truthfully		Total
	N	%	N	%	N	%	N	%	N
Northwest	3,293	16.4	291	1.4	1,589	7.9	14,905	74.2	20,078
North Central	3,145	16.1	292	1.5	1,519	7.8	14,547	74.6	19,503
Northeast	2,058	12.5	258	1.6	1,180	7.2	12,942	78.7	16,438
West	2,569	14.7	291	1.7	1,333	7.6	13,272	76.0	17,465
Central	6,893	19.2	708	2.0	2,690	7.5	25,677	71.4	35,968
East	2,581	19.6	181	1.4	948	7.2	9,436	71.8	13,146
Southwest	2,055	10.4	308	1.6	1,625	8.2	15,760	79.8	19,748
Southeast	2,674	10.1	455	1.7	2,133	8.1	21,193	80.1	26,455
Total	**25,268**	**15.0**	**2,784**	**1.6**	**13,017**	**7.7**	**127,732**	**75.7**	**168,801**

Respondent demographics are shown in Table 25 according to gender, race/ethnicity and grade level. Respondents were asked separate questions about race and Hispanic ethnicity. To facilitate statistical tests of differences among categories, we combined these results to create four categories: Non-Hispanic White or Caucasian, Non-Hispanic Black or African-American, Hispanic Ethnicity (any race), and Other. "Other" included all other respondents, including: (1) all non-Hispanic non-Whites and non-Blacks, including the response categories of Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, More than one race, Race not know or other; (2) respondents who indicated non-Hispanic ethnicity but did not respond to the question on race (see Table 26).

Table 25. *Demographic characteristics of the participants*

	N	%
Gender		
Male	74,951	49.1
Female	77,727	50.9
Grade		
6	21,640	14.2
7	21,623	14.2
8	27,745	18.2
9	21,562	14.1
10	26,006	17.0
11	16,542	10.8
12	17,560	11.5
Race/Ethnicity		
White	113,067	74.1
Black	7,220	4.7
Hispanic	12,220	8.0
Other (see Table 26)	19,599	12.8
No answer	572	0.4

Table 26. *Components of race/ethnicity category "Other"*

Race		Ethnicity
	Non-Hispanic	No Answer
White	(see Table 25)	6,041
Black or African-American	(see Table 25)	1,672
Asian	2,088	229
Native Hawaiian or Other Pacific Islander	343	44
American Indian or Alaskan Native	698	77
More than one race	5,044	691
Race not known or other	1,012	152
No answer	1,508	(see Table 25)

Reliability

Reliability is an estimate of how consistently survey items measure the same concept each time they are administered under the same conditions and with the same subjects. Internal reliability coefficients describe the consistency of results across sets of items (Fink, 1993). Internal reliability coefficients (i.e. Cronbach's alpha) based on the average correlation among item sets are shown in Table 27. Alpha coefficients range in value from 0 to 1. The higher the score is, the more reliable the item sets are. Nunnaly (1978) has indicated 0.7 to be an acceptable reliability coefficient, and many researchers require at least 0.8 for a "good scale." Based

on these criteria, the internal reliability of the Indiana Survey's item sets is good to excellent, with the exception of the Parental Attitudes Favorable to Drug Use, Low School Commitment, and Early Initiation of Drug Use item sets which are acceptable. This indicates that the item sets are consistent measures of the concepts in the Indiana Survey.

Table 27. Internal reliability of item sets

Item Set	Question Wording	Number of Items	Cronbach's Alpha
Lifetime Use	Have you ever used…?	19	.908
Use in the Past Month	How many times in the last month (30 days) have you used…	19	.846
Consequences of Use	How many times have you experienced the following due to your drinking or drug use during the past year?	7	.865
Gambling	During the last 12 months, how often have you done these activities?	6	.790
Perceived Peer Disapproval	How do you think your close friends feel (or would feel) about you doing each of the following things?	5	.930
Community Law and Norms Favorable to Drug Use	These questions ask about the neighborhood and community where you live.	7	.874
Perceived Availability of Drugs	How easy would it be for you to get…?	4	.856
Poor Family Management	The rules in my family are clear.	8	.851
Family Conflict	We argue about the same things in my family over and over.	3	.837
Parental Attitudes Favorable to Drug Use	How wrong do your parents feel it would be for you to…	3	.811
Parental Attitudes Favorable to Anti-social Behavior	How wrong do your parents feel it would be for you to…	3	.786
Low School Commitment	Now thinking back over the past year in school, how often did you…	3	.709
Rebelliousness	I like to see how much I can get away with.	3	.842
Early Initiation of Drug Use†	If you have ever used these drugs, at what age did you first use them?	3	.754
Peer Attitudes Favorable to Anti-social Behavior	How wrong do you think it is for someone your age to…?	5	.863
Peer Attitudes Favorable to Drug Use	How wrong do you think it is for someone your age to…?	4	.880
Perceived Risk of Drugs	How much do you think people risk harming themselves (physically or in other ways) if they…	5	.839
Anti-social Peers	In the past year (12 months), how many of your best friends have…	6	.852
Community Rewards for Prosocial Involvement	My neighbors notice when I am doing a good job and let me know.	3	.929
Family Opportunities for Prosocial Involvement	My parents ask me what I think before most family decisions affecting me are made.	3	.772
School Opportunities for Prosocial Involvement	In my school, students have lots of chances to help decide things like class activities and rules.	5	.775
School Rewards for Prosocial Involvement	My teacher(s) notices when I am doing a good job and lets me know about it.	4	.807
Interaction with Prosocial Peers	Think of your four best four friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have…	5	.826

Notes. † The scale is missing one item out of four items from the original CTC scale.

Validity

The validity of a survey is the extent to which it measures what its designers intend it to measure (Fink, 1993). The Indiana Survey is intended to measure the reported prevalence of substance use, the consequences of use, perceptions of peer approval of substance use, perceptions of personal safety, prevalence of gambling, and other concepts. The Indiana Survey measures these concepts among children and adolescents in Grades 6 through 12 located in schools across Indiana at a given point in time. The Indiana Survey uses a nonrandom sampling procedure, which presents a threat to the survey's external validity. A nonrandom procedure was used because a longstanding priority of the Indiana Survey has been to provide local level data to any and all schools or school corporations that request it. This nonrandom procedure may introduce bias, so the findings of the Indiana Survey should be generalized with caution.

To the extent that school districts have obtained information from every student in a particular grade level, the local results represent those community populations. In this respect, participating school districts can examine their own student response rates and decide how representative their survey data are for their local youth population. Formula 1.0 shows how the student response rate may be calculated from data in the local report provided to each participating school or school district.

Formula 1.0 Response Rate = Number of Respondents / Total Number of Students x 100

Where "Number of Respondents" is the number of students who completed and turned the survey in, and where "Total Number of Students" is the number of students whom the school corporation intended to survey.

If the response rate is 90% or greater, then the district level results (not shown in this report) are likely to be representative of the local student population.

At the sub-state regional and defined service area (DSA) levels, the ability to generalize the data is much lower because many school districts, and therefore many children and adolescents in the regional and DSA populations, did not participate in the Indiana Survey. As shown in Tables 21 and 22 , only 22.4 to 48.5 percent of students participated in the Indiana Survey across regions, and 11.2 to 48.1 percent across DSAs, respectively. The best approach to address this limitation is to assess the extent to which the samples of student respondents compare to the entire population of students in each region and DSA. This comparison of regional respondents and the population is shown by gender, ethnicity, race, and grade level in Table 28, and of DSA respondents in Table 29. Although this comparison does not provide a basis for generalizing results at the regional or DSA level, it provides guidance on where the data do and do not coincide proportionally with demographic subgroups in the regional and DSA populations.

As shown in Table 28, the majority of samples either under- or over-represent the proportions of students by gender, ethnicity, race, or grade level in a region. For example, in the West region, females are overrepresented in the Indiana Survey sample and Whites are underrepresented. This means that the sample has proportionally more females than the West region as a whole, and this bias should be taken into consideration when interpreting the results of the Indiana Survey data. Likewise, the sample has proportionally fewer White students.

Table 28. *Regional Comparison of Samples and Population by Demographics*

	Indiana		Northwest		Northcentral		Northeast		West	
	Pop.	Sample	Pop.	Sample	Pop.	Sample	Pop.	Sample	Pop.	Sample
Gender										
Male	51.0	49.1 *	50.9	48.5 *	51.1	49.0 *	50.9	49.8	51.2	49.3 *
Female	49.0	50.9 *	49.1	51.5 *	48.9	51.0 *	49.1	50.2	48.8	50.7 *
Race/Ethnicity#										
White	75.3	74.3 *	57.4	58.9 *	74.2	73.8	76.6	74.8 *	85.5	79.6 *
Black	11.8	4.7 *	21.0	9.6 *	9.7	1.4 *	10.0	4.6 *	2.9	2.1
Hispanic	7.2	8.0 *	16.1	16.9 *	10.1	14.2 *	7.1	6.4	6.2	6.5
Other	5.7	12.9 *	5.5	14.6 *	6.0	10.5 *	6.3	14.2 *	5.4	11.7 *
Grade										
6	14.3	14.2	14.0	17.7 *	14.3	13.0	14.2	8.1 *	14.1	13.8
7	14.4	14.2	14.0	14.9	14.4	17.6 *	14.1	11.1 *	14.1	11.3 *
8	14.3	18.2 *	14.2	18.2 *	14.4	18.3 *	14.1	13.5	14.1	21.0 *
9	15.1	14.1 *	15.5	12.8 *	15.0	15.5	15.8	18.1 *	15.2	12.2 *
10	14.6	17.0 *	14.7	14.9	14.4	14.4	14.4	20.9 *	14.5	18.8 *
11	13.9	10.8 *	14.1	10.2 *	13.9	11.2 *	13.6	14.9	14.1	9.3 *
12	13.4	11.5 *	13.5	11.2 *	13.6	10.1 *	13.8	13.2	13.9	13.6 *
	Indiana		**Central**		**East**		**Southwest**		**Southeast**	
	Pop.	**Sample**	**Pop.**	**Sample**	**Pop.**	**Sample**	**Pop.**	**Sample**	**Pop.**	**Sample**
Gender										
Male	51.0	49.1 *	50.7	48.2 *	51.0	49.1 *	50.6	49.8	51.5	49.6 *
Female	49.0	50.9 *	49.3	51.8 *	49.0	50.9 *	49.4	50.2	48.5	50.4 *
Race/Ethnicity#										
White	75.3	74.3 *	67.4	68.0	87.2	73.9 *	87.5	85.6 *	91.1	82.2 *
Black	11.8	4.7 *	19.6	9.5 *	5.3	5.5	4.9	1.0 *	2.4	1.7
Hispanic	7.2	8.0 *	6.7	7.0	1.9	4.9 *	2.4	4.1 *	2.5	4.7 *
Other	5.7	12.9 *	6.3	15.5 *	5.6	15.7 *	5.2	9.3 *	4.0	11.3 *
Grade										
6	14.3	14.2 *	14.7	16.0 *	14.3	12.1 *	14.3	15.2	14.0	14.1
7	14.4	14.2 *	14.7	14.9	14.1	16.3 *	14.2	15.7	14.4	11.7 *
8	14.3	18.2 *	14.6	19.3 *	14.2	19.4 *	14.1	16.2 *	14.4	18.5 *
9	15.1	14.1 *	14.6	14.0	14.9	16.0	15.1	13.3 *	15.1	12.7 *
10	14.6	17.0 *	15.0	17.0 *	14.6	15.4	14.4	16.3 *	14.4	18.4 *
11	13.9	10.8 *	13.6	9.6 *	13.9	11.2 *	14.2	11.3 *	14.1	10.6 *
12	13.4	11.5 *	12.8	9.1 *	14.0	9.6 *	13.7	12.1	13.6	13.9

* The sample is significantly different from the population ($p<.05$).

No answer is not included in calculation of the percentages for the sample.

As shown in Table 29, the majority of samples either under- or over-represent the proportions of students by gender, ethnicity, race, or grade level in a DSA. For example, in DSA 2, males are underrepresented in the Indiana Survey sample and Hispanics are overrepresented. This means that the sample has proportionally fewer males than DSA 2 as a whole, and this bias should be taken into consideration when interpreting the results of the Indiana Survey data. Likewise, the sample has proportionally more Hispanic students for DSA 2. This is a known limitation to applying the Indiana Survey results to non-Hispanic groups, which are under-represented in the sample.

Table 29. *DSA comparison of population and samples by demographics*

	Indiana		DSA1		DSA2		DSA3		DSA4	
	Pop.	Sample	Pop.	Sample	Pop.	Sample	Pop.	Sample	Pop.	Sample
Gender										
Male	51.0	49.1 *	50.8	47.4 *	51.3	49.3 *	51.2	49.6	50.7	49.2
Female	49.0	50.9 *	49.2	52.6 *	48.7	50.7 *	48.8	50.4	49.3	50.8
Race/Ethnicity[#]										
White	75.3	74.3 *	44.2	46.6 *	82.6	72.3 *	71.5	76.8 *	76.7	71.9 *
Black	11.8	4.7 *	29.8	16.8 *	4.4	2.3	12.7	1.4 *	4.4	1.4
Hispanic	7.2	8.0 *	20.0	19.6	8.5	14.0 *	9.8	12.5 *	14.2	16.0
Other	5.7	12.9 *	6.0	17.0 *	4.4	11.4 *	6.0	9.3 *	4.7	10.7 *
Grade										
6	14.3	14.2	14.0	20.2 *	14.2	14.4	14.0	14.5	14.6	10.9 *
7	14.4	14.2	14.1	15.5	14.1	14.7	14.3	18.5 *	14.8	15.0
8	14.3	18.2 *	14.0	21.3 *	14.5	16.4 *	14.4	21.0 *	14.5	17.6 *
9	15.1	14.1 *	15.7	9.6 *	15.5	15.1	14.9	14.7	14.6	13.3
10	14.6	17.0 *	14.7	13.9	14.2	16.1 *	14.9	12.8	14.2	20.5 *
11	13.9	10.8 *	14.3	8.1 *	13.8	11.6 *	14.0	9.9 *	13.8	11.3
12	13.4	11.5 *	13.2	11.4	13.7	11.7 *	13.6	8.6 *	13.5	11.3
	DSA5		**DSA6**		**DSA7**		**DSA8**		**DSA9**	
	Pop.	**Sample**	**Pop.**	**Sample**	**Pop.**	**Sample**	**Pop.**	**Sample**	**Pop.**	**Sample**
Gender										
Male	50.8	49.8	50.8	50.1	50.8	48.7 *	50.5	48.1 *	50.7	48.3 *
Female	49.2	50.2	49.2	49.9	49.2	51.3 *	49.5	51.9 *	49.3	51.7 *
Race/Ethnicity[#]										
White	66.8	70.4 *	85.9	82.4 *	88.6	74.0 *	82.9	74.9 *	44.0	38.0 *
Black	16.7	6.4 *	3.6	2.6	4.2	5.0	5.0	3.7	38.2	27.0 *
Hispanic	7.9	6.9	5.0	3.5	2.4	5.9 *	4.3	7.8 *	10.7	13.1 *
Other	8.6	16.4 *	5.5	11.5 *	4.8	15.0 *	7.8	13.5 *	7.1	21.9 *
Grade										
6	14.3	5.3 *	14.1	25.1 *	14.0	12.7	14.7	13.9	14.9	20.2 *
7	14.1	11.6 *	14.1	5.5 *	13.8	16.3 *	14.9	21.2 *	14.6	4.0 *
8	13.9	10.9 *	14.1	23.9 *	14.0	18.0 *	14.6	21.7 *	14.5	18.0 *
9	16.5	19.5 *	15.2	5.5 *	14.9	15.4	14.6	12.3 *	14.5	15.8
10	14.2	21.7 *	14.7	21.5 *	14.8	15.3	14.4	13.9	15.7	22.4 *
11	13.4	16.0 *	14.1	4.9 *	14.4	12.1 *	13.7	8.1 *	13.5	10.6 *
12	13.7	15.0	13.7	13.5	14.1	10.3 *	13.1	8.9 *	12.3	8.9 *

Table 29. *DSA comparison of population and samples by demographics (continued)*

	DSA10		DSA11		DSA12		DSA13		DSA14	
	Pop.	Sample	Pop.	Sample	Pop.	Sample	Pop.	Sample	Pop.	Sample
Gender										
Male	50.9	48.5 *	51.4	49.4 *	51.8	49.7 *	50.9	50.1	50.9	48.9 *
Female	49.1	51.5 *	48.6	50.6 *	48.2	50.3 *	49.1	49.9	49.1	51.1 *
Race/Ethnicity#										
White	89.9	81.5 *	88.7	82.4 *	90.6	81.2 *	86.4	85.3 *	90.1	82.8 *
Black	2.7	2.3	4.9	1.8	1.4	1.6	5.8	1.2 *	3.2	2.0
Hispanic	3.0	4.2	2.2	3.7	2.9	5.1 *	1.8	3.2	3.0	5.2 *
Other	4.4	12.0 *	4.2	12.1 *	5.1	12.1 *	6.0	10.2 *	3.7	10.0 *
Grade										
6	14.5	13.7	14.3	12.3	13.9	11.3 *	14.4	15.6	14.1	15.3
7	14.4	13.9	14.7	14.4	14.5	14.3	14.2	15.5	14.2	12.2 *
8	14.5	17.6 *	14.4	17.4 *	14.3	17.0 *	14.2	16.6 *	14.4	20.5 *
9	15.0	15.3	14.9	18.2 *	15.2	15.3	15.1	13.1 *	15.0	10.8 *
10	14.5	17.0 *	14.2	15.2	14.3	17.0 *	14.3	16.3 *	14.5	18.6 *
11	13.6	11.9	13.6	12.1	14.1	12.2	14.2	11.3 *	14.0	8.5 *
12	13.5	10.6 *	13.9	10.4 *	13.7	13.0	13.6	11.8	13.8	14.1

Notes. Pop. = Population; Sam. = Sample

* The sample is significantly different from the population ($p<.05$)

No answer is not included in calculation of the percentages for the sample.

The strength of the Indiana Survey is that it collects and reports valid and reliable data for local school corporations. At the state level, the data has the same degree of reliability. However, according to sampling theory, the state-level data is less valid (Levy & Lemeshow, 2003). This tradeoff reflects the state's current priorities for serving the substance use prevention needs of local communities. At the same time, statewide results from the Indiana Survey have a longstanding and high degree of concurrence with state-level surveys that use probability sampling, such as the Youth Risk Behavior Survey and the Monitoring the Future survey. This high degree of concurrence is due to the large percentage of school corporations (57.5 percent in 2011) and students who participate in the Indiana Survey. Due to this level of agreement, it is reasonable to compare the statewide Indiana Survey data with national survey results. Furthermore, the results are consistent with findings from other prevention studies and this reinforces our confidence in the validity of Indiana Survey data at the state level.

HOW TO INTERPRET THE RESULTS

Margin of Error

The Indiana Survey has a margin of error plus or minus less than 1 percent with a 95 percent confidence interval. This means that if we selected a group of students 100 times and asked a given question from this survey each time, then in 95 of those instances, the percentage of students giving a particular answer would be within one percentage point of the percentage who gave that same answer in this year's results of the Indiana Survey. Margin of error and confidence intervals, however, have limited applicability to the Indiana Survey because respondents were chosen nonrandomly.

2010-2011 Changes

For the statewide data tables, values shown in the 'change' column refer to statistically significant observed differences in prevalence of use between years 2010 and 2011. Statistical significance describes a mathematical measure of difference between groups (Daniel, 1991). The difference is said to be statistically significant if it is greater than what might be expected to happen by chance alone. "P" is an estimate of the probability that the result has occurred by statistical accident. In this report, the p-value is set at 0.05, which means that the difference or change described has a 95 percent chance of not having been due to chance alone. The plus or minus sign next to the change value indicates whether the 2011 percentage is an increase or decrease, respectively, from the previous year.

For the regional data tables, the symbols ▲ or ▼ are used to indicate statistically significant regional differences in prevalence of use compared to the entire state. The ▲ symbol indicates that the regional rate is higher than the state rate, and the ▼ symbol indicates that the regional rate is lower than the state rate.

Generalizing Local *Indiana Survey* Data to Local Populations

The IPRC provides each participant school corporation with a local report of the Indiana Survey results from its district. This section describes the method for estimating how well local data applies to local populations. The IPRC strongly encourages school corporations to share the results of this analysis with citizens and organizations engaged in local surveillance and planning.

The Response Rate

The response rate estimates how well the local results of the Indiana Survey describe all the youth in a grade or grades, in a school or schools, or in an entire school corporation.

If the response rate is 90 or greater, then the results are likely to be representative of the population defined. If the response rate is lower than 90%, results should be interpreted cautiously. In this case, the results might not be representative of students who were absent the day the survey was administered or of those who did not turn in a survey.

In any case, results do not generalize to those whose responses the IPRC systematically excluded from tabulation (see the “Data” section, above, for details).

The IPRC is unable to calculate the response rate for individual localities because one of the components of the response rate depends on information not collected along with the survey. This information, the Total Number of Students, is explained below.

Two pieces of information are required to calculate the response rate: “the total number of students” and “the total number of respondents.”

The Total Number of Students

The total number of students can only be determined by each school district. The total number of students is the number of students that the school district intended to survey. For instance, if the intention was to survey all ninth and tenth-grade students in all schools then the total enrollment number in Grades 9 through 10 would constitute the total number of students.

Total Number of Respondents

Local reports of the Indiana Survey issued to participating school corporations include a table similar to Table 30. The asterisk (*) in Table 30 illustrates where to locate the total number of respondents.

Table 30. *Sample Table from Local Report*

	Frequency	Percent
No gender reported		
No grade reported		
Unusable Surveys/Refused to Participate		
Surveys Rejected Due to Error Check		
Total Number of Usable Surveys		
Total	#,### *	100.0

Calculating the Response Rate

To determine the response rate for a locality, divide the Total Number of Respondents by the Total Number of Students and multiply the result by 100.

$$\text{Response Rate} = \left(\text{Number of Respondents} \,/\, \text{Total Number of Students} \right) \times 100$$

Identifying Significant Differences between Local and State Prevalence Rates

In the local report, the first set of tables, titled "Significant Difference between Local and State Drug Use Rates, 2011," show where a school corporation had statistically significant higher or lower rates compared to the state. Positive numbers indicate that a school corporation had rates higher than those of the state. Negative numbers indicate that a school corporation had rates lower than those of the state. Dash marks appear where there were no statistically significant differences between the school corporation and the state.

If a school corporation had prevalence rates higher than those of the state on particular drugs, the community might want to consider targeting prevention efforts at those drugs.

Practical Significance

The next set of tables in a local report shows the percentage of student participants who reported that they used specific drugs daily, during the past month and during

their lifetime. These rates are shown for the school district over a five year period if such data are available and compared to the state and most recently available national rates.

Targeting prevention efforts at particular drugs might be appropriate even though local prevalence rates are not higher than those of the state. For instance, if sixth-grade students in a corporation had a prevalence rate similar to that of the state for a specific drug, but the rate itself was high, prevention or treatment programs might be needed for sixth graders.

Key points for interpreting prevalence rate results of the Indiana Survey:

- Monthly prevalence is a general indicator of frequent or regular use of a drug.
- Lifetime prevalence is a general indicator of occasional or experimental use of a drug.
- “Prevalence” indicates any use of a drug within the specified time frame, regardless of its severity or frequency within that time frame (for example, any use of marijuana in the last month could be one time or two hundred times). Use monthly and lifetime prevalence rates in conjunction with detailed frequencies of use (for example, 1-5 times, 6-19 times, 20-40 times, more than 40 times). These are provided in tables in the back of a local report.

Interpreting Local Prevalence Rates of Gateway Drug Use

- Cigarette smoking is the best predictor of future drug use.
- Binge drinking is a key indicator of future substance abuse.
- Alcohol use indicates a need for student assistance programs.
- Marijuana use is a key indicator of future drug use.
- Grades with the most rapid increases indicate appropriate timing of secondary prevention strategies.

If a school corporation has participated more than three times in the Indiana Survey, it has sufficient data to examine changes over time. If enrollment is relatively stable over time, trends and patterns may appear. A commonly observed pattern is the “cohort effect.” For certain groups of youth, prevalence rates are inconsistent with the average use rates. These differences often persist over time. For instance, eighth-grade students this year may have used particular drugs 10% more than eighth-grade students two years ago. This pattern may continue from year to year until the students graduate.

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