Alcohol and Other Drug Use in Vigo County:
An Epidemiological Profile Focusing on Underage Drinking and Binge Drinking in 18-25 Year Olds

Prepared by the Vigo County Epidemiological & Outcomes Workgroup

April, 2008

For the Strategic Prevention Framework- State Incentive Grant
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**Vision:** “Imagine Vigo County Together: Healthy, safe and drug-free environments that nurture and assist all Vigo County citizens to thrive.”

**Mission:** The mission of the Vigo County Epidemiological and Outcomes Workgroup (VCEOW) is to gather, analyze, report, and maintain data related to illegal and irresponsible use of alcohol, tobacco, and other drugs in Vigo County, including information about prevalence, risk, and protective factors, and/or other pertinent data.
Vigo County Epidemiological and Outcomes Workgroup Members

Chair: Dr. Tom Johnson
Vice-Chair: Teri Evan

Dr. Tom Steiger
Sarah Forbes
Louise Anderson
Dr. Virgil Sheets
Dr. Carolyn Sur
Brandon Halleck
Rev. Doug Hazelwood
Deborah Kesler
Terry Bauer
William Turner
Terry Cohen
Greg Ewing
Nathan Lamkin
Kesha Coleman
Rachelle Wood

Indiana State University
Freebirds Solution Center
Indiana State University
Rose-Hulman Institute of Technology
West Central IN, Area Health Education Center
Indiana State University
Saint Mary of the Woods College
CHANCES for Indiana Youth
Maplewood Christian Church
Vigo County Juvenile Probation
Indiana State Excise Police
Indiana State Excise Police
Vigo County LCC Community Consultant
Vigo County Sheriff Department
Indiana State University
Graduate Student
SPF-SIG Program Director
SPF-SIG Administrative Assistant

Primary writer for the report: Dr. Tom Johnson
Additional material by: Nathan Lamkin, Drew Myers, Elaine Pastore, Dr. Tom Steiger, & Rachelle Wood.
Executive Summary

The Strategic Prevention Framework State Incentive Grant

The Strategic Prevention Framework (SPF) is a series of steps for developing programs aimed at preventing alcohol and other drug use and problems. These steps include: 1) Assessing the nature of the problem; 2) Building capacity to address the problem; 3) Planning programs to address the problem; 4) Implementing these programs; and 5) Evaluating the effectiveness of the programs.

Through a program called State Incentive Grants, the United States Substance Abuse and Mental Health Services Administration provides money to states to carry out the Strategic Prevention Framework. Vigo County is one of 12 communities in Indiana to receive funding from the state to implement the Strategic Prevention Framework locally. Vigo County was funded to develop prevention aimed at reducing underage drinking and binge drinking in 18-25 year olds. The first step of the SPF is to assess needs at the state and local level.

The Consumption and Consequences of Alcohol, Tobacco, and Drugs in Indiana: A State Epidemiological Profile

In both 2006 and 2007 the Indiana State Epidemiology and Outcomes Workgroup prepared reports documenting the types of alcohol and other drug problems that exist in the state. All 92 counties in Indiana were rated in terms of the types and severity of problems present in that county. Information about drug and alcohol use and problems in each county was used to rank counties in terms of the severity of various types of drug problems. Counties with serious problems were identified as having "significant challenges" for a given drug.

In the 2007 state report, Vigo County was identified as one of the counties having the most serious levels of alcohol problems and
methamphetamine use. Vigo County was also identified as one of the top four counties in the state in terms of overall severity of adult alcohol and other drug problems and one of the top 6 counties in terms of overall youth substance use.

A Report on Alcohol and Other Drug Problems in Vigo County

The Vigo County Epidemiological and Outcomes Workgroup is a team of local educators, researchers, law enforcement officers, health care professionals, prevention specialists, and concerned citizens who have assembled information about:

1) Factors that might increase or reduce risk of alcohol and other drug problems in Vigo County (Risk & Protective Factors)
2) Underage drinking in Vigo County, as well as binge drinking in 18 to 25 year olds
3) Legal and health consequences of underage and binge drinking
4) The nature and extent of use and problems related to other drugs in Vigo County

Risk & Protective Factors

Risk and protective factors are characteristics or conditions that have been identified by research as plausibly causally related to early involvement with alcohol. The more risk factors present in a community, the greater the likelihood of alcohol use and other similar problems. The presence of protective factors in a community reduces the risk of problems.

Example Risk Factors in Vigo County

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Example Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Economic Deprivation (Poverty)</td>
<td>Vigo County has one of the highest levels of overall poverty and of youth living in poverty of any County in Indiana.</td>
</tr>
<tr>
<td>School Failure</td>
<td>Low income students in Vigo County are at greater risk for school failure than in the average county in Indiana.</td>
</tr>
</tbody>
</table>
| Availability of Alcohol to Youth                   | 1) Some Vigo County youth report greater access to alcohol than reported by youth from other Indiana counties. However, there also seems to be a group of youth in Vigo County who report less access to alcohol than youth from other counties.  

2) Vigo county has more alcohol sales outlets per person than most counties in the state and Vigo County ranked third in the state in terms of percentage of household income spent on alcohol. |
| Peer Influences                                     | Around half of Vigo County high School students indicated that their friends approve of drinking alcohol. More than half of underage college students in Vigo County indicate that their friends approve of drinking. |
| Adult Alcohol and Drug                              | 1) Vigo County is in the top 15-25 % of counties in Indiana in terms of number of arrests for Public Intoxication, Driving |
Use under the Influence, and Liquor law violations.

2) Every year between 2001 and 2004, Vigo County had one of the highest rates of drinking among pregnant women of any county in Indiana.

Community norms and beliefs about youth drinking

In a recent telephone survey of Vigo county residents, more than 80% of those surveyed reported either that there is no problem with underage drinking in Vigo County or that the problem in Vigo County is no worse than in other counties in Indiana.

Conclusions Regarding Risk & Protective Factors

Early Problem or Antisocial Behavior: While some data is available regarding crime in Vigo County youth age 10-14, more information is needed, as well as some standard of comparison to interpret whether the crime rates observed in Vigo County youth are high or low relative to the state and the nation. While the percentage of students in special education is higher in Vigo County than the state average, this percentage is not a validated archival indicator of antisocial behavior, only a plausible candidate for an indicator.

Involvement in Church: Levels of religious involvement in youth entering Indiana State University from Vigo County appear to be higher than the level of religious involvement in students coming from other counties, but additional information is needed to more accurately determine level of religious involvement among underage youth in Vigo County. In ISU college students, religious involvement is consistently related to lower levels of alcohol use and problems, but no such data is yet available for non-college youth in Vigo County.

School Failure/Commitment: Several indicators suggest that levels of commitment to school in Vigo County may be somewhat lower than the state average, at least for some segments of the population. A decline in the dropout rate may have occurred after 2001, but this could be related to changes in the method of calculating this rate.

Social Availability of Alcohol: Social availability is higher for older youth than for younger students. Relative to the state of Indiana, Vigo County may hold a greater proportion of pre-college youth with relatively high social availability of alcohol and another group with relatively low social availability.

Peer Influences: Perceptions of peer approval appear to increase dramatically from 6th grade to 12th grade and are higher in college age students than in high school students. While the nature of the data requires that results be considered with caution, the information available suggests that half or more of late adolescents in Vigo County believe that their friends approve of drinking alcohol. More than half of ISU college students indicate that their friends approve of getting drunk, while around 30% of Vigo County High School Seniors indicate their friends would approve of weekly binge drinking.

Family & Parenting Factors: Several indicators suggest that family management problems and family conflict may be higher in Vigo County than in the state at large. Perceived parental approval of drinking is considerably lower than perceived peer approval, but the percentage of students who report that their parents would approve increases with age. In ISU college students, perceptions of parental approval are strongly related to levels of student drinking and perceptions of parental monitoring are also significantly but less strongly predictive of alcohol use and problems. The high rates of alcohol and tobacco use during pregnancy in Vigo County relative to other counties in Indiana, while not validated archival indicators, suggests that parents in Vigo County hold more favorable attitudes.
Towards alcohol use than parents from most other Indiana counties.

**Extreme Economic Deprivation**: Multiple sources of evidence indicate that extreme economic deprivation exists in Vigo County and that the level of economic deprivation in Vigo County is among the worst in the state of Indiana.

**Neighborhood Disorganization**: Voter turnout, a validated archival indicator of community disorganization, is extremely low in Vigo County relative to the national average. While not validated indicators, rates of property crimes as well as the personal crime of rape are higher in Vigo County than the state of Indiana and the nation.

**Transitions and Mobility**: Net migration and rental housing figures suggest that levels of transition and mobility are higher in Vigo County than the state average.

**Community Norms about Youth Drinking**: More than half of Vigo County middle school and high school students surveyed reported little risk in occasionally drinking 1-2 drinks and around 25% indicated that weekly binge drinking carried little or no risk. Adults in Vigo County tend to perceive experimenting with alcohol as a common and normal part of growing up. However, the also feel that underage drinking is dangerous. Adults in Vigo County generally believe that underage drinking is no more or less of a problem in Vigo County than elsewhere in the state of Indiana. Nearly 10% of adults surveyed in Vigo County did not see underage drinking as a problem at all.

**Retail Availability of Alcohol**: Alcohol is more readily available at retail outlets in Vigo County than in most counties in the state and Vigo County residents spend a larger proportion of their income on alcohol than do the residents of virtually all other counties.

### Alcohol Use in Vigo County

- According to the Indiana Alcohol, Tobacco, and Other Drug survey conducted annually by the Indiana Prevention Resource Center in Bloomington, Indiana, the percentage of Vigo County students at several grade levels who report weekly binge drinking (drinking 5 or more drinks on one occasion) was higher than the state average in 2005 and 2007.

- By they time they reach 8th grade, more than half of Vigo County Youth will have tried alcohol at least once in their lifetime.

- Sixth graders in Vigo County may be somewhat less likely to use alcohol than the typical Indiana 6th grader. However, at higher grade levels the percentage of Vigo County students who drink is often higher than the average for the state of Indiana.

- The majority of underage college students in Vigo County (60-80%) drink alcohol at least occasionally.

- Between 2004-05 and 2006-07, various sources show a slight decrease in the percentage of middle school, high school, and college youth who drink. However, it is not yet clear if this represents an actual change in behavior or is merely an artifact of inaccuracies in measurement.

### Some Consequences of Alcohol Use in Vigo County

According to the 2007 State Epidemiological Report, the rate of alcohol related automobile collisions in Vigo County (number of accidents per person living in the
Vigo County Epidemiological Profile

County) was among the highest 25% of Indiana Counties. At least 69 counties had lower rates of alcohol related collisions than Vigo County.

In 2007, more than 120 youth under the age of 18 were arrested for minor consumption of alcohol. Between 2000 and 2007, the greatest number of youth alcohol arrests occurs in the month of June.

In 2006, over $1,250,000 was spent on alcohol and drug related hospital visits in Vigo County.

In 2003 (the last year for which data are available) more people were treated for alcohol problems in Vigo County than for any other type of drug problem.

In 2006, nearly 200 ISU students were arrested or referred to ISU student judicial program for alcohol violations on the ISU campus (not counting students arrested off campus).

In the 2002-2003 school year, over half of ISU freshman reported having a hangover at least once. Around half indicated that had been sick or thrown up after drinking at least once that school year. Around 20% indicated that they had driven a car when they knew they were too drunk to drive and a similar percentage reported having had relationship problems related to their alcohol use.

Conclusions Regarding Consequences of Alcohol Use

- Large numbers of Vigo County Middle School, High School, and College students report experiencing various negative consequences of alcohol use, with hangovers being most common, but rates of driving under the influence being unacceptably high at virtually all age levels.

- Youth alcohol arrests peak in the month of June. Additional information is needed to help that peak may occur and what specific prevention efforts might be able to reduce problem drinking and or arrests during that month.

- The periods from age 15 to age 17 or between 8th and 10th grade seem to be important times for transitioning into alcohol use and problems among Vigo County youth.

- Based on several sources of data, alcohol dependence is the most frequently occurring diagnosis leading to substance abuse treatment in Vigo County.

- The total cost of hospital treatment of substance abuse related medical problems in Vigo County increased annually since 2003, topping $1 million in 2006.

- The largest groups of alcohol dependent individuals receiving subsidized treatment in Vigo County are white males between the ages of 35 and 44.

Conclusions Regarding Other Drugs of Abuse

Methamphetamine:

Methamphetamine is a more serious problem in Vigo County than in any but perhaps a few other counties in the state. While the number of individuals involved is not as large as the number with alcohol problems, methamphetamine should be considered one of the top problem drugs in Vigo County.

Marijuana:
In a 2007 survey of Vigo County Middle and High School students, rates of marijuana use by Vigo County 10th graders was significantly higher than the state average. Surveys of marijuana use by ISU students found a monthly use rate of between 12 and 24%. Two different While Vigo County was not identified in the 2007 State Report as a county with a high need to address marijuana dependence, the county ranked 5th in the state in terms of number of individuals being treated for marijuana dependence.

**Cocaine:**

The rate of cocaine use and dependence in Vigo County appears likely to be close to the state average. Compared to the percentage of the African Americans in the Vigo County population, African Americans are over-represented among individuals in substance abuse treatment in Vigo County where cocaine as the primary drug of abuse.

**Heroin:**

Based on available data, heroin dependence appears to be relatively uncommon in Vigo County when compared to rates for dependence on alcohol, marijuana, cocaine, and amphetamines.
Introduction

According to the Terre Haute Economic Development Corporation, Vigo County is the regional retail and employment hub for fifteen surrounding counties, including the five connecting counties of Clay, Sullivan, Parke, and Vermillion in Indiana and Edgar County in Illinois. Vigo County is located at the extreme edge of West Central Indiana along the Wabash River. Terre Haute is the county seat with a population of 57,259 in 2006 (1).

Vigo County offers Hoosier Hospitality at its finest. There are dining options from fine to franchise, from artsy to Blues Lounges. Year round activities including the Terre Haute Symphony, Swope Art Museum, CANDLES, Holocaust Museum and Education Center, college sports teams, big name entertainment at Hulman Center, Terre Haute Community Theater, Blues Festival, Children’s Science and Technology Museum, Clabber Girl Museum and Native American Museum and Nature Center and many others. (2). Saint Mary of the Woods College, Rose-Hulman Institute of Technology and Indiana State University offer many cultural, educational and informative programs to the community.

Education opportunities include Indiana State University, Rose-Hulman Institute of Technology, Saint Mary of the Woods College, Ivy Tech State College and Indiana Business College, Vigo County Public Library and Indiana State University’s Cunningham Memorial Library and others.

For recreation, there are 24 parks, seven public and private golf courses, a Frisbee golf course plus the Wabash River and lakes for fishing and boating. Vigo County also has a trail system for joggers, walkers and bicyclists. (3)

Population

Vigo County has the largest population of the surrounding counties which was 103,009 in the estimated 2006 US Census. Median Household Income is $34,536 with a median 2.38 persons per household. Per Capita Income is $26,568 while the USA Per Capita Income is $21,587. Median age is 35.9. (4) The Cost of Living in Vigo County is below the national average and significantly below other metropolitan areas (5).

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>The population by race:</td>
</tr>
<tr>
<td>African American</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
</tr>
<tr>
<td>Two or More Races</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Housing 2000 data:</td>
</tr>
<tr>
<td>Housing Units</td>
</tr>
<tr>
<td>Owner Occupied</td>
</tr>
<tr>
<td>Renter Occupied</td>
</tr>
<tr>
<td>Vacant Units</td>
</tr>
<tr>
<td>Median Value of Owner Occupied</td>
</tr>
<tr>
<td>Median Rent</td>
</tr>
</tbody>
</table>
According to the Terre Haute Housing Authority, as of January 2008 902 lived in Section 8 Housing, with 150 on the waiting list. There were 1000 low income housing units which are all occupied and 249 people are on the waiting list.

Table 3
Income and Poverty:

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>St. Rank</th>
<th>St Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Capita Personal Income in 2005</td>
<td>$27,425</td>
<td>47</td>
<td>88.0%</td>
</tr>
<tr>
<td>Median Household Income in 2004</td>
<td>$35,736</td>
<td>89</td>
<td>82.7%</td>
</tr>
<tr>
<td>Poverty Rate in 2004</td>
<td>15.4%</td>
<td>1</td>
<td>138.7%</td>
</tr>
<tr>
<td>Poverty Rate among Children under 18</td>
<td>21.3%</td>
<td>3</td>
<td>135.7%</td>
</tr>
<tr>
<td>Welfare (TANF) Monthly Average Families in 2006</td>
<td>768</td>
<td>10</td>
<td>1.9%</td>
</tr>
<tr>
<td>Food Stamp Recipients in 2006</td>
<td>13,037</td>
<td>9</td>
<td>2.3%</td>
</tr>
<tr>
<td>Free and Reduced Free Lunch Recipients in 2006</td>
<td>7,730</td>
<td>8</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Work and Employment

There are 10 Fortune 500 companies in Vigo County, industrial parks, airport, rail system and city bus system with ADA capacity. Area 7 Agency on Aging and Disabled offers transportation for those over 60 and/or physically challenged. (13) The two local hospitals are Union Hospital Health Group and Terre Haute Regional Hospital.

Table 4
The top six workforce categories are:

<table>
<thead>
<tr>
<th>Workforce:</th>
<th>Companies:</th>
<th>Jobs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Retail trade</td>
<td>401</td>
<td>7,890</td>
</tr>
<tr>
<td>2. Government</td>
<td>94</td>
<td>7,837</td>
</tr>
<tr>
<td>3. Manufacturing</td>
<td>138</td>
<td>7,696</td>
</tr>
<tr>
<td>4. Healthcare &amp; Social Assistance</td>
<td>297</td>
<td>7,371</td>
</tr>
<tr>
<td>5. Education Services</td>
<td>57</td>
<td>5,635</td>
</tr>
<tr>
<td>6. Construction</td>
<td>228</td>
<td>2,689</td>
</tr>
</tbody>
</table>

Table 5
Vigo County’s total Labor Force

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>47,082</td>
</tr>
<tr>
<td>Unemployed</td>
<td>2,642</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

Table 6
Top three employers by numbers of employees:

<table>
<thead>
<tr>
<th>Employer</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union Hospital Health Group</td>
<td>2,200</td>
</tr>
<tr>
<td>Vigo County School Corporation</td>
<td>2,163</td>
</tr>
<tr>
<td>Indiana State University</td>
<td>1,630</td>
</tr>
</tbody>
</table>
Table 7
Top three manufacturing Companies by number of employees:

<table>
<thead>
<tr>
<th>Company</th>
<th># of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Dane</td>
<td>1,600</td>
</tr>
<tr>
<td>Sony DADC</td>
<td>1,240</td>
</tr>
<tr>
<td>Bemis</td>
<td>1,100</td>
</tr>
</tbody>
</table>

Footnotes:
1,4,6,8-- STATS Indiana
2,3,5,7,9,10,11,12,13-- Terre Haute Economic Development Corporation

Over the past few years, a number of manufacturing and other facilities in Vigo County have experienced layoffs and/or closed completely. Table 8 provides a summary of some of these complied from the local newspaper.

Table 8
VIGO COUNTY LAYOFFS & CLOSURES

<table>
<thead>
<tr>
<th>Company</th>
<th>Date</th>
<th># of Layoffs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia House</td>
<td>2006</td>
<td>300+</td>
</tr>
<tr>
<td>International Paper</td>
<td>10/5/2007</td>
<td>156</td>
</tr>
<tr>
<td>Bemis</td>
<td>11/14/2007</td>
<td>63</td>
</tr>
<tr>
<td>CSN</td>
<td>1/9/2008</td>
<td>30</td>
</tr>
<tr>
<td>Great Dane</td>
<td>1/24/2008</td>
<td>75</td>
</tr>
<tr>
<td>Pfizer</td>
<td>1/29/2008</td>
<td>660</td>
</tr>
<tr>
<td>Great Dane</td>
<td>2/7/2008</td>
<td>54</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>1408</strong></td>
</tr>
</tbody>
</table>

Source: Tribune-Star News

Vigo County in the 2006 State Epidemiological Report

Vigo County was one of the communities identified as “High Need” for Alcohol-Related SPF SIG funding by 2004 Uniform Crime Reports data collected by the SEOW in 2006. Vigo County ranked number 9 out of 20 with these statistics. The following variables were used as indicators of alcohol problems:
- Number of alcohol-related fatal auto accidents
- Rate of alcohol-related fatal auto accidents
- Number of alcohol-related crashes
- Rate alcohol-related crashes
- Number of arrests for public intoxication
- Rate of arrests for public intoxication

Vigo County ranked number 3 out of 10 for communities identified as “High Need” for Methamphetamine. The indicators for Methamphetamine (from the FBI Uniform Crime Report) were:
- Total number of arrests for possession
- Rate of arrests for possession
Chapter 1 - METHODS

The Vigo County Epidemiology and Outcomes Workgroup

Members for the Vigo County Epidemiology and Outcomes Workgroup (VCEOW) were recruited at several SPF-SIG introductory meetings (based on expressed interest in serving on this group) as well as by targeting specific agencies and individuals known to have access to data relevant to the SPIF-SIG effort.

The VCEOW met bi-weekly for 2 months and then monthly for 2 months. VCEOW meetings included discussion of potential data sources and ways to obtain data, as well as discussion of what information to include in the report, how to interpret differences in data over time, what information to collect in the future, and other matters. In addition, several subcommittees met to discuss specific matters (e.g., preparing a telephone survey, preparing a key-leaders survey, etc.). The Chairperson was chosen because of his experience working with statistical data. The Vice-Chairperson was chosen because of her experience in prevention. The Secretary was chosen because of her SPF-SIG Program Director staff position.

Data Sources

A variety of data sources were used in preparing this report. Information on each source is described below. No one source of information will provide everything one wants to know about alcohol and other drug use and related information. Also, each data source has specific limitations in terms of the types of information contained and the degree to which that information reliably and accurately represents what is actually occurring in Vigo County and the State of Indiana. However, using multiple sources of information provides a variety of perspectives that may help us gain a more realistic picture of what is going on in Vigo County with regards to alcohol and other drug use than we could obtain by relying only on one source or by relying only on the opinions of individuals.

Afternoons R.O.C.K Pre-Tests

According to the Afternoons R.O.C.K. web-site (http://www.rock.indiana.edu/), Afternoons R.O.C.K. “is an after school drug prevention program for youth aged 10 - 14 years. The acronym ‘R.O.C.K.’ represents the mission of the program to provide Recreation, Object lessons, Culture and values and Knowledge via active and entertaining Focused and Supportive Prevention Activities designed to teach youth about social and media influences, conflict resolution and refusal/resistance skills, gang and violence prevention and the structuring of leisure time to be free of alcohol, tobacco and other drug use.”

“Born of a need for constructive, supervised activities for youth during the after school hours of 3pm to 6pm, Afternoons R.O.C.K. in Indiana provides youth with a prescribed strategy of structured and unstructured activities that promote positive social relationships and skills during these "three critical hours" of unsupervised time during which today’s youth often find themselves tempted to engage in risky behaviors such as experimentation with alcohol, tobacco and other drugs as well as vandalism, gang activity and sexual experimentation.”

Afternoons ROCK participants complete pre- and post- participation surveys which include questions about past month use of a variety of drugs. For this Vigo County Report, data were obtained from the Indiana Prevention Resource Center (IPRC, who administers the pre- and post- surveys) regarding pre-test levels of alcohol and other drug use at each
Afternoons R.O.C.K. site in Vigo County. Unfortunately, the program has not been consistently administered at the same locations every year. For the current report, data from each site were combined for each year to yield a total percentage. Given the changes in site location from year to year, as well as changes in the total number of participants, this data must be treated with caution, but was included because it can be compared to data from other sources to attempt to determine if: 1) prevalence of alcohol and other drug use in Afternoons R.O.C.K. participants is similar to the prevalence rates obtained in other sources; and 2) any changes over time in prevalence rates from Afternoons R.O.C.K. data parallel changes over time from other data sources.

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

The ATOD survey is conducted annually at the Indiana Prevention Resource Center (IPRC) (http://www.drugs.indiana.edu/data-survey_monograph.html). The survey is sponsored by the IPRC as well the Indiana Division of Mental Health and Addiction (DMHA). It monitors patterns of substance abuse by Indiana middle/high school students according to categories of lifetime, annual, monthly, and daily use. ATOD data is released annually and has been conducted for 15 years (1993 – 2007). The information presented in this report is taken from 2005 and 2007 reports provided by the Vigo County Public School Corporation.

The ATOD survey uses non-random, convenience samples of students. However, as shown in Table 1.1, in Vigo County the participation rate for the survey in 2005 and 2007 was very high, particularly for Middle School students. However, in 2007 students in the 6th, 9th, and 11th grades did not participate in the survey in Vigo County.

**Table 1.1: Sample size and proportion of enrolled students in sample for 2005 and 2007 ATOD survey**

<table>
<thead>
<tr>
<th>Grade</th>
<th>2005 Survey</th>
<th>2007 Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sample Size</td>
<td>Enrollment</td>
</tr>
<tr>
<td>6th</td>
<td>1070</td>
<td>1318</td>
</tr>
<tr>
<td>7th</td>
<td>1085</td>
<td>1404</td>
</tr>
<tr>
<td>8th</td>
<td>951</td>
<td>1298</td>
</tr>
<tr>
<td>9th</td>
<td>915</td>
<td>1326</td>
</tr>
<tr>
<td>10th</td>
<td>745</td>
<td>1242</td>
</tr>
<tr>
<td>11th</td>
<td>719</td>
<td>1105</td>
</tr>
<tr>
<td>12th</td>
<td>440</td>
<td>1077</td>
</tr>
</tbody>
</table>

**County Level Epidemiological Indicators (CLEI)**

The County Level Epidemiological Indicators web-site (www.sis.indiana.edu) is maintained by the IPRC. The CLEI site contains links to information about general population characteristics, alcohol and drug mortality and arrest data, TEDS data (see below), suspension and dropout rates, and other information useful for prevention planning and evaluation.

**Fatality Analysis Reporting System (FARS), Data and Vehicle Crash Record System (VCRS)**

The VCRS is a repository for Indiana State Police’s reports of collisions in Indiana. VCRS data is provided to the FARS, a national database of fatal motor vehicle accidents.
maintained by the National Highway Traffic Safety administration. Information about accidents involving alcohol is included and can be used to calculate state and national rates of alcohol-related fatal motor vehicle accidents. Note of caution: data in FARS is submitted on a voluntary basis, so it may not accurately represent the full incidence rate of state and national fatal motor vehicle accidents. Also, FARS data does not allow for comparison among age, gender, or racial groups. National Data are available at: http://www-fars.nhtsa.dot.gov/Main/index.aspx. State data are available upon request from the Indiana State Police. The VCRS data presented in this report were obtained from the 2007 State Epidemiological Profile and GIS in Prevention County Profile reports for Vigo County.

GIS in Prevention County Profile Reports for Vigo County

Since 2004 the Indiana Prevention Resource Center at Indiana University in Bloomington has been preparing reports for all 92 counties in Indiana to aid in prevention planning and assessment. The GIS reports present a variety of information regarding risk and protective factors, statistics on use, and consequences of alcohol and other drug use. GIS reports may be viewed at: www.drugs.indiana.edu/data-prevstat_pubs.html.

Indiana Department of Education Web-site

The Indiana Department of Education Website (http://www.doe.state.in.us/) maintains links for a variety of information about public school corporations in Indiana. For example, the enrollment figures shown above and used to compute participation rates for the ATOD survey were obtained from: http://mustang.doe.state.in.us/TRENDS/project.cfm?corp=8030. Information about ISTEP results, graduation rates, types of educational services provided, and suspensions were also obtained from this source.

Indiana State Department of Health Natality Report

The annual Department of Health Natality report catalogs information about pregnancies and birth in the state and in counties in Indiana. For the Vigo County report, this source was used to obtain information about the percentage of pregnancies in Vigo County and the State where the mother reported using alcohol or tobacco while pregnant. The Natality report is available at: http://www.in.gov/isdh/dataandstats/natality/index.htm.

Indiana State Epidemiological Profile (The Consumption and Consequences of Alcohol, Tobacco, and Drugs in Indiana: A State Epidemiological Profile 2007)

The Indiana Epidemiological Profile was prepared by the State Epidemiological and Outcomes Workgroup (SEOW) and "written for state policymakers and community leaders" and "presents data and analysis to support the development of a framework for advancing the mission of the Indiana Substance Abuse Prevention System" (SEOW, p. 3, 2007). The State Report provides a model for county level reports and some county level information presented in the State Report is also included in this Vigo County Report. However, the goal of the Vigo County report is to go beyond the data presented in the 2006 and 2007 SEOW reports to provide a more detailed description of alcohol and other drug problems in Vigo County. The 2007 Indiana State Epidemiological Profile is available at http://www.healthpolicy.iupui.edu/SEOW.htm.

Indiana State University Student’s Use of Alcohol and Marijuana

Indiana State University has the largest enrollment (between approximately 10,000 and 11,000 students per year over the past seven years) of any college or university in Vigo County.
County. College students are not counted in the Vigo County total population of 57,259 unless those students have been Vigo County residents prior to attending one of the four colleges or universities in Vigo County. Thus, college students add significantly to the population in Vigo County and are an important group for understanding patterns and prevalence of under age drinking and binge drinking in 18-25 year olds in Vigo County.

Information regarding the use, consequences, and correlates of alcohol and marijuana use in Indiana State University students was obtained from a variety of sources. Much of the information presented in this Vigo County report was obtained from research studies conducted by Dr. Tom Johnson’s research team at ISU, including data obtained in a series of samples collected with funding from the National Institute on Alcohol Abuse and Alcoholism (Johnson, Kristeller, & Sheets, 2004; Johnson, Sheets, & Kristeller, 2008). The samples collected for this project included a random sample of ISU students stratified by age and gender, and a sample that included 76 % of the freshman class entering ISU in the fall of 2002. Both samples were paid for participation in the study. Although the data are several years old at this point, both of these samples are likely to provide reasonably representative information about alcohol and drug use in ISU students. In addition to these samples, additional convenience samples from a variety of other studies, including student dissertations, were used in this Vigo County Report (Forbes, 2003; Freimuth, 2002; Glanville, 2007; Halberda, 2005; Hawkins, 2006; Shiber, 2003). These samples are likely to be less reliable and representative than the samples collected with NIAAA funding. These samples vary in the extent to which they sample broadly from the population of ISU students. However, some of the larger studies, such as Lindsey Hawkins’ dissertation study of marijuana use in ISU students, while still being convenience samples recruited from students in various ISU General Education classes, may also provide data that could be generalized to the entire population of ISU students.

Additional information on alcohol and other drug use in ISU students was obtained from the 2006 CORE College Student Alcohol Survey completed by over 1400 ISU students. Indiana State University was one of a coalition of 14 Indiana colleges and universities (ICAUS) who participated in the CORE Survey as part of efforts to increase awareness of college drinking in Indiana. ISU had one of the largest rates of participation in the CORE survey. Participants were recruited through a web-site and e-mails to all ISU students. Although some caution is warranted given that random sampling was not used to obtain this sample, the relatively large sample size suggests that the results may provide a reasonably good approximation of the general pattern of alcohol and other drug use among recent ISU students. For comparison purposes, the combined results of the 14 ICAUS schools are available, as well as national results.

**National Clandestine Laboratory Seizure System (NCLSS)**

This is a database maintained by the Drug Enforcement Agency, the El Paso Intelligence Center, and the Indiana State Police which contains information on illicit drug lab seizures in the United States. Information monitored includes types, numbers, and locations of labs; precursor and chemical sources; number of children involved; and law enforcement officers affected. NCLSS information included in this Vigo County Report was obtained from the Indiana State Epidemiological Report and GIS in Prevention Vigo County Profiles.

**Treatment Episode Data Set (TEDS)**

The Treatment Episode Data Set (TEDS) is a national database maintained by the Substance Abuse and Mental Health Services Administration (SAMHSA) and sponsored by the Indiana Division of Mental Health and Addiction (DMHA). TEDS information pertains to individuals entering treatment for substance abuse and/or dependence. Data are submitted
by state mental health departments annually, and include age, race, gender, and other
demographic information as well as information related to the use of various substances.
The format of the TEDS allows comparisons of state and national data regarding gender,
race, and age groups. County-level TEDS data are available through the Indiana
Department of Mental Health and Addiction and via the County Level Epidemiological
Indicators site maintained by the IPRC (www.sis.indiana.edu/).

Cautions: TEDS data are not necessarily representative of all individuals who receive
treatment for drug and alcohol abuse/dependency. In the state of Indiana, TEDS data
represents individuals entering treatment who are 200% below the poverty level and who
are receiving state-funded treatment. Individuals who are self-paying for treatment or have
insurance are thus not counted in Indiana TEDS data. National TEDS data are available at:
http://webapp.icpsr.umich.edu/

**Uniform Crime Report (UCR)**

The Uniform Crime Report is based on a National database maintained by the Federal
Bureau of Investigation (FBI) containing information on rates of property, violent, and drug-
related crimes in the U.S. submitted by law enforcement agencies on a state and county-by-
county basis. In the 2007 Indiana State Epidemiological Report, several types of crime rates
are compared for all Indiana counties, as well as comparisons with national rates. It is also
possible to compare rates for juveniles versus adults.

There is a 2-year lag between data collection and its availability. The UCR contains
information about drug possession and arrest, but data about drug/alcohol involvement in
the commission of other crimes is not recorded. States are not required to report data to the
UCR, and the level of reporting varies by county and state considerably. Indiana has a
rather low reporting rate overall, and the reporting rate for Vigo county in the most recent
UCR was 57%. As of the writing of this report, the Vigo County Sheriff’s department does
not provide UCR data to the FBI, although the Terre Haute City Police do. Given that less
than 100% of local law enforcement agencies provide UCR data, the crime indices for Vigo
County are actually estimates of what the rates would be with full participation. Thus, UCR
data should be interpreted with caution. UCR data presented in this Vigo County Report
were obtained from the GIS in Prevention Vigo County Profiles and/or the Indiana State
Epidemiological Report. County level UCR data are available at:

**Vigo County Community Norms Survey (2007)**

The Vigo County Local Epidemiological and Outcomes Workgroup, along with faculty at
Indiana State University (Dr. Tom Johnson, Dr. Tom Steiger, Dr. Yasenka Petersen, and Dr.
Virgil Sheets) prepared a series questions to be administered in a telephone survey of Vigo
County residents. The survey was administered by the Survey Research Laboratory at
Indiana State University under the direction of Dr. Ricardo Marte. Data for the community
norms survey was collected between 2/4/08 and 2/28/08. Data was collected through a
telephone survey. Weekday calls were made between the hours of 5PM and 9PM, Monday
through Thursday. Sunday calls were made between the hours of 3PM and 9PM. The
sample is drawn from a sample of Vigo County Households selected randomly through
random digit dialing procedures. The original sample is over 16,000 households. Of that
larger sample, a smaller sample of 873 households was contacted with 493 of those
completing the interview for a response rate of 57%. All interviews were conducted with
adults (18 years or older).

As is generally the case with telephone surveys of households, women are overrepresented
in the sample. Lower income households are under represented (41.1 percent of Vigo County households earn more than $50,000 compared to 51.5% of the sample reporting earning more than $55,000), as are college graduates (21.4% of Vigo County residents are college graduates, while nearly 42% of the sample are college graduates). Although we did not collect data on the respondent’s age, generally, older aged individuals are overrepresented in such samples.

The degrees of overrepresentation, however, are not great (with the exception of sex and education). In this sample, though all ethnic and racial groups are well represented, 90% of the Vigo County population is white; the sample is composed of 91% white or European Americans.

**Vigo County Juvenile Probation Office Monthly Reports**

The Vigo County Juvenile Probation Office receives information on juvenile arrests from all law enforcement agencies in Vigo County. From this information, a monthly report is prepared listing the total number of arrests for a month and the year to date totals for various criminal and status offenses. Totals are also provided for number and type of arrests by age, race, and gender. For this Vigo County Report, we used data from January 2000 through October 2007. Results reported for 2007 have thus been adjusted to estimate the number of incidents for the entire year.
Chapter 2 - FINDINGS REGARDING THE FUNDED PRIORITY SUBSTANCE

Vigo County was funded for prevention programs aimed at underage drinking and binge drinking in 18-25 year olds. Vigo County’s eligibility for SPF SIG funding was determined in part by results of the Indiana SEOW workgroups’ first epidemiological report (2006). This report identified Vigo County as evidencing a high level of need in addressing the problems of underage drinking and binge drinking in 18-25 year olds and methamphetamine use. The goal of this report is to go beyond the data presented in the 2006 and 2007 SEOW reports to provide a more detailed description of alcohol and other drug problems in Vigo County. While we will cite some of the information from the state reports, the current report is intended to supplement rather than replace the state reports.

The following sections describe epidemiological findings regarding underage and binge drinking. We will begin by discussing risk and protective factors present in Vigo County that might contribute to, or at the very least be predictive of, underage drinking and binge drinking. We will then present data regarding the frequency of underage drinking and of binge drinking in 18-25 year olds. Finally information will be presented about some of the consequences of underage and binge drinking.

Figure 2.1 below illustrates that risk and protective factors are thought to contribute to the use of alcohol. The use of alcohol in turn contributes to alcohol related problems or consequences, such as alcohol dependence or alcohol related crimes. Identifying risk and protective factors provides a basis for designing prevention interventions. Information about risk and protective factors, use, and consequences can be used to document the need for prevention programming, as well as serve as a means for monitoring the impact of programs.

Figure 2.1 - The causal sequence.

Risk and Protective Factors

Risk and protective factors are characteristics or conditions that have been identified by research as statistically predictive of and plausibly causally related to a given behavior, in this case, early involvement with alcohol. The presence of risk factors is associated with a greater likelihood of early involvement with alcohol, while the presence of protective factors is associated with a lower probability of use. Note that the presence of a risk factor does not automatically mean that someone will begin to use alcohol. Rather, the number of risk and protective factors present is thought to increase or decrease the probability or likelihood of alcohol use and problems developing. In addition, many risk and/or protective factors are predictive of multiple outcomes, such as substance abuse, delinquency, or teen pregnancy.

In some cases protective factors are simply the opposite of risk factors (e.g., school failure is a risk factor and school success is a protective factor). A common approach to prevention is to attempt to increase the number of protective factors and decrease the number of risk factors present for an individual or community. The United States Substance Abuse and Mental Health Services Administration (SAMHSA, 2001) specified six domains and associated risk and protective factors. These are shown in the Table 2.1.
Table 2.1 – SAMHSA Risk and Protective Factors

<table>
<thead>
<tr>
<th>Domain</th>
<th>Risk/Protective Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Biological and psychological dispositions, attitudes, values, knowledge, skills, problem behaviors</td>
</tr>
<tr>
<td>Family</td>
<td>Function, management, bonding</td>
</tr>
<tr>
<td>Peer</td>
<td>Norms, activities, bonding</td>
</tr>
<tr>
<td>School</td>
<td>Bonding, climate, policy, performance</td>
</tr>
<tr>
<td>Community</td>
<td>Bonding, norms, resources, awareness &amp; mobilization, policy</td>
</tr>
<tr>
<td>Society/Environmental</td>
<td>Norms, policy, sanctions</td>
</tr>
</tbody>
</table>

Hawkins, Catalano, and Miller (1992) provided a list of individual/interpersonal as well as contextual/environmental risk factors that has been widely cited. Their work contributed to the following list of risk and protective factors provided to Indiana counties who have received SPF SIG grants. This list covers individual, family, peer, and school level factors.

Table 2.2 – Hawkins, Catalano, & Miller Risk and Protective Factors

<table>
<thead>
<tr>
<th>Risk Factors for Underage Alcohol Use</th>
<th>Protective Factors for Underage Alcohol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme economic deprivation</td>
<td>Strong parental bonding</td>
</tr>
<tr>
<td>Neighborhood disorganization</td>
<td>Positive temperament</td>
</tr>
<tr>
<td>Physiological/genetic factors</td>
<td>Strong external support system</td>
</tr>
<tr>
<td>Poor &amp; inconsistent family management practices</td>
<td>Belief in generalized expectations, norms, values of society</td>
</tr>
<tr>
<td>Family conflict</td>
<td>Strong commitment to school</td>
</tr>
<tr>
<td>Low bonding to family</td>
<td>Involvement in church</td>
</tr>
<tr>
<td>Early &amp; persistent problem behavior</td>
<td></td>
</tr>
<tr>
<td>Academic failure</td>
<td></td>
</tr>
<tr>
<td>Low degree of commitment to school</td>
<td></td>
</tr>
<tr>
<td>Peer rejection in elementary grades</td>
<td></td>
</tr>
<tr>
<td>Alienation and rebelliousness</td>
<td></td>
</tr>
<tr>
<td>Early onset of drug use</td>
<td></td>
</tr>
</tbody>
</table>

For some risk and protective factors, researchers have identified variables that provide a valid indication of the presence of that factor (i.e., “validated archival indicators”). Hogan et al. (2003) provided a list of validated archival indicators, as well as suggested potential indicators for risk and protective factors where research has yet to document the validity of specific indicators. Unless otherwise indicated, the information presented in this report will focus on validated archival indicators of risk. Pieces of information that constitute potential indicators that have not been validated will be indicated as such.

Table 2.3 Risk & Protective Factors Covered in this Report

<table>
<thead>
<tr>
<th>Risk / Protective Factor</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early problem or antisocial behavior</td>
<td>Individual</td>
</tr>
<tr>
<td>Involvement in church or other place of worship</td>
<td>Individual (&amp; Community¹)</td>
</tr>
<tr>
<td>School failure/commitment</td>
<td>Individual (&amp; School²)</td>
</tr>
<tr>
<td>Peer influences</td>
<td>Peer</td>
</tr>
<tr>
<td>Social availability of alcohol to youth</td>
<td>Peer / Family</td>
</tr>
<tr>
<td>Family factors</td>
<td>Family</td>
</tr>
<tr>
<td>Extreme economic deprivation</td>
<td>Community</td>
</tr>
<tr>
<td>Community or neighborhood disorganization</td>
<td>Community</td>
</tr>
<tr>
<td>Transitions &amp; mobility</td>
<td>Community</td>
</tr>
<tr>
<td>Community norms about youth drinking</td>
<td>Community</td>
</tr>
<tr>
<td>Retail availability of alcohol to youth</td>
<td>Community</td>
</tr>
</tbody>
</table>

Notes: 1: Church involvement is an individual factor. The number of churches in an area can be considered a community factor; 2: Poor school performance in a given individual is an individual risk factor, while schools themselves can be a community level protective factor.
Early problem or antisocial behavior

Early initiation of problem behavior is a risk factor predictive of a variety of later problems, including not only alcohol and other drug use, but also for delinquency, teen pregnancy, school drop-out, and violence (Hogan et al., 2003; Jessor, Jessor, & Donovan, 1981). Hogan et al (2003, p.301) list several validated archival indicators of “early initiation of problem behavior” (dropouts prior to 9th grade; arrests of 10-14 year olds for vandalism, alcohol related crimes, and personal and property crimes) as well as possible indicators of “early and persistent antisocial behavior” (elementary school special education classes for Emotional Disturbance and/or Learning Disabilities; elementary school students with behavioral disorders).

Youth Crime. Youth crime statistics for Vigo County were provided by the Vigo County Juvenile Probation office. Table 2.4 shows the total number of arrests and the number of arrests for alcohol related crimes. As indicators of early problem behavior, values are typically computed as the rate per 1000 population age 10-14. Data for 2007 were estimated as data for November and December were not yet available when these calculations were made. Based on estimated values, the total number of arrests for 2007 is significantly lower than the number of arrests in this age group made in the years from 2001 through 2004.

Table 2.4 – Total arrests and alcohol related arrests in 10-14 year olds

<table>
<thead>
<tr>
<th>Year</th>
<th>Total arrests</th>
<th>Total arrests per 1000 population</th>
<th>Alcohol related arrests</th>
<th>Alcohol related arrests as % of total arrests</th>
<th>Alcohol arrests per 1000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>355</td>
<td>57</td>
<td>5</td>
<td>1.4 %</td>
<td>0.8</td>
</tr>
<tr>
<td>2001</td>
<td>383</td>
<td>61</td>
<td>10</td>
<td>2.6 %</td>
<td>1.6</td>
</tr>
<tr>
<td>2002</td>
<td>423</td>
<td>68</td>
<td>2</td>
<td>0.5 %</td>
<td>0.3</td>
</tr>
<tr>
<td>2003</td>
<td>393</td>
<td>63</td>
<td>16</td>
<td>4.1 %</td>
<td>2.6</td>
</tr>
<tr>
<td>2004</td>
<td>362</td>
<td>58</td>
<td>4</td>
<td>1.1 %</td>
<td>0.6</td>
</tr>
<tr>
<td>2005</td>
<td>293</td>
<td>47</td>
<td>16</td>
<td>5.5 %</td>
<td>2.6</td>
</tr>
<tr>
<td>2006</td>
<td>325</td>
<td>52</td>
<td>5</td>
<td>1.5 %</td>
<td>0.8</td>
</tr>
<tr>
<td>2007</td>
<td>254</td>
<td>41</td>
<td>14</td>
<td>5.5 %</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Notes: Source: Vigo County Juvenile Probation Office.

Educational Indicators. Hogan et al (2003) suggested that the number of children receiving special education services for Emotional Disturbance (ED) or Learning Disabilities (LD) might function as a possible indicator of early problem behavior in a community. The Indiana Department of Education Web-site provides information regarding the percentage of children in each public school district in the state receiving special education as well as other types of services. As shown in Table 2.5, the percent of Vigo County students receiving special education services is higher than the state average, while the percentage receiving gifted and talented services is below the state average. For future reports it may be possible to obtain more specific information from Covered Bridge Special Education District regarding numbers or proportions of ED and LD children receiving services.

Table 2.5 – Percentages of Vigo County Students Receiving Specific Types of Services

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Vigo County 2004-2005</th>
<th>Vigo County 2005-2006</th>
<th>Vigo County 2006-2007</th>
<th>State Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Students in Special Education</td>
<td>21.4</td>
<td>22.3</td>
<td>23.1</td>
<td>17.8</td>
</tr>
<tr>
<td>Percent of Students in Gifted and Talented Education</td>
<td>8</td>
<td>9</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Percent of Limited English Proficiency Students</td>
<td>0.5</td>
<td>0.6</td>
<td>0.8</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Notes: Source: IDOE Web-site.
Conclusions Regarding Early Problem or Antisocial Behavior:

- While some data exist regarding crime in youth age 10-14, the categories of offenses available for this report do not map directly onto the categories identified as validated archival indicators. It may be possible to gather such information from the FBI Uniform Crime Report or other sources.

- Some standard of comparison is needed to interpret whether the crime rates observed in Vigo County youth are high or low relative to the state and the nation.

- While the percentage of students in special education being higher in Vigo County is suggestive of enhanced risk relative to the rest of the state, it must be remembered that these are not validated archival indicators of antisocial behavior, only plausible candidates for indicators.

Involvement in Church or Other Place of Worship

Church or religious involvement can be considered as an individual protective factor, but the number of places of worship in a given region can also be considered as a protective factor at the community level. The 2005 GIS in Prevention County Profile Report for Vigo County (de Martinez, 2005) indicated that there were 178 churches in the county. The Faith and Values Section of the Terre Haute Tribune Star dated March 1, 2008 listed 253 churches or other places of worship in Vigo County and nearby communities in neighboring counties (not including 18 churches listed separately for Clay County).

Religious involvement or regular attendance at a church, synagogue, or other place of worship has consistently been shown to predict lower likelihood of drinking or developing alcohol dependence (Humphries & Gifford, 2006). As part of a series of studies of alcohol use in Indiana State University students, Dr. Tom Johnson and his research team divided a large sample of students into four groups based on their responses to questions about how often they attended church, how often they prayed or meditated, how important religion was in their lives, and other similar questions. Students in the most religious group drank less often and in smaller amounts than less religious students. For example, when asked to indicate the largest number of alcoholic drinks they had consumed on any one drinking occasion during the past year, the most religious group reported an average of less than three drinks. In contrast, the group that was lowest in religiousness reported an average of over eight drinks on one occasion. In a sample of 76% of the entering freshman class of 2002, underage students entering ISU from Vigo County scored higher on several measures of religiousness and spirituality than students who were not from Vigo County.

In ISU students, religious involvement appears to protect against problem drinking in at least three ways (Johnson et al., 2008). The most powerful two influences of religious involvement on drinking appear to be: 1) students who are more religious are less likely to have friends who drink heavily, thus reducing their exposure to alcohol and reducing the view that alcohol is a normal part of socializing; and 2) students who are more religious show a greater sense of personal meaning in life, report greater sense of internal peace, and are less likely to use alcohol as a way of trying to cope with negative feelings. Students who are more religious also report more negative beliefs about alcohol (for example, the belief that alcohol is dangerous, that alcohol contributes to violence, or that drinking is sinful, etc.). However, such beliefs are not nearly as strongly related to lower alcohol use as are peer associations and well-being (Johnson et al., 2008). It is important to note that not all students who are religious will avoid alcohol problems and that many students who identify themselves as atheists will actually refrain from drinking. As with all risk and protective factors, level of religious involvement can increase or decrease risk, but does not perfectly predict who will and will not develop problems with alcohol.
Conclusions Regarding Involvement in Church:

- Levels of religious involvement in youth entering Indiana State University from Vigo County appear to be higher than the level of religious involvement in students coming from other counties, but additional information is needed to more accurately determine level of religious involvement among underage youth in Vigo County.
- In ISU college students, religious involvement is consistently related to lower levels of alcohol use and problems, but no such data is yet available for non-college youth in Vigo County.

School Failure/Commitment

Early academic failure is an individual level risk factor associated with not only underage drinking, but a variety of other problem behaviors as well. However, schools can also be viewed as an important source of pro-social influences at the community level. Here we will be focusing primarily on school failure or problems as an individual risk factor. While Hogan et al. (2003) did not provide any validated indicators of early academic failure, they noted a variety of possible indicators, including scores on standardized tests such as the ACT or GED, number of GED diplomas issued, and measures of proficiency in various academic areas (such as ISTEP scores). Validated indicators of low commitment to school include the percentage of high school students who drop out in a given year and the percentage of 16-19 year olds not enrolled in school (Hogan et al., 2003). The Indiana Department of Education website provides statistics on dropouts and suspensions for Indiana Schools and School Districts. Figure 2.2 shows the number of students dropping out of high school from 1999 through 2004. The number of dropouts shows a decline after 2001, but due to the nature of the data, we cannot determine if these declines are statistically significant.

Figure 2.2

Vigo County – Number of Dropouts by Grade in School

Source: Indiana Department of Education Website
The Indiana Statewide Testing for Educational Progress (ISTEP) tests are measures of math and language proficiency administered annually to Indiana students in grades 3 through 10. Hogan et al suggested that such testing might provide an indicator of risk, but such scores are not validated archival indicators. The Indiana Department of Education website provides a variety of information about public schools in Indiana, including ISTEP scores and percentage of students passing the ISTEP. Table 2.6 shows the proportion of students across all grades passing the ISTEP math and English/language arts tests as well as the overall passing rate for the state.

### Table 2.6 – Percent of Students Passing ISTEP in Vigo County and Statewide

<table>
<thead>
<tr>
<th>School Year</th>
<th>State of Indiana</th>
<th>Vigo County</th>
<th>State of Indiana</th>
<th>Vigo County</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2001</td>
<td>66.7</td>
<td>62.9</td>
<td>64.1</td>
<td>61.4</td>
</tr>
<tr>
<td>2001-2002</td>
<td>66.3</td>
<td>63.5</td>
<td>64.6</td>
<td>63.5</td>
</tr>
<tr>
<td>2002-2003</td>
<td>68.0</td>
<td>65.4</td>
<td>69.4</td>
<td>67.8</td>
</tr>
<tr>
<td>2003-2004</td>
<td>71.4</td>
<td>66.9</td>
<td>70.6</td>
<td>68.3</td>
</tr>
<tr>
<td>2004-2005</td>
<td>72.2</td>
<td>65.8</td>
<td>71.2</td>
<td>67.8</td>
</tr>
<tr>
<td>2005-2006</td>
<td>74.0</td>
<td>68.4</td>
<td>71.7</td>
<td>68.5</td>
</tr>
<tr>
<td>2006-2007</td>
<td>73.7</td>
<td>67.2</td>
<td>71.4</td>
<td>67.0</td>
</tr>
<tr>
<td>2007-2008</td>
<td>74.6</td>
<td>70.9</td>
<td>72.0</td>
<td>68.4</td>
</tr>
</tbody>
</table>

The overall graduation rate for students in Vigo County in the 2006-2007 school year was 73.4%, very near the state average of 76.5%. Table 2.7 shows comparisons of graduation rates for several different subgroups of students in Vigo County and the state of Indiana.

### Table 2.7 - Graduation Rates for Various Types of Students in Vigo County and the State of Indiana (2006-2007 school year)

<table>
<thead>
<tr>
<th>Group</th>
<th>Vigo County Graduation Rate</th>
<th>State of Indiana Graduation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female students</td>
<td>75.5</td>
<td>80.4</td>
</tr>
<tr>
<td>Male students</td>
<td>71.3</td>
<td>72.7</td>
</tr>
<tr>
<td>Students receiving free lunch/textbooks</td>
<td>49.9</td>
<td>58.6</td>
</tr>
<tr>
<td>Special education students</td>
<td>46.4</td>
<td>52.6</td>
</tr>
<tr>
<td>Black students</td>
<td>63.2</td>
<td>57.0</td>
</tr>
<tr>
<td>White students</td>
<td>73.8</td>
<td>79.9</td>
</tr>
<tr>
<td>Multi-racial students</td>
<td>67.3</td>
<td>70.1</td>
</tr>
</tbody>
</table>

While the nature of the data does not allow us to determine statistical significance of the differences between Vigo County and the state, the largest discrepancy in the table is for students receiving free lunch/textbooks, where the graduation rate for Vigo County is nearly 9 points below the state average. This suggests that low income students in Vigo County may be at greater risk for school failure than low income students elsewhere in the state. This could be related to extreme economic deprivation in Vigo County, a risk factor that will be discussed later in this report.

**Conclusions Regarding School Failure/Commitment:** Several indicators suggest that levels of commitment to school in Vigo County may be somewhat lower than the state average, at least for some segments of the population. A decline in the dropout rate may have occurred after 2001, but this could be related to changes in the method of calculating this rate.
Social availability of alcohol to youth

Social availability of alcohol to youth represents the ease with which youth can obtain alcohol from peers or family members. Social availability would include what some researchers identify as “active social influences” (e.g., being handed a drink, etc.), which can be distinguished from passive social influences such as perceived norms or modeling of drinking behavior (Graham, Marks, & Hanson, 1991). Tom Johnson and his colleagues included the following questions to assess social availability on a survey of students entering ISU in the fall of 2002:

- On the average during the past year, how often did someone offer you a drink (that is, offer to buy you a drink, attempt to hand you or give you a drink, etc.)?
- On the average during the past year, how often have you been to parties or other social gatherings where people are drinking alcohol?

There was a significant difference between the proportions of Vigo County and non-Vigo county students who reported various frequencies of being offered a drink and being at a party where alcohol was served. A larger proportion of students from within Vigo County (25.5 %) than outside of Vigo County (17.1 %) had never been offered a drink during the previous year. However, a larger percentage of students entering ISU from within Vigo County reported having been offered a drink more than one time per week (19.7 % for students from Vigo County versus 14.1 % for students from outside Vigo County). This and other studies using social availability questions with ISU students suggest that social availability increases as students move from high school to college and as they move from their freshman to senior year of college.

The proportions of students entering from Vigo county and from outside of Vigo county also differed in terms of the frequency with which they had played drinking games. More students from Vigo County (13.9 %) than from outside Vigo County (8.1 %) reported playing drinking games once a week or more. A number of studies conducted at ISU have connected exposure to drinking games to increased drinking and increased risk of negative consequences of drinking, including sexual victimization (Johnson et al., 1998; Johnson & Sheets, 2004; Johnson & Stahl, 2004).

The 2007 Indiana ATOD survey asked students to indicate their main sources of alcohol beverages. Three of the four most commonly endorsed sources all involved social availability of alcohol. Table 2.8 shows the four most commonly endorsed sources of alcohol for Vigo County students, along with state averages for comparison.

**Table 2.8 – Percentage of Vigo County Students Indicating a Given Source as their Main Way of Obtaining Alcoholic Beverages**

<table>
<thead>
<tr>
<th>Source</th>
<th>8th Grade</th>
<th>10th Grade</th>
<th>12th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had someone else buy it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigo County</td>
<td>3.0 %</td>
<td>9.7 %</td>
<td>14.4 %</td>
</tr>
<tr>
<td>State of Indiana</td>
<td>2.5 %</td>
<td>8.0 %</td>
<td>13.0 %</td>
</tr>
<tr>
<td>Received from person 21 or older.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigo County</td>
<td>3.9 %</td>
<td>6.3 %</td>
<td>7.1 %</td>
</tr>
<tr>
<td>State of Indiana</td>
<td>3.0 %</td>
<td>5.5 %</td>
<td>8.8 %</td>
</tr>
<tr>
<td>Other ways</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigo County</td>
<td>7.6 %</td>
<td>9.5 %</td>
<td>5.6 %</td>
</tr>
<tr>
<td>State of Indiana</td>
<td>7.6 %</td>
<td>9.0 %</td>
<td>7.6 %</td>
</tr>
<tr>
<td>Family members.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigo County</td>
<td>4.4 %</td>
<td>3.5 %</td>
<td>3.2 %</td>
</tr>
<tr>
<td>State of Indiana</td>
<td>5.3 %</td>
<td>4.3 %</td>
<td>3.5 %</td>
</tr>
</tbody>
</table>
Conclusions Regarding Social Availability of Alcohol: Social availability is higher for older youth than for younger students. Relative to the state of Indiana, Vigo County may hold a greater proportion of pre-college youth with relatively high social availability of alcohol and another group with relatively low social availability. Results for youth must still be considered with caution because they are based on a non-random sample and we could not determine statistical significance of differences in the ATOD survey data.

Peer influences

There is considerable evidence supporting the influence of peers on drinking in children, adolescents (Chassin, Curran, Hussong, & Colder, 1996; Scheier & Botvin, 1997; Sieving, Perry, & Williams, 1999), and college students (Dorsey, Scherer, & Real, 1999; Hussong, 2003). Peer influences include perceptions of peer use, beliefs about peers’ approval of or attitudes towards alcohol, social pressures to drink, being offered drinks, and participation in drinking games, (Brown, et al., 1993; Hussong, 2002, 2003; Johnson et al, 1998; Johnson & Sheets, 2004; Suls & Green, 2003; Tucker et al., 2003; Wood et al., in press). Adolescents and college students often have several levels of social contacts, (e.g., best friends, social cliques, fellow members of Greek organizations, etc.; Brown et al., 1993; Dorsey et al., 1999; Hussong, 2002, 2003; Sher et al., 2001). Hussong (2002) demonstrated that among adolescents whose best friend used substances, those who belonged to a peer clique that did not use alcohol were less likely to use themselves than students who did not belong to such a group.

The IPRC ATOD survey contains questions about students’ perceptions of whether their peers would approve or disapprove of various levels of drinking and drug use. Figures 2.3 and 2.4 present perceptions of peer approval in Vigo County youth.

Figure 2.3

Percentage of Vigo County students who indicate that their peers would approve of occasionally consuming 1 or 2 alcoholic drinks

![Percentage of Vigo County students who indicate that their peers would approve of occasionally consuming 1 or 2 alcoholic drinks](chart)

Source: IPRC ATOD Survey, courtesy of Vigo County School Corporation

For 2007, the percentage of Vigo County students who indicated that their friends would
approve or strongly approve of occasionally having 1 or 2 drinks or of weekly binge drinking were similar to the state averages (Gassman et al., 2007). The percentage of 12th grade students approving was slightly higher in Vigo County than in the state. The percentage of 8th graders indicating that their peers would approve of weekly binge drinking was also higher in Vigo County than in the state, but we are unable to determine if these small differences are statistically significant.

Figure 2.4

In the graph of students’ perceptions of their parents’ approval that appears in the next section, there is very little increase from younger to older students in the percentage who said their parents would approve of drinking. However, ATOD Survey results show that the percentage of 12th graders who believe that their peers would approve of weekly binge drinking is more than three times as high as the percentage in 6th graders.

In a June 2002 survey of 1500 freshman who would enter ISU that fall (76 % of that year's freshman class), underage students entering ISU from Vigo County were more likely than students from outside of Vigo County to report that they had been offered alcohol more than once a week during the past year (19.7 % versus 14.1 %). Underage students from Vigo County also reported significantly higher ratings of how often their friends drink, how often they thought the typical ISU student of their gender drank, how often they themselves had played drinking games during the previous year, and how often they had attended parties or other social gatherings where alcohol was served.

In a survey conducted of a random sample of ISU students in the spring of 2002, 69.8 % of students indicated that their friends would approve or strongly approve of drinking alcohol and 54.8 % indicated that their friends would approve of getting drunk. There were no significant differences in perceived approval by year in school. However, men and students involved in the Greek system were significantly more likely than women and non-Greek students to indicate that their friends would approve of drinking and getting drunk.
Conclusions Regarding Peer Influences: Perceptions of peer approval appear to increase dramatically from 6th grade to 12th grade and are higher in college age students than in high school students. While the nature of the data requires that, at least for the ATOD survey, results be considered with caution, the information available suggests that half or more of late adolescents in Vigo County believe that their friends approve of drinking alcohol. More than half of ISU college students indicate that their friends approve of getting drunk, while around 30% of Vigo County High School Seniors indicate their friends would approve of weekly binge drinking.

Family Factors

Several family related factors are validated archival indicators of extreme social deprivation, including percentage or number of single family households, family history of substance abuse, and adults in alcohol and other drug treatment programs (Hogan et al., 2003). Other family related risk factors (and their associated indicators) include Family conflict (validated indicators: divorce rates and domestic violence arrests) family management problems (validated indicators: rates of children living away from parents and rates of children living in foster care), and favorable parent attitudes towards and involvement with alcohol use (possible indicators: adult alcohol related arrests, adult violent and property crime arrests, and alcohol and tobacco use during pregnancy) (Hogan et al., 2003).

Family Management Problems and Conflict. In 2003, Vigo County had the 10th highest number of births to teens of all Indiana counties (167). According to the GIS in Prevention Vigo County Profile Vigo county is above the state average in percent of single parent families (33.2 % vs. 28.7 %, 4th highest in the state), percent of households with a non-family male head of the household (1.5 vs. 1.1), percent of households with a non-family member female head of the household (.3 vs. .2), and percent of households with children where no parent is present (1.8 vs. 1.3). According to Demographic information provided by the Terre Haute Chamber of Commerce web-site, in 2000 there were 3920 single parent households in Vigo County, which was the 12th highest number in the state.

<table>
<thead>
<tr>
<th>Table 2.9 - Divorce Rates in Vigo County and in Indiana</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td>2002</td>
</tr>
<tr>
<td>2003</td>
</tr>
<tr>
<td>2004</td>
</tr>
<tr>
<td>2005</td>
</tr>
</tbody>
</table>

Perceptions of Parental Approval. There is considerable evidence supporting the influence of parents on drinking in children and adolescents (Barnes & Farrell, 1992; Barnes, Reifman, Farrell, & Dintcheff, 2000; Brown, Mounts, Lamborn, & Steinberg, 1993; Steinberg, Lamborn, Dornbusch, & Darling, 1992). Recent research indicates that parental influences also impact drinking in college students (Turrisi, Wiersma, & Hughes, 2000; Wood, Read. Mitchell, & Brand, 2004). Parental influences include behaviors such as monitoring, support, and modeling of alcohol use or non-use. Parents may also communicate attitudes such as disapproval of drinking (Barnes et al., 2000; Hussong, Curran, & Chassin, 1998; Steinberg, et al., 1992; Tucker et al., 2003; Wood et al., in press).

While youth’s perceptions of how much their parents approve or disapprove of drinking may not be accurate, such perceptions do predict youth drinking. Many surveys, including the Monitoring the Future Study and the IPRC AOD study, routinely gather information about perceptions of parental approval/disapproval. Figure 2.5 shows the percentage of Vigo County students at different grade levels who indicated that their parents would approve or strongly approve of their occasionally consuming 1-2 alcohol drinks and of binge drinking weekly (from 2007).
While we were not able to make statistical comparisons and though the non-random nature of the samples means any conclusions must be treated with caution, it is worth noting that at every grade level shown above, the percentage of Vigo County students who indicated that their parents would approve or strongly approve of occasionally consuming 1-2 alcoholic drinks was higher than the state average (Gassman et al., 2007). For binge drinking, greater percentages of both 10th and 12th grade students in Vigo County indicated that their parents would approve than did students in the state as a whole.

All of the percentages in this figure are considerably smaller than the percentages of students who believe that their peers would approve of drinking (see above). Thus, students clearly believe that drinking is much more acceptable to their peers than to their parents. Relatively few students at any grade level reported that their parents would approve of them binge drinking. However, the percentage of students who indicated that their parents would approve of them drinking 1 or 2 drinks occasionally was twice as large in the 10th graders as in the 8th graders. Similar changes in perception of parental approval of drinking with age are seen in national samples such as the Monitoring the Future Study. However, it is not likely that parents show drastic increases in their approval of drinking as students move through high school. (For example, see the results of the 2007 Vigo County Community norms survey reported below in the section on Community Norms about Youth Drinking.)

Students entering ISU from Vigo County were more likely than non-Vigo County students to indicate that their parent or guardian approved of them drinking alcohol or getting drunk.

Data collected by Dr. Tom Johnson and his colleagues in the spring of 2004 included 858 ISU sophomores who were at that time under the age of 21. Students were asked to rate how much their parents disapproved of drinking in general, as well how much they would disapprove of specific drinking behaviors by the student (e.g., drinking one or two drinks a day, drinking five or more drinks once or twice each weekend, etc.). African American and white students did not differ in their ratings of how much their parents’ approved or

Source: IPRC ATOD Survey, courtesy of Vigo County School Corporation
disapproved of alcohol use. Women rated their parents as more disapproving of their drinking than did men. Perceptions of parental approval were strongly predictive of students' drinking behavior, even after controlling for gender. Table 2.10 shows one example of a question about parental approval and illustrates how responses on the item are related to alcohol use.

<table>
<thead>
<tr>
<th>Example Question: How do your parents feel about drinking alcohol?</th>
<th>Strongly Disapprove</th>
<th>Disapprove</th>
<th>Neither Approve nor Disapprove</th>
<th>Approve</th>
<th>Strongly Approve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>128</td>
<td>215</td>
<td>411</td>
<td>95</td>
<td>8</td>
</tr>
<tr>
<td>Percent of total</td>
<td>14.93 %</td>
<td>25.09 %</td>
<td>47.96 %</td>
<td>11.09 %</td>
<td>9.33 %</td>
</tr>
<tr>
<td>Mean number of drinks consumed per week</td>
<td>2.60</td>
<td>3.93</td>
<td>6.00</td>
<td>8.50</td>
<td>12.40</td>
</tr>
<tr>
<td>Mean peak amount consumed on one occasion</td>
<td>4.20</td>
<td>6.16</td>
<td>7.33</td>
<td>7.54</td>
<td>7.15</td>
</tr>
<tr>
<td>Mean number of days per week where student drank alcohol</td>
<td>0.45</td>
<td>0.73</td>
<td>0.95</td>
<td>1.29</td>
<td>1.27</td>
</tr>
<tr>
<td>Mean number of days per week where student played a drinking game</td>
<td>0.19</td>
<td>0.31</td>
<td>0.45</td>
<td>0.61</td>
<td>1.74</td>
</tr>
<tr>
<td>Mean number of days per week where student binge drank</td>
<td>0.29</td>
<td>0.39</td>
<td>0.59</td>
<td>0.82</td>
<td>1.10</td>
</tr>
<tr>
<td>Mean number of alcohol related problems in current school year</td>
<td>0.40</td>
<td>0.51</td>
<td>0.62</td>
<td>0.90</td>
<td>1.45</td>
</tr>
</tbody>
</table>

Notes: All results computed only for students under age 21. Effect of approval is significant for all alcohol use variables. All means have been adjusted to control for gender.

**Parental Monitoring.** Parental monitoring refers to parents’ knowing or attempting to know where their children are, who they are with, and/or what they are doing both inside and outside the home. It has routinely been studied with regards to youth drinking, but has been found to be related to college student drinking as well (Wood et al.;, 2004). Figures 2.6 – 2.9 show the average number of days in a school year Vigo County students reported engaging in various activities without parental supervision. For time spent at home without adult supervision and time spent socializing without supervision, the increase in unsupervised time between 8th and 10th grade is larger than the increase from 10th to 12th grade. While we were unable due to the nature of the data to compute the statistical significance of these patterns, and the ATOD survey data must be treated with caution due to the non-random nature of the sample, these results could suggest that the period between 8th and 10th grade could be a critical time for increase in risk of ATOD use.
Figure 2.6

Average Number of Days per School Year at Home Without Adult Supervision

Figure 2.7

Average Number of Days per School Year Socializing Without Adult Supervision

Source: IPRC AOD Survey,
Courtesy of Vigo County School Corp.
Figure 2.8

Average Number of Days per School Year Working for Pay Outside Home

Source: IPRC AOD Survey, Courtesy of Vigo County School Corp.

Figure 2.9

Average Number of Days per School Year Volunteering Outside the Home

Source: IPRC AOD Survey, Courtesy of Vigo County School Corp.
Data regarding parental monitoring in ISU students is available for the 2004 sophomore class studied by Dr. Tom Johnson and his colleagues. Students completing the survey responded to a variety of questions about how much their parents attempted to know where they were at different times during the week and how much their parents actually knew about where they were. African American and white students did not differ significantly in their ratings of parental monitoring, but women reported higher levels of parental monitoring than did men. In underage students, parental attempts at monitoring were inversely related to amount of alcohol consumed, frequency of consumption, and frequency of alcohol problems, even after controlling for gender. However, these relationships were not as strong as the relationships described above between perceived parental approval and student drinking. For example, Table 2.11 shows what percentages of students indicated that their parents attempted to know and actually knew about their whereabouts at night and compares the means for these groups on various drinking variables. For all the drinking variables shown, there was a significant difference between students whose parents did not try to or actually know where they were and those who did know or try.

### Table 2.11 – Parental Monitoring as a Predictor of Alcohol Use and Problems in Indiana State University College Students

<table>
<thead>
<tr>
<th>Question: How much do your parents try to know about where you go at night?</th>
<th>They don't try</th>
<th>They try a little</th>
<th>They try a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>203</td>
<td>425</td>
<td>229</td>
</tr>
<tr>
<td>% of Sample</td>
<td>23.68%</td>
<td>49.59%</td>
<td>26.72%</td>
</tr>
<tr>
<td>Mean peak number of drinks consumed on a single occasion</td>
<td>7.20</td>
<td>6.74</td>
<td>5.68</td>
</tr>
<tr>
<td>Mean number of days per week where student drank alcohol</td>
<td>0.97</td>
<td>0.91</td>
<td>0.67</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question: How much do your parents really know about where you go at night?</th>
<th>They don't know</th>
<th>They know a little</th>
<th>They know a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>143</td>
<td>344</td>
<td>368</td>
</tr>
<tr>
<td>% of Sample</td>
<td>16.72%</td>
<td>40.23%</td>
<td>43.04%</td>
</tr>
<tr>
<td>Mean peak number of drinks consumed on a single occasion</td>
<td>7.62</td>
<td>6.92</td>
<td>5.86</td>
</tr>
<tr>
<td>Mean # of drinks per week</td>
<td>7.68</td>
<td>5.09</td>
<td>4.54</td>
</tr>
<tr>
<td>Mean number of days per week where student drank alcohol</td>
<td>1.16</td>
<td>0.91</td>
<td>0.69</td>
</tr>
<tr>
<td>Mean number of days per week where student played a drinking game</td>
<td>0.59</td>
<td>0.41</td>
<td>0.33</td>
</tr>
<tr>
<td>Mean number of days per week where student binge drank</td>
<td>0.74</td>
<td>0.50</td>
<td>0.46</td>
</tr>
<tr>
<td>Mean number of alcohol related problems in current school year</td>
<td>0.80</td>
<td>0.66</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Note: All means refer to behavior over the past year and have been adjusted to control for participants’ gender.

**Alcohol and Drug Related Adult Arrests.** Hogan et al. (2003) noted that arrests for alcohol and drug offenses, while not a validated archival indicator, may provide some information regarding favorable parental attitudes towards alcohol and other drugs. The 2007 Indiana State Epidemiological Profile provided information on numbers of arrests for various alcohol related offenses in Vigo County (based on 2005 UCR data and other sources). Table 2.12 provides the information reported by the State Epidemiological and Outcomes Workgroup (pp. 176-181).
Table 2.12 – Alcohol Related Arrests in Vigo County (2005)

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentile Ranking in State</th>
<th>Rate per 1000 population</th>
<th>Percentile Ranking in State</th>
</tr>
</thead>
<tbody>
<tr>
<td>PI Arrests</td>
<td>341</td>
<td>85th</td>
<td>3.29</td>
<td>50th</td>
</tr>
<tr>
<td>DUI Arrests</td>
<td>663</td>
<td>75th</td>
<td>6.39</td>
<td>50th</td>
</tr>
<tr>
<td>Liquor Law Violation Arrests</td>
<td>368</td>
<td>85th</td>
<td>3.53</td>
<td>75th</td>
</tr>
</tbody>
</table>

Notes: Source – 2007 Indiana State Epidemiological Report. Percentile indicates the percentage of Indiana counties reporting numbers or rates lower than Vigo County. “DUI” = Driving Under the Influence; “PI” = Public Intoxication.

Data provided by the Vigo County Sheriff’s Department includes 927 arrests for Operating a Vehicle while Intoxicated (OWI) and 464 arrests for Public Intoxication (PI) in the year 2007. While these numbers are higher than the UCR estimates for 2005, due to the nature of this data and the difference in data sources, we cannot determine if the 2007 values are statistically different than the 2005 values or how the 2007 Sheriff’s data compares to other counties in Indiana.

Alcohol and Tobacco Use during Pregnancy. Alcohol and tobacco use during pregnancy were suggested by Hogan et al (2003) as potential indicators of favorable parental attitudes towards and involvement with alcohol and other drugs. Table 2.13 presents data from the Indiana State Department of Health Natality Reports from 2000-2005. From 2001-2004 Vigo County was one of the top four counties in Indiana in terms of the proportion of births where the mother reported drinking alcohol during pregnancy.

Table 2.13 – Proportion of all births where mother reported drinking alcohol and smoking during pregnancy – Vigo County data

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Proportion reporting ETOH use during pregnancy</th>
<th>Alcohol proportion rank among IN counties</th>
<th>Proportion reporting smoking during pregnancy</th>
<th>Smoked proportion rank among IN counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>.0060</td>
<td>43rd- tied with 6 other counties</td>
<td>.2590</td>
<td>29th-tied with one other county</td>
</tr>
<tr>
<td>2001</td>
<td>.0200</td>
<td>1st</td>
<td>.3030</td>
<td>11th-tied with one other county</td>
</tr>
<tr>
<td>2002</td>
<td>.0160</td>
<td>2nd</td>
<td>.2700</td>
<td>23rd</td>
</tr>
<tr>
<td>2003</td>
<td>.0140</td>
<td>4th</td>
<td>.2810</td>
<td>15th</td>
</tr>
<tr>
<td>2004</td>
<td>.0150</td>
<td>2nd-tied with 1 other county</td>
<td>.2940</td>
<td>10th-tied with one other county</td>
</tr>
<tr>
<td>2005</td>
<td>.0090</td>
<td>12th-tied with 2 other counties</td>
<td>.2600</td>
<td>24th</td>
</tr>
</tbody>
</table>

Conclusions Regarding Family Factors:

- Several indicators suggest that family management problems and family conflict may be higher in Vigo County than in the state at large.
- Perceived parental approval of drinking is considerably lower than perceived peer approval, but the percentage of students who report that their parents would approve...
increases with age.

- In ISU college students, perceptions of parental approval are strongly related to levels of student drinking and perceptions of parental monitoring are also significantly, but less strongly predictive of alcohol use and problems.

- Statistics on alcohol and tobacco use during pregnancy, while not validated archival indicators, suggests that parents in Vigo County hold more favorable attitudes towards alcohol use than parents from most other Indiana counties.

**Extreme Economic Deprivation**

Extreme economic deprivation is a risk factor for substance abuse, delinquency, teen pregnancy, school drop-out, and violence. Validated archival indicators of economic deprivation include unemployment rates, and percentage or number of students in free and reduced lunch programs, families receiving aid to families with dependent children (AFDC), food stamp recipients, adults without a high school diploma (Hogan et al., 2003). Household income levels and poverty rates were not listed by Hogan et al. (2003) but are included in the Indiana Prevention Resource Center’s GIS in Prevention County Profile reports and are obvious plausible indicators of extreme economic deprivation.

The mean household income for Vigo County in 2004 ranked 88th out of all Indiana counties ($44,352), while the median income was 73rd ($46,015). According to the IPRC GIS in Prevention Vigo County Profile, in 2005 Vigo County had the 13th highest unemployment rate in the state (6.8 %). Vigo County also ranked eighth in total number of children living in poverty (2,765) and had the highest per capita poverty rate of all Indiana counties (15.4 %) and 3rd highest rate of children living in poverty (21.3 %). Vigo County was higher than the state average in percent of female heads of households with own children living in poverty (44.9 % in Vigo County vs. 34.9 % statewide) and single parents with children under 18 living below poverty (41.9% vs. 31.8 %). Vigo County is also among the "top 10" counties in Indiana in number of food stamp recipients (11,471 in 2004, see Table 2.14), welfare (TANF - Temporary Aid to Needy Families) recipients (1,062 in 2004, see table 2.15), and free and reduced fee lunch recipients (7,730 in 2006). Table 2.15 compares the state and Vigo county numbers of TANF recipients expressed as number of recipients per 1000 persons. Vigo county ranked 20th in percentage of families having no medical insurance (61.1 %). Over the period of 2004 to 2007, 48.3 % of Vigo county school children qualified for and received free lunches and/or textbooks. The state average for school districts during that time period was 40 %.

<table>
<thead>
<tr>
<th>Table 2.14 – Food Stamp Recipients in Vigo County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>2002</td>
</tr>
<tr>
<td>2003</td>
</tr>
<tr>
<td>2004</td>
</tr>
<tr>
<td>2005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2.15 – Rates of TANF Recipients in Vigo County and the State of Indiana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of TANF Recipients per 1000 persons</td>
</tr>
<tr>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Vigo County</td>
</tr>
<tr>
<td>State of Indiana</td>
</tr>
</tbody>
</table>
Conclusion Regarding Extreme Economic Deprivation: Multiple sources of evidence indicate that extreme economic deprivation exists in Vigo County and that the level of economic deprivation in Vigo County is among the worst in the state of Indiana.

Community or Neighborhood Disorganization

Hogan et al. (2003) identified the percentage of the population voting in elections and the number of prisoners in state and local correctional systems as validated archival indicators of community disorganization. Table 2.16 describes voter registration for Vigo County. As of 2004 almost all of Vigo County residents who are eligible to vote are registered, but only 25 - 38 % of eligible voters actually vote. In the November 2004 election, nationwide 63.8 % of eligible voters (88.5 % of registered voters) reported that they actually voted (US Census Bureau, 2006). Thus the percent of eligible voters in Vigo County who voted during the November 2004 election is less than half of the national average.

| Table 2.16 - Percentage of eligible voters voting in elections in Vigo County |
|-----------------------------------------------|-----------------------------------------------|
| Number of eligible voters                    | 80,017   | 80,017    | 80,017   | 80,017    |
| Number of registered voters                  | 75,515   | 78,413    | 79,519   | 75,202    |
| Percent of eligible voters who registered    | 94 %     | 98 %      | 99 %     | 94 %      |
| Number of voters who actually voted          | 20,918   | 30,271    | 20,221   | 30,271    |
| Percent of registered voters who voted       | 28 %     | 39 %      | 25 %     | 40 %      |
| Percent of eligible voters who voted         | 26 %     | 38 %      | 25 %     | 38 %      |

The FBI Uniform Crime report attempts to offer an index of the level of different types of crime nationwide and in various parts of the country. A value of 100 indicates the average level of a given type of crime in the US. Numbers below 100 indicate that a state of county has a rate for that crime that is lower than the national average, while numbers over 100 indicate a rate above the national average. Since 2002, Total Crime Index numbers for Vigo County have been higher than the national average, even though the state of Indiana overall has a lower crime rate than the national average (see Table 2.17). The rate of personal crime in Vigo County has been lower than the state and national levels, while the level of Property Crimes, especially Burglary and Larceny has been considerably above the state and national averages. In 2005 Vigo County had the highest Larceny Crime Index of any county in the state, and ranked third in burglary and 5th in both rape and motor vehicle theft. In that year Vigo County had the 5th highest total crime index of Indiana counties and the 3rd highest rate for property crimes. (Note - Vigo County’s coverage index, an indicator of the percent of information to the FBI by local law enforcement agencies, was 57.67 for 1995, the most recent year for which data are available. In the past, the Vigo County Sheriff’s Department has not provided information for the UCI. Thus, FBI UCI Crime Index ratings for Vigo County are estimates of what the actual index would be if 100 % of local law enforcement agencies provided data to the FBI and may overestimate or underestimate actual levels of crime in Vigo County.)
Table 2.17 - FBI Uniform Crime Report Crime Index Data for Vigo County

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Crime Index</th>
<th>Personal Crime Index</th>
<th>Property Crime Index</th>
<th>Murder</th>
<th>Rape</th>
<th>Robbery</th>
<th>Assault</th>
<th>Burglary</th>
<th>Larceny</th>
<th>Motor Vehicle theft</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vigo Co.</td>
<td>IN.</td>
<td>Vigo Co.</td>
<td>In</td>
<td>Vigo Co.</td>
<td>IN.</td>
<td>Vigo Co.</td>
<td>IN.</td>
<td>Vigo Co.</td>
<td>IN.</td>
</tr>
<tr>
<td>2002</td>
<td>111</td>
<td>90</td>
<td>110</td>
<td>91</td>
<td>114</td>
<td>93</td>
<td>113</td>
<td>90</td>
<td>114</td>
<td>93</td>
</tr>
<tr>
<td>2003</td>
<td>86</td>
<td>92</td>
<td>86</td>
<td>92</td>
<td>70</td>
<td>74</td>
<td>71</td>
<td>73</td>
<td>70</td>
<td>74</td>
</tr>
<tr>
<td>2004</td>
<td>136</td>
<td>90</td>
<td>135</td>
<td>90</td>
<td>145</td>
<td>110</td>
<td>143</td>
<td>93</td>
<td>145</td>
<td>110</td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusions Regarding Neighborhood Disorganization:

- Voter turnout, a validated archival indicator of community disorganization, is extremely low in Vigo County relative to the national average.
- While not validated indicators, rates of property crimes as well as the personal crime of rape are higher in Vigo County than the state of Indiana and the nation.

Transitions and Mobility

Hogan et al (2003) listed several validated archival indicators of transitions and mobility, including new home construction, households in rental properties, and net migration.

Housing. The US Census web-site (www.census.gov/const/www/permitsindex.html) listed the total building permits for Vigo County since 2001 as follows: 336 in 2001, 293 in 2002, 249 in 2003, 282 in 2004, 275 in 2005, and 235 in 2006. In 2000, the number of renter occupied housing units in Vigo County was 13,340, which ranked 11th highest in the state. Rental units constituted 29.5 % of the housing units in Vigo County, compared to 26.3 % of housing units statewide.

Net Migration. Over the years 2000 to 2003, the population of Vigo County decreased annually as the number of individuals migrating out of the county far exceeded the natural increase (births minus deaths). Net domestic migration for these years was -1120 from 2000-2001, -300 from 2003-2003, and -1287 from 2003-2003.

The Indiana Department of Education website lists intra-district and inter-district mobility rates for counties in Indiana as well as the state average. Intra-district mobility refers to the percentage of students moving from one school to another school of the same grade level within the same school district within a given school year (for example moving from one elementary school to another). Inter-district mobility refers to the proportion of students moving in or out of a given school district within a single school year. Intra-district mobility rates for the Vigo County School Corporation for the academic years 2004-05, 2005-06, and 2006-07 were 6.6 %, 7.3 %, and 7.1 % respectively. The most recent state average for intra-district mobility was 2.4 %. In other words, during the past three years the percentage of students within Vigo County who experienced having to switch to a different school was more than double the state average. Vigo county students move more often within the county than do students in most other school districts in the state. However, Inter-district mobility for Vigo County (movement in or out of the district) over the past three years was at or below the state average (state average = 3.9; for Vigo County, ’04-05 = 3.7, ’05-06 = 3.5, ’06-06 = 3.3).
Conclusions Regarding Transition and Mobility: Net migration and rental housing figures suggest that levels of transition and mobility are higher in Vigo County than the state average.

Community norms about youth drinking

School Survey Data. Norms include beliefs and attitudes about alcohol, including how risky certain drinking patterns are, what the drinking behaviors of typical members of a community are, and what forms of drinking by what individuals are acceptable and approved. Figures 2.10 and 2.11 illustrate perceptions of risk from the ATOD survey of Vigo County youth.

Figure 2.10

Percentage of Vigo County students who perceive slight or no risk in occasionally consuming 1 or 2 alcoholic drinks

Source: IPRC ATOD Survey, courtesy of Vigo County School Corporation
In both 2005 and 2007, more than half of the middle school and high school students surveyed in Vigo County indicated that occasionally drinking 1-2 drinks carried slight or no risk. Around 25% of youth indicated little or no risk from weekly binge drinking.

**Telephone Survey of Vigo County Residents.** Data for the community norms survey was collected between 2/4/08 and 2/28/08. Data was collected through a telephone survey. All calls were made between the hours of 5PM and 9PM, Monday through Thursday. Sunday calls were made between the hours of 3PM and 9PM. The sample is drawn from a sample of Vigo County Households selected randomly through random digit dialing procedures. The original sample is over 16,000 households. Of that larger sample, a smaller sample of 873 households was contacted with 493 of those completing the interview for a response rate of 57%. All interviews were conducted with adults (18 years or older).

As is generally the case with telephone surveys of households, women are overrepresented in the sample. Lower income households are under represented (41.1 percent of Vigo County households earn more than $50,000 compared to 51.5% of the sample reporting earning more than $55,000), as are college graduates (21.4% of Vigo County residents are college graduates, while nearly 42% of the sample are college graduates). Although we did not collect data on the respondent’s age, generally, older aged individuals are overrepresented in such samples.

The degrees of overrepresentation, however, are not great (with the exception of sex and education). In this sample, though all ethnic and racial groups are well represented, 90% of the Vigo County population is white; the sample is composed of 91% white or European Americans.

When asked whether they agreed or disagreed with the statement: "Vigo County has an underage drinking problem," 78% of survey respondents agreed, 9% disagreed, and 13% indicated that they did not know. Of those who agreed, 71.2% indicated that they felt that the underage drinking problem in Vigo County is about the same as in other communities in
Indiana. Only 9.3% felt that the problem in Vigo County is worse than in other Indiana communities, with 4.9% indicating that the problem in Vigo County is not as bad as in other communities and 14.7% indicating that they did not know.

### Table 2.18 - Perceptions of Underage Drinking in Vigo County Residents

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Don’t Know</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A normal part of growing up in today's society is experimenting with alcohol before one is 21.</td>
<td>11.8%</td>
<td>15.7%</td>
<td>0.8%</td>
<td>50.6%</td>
<td>21.1%</td>
</tr>
<tr>
<td>Experimenting with alcohol before one is of legal age is both risky and dangerous.</td>
<td>1.0%</td>
<td>4.0%</td>
<td>--</td>
<td>35.7%</td>
<td>59.2%</td>
</tr>
<tr>
<td>It is OK for people under the legal age to drink alcohol if they don't get drunk.</td>
<td>42.4%</td>
<td>42.6%</td>
<td>1.4%</td>
<td>10.0%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Nearly three-fourths of Vigo County residents surveyed indicated that they feel that underage drinking is a normal part of growing up in today's society, but nearly 95% of those surveyed considered underage drinking to be dangerous and 85% indicated that they disapproved of underage drinking. An additional question asked respondents to indicate whether it was ever appropriate for people under the legal drinking age to drink alcohol while under parental supervision. More than two-thirds of respondents said no, that it is never appropriate for parents to supervise underage drinking, while around 32% said yes. Of those who did feel that it is sometimes appropriate for children under the legal drinking age to drink under parental supervision, 15.2% also indicated that they felt it was appropriate for parents to host alcohol parties so that they can supervise their children's drinking.

### Table 2.19 – Vigo County Residents’ Perceptions of What Factors Lead to Underage Drinking

<table>
<thead>
<tr>
<th>Factors that might lead to underage drinking</th>
<th>Percent rating this factors as “very important”</th>
</tr>
</thead>
<tbody>
<tr>
<td>lack of parental supervision</td>
<td>85.5%</td>
</tr>
<tr>
<td>peer pressure</td>
<td>82.8%</td>
</tr>
<tr>
<td>easy access to alcohol</td>
<td>75.5%</td>
</tr>
<tr>
<td>parents or other family members providing alcohol</td>
<td>69.0%</td>
</tr>
<tr>
<td>low self-esteem, depression, anxiety or some other mental or emotional problems</td>
<td>65.9%</td>
</tr>
<tr>
<td>they don't know the risks of drinking</td>
<td>51.9%</td>
</tr>
<tr>
<td>lack of involvement in extra-curricular activities at school</td>
<td>50.4%</td>
</tr>
<tr>
<td>lack of involvement with church</td>
<td>46.0%</td>
</tr>
<tr>
<td>lack of enforcement of alcohol laws</td>
<td>45.7%</td>
</tr>
<tr>
<td>they are bored or feel they have nothing else to do</td>
<td>40.8%</td>
</tr>
<tr>
<td>alcohol advertising</td>
<td>31.7%</td>
</tr>
</tbody>
</table>

Vigo County residents participating in the telephone survey tended to view family and peer factors as contributing most to underage drinking. Easy access to alcohol was also cited as an important factor.
### Table 2.20 - Perceptions of how effective different types of prevention approaches would be

<table>
<thead>
<tr>
<th>Interventions that might reduce underage drinking</th>
<th>&quot;not at all effective&quot;</th>
<th>&quot;somewhat effective&quot;</th>
<th>&quot;very effective&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>more prevention education programs in schools</td>
<td>9.4 %</td>
<td>46.2 %</td>
<td>44.4 %</td>
</tr>
<tr>
<td>more treatment programs available for those who have alcohol problems</td>
<td>7.3 %</td>
<td>31.7 %</td>
<td>60.3 %</td>
</tr>
<tr>
<td>stricter enforcement of alcohol related laws such as drunk driving laws, retailers who sell alcohol to minors, and underage drinkers themselves</td>
<td>6.2 %</td>
<td>18.4 %</td>
<td>75.1 %</td>
</tr>
</tbody>
</table>

### Conclusions Regarding Community Norms about Youth Drinking:

- While ATOD data must be treated with caution, more than half of Vigo County middle school and high school students apparently saw little risk in occasionally drinking 1-2 drinks and around 25% indicated that weekly binge drinking carried little or no risk.
- Adults in Vigo County tend to perceive experimenting with alcohol as a common and normal part of growing up. However, the also feel that underage drinking is dangerous.
- Adults in Vigo County generally believe that underage drinking is no more or less of a problem in Vigo County than elsewhere in the state of Indiana. Nearly 10% of adults surveyed in Vigo County did not see underage drinking as a problem at all.

### Retail availability of alcohol to youth

According to the GIS in Prevention Vigo County profile, in 2005 Vigo County was higher than the state average in number of alcohol sales outlets per 1000 persons (2.3 vs. 1.8, 17th highest in the state). The same year, total spending per household as a percentage of median household income was 0.92%, which ranked 3rd highest in the state. Average amount of spending on alcohol is below the state average, but this could easily be a consequence of the relatively low incomes of Vigo County residents.

### Conclusions Regarding Retail Availability of Alcohol:

Alcohol is more readily available at retail outlets in Vigo County than in most counties in the state and Vigo County residents spend a larger proportion of their income on alcohol than do the residents of virtually all other counties.
A number of sources of information are available that allow estimation of the proportion of Vigo County youth who are underage drinkers and the proportion of 18-25 year olds who engage in binge drinking. Individually, most of these sources must be considered with caution, because virtually all of them are non-random samples and may not be representative of the population. However, when different sources of data report information on students at the same age or grade level, results from these sources can be compared to determine if they offer similar rates for a given age or grade level.

**Alcohol Use in School Age Children**

Vigo County schools have regularly participated in a survey regarding Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents (ATOD Survey), conducted by the Indiana Prevention Resource Center at Indiana University in Bloomington, Indiana. In the 2007 survey, 2422 Vigo county school children provided usable surveys (1010 8<sup>th</sup> graders, 808 10<sup>th</sup> graders, and 411 12<sup>th</sup> graders). In the 2005 survey, there were 5935 Vigo county school children who provided usable data (1070 6<sup>th</sup> graders, 1085 7<sup>th</sup> graders, 951 8<sup>th</sup> graders, 915 9<sup>th</sup> graders, 745 10<sup>th</sup> graders, 719 11<sup>th</sup> graders, and 440 12<sup>th</sup> graders). The survey asks not only about use of various drugs during various time periods (daily use, use in the past 30 days, use in the past year, lifetime use), but also information about consequences of use, and a variety of risk and protective factors, including perceptions of risk, perceptions of peer and parent approval, reasons for using drugs, and other variables.

General information about the ATOD survey and copies of the latest state wide data are available at [http://www.drugs.indiana.edu/data-survey_monograph.html](http://www.drugs.indiana.edu/data-survey_monograph.html).

An important caution about this information is that, like a number of other sources of data included in this report, the survey is NOT a random sample of the population. Therefore the data may not be representative of the true level of use in the population. Nonetheless, the ATOD report data offer an important and useful source of information and do allow for some comparisons to be made between Vigo County and the rest of the state.

**Daily Drinking.** In 2007, the percentages of 10<sup>th</sup> graders in Vigo County who reported drinking alcohol on a daily basis was (4.7 % of 8<sup>th</sup> graders surveyed) was significantly higher than the state average. Percentages of daily drinking for 8<sup>th</sup> and 12<sup>th</sup> graders were not significantly different from the state averages. In 2005, daily drinking was higher than the state average among 6<sup>th</sup> graders (0.4 %), 10<sup>th</sup> graders (5.2 %), and 11<sup>th</sup> graders (5.7 %) in Vigo County.

**Binge Drinking.** In 2007, the percentage of 10<sup>th</sup> graders in Vigo County who reported weekly binge drinking (4.0 %) was significantly higher than the state average. Percentages of binge drinking for 8<sup>th</sup> and 12<sup>th</sup> graders were not significantly different from the state averages. In 2005, the percentage of Vigo county students reporting daily binge drinking was higher than the state average for 8<sup>th</sup> graders, 10<sup>th</sup> graders, and 11<sup>th</sup> graders.

<table>
<thead>
<tr>
<th>Table 2.21 – Binge Drinking Frequency over the Past Two Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt; grade</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>No response</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Once</td>
</tr>
<tr>
<td>Twice</td>
</tr>
<tr>
<td>3 or more times</td>
</tr>
</tbody>
</table>

In both the 2005 and the 2007 data, as grade level increases, the percentage of students who report no binge drinking gets lower. In addition, the percentage of students reporting...
binge drinking three or more times during the previous two weeks was higher at all grade levels in 2007 than it had been in 2005. However, due to the nature of the data, we cannot determine if this difference is statistically significant.

**Drinking During Past Month, Past Year, and Lifetime.** Figures 2.12 - 2.14 provide data on the percentage of Vigo County youth at different grade levels who reported using alcohol at least once in their lifetime, at least once in the past year, and at least once in the month prior to the survey (defined as the previous 30 days). In the 2007 survey, the only time frame in which the percentage of Vigo county school children reporting drinking was significantly higher than the state average was for lifetime alcohol use in 10th graders. For all other grade levels and time periods in the 2007 survey, the percentage of Vigo County school children who reported drinking did not differ from the state average. In the 2005 survey, Vigo County students reported significantly higher percentages of drinking for the following grade levels and time periods: past month drinking in 11th graders; past year drinking in 7th, 8th, 10th, and 11th graders; and lifetime drinking in 7th, 8th, 10th, and 11th graders. The percentage of 11th graders reporting having consumed alcohol at least once in their lifetime in Vigo County was 7.3 % greater than the state average. However, Vigo County youth reported less drinking than the state average for past month use by 6th graders; past year use by 6th and 12th graders; and lifetime use by 6th graders.

**Figure 2.12**

**Lifetime use of alcohol in Vigo county youth**

![Graph showing lifetime use of alcohol by grade level in Vigo County]

Source: Indiana Prevention Resource Center Alcohol Tobacco and Other Drug use Survey, Courtesy of Vigo County Schools
As can be seen in these figures, greater percentages of 12th grade students have used alcohol than of 6th grade students. In general, since 2001 at least half of Vigo county school children will have tried alcohol by the time they reach 8th grade. It is also worth noting that early use is a risk factor predictive of greater likelihood of later alcohol related problems.

For lifetime and past year use, there is little difference between the percentage of 10th graders and the percentage of 12th graders who have used alcohol. In all three of these graphs, the biggest differences are between the percentages of 6th graders and 8th graders who drink, and between the percentage of 8th graders and the percentage of 9th graders. This suggests that the period between 6th grade and 8th grade is a time when youth are likely to be introduced to alcohol. Another such period of increased risk to begin drinking seems to occur between 8th grade and 10th grade. There may be key developmental or psychosocial events that occur during these times that increase the likelihood of youth beginning to drink. Such events could include onset of puberty, obtaining a drivers’ license, working outside the home, or increase in unsupervised interactions with peers.
**Data from the Afternoons R.O.C.K. Program.** All students who participate in the Afternoons R.O.C.K. program (see Chapter 1) complete a questionnaire at the beginning and end of the program. The questionnaire includes items that ask youth to report on what drugs they have used during the previous month. This information provides another way to estimate youth alcohol and other drug use. Figure 2.15 shows the percentage of Afternoons R.O.C.K. participants who admitted using alcohol during the month prior to starting in the program. The percentages of students who reported past month alcohol use is quite a bit lower in the Afternoons R.O.C.K. data than for the ATOD Survey data. However, this is likely due at least in part to the fact that Afternoons R.O.C.K. includes substantial numbers of elementary school students and thus reflects a younger population than in the ATOD Survey. In addition, the sample size for the Afternoon’s Rock survey data is considerably smaller than the size of the ATOD sample. Thus, the Afternoon’s Rock data is likely less representative of the population than the ATOD data and may provide a less reliable estimate of the population prevalence of alcohol and other drug use.
Vigo County is home to three universities (Indiana State University, St Mary of the Woods College, Rose-Hulman Institute of Technology) and one Junior College (Ivy Tech). Indiana State University (ISU) was one of a coalition of 14 Indiana colleges and universities who participated in the 2006 CORE College Student Alcohol Survey as part of efforts to increase awareness of college drinking in Indiana. Overall, the survey revealed that around 45% of Indiana college students had engaged in binge drinking in the two weeks prior to the survey, while 65% of students under age 21 had consumed alcohol in the past 30 days. ISU had one of the largest rates of participation in the CORE survey (over 1400 students). At ISU, 39.5% of students reported engaging in binge drinking in the two-weeks prior to the survey, while 58.2% of underage students had consumed alcohol in the past 30 days. Statewide, 44.5% of students reported binge drinking in the previous two weeks, while only 39.5% of ISU students reported binging in the previous two weeks.

A number of research studies on college student drinking have been conducted at ISU over the past decade (e.g., Johnson, Wendel, & Hamilton, 1998; Johnson, Sheets, & Kristeller, 2008, etc.), including a study funded by the National Institute of Alcohol Abuse and Alcoholism that surveyed 76% of the freshman class of 2002 (over 1500 students) in June prior to their entering ISU and again at the end of their freshman and sophomore years. Not surprisingly, rates of drinking and binge drinking in this sample went up from before entering ISU to the follow-ups in the freshman and sophomore years.

Using this sample, we were also able to compare the drinking behaviors of students who entered ISU from Vigo County to that of ISU students who came from outside Vigo County. A greater proportion of Vigo County than non-Vigo county students reported never having consumed alcohol regularly (53.6% versus 48.7%). However, among students who did drink, underage students from Vigo County reported a higher mean weekly consumption of alcohol than non-Vigo County students.
Using the same sample, students were followed from June 2002 (before entering ISU) through spring of 2004. Prior to entering college, African American students reported lower levels of drinking on all alcohol measures than did European American students. However, by their sophomore year, there were fewer significant differences between the drinking of white and African American students.

**Figure 2.16**

![Percentage of Underage ISU Students Reporting Drinking Alcohol in the Past Year](chart)

**Figure 2.17**

![Percentage of ISU Students Age 25 & Under Reporting Binge Drinking in Past 30 Days](chart)
**Conclusions Regarding Alcohol Use in Vigo County:**

- Based on ATOD data, by the time they reach 8\(^{th}\) grade, more than half of Vigo County Youth will have tried alcohol at least once in their lifetime. While the ATOD sample is a convenience sample, in the 2005 and 2007 surveys the data for 8\(^{th}\) grade and below included 70-80 % of all students enrolled at those grades and likely provides a relatively accurate representation of youth drinking in Vigo County.

- Sixth graders in Vigo County may be somewhat less likely to use alcohol than the typical Indiana 6\(^{th}\) grader. However, at higher grade levels the percentage of Vigo County students who drink is often higher than the average for the state of Indiana.

- The vast majority of underage college students in Vigo County (60-80 %) drink alcohol at least occasionally.

- Despite variations in the age of participants and the nature of the sample, all of the graphs of alcohol use data presented in this section show small decreases in prevalence between approximately 2004-2005 and 2006-2007. Given the nature of the samples available, in most cases it is not possible to determine if these decreases are statistically significant. Consideration of additional information (e.g., national and state trends, data on alcohol related consequences, data on possible changes in risk and protective factors or alcohol enforcement, etc.) is necessary before concluding that these changes could plausibly represent a real decrease, but this possibility deserves further exploration.
Drinking alcohol can directly or indirectly lead to a number of negative outcomes. Underage drinking is itself unlawful, but even in individuals of legal age, arrests can be made for Public Intoxication or Driving Under the Influence. At least some proportion of individuals who use alcohol will go on to develop alcohol abuse of alcohol dependence. Alcohol abuse is a problematic or dangerous pattern of use in individuals who are most likely not physically addicted to alcohol. For example, abuse may involve frequently drinking and then driving, drinking and getting into fights, or neglecting work, family, or school obligations due to drinking. Alcohol dependence refers to a more extreme pattern of problem drinking where an individual has become physically (e.g., as evidenced by tolerance or withdrawal symptoms) or psychologically (e.g., as evidence by loss of control over drinking) addicted to alcohol. However, even individuals who do qualify for a diagnosis of abuse or dependence on alcohol can still experience negative consequences from alcohol use. A first time drinking can die from alcohol poisoning or an alcohol related accident, and someone who does not habitually abuse alcohol can still occasionally suffer from a hangover or miss work or school related to even a single episode of alcohol use. Even nondrinkers can be affected by alcohol use in a community, such as when nondrinkers are injured or killed by a drunk driver or are victims of physical or sexual abuse. Non-drinkers can also be bothered by property damage or even excessive noise created by those who do drink.

Alcohol use is associated with a number of adverse health effects, including damage to the liver, heart, and nervous system, several forms of cancer, and fetal alcohol syndrome (FAS, McKim, 2007). Some health problems can occur even in individuals who do not qualify for alcohol abuse or dependence. For example, NIAAA recommends that women who are pregnant should not consume any alcohol because we do not know what would constitute “safe” levels of drinking that would not harm the developing fetus. Alcohol use is also associated with an increased risk for various types of accidents, including falls and house fires (due to falling asleep while smoking and drinking). Alcohol use is also strongly associated with violence.

Self-Reported Consequences of Alcohol and other Drug Use

Surveys of youth and adults routinely ask about a variety of consequences of drinking and other drug use, such as driving a motor vehicle after drinking or drugging, having a hangover, missing school or work, getting in fights, or damaging property. Such items are included in the annual ATOD survey of Middle and High School students and have also been included in studies of college students conducted by Dr. Tom Johnson's research group and ISU.

ATOD Survey. Figures 2.18 and 2.19 show percentages of Vigo County students who reported several different types of consequences from drinking or other drug use in the 2005 and 2007 IPRC ATOD surveys. (A variety of additional consequences are covered in the ATOD survey, but only four illustrative examples are shown here.) None of these consequences were reported by more than 50 % of students surveyed, but the percentages are still alarmingly high. For example, in the 2005 survey nearly 20 % of Vigo County High School Juniors and Seniors reported driving after drinking or using drugs. While the percentages for lower grade levels are likely to be more accurate than those for upper grade levels, based on the percentages reported in 2005, more than 800 Vigo County Middle and High School students would have driven under the influence during that year. Around 2000 students would have experienced a hangover that same year.
Figure 2.18

2005 Percentage of Students Reporting Substance Use Related Incidents

Source: Indiana Prevention Resource Center Alcohol Tobacco and Other Drug use Survey, Courtesy of Vigo County Schools

Figure 2.19

2007 Percentage of Students Reporting Substance Use Related Incidents

Source: Indiana Prevention Resource Center Alcohol Tobacco and Other Drug use Survey, Courtesy of Vigo County Schools
Several consequences, specifically driving under the influence and missing school, show rather large differences between the prevalence’s reported for 10th and 12th graders in 2005 (Figure 2.18) and the prevalence’s at those grade levels in 2007 (Figure 2.19). Given the nature of the data it is impossible to determine if these differences represent real changes in prevalence of driving and drinking/drugging among Vigo County youth or effects related to some time specific local or national events. For example, the occurrence of a well publicized drunk driving death or alcohol poisoning death of a local youth (such as occurred in Vigo County in February 2007) shortly before the sample was collected or any of a variety of other factors could affect the data. It is also possible that the difference between 2005 and 2007 merely represent the type of random variation that is possible when using non-random convenience samples.

**ISU Student Surveys.** Both the studies conducted by Dr. Tom Johnson and his research team and the 2006 CORE survey contain information about consequences of alcohol use (or in the CORE survey alcohol and other drug use). The ISU alcohol research group has typically assessed alcohol related consequences with the Young Adult Alcohol Problems Screening Inventory (Hurlbut & Sher, 1992), a 27 item measure designed specifically for use with college students. Table 2.21 presents data on alcohol related consequences reported by a prospective sample where the same group of students was surveyed the summer before entering ISU and towards the end of their freshman and sophomore years.

**Table 2.21 – Percentage of Prospective Sample of ISU College Students Reporting Various Consequences**

<table>
<thead>
<tr>
<th>During the past year (wave 1) / current school year (waves 2 &amp; 3) . . .</th>
<th>Wave 1 June 2002</th>
<th>Wave 2 Spring 2003</th>
<th>Wave 3 Spring 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you driven a car when you knew you had too much to drink to drive safely?</td>
<td>19.6 %</td>
<td>19.2 %</td>
<td>23.6 %</td>
</tr>
<tr>
<td>Have you had a headache (hangover) the morning after you had been drinking?</td>
<td>45.6 %</td>
<td>52.0 %</td>
<td>53.8 %</td>
</tr>
<tr>
<td>Have you not gone to work or missed classes at school because of drinking, a hangover, or an illness caused by drinking?</td>
<td>5.9 %</td>
<td>24.2 %</td>
<td>22.4 %</td>
</tr>
<tr>
<td>Have you gotten into physical fights when drinking?</td>
<td>7.3 %</td>
<td>10.2 %</td>
<td>10.9 %</td>
</tr>
<tr>
<td>Has your drinking ever created problems between you and your boyfriend/girlfriend (or spouse) or other near relative?</td>
<td>13.3 %</td>
<td>18.5 %</td>
<td>18.9 %</td>
</tr>
<tr>
<td>Has drinking ever gotten you into sexual situations which you later regretted?</td>
<td>14.3 %</td>
<td>20.4 %</td>
<td>20.5 %</td>
</tr>
<tr>
<td>Have you awakened the morning after a good bit of drinking and found you could not remember a part of the evening before?</td>
<td>29.6 %</td>
<td>34.0 %</td>
<td>34.3 %</td>
</tr>
<tr>
<td>Have you ever found you needed larger amounts of alcohol to feel any effect, or that you could no longer get high or drunk on the amount that used to get you high or drunk?</td>
<td>15.6 %</td>
<td>22.8 %</td>
<td>18.5 %</td>
</tr>
</tbody>
</table>

Note: Computing percentages using only participants who provided data at all 3 waves (N = 627) produces values that are generally + or – 2 % from the values reported here.
The only consequences that did not show an increase in prevalence from before college to the end of the freshman year was driving a car after drinking, which showed a small increase from the freshman to sophomore years. In the prospective sample, most consequences remained relatively stable or declined slightly from the freshman to the sophomore year.

Table 2.22 shows data from a cross sectional sample containing approximately equal numbers of freshmen, sophomores, juniors, and seniors and equal proportions of men and women in each year.

**Table 2.22 - Percentage of Cross Sectional Sample of ISU College Students Reporting Various Consequences in Current School Year (2001-2002)**

<table>
<thead>
<tr>
<th>During the current school year.</th>
<th>Freshman N = 143</th>
<th>Sophomores N = 106</th>
<th>Juniors N = 128</th>
<th>Seniors N = 132</th>
<th>Total N = 512</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you driven a car when you knew you had too much to drink to drive safely?</td>
<td>16.8 %</td>
<td>26.4 %</td>
<td>36.4 %</td>
<td>40.9 %</td>
<td>30.1 %</td>
</tr>
<tr>
<td>Have you had a headache (hangover) the morning after you had been drinking?</td>
<td>51.0 %</td>
<td>61.3 %</td>
<td>58.6 %</td>
<td>57.6 %</td>
<td>56.8 %</td>
</tr>
<tr>
<td>Have you not gone to work or missed classes at school because of drinking, a hangover, or an illness caused by drinking?</td>
<td>23.6 %</td>
<td>25.5 %</td>
<td>23.4 %</td>
<td>31.6 %</td>
<td>26.0 %</td>
</tr>
<tr>
<td>Have you gotten into physical fights when drinking?</td>
<td>4.9 %</td>
<td>7.6 %</td>
<td>16.3 %</td>
<td>6.0 %</td>
<td>8.6 %</td>
</tr>
<tr>
<td>Has your drinking ever created problems between you and your boyfriend/girlfriend (or spouse) or other near relative?</td>
<td>18.8 %</td>
<td>14.2 %</td>
<td>15.5 %</td>
<td>10.5 %</td>
<td>14.9 %</td>
</tr>
<tr>
<td>Has drinking ever gotten you into sexual situations which you later regretted?</td>
<td>20.1 %</td>
<td>22.1 %</td>
<td>16.4 %</td>
<td>12.8 %</td>
<td>17.5 %</td>
</tr>
<tr>
<td>Have you awakened the morning after a good bit of drinking and found you could not remember a part of the evening before?</td>
<td>29.2 %</td>
<td>36.8 %</td>
<td>38.8 %</td>
<td>27.8 %</td>
<td>32.8 %</td>
</tr>
<tr>
<td>Have you ever found you needed larger amounts of alcohol to feel any effect, or that you could no longer get high or drunk on the amount that used to get you high or drunk?</td>
<td>20.8 %</td>
<td>16.0 %</td>
<td>20.9 %</td>
<td>10.5 %</td>
<td>17.2 %</td>
</tr>
</tbody>
</table>

Note: Proportion of men and women at each class level is not significantly different.

The only consequence which showed a consistent pattern of increasing prevalence with year in school in both the prospective and cross sectional samples was driving after drinking. In both the prospective and cross sectional samples, men are more likely to report most consequences than women, and also report greater numbers of occurrence for most consequences. Similarly, white students report more consequences than African American students, but not all of these differences are statistically significant.

The CORE Survey contains many items similar to those on the ATOD Survey and the YAAPST, but with slightly different wordings. Table 2.23 compares the percentages of students in the ISU 2006 CORE sample to the results for the 14 ICAUS colleges and universities and the National results from all CORE respondents that year. For most consequences, there are only small differences between the ISU results and the values for other Indiana schools and the nation. The largest differences are for driving a car while
under the influence, where ISU students were higher than the ICAUS results, and having a memory loss, where the percentage of ISU students was lower than in the full ICAUS sample.

Table 2.23 – Percentages of participants in 2006 CORE Survey Reporting Various Consequences in the Past Year

<table>
<thead>
<tr>
<th>Consequence</th>
<th>ISU Sample N = 1410</th>
<th>ICAUS Schools N = 7612</th>
<th>National Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Been arrested for DWI/DUI</td>
<td>1.3 %</td>
<td>1.0 %</td>
<td>1.7 %</td>
</tr>
<tr>
<td>Damaged property, pulled fire alarms, etc.</td>
<td>4.9 %</td>
<td>6.2 %</td>
<td>7.1 %</td>
</tr>
<tr>
<td>Driven a car while under the influence</td>
<td>27.5 %</td>
<td>23.8 %</td>
<td>26.6 %</td>
</tr>
<tr>
<td>Got into an argument or fight</td>
<td>31.5 %</td>
<td>28.9 %</td>
<td>32.3 %</td>
</tr>
<tr>
<td>Been taken advantage of sexually</td>
<td>9.9 %</td>
<td>10.0 %</td>
<td>10.6 %</td>
</tr>
<tr>
<td>Missed a class</td>
<td>27.0 %</td>
<td>26.3 %</td>
<td>31.0 %</td>
</tr>
<tr>
<td>Had a memory loss</td>
<td>29.1 %</td>
<td>34.1 %</td>
<td>33.5 %</td>
</tr>
<tr>
<td>Had a hangover</td>
<td>59.0 %</td>
<td>59.8 %</td>
<td>62.4 %</td>
</tr>
<tr>
<td>Got nauseated or vomited</td>
<td>53.5 %</td>
<td>52.7 %</td>
<td>53.6 %</td>
</tr>
</tbody>
</table>

Motor Vehicle Accidents

The State of Indiana Epidemiological Profile from 2007 (Indiana State Epidemiology and Outcomes Workgroup, 2007) provided data on motor vehicle collisions and fatal accidents in all Indiana Counties. This information was used in identifying counties (including Vigo County) eligible for SPF SIG funding in the alcohol priority area. Overall, traffic accidents in Indiana declined between 2003 and 2006, but the number of alcohol related traffic fatalities increased over that time period. Table 2.21 shows data for Vigo County (Indiana SEOW, 2007). As in the state as a whole, in Vigo County traffic accidents decreased from 2003 to 2006. While alcohol related traffic fatalities also declined in Vigo County from 2003 to 2006, the low base rate of this event (i.e., the low number of times it occurs) in Vigo County makes it impossible to determine if this decrease is meaningful or simply due to random fluctuations.

Table 2.21 - Motor Vehicle Accidents in Vigo County

<table>
<thead>
<tr>
<th>Year</th>
<th>Collisions</th>
<th>Alcohol Related</th>
<th>Fatalities</th>
<th>Alcohol Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>4294</td>
<td>284</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>2004</td>
<td>4089</td>
<td>207</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>2005</td>
<td>4007</td>
<td>214</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>2006</td>
<td>3828</td>
<td>203</td>
<td>12</td>
<td>3</td>
</tr>
</tbody>
</table>

School Suspensions

Figure 2.20 shows the number of suspensions from Vigo County Schools involving alcohol, drugs, or weapons. While the proportion of suspensions or dropouts that involve alcohol cannot specifically be identified from this information, this information represents a
consequence of alcohol or other drug use that is readily available and potentially responsive to prevention efforts and thus is worth monitoring over time.

Figure 2.20

Vigo County - Number of Suspensions Involving Alcohol, Drugs or Weapons

Source: Indiana Department of Education Website

Alcohol Related Arrests

The number of alcohol related arrests provides one indication of the severity of problematic drinking in a region. While individuals who abuse or are dependent on alcohol are more likely than the average person to be arrested on some alcohol related charge, even light, non-problem, or social drinkers can end up being arrested if they drink in irresponsible fashion (e.g., driving after drinking, etc.). Underage drinking is by definition unlawful and therefore can lead to arrest no matter how much or little alcohol one has consumed.

Juvenile Arrests. The Vigo County Juvenile Probation office maintains monthly records of arrests for different offenses in youth under the age of 18. These records make it possible to examine patterns of arrests over time, and for different age and/or racial/ethnic groups. The largest number of alcohol related arrests among youth under the age of 18 has consistently been for minor consumption.

Figure 2.21 shows total number of arrests for minor consumption from 2000 to 2007, while figure 2.22 shows minor consumption arrests as a percentage of total juvenile arrests. Figure 2.23 separates the data from 2.22 into separate lines for boys and girls. Figure 2.24 shows numbers of other alcohol related arrests.

Several of the tables below show increases in alcohol related juvenile arrests from 2004 to 2007. It may possible to obtain information from local law enforcement agencies that could help explain the increase in arrests (e.g., number of officers on specific patrols, specific initiatives such as Project 21 aimed at reducing underage drinking). This might help clarify if there could be a plausible connection between the increase in arrests from 2004 to 2007 and the possible slight decrease in prevalence of use and consequences over a similar time period. Information from local law enforcement agencies might also help identify plausible
reasons for the saw-tooth pattern (arrests increasing one year and declining the next) observed from 2000 to 2004.

Figure 2.21

Number of Arrests for Minor Consumption

Figure 2.22

Minor consumption arrests as percentage of total juvenile arrests

Source: Data from Vigo County Juvenile Probation; Calculations by Tom Johnson, Indiana State University
Figure 2.23

Minor consumption arrests as percentage of total arrests

Source: Data from Vigo County Juvenile Probation; Calculations by Tom Johnson, Indiana State University

Figure 2.24

Other Alcohol Related Arrests

Source: Data from Vigo County Juvenile Probation; Calculations by Tom Johnson, Indiana State University
Figure 2.25 shows the average number of alcohol-related arrests per month. Since 2000, juvenile arrests for alcohol violations (minor consumption, public intoxication, and possession of alcohol combined) have been highest in the month of June. The average number of arrests for June is significantly different from the number of arrests in all other months except for March and September.

**Figure 2.25**

**Juvenile alcohol related arrests by month, 2000-2007**  
(minor consumption + public intoxication + possession of alcohol)

Figures 2.26 – 2.28 show the mean number of arrests per month for various age groups from 12 and under to 17 year olds during the time period of 2000 to 2007. This sort of data is generally presented using bar graphs, since each age group represents a separate group of individuals rather than the same individuals at different ages. However, we have used line graphs here to better illustrate the age span where the biggest increases in arrests occur. For minor consumption and alcohol possession arrests, it is plain that the line segment between age 15 and 16 is the longest segment in each graph. Thus, the biggest increase in these offenses occurs at the transition from age 15 to age 16. However, the biggest increase for public intoxication arrests occurs at the transition from age 16 to age 17. This may provide some information about developmental transitions in alcohol use in Vigo County youth.

**Figure 2.26**
Figure 2.27

Mean number of arrests per month for minor consumption (2000-2007)

Source: Vigo County Juvenile Probation Office

Mean number of arrests per month for possession of alcohol (2000-2007)

Source: Vigo County Juvenile Probation Office
Indiana State University Public Safety Information. Indiana State University Public Safety maintains and publishes records of various types of violations and arrests on the ISU campus and elsewhere. Liquor law violations may result in referral to ISU Student Judicial Programs or in an arrest.

<table>
<thead>
<tr>
<th>Liquor law violations referrals to student judicial</th>
<th>On Campus Totals</th>
<th>Residence Halls</th>
<th>Public Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>74</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>2005</td>
<td>90</td>
<td>74</td>
<td>7</td>
</tr>
<tr>
<td>2006</td>
<td>167</td>
<td>127</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquor law violations arrests</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>59</td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>2005</td>
<td>27</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>2006</td>
<td>18</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

Conclusions Regarding Consequences of Alcohol Use:

- Large numbers of Vigo County Middle School, High School, and College students report experiencing various negative consequences of alcohol use, with hangovers being most common, but rates of driving under the influence being unacceptably high at virtually all age levels.

- Given the peak in alcohol arrests observed in June, additional information may be useful in both explaining why that peak may occur and clarifying whether specific prevention efforts might be able to target that time period and thereby reduce problem drinking and or arrests during that month.
Alcohol Abuse and Dependence

As noted in the introduction to this section, alcohol abuse and dependence are the terms used by health professionals to refer to patterns of alcohol use that have become problematic enough to warrant some form of treatment or intervention.

Hospital Discharge Data. The Indiana State Department of Health maintains records of number of individuals with different diagnoses discharged from public hospitals in the state. Information on the number of individuals diagnosed with drug or alcohol related diagnoses were retrieved on February 21, 2008, from http://www.in.gov/isdh/dataandstats/hosp_disch_data/hosp_guide_index.htm. Table 2.23 provides information about the number of individuals discharged with various diagnoses in Vigo County from 2003 through 2006. Alcohol or drug psychoses include delirium, amnesia, dementia, or hallucinations related to use of withdrawal from alcohol or other drugs. In the data below, psychotic reactions were more commonly diagnosed for drugs other than alcohol. In contrast, dependence was more frequently diagnosed for alcohol than for other drugs. Cases of nondependent abuse include both alcohol and other drugs.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Psychoses</td>
<td>10</td>
<td>8</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Drug Psychoses (not including alcohol)</td>
<td>22</td>
<td>22</td>
<td>26</td>
<td>18</td>
</tr>
<tr>
<td>Alcohol Dependence Syndrome</td>
<td>25</td>
<td>38</td>
<td>34</td>
<td>62</td>
</tr>
<tr>
<td>Drug Dependence (not including alcohol)</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Nondependent Abuse of drugs (including alcohol)</td>
<td>8</td>
<td>17</td>
<td>18</td>
<td>44</td>
</tr>
<tr>
<td>Totals</td>
<td>68</td>
<td>83</td>
<td>83</td>
<td>141</td>
</tr>
</tbody>
</table>

Table 2.24 shows the costs in time and money of the cases listed above. Total days refers to the combined number of days that individuals were hospitalized with one of the above diagnoses, while the mean length of stay represents the average number of days patients were hospitalized. Similarly, both the total charges and the average charge per patient are presented (rounded to the nearest dollar). The differences in length of stay are not statistically significant, but the total cost for treatment in 2006 is significantly higher than for 2003.
Table 2.24 - Length and Cost of Hospital Stays for Individuals Discharged from Vigo County Hospitals with Alcohol and Other Drug Related Diagnoses

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Days</td>
<td>220.00</td>
<td>278.00</td>
<td>266.00</td>
<td>330.00</td>
</tr>
<tr>
<td>Mean length of stay</td>
<td>3.46</td>
<td>3.36</td>
<td>2.63</td>
<td>2.61</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$508,334</td>
<td>$821,593</td>
<td>$840,936</td>
<td>$1,252,069</td>
</tr>
<tr>
<td>Mean cost per patient</td>
<td>$7546</td>
<td>$9631</td>
<td>$9049</td>
<td>$10,332</td>
</tr>
</tbody>
</table>

**Treatment Episode Data Set Results.** TEDS data for Vigo County and the state of Indiana provide information about individuals who are below poverty level and receiving subsidized addiction treatment services. Figure 2.29 shows numbers of men and women being treated with alcohol as their primary drug of abuse. The number of men in treatment has typically been 4 to 5 times as large as the number of women.

**Figure 2.29**

Number of persons in substance abuse treatment with alcohol listed as primary substance of abuse – by gender

![Graph showing the number of men and women in substance abuse treatment with alcohol as primary substance of abuse from 2001 to 2003.]

Source: Treatment Episode Data Set (TEDS), accessed via Indiana Prevention Resource Center Web-site

Figure 2.30 compares numbers of African Americans and whites receiving treatment for alcohol as a primary substance of abuse. While African Americans make up approximately 9% of the Vigo County population, in 2001 and 2002 they made up 12% of the individuals receiving subsidized alcohol treatment.
Table 2.31 shows individuals in treatment by age group. In national samples alcohol use and dependence typically peaks in 18-24 year olds. However, the age group with the largest number of individuals receiving subsidized alcohol treatment in Vigo County is individuals age 35-44. The number of individuals under age 24 and the number between age 25 and 34 are virtually identical.

Figure 2.31
Figure 2.32

Number of persons in substance abuse treatment with alcohol listed as primary substance of abuse – whites by age group

Source: Treatment Episode Data Set (TEDS), accessed via Indiana Prevention Resource Center Web-site

Figure 2.33 shows a breakdown of the number of individuals in treatment by race and gender. As in national samples, in Vigo County black women are less likely to be in treatment for alcohol problems than black men or white men and women.

Figure 2.33

Number of persons in substance abuse treatment with alcohol listed as primary substance of abuse – by race and gender

Source: Treatment Episode Data Set (TEDS), accessed via Indiana Prevention Resource Center Web-site
CONCLUSIONS:

Based on hospital discharge data and TEDS data, alcohol dependence is the most frequently occurring diagnosis leading to substance abuse treatment in Vigo County. The total cost of hospital treatment of substance abuse related medical problems in Vigo County increased annually since 2003, topping $1 million in 2006. The largest groups of alcohol dependent individuals receiving subsidized treatment in Vigo County are white males between the ages of 35 and 44.
Methamphetamines

Based on the number and rate of arrests for synthetic drug manufacture, the 2007 Indiana SEOW report ranked Vigo County as one of six counties tied for the top ranking in terms of methamphetamine being a significant substance abuse challenge.

**Methamphetamine Laboratory Seizures**

| Table 3.1 - Methamphetamine Laboratory Seizures in Vigo County and the State of Indiana |
|---------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
|                                 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| Total seizures in Vigo County   | 22   | 82   | 104  | 105  | 108  | 166  | 83   |
| Total seizures in Indiana       | 177  | 374  | 690  | 999  | 1260 | 1549 | 1303 |
| Percentage of state of Indiana  |      |      |      |      |      |      |      |
seizures occurring in Vigo County | 12.4 % | 21.9 % | 15.1 % | 10.5 % | 8.6 % | 10.7 % | 6.4 % |

**Methamphetamine Treatment**

According to 2005 TEDS data presented in the 2007 Indiana SEOW report, Vigo County ranked number 1 in the state in terms of number of individuals in treatment who reported methamphetamine use (393) and in the number who reported that it was their primary drug (244). Only one other Indiana county had more than 300 individuals in treatment who reported methamphetamine use (Vanderburgh, N = 351) and no other county reported more than 200 individuals in treatment who used methamphetamine.

For most drugs of abuse, the number of men in treatment typically is larger than the number of women. In Vigo County, in the years 2001 and 2003 there was little difference in the number men and women in treatment who listed amphetamines as their primary substance of abuse (see Figure 3.1).

Older TEDS data accessed from the IPRC CLEI system shows considerably lower numbers of individuals in treatment where amphetamines are listed as the primary drug of abuse. Figure 3.1 shows the number of men and women in treatment for amphetamine abuse from 2001 to 2003. The decrease in laboratory seizures seems to correspond to an increase in the number of individuals receiving treatment for methamphetamines abuse. However, further information from local law enforcement and treatment professionals should be gathered before concluding that there is any causal link between the numbers for seizures and numbers of individuals in treatment.
CONCLUSIONS:

Methamphetamine is a more serious problem in Vigo County than in any but perhaps a few other counties in the state. While the number of individuals involved is not as large as the number with alcohol problems, methamphetamine should be considered one of the top problem drugs in Vigo County.

Marijuana

Marijuana Use

Nationwide, marijuana is the most frequently abused illegal drug in both adults and youth (McKim, 2007). Results from Indiana parallel the national pattern (SEOW, 2007).

ATOD Survey. On the 2007 ATOD survey, Vigo County 10th graders had monthly, annual, and lifetime prevalence rates for marijuana use that were significantly higher than the state rate. For monthly use, 17.8% of Vigo County 10th graders reported using marijuana in the 30 days prior to the survey, versus 14.4% in the state of Indiana and 14.2% nationwide. The monthly rate for 12th graders was 17.8%, versus 15.8% for the state, but the difference between Vigo County and the state rate was not significant for 12th graders.

Indiana State University College Students. In the spring of 2005, ISU psychology graduate student Lindsey Hawkins collected data for her dissertation concerning marijuana use in ISU students. She obtained a representative sample of 782 undergraduate students. In this sample, 55.5% of the male students and 49.5% of the female students reported that they had used marijuana at least once in their lifetime. There was no significant difference between African American and white ISU students in terms of lifetime prevalence rates. The sample did not contain enough students from any other racial or ethnic groups to make any meaningful estimates of frequency of use for those groups.

This study also asked students about their use within the previous 6 months and the previous 30 days. Table 3.2 shows 30-day and 6 month prevalence of use for men and
women, as well as the percentage of students who reported weekly use of marijuana. In all comparisons of men and women’s use, the difference between men and women is statistically significant. In other words, there is less than 1 in 100 probability that these differences occurred by random chance and do not reflect actual differences in rates of use between men and women. Combining men and women, 34% of the sample of ISU students reported having used marijuana in the past 6 months and 23.8% reported using in the 30 days prior to the survey.

<table>
<thead>
<tr>
<th>Table 3.2 – Marijuana Use Rates in Indiana State University College Students (2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Women</strong></td>
</tr>
<tr>
<td>Used marijuana in previous 6 months</td>
</tr>
<tr>
<td>Any marijuana use in past 30 days</td>
</tr>
<tr>
<td>Used marijuana once a week or more during past 30 days</td>
</tr>
</tbody>
</table>

The CORE survey, conducted during the spring semester of 2006, also asked students about marijuana use. The numbers reported in the CORE survey are somewhat lower than those found by Hawkins. In the CORE survey 11.5% of ISU students reported using marijuana in the previous 30 days, nearly identical to the state wide rate of 11.6%. Among ISU students, 21.8% reported using within the previous year, compared to 23.5% statewide.

**Treatment of Marijuana Abuse/Dependence**

According to data from the TEDS reported in the State of Indiana Epidemiological report, in 2005, 563 persons in substance abuse treatment in Vigo county reported that they used marijuana. Of those, 252 indicated that it was their primary substance of abuse. There were only four counties in Indiana who had higher numbers of users and primary abusers in treatment (Allen, Lake, Marion, and Vanderburgh).

**Figure 3.2**

*Number of persons in substance abuse treatment with marijuana listed as primary substance of abuse – by gender*
Figure 3.2 shows the numbers of men and women in subsidized treatment with marijuana as their primary drug of abuse. As with alcohol, more men than women receive treatment for marijuana abuse in Vigo County. Figure 3.3 shows the number of individuals in treatment by age group. Individuals in treatment for marijuana abuse in Vigo County tend to be younger than those in treatment for alcohol use. The largest numbers are in the 18-24 age range, younger than the most common age for alcohol use.

Figure 3.3

Number of persons in substance abuse treatment with marijuana listed as primary substance of abuse - by age

![Graph showing number of persons in substance abuse treatment with marijuana listed as primary substance of abuse by age.](source)

Source: Treatment Episode Data Set (TEDS), accessed via Indiana Prevention Resource Center Web-site

Figure 3.4

Number of persons in substance abuse treatment with marijuana listed as primary substance of abuse – by race

![Graph showing number of persons in substance abuse treatment with marijuana listed as primary substance of abuse by race.](source)

Source: Treatment Episode Data Set (TEDS), accessed via Indiana Prevention Resource Center Web-site
CONCLUSIONS:

In the 2007 ATOD survey, rates of marijuana use were significantly higher in Vigo County 10th graders than the state average. Surveys of marijuana use by ISU students found a monthly use rate of between 12 and 24%. Two different While Vigo County was not identified in the 2007 State Report as a county with a high need to address marijuana dependence, the county ranked 5th in the state in terms of number of individuals being treated for marijuana dependence.

Other Drugs

Cocaine

According to the 2007 Indiana SEOW report, rates of arrests for possession and sale of cocaine place Vigo County in the 50th percentile among counties in the state in terms of cocaine being a prevention priority. The 2005 TEDS data presented in the SEOW report indicated that 75 individuals in substance abuse treatment in Vigo County reported use of cocaine, while 33 reported it as their primary drug of abuse. These numbers represent the 17th and 18th highest numbers in the state. Given that Vigo county ranks 16th of 92 Indiana counties in population, these numbers are close to what might be expected if rates of cocaine use and dependence in Vigo county are around the state average.

Figure 3.5 shows numbers of black and white individuals in treatment with cocaine as their primary substance of abuse. Relative to the percentage of African Americans in Vigo County, blacks are over-represented among individuals in treatment for cocaine use in the county.

Figure 3.5

Number of persons in substance abuse treatment with crack or cocaine listed as primary substance of abuse – by race

![Graph showing number of persons in substance abuse treatment with crack or cocaine listed as primary substance of abuse by race from 2001 to 2003.](source)

Source: Treatment Episode Data Set (TEDS), accessed via Indiana Prevention Resource Center/Website

Figure 3.6 shows treatment figures by gender. In 2001 and 2002, more men than women were in treatment with cocaine as their primary substance of abuse. In 2003, there was relatively little difference in the number of men and women in treatment. Obtaining more
recent data would help clarify if this might represent a local trend or merely random fluctuations in who enters treatment.

Figure 3.6

**Number of persons in substance abuse treatment with crack or cocaine listed as primary substance of abuse – by gender**

![Graph showing number of persons in substance abuse treatment with crack or cocaine listed as primary substance of abuse by gender from 2001 to 2003.]

Source: Treatment Episode Data Set (TEDS), accessed via Indiana Prevention Resource Center Web-site

**Heroin**

According to the 2005 TEDS data presented in the 2007 SEOW report, only 4 individuals in substance abuse treatment in Vigo County reported using heroin and only 2 reported it as their primary drug of abuse. Vigo County was tied for 21st with 4 other counties in terms of number of individuals in treatment using heroin number who reported it as their primary drug.

**Indiana State University Public Safety Information.**

Indiana State University Public Safety provided reports of all drug violations resulting in referrals to student judicial or in arrests.

<table>
<thead>
<tr>
<th>Table 3.3 – Indiana State University Public Safety Arrests and Referrals for Drug Violations</th>
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</thead>
<tbody>
<tr>
<td>Drug violations referrals to student judicial</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>2004</td>
</tr>
<tr>
<td>2005</td>
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<tr>
<td>2006</td>
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<tr>
<td>Drug violations arrests</td>
</tr>
<tr>
<td>2004</td>
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<tr>
<td>2005</td>
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<tr>
<td>2006</td>
</tr>
</tbody>
</table>
**ISU CORE Survey Data**

In the CORE survey, 10.9% of ISU students reported use of some illegal drug other than marijuana during the past year (compared to 9.4% state wide). In addition, 5.0% of students reported past 30 day use of some illegal drug other than marijuana (relative to 4.8% state wide). While marijuana was reported as the most frequently used illegal drug at ISU and across the state, amphetamines (ISU = 2.6%; state = 2.3%) and sedatives (ISU = 2.3%, state = 1.9%) ranked second and third in the CORE survey.

**CONCLUSIONS:**

- The rate of cocaine use and dependence in Vigo County appears likely to be close to the state average.
- Compared to the percentage of the African Americans in the Vigo County population, African Americans are over-represented among individuals in substance abuse treatment in Vigo County where cocaine as the primary drug of abuse.
- Based on available data, heroin dependence appears to be relatively uncommon in Vigo County when compared to rates for dependence on alcohol, marijuana, cocaine, and amphetamines.


### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ATOD</td>
<td>Alcohol, Tobacco, and Other Drug</td>
</tr>
<tr>
<td>CLEI</td>
<td>County Level Epidemiological Indicators</td>
</tr>
<tr>
<td>CSAP</td>
<td>Center for Substance Abuse and Prevention</td>
</tr>
<tr>
<td>DUI</td>
<td>Driving Under the Influence (of alcohol or other drugs)</td>
</tr>
<tr>
<td>DMHA</td>
<td>Department of Mental Health and Addiction</td>
</tr>
<tr>
<td>INDOE</td>
<td>Indiana Department of Education</td>
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<tr>
<td>IPRC</td>
<td>Indiana Prevention Resource Center</td>
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<tr>
<td>ISU</td>
<td>Indiana State University</td>
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<tr>
<td>FBI</td>
<td>Federal Bureau of Investigation</td>
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<tr>
<td>MTF</td>
<td>Monitoring the Future study</td>
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<tr>
<td>NIAAA</td>
<td>National Institute on Alcohol Abuse and Alcoholism</td>
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<tr>
<td>OWI</td>
<td>Operating a Vehicle While Intoxicated</td>
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<tr>
<td>SEOW</td>
<td>State Epidemiological and Outcomes Workgroup</td>
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<tr>
<td>SIG</td>
<td>State Incentive Grant</td>
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<tr>
<td>SPF</td>
<td>Strategic Prevention Framework</td>
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<td>TEDS</td>
<td>Treatment Episode Data Set</td>
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<tr>
<td>UCR</td>
<td>Uniform Crime Report</td>
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