2018 State of Iowa Substance Use Epidemiological Profile

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EXECUTIVE SUMMARY

In 2006, the Iowa Department of Public Health received funding from the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration's Center for Substance Abuse Prevention, for a State Epidemiological Outcome Workgroup (Workgroup) to develop a state epidemiological profile on substance abuse. The Workgroup included representatives from agencies directly involved with preventing substance misuse in the State of Iowa. A separate Data Task Group was formed to develop criteria for selecting adequate indicators for the profile and to use those criteria to identify, analyze, and select indicators for inclusion in Iowa's epidemiological profile. The following criteria were developed during the writing of the *2006 Iowa Epidemiological Profile* and were used for the subsequent profiles, as well:

- Data available at the state (Iowa) level;
- The sample covers age range;
- Data collected at least every two years;
- Measures directly related or strongly associated with Alcohol, Tobacco, and Other Drug (ATOD) use;
- Data pertain to consumption or consequence; and
- Data sets have an adequate sample size.

Approximately 45 indicators were included in the *2007 Iowa Epidemiological Profile*, and an additional six new indicators were added to the 2008 Profile. The 2009 Profile also introduced mapping for the major consumption and consequence indicators showing their distribution across Iowa's 99 counties. The magnitude of the indicators dictated the priorities chosen in the Strategic Prevention Framework State Incentive Grant application (SPF SIG). After receiving the SPF SIG Cooperative Agreement, the 2010 Profile introduced the analysis of mortality and hospital discharge data. Using Internal Classification of Diseases (ICD) 9th and 10th revision, conditions attributed to alcohol, tobacco, and drugs were identified and computed to generate rates. The 2012 Profile introduced Synar data, which assessed how tobacco outlets are compliant to the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act. The Synar amendment prohibits the sale or distribution of tobacco products to individuals under the age of 18.

The 2016 Profile builds upon previous profiles and includes new data including intervening variables associated with substance use. Mental health, suicide data, and recommendations were also added to the 2016 Profile. The *2018 Epidemiological Profile* highlights data regarding over-the-counter medications, opioid-related hospitalizations, and opioid-related deaths. State and national maps were presented to provide visual presentations of the various substances.

Key Findings in the 2018 Epidemiological Profile

Alcohol

Adult Consumption

- Alcohol remains the most reported primary substance of choice for treatment admission; however, the data shows gradual decrease from 2013 to 2017 (414 per 100,000 to 323 per 100,000; IDPH, 2017).
- Alcohol-related treatment admission was higher among adults aged 24-44 compared to other age groups.
- Black or African American aged 18 or older had the highest rates of alcohol-related treatment admission compared to Hispanic or Latino and White in the same age group.
- The percentage of primary substance of choice for treatment admission was higher among Iowans with bachelor's degree and higher compared to the other educational levels.
- The percentage of Iowans reporting alcohol use in the past 30 days remained stable since 2007.
- Alcohol use in the past 30 days is higher among Iowans compared to the national rate.
- Among Iowa's six regions, Northeast Iowa had the highest alcohol use in the past 30 days; percentages range from 59.2 – 63.4 percent (NSDUH, 2016).
- Iowa men engaged in binge drinking at nearly twice the rate among women.
- Iowans aged 18-24 had the highest percentage of binge drinking compared to other age groups.

Youth Consumption

- Alcohol use in the past 30 days and binge drinking among Iowa youth continue to decline for all grade levels (Grades 6, 8, 11).
- From 1999 to 2016, alcohol use in the past 30 days decreased by 65 percent and binge drinking decreased by 75 percent among all grade levels.
- From 2002 to 2016, perceived alcohol availability for all grade levels declined by 21 percent.

Tobacco

Adult Consumption

- Cigarette use in the past 30 days decreased by 12 percent in Iowa.
- Iowans with less than high school had the highest rate of cigarette use in the past 30 days compared to other educational levels.
- Iowans earning $50,0000 or more annually reported the lowest cigarette use in the past 30 days compared to those earning less than $15,000.

Youth Consumption

- From 1999 to 2016, youth cigarette use in the past 30 days decreased by 82 percent for all grade levels.
- Since 1999, cigarette smoking among youth who reported this behavior before age 13 continued to decline.

- Although cigarette use in the past 30 days continued to decrease, cigarette use risk perception decreased from 83 percent to 77 percent for all grade levels.
- In 2016, 5 percent of youth in all grade levels (i.e., Grades 6, 8, 11) reported e-cigarette use in the past 30 days.

Marijuana and Illicit Drugs

Adult Consumption

- Marijuana use in the past 30 days fluctuated between 5 – 6 percent for Iowans aged 12 or older from 2007 to 2014.
- Compared to other states, Iowa was among those states with the lowest marijuana and cocaine use in the past 30 days.
- Northwest, Southwest, and Southeast Iowa regions had the highest marijuana use in the past 30 days (ranging from 4.1 to 5.1 percent) compared to the other Iowa regions (NSDUH, 2016).
- Cocaine use in the past 30 days was higher among Iowans aged 18-25 compared to other age groups.
- Methamphetamine-related treatment admissions doubled since 2012 and the rates were higher for males than females.
- Methamphetamine labs seized and methamphetamine production near a child (e.g., under the age of 18) has continually decreased since 2010.

Youth consumption

- Based on IYS data, marijuana use in the past 30 days has significantly declined among youth in grades 6, 8, and 11 since 1999.
- Iowa youth who reported marijuana use before age 13 also continued to decrease since 2002.
- Illicit drug use in the past 30 days was less than or equal to 2 percent for all grade levels (IYS, 2016).
- In 2016, 85 percent of youth in all grade levels reported that their peers believed illicit drug use was *Very Wrong - Wrong*.
- Males had a lower perception of self-harm due to illicit drug use compared to females.

Over the Counter and Prescription Medications

Youth/Adult consumption

- In Iowa, prescription medication misuse in the past year has remained relatively stable since 2007.
- Opioid-related poisoning emergency department visits were higher among females compared to males.
- Opioid-related deaths were higher among Iowans aged 25-44 compared to other age groups; opioid-related hospitalizations were higher among Iowans aged 45-64.

- All drug-related emergency department visits were higher among Iowans aged 25 and younger.
- Although women had a higher rates of all drug-related emergency department visits and hospitalizations, males had a higher rate of all drug-related deaths.
- Based on the IYS data, from 2005 to 2016, the rate of over the counter medication misuse in the past 30 days decreased 25 percent for all grades (6th, 8th, and 11th grade).

Legal Consequences

- The rate of prison admissions in which methamphetamine was cited as primary drug of choice increased 20 percent in the past 10 years.
- Marijuana was the second drug cited as primary drug of choice at prison admissions.
- The rate of prison admissions in which opioids was cited as primary drug of choice increased 400 percent since 2007, from 1 percent to 5 percent.

Mental Health

- Between 2009 and 2016, Iowans aged 18 to 25 with major depressive episodes in the past year increased 38 percent.
- There was no significant difference in serious thoughts of suicide among Iowa adults 18 or older and 26 or older in the past year.

Conclusion

In Iowa, progress continues to be made in addressing substance use and misuse, including reductions in youth alcohol use, cigarette use amongst all ages, and binge drinking. Despite this progress, usage rates and the harmful effects of substance use continue to affect too many Iowans. Although alcohol remains the most reported substance at treatment admission, methamphetamine was the second most cited drug of choice in Iowa.

BACKGROUND

Iowa, named after the Ioway Indian tribe, became the 29th U.S. state in 1846. Iowa is known as the Hawkeye State and Des Moines is the capital city. The State of Iowa had an estimated population of 3,130,869 in 2016 (U.S. Census, 2017). Two of its many attractions are the rare Loess Hills along the Missouri River, and the world-famous Iowa State Fair in Des Moines. Iowa is bordered by two great American rivers, the Mississippi and the Missouri on its east and west sides, thus making it part of the Lewis and Clark Expedition.

According to the 2016 U.S. Census estimate, 90.4 percent of Iowans are White, non-Hispanic, 5.7 percent Hispanic or Latino, 3.6 percent African American or Black, 2.4 percent Asian, 0.3 percent American Indian and Alaska Native, and 0.1 percent Native Hawaiian and other Pacific Islander. More than 90 percent of Iowans have a high school diploma or higher, and 28 percent have a bachelor's degree or higher.

Table 1: Iowa Population by Sex, Age, Race/Ethnicity, and Urban and Rural Designation, U.S. Census Bureau, 2016

Sex	**Percent**
Female	50.3
Male	49.7
Age (in years)	
<1 (infancy)	1.2
1 – 14 (childhood)	18.1
15 – 24 (adolescence/ young adulthood)	14.3
25 – 44 (early working age)	24.3
45 – 64 (older working age)	25.7
65+ (older adult)	16.4
Race/Ethnicity	
White	87.0
Hispanic or Latino	5.8
Black or African American	4.2
Asian	2.7
American Indian and Alaska Native	0.3
Urban and Rural Designation	
Urban	64.3
Rural	35.7

In 2006, the Iowa Department of Public Health (IDPH) received funding from the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Prevention, for a **State Epidemiological Outcome Workgroup** (SEOW; name changed later to the **State Epidemiological Workgroup** (SEW)). The IDPH Division of Behavioral Health, the Single State Authority for substance abuse prevention and treatment, administers the funds and activities of the SEW. Through SEW, Iowa initiated a systematic process to identify and analyze substance use and abuse epidemiology statewide. The resulting epidemiological profiles of substance use helped assess substance use issues and prioritize prevention services and treatment. Statewide profiles were divided into sections to summarize data by consumption patterns and consequences of use of various substances.

In 2009, IDPH was awarded a SAMHSA cooperative agreement, Strategic Prevention Framework State Incentive Grant (SPF SIG), to address underage drinking, as well as adult binge drinking and related consequences. In 2011, another one-year award, the Strategic Prevention Enhancement, was awarded to IDPH to expand the work of the SEW, as well as increase partnership, collaboration and data sharing between various state agencies. The new expanded SEW had the mission of redefining the scope of its work and identifying meaningful epidemiological products (in addition to the *Epidemiological Profiles*) for the public, researchers, prevention and treatment professionals statewide, plus state and federal legislators.

In September 2014, SAMSHA awarded IDPH a five-year Partnerships for Success Grant. This project continued to build upon the experience and established Strategic Prevention Framework (SPF) prevention infrastructure to address two of the nation's top substance abuse prevention priorities (i.e., underage drinking, adult binge drinking) in identified high need communities. The project is based on the premise that over time, community-level change will lead to measurable change at the state/tribal level.

In September 2016, SAMHSA awarded IDPH a five-year Strategic Prevention Framework (SPF) for Prescription Drugs (SPF Rx) grant. Some of the key elements of the SPF Rx project include:

- Identify highest need counties and prescription drug disparities;
- Create a SPF evidence-based prescription drug misuse prevention infrastructure to identify, promote, and evaluate evidence-based practices, programs, and policies;
- Create and disseminate a statewide media campaign focused on the misuse of prescription drugs; and
- Direct funding, through a competitive RFP process, to the 3 "*highest need*" counties identified with data indicators focused on prescription drug misuse.

Process

The Epidemiological Workgroup (Workgroup) was formed in mid-2006 by inviting representatives from state agencies directly involved with preventing substance use statewide. Members of the SEW included representatives from:

- Department of Human Rights, Division of Criminal and Juvenile Justice Planning
- Governor's Office of Drug Control Policy
- Iowa Department of Corrections

- Iowa Department of Education
- Iowa Department of Public Health
- University of Iowa, Iowa Consortium for Substance Abuse Research and Evaluation (Iowa Consortium)

During the summer and fall of 2006, a separate Data Task Group (DTG) was formed to identify, analyze, and select indicators to include in the Iowa epidemiological profile. This smaller DTG was a sub-group of the SEW with additional members recruited from an existing Iowa Collaboration for Youth Development data committee. The DTG forwarded findings and recommendations to the SEW, which made final decisions about which data to include in the epidemiological profile.

The DTG included individuals with extensive experience in using specific state- and federal-level data collection processes and data sets. DTG representatives included:

- Department of Human Rights, Division of Criminal and Juvenile Justice Planning
- Governor's Traffic Safety Bureau
- Iowa Consortium
- Iowa Department of Education
- Iowa Department of Public Health
- Iowa Department of Public Safety

Among the approximately 300 possible indicators, available in an appendix on the State Epidemiological Website the Data Task Group (DTG) identified potential data sources for each and determined the quality and characteristics of the datasets. Criteria for choosing the best indicators for the profile were later developed.

The SEW emphasized including applicable National Outcome Measures (NOM) in the identified indicators. The following criteria were used in the selection process:

- Data available at State (Iowa) level;
- Sample includes all geographic areas;
- Sample includes age range;
- Data collected at least every two years;
- Measures directly related or strongly associated with Alcohol, Tobacco, and Other Drugs (ATOD) use;
- Data pertain to consumption or consequence; and
- Datasets have adequate sample size.

Additional criteria were applied where similar indicators existed:

- Historical data available;
- Data available at local level;
- Limited redundancy between indicators; and
- Alignment with consequence data.

After the master indicator list was complete and the selection criteria developed, the DTG began to select indicators for the Epidemiological Profile. The indicator selection process culminated in DTG

assistance in obtaining state-level data. Most indicators were discarded for at least one of the following reasons:

- No useful data source was available;
- Significant problems existed with the data source (e.g., inadequate sample size, unavailability of raw data, inconsistent reporting); and
- Lack of a strong relationship or association between ATOD use and a given consequence.

The DTG prioritized the indicators according to consumption or consequences for alcohol, tobacco, and illicit drugs. National Datasets were rejected if they were not representative of Iowa due to small sample size.

In 2012, members were added to the DTG representing health, public safety, the military, research, and academia. The SEW reviewed its operating policies and procedures, elected a new chair, and reviewed potential indicators for inclusion in the Epidemiological Profile.

SEW Membership

From 2016-2017, several SEW members either retired or changed jobs. For that reason, new members were added to the SEW. For instance, members from the following organizations were added to the SEW:

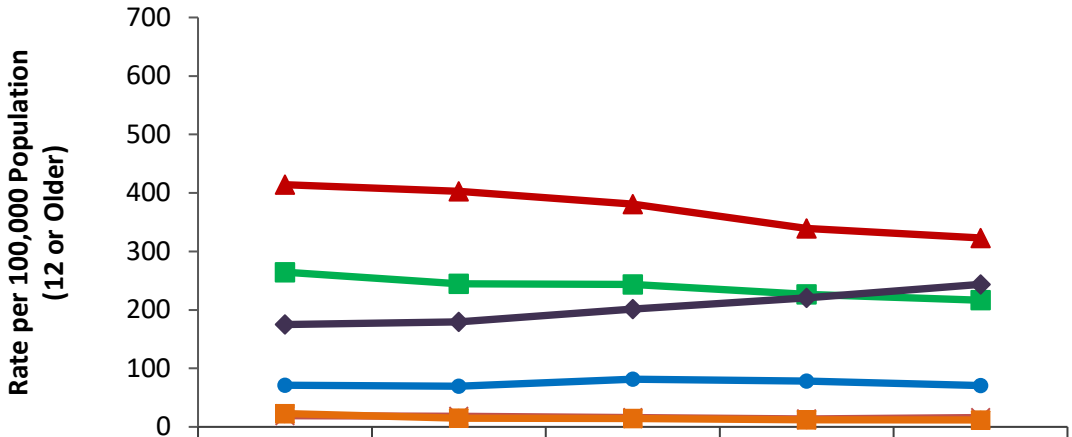
- Area Substance Abuse Council
- Department of Commerce, Alcohol and Beverage Division
- Governor's Office of Drug Control Policy
- Iowa Department of Human Services
- Iowa Department of Human Rights, Division of Criminal and Juvenile Justice Planning
- Jones County Substance Abuse Coalition
- Iowa Hospital Association
- State of Iowa Youth Advisory Council
- University of Iowa
- University of Northern Iowa

ALCOHOL CONSUMPTION

Primary Substance of Choice

Alcohol is the substance most frequently used by Iowa adults and youth. The total number of substance use disorder treatment admissions decreased 7 percent from 2013 to 2017 (i.e., 29,873 to 27,780), indicating fewer Iowans received treatment in 2017. Alcohol remains the most reported substance at treatment admission albeit at a decreasing rate (2013 admissions 414 per 100,000; 2017 admissions 323 per 100,000; Figure 1). Methamphetamine was the second most-cited drug of choice noted on 2017 treatment admission (i.e., 244 per 100,000), followed by marijuana (i.e., 217 per 100,000 population), and opioids (i.e., 71 per 100,000 population; Figure 1).

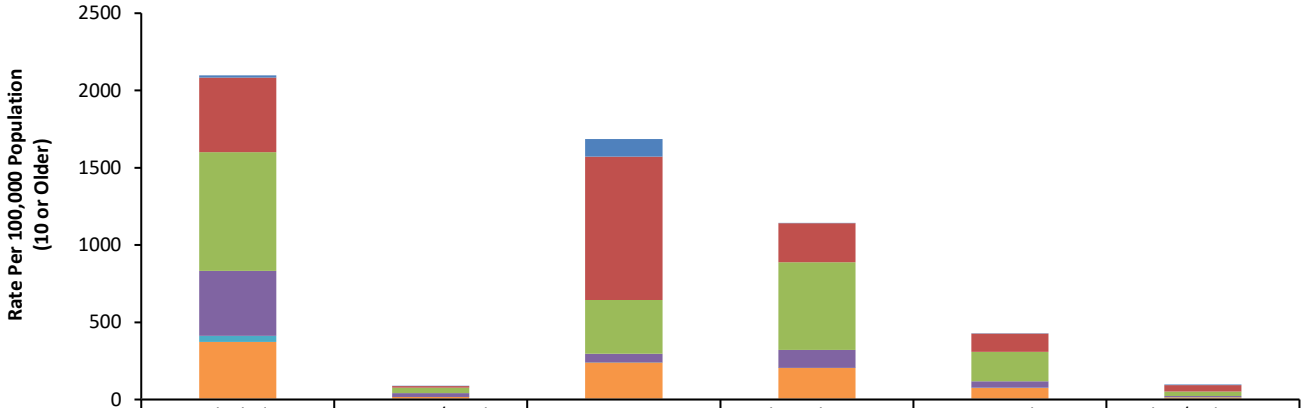
Figure 1: Rate of Treatment Admission Primary Substance of Choice by Substance Type, Iowans 10 years of age and older, IDPH, 2013-2017



	2013	2014	2015	2016	2017
Alcohol	414	403	381	339	323
Cocaine/Crack	19	18	16	14	16
Marijuana	265	245	244	227	217
Methamphetamine	175	180	202	221	244
Opioids	71	70	82	79	71
Other/Unknown	23	15	14	12	12

Figure 2 illustrates the average rate of people aged 10 or older reporting primary substance of choice at treatment admission. The average rates are based on combined 2013-2017 treatment admission data from Iowa Service Management and Reporting Tool (I-SMART). The 2013-2017 data indicated that the average annual percentage of treatment admissions for marijuana was highest among people aged 15 to 24 (929 per 100,000 population) compared to other age groups (Figure 2). The annual percentage of treatment admissions for alcohol was highest among people 24 to 44 (769 per 100,000 population) followed by people aged 15 to 24 (483 per 100,000 population) and 45 to 65 (419 per 100,000 population). Overall, among all ages in Iowa, alcohol (372 per 100,000 population) was the primary substance of choice followed by marijuana (239 per 100,000 population) and methamphetamine (204 per 100,000 population).

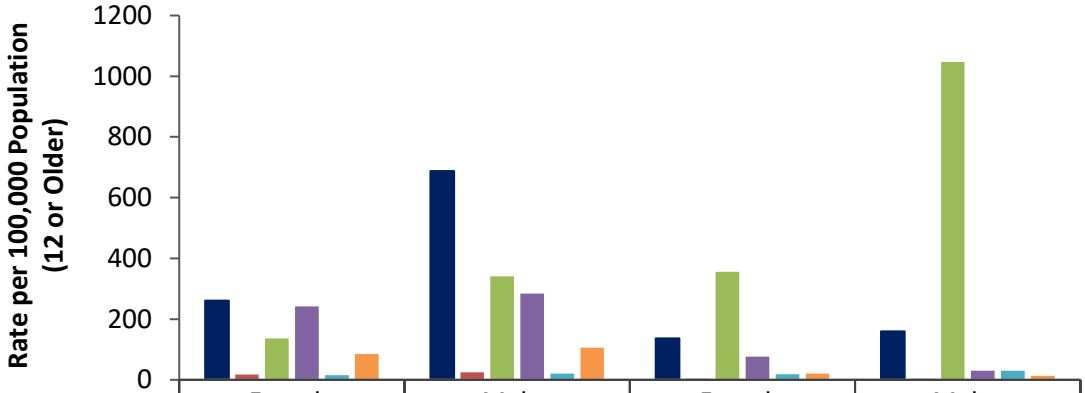
Figure 2: Average Rate of Primary Substance of Choice for Treatment Admission by Substance Type Age, IDPH, 2013-2017



	Alcohol	Cocaine/Crack	Marijuana	Methamphetamine	Opioids	Other/Unknown
10-14	15	0	113	2	2	4
15-24	483	12	929	253	118	42
24-44	769	34	348	568	191	30
45-65	419	25	55	115	41	7
65+	41	1	1	2	3	0
All Ages	372	17	239	204	74	15

Figure 3 illustrates the annual average rate of primary substance of choice for treatment admission among two different age groups (i.e., aged 12 to 17, 18 or older) and by sex. The average rates are based on combined 2013-2017 treatment admission data from Iowa Service Management and Reporting Tool (I-SMART). From 2013-2017, the rate of marijuana treatment admission was significantly higher among males 12 to 17 years old. Among people aged 18 or older, alcohol was the primary substance of choice for males at treatment admission. The average rates of methamphetamine and opioids treatment admissions were highest among females aged 12 to 17 years old.

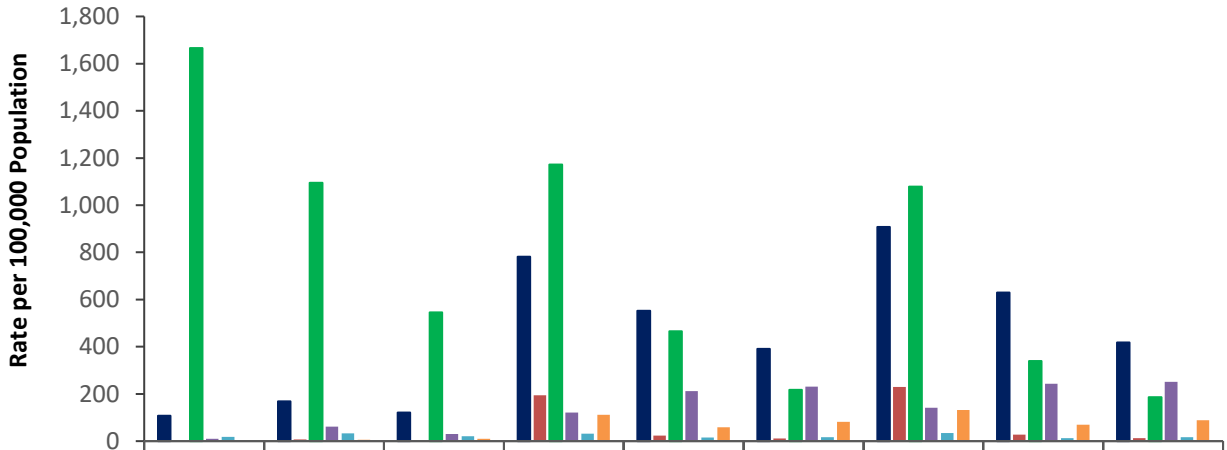
Figure 3: Average Rate of Primary Substance of Choice for Treatment Admission by Substance Type, Sex, IDPH, 2013-2017



	Adults		Juveniles	
	Female	Males	Female	Males
Alcohol	260	687	137	160
Cocaine/Crack	18	25	4	3
Marijuana	137	340	356	1047
Methamphetamine	242	284	76	30
Other/Unknown	15	20	18	30
Opioids	85	106	21	13

Figure 4 illustrates the annual average rate of primary substance of choice for treatment admission among three different age groups (i.e., 12 to 17, 12 or Older, and 18 or older) by race/ethnicity. From 2013-2017, the rate of marijuana treatment admission was significantly higher among Black or African Americans 12 to 17 years old. Among Iowans aged 18 or older, alcohol was the primary substance of choice at treatment admission for Black or African Americans, Hispanic or Latinos, and White.

Figure 4: Rate of Primary Substance of Choice for Treatment Admission by Substance Type, Race/Ethnicity, IDPH, 2013-2017



	12-17			12+			18+		
	Black or African American	Hispanic or Latino	White	Black or African American	Hispanic or Latino	White	Black or African American	Hispanic or Latino	White
Alcohol	108	168	121	782	553	391	908	630	418
Cocaine/Crack	4	7	2	194	24	11	230	27	12
Marijuana	1,666	1,095	545	1,172	466	218	1,078	339	186
Methamphetamine	9	61	31	121	213	231	142	243	251
Other/Unknown	18	33	21	32	16	17	34	12	16
Opioids	4	5	10	112	58	82	132	69	89

Table 1 illustrates the annual average number and percentage of treatment admission primary substance of choice among people aged 18 or older by education status. From 2013-2017, the percentage of alcohol treatment admission was disproportionately highest among people with a bachelor's degree and higher. Among Iowans with less than a high school diploma, the percentage of marijuana and methamphetamine treatment admission were similar. Treatment admissions for opioids were highest among people with some college or an associate degree.

Table 2: Average Number and Percentage of Primary Substance of Choice for Treatment Admission by Substance Type, Education Status, Aged 18 or Older, IDPH, 2013-2017

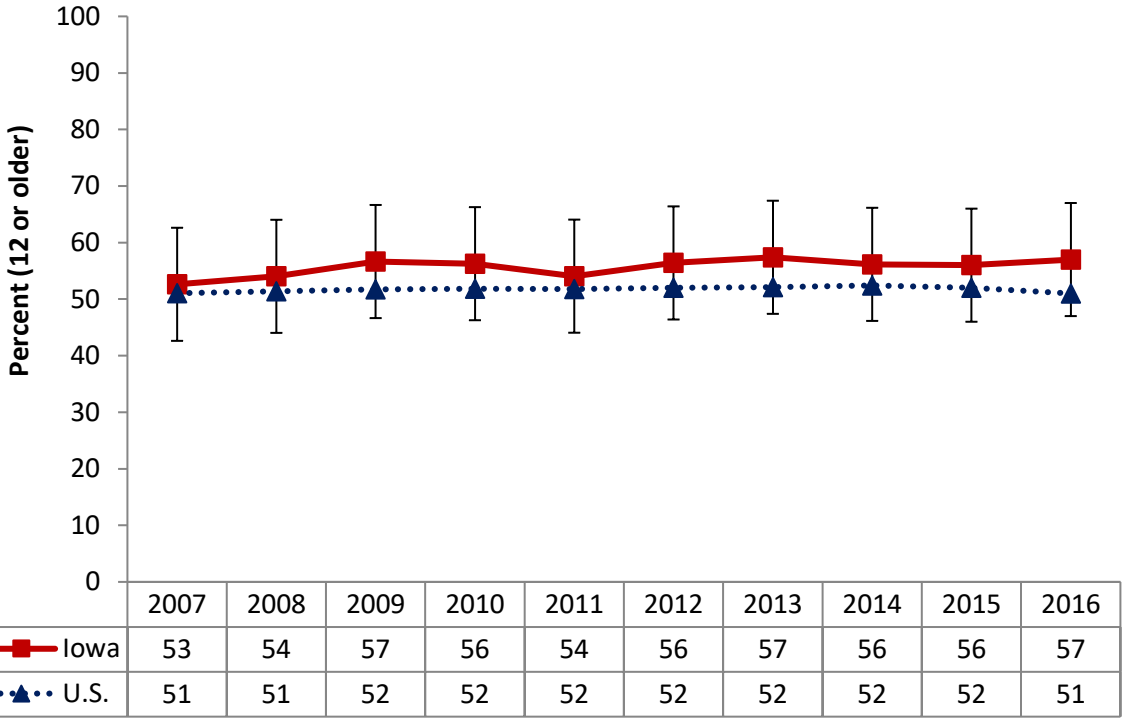
Education Status	Drug Type	Number of Admissions	Percentage of Admissions
Less than High School	Alcohol	1,591	32
	Marijuana	1,431	29
	Methamphetamine	1,402	29
	Opioids	361	7
	Cocaine/Crack	97	2
	Other/Unknown	71	1
High School Graduate or Equivalent	Alcohol	5,401	40
	Methamphetamine	3,497	26
	Marijuana	3,114	23
	Opioids	1,103	8
	Cocaine/Crack	268	2
	Other/Unknown	212	2
Some College or Associate's Degree	Alcohol	2,699	48
	Methamphetamine	1,130	20
	Marijuana	940	17
	Opioids	618	11
	Cocaine/Crack	105	2
	Other/Unknown	91	2
Bachelor's Degree and Higher	Alcohol	1,564	68
	Methamphetamine	254	11
	Opioids	210	9
	Marijuana	187	8
	Cocaine/Crack	38	2
	Other/Unknown	42	2

ADULT CONSUMPTION PATTERNS

Adult Alcohol Consumption

Figure 5 illustrates the percentage of people aged 12 or older reporting alcohol use in the past 30 days in Iowa and the United States. The 2016 NSDUH estimated approximately 1,509,996 (57 percent) of Iowa residents aged 12 or older had used alcohol in the past 30 days. However, in 2011, the NSDUH data estimated nearly 1,394,621 (54 percent) of Iowa residents aged 12 or older had used alcohol in the past 30 days. From 2012 to 2016, the percentage of Iowans who reported alcohol use in the past 30 days has remained stable (Figure 5). In the U.S., the percentage of people aged 12 or older reporting alcohol use in the past 30 days remained the same from 2009 to 2015.

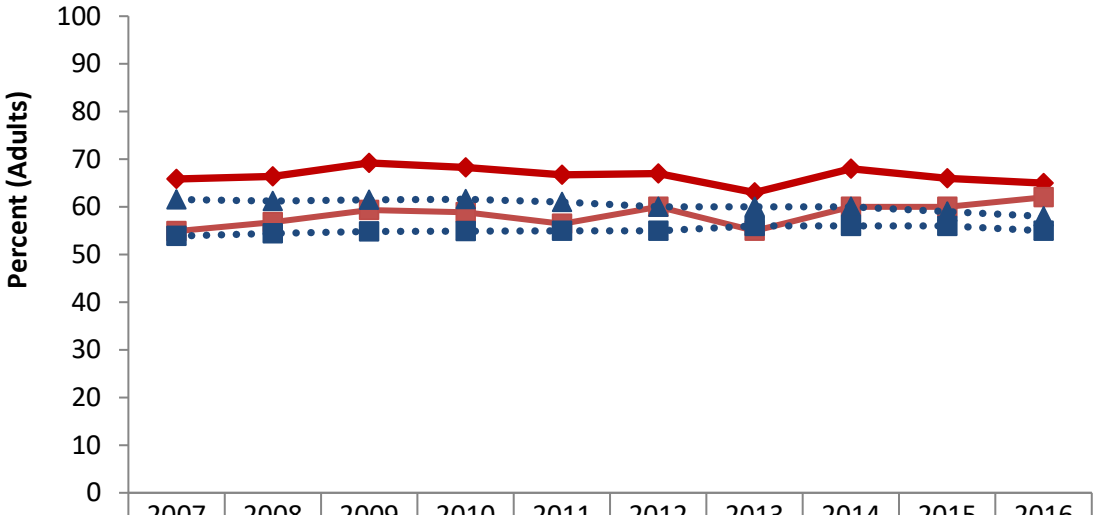
Figure 5: Past 30 Day Alcohol Use, Aged 12 or Older, Iowa & U.S., NSDUH, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	53	54	57	56	54	56	57	56	56	57
U.S.	51	51	52	52	52	52	52	52	52	51

Figure 6 illustrates the percentage of adults age 18-25 and 26 years of age or older reporting alcohol use in the past 30 days by age. In 2016, the NSDUH estimates that 227,928 Iowans aged 18-25 and 1,233,005 Iowans 26 or older used alcohol in the past 30 days. The percentage of adults aged 18-25 in Iowa had the highest rate (65 percent) of alcohol use in the past 30 days compared to the national rate of 58 percent in 2016 (Figure 6). In the same period, Iowans aged 26 or older reported a higher percentage (62 percent) of alcohol use in the past 30 days compared to the national rate (55 percent; Figure 6).

Figure 6: Past 30 Day Alcohol Use among Adults by Age, Iowa & U.S., NSDUH, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa - 18-25	66	66	69	68	67	67	63	68	66	65
Iowa - 26+	55	57	59	59	56	60	55	60	60	62
U.S. - 18-25	62	61	62	62	61	60	60	60	59	58
U.S. - 26+	54	54	55	55	55	55	56	56	56	55

Figure 7 illustrates the percentage of adults aged 18 or older reporting alcohol use in the past 30 days by gender. Based on the Behavioral Risk Factor Surveillance System (BRFSS) survey, respondents were two questions asked about their current alcohol use. The question asked was: "During the past 30 days, have you had at least one drink of any alcoholic beverage such as beer, wine, a malt beverage, or liquor?" and "During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage?" The 2015-2016 BRFSS results showed that Iowa men had the highest percent (66 percent, 65 percent respectively) of alcohol use in the past 30 days compared to the national rates of 60 percent (Figure 4). Alcohol use in the past 30 days was higher among Iowa women in 2015 (51 percent) and 2016 (54 percent) compared to the national rates of 48 percent (Figure 7).

Figure 7: Past 30 Day Alcohol Use among Adults by Sex, Iowa & U.S., BRFSS, 2015-2016

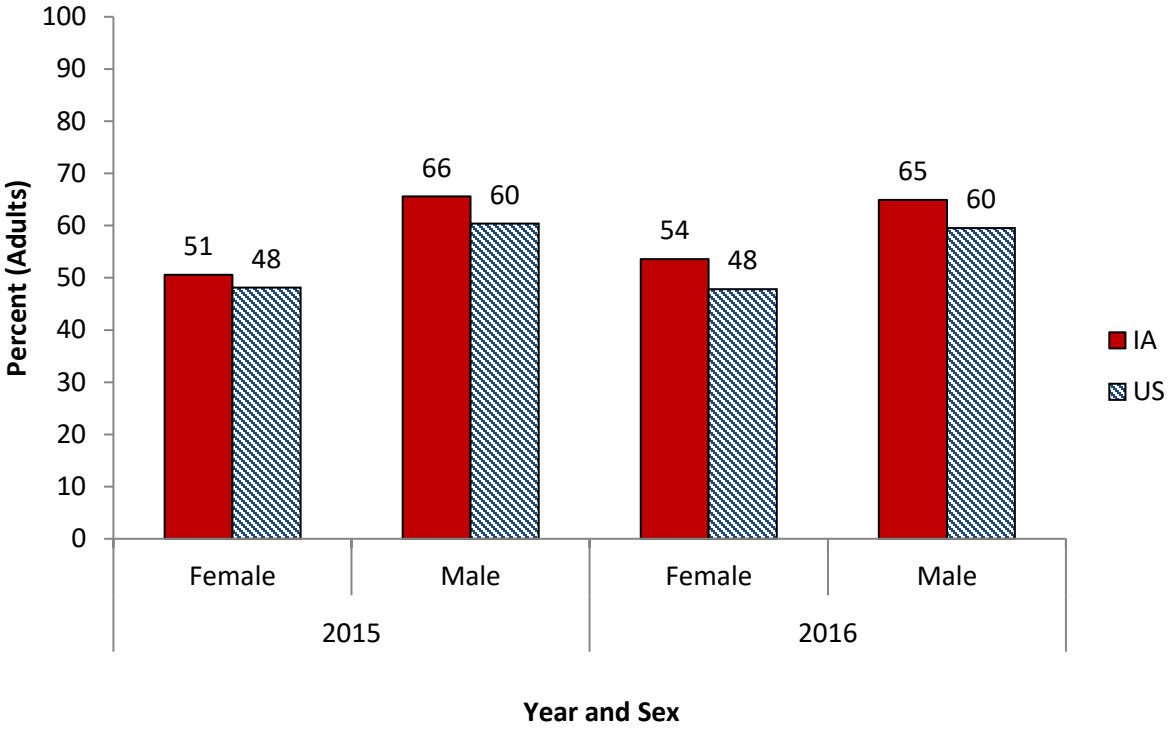


Figure 8 illustrates the percentage of adults reporting alcohol use in the past 30 days by age. The BRFSS results showed that Iowa adults had the highest alcohol use among age groups 25-34 (68 percent) and 35-44 (66 percent). Iowans ages 65 and older had a lower percentage of alcohol use compared to the national rates (Figure 8). Iowans 18-24 years were 10 percentage points higher than the nation, the greatest gap between Iowans and national numbers in regards to alcohol use in the past 30 days (Figure 8).

Figure 8: Past 30 Day Alcohol Use among Adults by Age, Iowa & U.S., BRFSS, 2015-2016

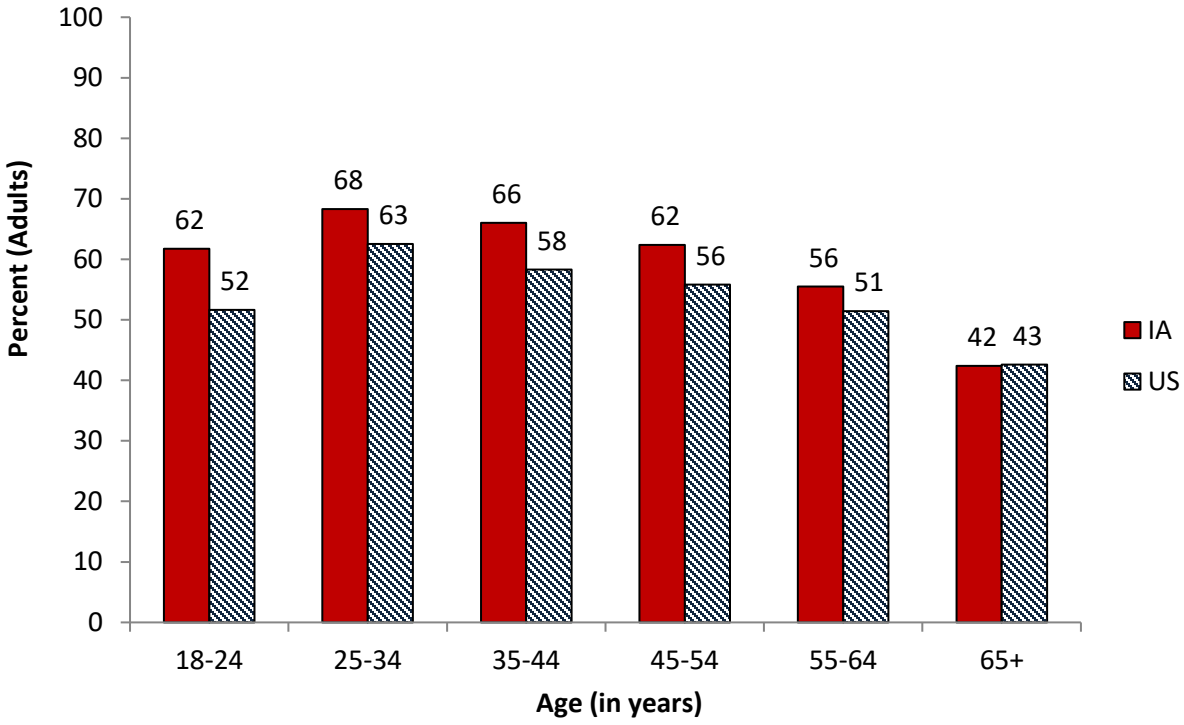


Figure 9 illustrates the percentage of adults age 18 or older reporting alcohol use in the past 30 days by education level. Based on the BRFSS data, 71 percent of Iowa college graduates reported alcohol use compared to 67 percent for the nation rate (Figure 9). The percentage of Iowans who drank alcohol in the past 30 days increased as the level of education increased; the highest level of alcohol use was found among college graduates.

Figure 9: Past 30 Day Alcohol Use among Adults by Education, Iowa & U.S., BRFSS, 2015-2016

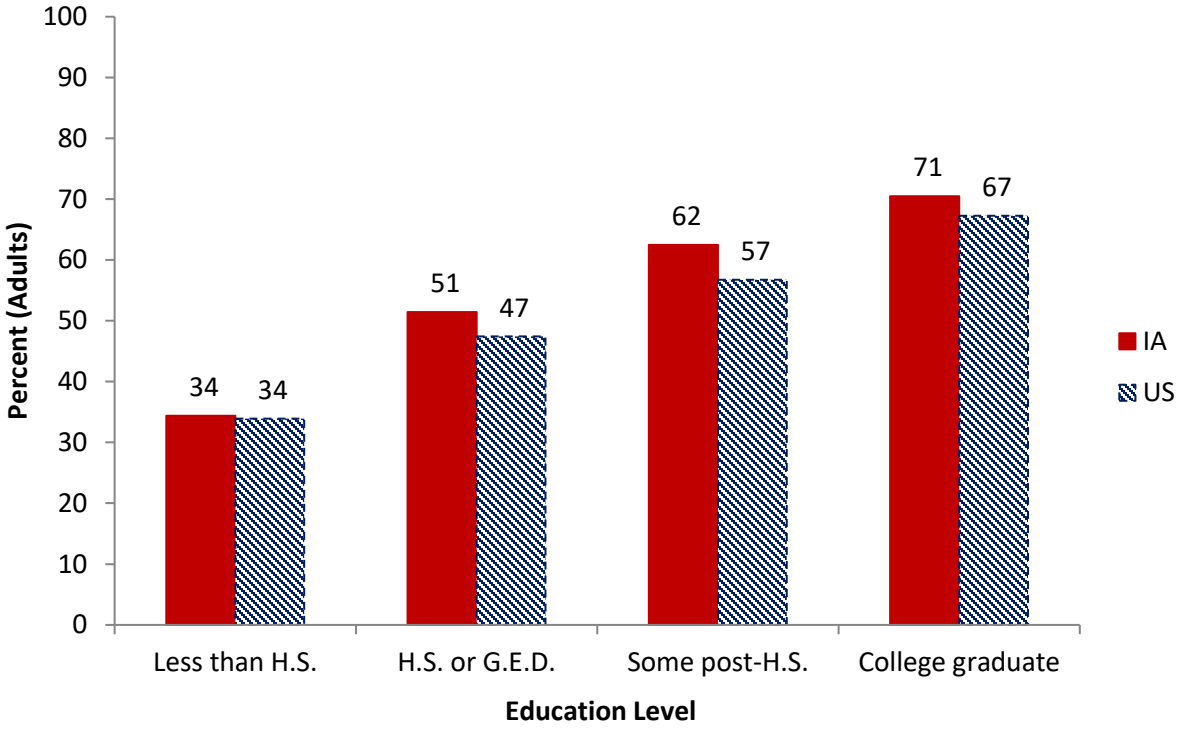


Figure 10 illustrates the percentage of adults reporting alcohol use in the past 30 days by income level. Seventy-seven percent of Iowa adults earning $50,000 or more annually reported alcohol use compared to 42 percent of adults earning less than $15,000 annually (Figure 10). Compared to the national level, Iowa adults in all income levels reported more alcohol use. More Iowans at higher annual incomes report the past 30 days alcohol use compared to those who earn less; this pattern is also observed at the national level.

Figure 10: Past 30 Day Alcohol Use among Adults by Income Level, Iowa & U.S., BRFSS, 2015-2016

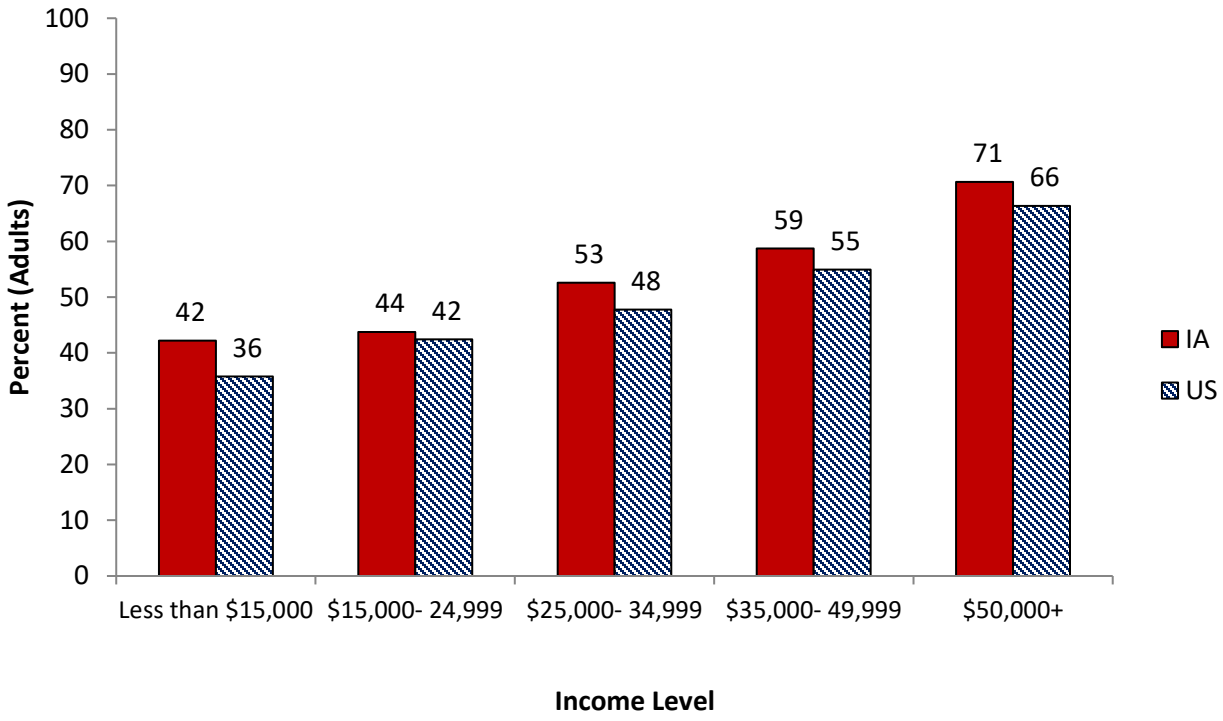


Figure 11 illustrates the percentage of people aged 12 or older reporting alcohol use in the past 30 days. The color legend illustrates the frequency distribution of the percentages of those surveyed reporting alcohol use in the past 30 days in the United States. States are combined into five groups based on the magnitude of alcohol use percentages; Iowa was categorized in the second highest group nationally. The states with the highest percentages of those surveyed reporting alcohol use in the past 30 days are in the upper Midwest and New England.

Figure 11: Past 30 Day Alcohol Use, Aged 12 or Older, NSDUH, 2015-2016

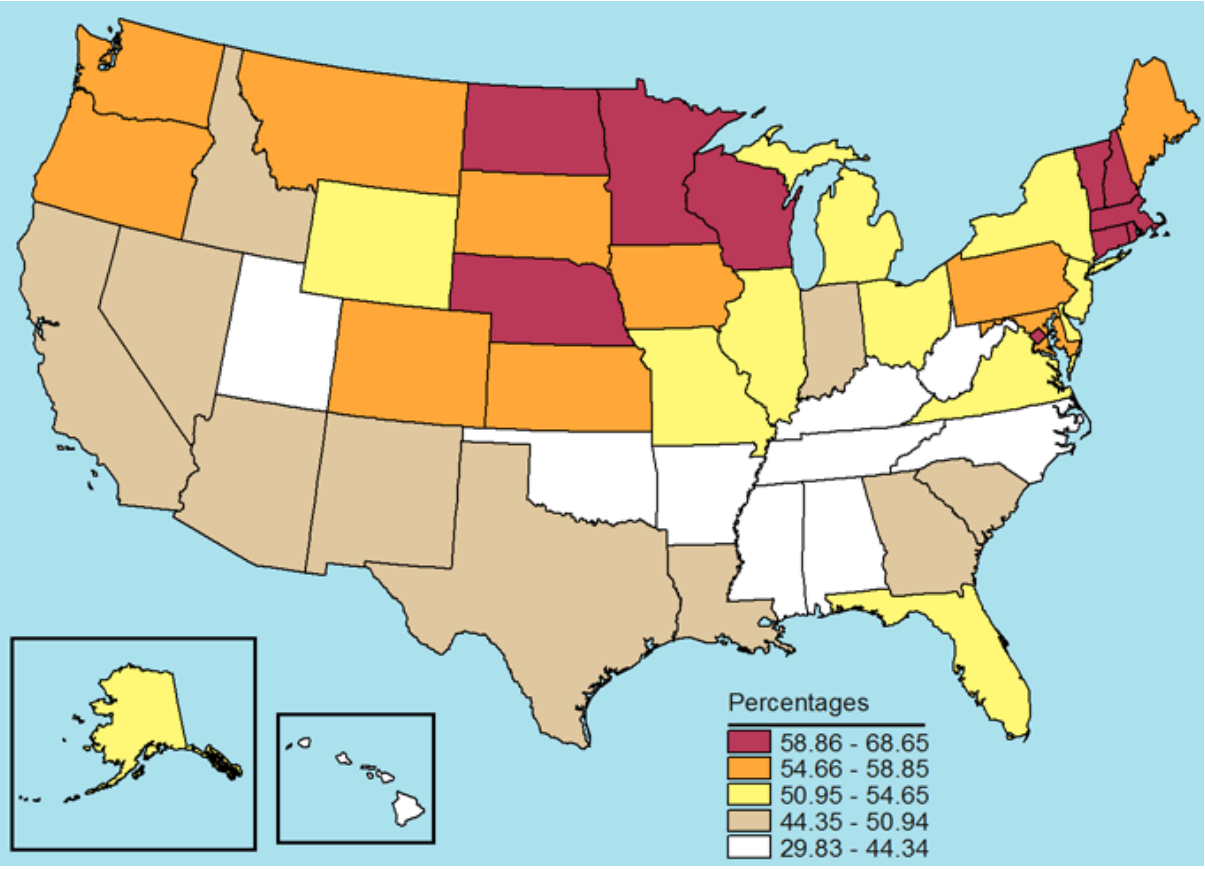


Figure 12 illustrates the percentage of people aged 18 to 25 reporting alcohol use in the past 30 days. The color legend below the map illustrates the frequency distribution of the percentages of those surveyed reporting alcohol use in the past 30 days. States are categorized into five groups based on the magnitude of their percentages; Iowa was one of the states in the highest group for alcohol use in past 30 days.

Figure 12: Past 30 Day Alcohol Use among Adults, Aged 18 to 25, NSDUH, 2015-2016

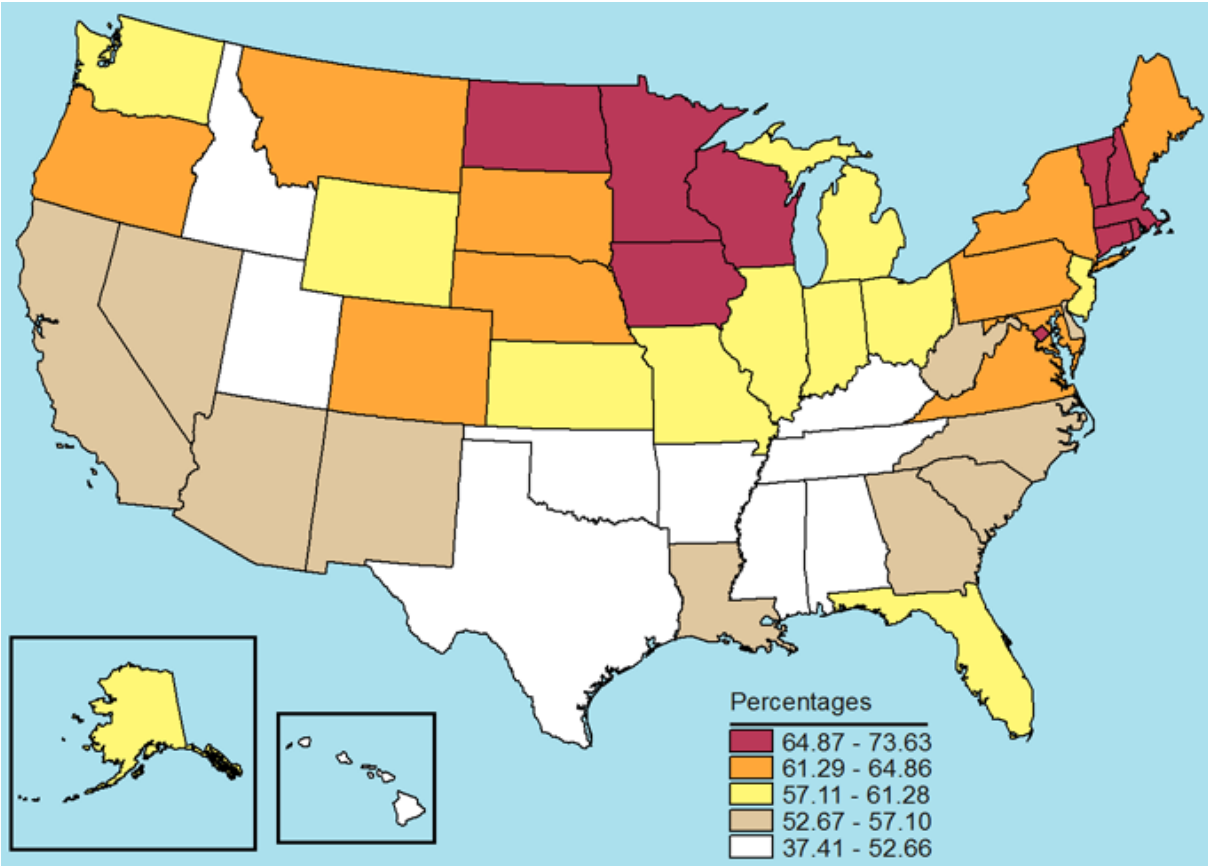
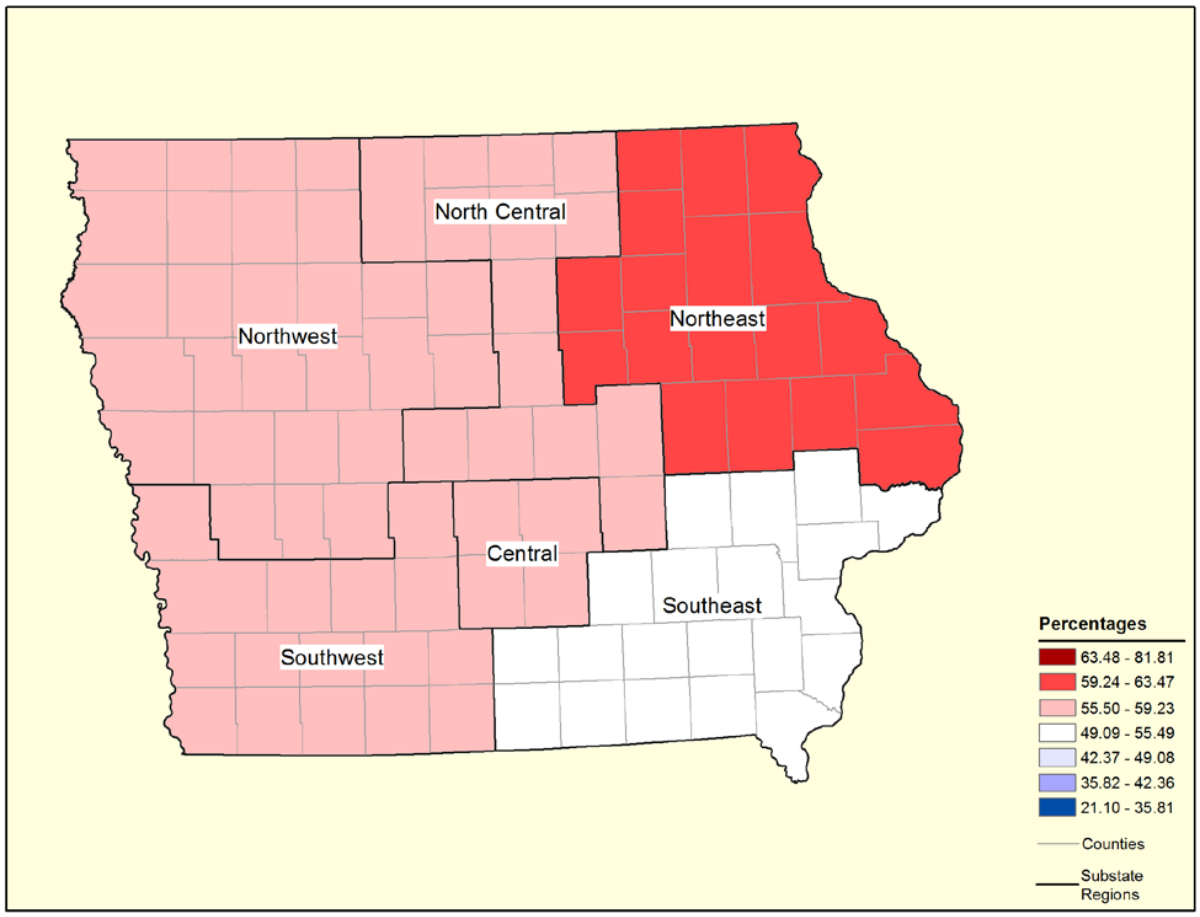


Figure 13 illustrates the percentage of people ages 12 and older who used alcohol in the past 30 days. The 2014-2016 NSDUH showed that Northeast Iowa was in the highest group (59.24 – 63.47 percent) while Southeast Iowa was lower; all the other regions were in the middle group (Figure 13). All Iowa regions were in the top four groupings of regions.

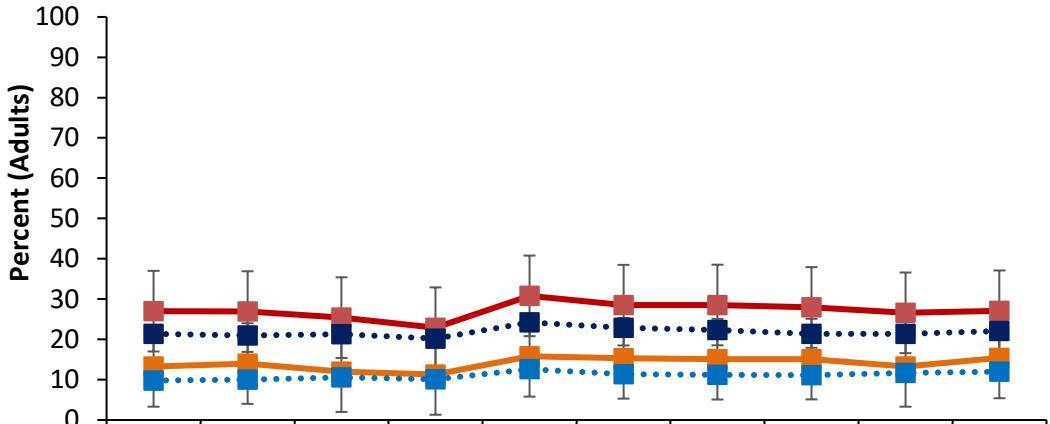
Figure 13: Past 30 Day Alcohol Use, Aged 12 or Older, NSDUH, 2014-2016



Adult Binge Drinking

Figure 14 illustrates the percentage of Iowa and U.S. adults reporting binge drinking in the past 30 days by sex. According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA; 2004), binge drinking is a pattern of drinking that brings blood alcohol concentration (BAC) to 0.08 gram percent or above (5 or more drinks for males and 4 or more drinks for females in about two hours). The data showed that men report binge drinking at nearly twice the rate of women. Iowa women and men reported binge drinking at rates higher than the corresponding national rate (Figure 14). Although men binge drank more than women, prevalence has remained relatively stable for both sexes over the last several years.

Figure 14: Past 30 Day Binge Drinking among Adults by Sex, Iowa & U.S., BRFSS, 2015-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
IA - Female	13	14	12	11	16	15	15	15	13	15
IA - Male	27	27	25	23	31	29	29	28	27	27
US - Female	10	10	11	10	13	11	11	11	12	12
US - Male	21	21	21	20	24	23	22	21	21	22

Figure 15 illustrates the percentage of adults reporting binge drinking in the past 30 days by age. Binge drinking is defined as 5 or more drinks for males and 4 or more drinks for females in about two hours (NIAAA, 2004). The 2015-2016 BRFSS data showed that binge drinking decreases with age (Figure 15).

Figure 15: Past 30 Day Binge Drinking among Adults by Age, Iowa & U.S., BRFSS, 2015-2016

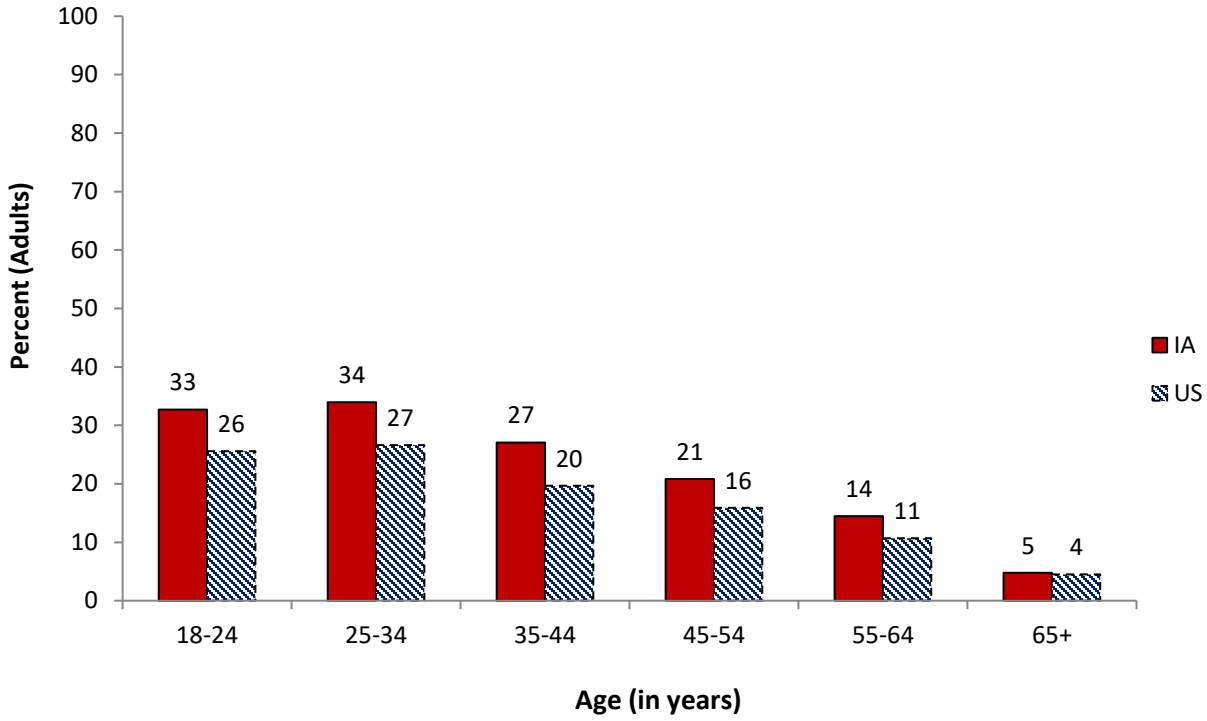


Figure 16 illustrates the percentage of adults who reported binge drinking in the past 30 days by education level. Binge drinking is defined as 5 or more drinks for males and 4 or more drinks for females in about two hours (NIAAA, 2004). At both the state- and national-level, respondents with some post-high school had a higher rate of binge drinking compared to the other education levels. The 2015 -2016 BRFSS data showed that Iowans at all educational levels, except less than high school, had a higher rate of binge drinking than nationally (Figure 16).

Figure 16: Past 30 Day Binge Drinking among Adults by Education Level, Iowa & U.S., BRFSS, 2015-2016

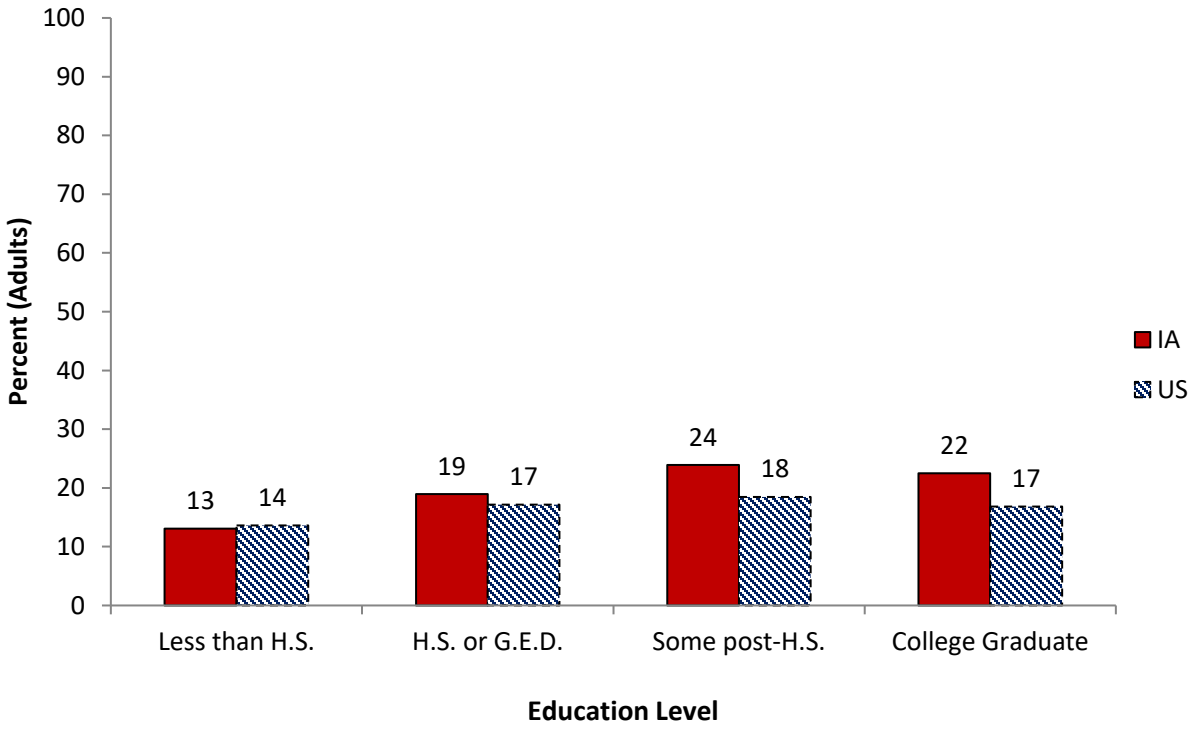


Figure 17 illustrates the percentage of adults who reported binge drinking in the past 30 days by income level. The 2015-2016 BRFSS data showed that binge drinking varies by income level. Iowans earning $15,000-24,999 annually reported the lowest binge drinking rate while Iowans earning $50,000 or more had the highest binge drinking rate (Figure 17). Compared to the national rate, Iowans at all income levels had higher rates of binge drinking in the past 30 days (Figure 17).

Figure 17: Past 30 Day Binge Drinking among Adults by Income Level, Iowa & U.S., BRFSS, 2015-2016

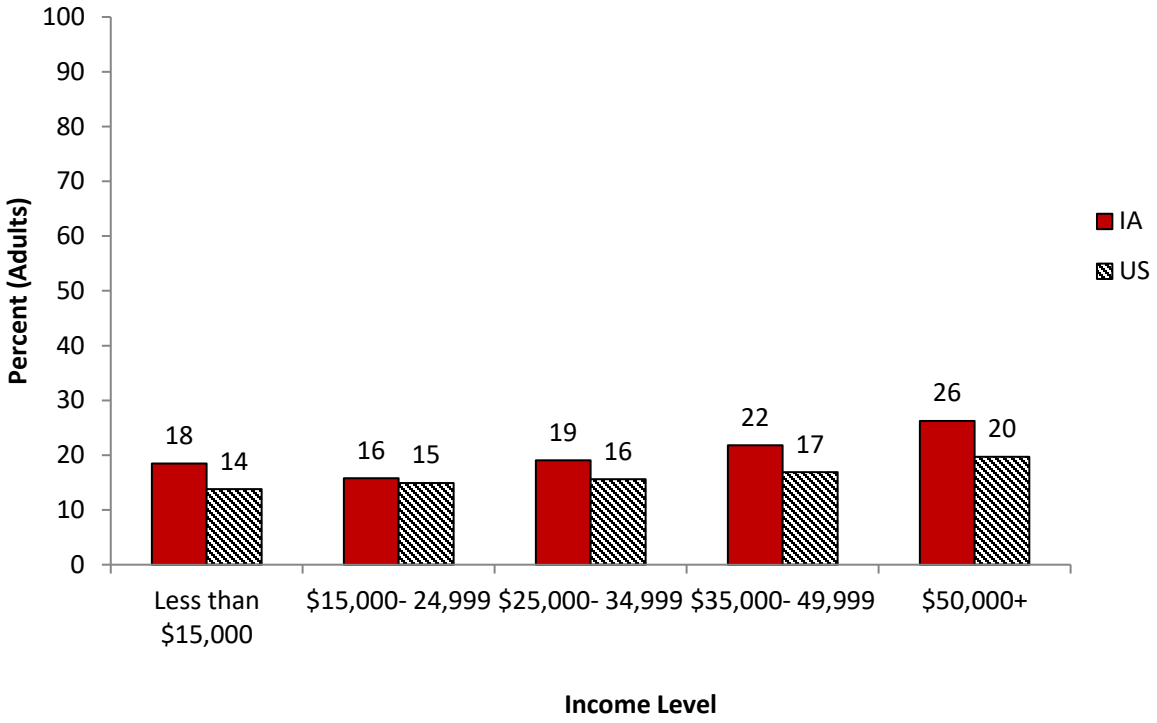


Figure 18 illustrates the percentage of people aged 12 or older reporting binge drinking in the past 30 days. The map groups states into five groups based on the magnitude of binge drinking in the past 30 days. Iowa was among states in the highest group (27.9 - 37.9 percent) that included the District of Columbia, Massachusetts, Montana, Nebraska, New Hampshire, North Dakota, Rhode Island, South Dakota, and Wisconsin (Figure 18).

Figure 18: Past 30 Day Binge Drinking, Aged 12 or Older, NSDUH, 2015-2016

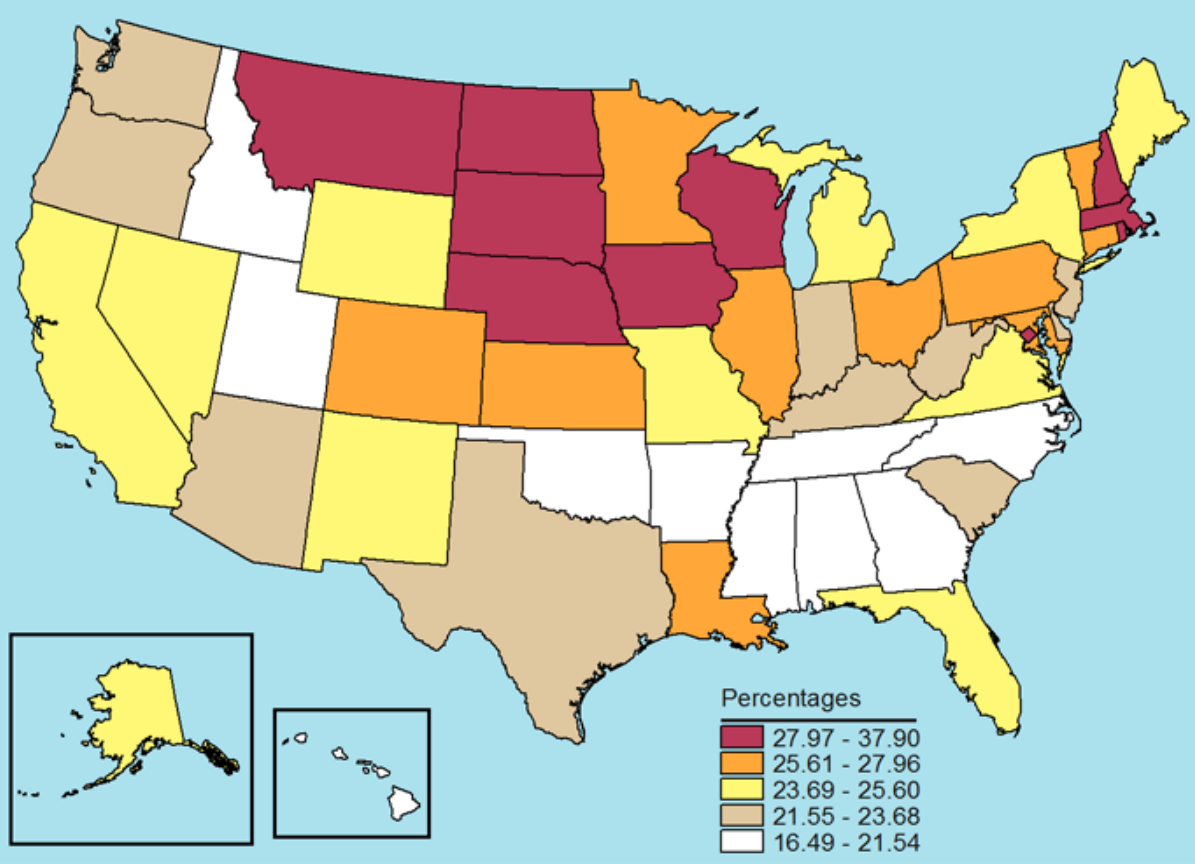
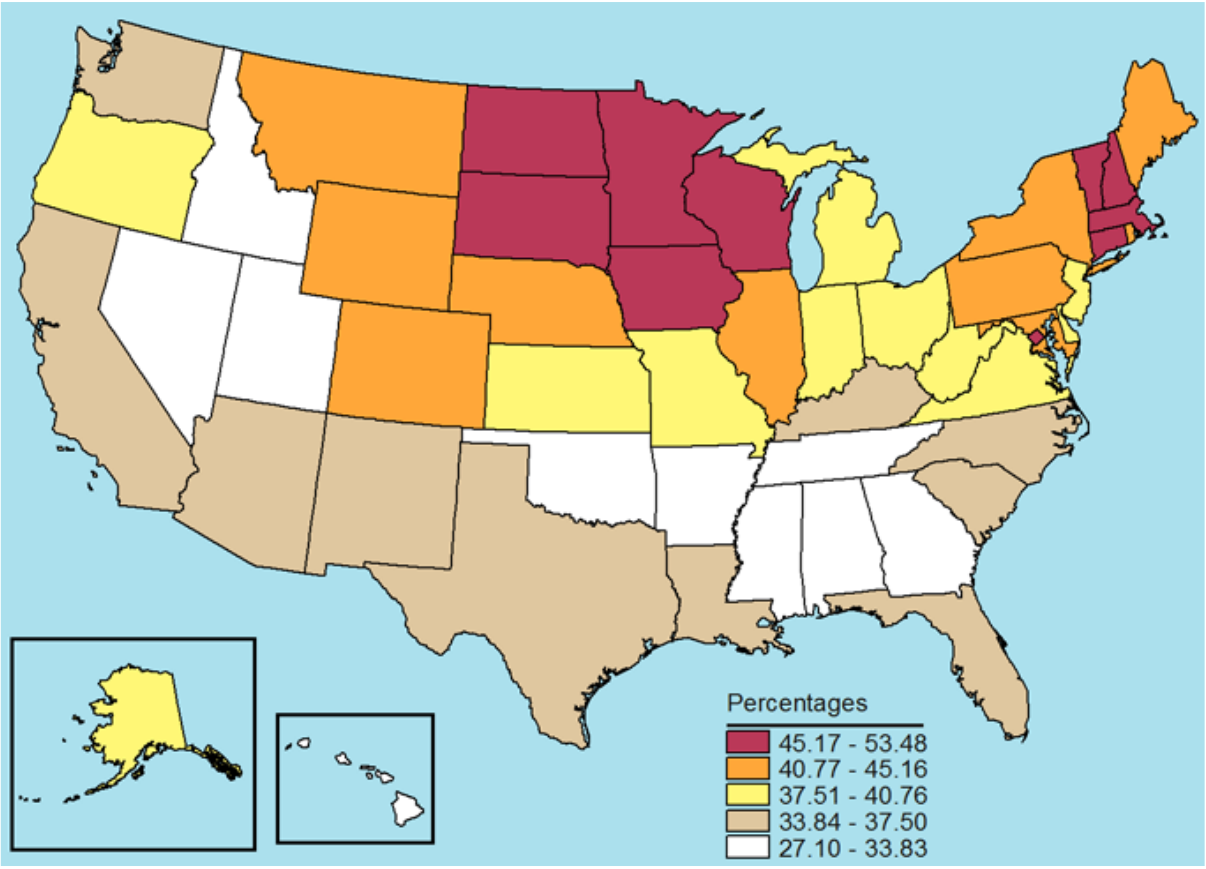


Figure 19 illustrates the percentage of people aged 18 to 25 reporting binge drinking in the past 30 days. The map groups states into five groups based on the magnitude of binge drinking in the past 30 days for young adults. Iowa was among those in the highest group (45.1 - 53.4 percent) that included Connecticut, District of Columbia, Massachusetts, Minnesota, New Hampshire, North Dakota, South Dakota, Vermont, and Wisconsin (Figure 19).

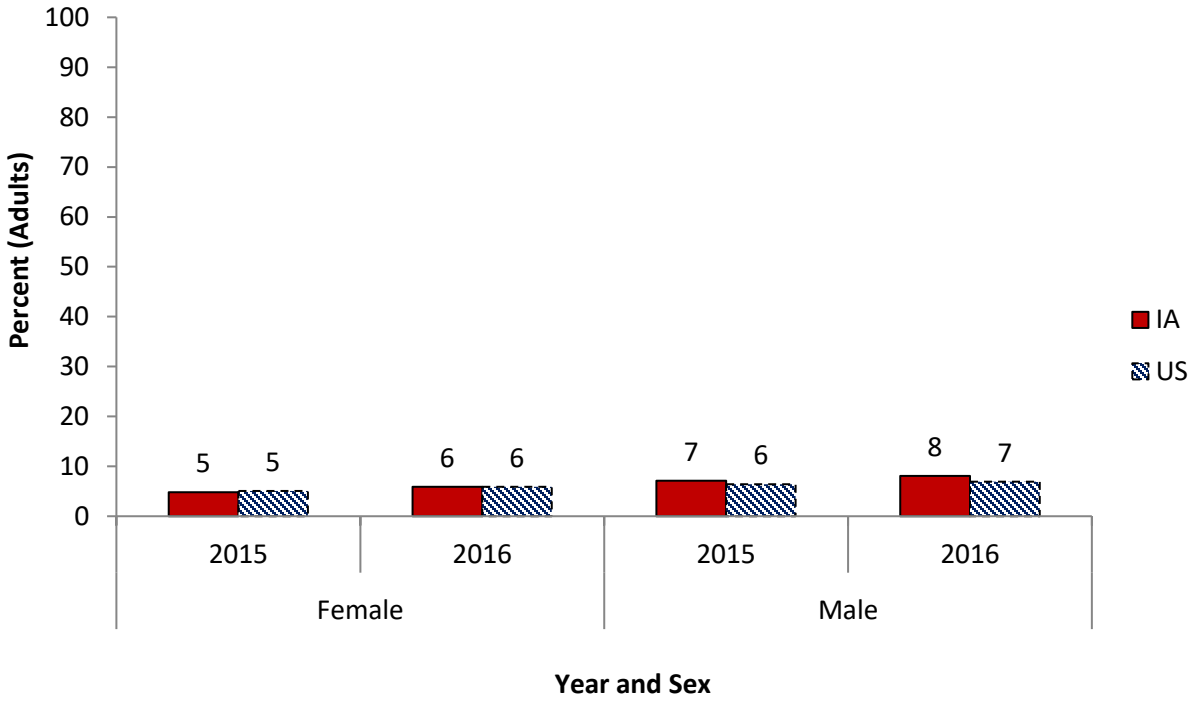
Figure 19: Past 30 Day Binge Drinking among Adults, Aged 18 to 25, NSDUH, 2015-2016



Adult Heavy Drinking

Figure 20 illustrates the percentage of adults 18 or older reporting heavy drinking in the past 30 days by sex. Heavy drinking was defined as an average of greater than 14 drinks per week for men and seven drink per week for women. In 2016, more Iowa men reported heavy drinking (8 percent) compared to the national rate (7 percent). Between 2015 and 2016, the percent of Iowa women who reported heavy drinking in the past 30 days increased from 5 percent to 6 percent (Figure 20).

Figure 20: Past 30 Day Heavy Drinking among Adults by Sex, Iowa & U.S., BRFSS, 2015-2016



Adult Perception of Risk

Figure 21 illustrates the percentage of people aged 12 or older reporting perception of risk from binge drinking. Iowa was among the states in the lowest group (34.4 to 39.1 percent); Iowa is included in the group in which the lowest percent of residents 12 and older report a perception of binge drinking risk. Other states in this group include Kansas, Michigan, Minnesota, Montana, Nebraska, New Hampshire, South Dakota, Vermont, and Wisconsin (Figure 21).

Figure 21: Perception of Risk from Binge Drinking, Aged 12 or Older, NSDUH, 2015-2016

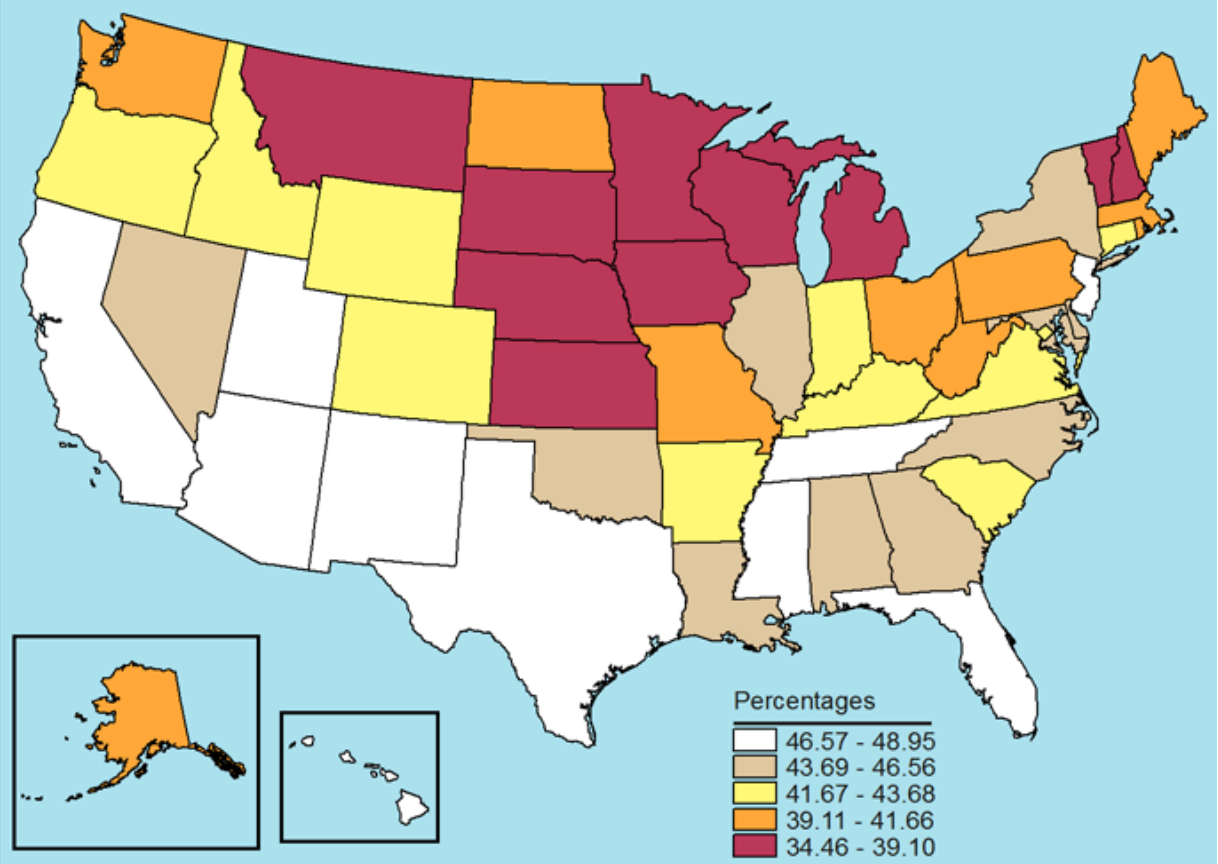
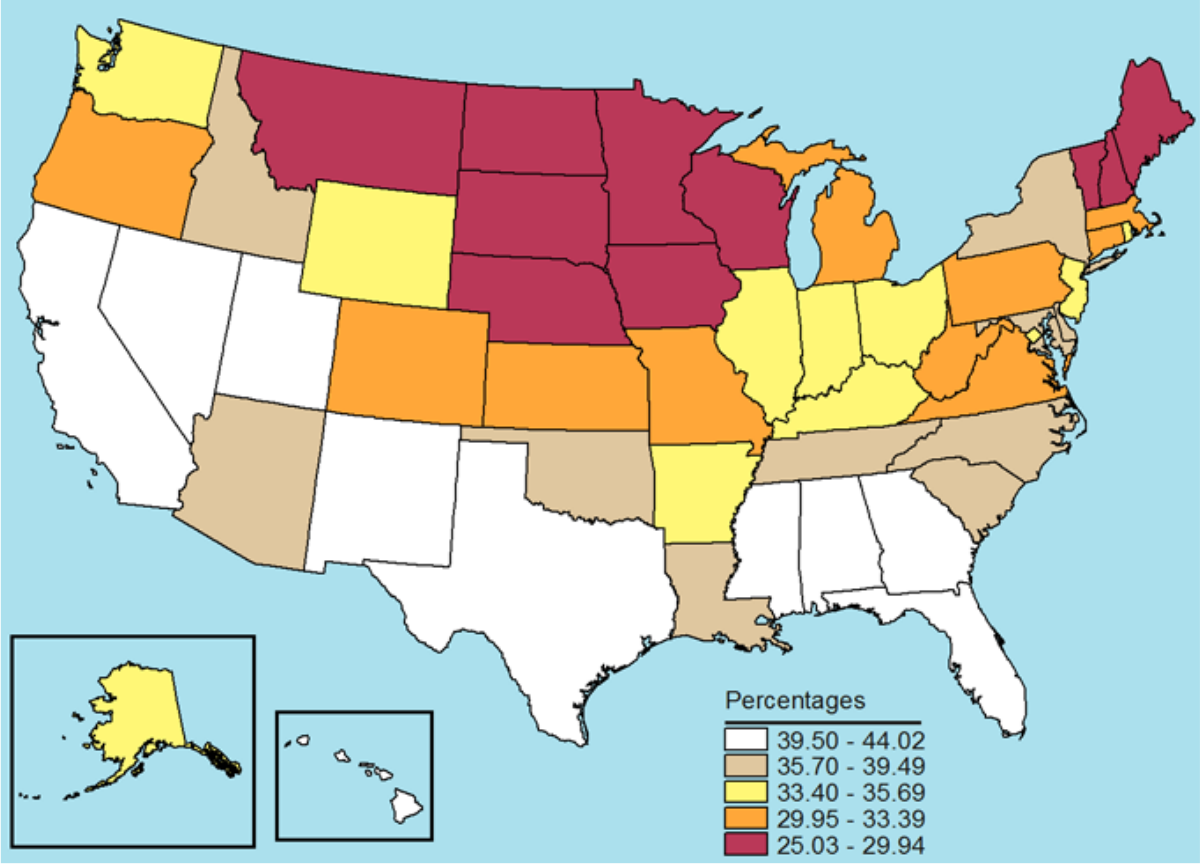


Figure 22 illustrates the percentage of people aged 18 to 25 reporting perception of risk from binge drinking. Similar to the previous figure, Iowa was among the states in the lowest group (35.3 to 40.1 percent); other states in this group include Kansas, Michigan, Minnesota, Montana, Nebraska, New Hampshire, South Dakota, Vermont, and Wisconsin (Figure 22).

Figure 22: Perception of Risk from Binge Drinking among Adults, Aged 18 to 25, NSDUH, 2015-2016

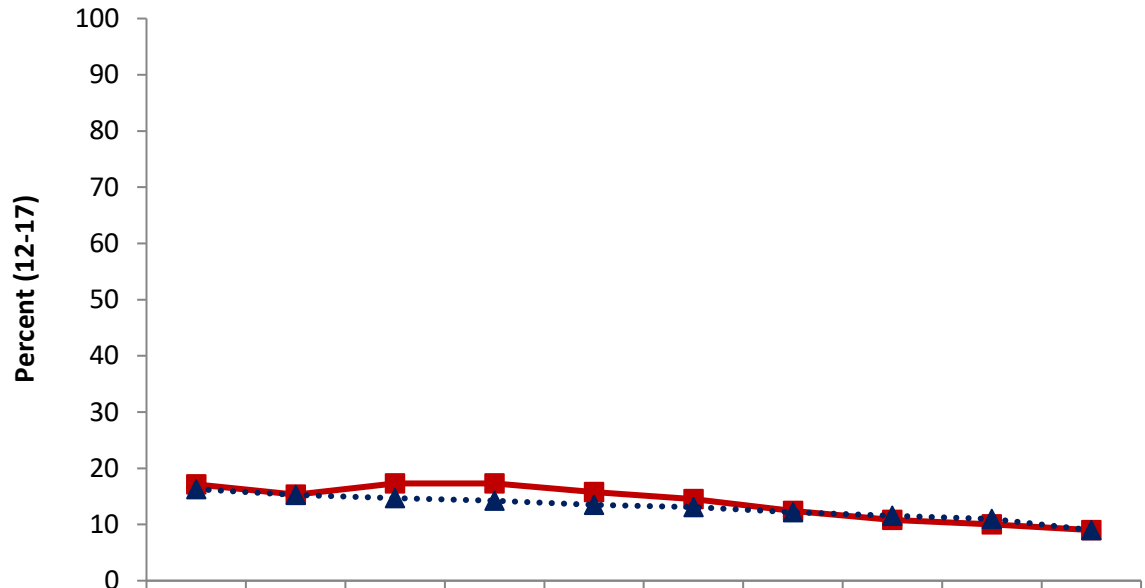


YOUTH CONSUMPTION PATTERNS

Youth Alcohol Use in the Past 30 Days

Figure 23 illustrates the percentage of youth aged 12-17 reporting alcohol use in the past 30 days. The 2007-2016 NSDUH data showed a gradual decrease among Iowa youth with a 47 percent decrease since 2010. These NSDUH data show that alcohol use in the past 30 days among Iowa youth was relatively similar to the national rates (Figure 23).

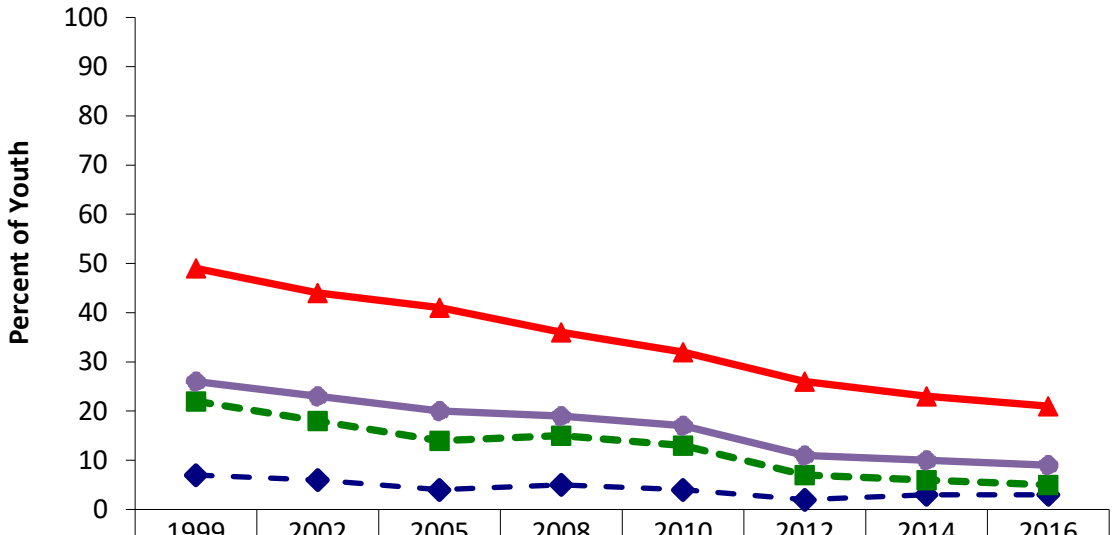
Figure 23: Past 30 Day Alcohol Use among Youth, Iowa & U.S., NSDUH, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	17	15	17	17	16	15	12	11	10	9
U.S.	16	15	15	14	13	13	12	12	11	9

Figure 24 illustrates the percentage of youth reporting alcohol use in the past 30 days by grade. Students were asked the following question: "In the past 30 days, have you had at least one drink (glass, bottle, or can of beer, glass of wine, liquor, or mixed drink?" Alcohol use among Iowa youth has decreased for grades 6, 8, and 11. Although Iowa youth continue to drink alcohol, use across all three grades has declined. Alcohol use in the past 30 days decreased by nearly 57 percent for youth in both sixth and eleventh grades and 77 percent for youth in eighth grade. In 2016, nearly 21 percent of youth in grade 11, 5 percent of youth in grade 8, and 3 percent of youth in grade 6 reported alcohol use in the past 30 days (Figure 24).

Figure 24: Past 30 Day Alcohol Use among Youth by Grade, IYS, 1999-2016

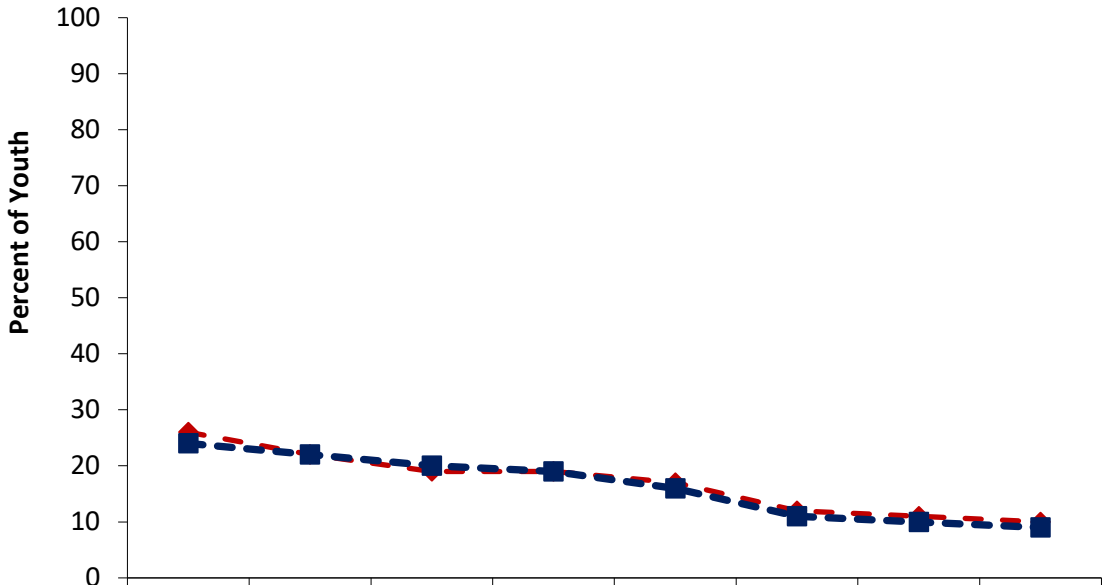


	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	7	6	4	5	4	2	3	3
Grade 8	22	18	14	15	13	7	6	5
Grade 11	49	44	41	36	32	26	23	21
All Grades	26	23	20	19	17	11	10	9

Note: The 2014 data on alcohol use in the past 30 days in the 2016 Epidemiological Profile (Figure 15) was incorrect. We updated this data in the 2018 Epidemiological Profile.

Figure 25 illustrates the percentage of youth reporting alcohol use in the past 30 days by sex. In 2016, 9 percent of females and 10 percent of males reported alcohol use in the past 30 days (Figure 25). Between 2008 and 2016, alcohol use in the past 30 days decreased by 52 percent for females and 61 percent for males. Since 1999, alcohol use in the past 30 days has been declining for both males and females.

Figure 25: Past 30 Day Alcohol Use among Youth by Sex, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Male	26	22	19	19	17	12	11	10
Female	24	22	20	19	16	11	10	9

Figure 26 illustrates the percentage of eleventh grade youth reporting alcohol use in the past 30 days. The percentage of eleventh grade youth reporting alcohol use in the past 30 days was based on combined 2012-2018 data. The percentage of districts and non-public schools that participated in each IYS are as follows:

- 2012: 73 percent public school districts and 12 percent non-public schools;
- 2014: 85 percent public school districts and 12 percent non-public schools;
- 2016: 83 percent public school districts and 15 percent non-public schools, and
- 2018: 68 percent public school districts and 7.6 percent non-public schools.

The color legend illustrates the range of percentages for the frequency distribution of youth reporting alcohol use in the past 30 days in Iowa. The map groups counties into five groups based on the magnitude of their percentages. Twenty-one counties were in the lowest group (15- 20.2 percent); the top 5 counties included Fremont, Mahaska, Mills, Ringgold, and Sioux (Figure 26). Counties in top 5 highest group (27.7 to 38.4 percent) were Adams, Allamakee, Appanoose, Lee, and Sac (Figure 26).

Figure 26: Past 30 Day Alcohol Use among 11th Grade Students by County, IYS, 2012-2016

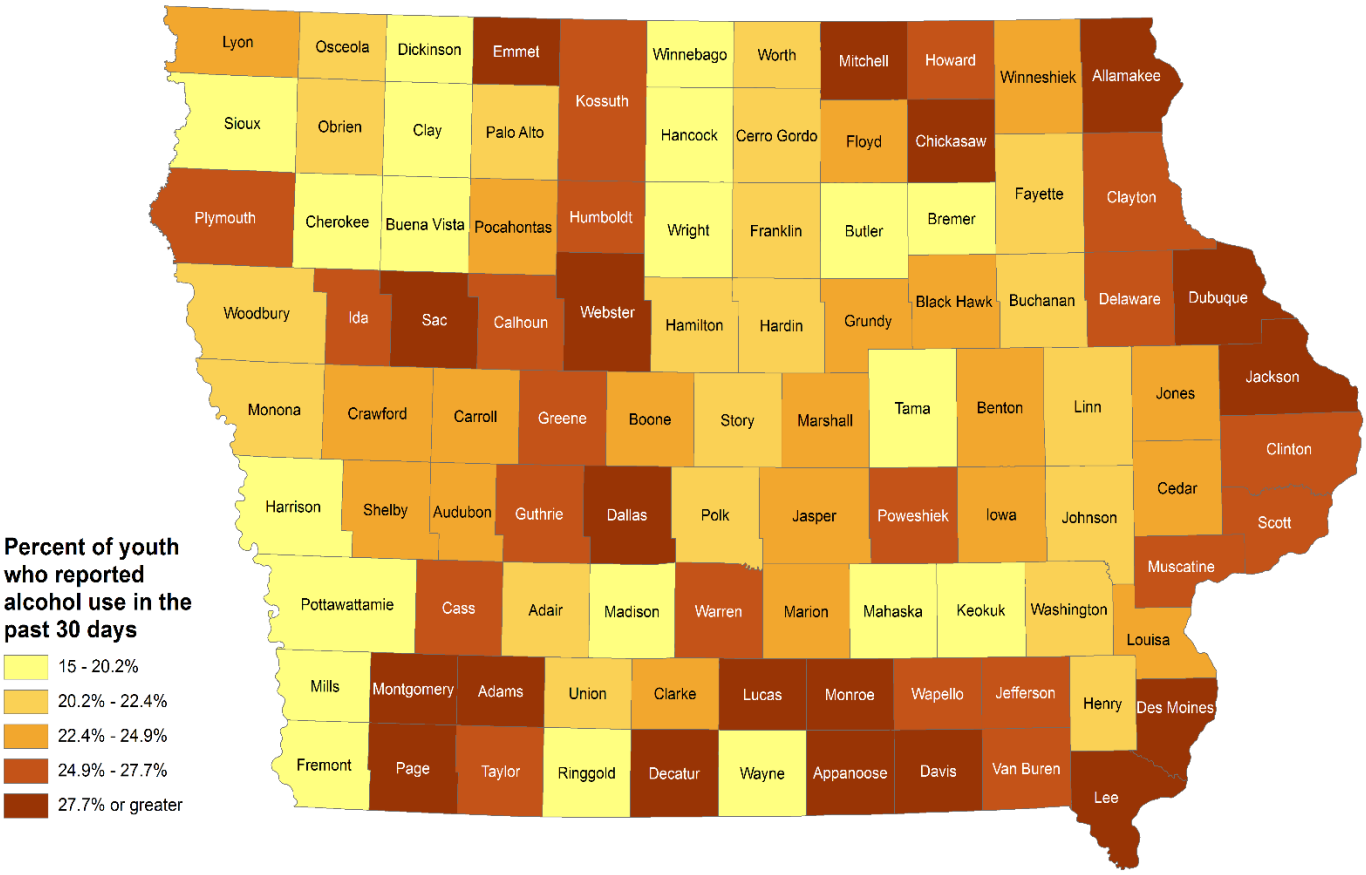
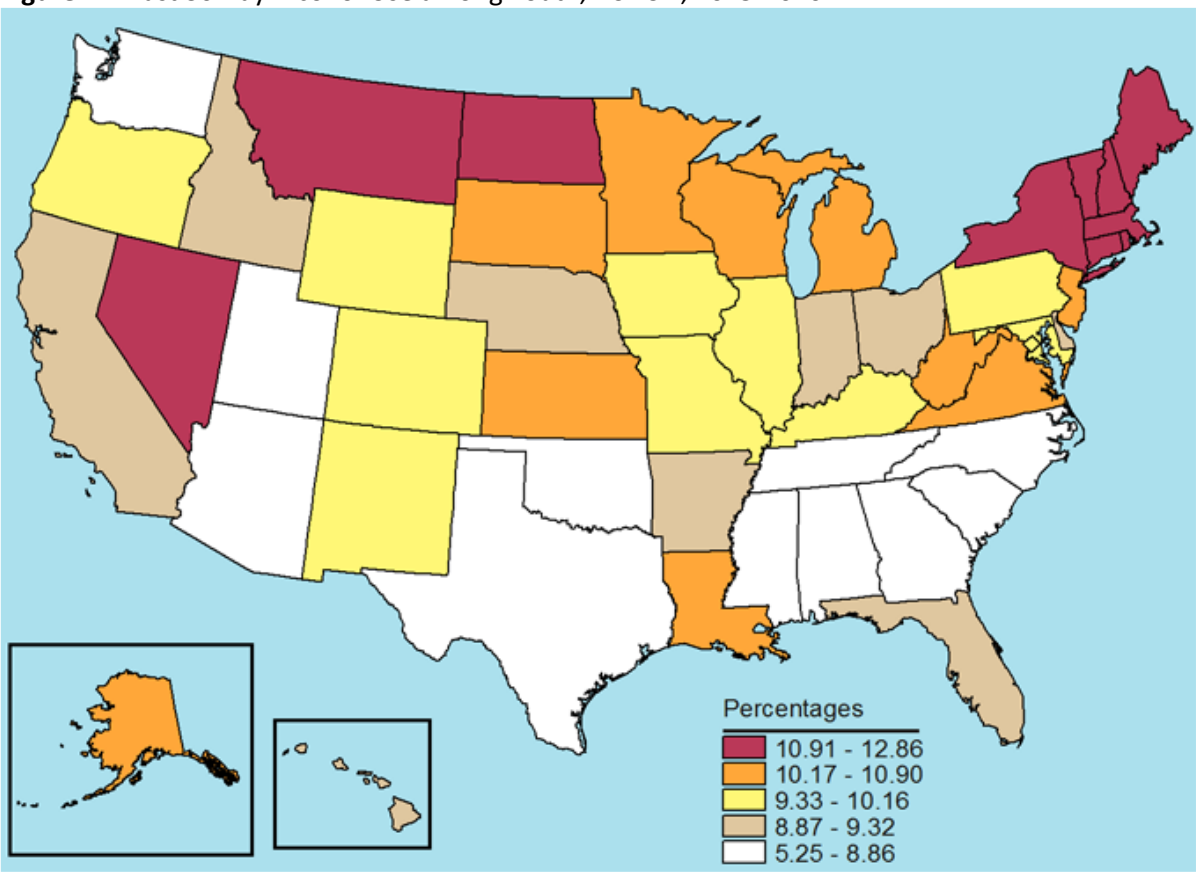


Figure 27 illustrates the percentage of youth (aged 12 to 17) reporting alcohol use in the past 30 days. The color legend below the map illustrates the range of percentages for the frequency distribution youth reporting alcohol use in the past 30 days in the United States. The map categorizes states into five groups based on the magnitude of their percentages. Iowa was among the states in the mid-group (9.3 to 10.1 percent) that included Colorado, District of Columbia, Illinois, Kentucky, Maryland, Missouri, New Mexico, Oregon, Pennsylvania, and Wyoming (Figure 27).

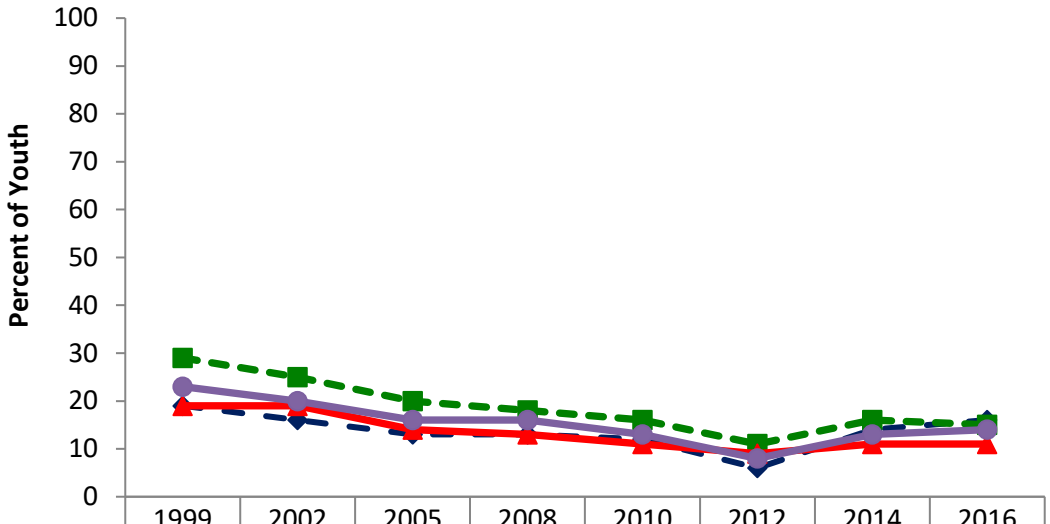
Figure 27: Past 30 Day Alcohol Use among Youth, NSDUH, 2015-2016



Youth First Alcohol Use Before Age 13

Figure 28 illustrates the percentage of youth reporting first alcohol use before age 13 by grade level. Youth were asked the following question: "*How old were you (if ever) when you first: Drank (more than a few sips) of alcohol (beer, wine, liquor)?*" From 1999 to 2016, the IYS results indicated a 48 percent decrease in the first use of alcohol before the age of 13 or 14 for youth in grade 8; 42 percent for youth in grade 11; and 15 percent for youth in grade 6. In 2016, 16 percent of youth in grade 6, 15 percent of youth in grade 8 and 11 percent of youth in grade 11 reported the first use of alcohol before the age of 13 or 14 (Figure 28). In 2016, 14 percent of youth in all grades reported first use of alcohol before the age of 13 or 14; this represents a 39 percent decrease since 1999 (Figure 28).

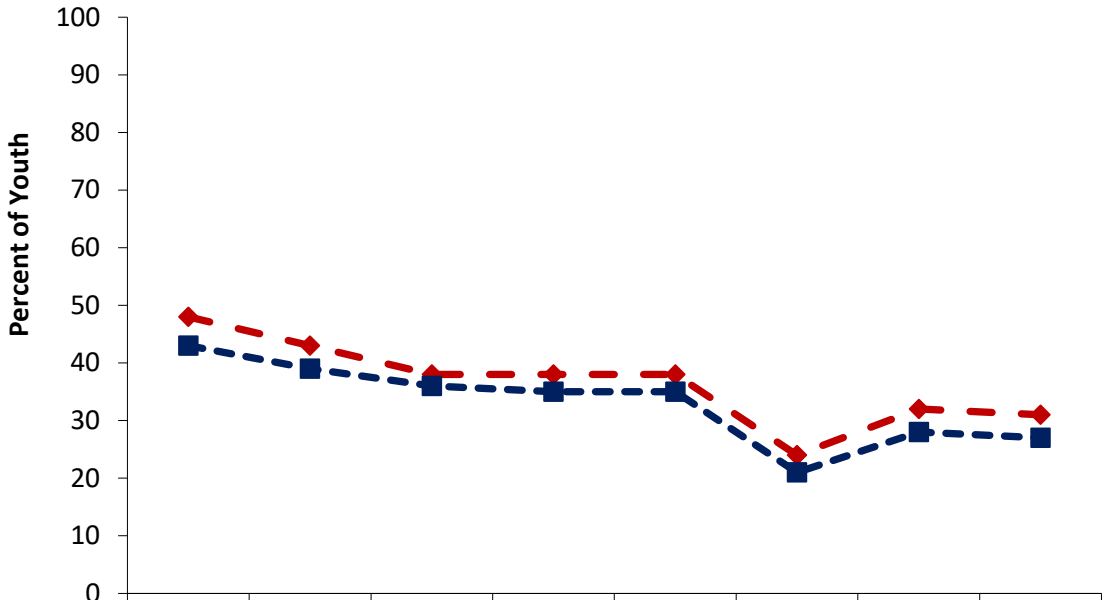
Figure 28: Percent of Youth Reporting Age of First Alcohol Use by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	19	16	13	13	12	6	14	16
Grade 8	29	25	20	18	16	11	16	15
Grade 11	19	19	14	13	11	9	11	11
All Grades	23	20	16	16	13	8	13	14

Figure 29 illustrates the percentage of youth reporting alcohol use in the past 30 days by sex. In 2016, 9 percent of females and 10 percent of males reported alcohol use in the past 30 days (Figure 29). From 2008 to 2016, alcohol use in the past 30 days decreased 52 percent for females and 61 percent for males. Since 1999, alcohol use in the past 30 days has been declining for both males and females.

Figure 29: Percent of Youth Reporting First Alcohol Use by Sex, IYS, 1999-2016

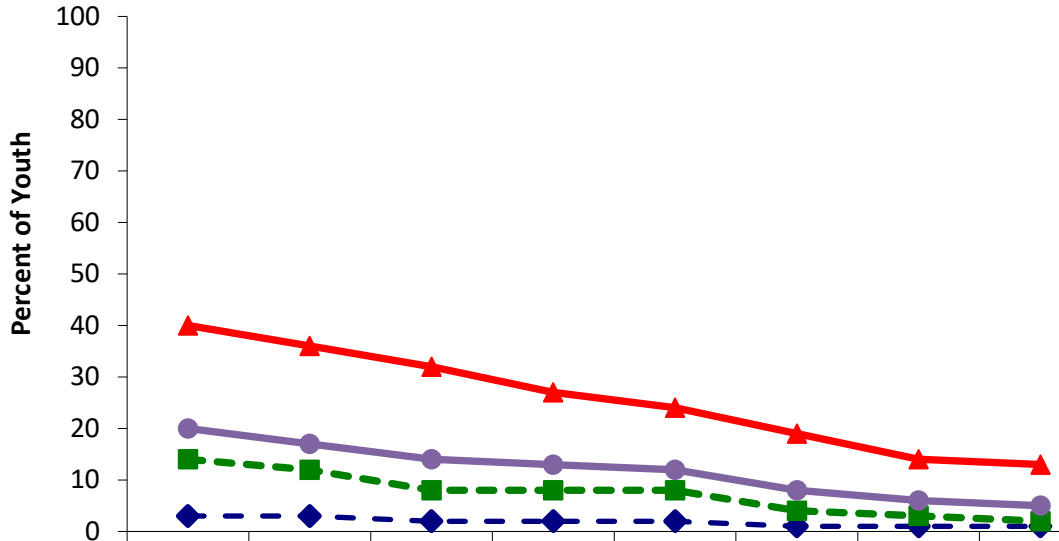


	1999	2002	2005	2008	2010	2012	2014	2016
Male	48	43	38	38	38	24	32	31
Female	43	39	36	35	35	21	28	27

Youth Binge Drinking

Figure 30 illustrates the percentage of youth reporting binge drinking in the past 30 days by grade. Youth were asked the following question: *"During the last 30 days, on how many days did you have 5 or more drinks of alcohol (glasses, bottles, or cans of beer, glasses of wine, liquor, mixed drinks) in a row, that is within a couple of hours?"* Binge drinking among Iowa youth has been declining since 1999. In 2016, 13 percent of youth in grade 11 reported binge drinking in the past 30 days compared to 27 percent in 2008 (Figure 30). In the same period, 2 percent of youth in grade 8 reported binge drinking compared to 8 percent. Overall, binge drinking decreased by 75 percent (i.e., 20 percent in 1999 to 5 percent in 2016) (Figure 30).

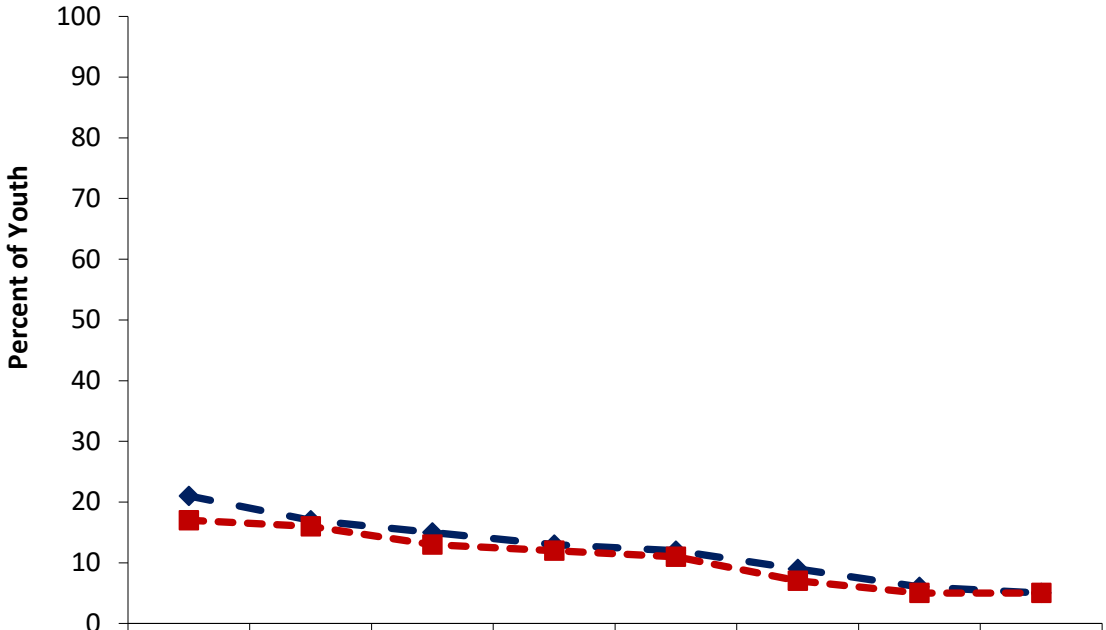
Figure 30: Past 30 Day Binge Drinking among Youth by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	3	3	2	2	2	1	1	1
Grade 8	14	12	8	8	8	4	3	2
Grade 11	40	36	32	27	24	19	14	13
All Grades	20	17	14	13	12	8	6	5

Figure 31 illustrates the percentage of youth reporting binge drinking in the past 30 days by gender. In 2016, 5 percent of females and 5 percent of males reported binge drinking in past 30 days (Figure 31). Between 2008 and 2016, binge drinking in the past 30 days decreased 70 percent for females and 76 percent for males. Since 1999, binge drinking in the past 30 days has declined for both males and females.

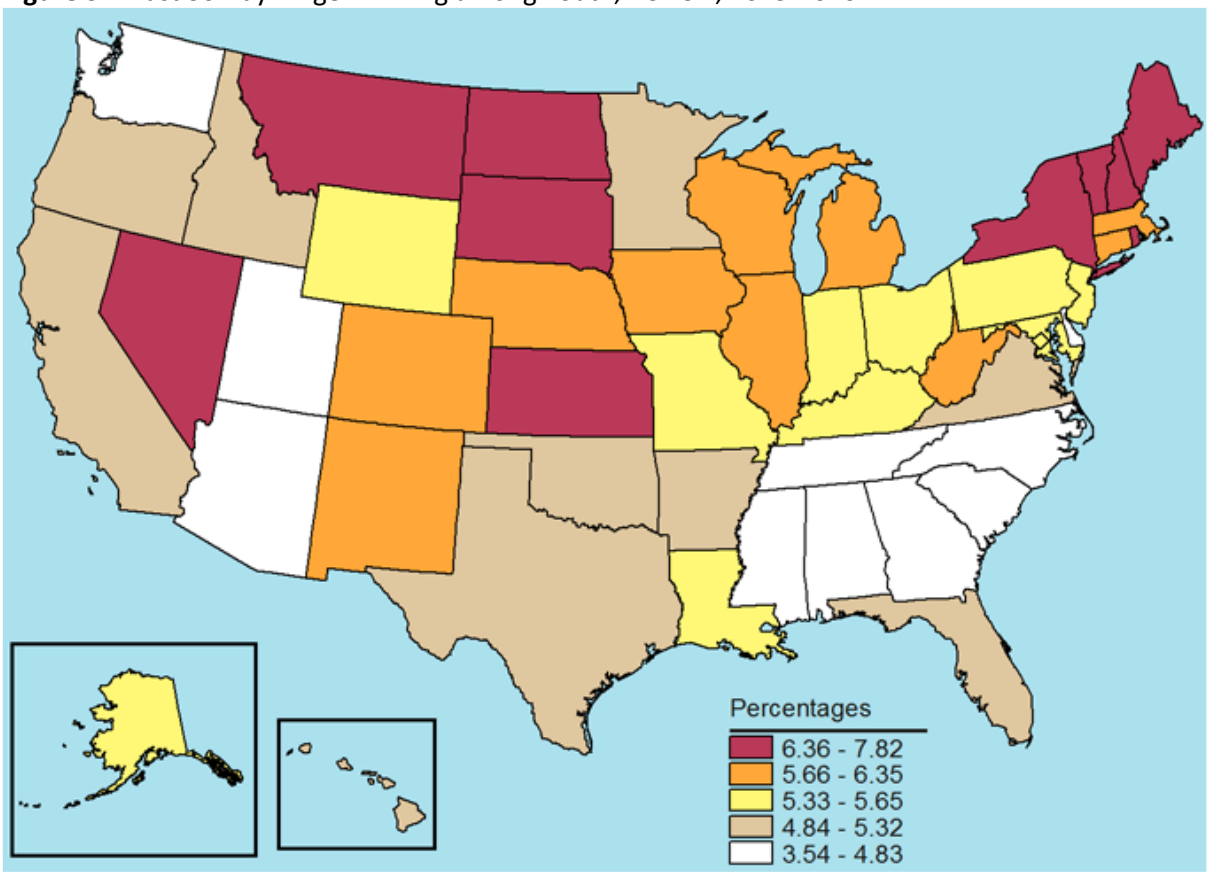
Figure 31: Past 30 Day Binge Drinking among Youth by Sex, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Male	21	17	15	13	12	9	6	5
Female	17	16	13	12	11	7	5	5

Figure 32 illustrates the percentage of youth aged 12 to 17 reporting binge drinking in the past 30 days. The color legend below the map illustrates the percentages of youth reporting binge drinking in the United States. States are categorized into five groups based on the magnitude of their percentages. Iowa was among the states in the second highest group (5.66 to 6.35 percent) including Colorado, Connecticut, Illinois, Massachusetts, Michigan, Nebraska, New Mexico, West Virginia, and Wisconsin (Figure 32).

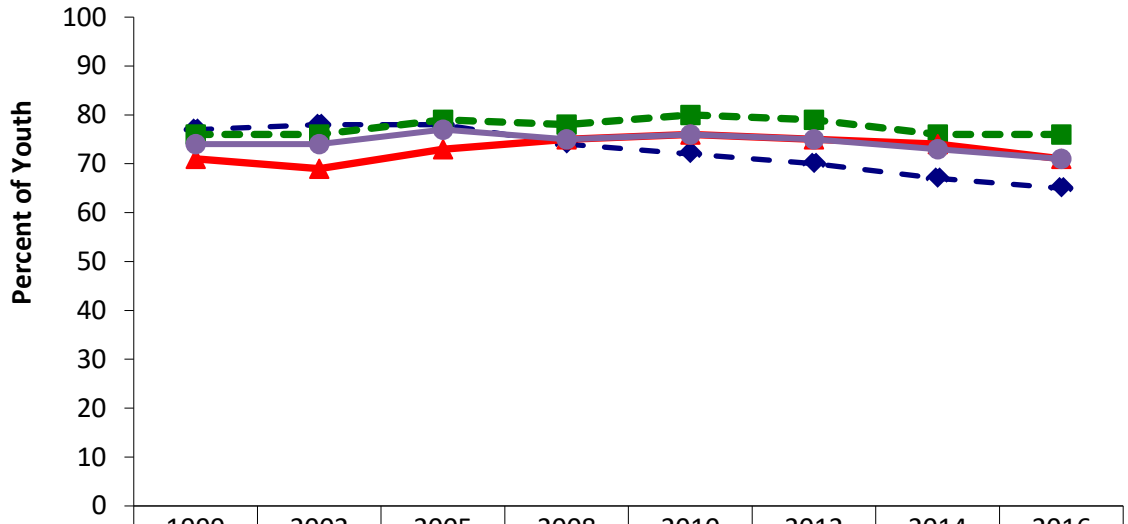
Figure 32: Past 30 Day Binge Drinking among Youth, NSDUH, 2015-2016



Youth Perception of Risk

Figure 33 illustrates the percentage of youth reporting alcohol use risk perception by grade. The 1999-2016 IYS showed a relatively stable trend in youth perception of alcohol consumption risk. The IYS asked youth about their attitude on the consumption of five or more alcohol drinks once or twice a week as posing a Great - Moderate risk. In 1999, perception of alcohol risk for grade 6 respondents was 77 percent compared to 65 percent in 2016 (Figure 33). For the same period, the IYS did not demonstrate any significant changes in alcohol use risk perception for youth in grades 8 and 11(Figure 33). Overall, the IYS showed a 4 percent decrease in alcohol use risk perception for all grade levels.

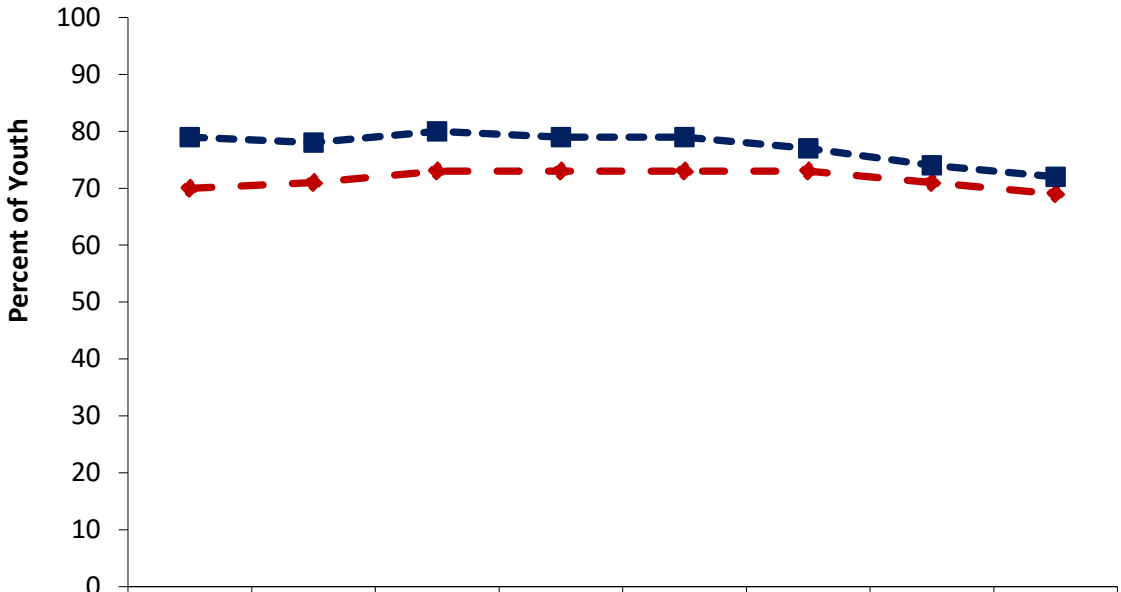
Figure 33: Percent of Youth Reporting Alcohol Use Risk Perception by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	77	78	78	74	72	70	67	65
Grade 8	76	76	79	78	80	79	76	76
Grade 11	71	69	73	75	76	75	74	71
All Grades	74	74	77	75	76	75	73	71

Figure 34 illustrates the percentage of youth perception of alcohol use risk by sex. In 1999, perception of alcohol risk for females was 79 percent compared to 72 percent in 2016 (Figure 34). In the same period, 70 percent of males reported alcohol use risk perception and 69 percent, respectively (Figure 34). Males had lower alcohol risk perception compared to females.

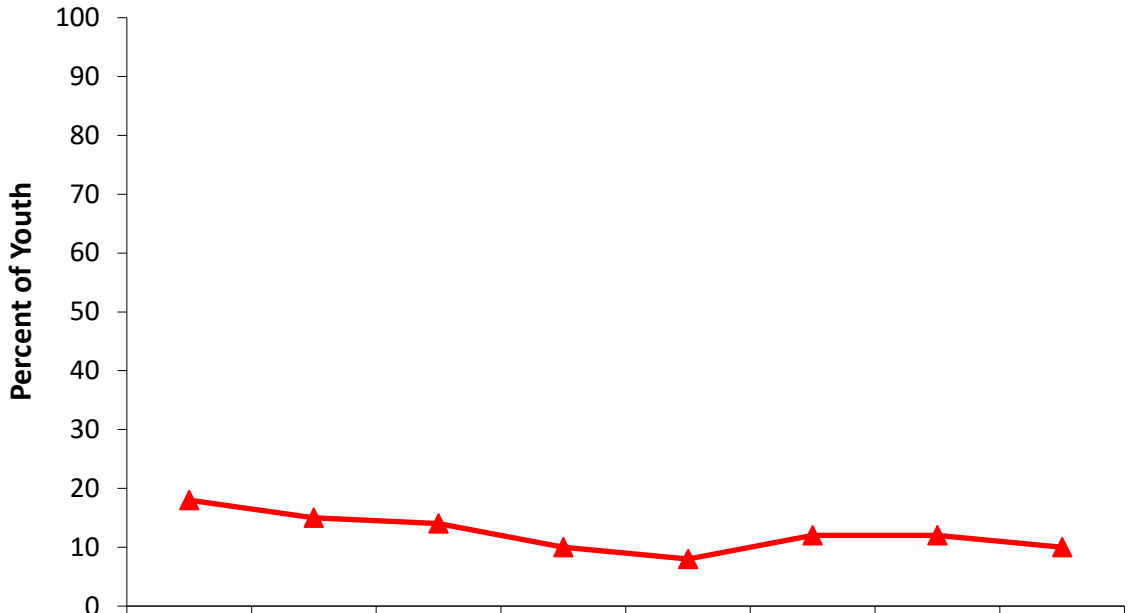
Figure 34: Percent of Youth Reporting Alcohol Use Risk Perception by Sex, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Male	70	71	73	73	73	73	71	69
Female	79	78	80	79	79	77	74	72

Figure 35 illustrates the percentage of youth reporting driving a car or motor vehicle after using alcohol or drugs. In 2016, 10 percent of students in grade 11 reported driving a car or motor vehicle after using alcohol or drugs; this represents a 44 percent decrease since 1999 (Figure 35). From 2005 to 2016, the percent of youth who reported driving a car or motor vehicle after using alcohol or drugs have remained relatively stable.

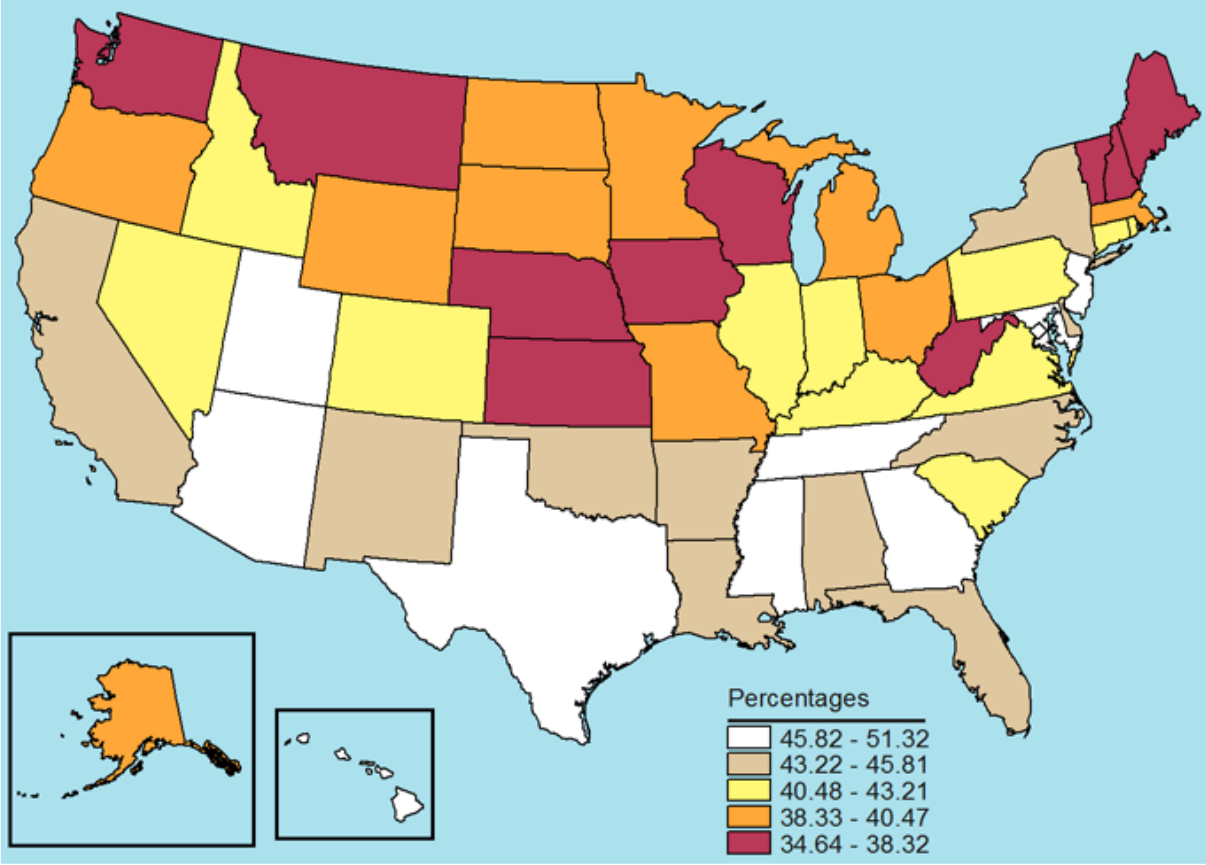
Figure 35: Percent of Youth Reporting Driving a Car or Motor Vehicle After Using Alcohol or Drugs, Grade 11 and All Grades, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 11	18	15	14	10	8	12	12	10

Figure 36 illustrates the percentage of youth aged 12 to 17 reporting binge drinking risk perception. The color legend below the map illustrates the percentages reporting binge drinking risk perception in the United States. States are grouped into five categories based on the magnitude of their percentages. Iowa was among the states in the lowest group (34.64 to 38.32 percent); this group included Kansas, Maine, Montana, Nebraska, New Hampshire, Vermont, Washington, West Virginia, and Wisconsin (Figure 36).

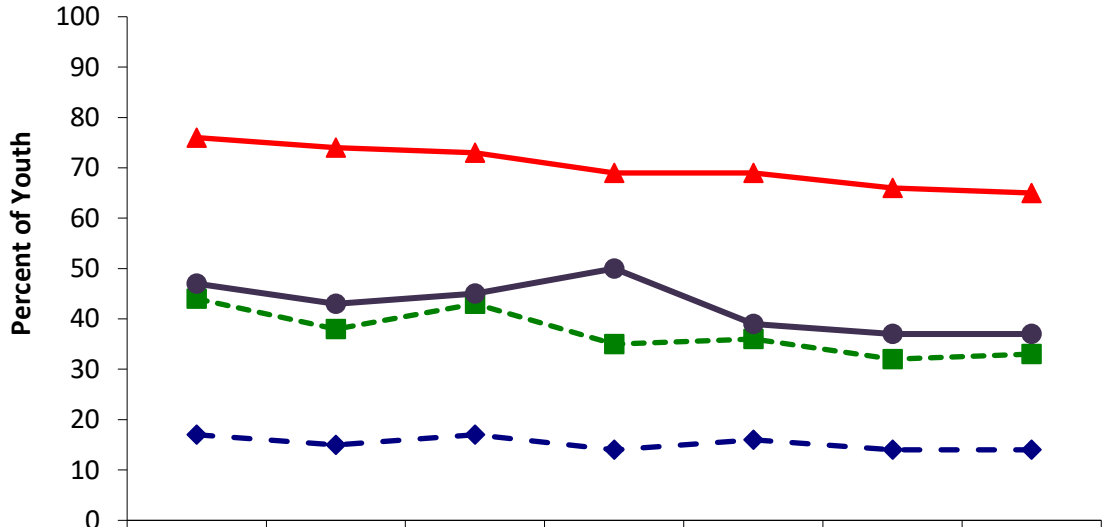
Figure 36: Binge Drinking Risk Perception among Youth, Aged 12 to 17, NSDUH, 2015-2016



Youth Perceived Alcohol Availability

Figure 37 illustrates the percentage of youth reporting easy access to alcohol by grade level. The IYS asked Iowa youth about the perception of alcohol availability in the neighborhood or community or neighborhood with the question: *"In your neighborhood or community, how difficult do you think it would be for a kid your age to get alcoholic beverages (beer, wine or liquor)?"* The percent of students reporting easy access to alcohol has fluctuated since 2002 for all three grade levels. In 2016, the rates decreased for grades 8 and 11. In 2016, 33 percent of youth in grade 8 reported easy access to alcohol compared to 65 percent of youth in grade 11 (Figure 37). Eleventh grade youth had the highest percent of perceived alcohol availability among the three grade levels. Since 2002, perceived alcohol availability for all grade levels decreased 21 percent (Figure 37). Perceived alcohol availability varied by grade level.

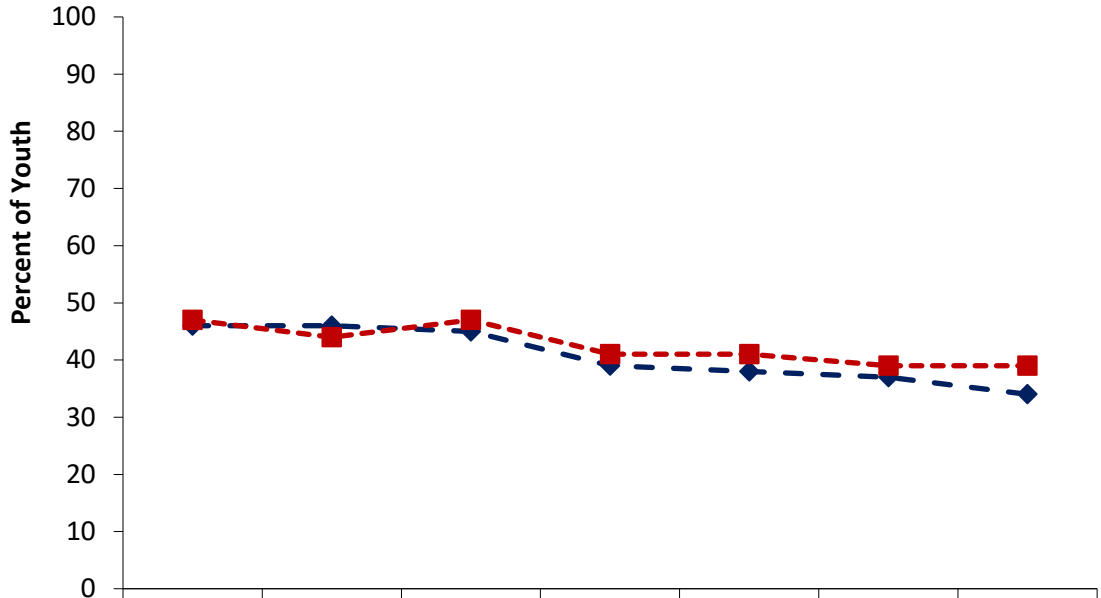
Figure 37: Percent of Youth Reporting Easy Access to Alcohol by Grade, IYS, 2002-2016



	2002	2005	2008	2010	2012	2014	2016
Grade 6	17	15	17	14	16	14	14
Grade 8	44	38	43	35	36	32	33
Grade 11	76	74	73	69	69	66	65
All Grades	47	43	45	50	39	37	37

Figure 38 illustrates the percentage of youth reporting easy access to alcohol by sex. Youth were asked: *"In your neighborhood or community, how difficult do you think it would be for a kid your age to get each of the following: Alcoholic beverages (beer, wine, or liquor)?"* In 2016, 34 percent of males and 39 percent of females reported easy access to alcohol compared to 39 percent of males and 41 percent of females in 2010 (Figure 38). Females were more likely to report easy access to alcohol than their male counterparts.

Figure 38: Percent of Youth Reporting Easy Access to Alcohol by Sex, IYS, 2008-2016

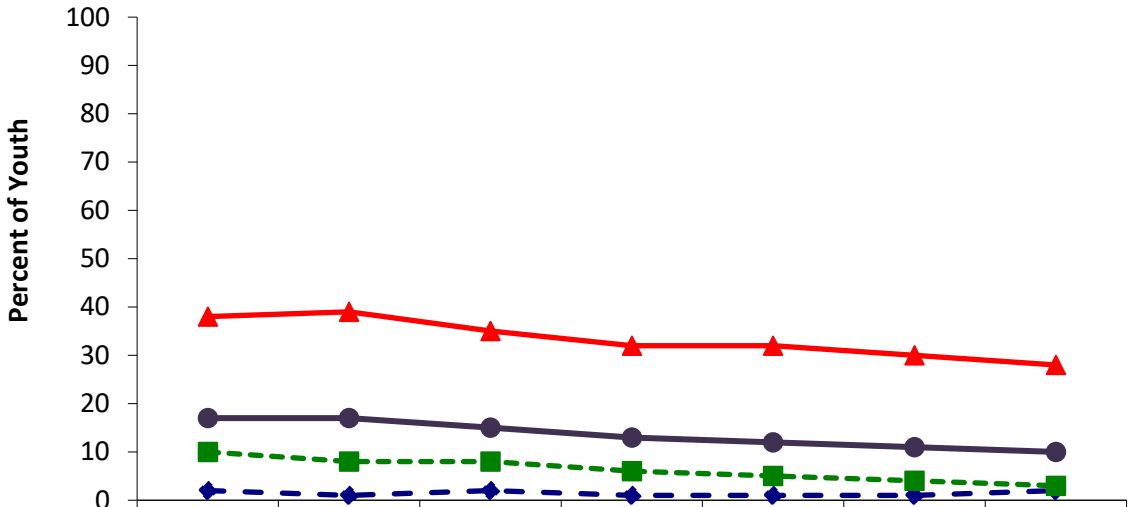


	2002	2005	2008	2010	2012	2014	2016
Male	46	46	45	39	38	37	34
Female	47	44	47	41	41	39	39

Youth Normative Beliefs about Peer Alcohol Consumption

Figure 39 illustrates the percentage of youth reporting normative beliefs about alcohol by grade. Normative perceptions of peer alcohol consumption were evaluated in the IYS by asking: "*How wrong would most of the students in your school (not just your best friends) feel it would be for you to: Drink beer, wine, alcoholic drinks, or hard liquor?*" The 2016 IYS data indicated that only 2 percent of 6th grade youth reported peer alcohol use "Not wrong at all," followed by 3 percent of youth in grade 8 and 28 percent of youth in grade 11 (Figure 39). From 2002 to 2016, the percent of youth reporting peer alcohol use "Not wrong at all" decreased by 41 percent.

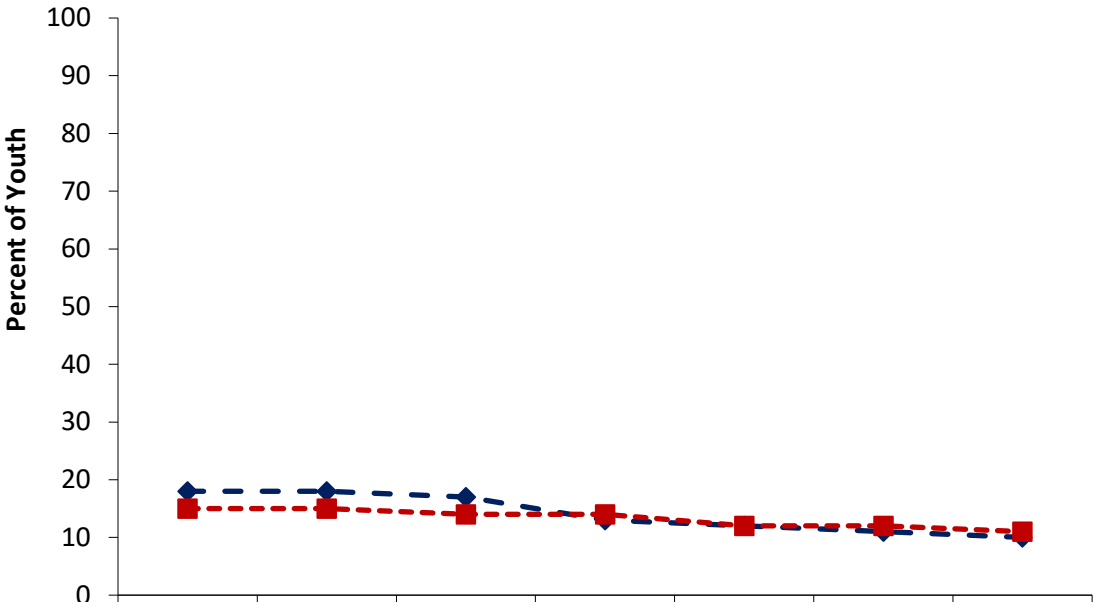
Figure 39: Percent of Youth Reporting Alcohol Use Not Wrong at All to Peers by Grade, IYS, 2002-2016



	2002	2005	2008	2010	2012	2014	2016
Grade 6	2	1	2	1	1	1	2
Grade 8	10	8	8	6	5	4	3
Grade 11	38	39	35	32	32	30	28
All Grades	17	17	15	13	12	11	10

Figure 40 illustrates the percentage of youth reporting alcohol use normative beliefs by sex. The 2016 IYS data showed that 11 percent of females thought that peer alcohol use normative beliefs were "Not wrong at all" compared to 10 percent of males in the same year (Figure 40). In 2012, 12 percent of both males and females reported peer alcohol use normative beliefs "Not wrong at all" (Figure 40). In 2008, 17 percent of males and 14 percent of females reported peer beliefs were "Not wrong at all" about alcohol use (Figure 40). In 2010, there was a slight difference between males (13 percent) and females (14 percent; Figure 40). Overall, females reported a higher percentage of alcohol-related normative beliefs as "Not wrong at all" in 2010, 2014 and 2016.

Figure 40: Percent of Youth Reporting Alcohol-Related Normative Beliefs "Not wrong at all" by Sex, IYS, 2008-2016



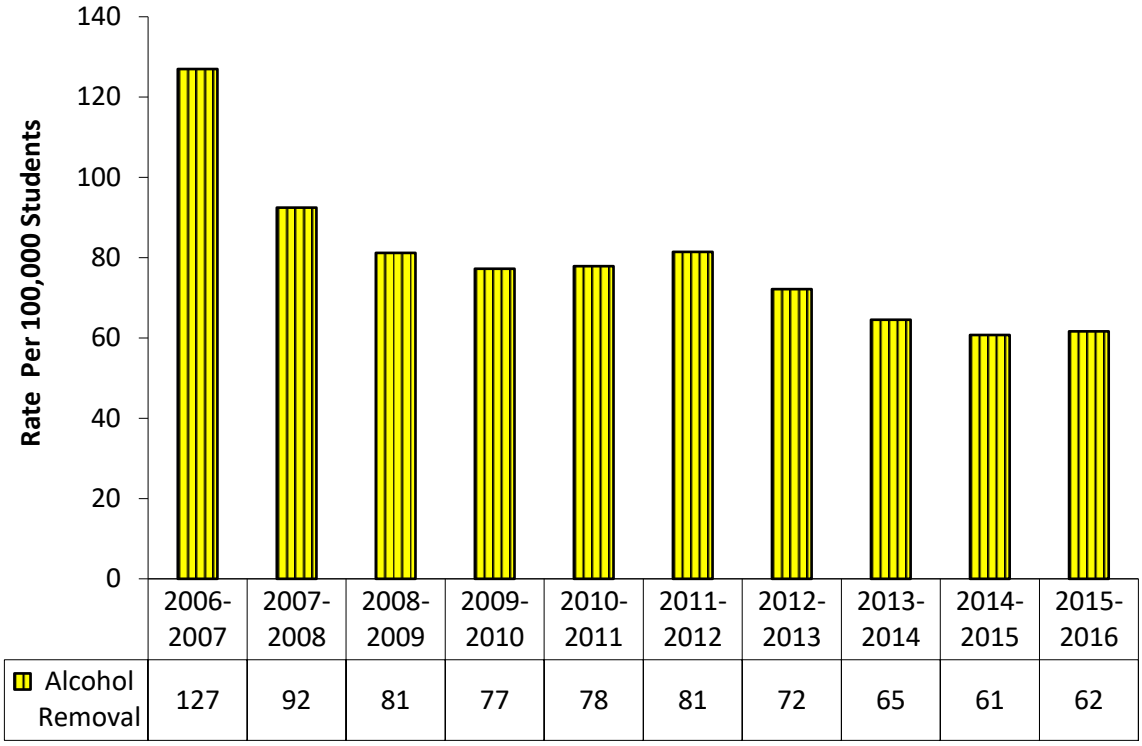
	2002	2005	2008	2010	2012	2014	2016
Male	18	18	17	13	12	11	10
Female	15	15	14	14	12	12	11

CONSEQUENCES OF ALCOHOL USE

Education Consequences

Figure 41 illustrates the rate of youth suspensions and expulsions due to alcohol in Iowa schools. The 2006-2007 Iowa Department of Education (IDE) data showed that the rate of school suspensions and expulsions was 127, compared to 62 in 2015-2016 (Figure 41). The Iowa school suspension and expulsion rate has decreased from the 2006-2007 school year to 2015-2016 school year (Figure 44).

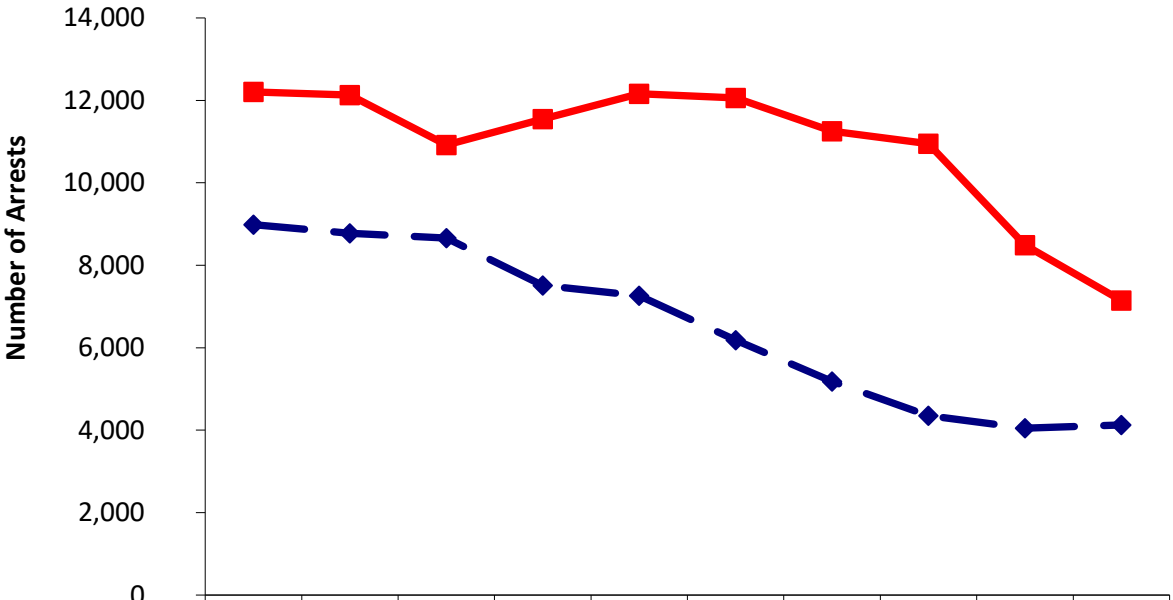
Figure 41: Rate of Youth Suspensions and Expulsions Due to Alcohol in Iowa Schools, IDE, 2006-2016



Legal Consequences

Figure 42 illustrates the number of alcohol-related arrests due to drunkenness and liquor law violations in Iowa. Drunkenness is defined as "…when individuals drink alcoholic beverages to the extent that their mental faculties and physical coordination are substantially impaired (FBI-UCR, 2004)." Liquor law violation is defined as "…the violation of laws or ordinances prohibiting the manufacture, sale, purchase, transportation, possession, or use of alcoholic beverages, not including Operating a Vehicle While Intoxicated (OWI) or drunkenness offenses (FBI-UCR, 2004)." The 2007-2016 Federal Bureau of Investigation – Uniform Crime Reporting (FBI-UCR) data showed a decrease in liquor law and drunkenness violations in Iowa. Liquor law violations have been gradually decreasing since 2009. In 2011, there were more than 7,000 liquor law violations compared to more than 4,000 liquor law violations in 2016 (Figure 42). Arrest due to drunkenness significantly decreased from 12,158 arrests in 2011 to 7,144 arrests in 2016 (Figure 42). The lowest number of arrest due to drunkenness was in 2016, with more than 7,000 arrests compared to the highest number in 2007, with 12,205 arrests (Figure 42).

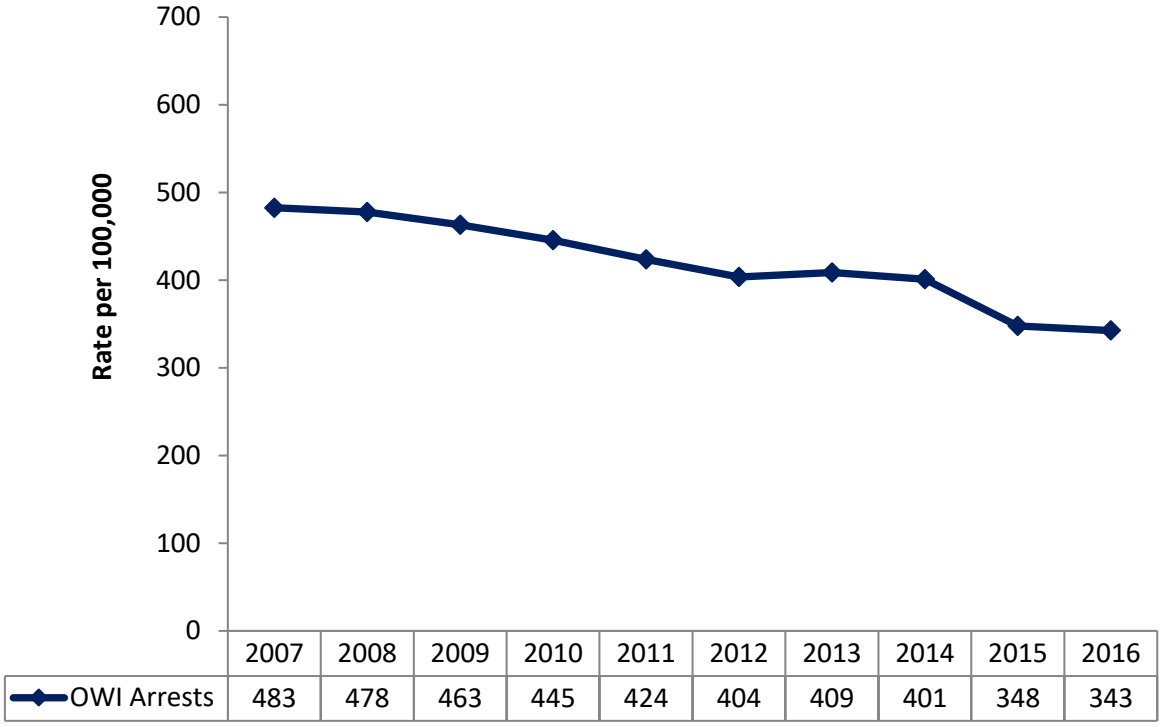
Figure 42: Total Number of Alcohol Offense – Liquor Law Violation and Drunkenness Arrests, FBI-UCR, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Liquor Law	8,985	8,778	8,663	7,509	7,261	6,183	5,181	4,352	4,048	4,129
Drunkenness	12,205	12,129	10,917	11,549	12,158	12,060	11,256	10,951	8,492	7,144

Figure 43 illustrates the rate of Operating a Vehicle while Intoxicated (OWI) in Iowa. Drivers with a blood/breath/urine alcohol concentration (BAC) of 0.08 percent or greater are considered to be alcohol-impaired. OWI arrests in Iowa have been decreasing gradually since 2007. In 2016, the rate of OWI arrests was 343 per 100,000 population (Figure 43). From 2012 to 2016, OWI arrests in Iowa decreased 15 percent (Figure 43).

Figure 43: Rates of Operating a Vehicle While Intoxicated, FBI-UCR, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
OWI Arrests	483	478	463	445	424	404	409	401	348	343

Alcohol-Related Poisoning

Table 3 illustrates the 2016 numbers and crude rates for emergency department (ED) visits, hospitalizations and mortality for alcohol-related poisoning by age and sex. The number of alcohol-related poisoning emergency department visits was 4,176 (518.3 per 100,000) for Iowans ages 45 to 64 years and 1,560 (148.2 per 100,000) for Iowans aged 25 and younger. Hospitalization due to alcohol-related poisoning and mortality were higher among Iowans aged 45 to 64 years compared to all other age groups. ED alcohol-related poisoning visits (455.8 per 100,000) and hospitalizations (244.5 per 100,000) were higher among females compared to males (Table 3). However, the mortality rate of alcohol-related poisoning (37.1 per 100,000) was higher among males compared to females (Table 3).

Table 3: Iowa Rate of Alcohol-related Emergency Department Visits, Hospitalizations and Mortality by Age and Sex, 2016

Age (in years)	Emergency Department Visits		Hospitalizations		Deaths	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<25	1,560	148.2	218	20.7	14	1.3
25-44	4,029	528.8	2,106	276.4	121	15.9
45-64	4,176	518.3	2,623	325.5	427	53.0
65+	470	91.4	314	61.1	188	36.7
All Age Groups	10,235	326.5	5,261	167.8	750	24.0
Sex						
Female	7,106	455.8	3,812	244.5	173	11.0
Male	3,129	198.6	1,449	92.0	577	37.1

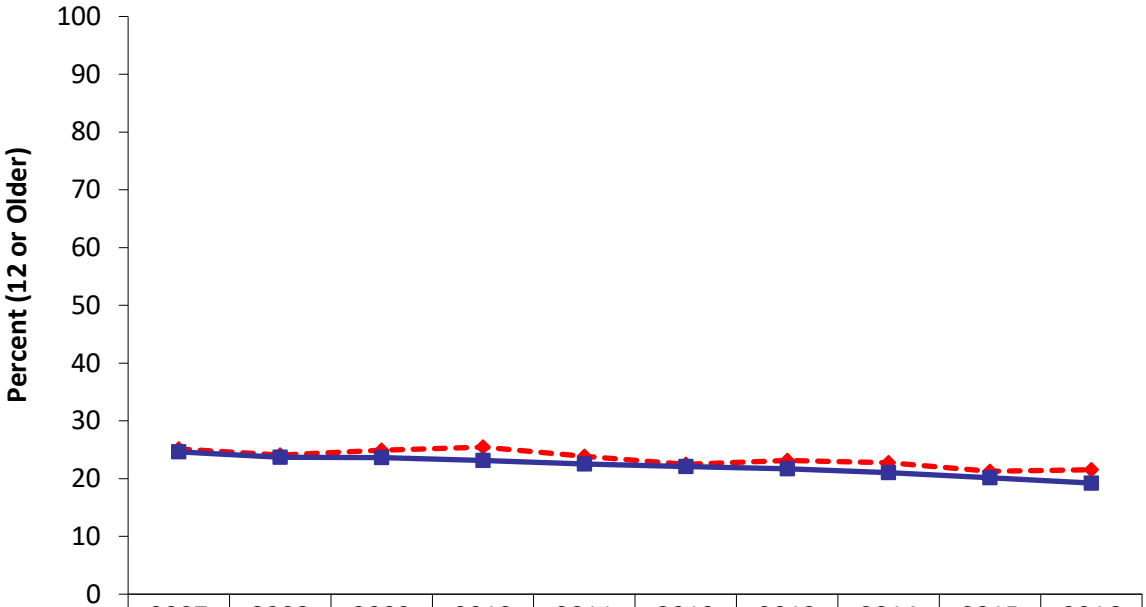
CIGARETTE AND TOBACCO CONSUMPTION

Adult Consumption Patterns

Youth and Adult Cigarette Use

Figure 44 illustrates the percentage of people aged 12 or older reporting cigarette use in the past 30 days. The overall national and state rates of cigarette use in the past 30 days did not appear to be different, nor were there differences between 2007 and 2016 (Figure 44). From 2007 to 2016, cigarette use in the past 30 days decreased 12 percent in Iowa and 24 percent nationally (Figure 44).

Figure 44: Past 30 Day Cigarette Use, Aged 12 or Older, Iowa & U.S., NSDUH, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	25	24	25	25	24	22	23	23	21	22
US	25	24	24	23	23	22	22	21	20	19

Figure 45 illustrates the average percentage of people reporting cigarette use in the past 30 days by sex. The BRFSS surveyed Iowans 18 years of age and older about cigarette use. Respondents were asked if they smoked a cigarette "…every day, some days, or not at all" in the past month. In 2016, cigarette smoking was slightly lower among Iowa adults compared to the national rate. For the same period, the rate of cigarette use among Iowa females (i.e., 15.8%) was higher than the U.S. prevalence rate (i.e.,14 percent) (Figure 45). The prevalence of cigarette use was higher among Iowa females compare to the U.S. In 2016, almost 16 percent of Iowa women reported cigarette use in the past 30 days compared to 14 percent nationally (Figure 45).

Figure 45: Past 30 Day Cigarette Use among Adults by Sex, Iowa & U.S., BRFSS, 2015-2016

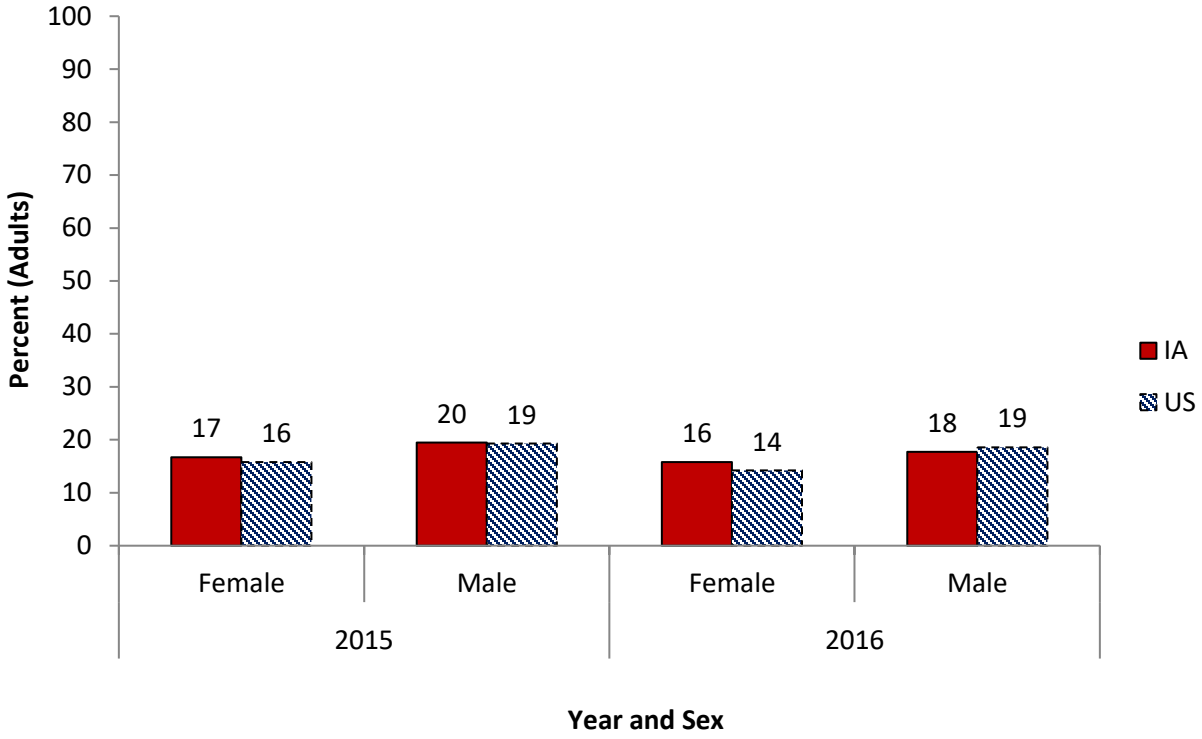


Figure 46 illustrates the percentage of people reporting cigarette use in the past 30 days by age. The highest rate of past 30-day cigarette use was reported by Iowans 25-34-years of age (BRFSS, 2016). Sixteen percent of Iowa adults 18-24 years reported cigarette use in the past 30 days compared to 13 percent at the national level (Figure 46). Nineteen percent of 45-54-year old Iowa adults reported cigarette use in the past 30 days, which was similar to the national level (Figure 46). Iowans aged 65 and older had the lowest rate of cigarette use in the past 30 days, similar to the national rate of 9 percent (Figure 46).

Figure 46: Past 30 Day Cigarette Use among Adults by Age, Iowa & U.S., BRFSS, 2016

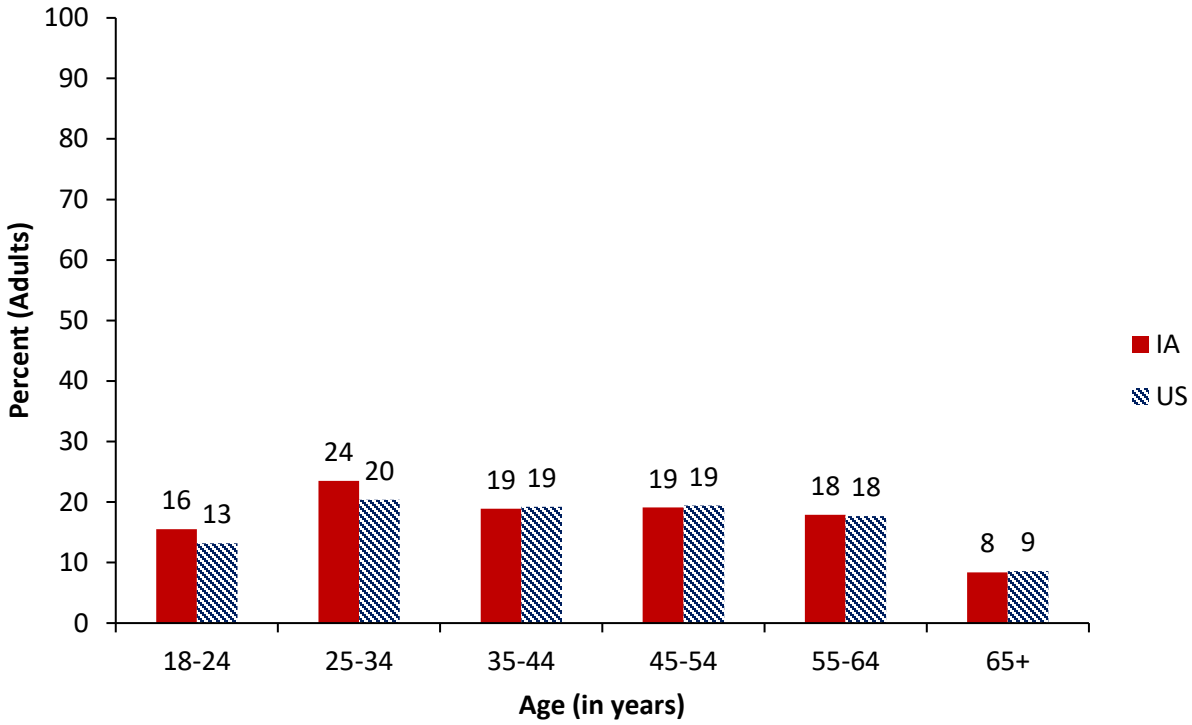


Figure 47 illustrates the percentage of adults aged 18 or older who reported cigarette use in the past 30 days by education level. Respondents with less than high school had the highest rate of cigarette use in the past 30 days compared to other education groups. Twenty-one percent of Iowans with a high school diploma or G.E.D. reported cigarette use in the past 30 days, which is similar to the national level (Figure 47).

Figure 47: Past 30 Day Cigarette Use among Adults by Education Level, Iowa & U.S., BRFSS, 2016

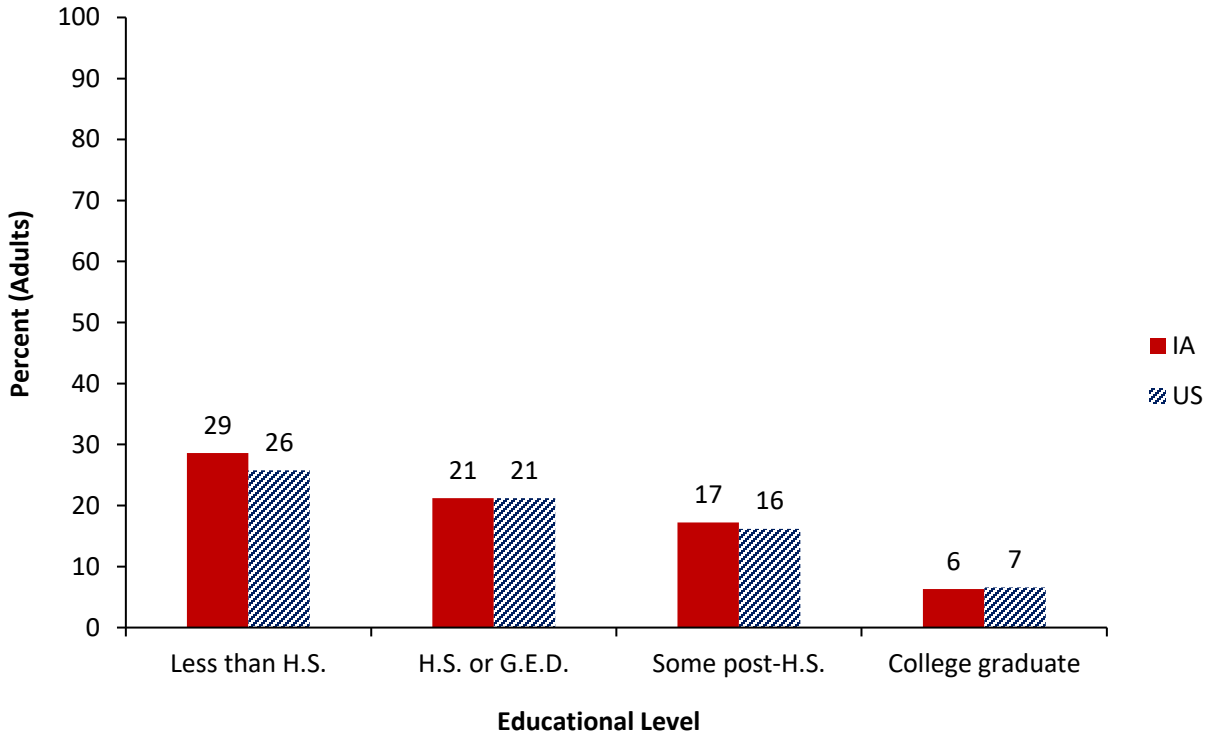


Figure 48 illustrates the percentage of adults who reported cigarette use in the past 30 days by income. Iowans earning $50,000 or more annually reported the lowest rates pf cigarette use in the past 30 days compared to those earning less than $15,000 annually. Approximately 33 percent of Iowans earning less than $15,000 reported cigarette use in the past 30 days compared to 32 percent nationally (Figure 48). Among people earning $50,000 or more annually, cigarette use rates in the past 30 days were similar (12 percent) for both Iowa and the nation (Figure 48).

Figure 48: Past 30 Day Cigarette Use among Adults by Income, Iowa & U.S., BRFSS, 2015-2016

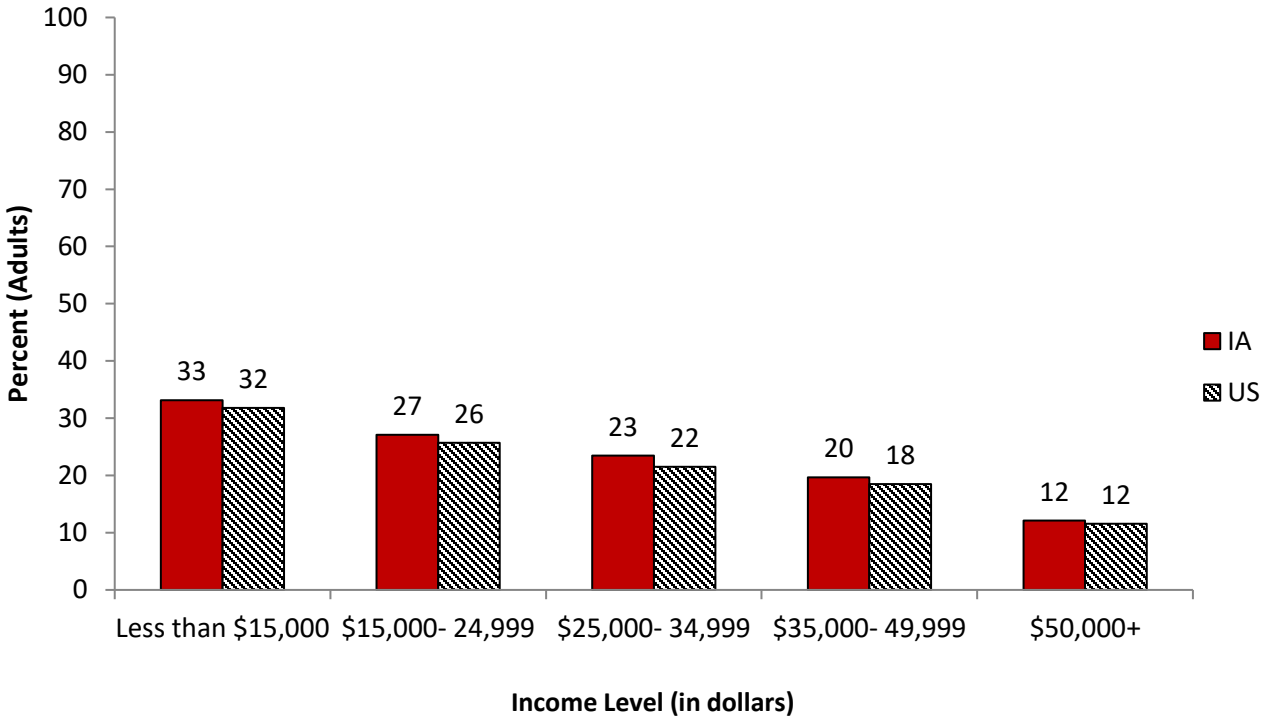


Figure 49 illustrates the percentage of people aged 12 or older reporting cigarette use in the past 30 days. The color legend below the map illustrates the percentages of those surveyed reporting cigarette use in the past 30 days in the United States. The map categorizes states into five groups based on the magnitude of their percentages. Iowa was among the states in the second highest group (21.32 to 22.98 percent) that included Alabama, Indiana, Michigan, Missouri, North Dakota, Pennsylvania, South Carolina, Vermont, and Wyoming (Figure 49).

Figure 49: Past 30 Day Cigarette Use, Aged 12 or Older, NSDUH, 2015-2016

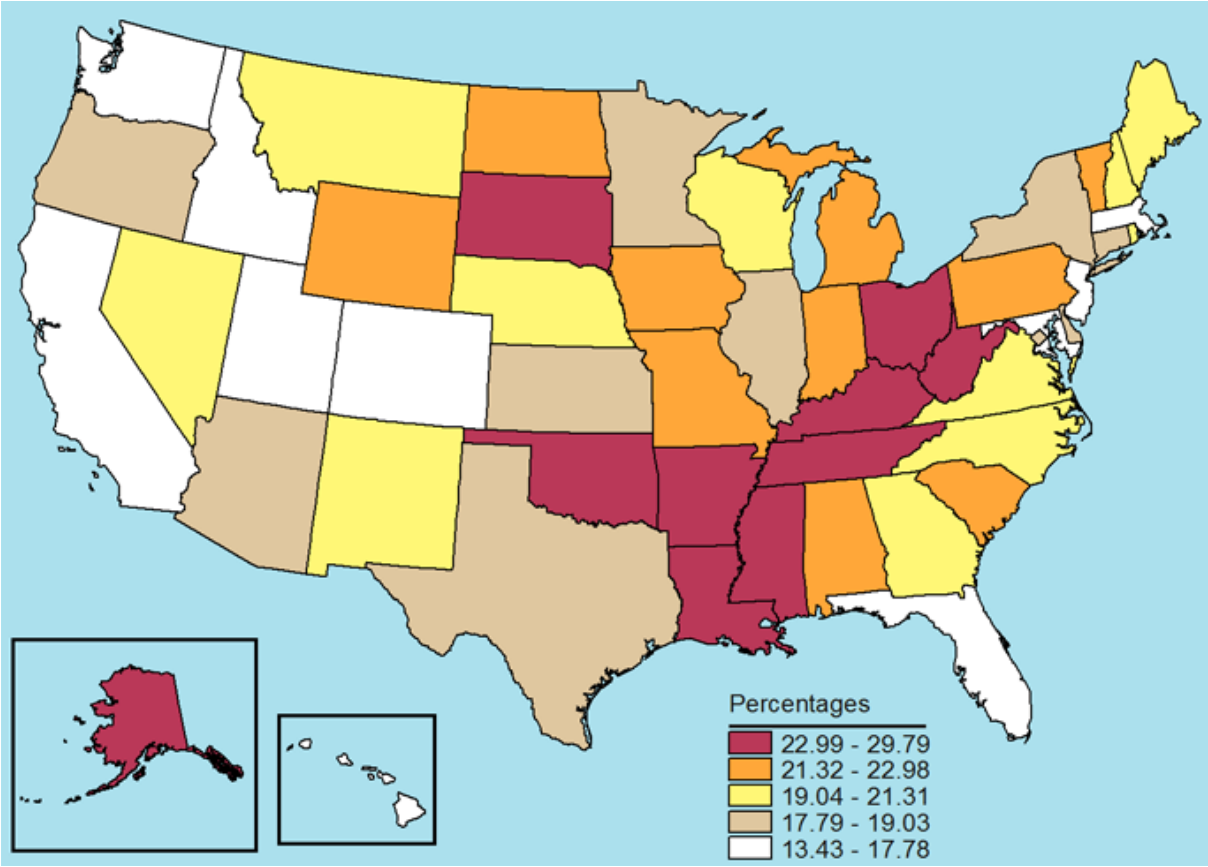
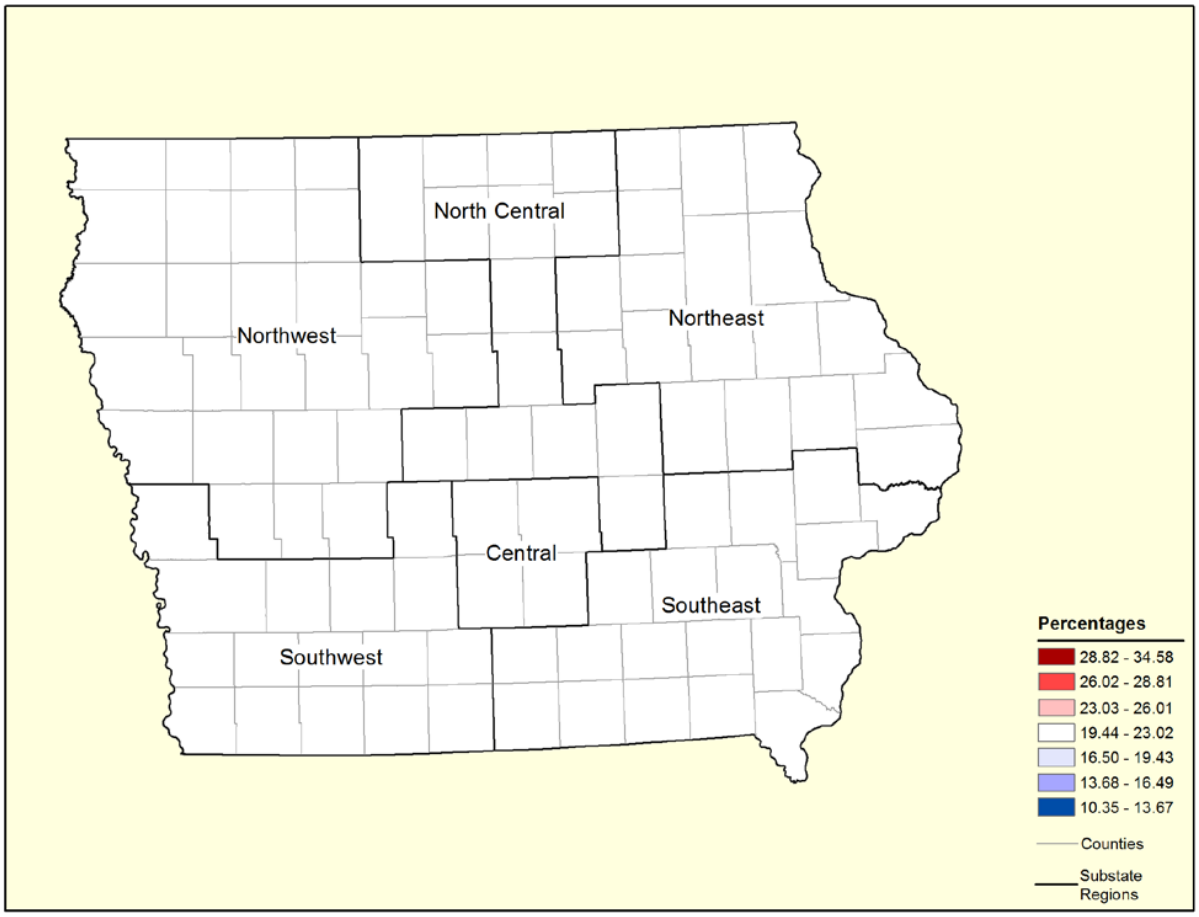


Figure 50 illustrates the percentage reporting cigarette use in the past 30 days among people aged 12 or older. The color legend below the map illustrates the range of percentages for the frequency distribution of those reporting cigarette use in the past 30 days in Iowa. The map groups Iowa into seven groups based on the magnitude of their percentages. The 2014-2016 NSDUH showed that all Iowa regions were in the middle group (19.44 – 23.02 percent) reporting cigarette use in the past 30 days.

Figure 50: Past 30 Day Cigarette Use, Aged 12 or Older, NSDUH, 2014-2016

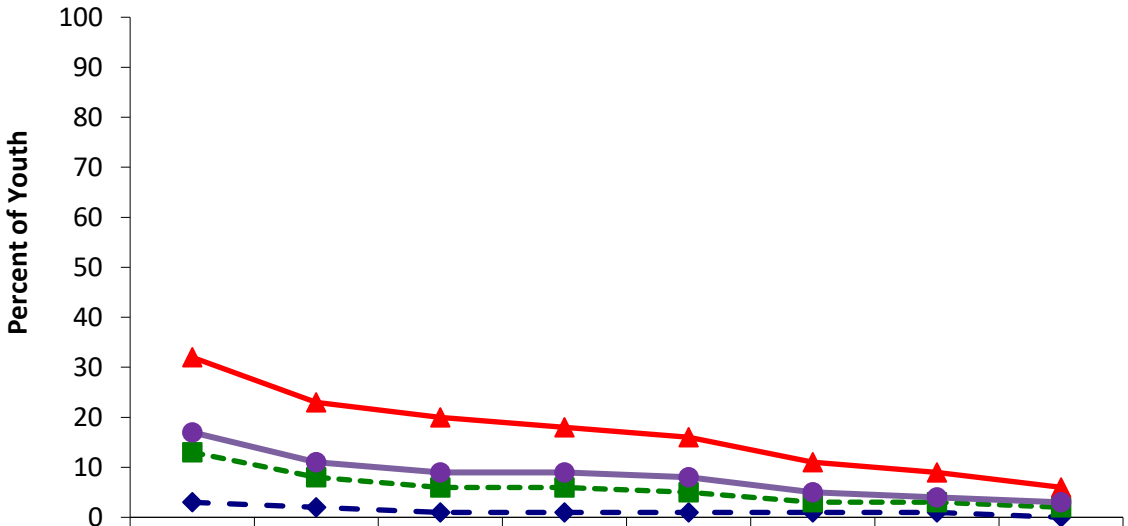


Youth Tobacco Use Patterns

Youth Cigarette Use

Since 1999, cigarette use among Iowa students in grades 6, 8, and 11 has declined. Youth were asked the following question in the Iowa Youth Survey: "*In the past 30 days, on how many days have you smoked cigarettes?*" Figure 51 illustrates the percentage of youth reporting cigarette use in the past 30 days by grade level. Although Iowa youth continue to smoke, cigarette use across all three grades has declined. Cigarette use in the past 30 days among sixth grade students decreased from 3 percent in 1999 to less than one percent in 2016 (Figure 51). In 2016, 6 percent of eleventh grader students and 2 percent of eighth grade students reported cigarette use in the past 30 days (Figure 51). Cigarette use among eleventh graders decreased 81 percent between1999 and 2016, from 32 percent to 6 percent (Figure 51). In Iowa, cigarette use in the past 30 days decreased 82 percent among all grade levels participating in the IYS.

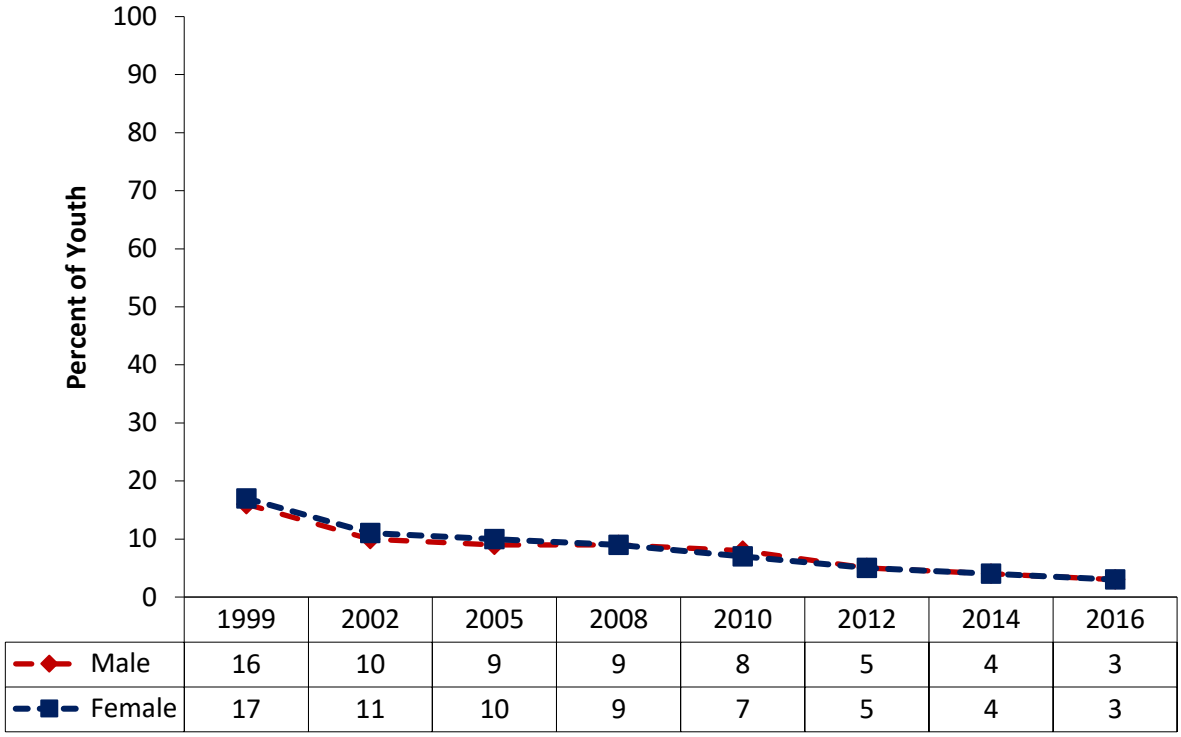
Figure 51: Past 30 Day Cigarette Use among Youth by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	3	2	1	1	1	1	1	0
Grade 8	13	8	6	6	5	3	3	2
Grade 11	32	23	20	18	16	11	9	6
All Grades	17	11	9	9	8	5	4	3

Figure 52 illustrates the percentage of youth reporting cigarette use in the past 30 days by sex. In 2016, 3 percent of females reported cigarette use in the past 30 days, which is similar to male cigarette use (Figure 52). From 1999 to 2016, cigarette use in the past 30 days decreased 82 percent for females and 81 percent for males. Cigarette use in the past 30 days has declined among both males and females since 1999.

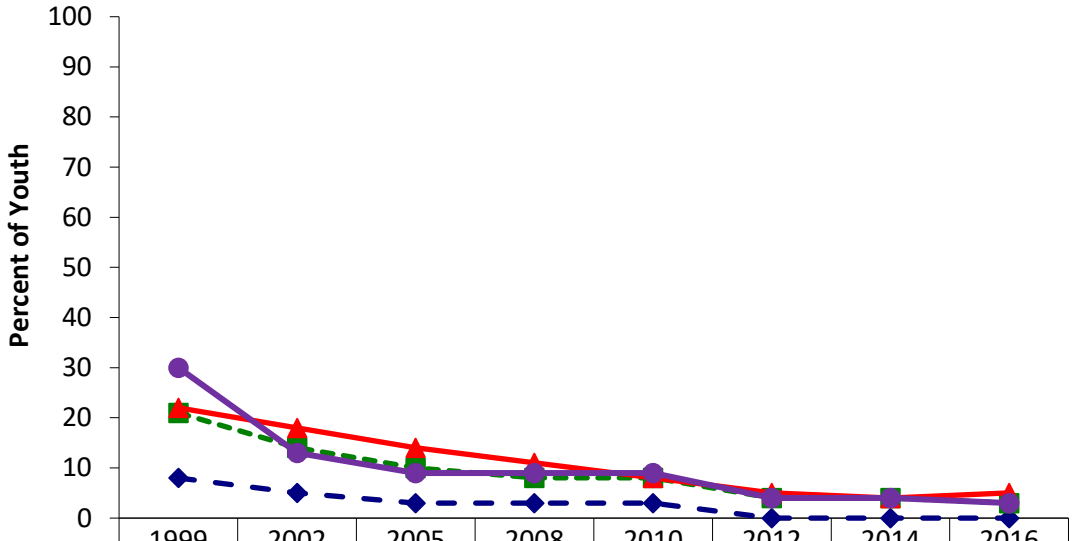
Figure 52: Past 30 Day Cigarette Use among Youth by Sex, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Male	16	10	9	9	8	5	4	3
Female	17	11	10	9	7	5	4	3

Figure 53 illustrates the percentage of youth reporting first cigarette use before age 13 by grade level. Youth were asked the following question: "How old were you when you first smoked a whole cigarette for the first time?" Between 1999 and 2016, the IYS results indicated first use of cigarettes before the age of 13 decreased 80 percent for grade 8 students and 81 percent for grade 11 students. Since 2012, the rates of cigarette use among youth in grade 6 were negligible (i.e., less than one percent for three consecutive surveys). In 2016, 3 percent of youth in grade 8 and 5 percent of youth in grade 11 reported first cigarette use before the age of 13 (Figure 53). In 2016, 3 percent of youth in all grades reported the first use of cigarette before the age of 13 – nearly a 90 percent decreased since 1999 (Figure 53).

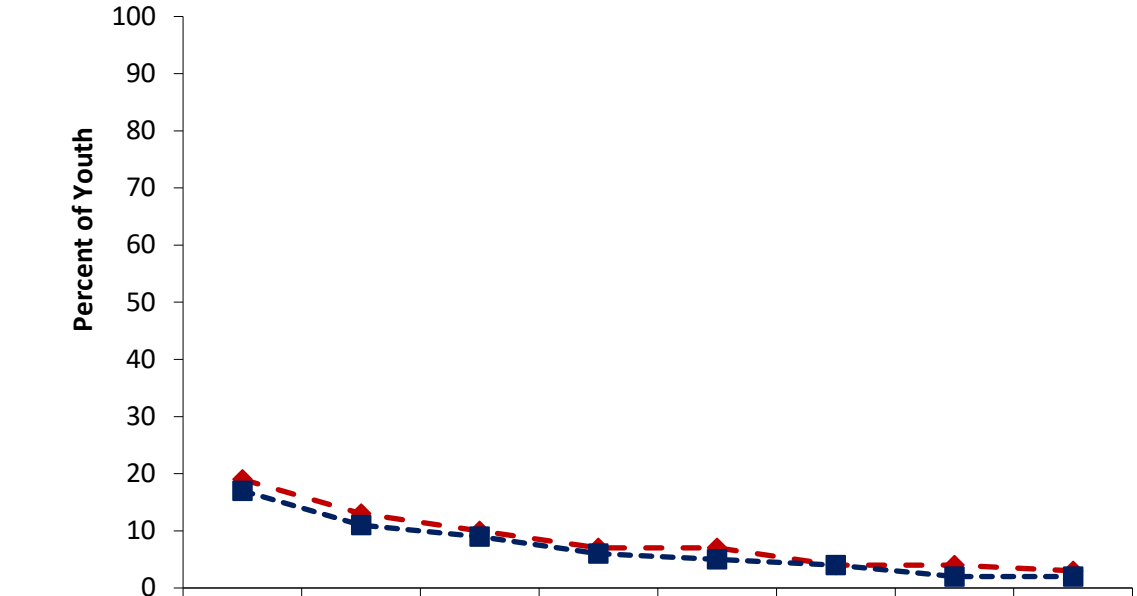
Figure 53: Cigarette Use before Age 13 by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	8	5	3	3	3	0	0	0
Grade 8	21	14	10	8	8	4	4	3
Grade 11	22	18	14	11	8	5	4	5
All Grades	30	13	9	9	9	4	4	3

Figure 54 illustrates the percentage of youth reporting cigarette use before the age of 13 in the past 30 days by sex. In 2016, 3 percent of females and 2 percent of males reported cigarette use in the past 30 days (Figure 54). Between 2002 and 2016, cigarette use before the age of 13 in the past 30 days decreased 88 percent for females and 84 percent for males. Cigarette use before the age of 13 in the past 30 days has declined for both males and females since 1999.

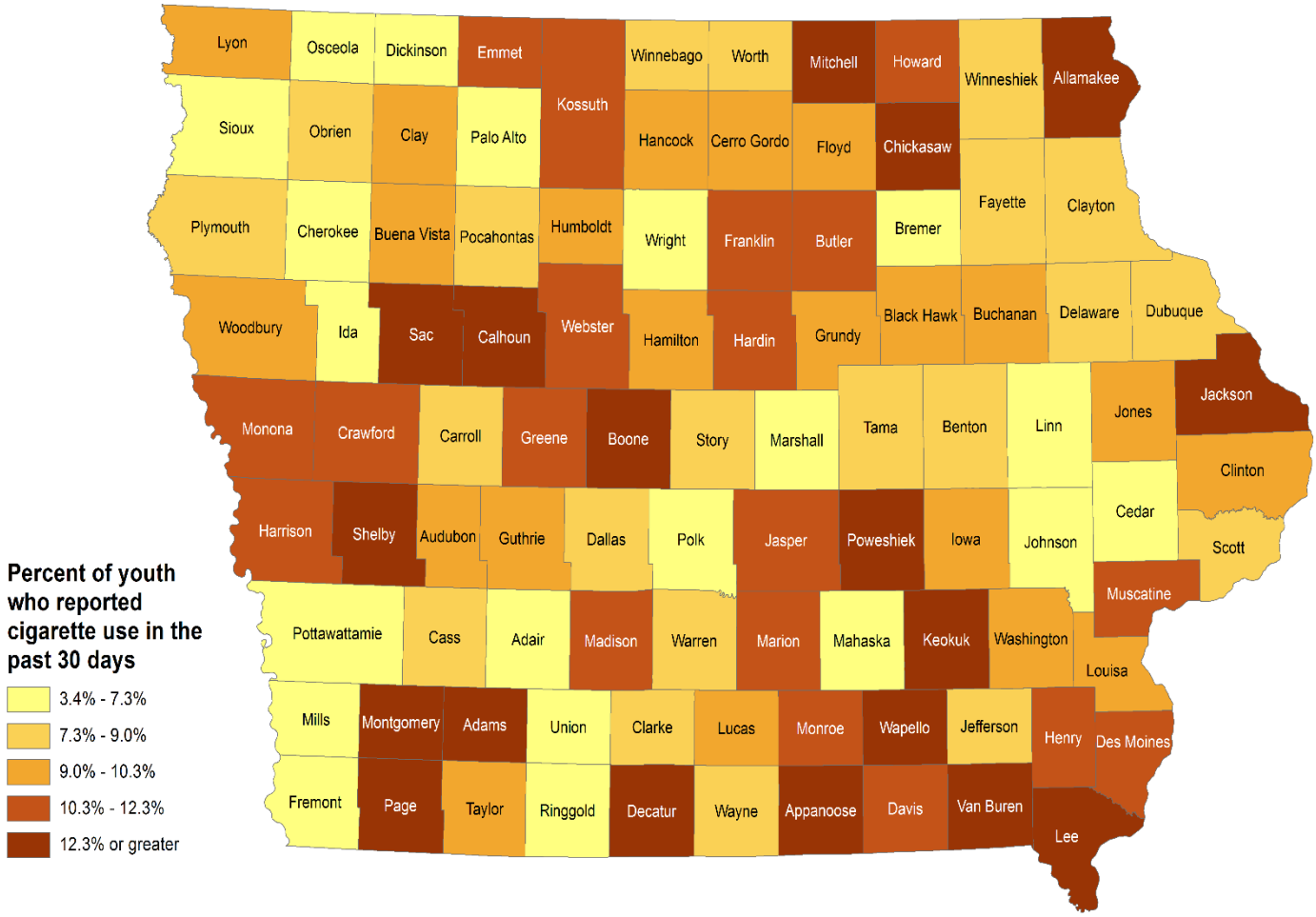
Figure 54: Cigarette Use before Age 13 by Sex, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Male	19	13	10	7	7	4	4	3
Female	17	11	9	6	5	4	2	2

Figure 55 illustrates the frequency distribution percentage of youth in grade 11 reporting cigarette use in the past 30-days. The map categorizes counties into five groups based on the percentage of eleventh grade students who reported cigarette use in the past 30 days. The map shows data based the county of residence of the students. Twenty-one counties were in the lowest group (3.4 to 7.3 percent); the top 5 counties included Cherokee, Fremont, Johnson, Ringgold, and Union (Figure 55). The top 5 counties in the next lowest group (7.3 to 9.0 percent) were Delaware, Fayette, O'Brien, Palo Alto, and Pottawattamie (Figure 29). Counties in the top 5 highest group (12.3 to 22 percent) were Adams, Appanoose, Montgomery, Page, and Poweshiek (Figure 55).

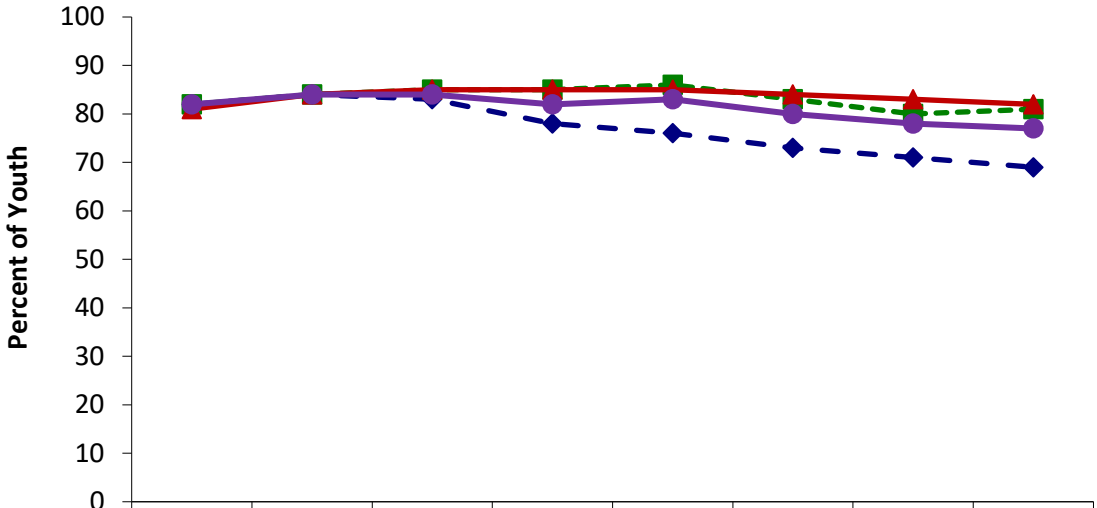
Figure 55: Past 30 Day Cigarette Use among 11th Grade by County, IYS, 2012-2016



Youth Cigarette Use Risk Perception

Figure 56 illustrates the percentage of youth reporting cigarette risk perception by grade level. The IYS asked Iowa youth the following question: "How much do you think you risk harming yourself (physically or otherwise) if you smoke cigarettes every day?" In 2002, the cigarette risk perception among sixth grade students was 84 percent compared to 69 percent in 2016 (Figure 56). In 2016, 69 percent of sixth graders believed smoking cigarettes every day posed a Great-Moderate Risk of self-harm. For the same period, the IYS did not find significant changes in cigarette risk perception among students in grades 8 and 11(Figure 56). However, between 2010 and 2016, a 5 percent decrease in cigarette risk perception for eighth graders and 3 percent decrease for eleventh graders was found. During the same timeframe, cigarette risk perception decreased 7 percent for grades 6, 8, and 11, from 83 percent to 77 percent (Figure 56).

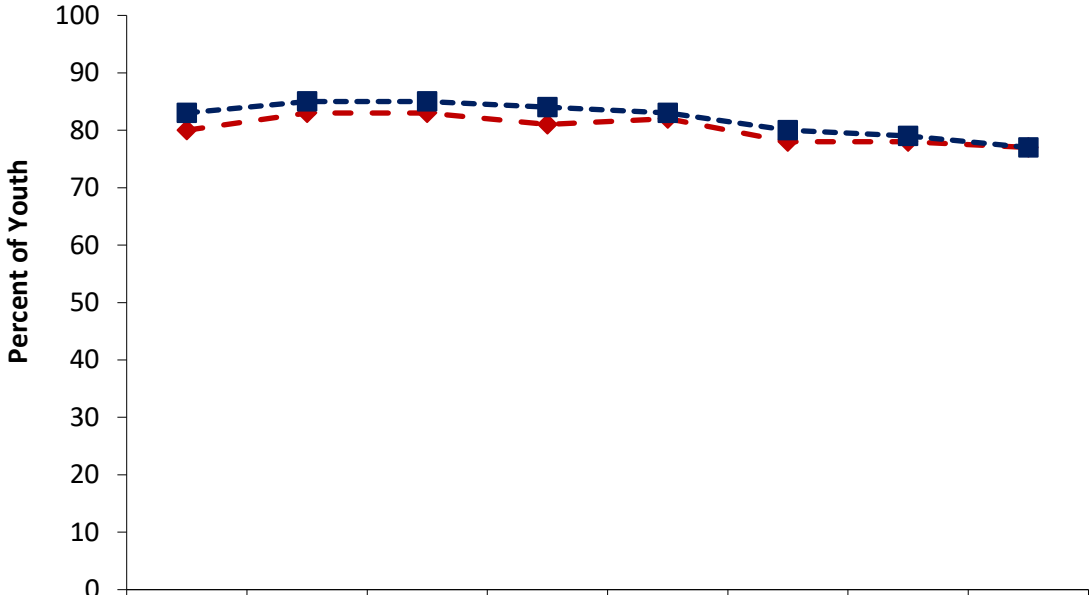
Figure 56: Cigarette Risk Perception among Youth by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	82	84	83	78	76	73	71	69
Grade 8	82	84	85	85	86	83	80	81
Grade 11	81	84	85	85	85	84	83	82
All Grades	82	84	84	82	83	80	78	77

Figure 57 illustrates the percentage of youth reporting cigarette risk perception by sex. According to the 2016 IYS, female and male students reported similar rates of cigarette use risk perception; 77 percent of both male and female students believed smoking cigarettes every day posed a Great-Moderate Risk of self-harm (Figure 57). Between 2002 and 2005, cigarette risk perception rates were higher for female (85 percent) and male (83 percent) (Figure 57).

Figure 57: Cigarette Risk Perception among Youth by Sex, IYS, 1999-2016

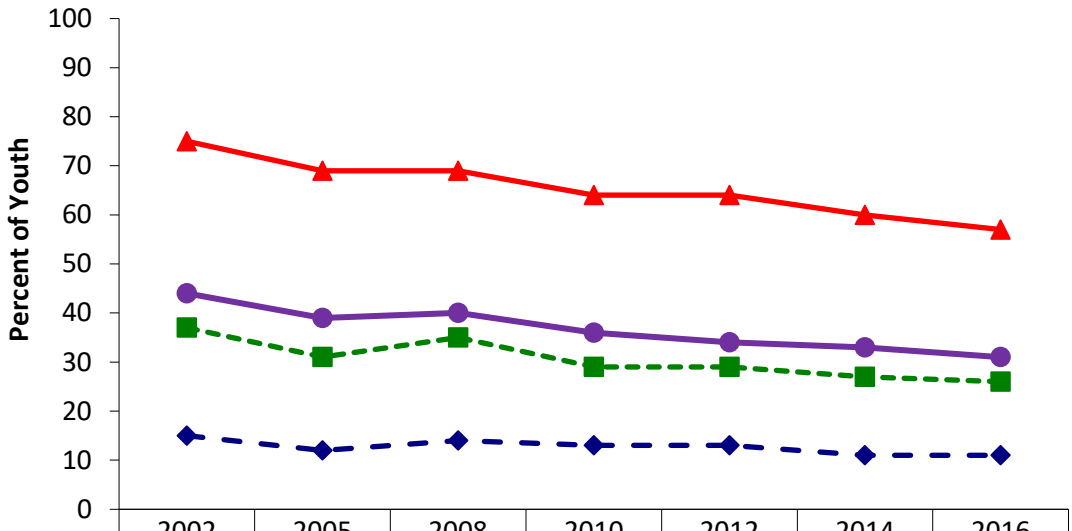


	1999	2002	2005	2008	2010	2012	2014	2016
Male	80	83	83	81	82	78	78	77
Female	83	85	85	84	83	80	79	77

Youth Perceived Cigarette Availability

Figure 58 illustrates the percentage of youth reporting easy access to cigarettes by grade level. The IYS asked Iowa youth their perception of cigarette availability in the community or neighborhood. The question asked was "*In your neighborhood or community, how difficult do you think it would be for a kid your age to get cigarettes?*" Perception of cigarette availability among Iowa youth has steadily decreased for all grade levels since 2008. In 2016, 57 percent of youth in grade 11 reported it was *Very Easy-Easy* to access cigarettes compared to 26 percent of youth in grade 8 and 11 percent in grade 6 (Figure 58). Eleventh grade students had the highest percentage of perceived cigarette availability among the three grade levels. Since 2002, perception of cigarette availability decreased 24 percent for youth in grade 11, 29 percent for youth in grade 8 and 26 percent for youth in grade 6. Overall, 31 percent of Iowa youth reported *Very Easy-Easy* access to cigarettes in the community or neighborhood (Figure 58).

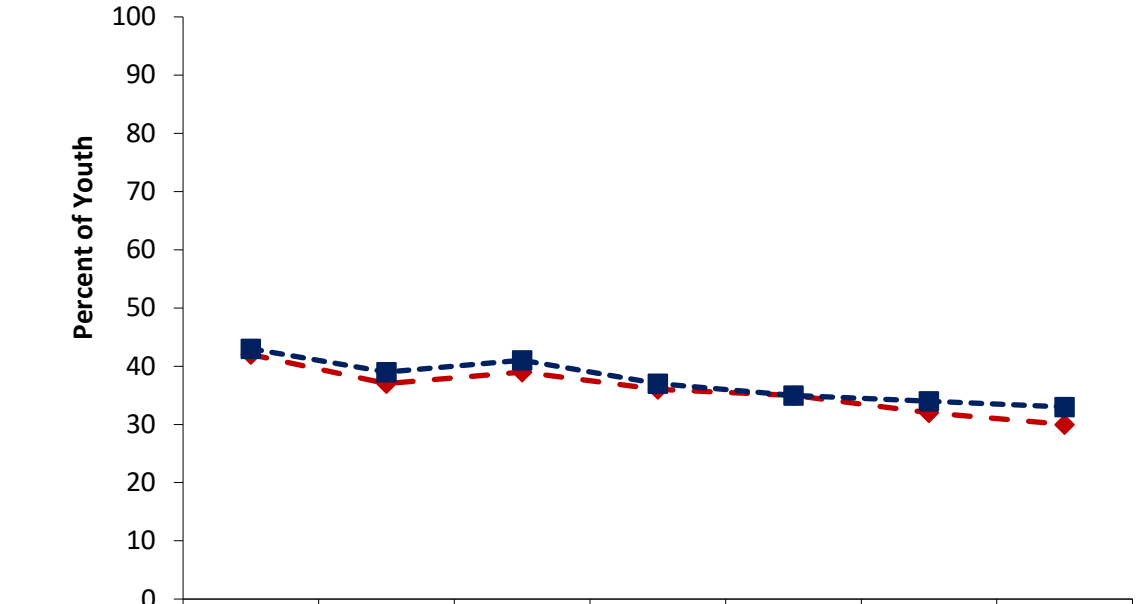
Figure 58: Cigarette Availability among Youth by Grade, IYS, 2002-2016



	2002	2005	2008	2010	2012	2014	2016
Grade 6	15	12	14	13	13	11	11
Grade 8	37	31	35	29	29	27	26
Grade 11	75	69	69	64	64	60	57
All Grades	44	39	40	36	34	33	31

Figure 59 illustrates the perception of cigarette availability in the community or neighborhood by sex. In 2016, more females perceived cigarette availability (33 percent) compared to their male counterparts (30 percent; Figure 59). In 2012, the perception of *Very Easy-Easy* cigarette availability among Iowa youth was the same (35 percent) for both sexes (Figure 59). In 2014, 32 percent of males and 34 percent of females reported that it was *Very Easy-Easy* to get cigarettes in their neighborhood or community. Overall, a greater percentage of females reported cigarette availability as *Very Easy-Easy* then males.

Figure 59: Percent of Youth Reporting Community or Neighborhood Easy Access to Cigarettes by Sex, IYS, 2002-2016

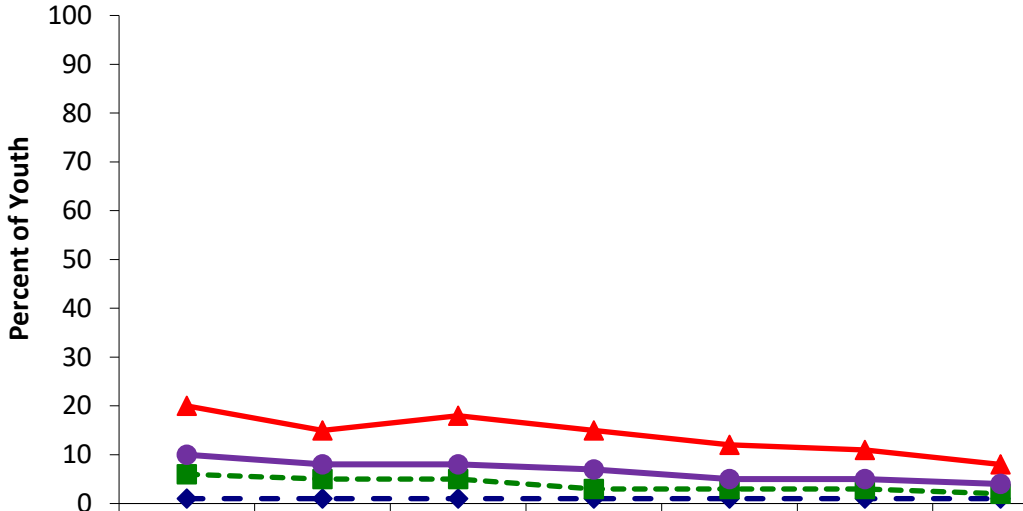


	2002	2005	2008	2010	2012	2014	2016
Male	42	37	39	36	35	32	30
Female	43	39	41	37	35	34	33

Perception of Cigarette Normative Beliefs

Figure 60 illustrates the percentage of youth reporting cigarette peer normative beliefs by grade. Perception of cigarette normative beliefs was evaluated in the IYS in all three grades (6, 8, and 11). The IYS question was: "How wrong would most of the students in your school (not just your best friends) feel it would be for you to: Smoke cigarettes?" The 2016 IYS data indicated that 1 percent of youth in grade 6 reported "Not wrong at all" followed by 2 percent of youth in grade 8 and 8 percent of youth in grade 11 (Figure 60). Between 2008 and 2016, the percentage of youth reporting cigarette use "Not wrong at all" decreased 50 percent. In 2016, 4 percent of youth in all grades reported cigarette use "Not wrong at all" compared to 8 percent in 2008 (Figure 60).

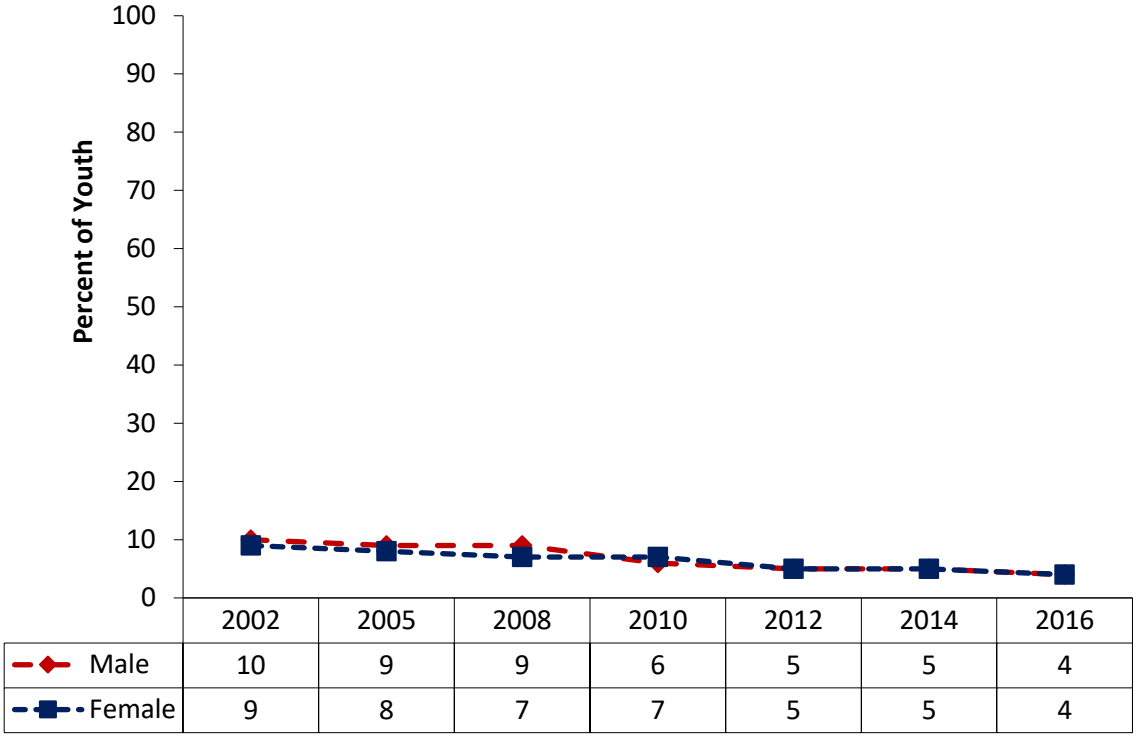
Figure 60: Tobacco Normative Beliefs among Youth by Grade, IYS, 2002-2016



	2002	2005	2008	2010	2012	2014	2016
Grade 6	1	1	1	1	1	1	1
Grade 8	6	5	5	3	3	3	2
Grade 11	20	15	18	15	12	11	8
All Grades	10	8	8	7	5	5	4

Figure 61 illustrates the percentage of youth reporting cigarette use peer normative beliefs by sex. The 2016 IYS data found that 4 percent of both females and males believed cigarette use was considered "Not wrong at all" by their peers (Figure 61). In 2012 and 2014, 5 percent of both males and females reported cigarette use was considered "Not wrong at all" By peers. In 2008, 9 percent of males and 7 percent of females reported cigarette use was considered by peers as "Not wrong at all" (Figure 61). Overall, the rates of cigarette normative beliefs were relatively similar among both males and females.

Figure 61: Cigarette Normative Beliefs among Youth by Sex, IYS, 2002-2016

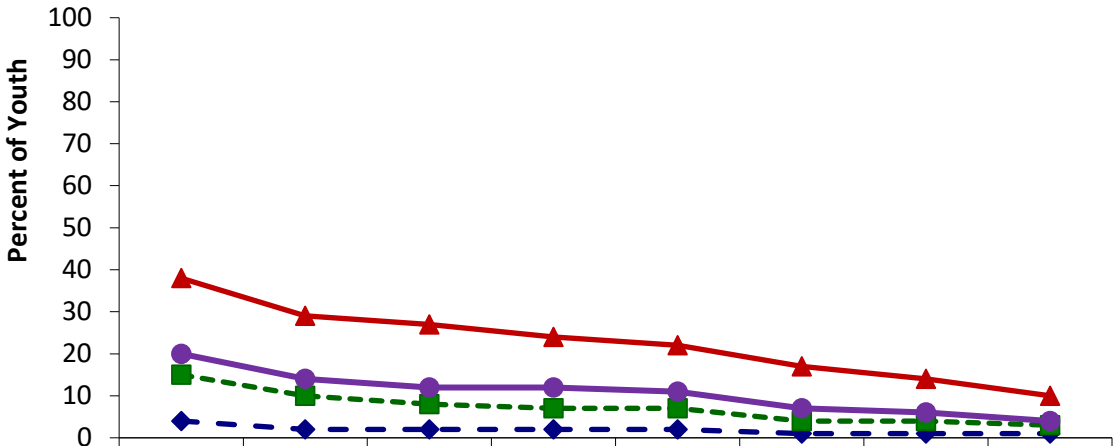


	2002	2005	2008	2010	2012	2014	2016
Male	10	9	9	6	5	5	4
Female	9	8	7	7	5	5	4

Youth Tobacco Use

Figure 62 illustrates the percentage of youth reporting tobacco use in the past 30 days by grade level. Tobacco use included cigarettes, cigars, smokeless tobacco, tobacco smoked with a water pipe, tobacco smoked with regular pipe, and menthol cigarettes. Although Iowa youth continue to use tobacco, across all three grades it has declined since 1999. Tobacco use in the past 30 days decreased among sixth graders from 4 percent in 1999 to 1 percent in 2016 (Figure 65). In 2016, nearly 10 percent of youth in grade 11 and 3 percent of youth in grade 8 reported tobacco use in the past 30 days (Figure 65). Tobacco use among youth in grade 11 decreased 74 percent between 1999 and 2016, from 38 percent to 10 percent (Figure 65). Overall, tobacco use in the past 30 days decreased by 80 percent for all grade levels.

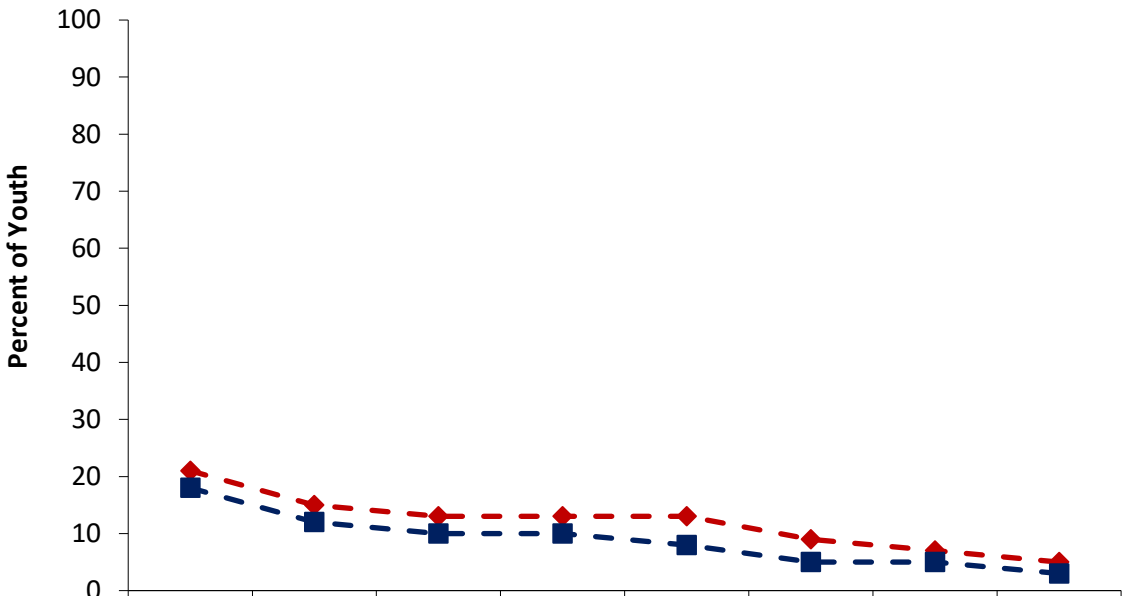
Figure 62: Past 30 Day Tobacco Use among Youth by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	4	2	2	2	2	1	1	1
Grade 8	15	10	8	7	7	4	4	3
Grade 11	38	29	27	24	22	17	14	10
All Grades	20	14	12	12	11	7	6	4

Figure 63 illustrates the percentage of youth reporting tobacco use in the past 30 days by sex. Tobacco use included cigarettes, cigars, smokeless tobacco, tobacco smoked with a water pipe, tobacco smoked with regular pipe, and menthol cigarettes. In 2016, 3 percent of females reported tobacco use in the past 30 days compared to 5 percent of males (Figure 63). Between 2010 and 2016, tobacco use in the past 30 days decreased by 62 percent for females and 61 percent for males. Since 1999, tobacco use in the past 30 days has declined for both males and females.

Figure 63: Past 30 Day Tobacco Use among Youth by Sex, IYS, 1999-2016



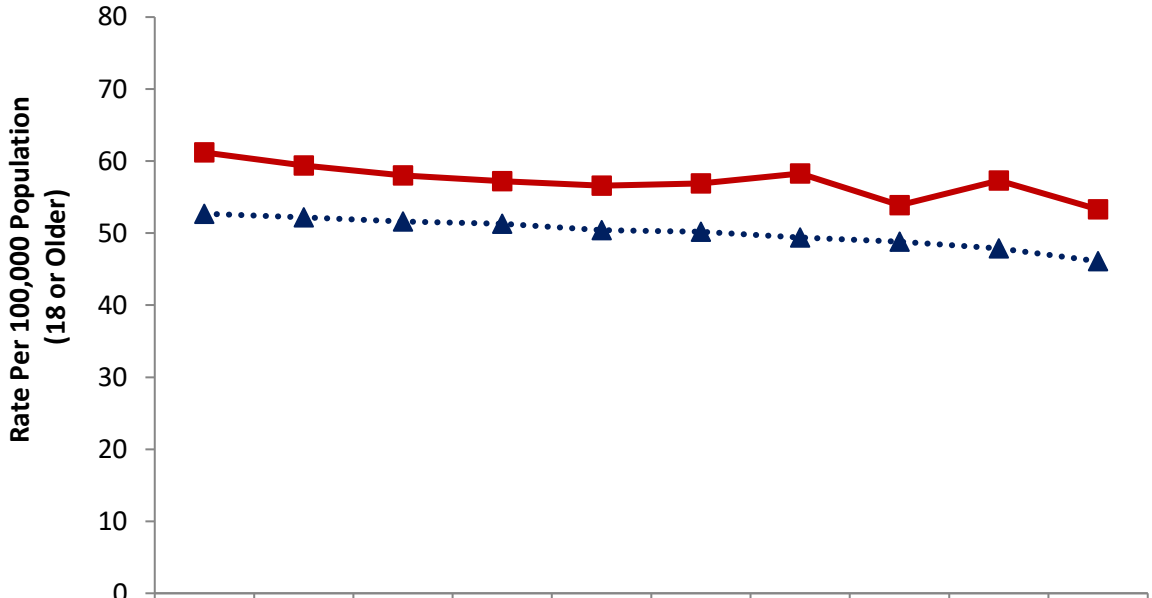
	1999	2002	2005	2008	2010	2012	2014	2016
Male	21	15	13	13	13	9	7	5
Female	18	12	10	10	8	5	5	3

TOBACCO USE CONSEQUENCES

Lung Cancer Mortality Attributed to Tobacco

Figure 64 illustrates the lung cancer mortality rates for adults (i.e., 18 years of age and older) in Iowa and nationally. Overall, the lung cancer mortality rate was higher among Iowans compared to the U.S. In 2016, the lung cancer mortality rate was 53 per 100,000 compared to 46 per 100,000 population nationally (Figure 64).

Figure 64: Adult Lung Cancer Mortality Rate, Iowa & U.S., CDC WONDER, 2007 -2016

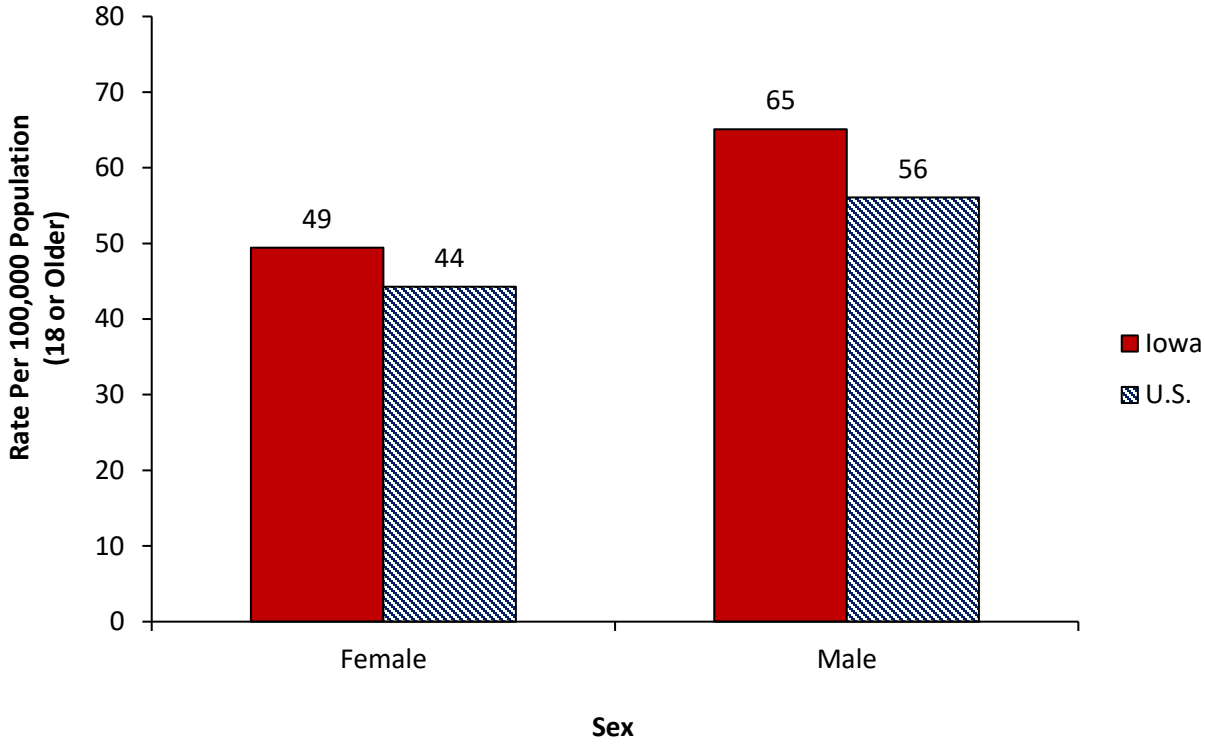


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	61	59	58	57	57	57	58	54	57	53
U.S.	53	52	52	51	50	50	49	49	48	46

Note: ICD-10 codes: C33-C34

Figure 65 illustrates the adult (i.e., 18 years of age and older) lung cancer mortality rates by sex in Iowa and nationally. Iowa males had a higher lung cancer mortality rate compared to Iowa females. Sex appeared to be associated with lung cancer mortality. Compared to the U.S., Iowa males and females had higher rates of lung cancer mortality (Figure 65).

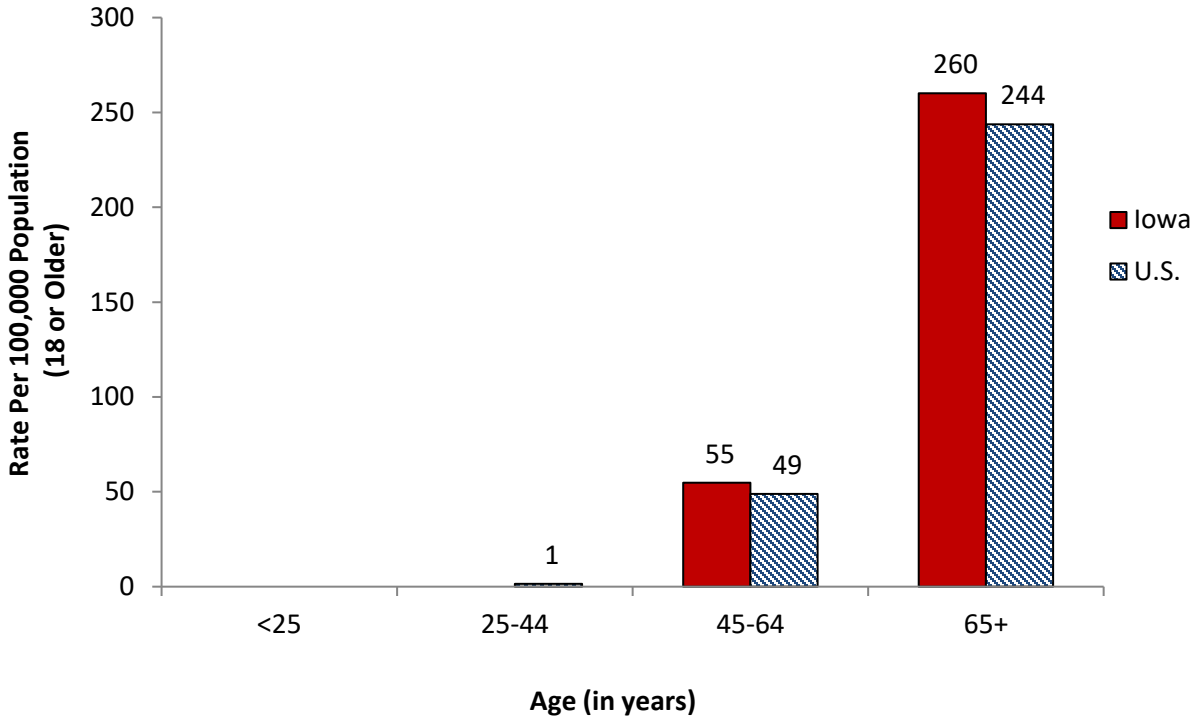
Figure 65: Lung Cancer Mortality Rates among Adults by Sex, Iowa & U.S., CDC WONDER, 2007-2016



Note: ICD-10 codes: C33-C34

Figure 66 illustrates adult lung cancer mortality rates among age groups (i.e., 18 years of age and older) in Iowa and the U.S. Lung cancer mortality was higher among persons aged 65 or older for both Iowa (260 per 100,000 population) and the U.S. (244 per 100,000 population). People aged 44 and younger had the lowest rates of lung cancer mortality in both Iowa and the U.S. Lung cancer mortality among people aged 45 to 64 was 55 per 100,000 for Iowa and 49 per 100,000 for the U.S. (Figure 66).

Figure 66: Lung Cancer Mortality Rate among Adults by Sex, Iowa & U.S., CDC WONDER, 2007-2016



Note: ICD-10 codes: C33-C34

e-CIGARETTE CONSUMPTION

Table 4 illustrates the percentage of youth reporting e-cigarette use in the past 30 days by grade. In 2014, an e-cigarette use question was added to the IYS. The question was: "In the past 30 days, on how many days have you used electronic cigarettes or e-cigarettes (battery-powered cigarettes)?" In 2016, the IYS e-cigarette question was revised to: "In the past 30 days, on how many days have you used e-cigarettes (vape-pens, hookah-pens, e-hookahs, e-cigars, e-pipes, personal vaporizers or mods)?" It is important to acknowledge that changes made to the context of the survey question could lead to different responses for the 2014 and 2016 IYS results. In 2014, 3 percent of youth in grade 6 reported that they had used e-cigarette in the past 30 days (Table 4). In 2016, 9 percent of youth in grade 11 and 3 percent of youth in grade 8 reported e-cigarette use in the past 30 days (Table 4). In 2016, 4 percent of females and 5 percent of males reported e-cigarette use in the past 30 days (Table 4). In 2014, 5 percent of females and 7 percent of males reported e-cigarette use in the past 30 days (Table 4).

Table 4: Past 30 Day E-Cigarette Use among Youth by Grade & Sex, IYS, 2014-2016

Grade	2014	2016
6th	3%	1%
8th	4%	3%
11th	11%	9%
All Grades	6%	5%
Sex		
Male	7%	5%
Female	5%	4%

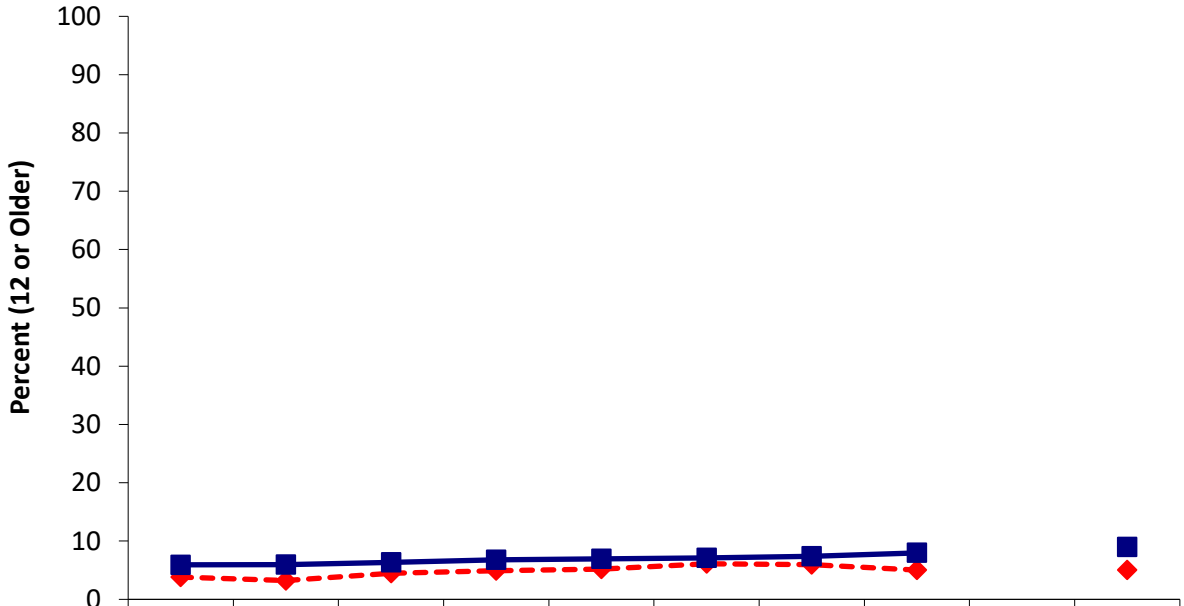
MARIJUANA AND ILLICIT DRUGS

Adult Consumption Patterns

Marijuana Use among People Aged 12 or Older

Figure 67 illustrates the percentage of people aged 12 or older reporting marijuana use in the past 30 days. Overall, national and state rates of marijuana use in the past 30 days did not differ significantly, nor were there significant differences across years. From 2007 to 2017, marijuana use rates in the past 30 days demonstrated minor fluctuation for both Iowa and the nation. In 2016, about 5 percent of Iowans 12 years of age and older reported marijuana use in the past 30 days compared to 9 percent nationally (Figure 67).

Figure 67: Past 30 Day Marijuana Use, Aged 12 or Older, Iowa & U.S., NSDUH, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	4	3	4	5	5	6	6	5		5
U.S.	6	6	6	7	7	7	7	8		9

Figure 68 illustrates the percentage of people aged 12 or older reporting marijuana use in the past 30 days. The color legend below the map illustrates the frequency distribution of respondents reporting binge drinking in the past 30 days across the United States. Iowa was among the states in the lowest group (5.2 to 6.7 percent) that included Alabama, Mississippi, New Jersey, North Dakota, Oklahoma, Texas, Utah, West Virginia, and Wyoming (Figure 68).

Figure 68: Past 30 Days Marijuana Use, Aged 12 or Older, NSDUH, 2015-2016

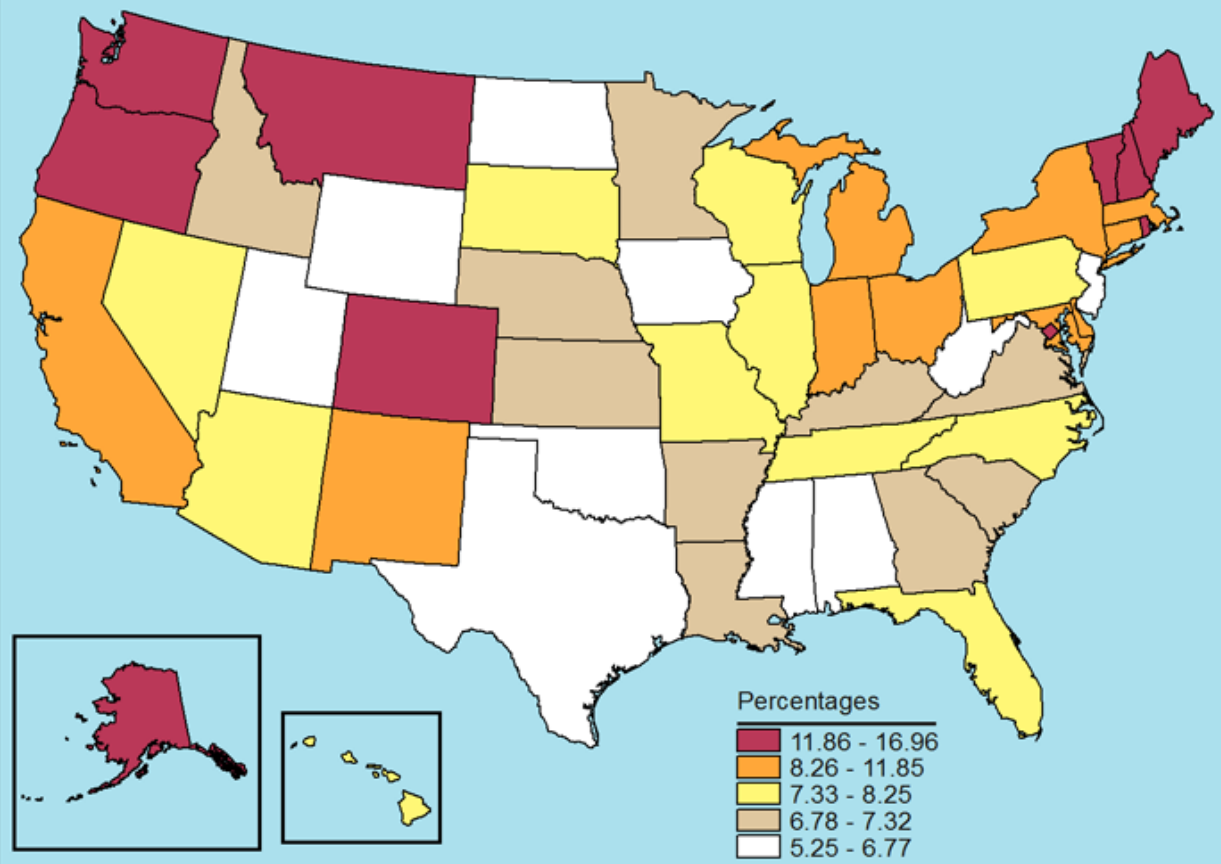


Figure 69 marijuana use in the past 30 days among Iowans aged 12 or older. The color legend below the map illustrates the range of percentages of marijuana use in the past 30 days. The map displays seven groups based on the magnitude of their percentages. The 2014-2016 NSDUH showed that Northeast, Southeast and Southwest Iowa were in the lowest group (4.1 – 5.1 percent). Regions in the next lowest group (55.5 – 59.2 percent) were Central, North Central and Northeast Iowa.

Figure 69: Past 30 Day Marijuana Use, Aged 12 or Older, NSDUH, 2015-2016

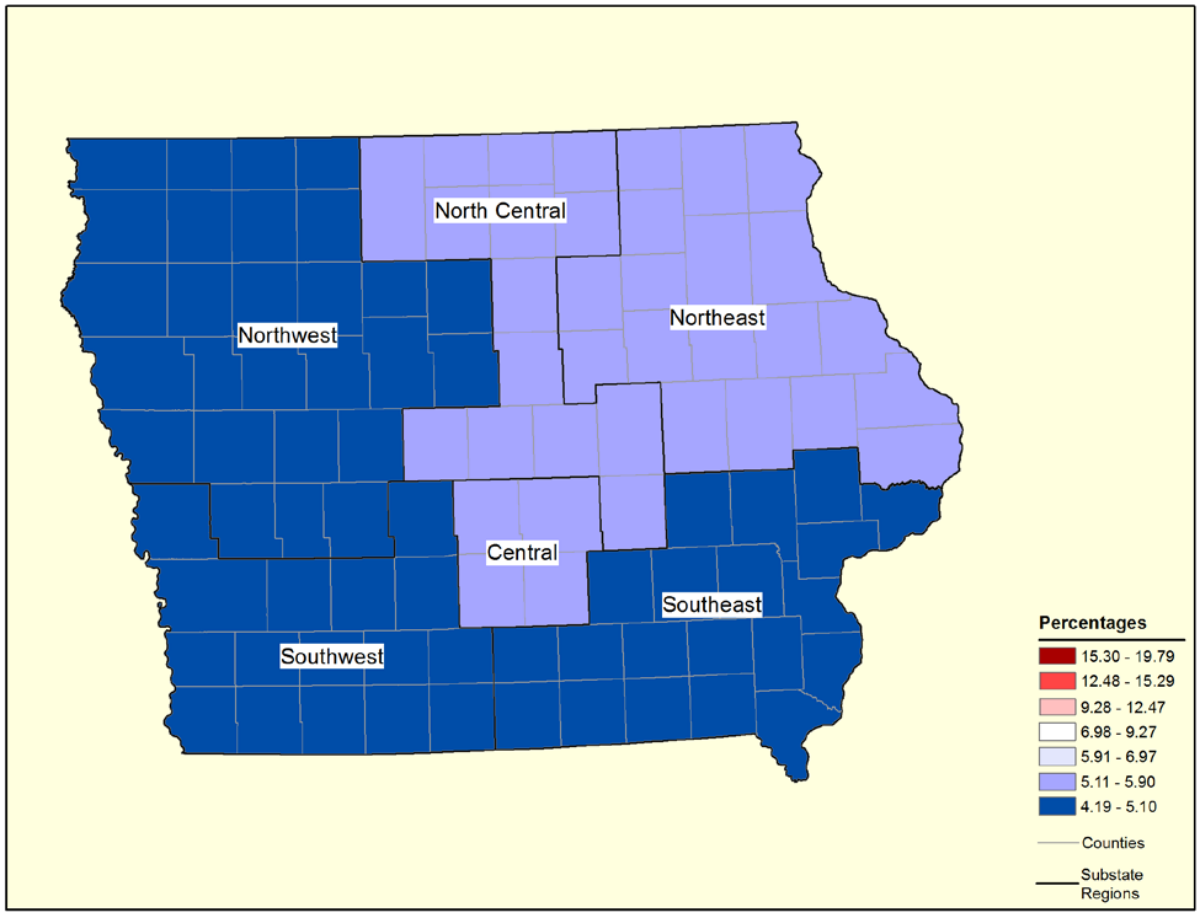
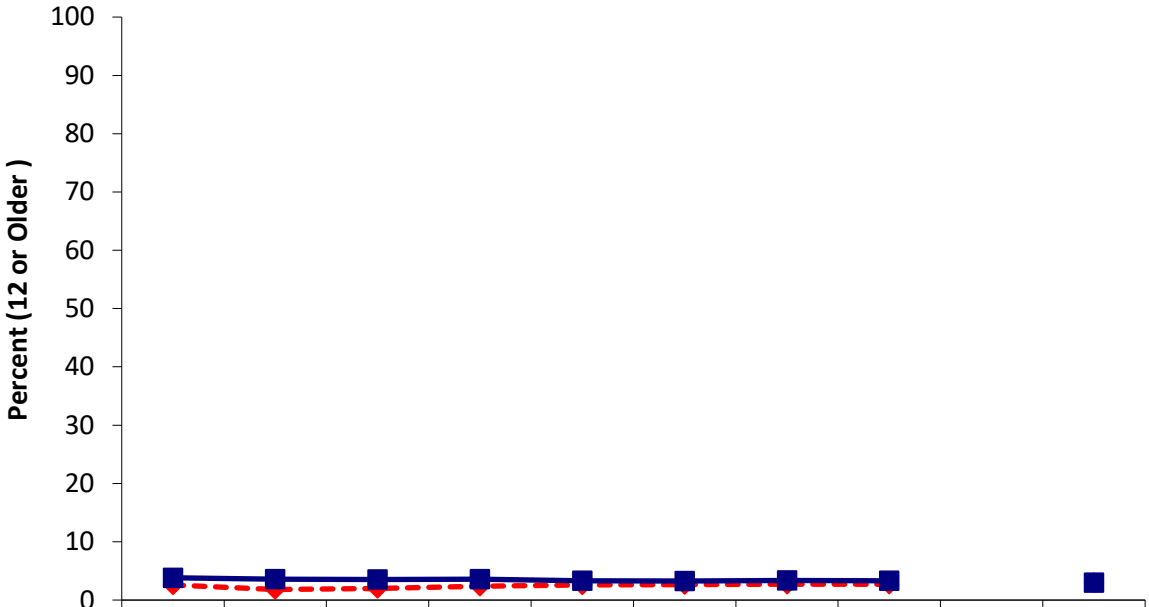


Figure 70 illustrates illicit drug other than marijuana in the past 30 days. Illicit drug other than marijuana in the past 30 days has remained relatively stable for the past decade. From 2011 to 2016, rates of illicit drug use in the past 30 days were similar (3 percent both statewide and nationally (Figure 70). From 2007 to 2010, rates of illicit drug use were lower for Iowa compared to the U.S.

Figure 70: Past 30 Day Illicit Drug Use Other than Marijuana, Aged 12 or Older, Iowa & U.S., NSDUH, 2007-2016



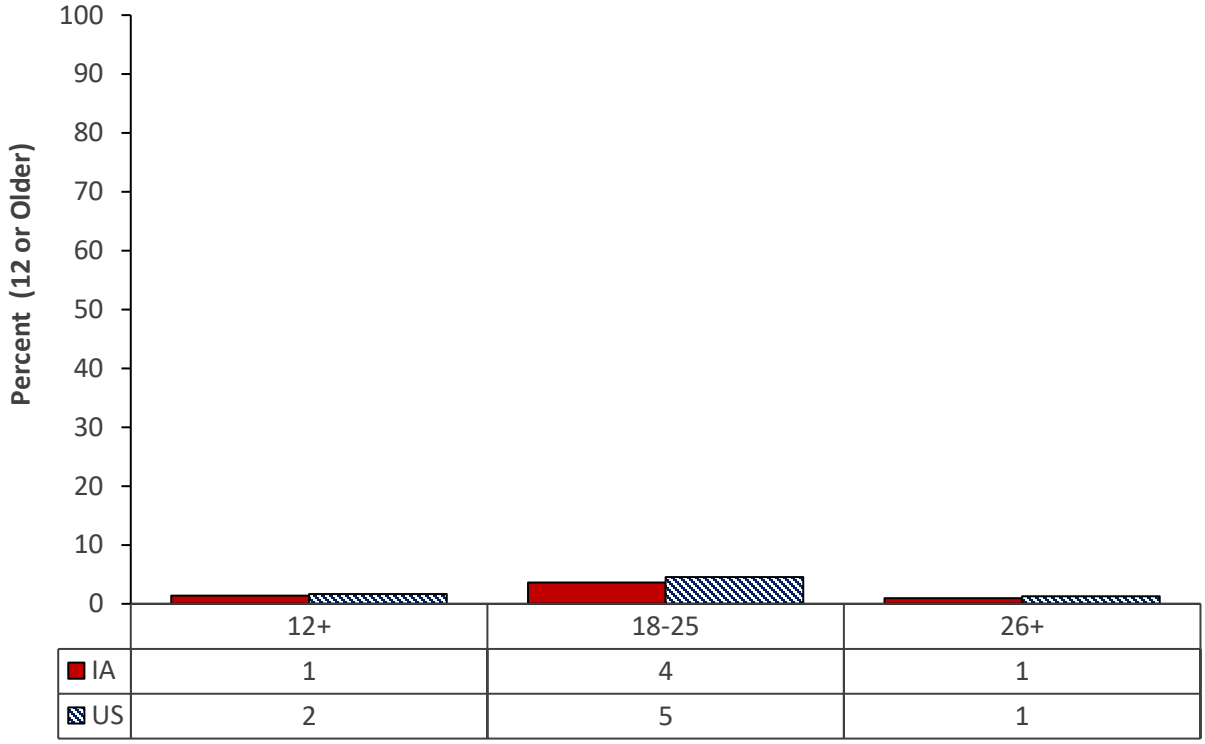
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	3	2	2	2	3	3	3	3		3
U.S.	4	4	4	4	3	3	3	3		3

Note: In 2015, changes were made to the NSDUH questionnaire and data collection procedures that do not allow comparisons between 2015, previous and subsequent years for illicit drug use other than marijuana outcome. Therefore, the 2015 data was excluded from this epidemiological profile.

Cocaine Use among Respondents Aged 12 or Older

Figure 71 illustrates the cocaine use in the past year by age group. On average, the percentage of cocaine use in the past year was 1 percent for Iowans aged 12 or older compared to 2 percent for the U.S. (Figure 71). The percentage of cocaine use in the past year was higher among people aged 18 to 25 compared to people aged 12 or older or 26 or older. From 2012 to2016, the average percentage of cocaine use in the past year was 4 percent for Iowans aged 18 to 25 and 5 percent for the U.S. (Figure 71).

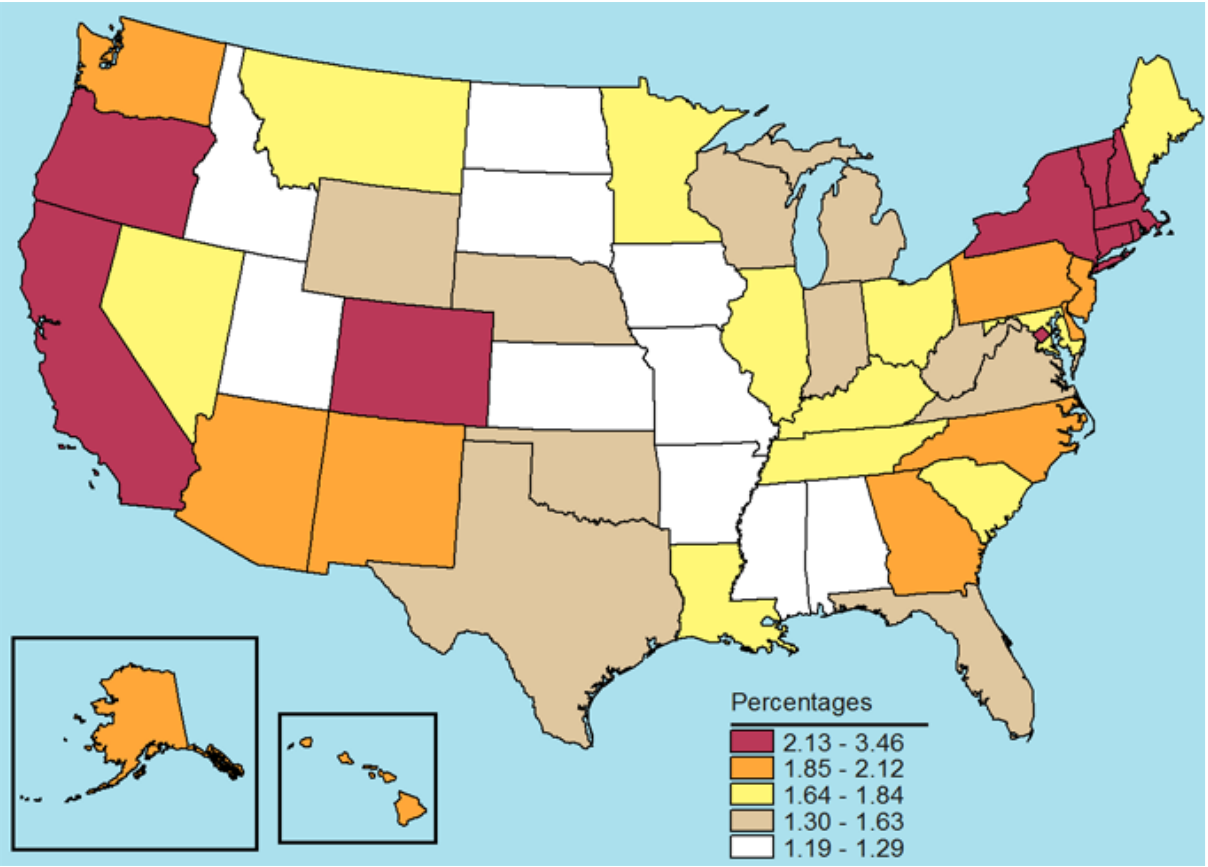
Figure 71: Past Year Cocaine Use, Aged 12 or Older, Iowa and the U.S., NSDUH, 2012-2016



	12+	18-25	26+
IA	1	4	1
US	2	5	1

Figure 72 illustrates cocaine use in the past year among respondents 12 years of age and older. The color legend below the map shows the percentage reporting cocaine in the past 30 days in the U.S. States are grouped based on the magnitude of percentages of residents using cocaine. Iowa was among the states in the lowest group (1.1 to 1.2 percent) that included Alabama, Arkansas, Idaho, Kansas, Mississippi, Missouri, North Dakota, South Dakota, and Utah (Figure 72).

Figure 72: Past Year Cocaine Use, Aged 12 or Older, NSDUH, 2015-2016



Methamphetamine Treatment

The rate of methamphetamine-related treatment admissions in Iowa has nearly doubled since 2012. In 2016, more than 6,900 Iowans were admitted for methamphetamine use disorder treatment. The methamphetamine-related treatment admission rate increased from 183.4 per 100,000 population in 2012 to 273.9 per 100,000 population in 2016 (Figure 73). Iowans aged 25 to 44 had the highest rates of methamphetamine-related treatment admissions compared to other age groups. Rates were higher for males than females. Among males, the rate increased from 195 per 100,000 population in 2012 to 288 in 2016 (Figure 73). Among females, the rate increased from 172 per 100,000 population in 2012 to 260 in 2016 (Figure 73).

Figure 73: Methamphetamine Treatment Admissions Rate by Age and Sex, 2012-2016

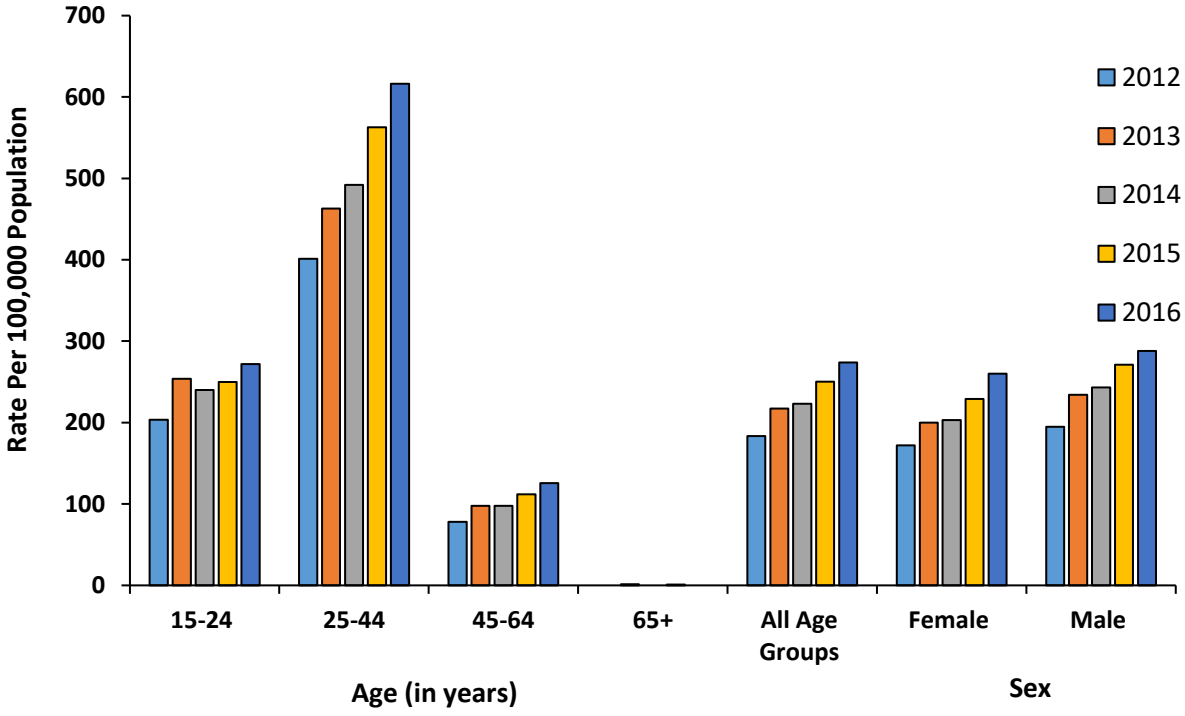
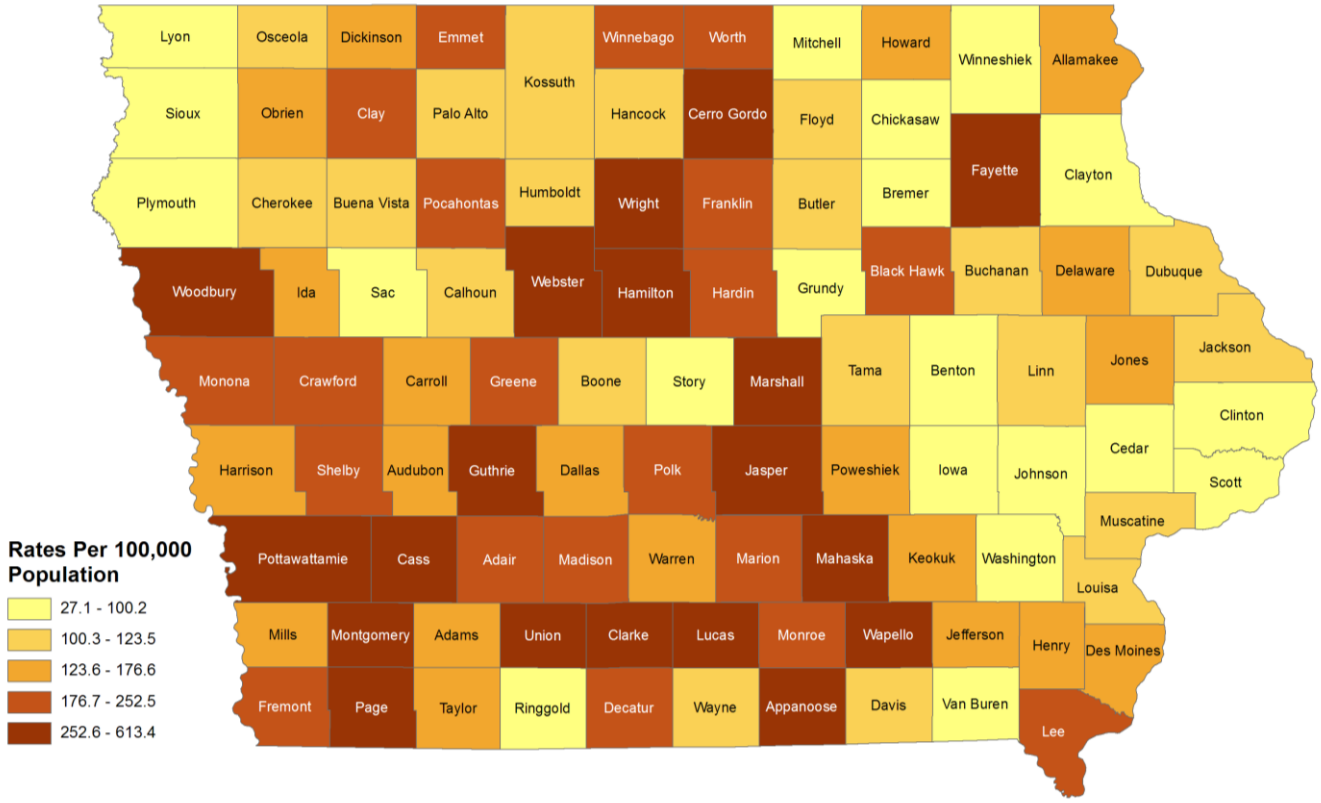


Figure 74 displays the average annual rates for methamphetamine-related treatment admission (primary mentions) by county. The county rates are based on the patient's county of residence and unique treatment admissions. The county rates varied greatly from 27.1 per 100,000 population in Cedar County to 613.4 in Wapello County. The data comes from the Iowa Service Management and Reporting Tool (I-SMART). The five counties with the lowest rates included: Cedar (27.1 per 100,000 population), Johnson (28.5), Lyon (30.6), Ringgold (43.5), and Scott (46.6; Figure 74). The five counties with the highest rates of methamphetamine-related treatment admissions included: Wapello (613.4 per 100,000 population), Webster (594.8), Montgomery (450.8), Cerro Gordo (413.3), and Appanoose (412.6; Figure 74).

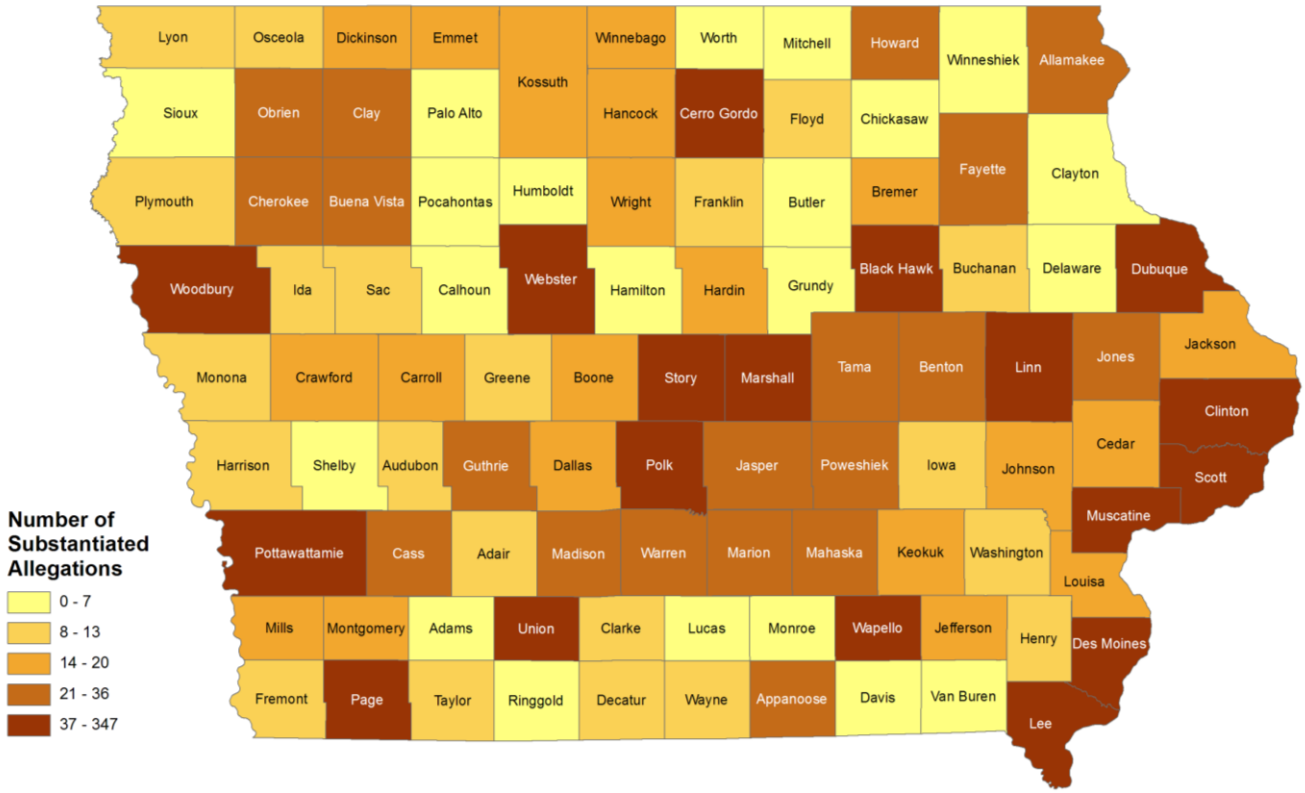
Figure 74: Average Annual Rate of Methamphetamine Treatment Admissions, IDPH, 2012-2016



Methamphetamine-Related Substantiated Allegation of Abuse

Figure 75 maps the number of methamphetamine-related substantiated allegations of abuse in Iowa. The Iowa Department of Human Services (DHS; 2018) defines substantiated allegation as "…abuse based on a preponderance of credible evidence available to DHS, the allegation of abuse is confirmed and it is the type of abuse that requires placement on the Child Abuse Registry." The color legend below the map illustrates the frequency distribution of methamphetamine-related substantiated allegation of abuse. The data is based on the county of residence. The 2016-2018 Department of Human Services (DHS) data showed that 21 Iowa counties were in the lowest group (0 to 7) and 18 were in the highest group (37 to 347; Figure 75). The number of substantiated allegations of methamphetamine abuse for counties varied greatly from zero in Ringgold to 347 in Polk County. The five counties with the highest number of substantiated allegation of methamphetamine abuse included: Lee (92), Linn (139), Polk (347), Pottawattamie (179), and Woodbury (204; Figure 75).

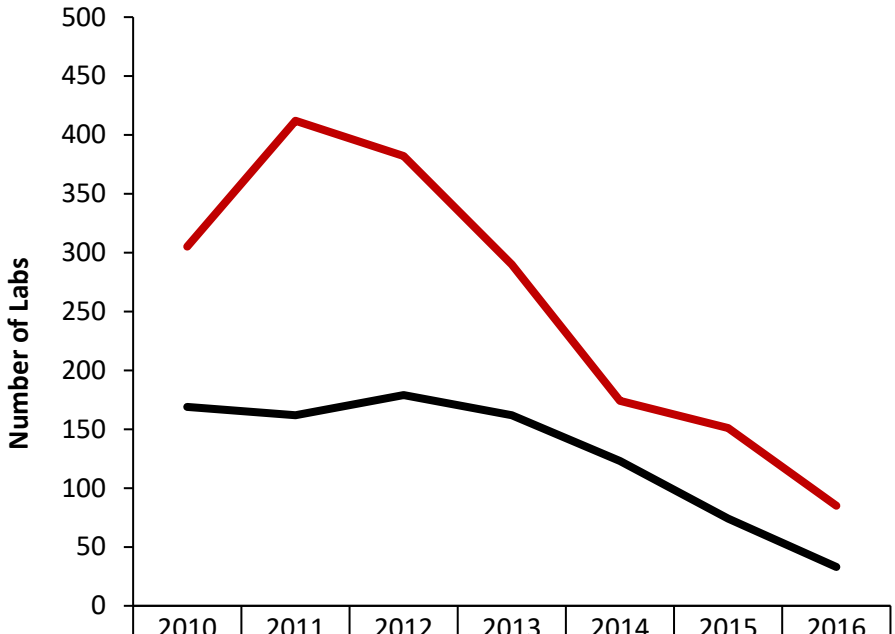
Figure 75: Number of Substantiated Allegations of Methamphetamine Abuse, DHS, 2016-2018



Methamphetamine Production

The number of methamphetamine labs seized by Iowa local or state law enforcement decreased from 412 in 2011 to 85 in 2016 (Figure 76). Between 2012 and 2016, methamphetamine production in the presence of a minor decreased by more than 80 percent from 179 cases to 33 cases (Figure 76). Clandestine methamphetamine lab seizures are reported by local or state law enforcement agencies to the Iowa Department of Public Safety.

Figure 76: Number of Methamphetamine Labs Seized by Iowa Law Enforcement Agencies and Number of Methamphetamine Production Cases in the Presence of a Minor , IDPS & IDHS, 2010-2016

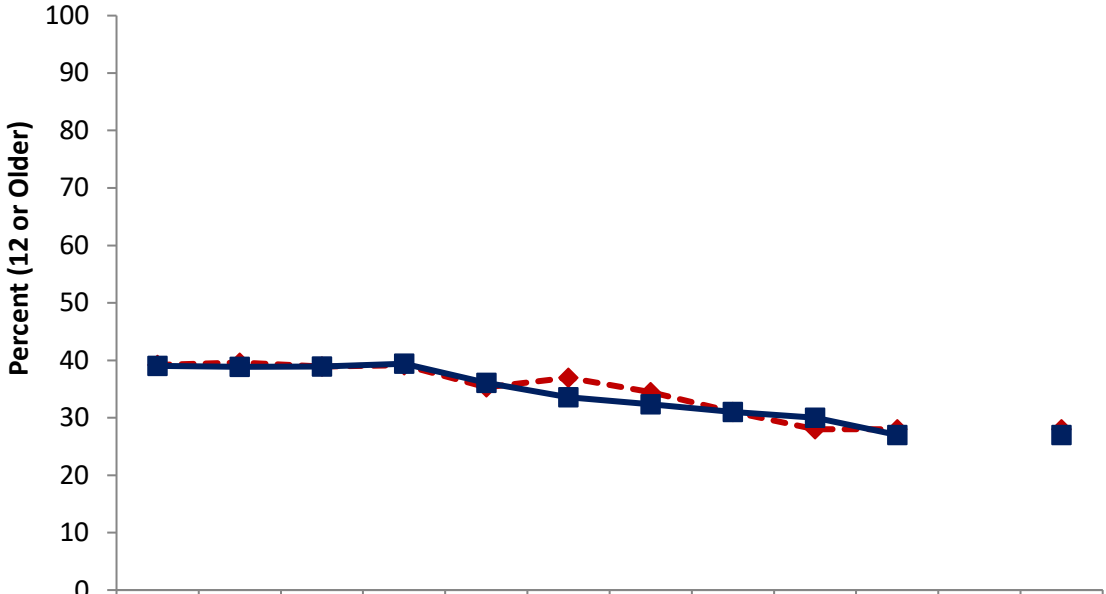


	2010	2011	2012	2013	2014	2015	2016
Meth Labs Seized	305	412	382	290	174	151	85
Meth Production Near Minor	169	162	179	162	123	74	33

Marijuana and Illicit Drug Use Risk Perception

Figure 77 illustrates the percentage of people reporting perception of risk related to marijuana use in the past 30 days by age. Marijuana use risk perception steadily decreased since 2006. In 2016, 28 percent of Iowa adults reported marijuana use risk perception compared to 27 percent at the national level (Figure 77). From 2005 to 2009, the rates of marijuana use risk perception were relatively similar for both Iowa and the U.S. Overall, from 2010 to 2011, the rates of marijuana use risk perception were higher for Iowa compared to the national rates.

Figure 77: Percent of People Reporting Perception of Great Risk from Smoking Once a Month, Aged 12 or Older, NSDUH, 2005-2016

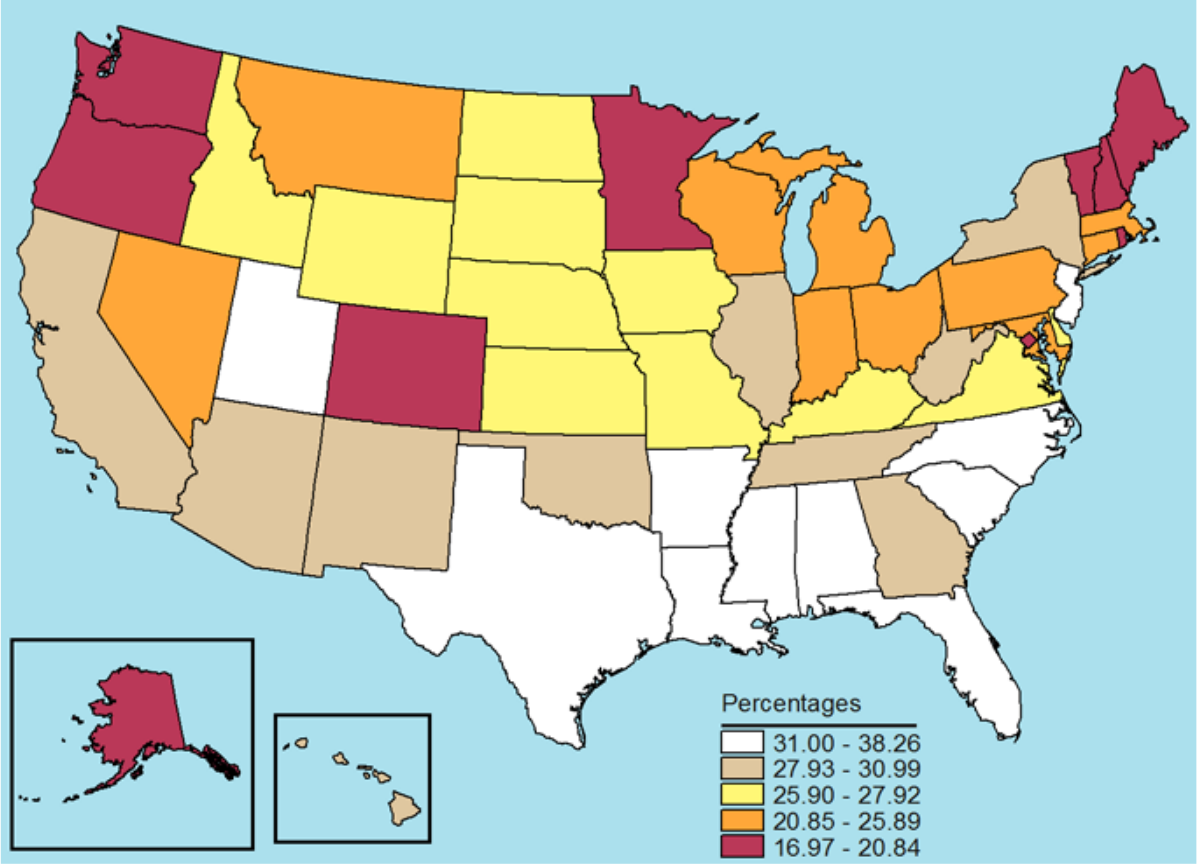


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	39	40	39	39	35	37	34	31	28	28		28
U.S.	39	39	39	39	36	34	32	31	30	27		27

Note: In 2015, changes were made to the NSDUH questionnaire and data collection procedures that do not allow comparisons between 2015, previous and subsequent years for perception of risk related to marijuana use outcome. Therefore, the 2015 data was excluded from this epidemiological profile.

Figure 78 illustrates the percentage of people aged 12 or older reporting marijuana use risk perception in the past 30 days. The color legend below the map illustrates the percentages of people reporting marijuana in the past 30 days across the U.S. States are divided into five groups based on the magnitude of their percentage. Iowa was among the states in the mid-group (25.9 to 27.9 percent) that included Delaware, Idaho, Kansas, Kentucky, Missouri, Nebraska, North Dakota, South Dakota, Virginia, and Wyoming (Figure 78).

Figure 78: Perception of Great Risk from Smoking Once a Month, Aged 12 or Older, NSDUH, 2015-2016

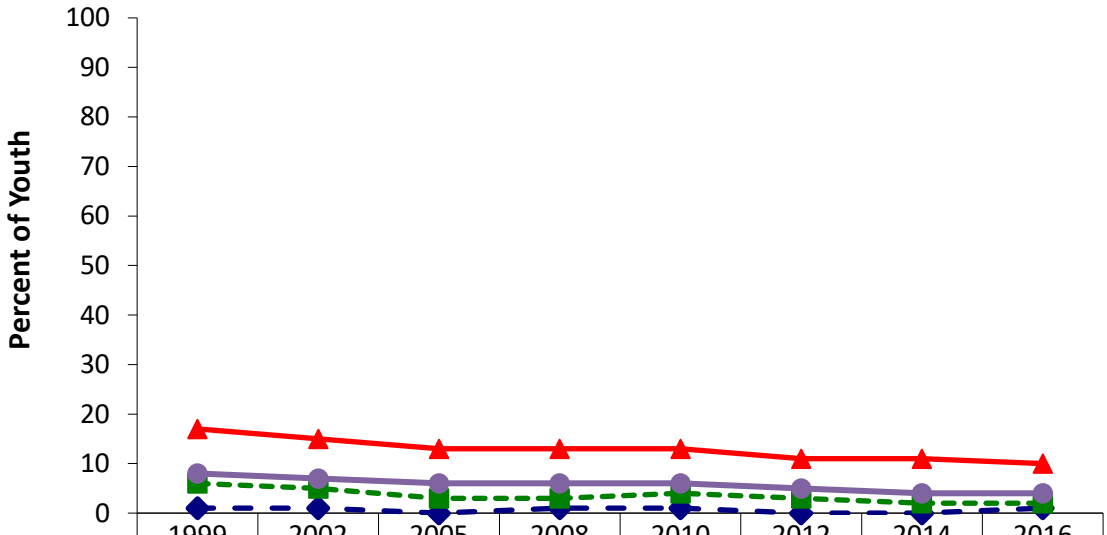


Youth Consumption Patterns

Youth Marijuana Use

Figure 79 illustrates the percentage of youth reporting marijuana use in the past 30 days by grade. The IYS asked youth: *In the past 30 days, have you used marijuana (pot, grass, hash, weed)?* Although Iowa youth continue to use marijuana, it has declined among students in grade 8 and 11. For sixth grade students, the rate of marijuana use has fluctuated around 0 and 1 percent. From 1999 to 2016, marijuana use decreased 41 percent among youth in grade 11 and 66 percent among youth in grade 6.

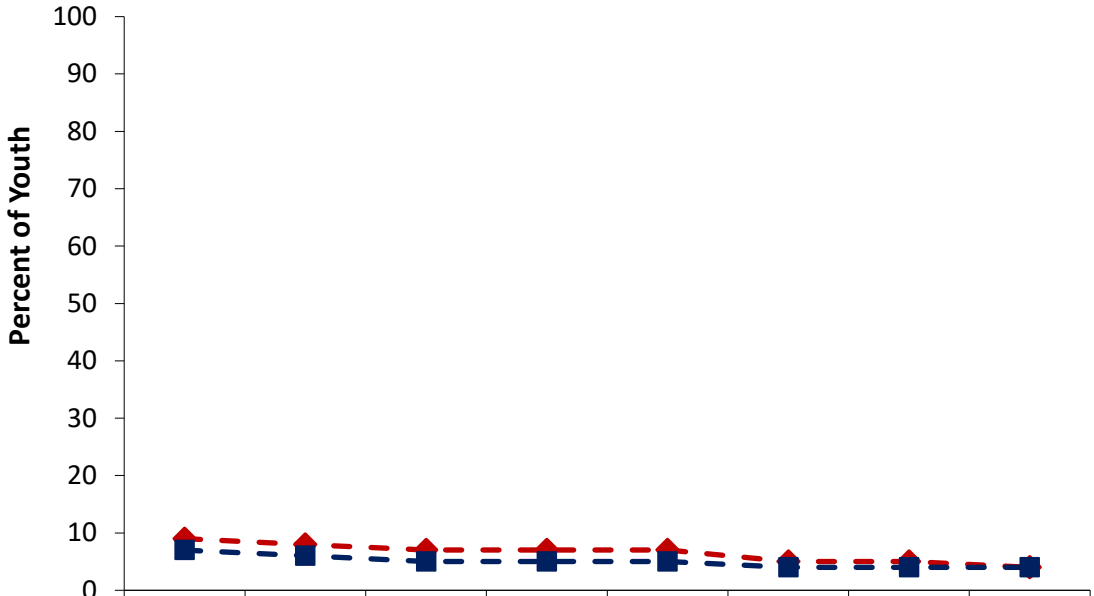
Figure 79: Past 30 Day Marijuana Use among Youth by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	1	1	0	1	1	0	0	1
Grade 8	6	5	3	3	4	3	2	2
Grade 11	17	15	13	13	13	11	11	10
All Grades	8	7	6	6	6	5	4	4

Figure 80 illustrates the percentage of youth reporting marijuana use in the past 30 days by sex. The 2016 IYS data demonstrated similar rates of marijuana use among males and females in the past 30 days. From 1999 to 2014 marijuana use rates were higher among males; rates were the same in 2016. In 1999, the rate of marijuana use among males was 9 percent compared to 7 percent among females (Figure 80). Between 1999 and 2016, marijuana use in the past 30 days decreased by more than 50 percent for males and 43 percent for females.

Figure 80: Past 30 Day Marijuana Use among Youth by Sex, IYS, 1999-2016

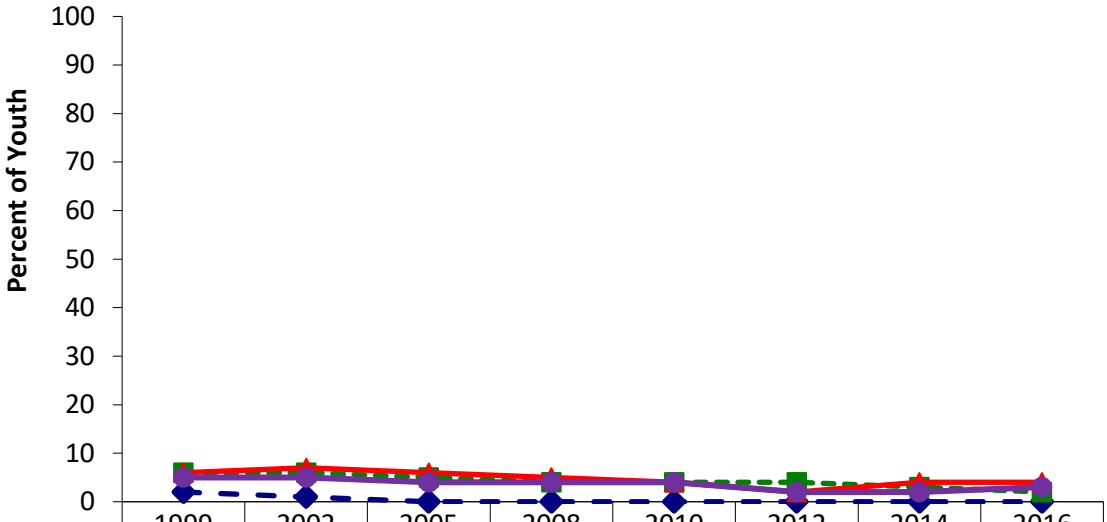


	1999	2002	2005	2008	2010	2012	2014	2016
Male	9	8	7	7	7	5	5	4
Female	7	6	5	5	5	4	4	4

Age First Smoked Marijuana

Figure 81 illustrates the percentage of youth reporting first marijuana use before age 13 or 14 by grade level. Youth were asked: *"How old were you when you first tried marijuana (pot, grass, hash, weed)?"* From 2005 to 2016, sixth grade youth reported no marijuana use. Between 1999 and 2016, IYS results indicated a 66 percent decrease in marijuana use before the age of 13 or 14for eighth grade students and 33 percent decrease for eleventh grade students. In 2016, 2 percent of youth in grade 8 and 4 percent of youth in grade 11 reported marijuana first use before the age of 13 or 14 (Figure 81). In 2016, approximately 3 percent of youth in all three grades reported first use of marijuana before the age of 13; this represents a 40 percent decrease since 1999 (Figure 81).

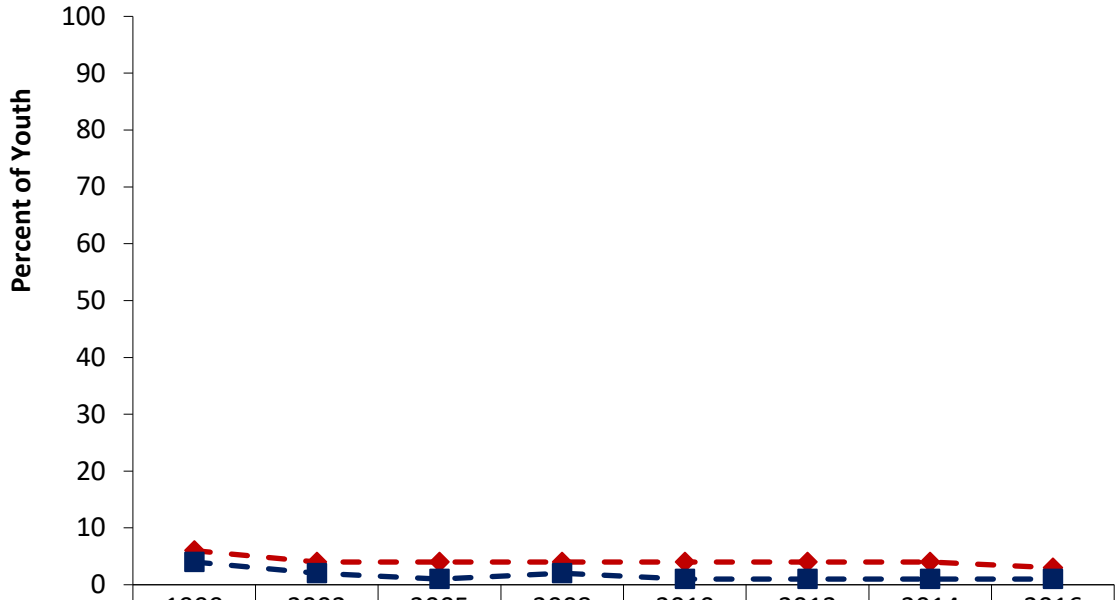
Figure 81: Marijuana Use before Age 13 by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	2	1	0	0	0	0	0	0
Grade 8	6	6	5	4	4	4	3	2
Grade 11	6	7	6	5	4	2	4	4
All Grades	5	5	4	4	4	2	2	3

Figure 82 illustrates the percentage of youth reporting marijuana use before age 13 by age. In 2016, 1 percent of females and 3 percent of males reported marijuana use before the age of 13 (Figure 82). From 2008 to 2016, marijuana use before age of 13 decreased by 75 percent for females and 50 percent for males. Although males have a higher rate, marijuana use before the age of 13 has declined for both males and females since 1999. Among males, marijuana use rates before the age of 13 remained the same (4 percent) for 2002 through 2014 (Figure 87). Among females, rates remained the same (1 percent) for 2010 through 2016 (Figure 82).

Figure 82: Marijuana Use before Age 13 by Sex, IYS, 1999-2016

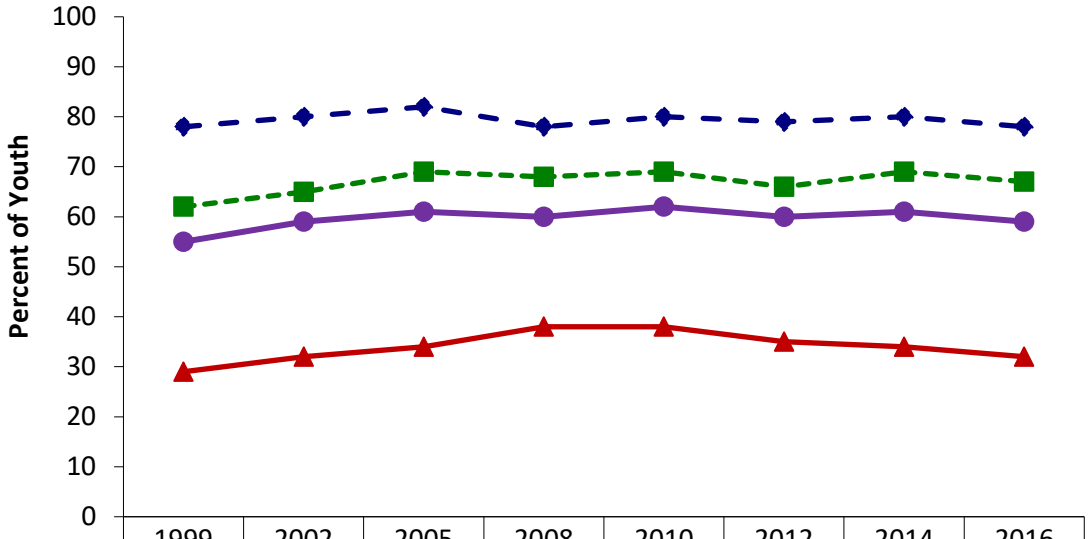


	1999	2002	2005	2008	2010	2012	2014	2016
Male	6	4	4	4	4	4	4	3
Female	4	2	1	2	1	1	1	1

Youth Perceived Availability of Marijuana

Figure 83 illustrates the percentage of youth reporting marijuana accessibility by grade level. The IYS asked Iowa youth about the perception of marijuana availability in the community or neighborhood. The question asked was: "*In your neighborhood or community, how difficult do you think it would be for a kid your age to get marijuana (pot, weed, hash)?*" The percent of youth reporting access to marijuana as *Very Hard-Hard* gradually increased between 1999 and 2008 for all three grade levels. In 2016, the IYS data showed a decrease for all three grade levels. In 2016, 78 percent of youth in grade 6 reported difficulty accessing marijuana as *Very Hard-Hard* compared to 32 percent of youth in grade 11 (Figure 83). In the same time period, 67 percent of youth in grade 8 reported accessing marijuana as *Very Hard-Hard* (Figure 88). Youth in grade 6 had the highest percentage of students who believe marijuana availability was *Very Hard-Hard* among the three grade levels. Since 2002, the perception that marijuana availability was *Very Hard-Hard* for all grade levels decreased 7 percent (Figure 83).

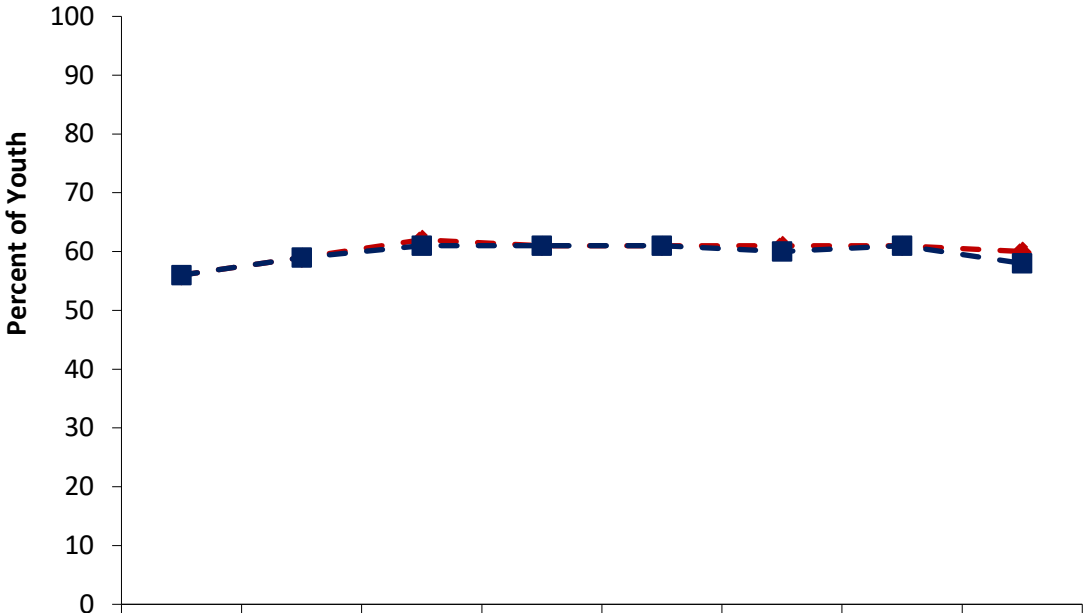
Figure 83: Marijuana Availability as Very Hard-Hard by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	78	80	82	78	80	79	80	78
Grade 8	62	65	69	68	69	66	69	67
Grade 11	29	32	34	38	38	35	34	32
All Grade	55	59	61	60	62	60	61	59

Figure 84 illustrates the percentage of youth reporting marijuana availability in their community by sex. In 2016, 60 percent of males reported marijuana availability was *Very Hard-Hard* compared to 58 percent of females (Figure 89). Rates of perceived marijuana availability were lowest (55 percent) for both males and females in 1999 compared to subsequent years. Overall, there was no significant difference between sexes regarding marijuana availability.

Figure 84: Difficulty Accessing Marijuana among Youth by Sex, IYS, 1999-2016

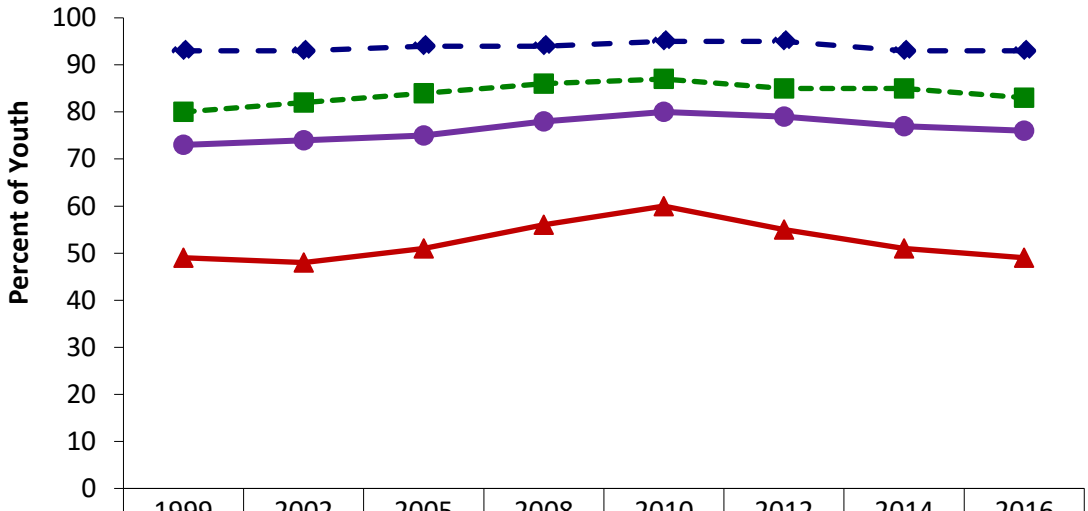


	1999	2002	2005	2008	2010	2012	2014	2016
Male	56	59	62	61	61	61	61	60
Female	56	59	61	61	61	60	61	58

Youth Perception of Peer Marijuana Normative Beliefs

Figure 85 illustrates the percentage of youth reporting on peer norms regarding marijuana use by grade. Youth perception of peer norms regarding marijuana use was asked with the following question: "*How wrong would most of the students in your school (not just your best friends) feel it would be for you to smoke marijuana?*" The 2016 IYS data found that 93 percent of sixth graders indicated peers would regard marijuana use as *Very Wrong-Wrong,* 83 percent of eighth graders, and 49 percent of eleventh graders (Figure 85). From 2002 to 2016, the percent of youth reporting peer disapproval of marijuana use increased by more than 2 percent. Overall, in 2016, 76 percent of youth in all grades reported peer disapproval of marijuana use compared to 80 percent in 2008, a decrease of 5 percent (Figure 85).

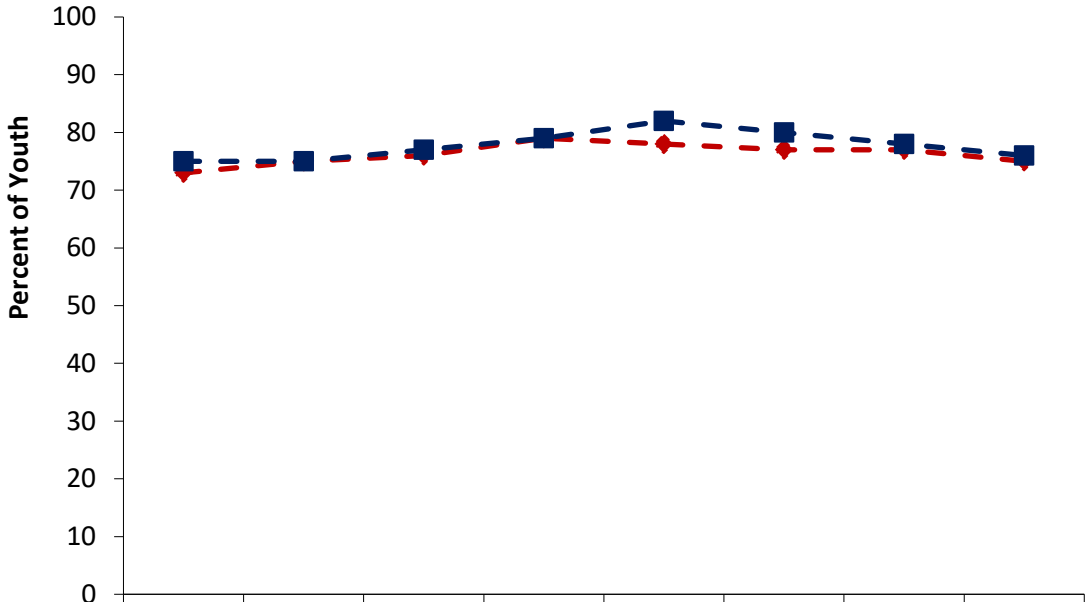
Figure 85: Peer Marijuana Normative Beliefs by Grade, IYS, 2002-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	93	93	94	94	95	95	93	93
Grade 8	80	82	84	86	87	85	85	83
Grade 11	49	48	51	56	60	55	51	49
All Grade	73	74	75	78	80	79	77	76

Figure 86 illustrates the percentage of youth reporting peer normative beliefs related to marijuana use by sex. The 2016 IYS data showed that 76 percent of females believed peers would regard marijuana use as *Very Wrong-Wrong* compared to 75 percent of males (Figure 86). In 2002 and 2008, both sexes reported peer disapproval of marijuana use (75 and 79 percent, respectively) (Figure 86). In 2014, 77 percent of males and 78 percent of females reported peer believed marijuana use as *Very Wrong-Wrong* (Figure 86). Overall, females reported a slightly higher percentage of peer disapproval of marijuana use in 1999, 2005, 2010, and 2012.

Figure 86: Peer Marijuana Normative Beliefs by Sex, IYS, 2002-2016

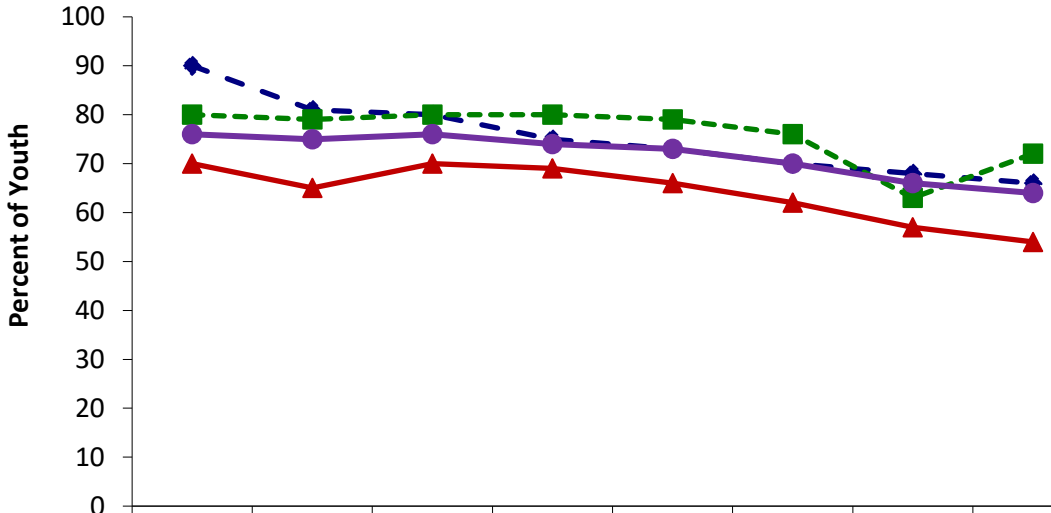


	1999	2002	2005	2008	2010	2012	2014	2016
Male	73	75	76	79	78	77	77	75
Female	75	75	77	79	82	80	78	76

Youth Marijuana Use Risk Perception

Figure 87 illustrates the percentage of youth reporting marijuana use posed a self-harm risk by grade. Marijuana self-harm risk was evaluated in all three grades (6, 8, and 11) with the following question: "*How much do you think you risk harming yourself if you smoke marijuana once a week?*" The 2016 IYS data found that 72 percent of eighth grade youth reported the *Great-Moderate Risk* of self-harm from marijuana use followed by 66 percent of youth in grade 6 and 54 percent of youth in grade 11 (Figure 87). From 2002 to 2016, the percent of youth reporting the risk of self-harm from marijuana decreased by more than 14 percent. In 2016, 64 percent of youth in all grades reported *Great-Moderate Risk* of harm from marijuana compared to 74 percent in 2008, a decrease of 13 percent (Figure 87).

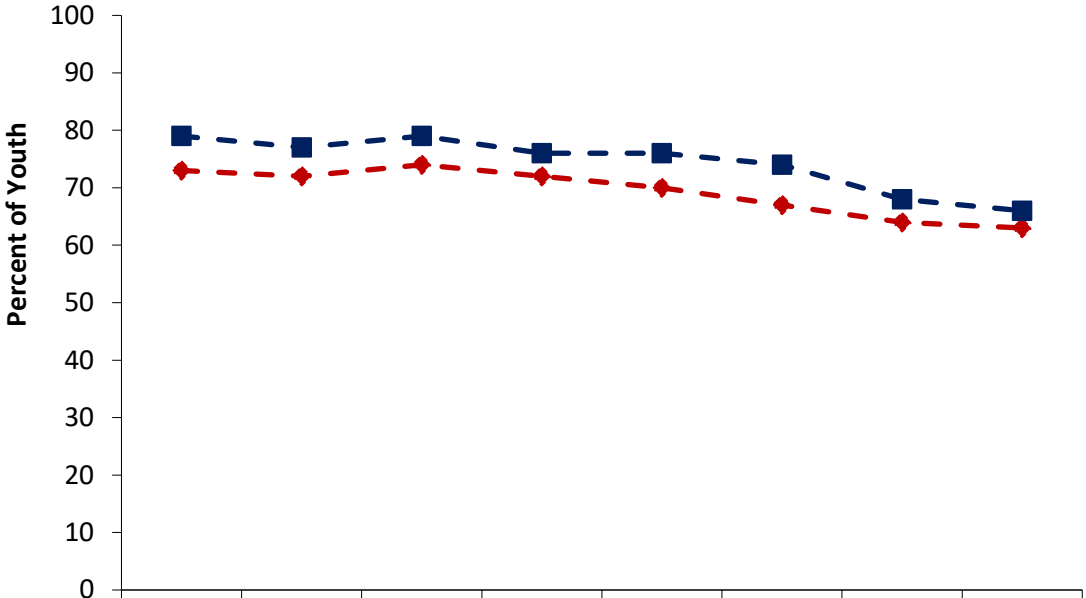
Figure 87: Self-harm Risk Posed by Marijuana Use by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	90	81	80	75	73	70	68	66
Grade 8	80	79	80	80	79	76	63	72
Grade 11	70	65	70	69	66	62	57	54
All Grades	76	75	76	74	73	70	66	64

Figure 88 illustrates the percentage of youth reporting marijuana posed a self-harm risk by sex. According to the 2016 IYS, 66 percent of females reported *Great-Moderate Risk* from marijuana compared to 63 percent of males (Figure 88). Between 2002 and 2008, rates for marijuana self-harm risk were higher for both female and male students. Overall, more females reported *Great-Moderate Risk* from marijuana compared to their male counterparts.

Figure 88: Marijuana Use Self-harm Risk by Sex, IYS, 1999-2016



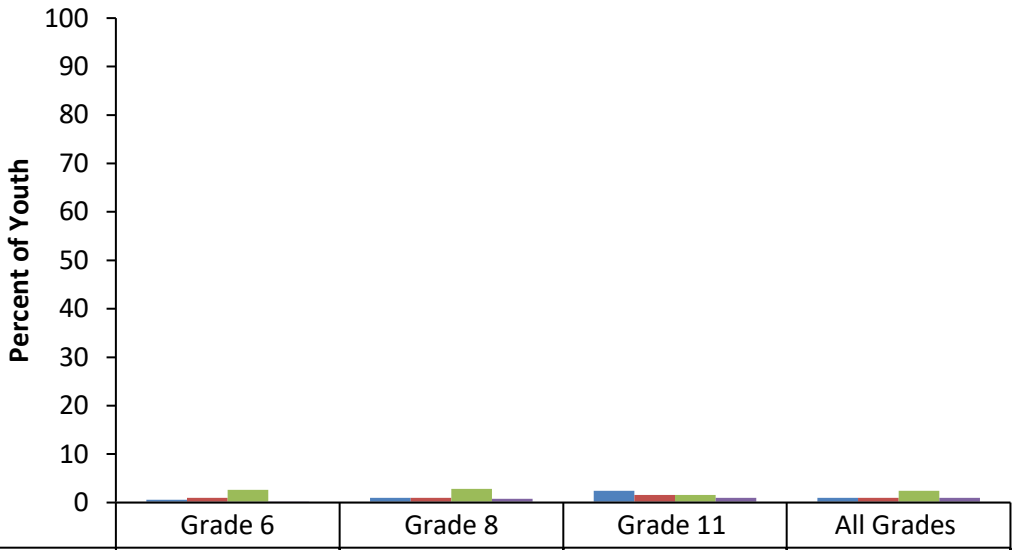
	1999	2002	2005	2008	2010	2012	2014	2016
Male	73	72	74	72	70	67	64	63
Female	79	77	79	76	76	74	68	66

Note: Data represent percentage of respondents who indicated Great-Moderate Risk of marijuana use.

Youth Illicit Drug Use

Figure 89 illustrates the percentage of youth reporting illicit drug use in the past 30 days by grade. The average percent is based on combined 1999-2016 IYS data. According to the IYS results, 3 percent of youth in grade 6 and 8 reported inhalant use in the past 30 days compared to 2 percent of youth in grade 11 (Figure 89). From 1999 to 2016, less than one percent of youth in grade 6 reported methamphetamine use in the past 30 days compared to 1 percent for students in grade 8 and 11 (Figure 89). About 1 percent of youth in grade 6 and 8 reported amphetamine use in the past 30 days compared to 2 percent of youth in grade 11 (Figure 89). Overall, illicit drug use in the past 30 days was less than or equal to 2 percent for all three grade levels.

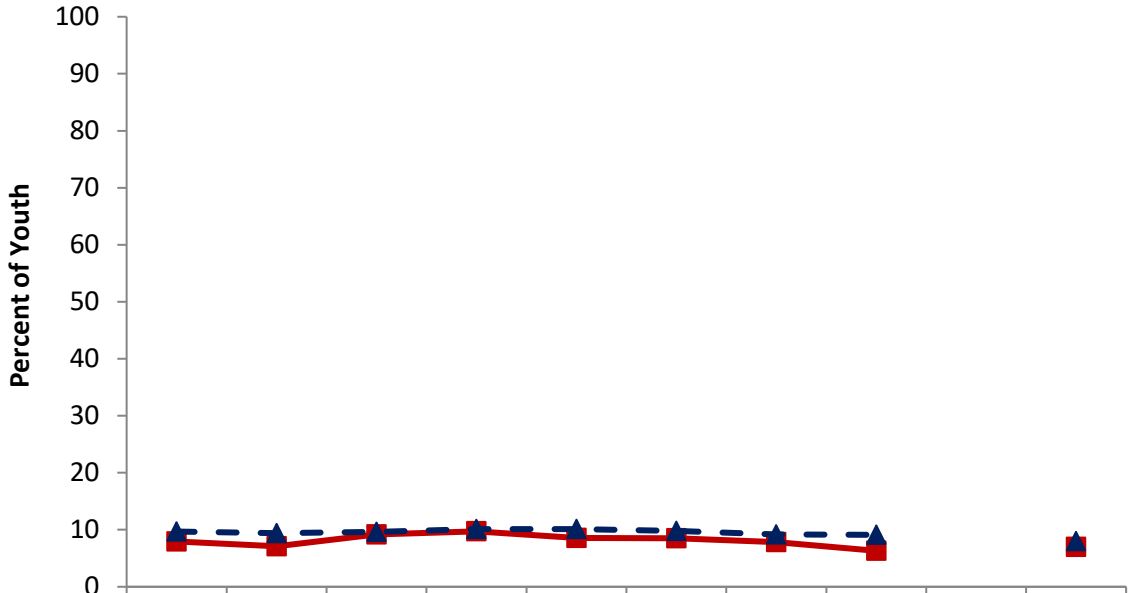
Figure 89: Past 30 day Illicit Drug Use among Youth by Grade and Drug Type, IYS, 1999-2016



	Grade 6	Grade 8	Grade 11	All Grades
Amphetamine	1	1	2	1
Cocaine	1	1	2	1
Inhalant	3	3	2	2
Methamphetamine	0	1	1	1

Figure 90 illustrates the percentage of youth aged 12 to 17 reporting any illicit drug use in the past 30 days. The overall national and state rates of illicit drug use in the past 30 days did not differ significantly, nor were significant differences noted in the previous years. In 2016, 7 percent of Iowans aged 12 to 17 reported illicit drug use in the past 30 days compared to 8 percent nationally (Figure 95). In 2010, the 10 percent rate of illicit drug use in the past 30 days was similar for both Iowa and the nation (Figure 90).

Figure 90: Past 30 day Any Illicit Drug Use among Youth, Aged 12 to 17, NSDUH, 2007-2016

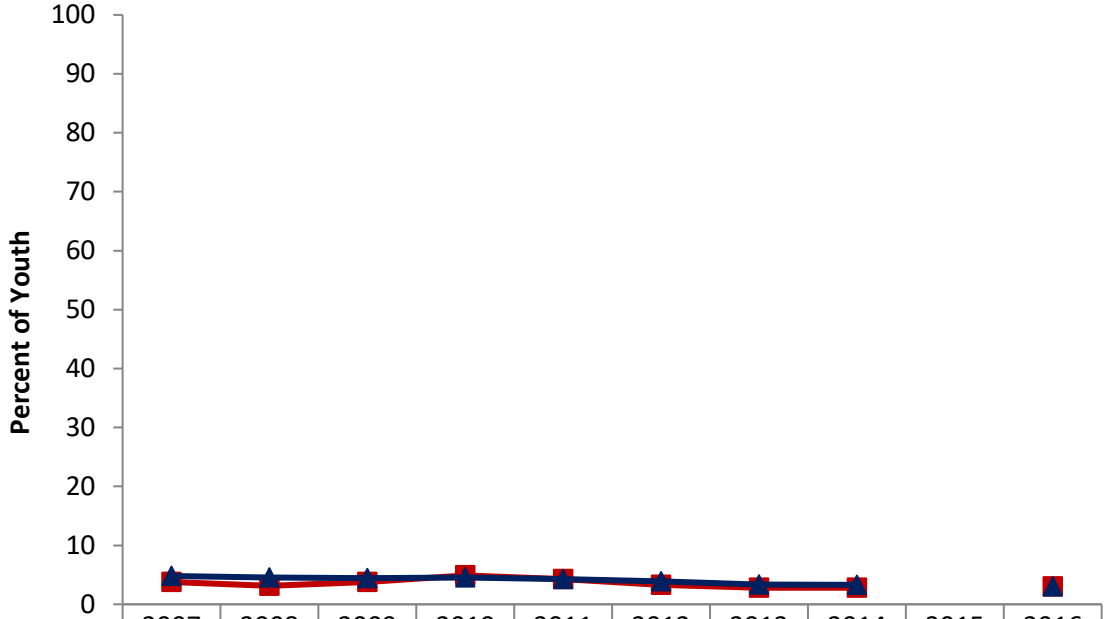


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	8	7	9	10	9	9	8	6		7
U.S.	10	9	10	10	10	10	9	9		8

Note: In 2015, changes were made to the NSDUH questionnaire and data collection procedures that do not allow comparisons between 2015, previous and subsequent years for any illicit drug use outcome. Therefore, the 2015 data was excluded from this epidemiological profile.

Figure 91 illustrates the percentage of youth aged 12 to 17 reporting any illicit drug other than marijuana in the past 30 days. The overall national and state rates of illicit drug other than marijuana in the past 30 days did not differ significantly, nor were there significant differences in the previous years. Overall, the percentage of Iowans aged 12 to 17 who reported illicit drug use other than marijuana in the past 30 days was similar to the nation rate in 2009-2011 and 2013-2016 (Figure 91). In 2016, 3 percent of Iowa youth reported illicit drug use other than marijuana in the past 30 days, which is similar to the national rate (Figure 91).

Figure 91: Past 30 Day Illicit Drug Use Other than Marijuana, Aged 12 to 17, NSDUH, 2007-2016



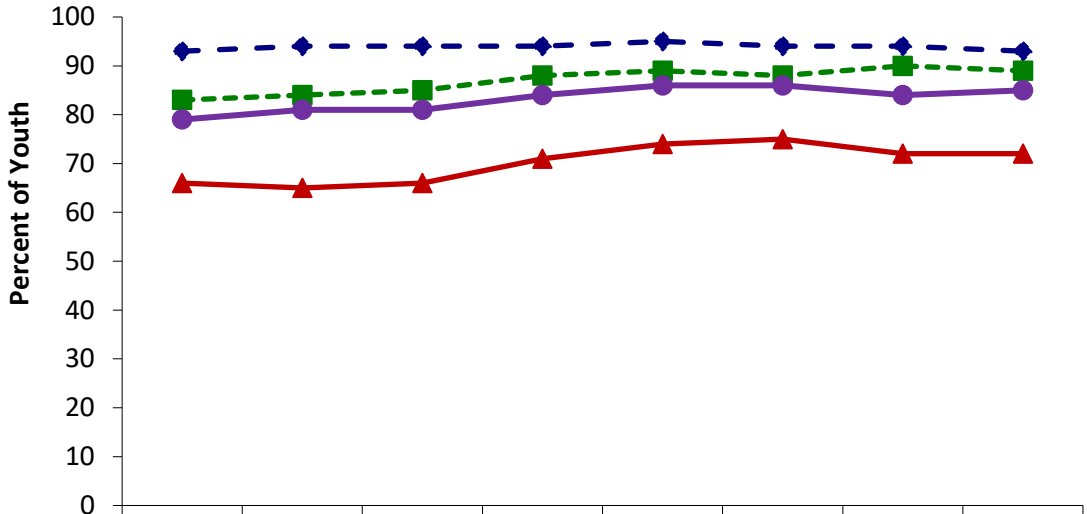
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	4	3	4	5	4	3	3	3		3
U.S.	5	5	4	5	4	4	3	3		3

Note: In 2015, changes were made to the NSDUH questionnaire and data collection procedures that do not allow comparisons between 2015, previous and subsequent years for illicit drug use other than marijuana outcome. Therefore, the 2015 data was excluded from this epidemiological profile.

Youth Perception of Peer Illicit Drug Use Norm

Figure 92 illustrates peer normative beliefs regarding illicit drug use by grade. Youth perception of peer norm beliefs regarding illicit drug use was evaluated in the IYS in all three grades (6, 8, and 11) with the following question: *"How wrong would most of the students in your school (not just your best friends) feel it would be for you to use any illegal drug other than alcohol, cigarettes, or marijuana?"* In 2016, 93 percent of sixth grade youth believed peers regarded illicit drug use as *Very Wrong-Wrong* followed by 89 percent of eighth grade youth and 72 percent of eleventh grade youth (Figure 92). From 2002 to 2016, the percentage of youth reporting peers believed illicit drug use was *Very Wrong-Wrong* increased 4 percent. In 2016, 85 percent of youth in grades 6, 8, and 11 reported peers believed illicit drug use was *Very Wrong-Wrong* compared to 84 percent in 2008, an increase of one percent (Figure 92).

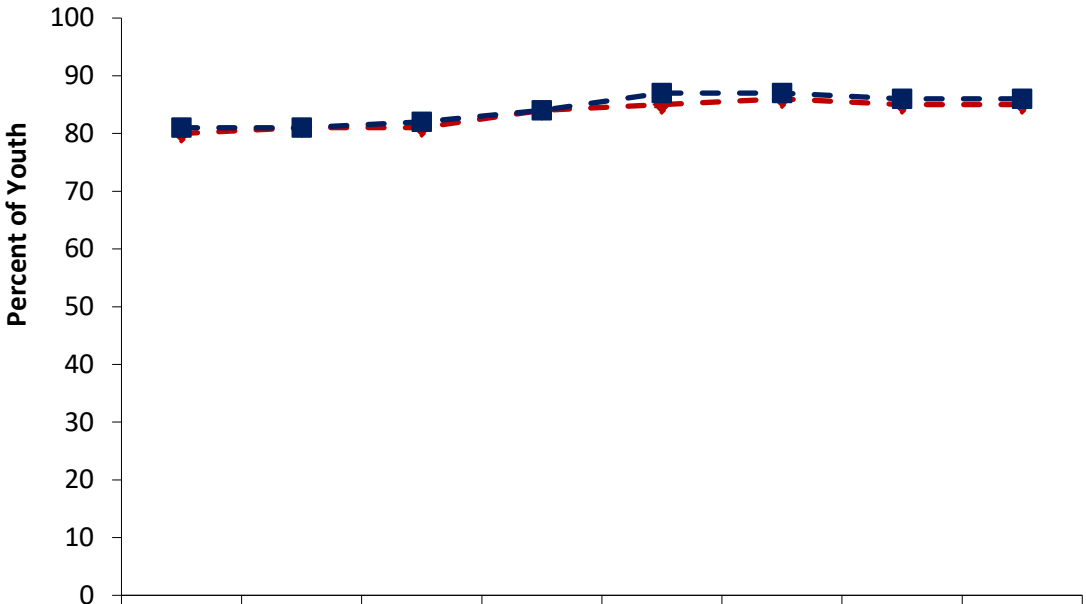
Figure 92: Peer Normative Beliefs Regarding Illicit Drug Use among Youth by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	93	94	94	94	95	94	94	93
Grade 8	83	84	85	88	89	88	90	89
Grade 11	66	65	66	71	74	75	72	72
All Grades	79	81	81	84	86	86	84	85

Figure 93 illustrates the percentage of youth reporting peer normative beliefs regarding illicit drug use by sex. The 2016 IYS data showed that 86 percent of females reported peers regarded illicit drug use as *Very Wrong-Wrong* compared to 85 percent of males (Figure 93). In 2002 and 2008, both sexes tied (i.e., 81 percent, 84 percent, respectively) (Figure 93). In 2014, 85 percent of males and 86 percent of females reported peers regarded illicit drug use as *Very Wrong-Wrong* (Figure 93).

Figure 93: Peer Normative Beliefs Regarding Illicit Drug Use among Youth by Sex, IYS, 2002-2016

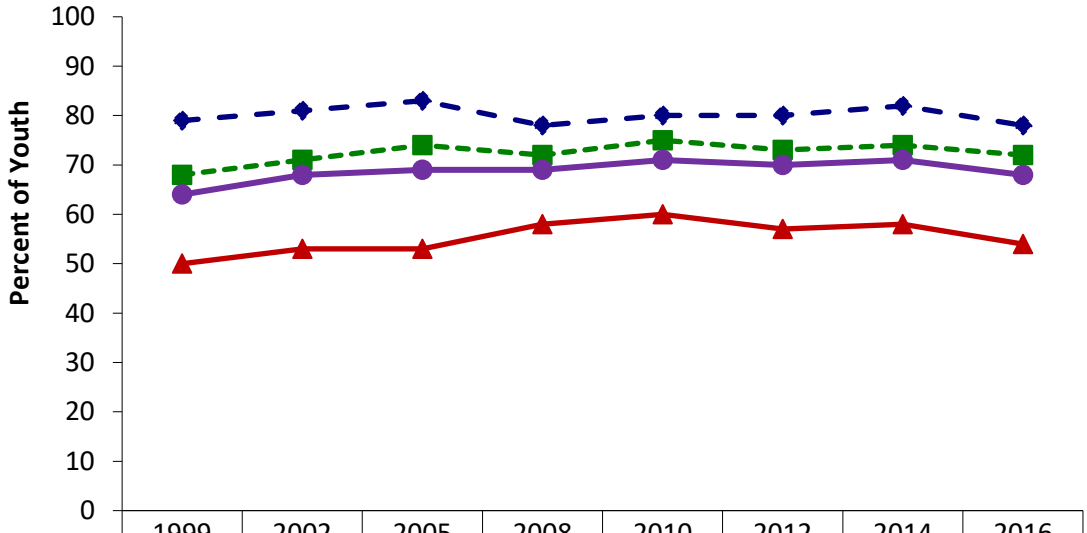


	1999	2002	2005	2008	2010	2012	2014	2016
Male	80	81	81	84	85	86	85	85
Female	81	81	82	84	87	87	86	86

Youth Perceived Availability of Illicit Drugs

Figure 94 illustrates the percentage of youth reporting illicit drug availability by grade level. The IYS queried students about illicit drug availability in the neighborhood or community. The question asked was: "*In your neighborhood or community, how difficult do you think it would be for a kid your age to get any other illegal drug (cocaine, etc.)*?" Since 2008, rates of perceived illicit drug availability have steadily increased for all grade levels. In 2016, 54 percent of youth in grade 11 reported illicit drug availability as *Very Hard-Hard* compared to 72 percent of youth in grade 8 and 78 percent in grade 6 (Figure 94). The IYS data showed that eleventh grade students, compared to sixth and eighth grade students, reported the lowest percentage of illicit drug availability as *Very Hard-Hard*. Since 2008, the perception of illicit drug availability decreased 7 percent for eleventh graders, but remained the same for sixth and eighth graders. Overall, 68 percent of students reported illicit drug availability in the neighborhood or community as *Very Hard-Hard* (2016).

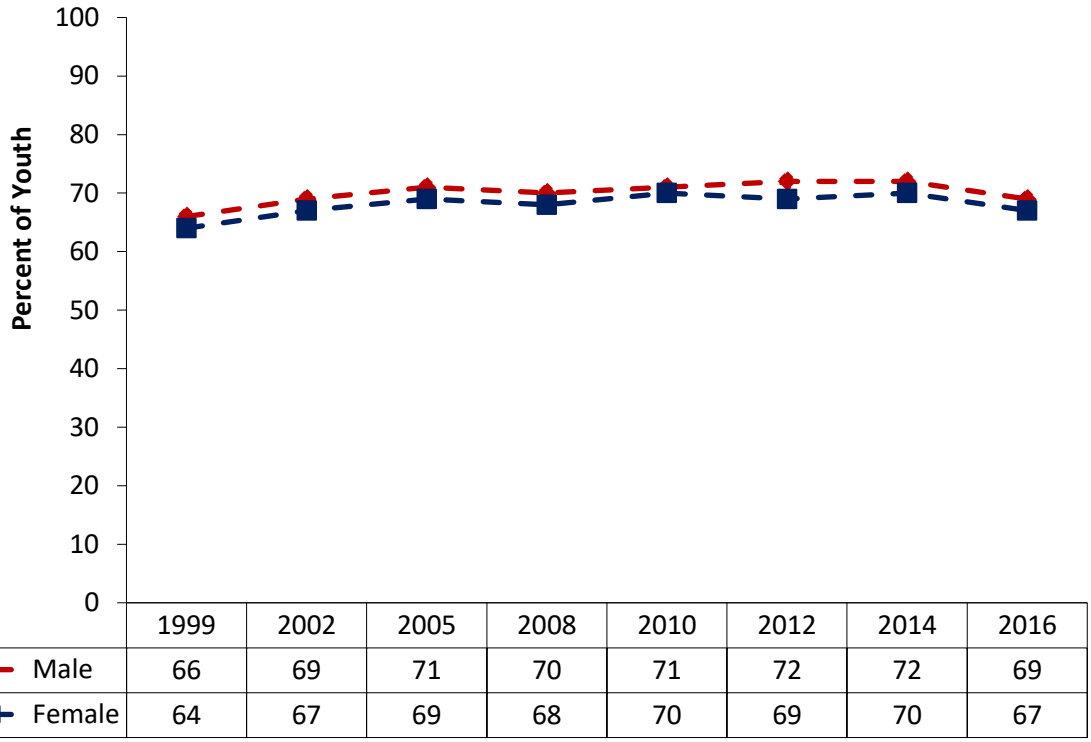
Figure 94: Neighborhood or Community Illicit Drug Availability among Youth by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	79	81	83	78	80	80	82	78
Grade 8	68	71	74	72	75	73	74	72
Grade 11	50	53	53	58	60	57	58	54
All Grades	64	68	69	69	71	70	71	68

Figure 95 illustrates the percentage of youth reporting illicit drug availability by sex. In 2016, 69 percent of males and 67 percent of females reported neighborhood or community illicit drug availability was *Very Hard-Hard* compared to 70 percent of males and 68 percent of females in 2008 (Figure 95). Results showed that a smaller percentage of female students reported community or neighborhood availability of illicit drugs was *Very Hard-Hard* compared to male students.

Figure 95: Other Illicit Drug Availability in the Neighborhood or Community among Youth by Sex, IYS, 1999-2016

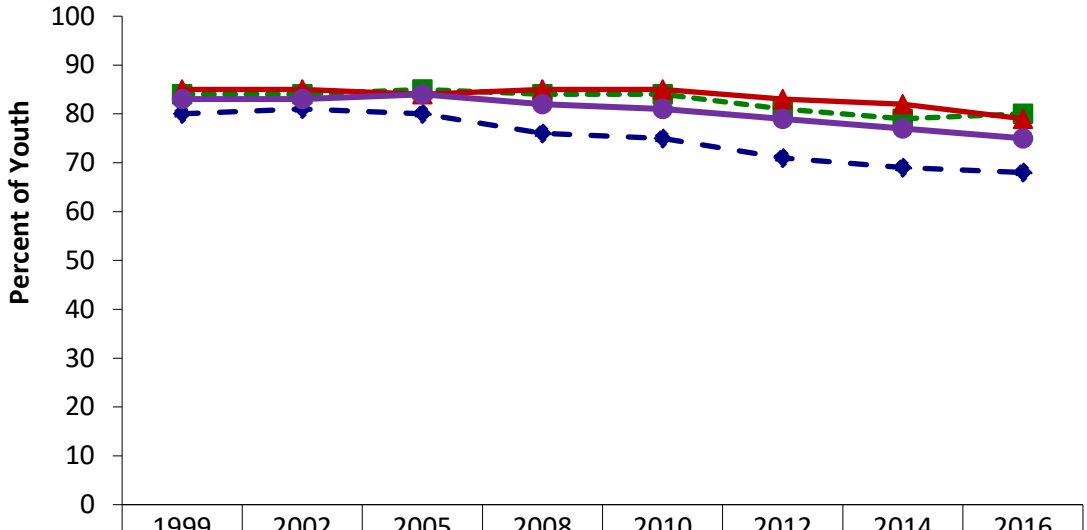


	1999	2002	2005	2008	2010	2012	2014	2016
Male	66	69	71	70	71	72	72	69
Female	64	67	69	68	70	69	70	67

Youth Illicit Drug Use Risk Perception

Figure 96 illustrates the percentage of youth reporting illicit drug use posed self-harm risk by grade. Illicit drug use self-harm risk was evaluated in all three grades (6, 8, and 11) with the following question: *"How much do you think you risk harming yourself (physically or otherwise) if you use any other illegal drug once a week?"* In 1999, 80 percent of grade 6 respondent indicated *Great-Moderate* Risk of self-harm compared to 68 percent in 2016 (Figure 96). For the same period, eleventh grade students reported a significant decrease (i.e., 85 percent to 79 percent), respectively (Figure 96). Overall, the IYS found a 10 percent decrease in the perception of *Great-Moderate* self-harm risk with illicit drug use for all grade levels.

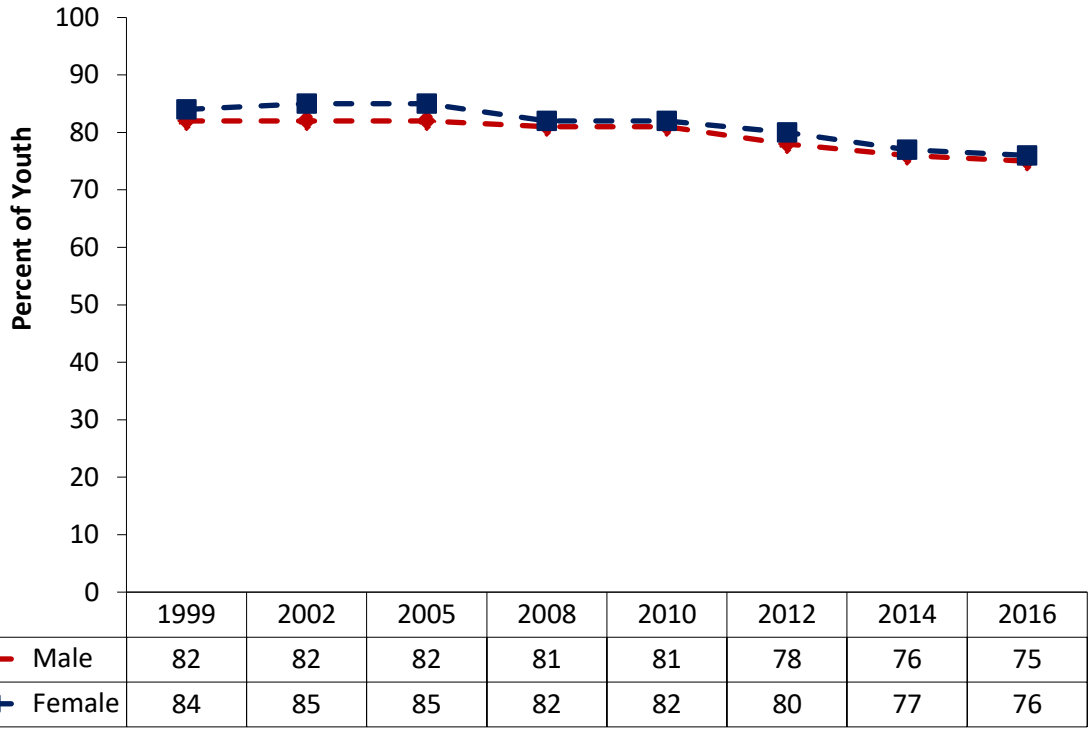
Figure 96: Percent of Youth Reporting Other Illicit Drug Use Risk Perception among Youth by Grade, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Grade 6	80	81	80	76	75	71	69	68
Grade 8	84	84	85	84	84	81	79	80
Grade 11	85	85	84	85	85	83	82	79
All Grades	83	83	84	82	81	79	77	75

Figure 97 illustrates the percentage of youth reporting risk of self-harm with weekly illicit drug use by sex. In 1999, 84 percent of female students reported *Great-Moderate Risk* compared to 76 percent in 2016 (Figure 97). In the same period, 82 percent (1999) and 75 percent (2016) of males reported the risk of self-harm was *Great-Moderate* with illicit drug self-harm, respectively (Figure 97). A greater percentage of female students, compared to male students, indicated the risk of self-harm with illicit drug use was *Great-Moderate*.

Figure 97: Self-harm Risk with Illicit Drug Use among Youth by Sex, IYS, 1999-2016



	1999	2002	2005	2008	2010	2012	2014	2016
Male	82	82	82	81	81	78	76	75
Female	84	85	85	82	82	80	77	76

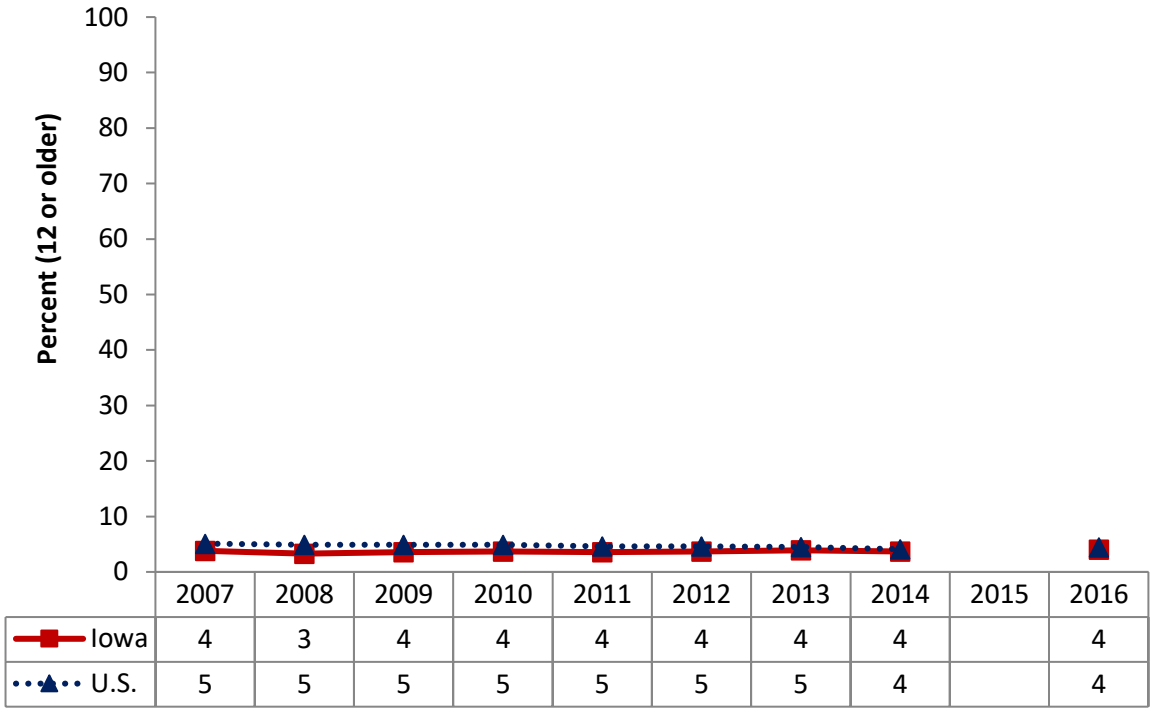
OVER THE COUNTER AND PRESCRIPTION MEDICATIONS

Adult Consumption Patterns

Prescription Medications Misuse

Figure 98 illustrates the percentage of people aged 12 or older reporting prescription medication misuse in the past year. Misuse of four categories of prescription drugs (i.e., pain relievers, tranquilizers, stimulants, and sedatives) is defined as "…use in any way not directed by a doctor, including use without a prescription of one's own; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor (NSDUH, 2018)." The overall national and state rates of prescription medication misuse in the past year did not differ significantly, nor were there significant differences in the previous years (Figure 98). Prescription medication misuse in the past year has remained relatively stable for both Iowa and the nation since 2007.

Figure 98: Prescription Medication Misuse in the Past Year, Aged 12 or Older, NSDUH, 2007-2016

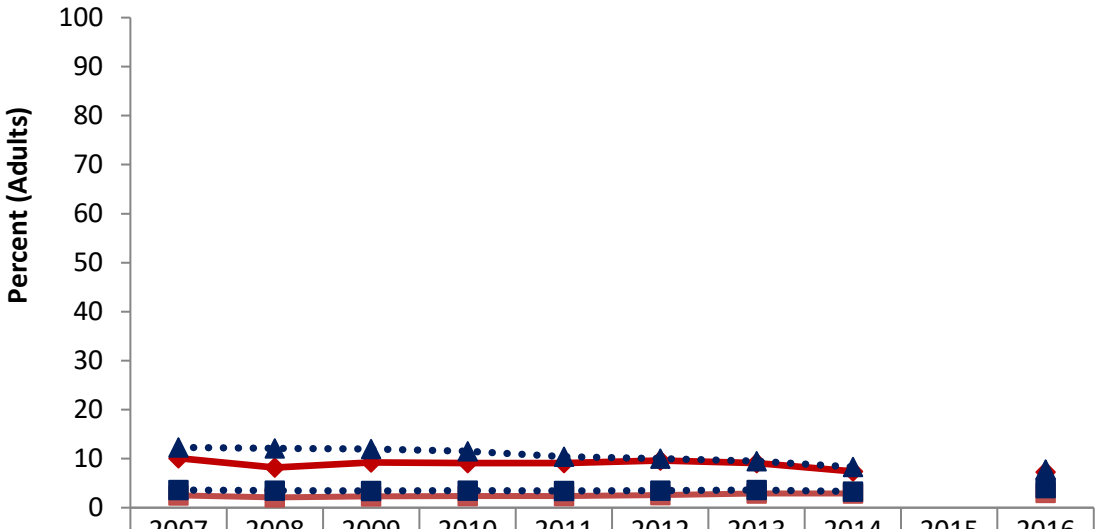


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa	4	3	4	4	4	4	4	4		4
U.S.	5	5	5	5	5	5	5	4		4

Note: In 2015, changes were made to the NSDUH questionnaire and data collection procedures that do not allow comparisons between 2015, previous and subsequent years for prescription medication misuse outcome. Therefore, the 2015 data was excluded from this epidemiological profile.

Figure 99 illustrates the percentage of adults age 18-25 and 26 or older reporting prescription medication misuse in the past year. Misuse of four categories of prescription drugs (pain relievers, tranquilizers, stimulants, and sedatives) is defined as use in any way not directed by a doctor, including use without a prescription of one's own; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. In 2016, about 255,067 Iowa adults aged 18-25 and 610,832 Iowa adults 26 or older reported prescription medications misuse in the past year. In 2016, Iowa adults aged 18-25 had the lowest rate (7 percent) of prescription medications misuse in the past year compared to the national rate of 8 percent (Figure 99). In the same period, Iowans aged 26 or older also reported the lowest percentage (3 percent) of prescription medications misuse in the past year compared to the national rate (4 percent; Figure 99).

Figure 99: Past Year Prescription Medication Misuse among Adults, NSDUH, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iowa - 18-25	10	8	9	9	9	10	9	7		7
Iowa - 26+	3	2	2	2	2	3	3	3		3
U.S. - 18-25	12	12	12	12	10	10	10	8		8
U.S. - 26+	4	4	3	4	3	4	4	3		4

Note: In 2015, changes were made to the NSDUH questionnaire and data collection procedures that do not allow comparisons between 2015, previous and subsequent years for prescription medication misuse outcome. Therefore, the 2015 data was excluded from this epidemiological profile.

Opioid-Related Poisoning

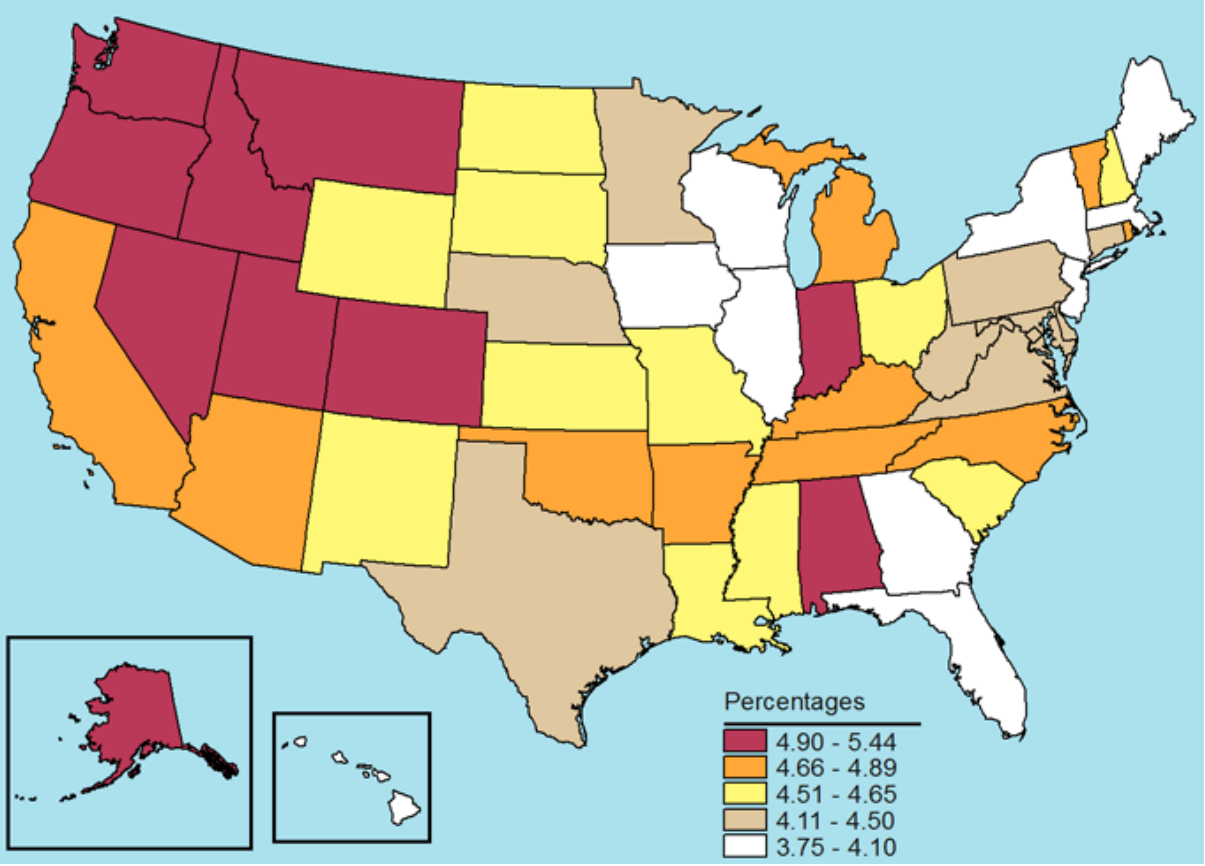
Table 5 illustrates the 2016 numbers and crude rates for Emergency Department (ED) visits, hospitalizations and mortality for opioid-related poisoning by age and sex. The ED visits and hospitalization data come from the Inpatient and Outpatient data, and mortality data come from the Iowa Vital Records. In 2016, the number of opioid-related poisoning ED visits was 363 (11.6 per 100,000 population) for all ages. People 65 or older had the lowest rates of opioid-related poisoning ED visits, hospitalizations, and mortality. Opioid-related poisoning hospitalization and mortality were higher among people aged 45 to 64 years compared to all other age groups. Opioid-related poisoning ED visits were highest among females (Table 5). However, the rate of opioid-related poisoning mortality was higher among males (Table 5).

Table 5: Rate of Opioid-Related Emergency Department Visits, Hospitalizations and Mortality by Age and Sex, IDPH, 2016

Age (in years)	Emergency Department Visits		Hospitalizations		Mortality	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<25	109	10.4	33	3.1	24	2.3
25-44	104	13.6	91	11.9	77	10.1
45-64	101	12.5	138	17.1	68	8.4
65+	49	9.5	53	10.3	7	1.4
All Age Groups	363	11.6	315	10.0	176	5.6
Sex						
Female	202	12.8	180	11.4	62	3.9
Male	161	10.3	135	8.7	114	7.3

Figure 100 illustrates the percentage of adults 12 or older reporting pain reliever misuse in the past year. The color legend below the map illustrates the frequency distribution of the percentages of people reporting pain reliever misuse in the past year in the United States. Iowa was among states in the lowest group (3.7 to 4.1 percent) that included Florida, Georgia, Hawaii, Illinois, Maine, Massachusetts, New Jersey, New York, and Wisconsin (Figure 100).

Figure 100: Past Year Pain Reliever Misuse, Aged 12 or Older, NSDUH, 2016



All Drug-Related Poisoning

Table 6 illustrates the 2016 numbers and crude rates for Emergency Department (ED) visits, hospitalizations and mortality for all drug-related poisoning by age and sex. The highest number and rate of all drug-related poisoning ED visits was among Iowans aged 25 and younger (i.e. 2,394; 277.4 per 100,000 population); the second highest group was Iowans 25 to 44 years of age (i.e., 1,311 ;172.1 per 100,000). All drug-related poisoning hospitalization were higher among females and all drug-related deaths were higher among males.

Table 6: All Drug-Related Emergency Department Visits, Hospitalizations and Mortality by Age and Sex, 2016

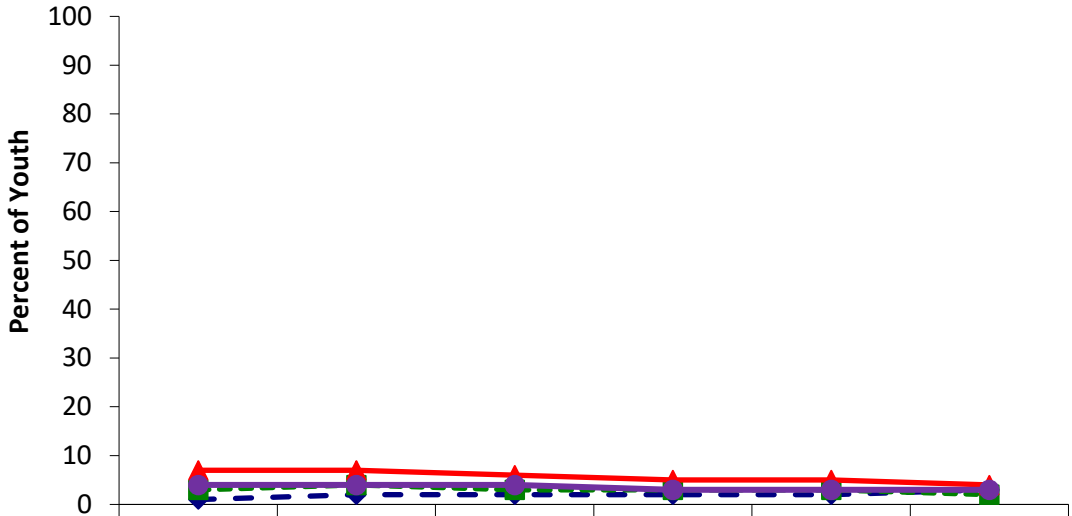
Age (in years)	Emergency Department Visits		Hospitalizations		Mortality	
	Number	Rate per 100,000	Number	Rate per 100,000	Number	Rate per 100,000
<25	2,394	277.4	843	80.1	31	2.9
25-44	1,311	172.1	1,127	147.9	128	16.8
45-64	817	101.4	790	98.0	132	16.4
65+	361	70.2	212	41.2	16	3.1
All Age Groups	4,883	155.8	2,972	94.8	307	9.8
Sex						
Female	2,876	182.5	1,825	115.8	118	7.5
Male	2,007	128.7	1,147	73.6	189	12.1

Youth Over-the-Counter Medications Consumption Patterns

Youth Over-the-Counter Medications Misuse

Figure 101 illustrates the percentage of youth reporting over-the-counter medication misuse in the past 30 days by grade level. Youth participating in the IYS were asked: *"In the past 30 days, on how many days have you used over the counter medications different from the directions?"* Over-the-counter medication misuse among Iowa youth in grade 6 increased from 2005 (1 percent) to 2016 (3 percent) (Figure 101). During the same time period, among eighth grade students, the percentage of over-the-counter medication misuse decreased from 3 percent to 2 percent; among eleventh grade youth 7 percent to 4 percent (Figure 101). From 2005 to 2016, the rate of over-the-counter medication misuse in the past 30 days decreased 25 percent for all grades.

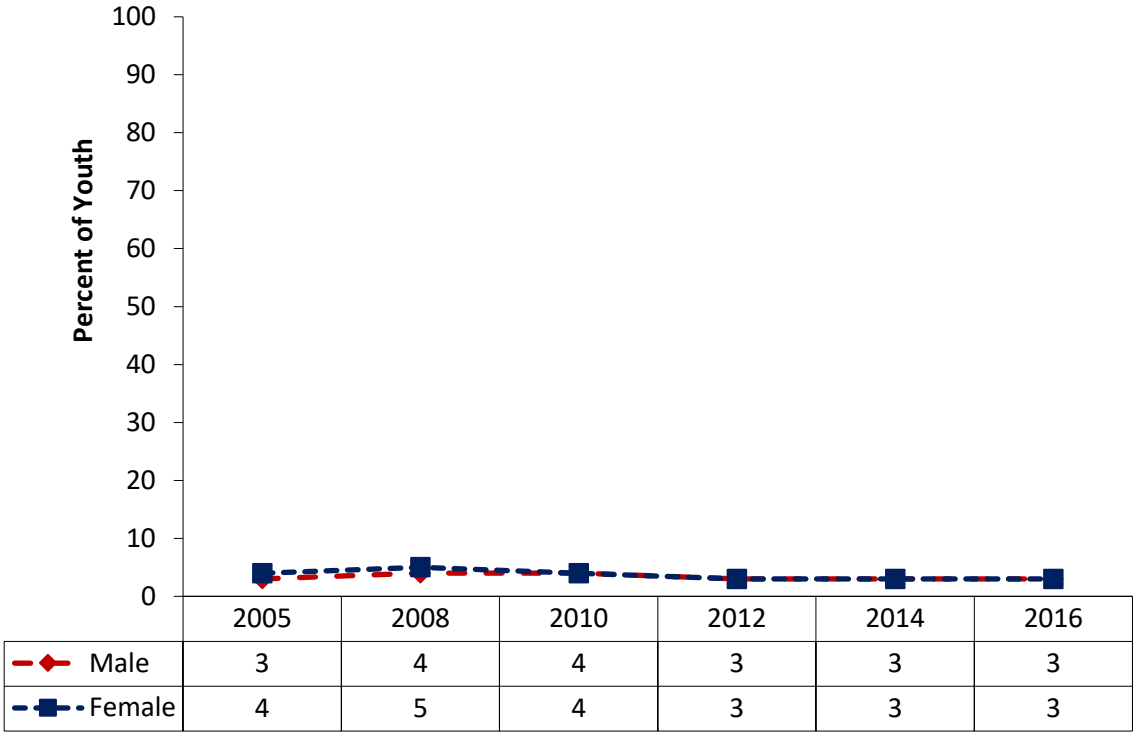
Figure 101: Past 30 Day Over-the-Counter Medication Misuse among Youth by Grade, IYS, 2005-2016



	2005	2008	2010	2012	2014	2016
Grade 6	1	2	2	2	2	3
Grade 8	3	4	3	3	3	2
Grade 11	7	7	6	5	5	4
All Grades	4	4	4	3	3	3

Figure 102 illustrates the percentage of youth reporting over-the-counter medication misuse in the past 30 days by sex. The 2010-2016 IYS data found that males and females had similar rates of over-the-counter medication misuse in the past 30 days. In 2005 and 2008, females had slightly higher rates of over-the-counter medication misuse in the past 30 days. In 2016, 3 percent of males and females reported over-the-counter medication misuse in the past 30 days (Figure 102).

Figure 102: Past 30 Day Over-the-Counter Medication Misuse among Youth by Sex, IYS, 2005-2016

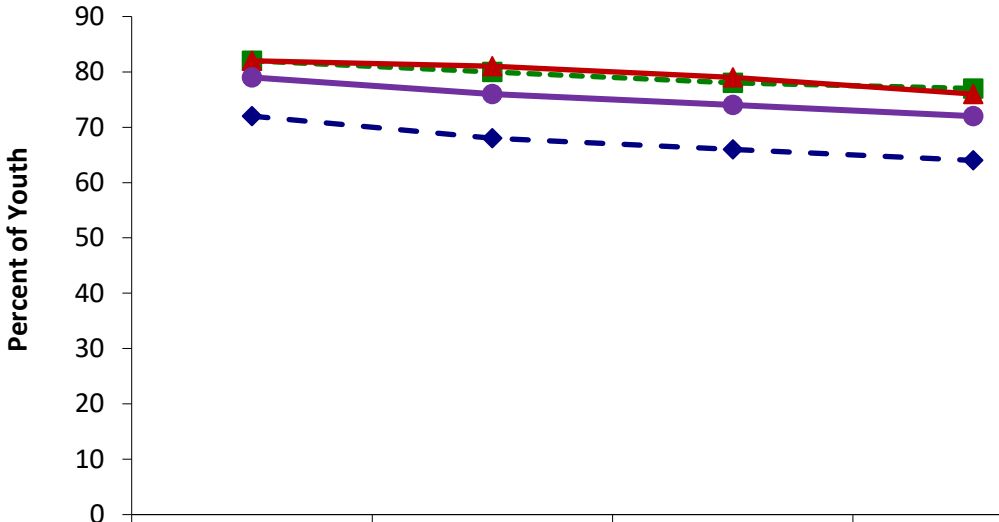


	2005	2008	2010	2012	2014	2016
Male	3	4	4	3	3	3
Female	4	5	4	3	3	3

Youth Over-the-Counter Medications Risk Perception

Figure 103 illustrates the percentage of youth reporting risk of self-harm with the misuse of over-the-counter medication by grade level. The IYS asked the perception of over the counter medications misuse as great-moderate risk. The question asked was *"How much do you think you risk harming yourself (physically or otherwise) if you use over the counter medications different from the directions?"* In 2010, 72 percent of sixth grader students indicated a Great-Moderate risk of self-harm compared to 64 percent in 2016 (Figure 103). Students in grade 11 reported a decrease during the same timeframe (i.e., 82 percent to 76 percent, respectively) (Figure 103). Overall, the IYS demonstrated a 9 percent decrease in risk of self-harm from over-the-counter medication misuse for all grade levels.

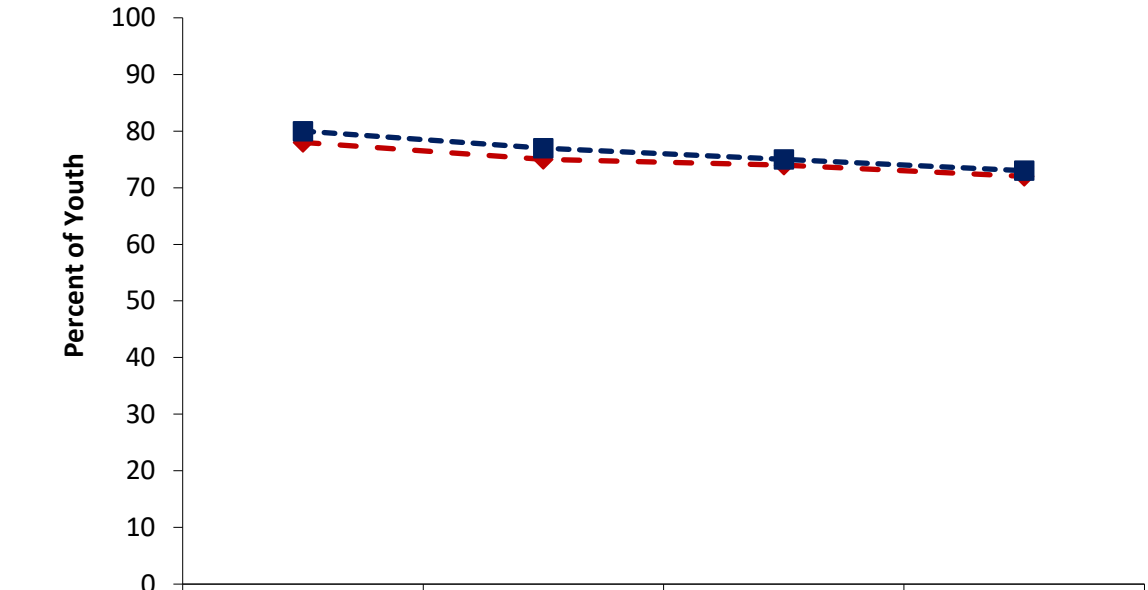
Figure 103: Over-the-Counter Medications Misuse Self-harm Risk among by Sex, IYS, 2010-2016



	2010	2012	2014	2016
Grade 6	72	68	66	64
Grade 8	82	80	78	77
Grade 11	82	81	79	76
All Grades	79	76	74	72

Figure 104 illustrates the risk of self-harm due to the misuse of over-the-counter medication by grade level. The IYS asked the self-harm risk due to over-the-counter medications misuse as Great-Moderate. In 2010, over-the-counter medications misuse self-harm risk among female students was 80 percent compared to 73 percent in 2016 (Figure 104). In the same period, 78 percent of males reported over-the-counter medications misuse risk of self-harm and 72 percent, respectively (Figure 104). A smaller percentage of males reported *Great-Moderate* self-harm risk from over-the-counter medications.

Figure 104: Risk of Self-harm from Ove-the-Counter Medications Misuse among Youth by Sex, IYS, 2010-2016

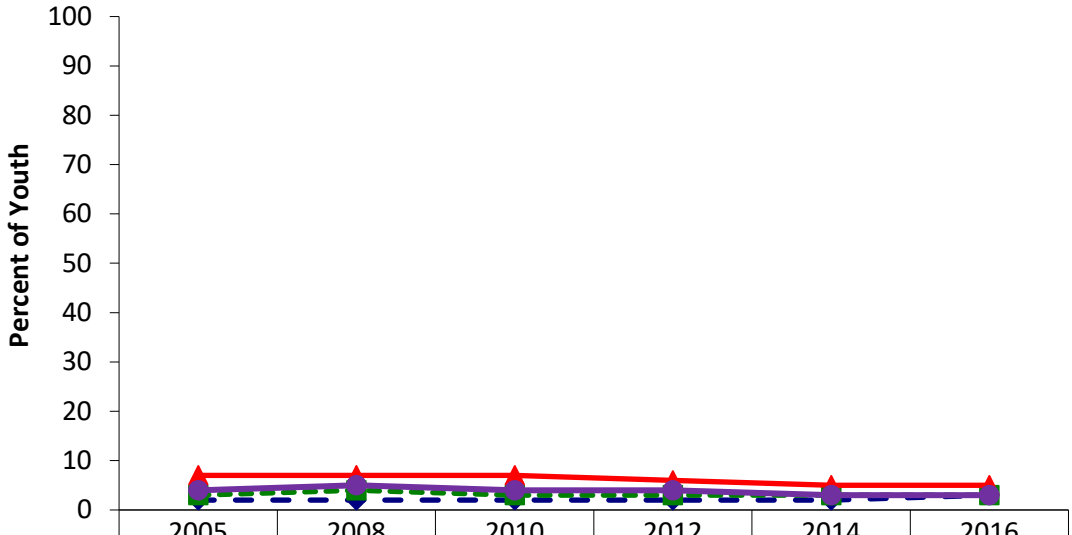


	2010	2012	2014	2016
Male	78	75	74	72
Female	80	77	75	73

Youth Prescription Medication Misuse

Figure 105 illustrates the percentage of youth reporting prescription medication misuse in the past 30 days by grade level. Youth were asked the following question: "*In the past 30 days, on how many days have you used prescription medications (that were prescribed to you by your doctor) different from the directions?*" Prescription medications misuse among sixth grade Iowa youth increased from 2 percent (2005) to 3 percent (2016). In the same period, the percentage of prescription medications misused remained the same for eighth grade students except for a modest increase in 2008. For grade 11 youth, the prescription medications misuse decreased from 7 percent (2005) to 5 percent (2016). From 2005 to 2016, the rate of prescription medication misuse in the past 30 days decreased by 25 percent for all grades. Overall, a greater percentage of eleventh grade youth reported prescription medications misuse in the past 30 days compared to sixth and eighth grade youth.

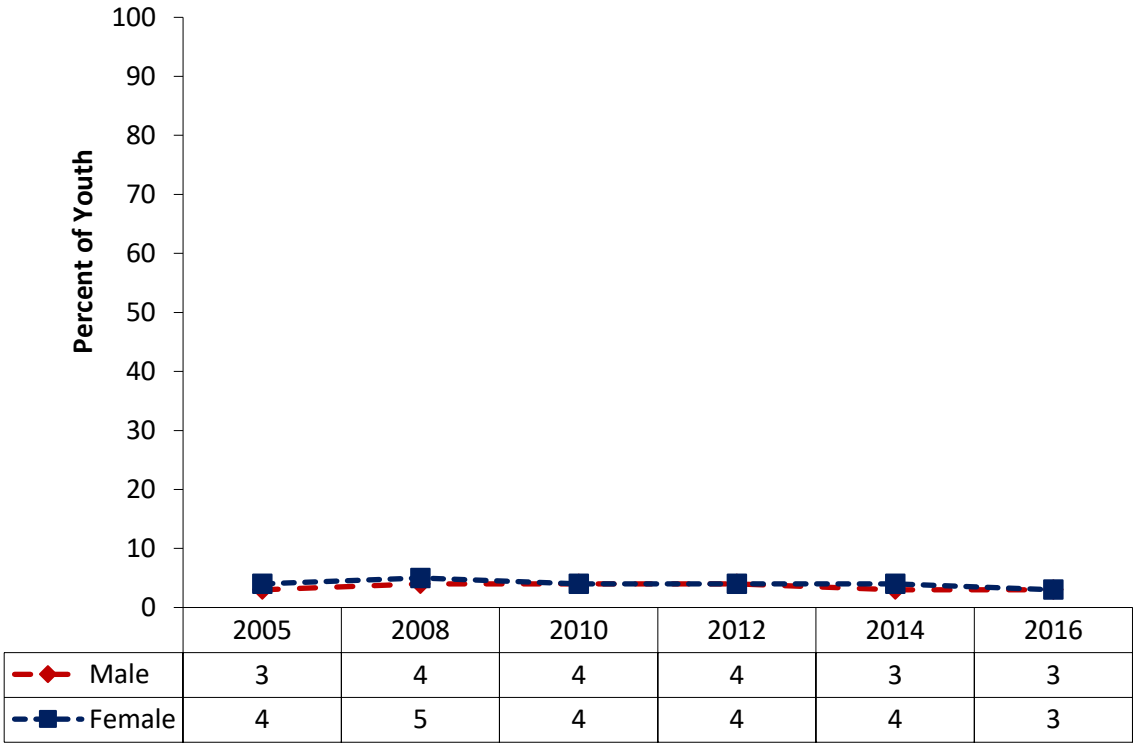
Figure 105: Prescription Medications Misuse among Youth by Grade, IYS, 2005-2016



	2005	2008	2010	2012	2014	2016
Grade 6	2	2	2	2	2	3
Grade 8	3	4	3	3	3	3
Grade 11	7	7	7	6	5	5
All Grades	4	5	4	4	3	3

Figure 106 illustrates the percentage of youth reporting prescription medications misuse in the past 30 days by sex. The 2010-2012 IYS data showed that both males and females had similar rates of prescription medications misuse in the past 30 days. In 2016, males and females also had similar rates of prescription medications misuse in the past 30 days.

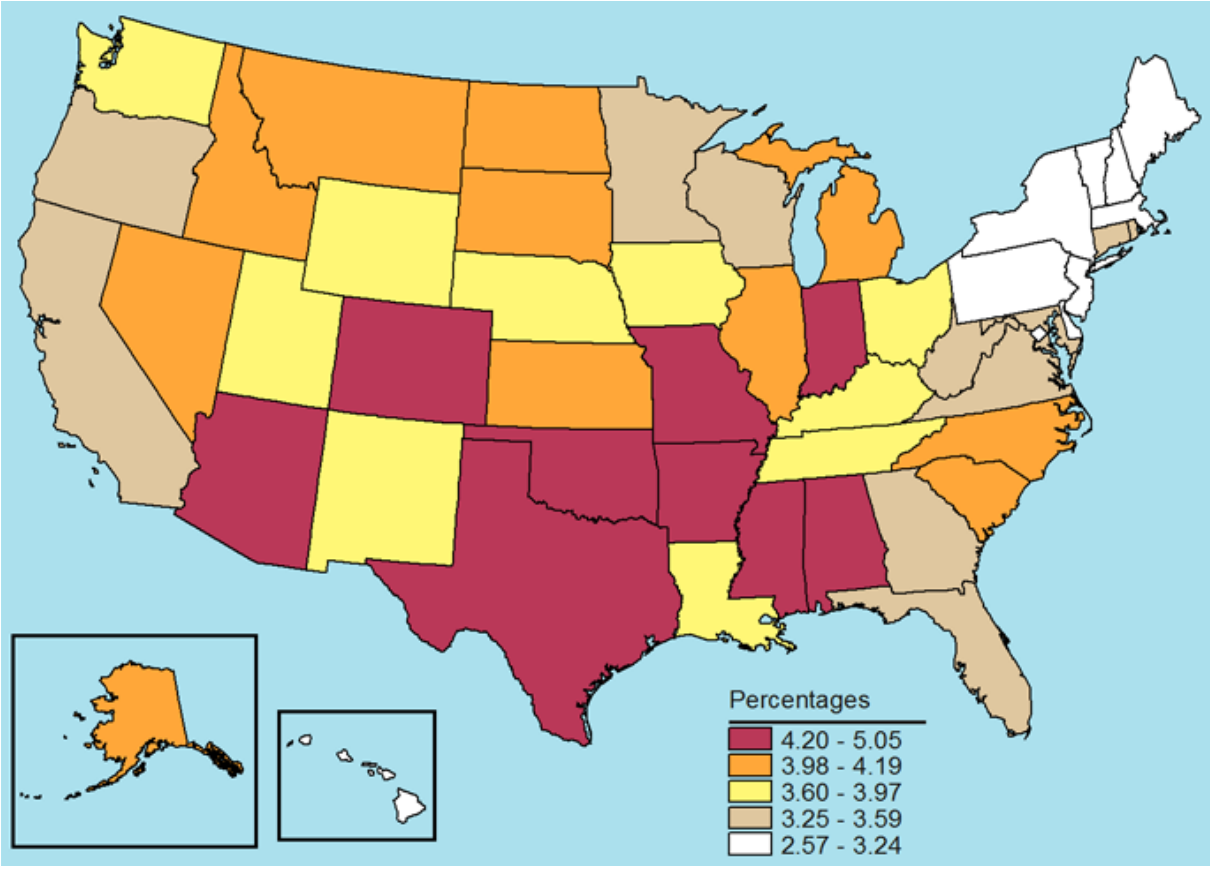
Figure 106: Prescription Medications Misuse among Youth by Sex, IYS, 2002-2016



	2005	2008	2010	2012	2014	2016
Male	3	4	4	4	3	3
Female	4	5	4	4	4	3

Figure 107 illustrates the percentage of youth aged 12 to 17 reporting pain reliever misuse in the past year. The color legend below the map illustrates the frequency distribution of the percentages of youth reporting pain reliever misuse in the past year in the United States. The map categorizes states into five groups based on the magnitude of their percentages. Iowa was among the states in the mid-group (3.6 to 3.9 percent) that included Kentucky, Louisiana, Nebraska, New Mexico, Ohio, Tennessee, Utah, Washington, and Wyoming.

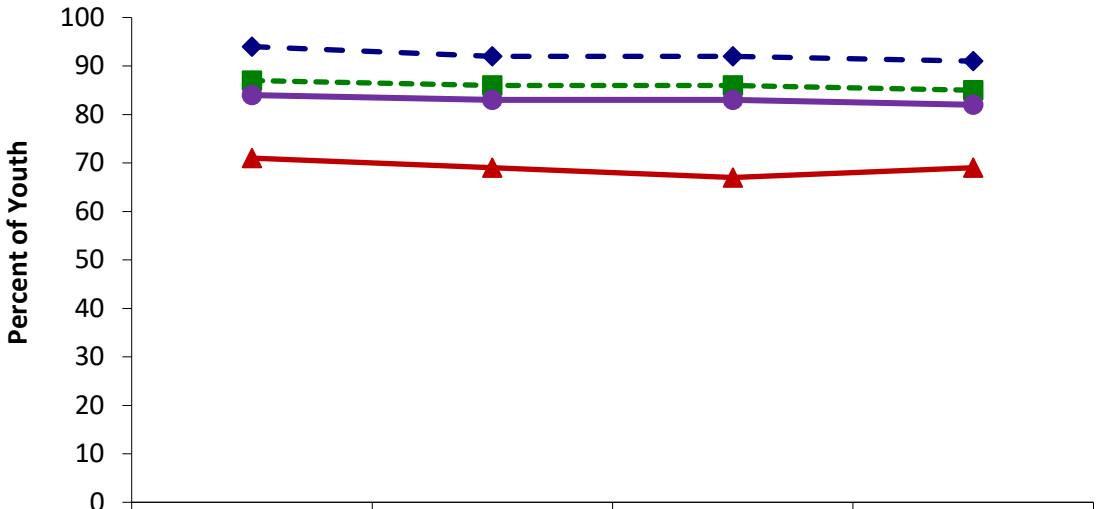
Figure 107: Past Year Pain Reliever Misuse among Youth, Aged 12 to 17, NSDUH, 2016



Youth Prescription Medications Misuse Normative Beliefs

Figure 108 illustrates the percentage of youth reporting normative beliefs by grade. Normative perceptions of peer prescription medication misuse were evaluated in the IYS all three with the following question: *"How wrong would most of the students in your school (not just your best friends) feel it would be for you to use prescription drugs that were not prescribed for you?"* The 2016 IYS data indicated that 91 percent of sixth grade students indicated prescription medication misuse by peers was Very Wrong-Wrong followed by 85 percent of eighth grade students and 69 percent of eleventh grade students (Figure 108). In 2016, 82 percent of students in grades 6, 8, and 11 reported prescription medications misuse by peers as Very Wrong-Wrong compared to 84 percent in 2010, a decrease of 2 percent (Figure 108).

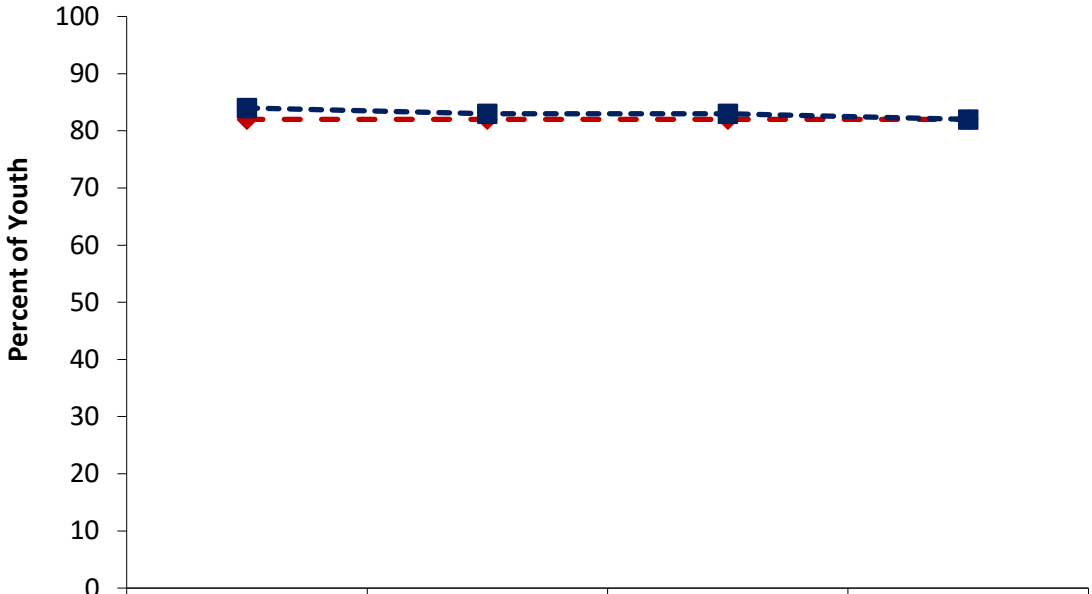
Figure 108: Peer Prescription Medications Misuse among Youth by Grade, IYS, 2010-2016



	2010	2012	2014	2016
Grade 6	94	92	92	91
Grade 8	87	86	86	85
Grade 11	71	69	67	69
All Grades	84	83	83	82

The IYS evaluated youth perception of prescription medication misuse normative beliefs in all three grades by sex. Figure 109 illustrates the percentage of youth reporting on prescription misuse peer normative beliefs by sex. The 2016 IYS data showed that 82 percent of females reported that prescription medications misuse was considered by peers as *Very Wrong-Wrong* compared to 84 in 2010. In the same period, 82 percent of males reported that prescription medications misuse was considered by peers as *Very Wrong-Wrong*. In 2016, both males and females had the same rates (82 percent) of prescription medications misuse peer normative beliefs.

Figure 109: Prescription Medications Misuse Peer Normative Beliefs among Youth by Sex, IYS, 2010-2016

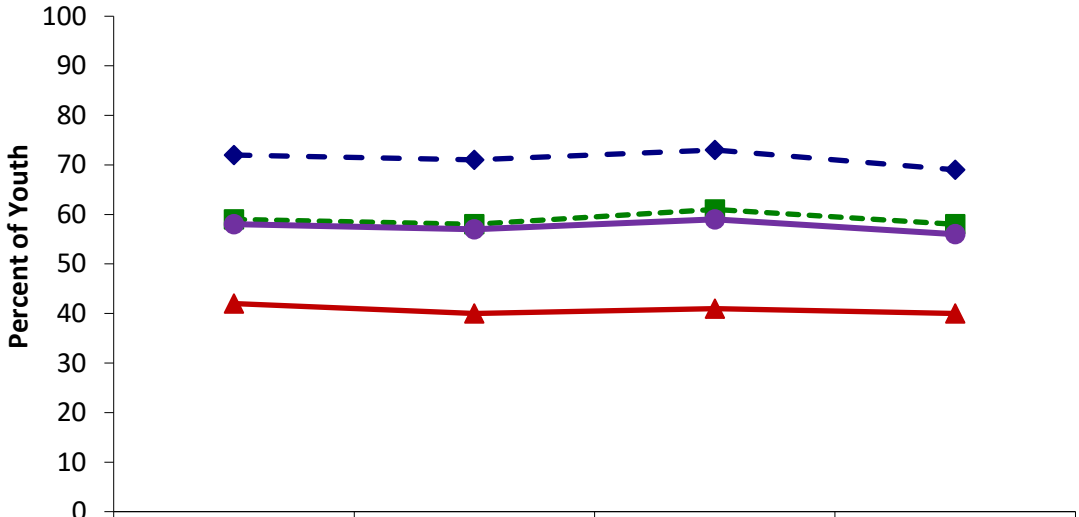


	2010	2012	2014	2016
Male	82	82	82	82
Female	84	83	83	82

Youth Perceived Availability of Prescription Medications

Figure 110 illustrates the percentage of youth reporting availability of prescription medications by grade level. The IYS asked Iowa youth about availability of prescription medications in the neighborhood or community or neighborhood. The question asked was: "*In your neighborhood or community, how difficult do you think it would be for a kid your age to get prescription medication that is not prescribed for you by a doctor or nurse?*" The percent of students reporting easy access to prescription medications has remained relatively consistent since 2010. In 2016, 40 percent of eleventh grade students reported prescription medications were *Very Hard-Hard* to find compared to 58 percent of eighth grade students and 69 percent of sixth grade students (Figure 110). The IYS data showed that a greater percentage of students in grade 11, compared to students in grade 8 and 6, reported prescription medication as *Very Easy-Easy* to find. Since 2010, the perception that prescription medication availability was *Very hard-hard* decreased 5 percent for youth in grade 11, 2 percent grade 8, and 4 percent for grade 6. In 2016, 56 percent of Iowa youth reported prescription medications in the neighborhood or community was *Very Hard-Hard* to find (Figure 110).

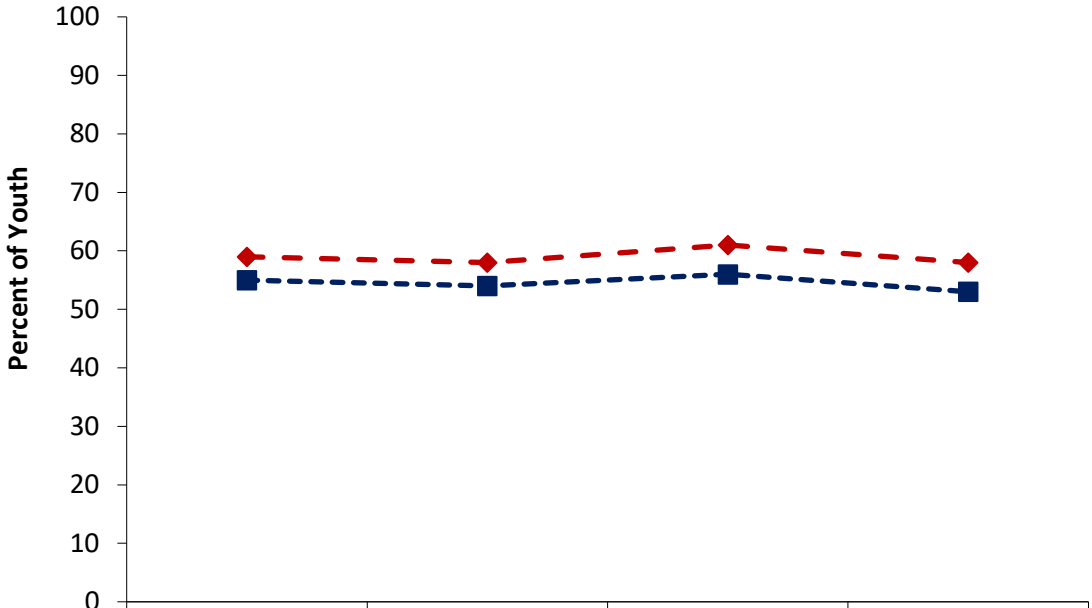
Figure 110: Community and Neighborhood Availability of Prescription Medications among Youth by Grade, IYS, 2010-2016



	2010	2012	2014	2016
Grade 6	72	71	73	69
Grade 8	59	58	61	58
Grade 11	42	40	41	40
All Grades	58	57	59	56

Figure 111 illustrates the percentage of youth reporting neighborhood or community availability of prescription medications by sex. In 2016, 58 percent of males and 53 percent of females reported prescription medications availability was *Very Hard-Hard* compared to 59 percent of males and 55 percent of females in 2010 (Figure 111). Results demonstrated that females were less likely to report availability was *Very Hard-Hard* compared with their male counterparts.

Figure 111: Community and Neighborhood Availability of Prescription Medications among Youth by Sex, IYS, 2010-2016

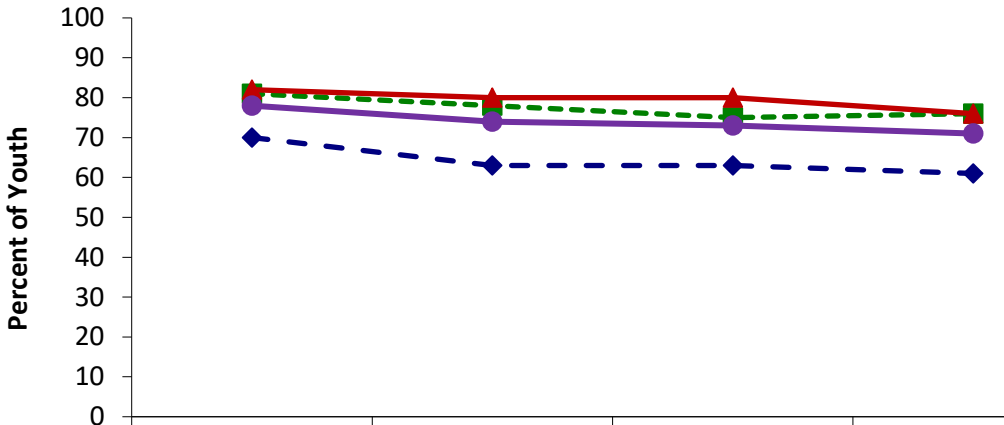


	2010	2012	2014	2016
Male	59	58	61	58
Female	55	54	56	53

Youth Prescription Medications Misuse Risk Perception

Figure 112 illustrates the percentage of youth reporting prescription medication misuse perception by grade. The IYS question asked was: "*How much do you think you risk harming yourself (physically or otherwise) if you use prescription medication (that were prescribed for you by your doctor) different from the directions?"* The prescription medication misuse risk perception for sixth grade students demonstrated a statistically significant. decrease since 2010. In 2010, perception of risk for prescription medications misuse among grade 6 students was 70 percent compared to 61 percent in 2016 (Figure 112). For the same period, youth in grade 11 reported a significant decrease in prescription medication misuse risk perception (i.e., 82 percent to 76 percent, respectively) (Figure 112). Overall, the IYS showed a 7 percent decrease in prescription drug risk perception for all grades.

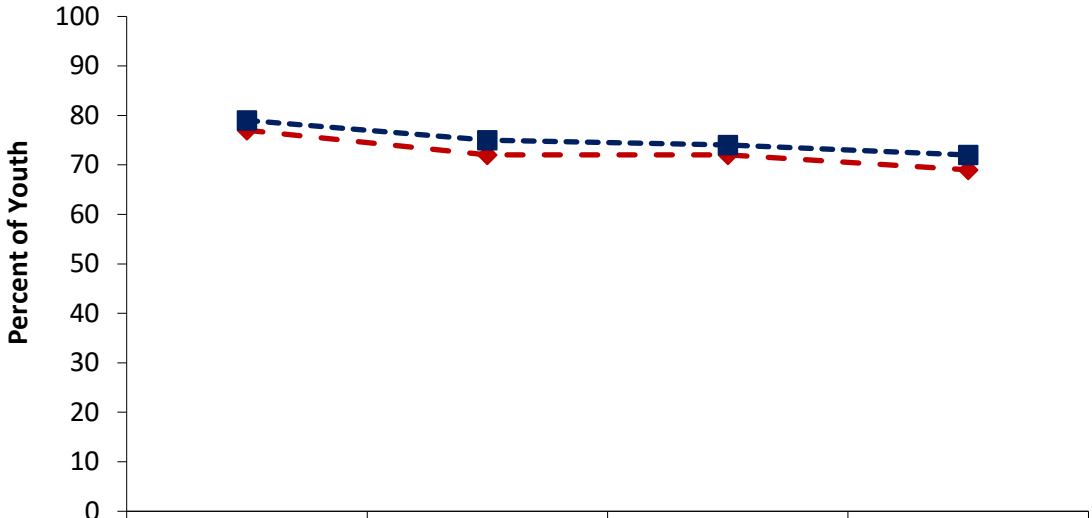
Figure 112: Risk Perception of Prescription Medications Misuse among Youth by Grade, IYS, 2010-2016



	2010	2012	2014	2016
Grade 6	70	63	63	61
Grade 8	81	78	75	76
Grade 11	82	80	80	76
All Grades	78	74	73	71

Figure 113 illustrates the percentage of youth reporting prescription medication misuse risk perception by sex. The IYS posed the perception of risk as *Great-Moderate* risk. In 2010, the perception of risk as *Great-Moderate* among females was 79 percent compared to 72 percent in 2016 (Figure 113). In the same period, the perception of risk as *Great-Moderate* among males was 77 percent compared to 72 percent. A smaller percentage of males perceived prescription medication misuse risk was *Great-Moderate*.

Figure 113: Risk Perception of Prescription Medications Misuse among Youth by Sex, IYS, 2010-2016



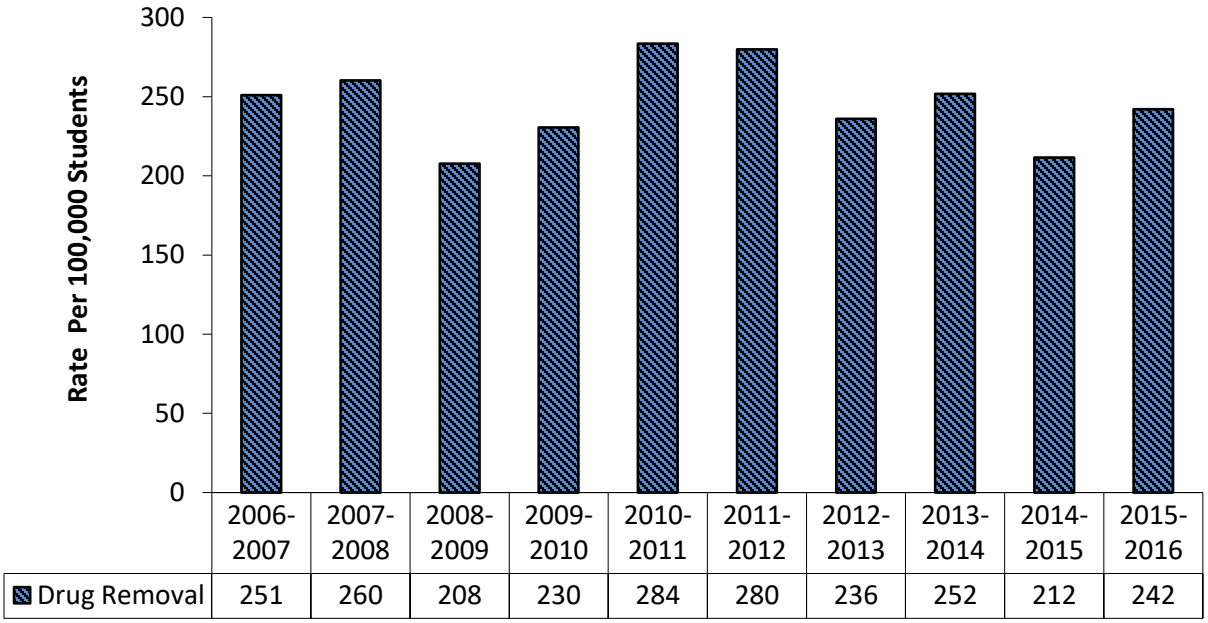
	2010	2012	2014	2016
Male	77	72	72	69
Female	79	75	74	72

CONSEQUENCES OF ILLICIT AND PRESCRIPTION DRUG USE

Educational Consequences

Figure 114 illustrates the rate of student school removal (i.e., suspension, expulsion) due to drug use. The rate of student school removals due to drug use is based on all Iowa public schools. During the 2015-2016 academic year, the rate of school suspensions and expulsions was 242 per 100,000 population, compared to 212 in 2014-2015 school year. School suspensions and removal rate has fluctuated since the 2006-2007 academic year. The rate of drug-related suspension and expulsion was significantly lower in 2008-2009 compared to 2010-2011. In Iowa, the 2010-2011 academic year rate for school removal was higher (284 per 100,000 population) than other school years (Figure 114).

Figure 114: Student Removals Due to Drug Use in All Iowa Public Schools, IDE, 2006-2016

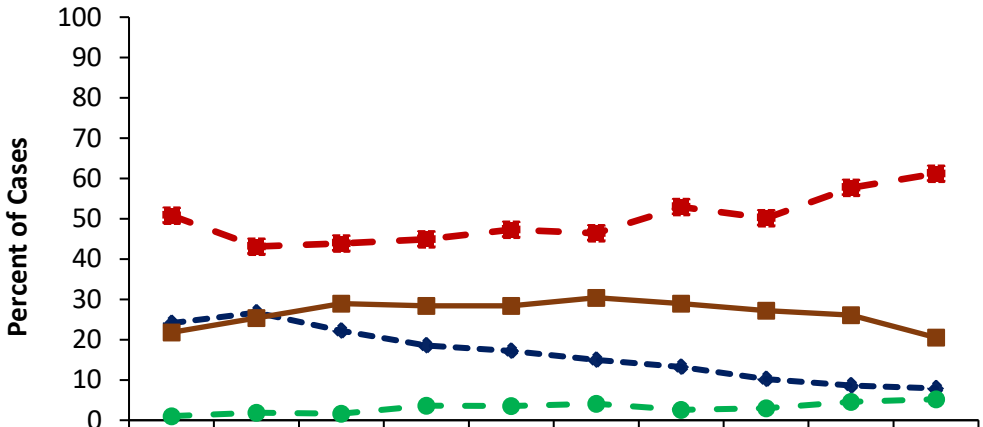


	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Drug Removal	251	260	208	230	284	280	236	252	212	242

Legal Consequences

Figure 115 illustrates the percentage of prison incarceration by drug type. The data includes offenders who were newly admitted to prison with a most serious drug offense (Iowa Correctional Offender Network (ICON; 2016). These are drugs that are identified as having the most significant harm to the users including, in order from most to least harmful, crack, heroin, methamphetamine, and cocaine ICON, 2016). The 2007-2016 ICON data demonstrate that upon prison incarceration, Iowa offenders reported methamphetamine as primary drug of choice more frequently than opioids, marijuana, and cocaine/crack. Between 2007 and 2016, the rate of prison admissions in which methamphetamine was cited as the primary drug of choice increased 20 percent, from 51 percent (2007) to 61 percent (2016) (Figure 115). Since 2007, the rate for opioids as the primary drug of choice increased 400 percent, from 1 percent (2007) to 5 percent (2016). The rate in which marijuana was cited as the primary drug of choice upon incarceration has fluctuated over the past decade; however, cocaine/crack noted as the primary drug of choice decreased by 67 percent, from 24 percent (2007) to 8 percent (2016) (Figure 115).

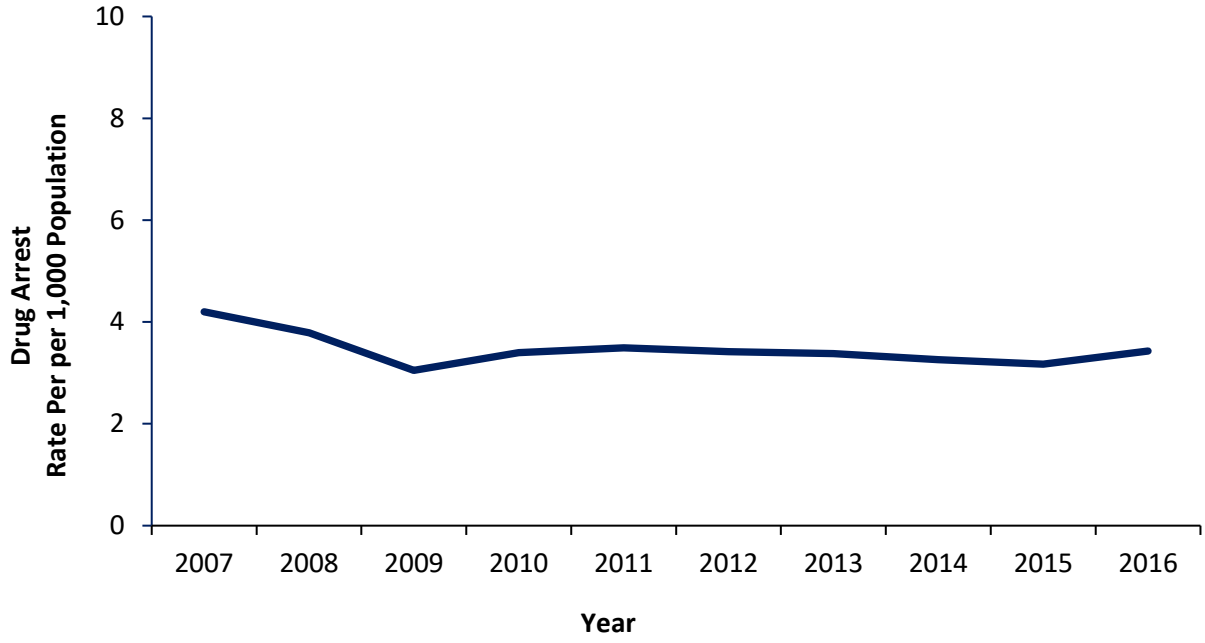
Figure 115: Prison Incarcerations by Primary Drug of Choice, ICON, 2007-2016



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Methamphetamine	51	43	44	45	47	46	53	50	58	61
Cocaine/Crack	24	27	22	19	17	15	13	10	9	8
Marijuana	22	25	29	28	28	30	29	27	26	21
Opioids	1	2	2	4	4	4	3	3	5	5

Figure 116 illustrates the rate of drug arrests in Iowa. Between 2007 and 2009, the 2007-2016 Federal Bureau of Investigation (FBI)- Uniform Crime Reporting (UCR) data showed a 25 percent decrease in drug arrests statewide. That rate remained at 3 drug arrests per 100,000 population between 2009 and 2016 (Figure 116).

Figure 116: Iowa Drug Arrests by Year, FBI-UCR, 2007-2016

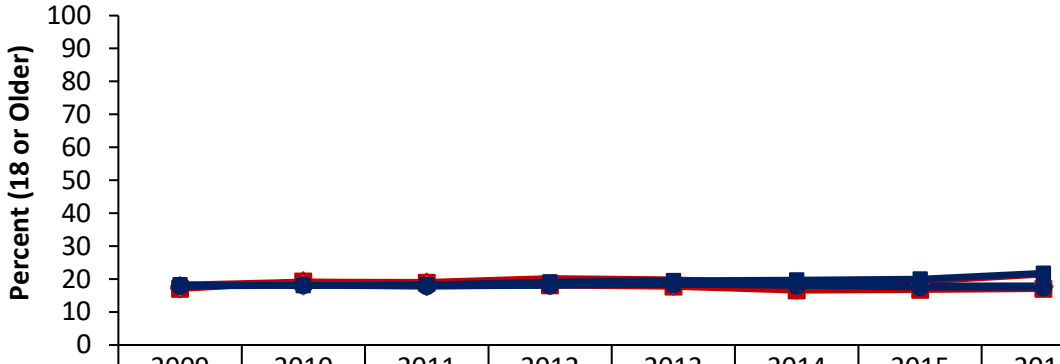


MENTAL HEALTH

Adult Mental Health

Figure 117 illustrates the percentage of Iowans aged 18 or older who reported any mental illness in the past year. In 2016, 18 percent of surveyed Iowans aged 18 or older reported any mental health illness in the previous year (Figure 117). This 18 percent represents approximately 490,319 Iowans. In the same timeframe Iowans aged 18-25 had the highest rate (22 percent) of any mental illness in the past year; this rate is similar to the national rate (Figure 117).

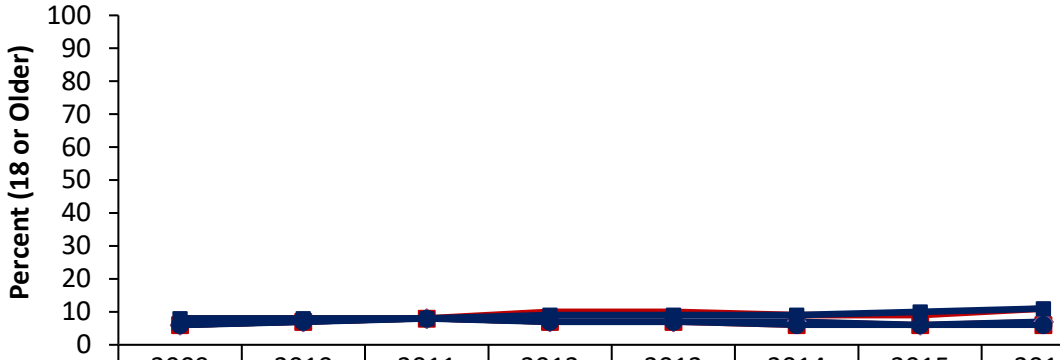
Figure 117: Any Mental Illness in the Past Year Any Mental Illness among Adults by Age, NSDUH, 2009-2016



	2009	2010	2011	2012	2013	2014	2015	2016
Iowa - 18+	17	19	19	18	18	17	17	18
Iowa - 18-25	18	19	19	20	20	19	19	22
Iowa - 26+	17	19	19	18	18	17	17	17
U.S. - 18+	18	18	18	18	19	18	18	18
U.S. - 18-25	18	18	18	19	20	20	20	22
U.S. - 26+	18	18	18	18	18	18	18	17

Figure 118 illustrates the percentage of Iowans aged 18 or older who reported experiencing a major depressive episode in the past year. The 2016 NSDUH data estimated approximately 168,034 (7 percent) Iowa adults aged 18 or older reported major depressive episode in the past year (Figure 118). In the same period, the percentage of adults aged 18 to 25 had the highest rate (11 percent) of major depressive episode in the past year, similar to the national rate (Figure 118). Overall, there was no significant differences in major depressive episode between adults 18 or older and 26 or older in the past year both statewide and nationally.

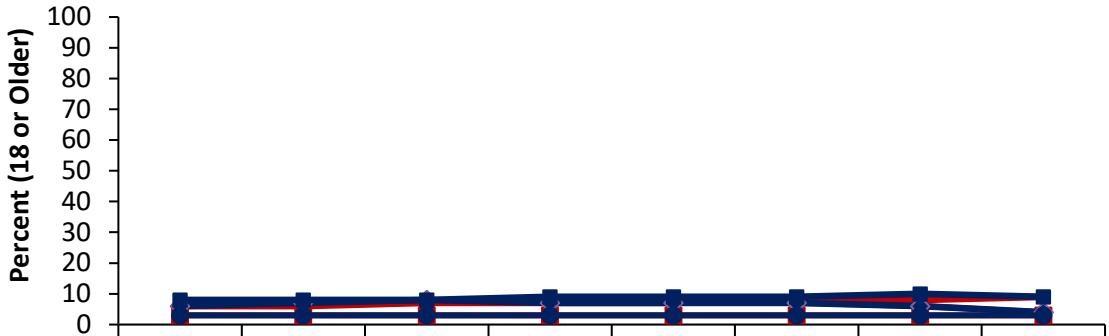
Figure 118: Past Year Major Depressive Episode among Adults by Age: Iowa and the U.S. NSDUH, 2009-2016



	2009	2010	2011	2012	2013	2014	2015	2016
Iowa - 18+	6	7	8	7	7	7	6	7
Iowa - 18-25	8	8	8	10	10	9	9	11
Iowa - 26+	6	7	8	7	7	6	6	6
U.S. - 18+	6	7	8	7	7	7	6	7
U.S. - 18-25	8	8	8	9	9	9	10	11
U.S. - 26+	6	7	8	7	7	6	6	6

Figure 119 illustrates the percentage of Iowans aged 18 or older who reported "Serious thoughts of suicide" in the past year. The 2016 NSDUH data estimated approximately 96,019 (4 percent) of Iowa adults aged 18 or older in reported serious thoughts of suicide in the past year (Figure 119). In the same time period, the percentage of adults aged 18 to 25 had the highest rate (9 percent) of serious thoughts of suicide in the past year, which is similar to the national rate (Figure 119). Overall, there was no significant difference in serious thoughts of suicide between adults 18 or older and 26 or older in the past year statewide or nationally.

Figure 119: Past Year Serious Thoughts of Suicide among Adults by Age: Iowa and the U.S. NSDUH, 2009-2016



	2009	2010	2011	2012	2013	2014	2015	2016
Iowa - 18+	6	7	8	7	7	7	6	4
Iowa - 18-25	6	6	7	7	7	8	8	9
Iowa - 26+	3	3	3	3	3	3	3	3
U.S. - 18+	6	7	8	7	7	7	6	4
U.S. - 18-25	8	8	8	9	9	9	10	9
U.S. - 26+	3	3	3	3	3	3	3	3

DISCUSSIONS

Iowa is a rural state with many of the same social and substance use disorder as other rural states: erosion of rural life resulting from the disappearance of the family farm, subsequent decaying of the infrastructure of small towns, isolated communities, growing dependence on the gaming industry, and a state budget that is not adequate to address substance use disorder issues. Iowa is among the small number of states not dominated by a major metropolitan area. It is comprised of rural areas, small towns, and small cities — the population in Iowa is markedly older than most states, moderately educated, and less likely to include minority group member.

Consideration of Iowa's unique population is important in comparing state or local data with national data. Iowa has a large higher education system. It has only three state-supported universities, but all three have more than 20,000 students at the undergraduate and graduate levels.

The Iowa legislature has been forthcoming on policy to prevent substance use disorder. Several policy proposals at the state and local level have been enacted to curb alcohol (Keg registration, 21 only proposition), tobacco ($1 tax raise in 2006, Iowa Smoke-Free Air Act), illicit drugs (e.g., methamphetamine with Pseudo-Ephedrine Act), and most recently, naloxone (i.e., made available for Iowans in a position to assist with reversing drug overdose deaths). However, it is important to understand that the burden of substance use disorder requires continuous efforts to reduce the consequences of substance use among Iowans of all ages.

Iowa is one of the states with the highest prevalence of binge drinking and alcohol use (i.e., past 30 days). This data is illustrated in the Epidemiological Profile by BRFSS and NSDUH data. Iowans surveyed have significantly higher levels of alcohol use acceptance, binge drinking, and lower perception of risk. However, among Iowa youth alcohol normative beliefs have significantly declined. Moreover, the rate of school suspensions and expulsions has gradually decreased among Iowa youth since 2006.

The *2018 Epidemiological Profile* provides a comprehensive overview of the prevalence of substance use, mortality, and morbidity in Iowa. Underage alcohol use and adult binge drinking have been selected as priorities for substance use prevention efforts. Most recently, the *Iowa Partnerships for Success* project focused on addressing underage drinking and youth binge drinking among Iowans ages 12 to 20. In addition to these efforts, the state implemented the Strategic Prevention Framework for Prescription Drugs (SPF Rx) to address substance use disorder prevention priority of prescription drug misuse among Iowans in two specific age groups (i.e., 12 to 17, 18 or older). Many Iowans today face e prescription drug misuse and consequences which requires continuous surveillance and prevention to reduce the consequences.

RECOMMENDATIONS

The Epidemiological Profile serves as a tool to assess, collect, and evaluate substance use disorder and consequences affecting Iowans. The SEW process provides an avenue for SEW members, data managers, and stakeholders to consolidate surveillance data to examine the various health, social, and economic factors in Iowa. Based on this Epidemiological Profile, the following recommendations are made to ensure continuous efforts to reduce substance use problems in Iowa:

- Identify, collect and analyze new data related to substance consumption and consequence;
- Analyze and evaluate relevant data systems for long-term use;
- Identify indicators needing improvement or expansion of the surveillance;
- Continue to identify and assess data gaps, particularly for prescription drug misuse, and understand the Iowa Prescription Monitoring Programs in order to increase awareness for health care providers, prescribers, and policymakers;
- Continue public awareness of substance use disorder and related consequences, and
- Increase efforts to identify and collect data specifically among college students in Iowa.

DATA USAGE

The Epidemiological Profile can be used to:

- Guide actions for substance abuse problems in Iowa;
- Measure the burden of substance abuse problems;
- Monitor trends in the burden of substance abuse, including the detection of substance abuse epidemic in Iowa;
- Prioritize the allocation of substance abuse resources, and
- Provide a basis for substance abuse epidemiology.
- The most appropriate recommendation is to educate the readers of the Epi Profile on how to comprehend and use trend data correctly. Trend data can show both positive and negative trends, and needs to be fully understood and utilized correctly when sharing with stakeholders and media. Readers of the Epi Profile should use the data to guide effective and efficient use of substance abuse prevention resources.

APPENDIX: DATA SOURCES AND REFERENCES

Data Source	Year	Web Link
Behavioral Risk Factor Surveillance System (BRFSS)	2012-2015	https://www.cdc.gov/brfss/brfssprevalence/index.html
Center for Disease Control Wonder (CDC Wonder)	2005-2015	https://wonder.cdc.gov/ucd-icd10.html
Federal Bureau of Investigation - Uniform Crime Reporting (FBI-UCR	2005-2015	https://ucr.fbi.gov/ucr-publications
Iowa Corrections Offender Network (ICON)	2007-2016	
Iowa Department of Public Health (Hospital Discharge Data)	2006-2015	
Iowa Department of Public Health (Death Data)	2010-2015	
Iowa Department of Education (IDE)	2005-2015	https://www.educateiowa.gov/education-statistics
Iowa Youth Survey (IYS)	1999-2016	http://www.iowayouthsurvey.iowa.gov/state_of_iowa/index.html
National Survey on Drug Use and Health (NSDUH)	2004-2015	http://pdas.samhsa.gov/#/
Iowa Department of Human Services(DHS). Child Welfare. JARVIS Data System.	2016-2018	

References

National Institute on Alcohol Abuse and Alcoholism. (2004). NIAAA council approves definition of binge drinking. Retrieved from https://pubs.niaaa.nih.gov/publications/Newsletter/winter2004/Newsletter_Number3.pdf

National Survey on Drug Use and Health. (2018). 2016 National Survey on Drug Use and Health: Public use file codebook. Retrieved from http://samhda.s3-us-gov-west-1.amazonaws.com/s3fs-public/field-uploads-protected/studies/NSDUH-2016/NSDUH-2016-datasets/NSDUH-2016-DS0001/NSDUH-2016-DS0001-info/NSDUH-2016-DS0001-info-codebook.pdf

Appendix B: Definitions

Alcohol-Related Convictions: Number of charges with a guilty finding in court for violations of Iowa Code chapter 123.

Alcohol Related Offense Arrests: Number of Arrests made by local, county or state peace officers following a violation of Iowa Code chapter 123.

Binge Drinking Prevalence:

- **BRFSS**: Proportion of adults reporting having had (males five or more, females four or more) drinks on one occasion.
- **NSDUH**: Proportion of adults or youth reporting having had five or more drinks on one occasion.
- **IYS**: Proportion of students reporting having had five or more drinks

Current Alcohol Use Prevalence (past 30 days): Proportion of adults or youth who have had at least one drink of alcohol within the past 30 days.

Heavy Drinking (BRFSS): Proportion of adult reporting having had (men more than two drinks, women more than one) drink per day.

Liquor Law Violations: Offenses dealing with sales or provision of alcohol.

Operating a Vehicle While Intoxicated (OWI): Offense of operating a vehicle while intoxicated.

Prescription drug abuse: The use of a medication without a prescription, in a way other than as prescribed, or for the experience or feelings elicited.

Prescription medications: Medications used to treat pain, attention deficit disorders, sleep disorders and anxiety that are not over the counter drugs.

Prevalence: Number or proportion (percent) of cases or events in a given population. Often further distinguished as point prevalence (single point in time) or period prevalence (over a period of time).

Rate per 100,000: (Number of cases or events / total population)* 100,000.

- Age-adjusted rate: A rate statistically modified to eliminate the effect of different age distributions in the different populations
- Age-specific rate: A rate limited to a particular age group. The numerator is the number of cases in that age group; the denominator is the number of persons in that age group in the population.
- Sex-specific rate: A rate limited to a particular sex. The numerator is the number of cases in that sex; the denominator is the number of persons of that sex in the population.

- Race-specific rate: A rate limited to a particular racial category. The numerator is the number of cases in that racial category; the denominator is the number of persons from that racial category in the population.

Appendix C: ICD-9/ICD-10 Codes

ICD-9 Codes	
Description	
Drug-related Emergency Department Visits	960-979, E850-E858, E950.0-E950.5, E962.0, E980.0-E980.5
Drug-related Hospitalization	960-979, E850-E858, E950.0-E950.5, E962.0, E980.0-E980.5
Opioid-related Emergency Department Visits	965.00, 965.02, 965.09, E850.1, E850.2
Opioid-related Emergency Department	965.00, 965.02, 965.09, E850.1, E850.2
ICD-10-CM Codes	
Drug-related Emergency Department Visits	[T36.x-T50.x] (1A, 1D), [T36.x-T50.x] (2A, 2D), [T36.x-T50.x] (3A, 3D), [T36.x-T50.x] (4A, 4D)
Drug-related Hospitalization	[T36.x-T50.x] (1A, 1D), [T36.x-T50.x] (2A, 2D), [T36.x-T50.x] (3A, 3D), [T36.x-T50.x] (4A, 4D)
Opioid-related Emergency Department Visits	[T40.0x] (1A, 1D), [T40.0x] (2A, 2D), [T40.0x] (3A, 3D), [T40.0x] (4A, 4D), [T40.2x] (1A, 1D), [T40.2x] (2A, 2D), [T40.2x] (3A, 3D), [T40.2x] (4A, 4D), [T40.3x] (1A, 1D), [T40.3x] (2A, 2D), [T40.3x] (3A, 3D), [T40.3x] (4A, 4D), [T40.4x] (1A, 1D), [T40.4x] (2A, 2D), [T40.4x] (3A, 3D), [T40.4x] (4A, 4D)
Opioid-related Emergency Department	[T40.0x] (1A, 1D), [T40.0x] (2A, 2D), [T40.0x] (3A, 3D), [T40.0x] (4A, 4D), [T40.2x] (1A, 1D), [T40.2x] (2A, 2D), [T40.2x] (3A, 3D), [T40.2x] (4A, 4D), [T40.3x] (1A, 1D), [T40.3x] (2A, 2D), [T40.3x] (3A, 3D), [T40.3x] (4A, 4D), [T40.4x] (1A, 1D), [T40.4x] (2A, 2D), [T40.4x] (3A, 3D), [T40.4x] (4A, 4D)
ICD-10 Codes	
Description	
Alcohol-related Mortality	F10, I42.6, G31.2, G62.1, K29.2, K70, K73, K74, K86.0, T51, X45, X65, Y15, Y90, Y91
Alcohol-related Cirrhosis Mortality	K70 (.0 - .9)
Drug-related Mortality	X40-X44, X60-X64, X85, Y10-Y14
Opioid-related Mortality	X40-X44, X60-X64, X85, Y10-Y14, T40.0, T40.1, T40.2, T40.3, T40.4, T40.6
Lung Cancer	C33-C34
Suicide	X60 – X84, Y87.0
Tobacco-related Mortality	C00-C15, C33, C34, J40 -J44