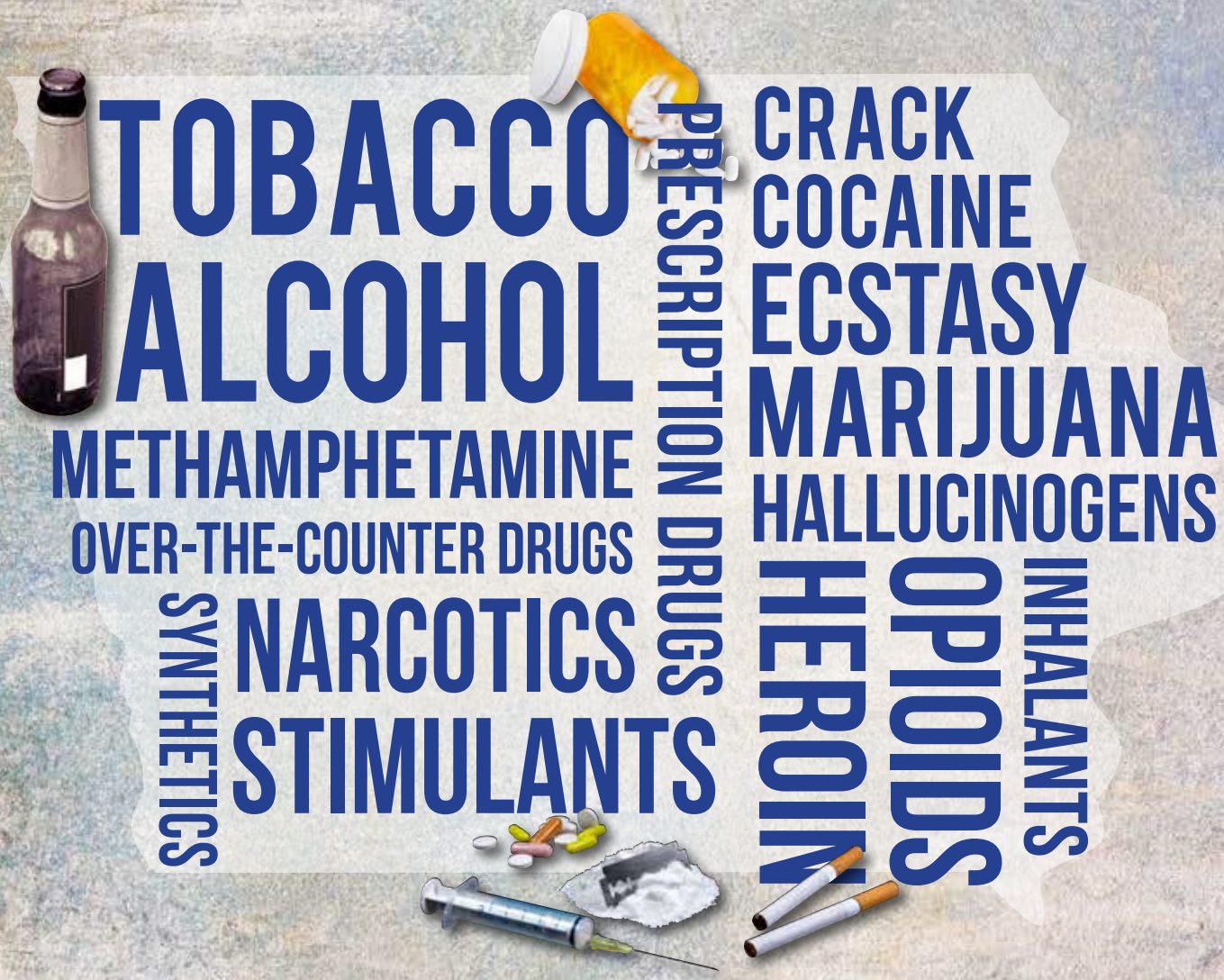
STATE OF IOWA SUBSTANCE USE

EPIDEMIOLOGICAL PROFILE

STATE EPIDEMIOLOGICAL WORKGROUP

DATE 2016



IDPH
Iowa Department of Public Health

Suggested citation for this document:
Iowa Department of Public Health
State Epidemiological Workgroup
2016 State of Iowa Epidemiological Profile. Des Moines: Iowa Dept. of Public Health, [2016].
Web: https://idph.iowa.gov/substance-abuse/epidemiological-workgroup

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Acknowledgement

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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. 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 utilize 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;
- 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 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 death 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.

Key Findings in the 2016 Epi Profile

Alcohol

- Data from substance use disorder treatment services show that alcohol was the most reported substance of use among Iowans at treatment admission. Overall, the total number of admissions for substance use disorders reported in the Treatment Episode Data Sets (TEDS) decreased by 4 percent from 29,525 (2013) to 28,415 (2014), indicating that fewer people sought treatment in 2014.

- The 2013-2014 Substance Abuse and Mental Health Services Administration National Survey on Drug Use and Health (NSDUH) estimated that approximately 1.5 million (56 percent) of Iowans, 12 and older, had had a drink of alcohol in the past month. Likewise, nearly 800,000 (25 percent), reported binge drinking (drinking five or more drinks of alcohol within a couple of hours) in the past month. The binge drinking rate among Iowans aged 18 and older (27 percent) remains significantly higher than the national rate (25 percent). The difference may be due to a significantly lower perception of great to moderate risk of binge drinking in Iowa (36 percent) than the national average (50 percent).

- Since 1999, alcohol consumption among Iowa youth has significantly decreased as reported on the Iowa Youth Survey.

- The overall rate of suspensions and expulsions for alcohol has decreased since 2006, from 127 per 100,000 population to 65 per 100,000 population in 2014 as reported in the Iowa Department of Education Data.

- Age and gender influence alcohol-related mortality. Alcohol-related mortality rates were higher among Iowans age 65 and older compared to younger age groups. Iowa males had a higher alcohol-related mortality rate than did females.

- Overall alcohol-related traffic fatalities rates were stable over the last decade, approximately one-quarter to one-third of Iowa traffic fatalities involved a driver who used alcohol.

- The total number of hospitalization events attributed to alcohol-related injuries increased from 1,841 cases in 2013 to 2,011 in 2014. The hospitalization rates per 100,000 population increased with age and were highest among the 25-44 and the 45-64 age groups. The data showed a significant increase (44 per 100,000 population in 2010 to 57 per 100,000 population in 2014) in alcohol-attributed hospitalizations among Iowans aged 65 or older. Alcohol-related hospitalization rates were higher for males than females.

Tobacco

- Two significant Iowa laws covering tobacco use were enacted in the late 2000s. The state cigarette excise tax was increased in 2007. As of 2014, among all states, Iowa's cigarette excise tax ranked in the middle of all states (25th highest). The Iowa Smoke-Free Air Act legislation was passed in 2008. This legislation prohibits smoking in almost all public places and enclosed areas, including places of employment and some outdoor areas.

- Based on NSDUH estimates, adult tobacco use in Iowa has trended downward over the last decade but remained significantly higher than the national tobacco usage rates. These results are corroborated by the Behavioral Risk Factor Surveillance System (BRFSS), which finds a difference in the proportion of adult (over 18 years of age) smokers between Iowa and the nation.

- Youth cigarette use in Iowa is declining, as evidenced by the reduction in the number of youth reporting first use of cigarettes before age 13 and past 30-day cigarette use, and by the increase in the perception of risk associated with cigarette use, all as reported on the Iowa Youth Survey (IYS).

- The overall tobacco-associated mortality rate has trended downward over the past decades. As of 2014, approximately five Iowans die per day from a condition associated with tobacco. For every death associated with tobacco, there were an average of seven tobacco-related hospitalizations.

Illicit Drugs and Prescription Medications

- The percent of people reporting past 30-day use of illicit drugs in Iowa has continued to stay similar to the national rate of 3 percent (about 78,764 Iowans aged 12 or older).

- The 2014 NSDUH survey showed that marijuana was still the most widely used illicit drug among youth, with 12,215 (5 percent) of Iowans aged 12-17 years old reporting they used marijuana in the past 30 days, compared to 7 percent of U.S. youth.

- The number of deaths associated with drug use (including non-medical use of prescription drugs) continues to increase. In 2014, about 285 deaths were drug-related compared to 247 in 2010. In Iowa, drug-related death rates were higher among males and people over the age of 24. Drug-associated hospitalization rates trended downward from 2005-2014.

Conclusion

Progress has been made in addressing substance use and misuse in Iowa, 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 plague too many Iowans. Focus and resources must continue to be placed on the largest issues (alcohol and tobacco) while also recognizing emerging trends and more local issues (marijuana and prescription drugs). Understanding of intervening variables and related issues like mental health will continue to provide insight and direction to future substance use interventions.

Background

Iowa, named after the Ioway Indian tribe, became the 29th U.S. state in 1846. It is known as the Hawkeye State, and Des Moines is the capital city. 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, making it part of the Lewis and Clark Expedition.

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) and hereafter referred to as the SEW). IDPH's Division of Behavioral Health, the Single State Agency for substance abuse prevention and treatment, administers the funding and activities of the SEW. Through SEW, Iowa undertook a systematic process to identify and analyze the epidemiology of substance use and abuse in the state. The resulting epidemiological profiles of substance use helped assess substance use issues and prioritize prevention services. The profiles were divided into sections that summarized data by consumption patterns and consequences of use of the various substances.

In 2009, IDPH was awarded a cooperative agreement, Strategic Prevention Framework State Incentive Grant (SPF SIG), from SAMHSA to address underage drinking and adult binge drinking and related consequences in the state of Iowa. In 2011, another one-year award, the Strategic Prevention Enhancement, was directed to IDPH to, among other deliverables, expand the work of the SEW, and increase partnership, collaboration and data sharing between the different state agencies. The new expanded SEW had the mission of redefining the scope of its work and identifying meaningful epidemiological products (besides the Epidemiological Profiles) for the public, researchers, local staffs and legislators.

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

Process

The Epidemiological Workgroup (Workgroup) was first formed in mid-2006 by inviting representatives from agencies directly involved with preventing substance use in the state. The members of the Workgroup 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 was formed to identify, analyze and select indicators for inclusion in Iowa's epidemiological profile. This smaller Data Task Group was, in practice, a sub-group of the Workgroup, with added members of an existing data committee from the Iowa Collaboration for Youth Development. The Data Task Group forwarded their findings and recommendations to the Workgroup, which made final decisions about which data should be included in the epidemiological profile.

The Data Task Group consisted of individuals with extensive experience in using specific state and federal level data collection processes and data sets and included representatives from:

- 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

For the approximately 300 possible indicators, which are available in an appendix stored in the State Epidemiological Website, the Data Task Group 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 Workgroup emphasized including the applicable National Outcome Measures (NOMs) in the list of indicators. The following criteria were used in the selection process:

- Data available at State (Iowa) level;
- Sample covers all geographic areas;
- Sample covers age range;
- Data collected at least every two years;
- Measures directly related or strongly associated with 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 (some redundancy is acceptable); and
- Closeness to consequence (where applicable).

After the master indicator list was complete and the selection criteria developed, the Data Task Group began to select indicators for the Epi Profile. The indicator selection process lasted two months, culminating in the Data Task Group's assistance in securing state-level data. Most of the indicators were discarded for at least one of the following reasons:

- No useful data source was available;
- Significant problems existed with the data source, such as inadequate sample size, unavailability of raw data, and inconsistent reporting; and
- There was a lack of strong relationship or association between ATOD use and a given consequence.

The Data Task Group arranged the indicators according to consumption or consequences for alcohol, tobacco, and illicit drugs and rejected some national datasets that were not representative of Iowa because of small or replacement population samples.

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

WHAT IS NEW IN THE 2016 EPI PROFILE?

- Whenever possible, all previous data points were updated.

- In 2016, intervening variables were included as a new chapter. Among the intervening variables, risk and protective factors at the individual and community level such as risk perception and state activities to promote healthy behaviors and treatment data were included. A new section on mental health issues was also added.

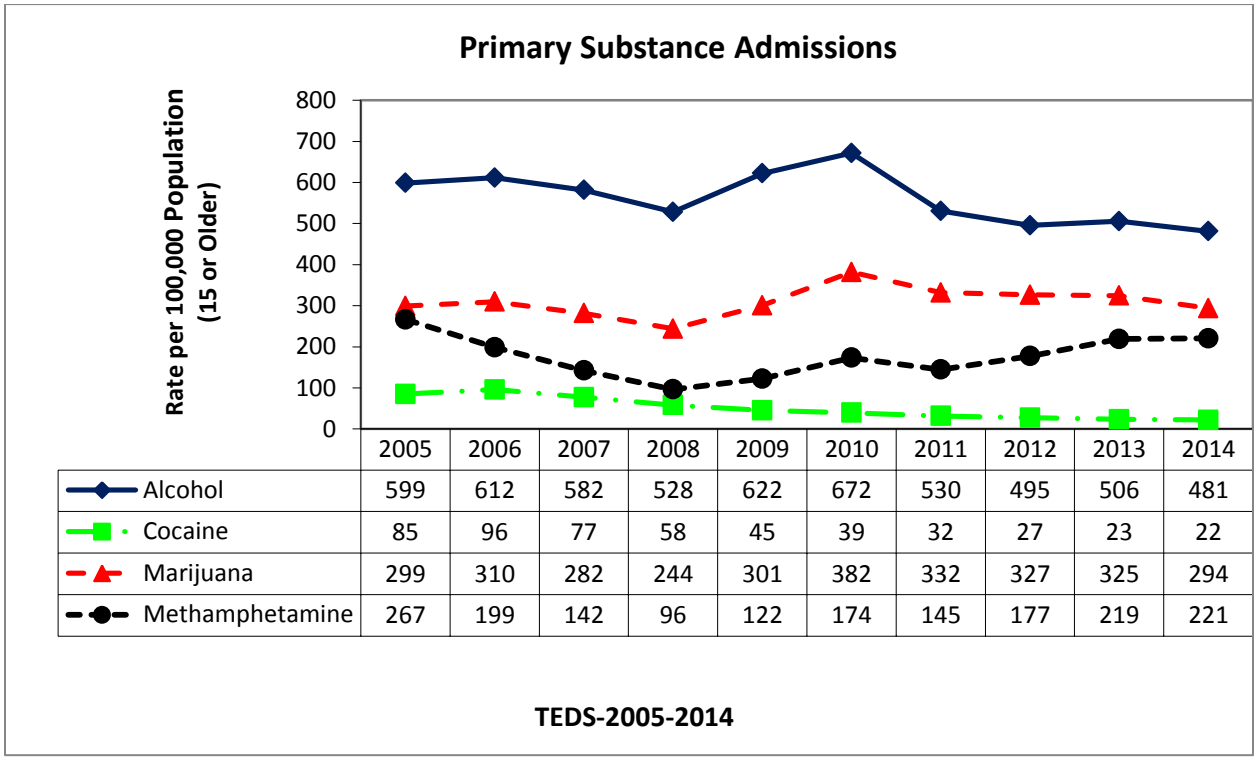
- The analyses of hospitalization data for tobacco, alcohol, and prescription drugs was conducted by first creating an injury subset of records based on the CDC's injury indicator guidance and then querying for cases attributed to tobacco, alcohol, and prescription drugs.

Alcohol Consumption

Primary Substance of Choice

Alcohol is the substance most frequently used by adults and youth in Iowa. The total number of admissions for substance use disorders reported in the Treatment Episode Data Sets (TEDS) decreased by 4 percent from 29,525 (2013) to 28,415 (2014), indicating that fewer people sought treatment in 2014. The 2004-2014 TEDS data showed that Iowans used alcohol more frequently than cocaine, marijuana, and methamphetamine, with this rate nearly matching the sum for the next two most frequent substances. Although the rate of alcohol use decreased from 505 per 100,000 Iowans ages fifteen and over in 2013 to 481 in 2014, alcohol remains the most reported substance of use at treatment admission (Figure 1). The 2014 TEDS data showed that marijuana trailed behind alcohol with 293 per 100,000 population, followed by methamphetamine at 221 per 100,000 population, and cocaine with 22 per 100,000 population.

Figure 1: Per Capita Primary Substance of Use as Reported upon Entry into Treatment, Ages 15 or Older

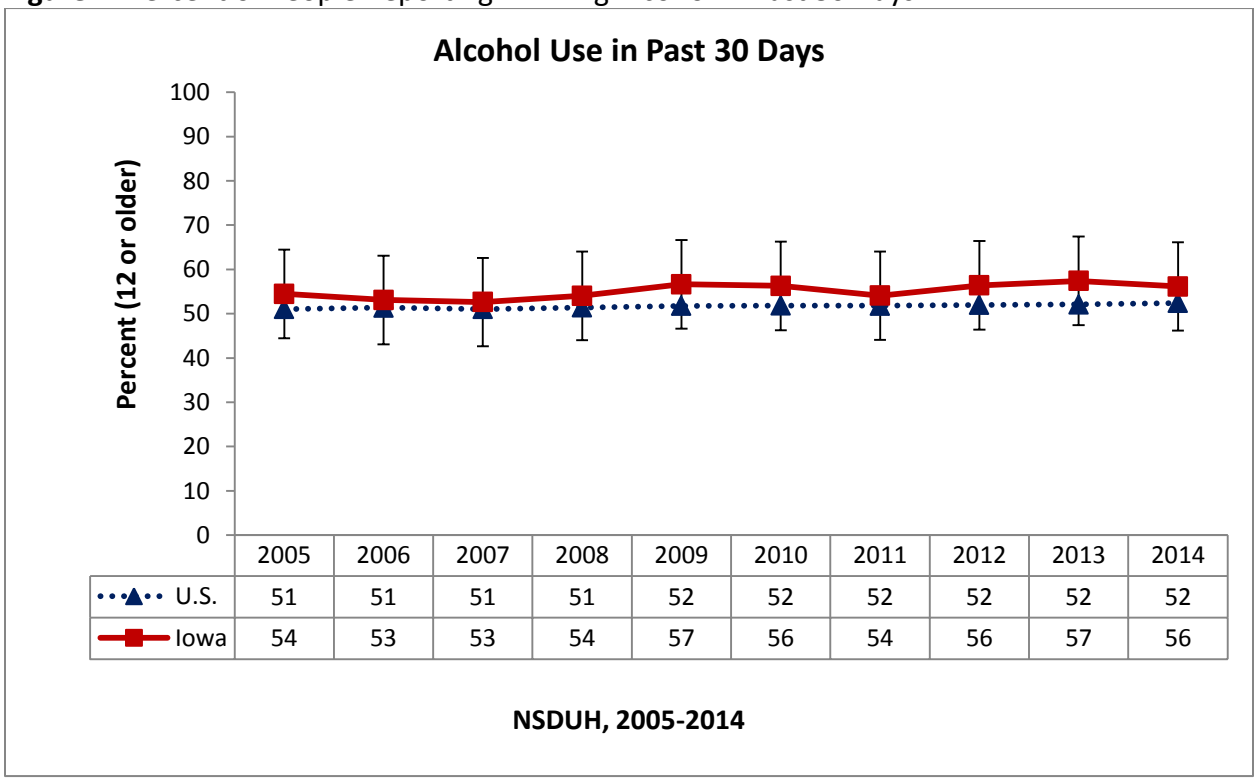


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Alcohol	599	612	582	528	622	672	530	495	506	481
Cocaine	85	96	77	58	45	39	32	27	23	22
Marijuana	299	310	282	244	301	382	332	327	325	294
Methamphetamine	267	199	142	96	122	174	145	177	219	221

Adult Consumption Patterns

The 2013-2014 NSDUH estimated approximately 1,474,204 (56 percent) of Iowa residents 12 years of age or older had used alcohol in the last month was significantly higher than the 2004-2005 NSDUH estimate of 1,396,758 (54.5 percent). Figure 7 shows that the prevalence of binge drinking in Iowa was significantly higher than the national rate (25 versus 23 percent in 2014), even though the Iowa rate decreased by three percentage points from 2012(NSDUH, 2014). From 2005 to 2014, the percent of people who reported alcohol use in the past 30 days in Iowa has remained stable, and similar to the national rate (Figure 2). Regarding the ranking of point prevalence estimates, Iowa was among the ten states with the highest reported binge drinking prevalence.

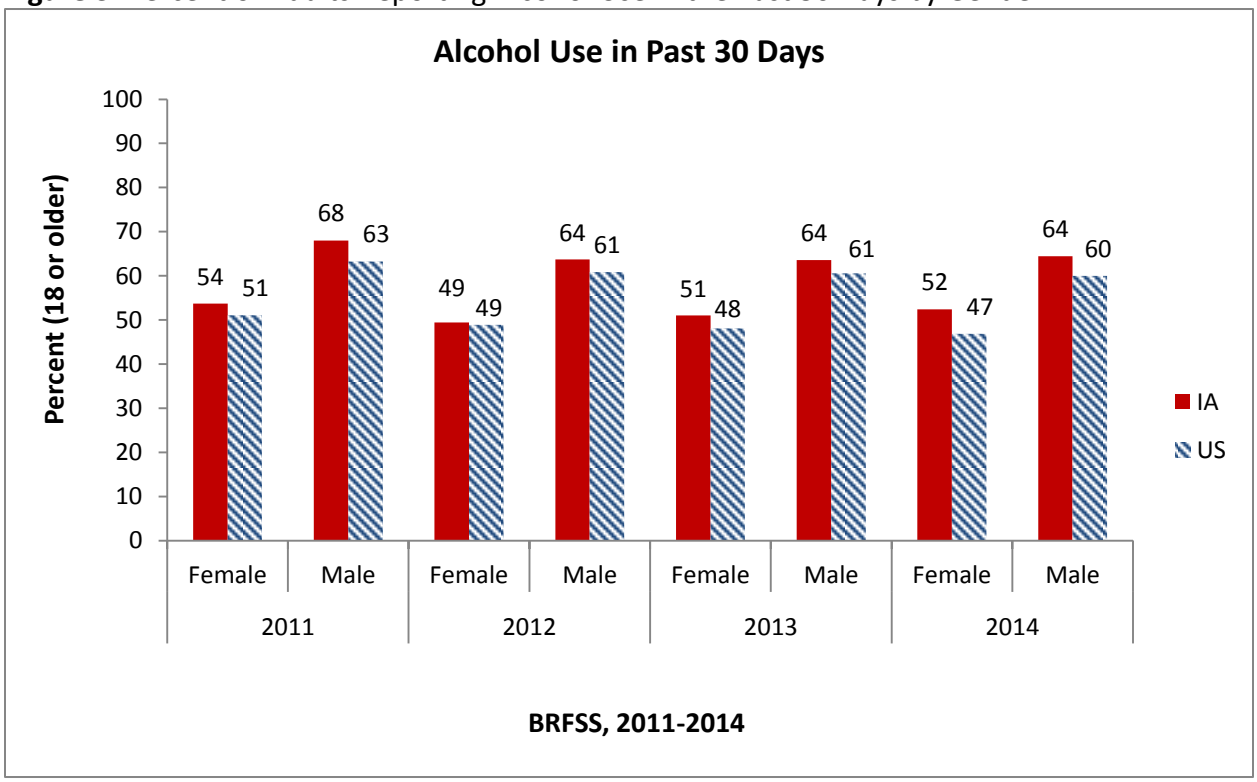
Figure 2: Percent of People Reporting Drinking Alcohol in Past 30 Days



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
U.S.	51	51	51	51	52	52	52	52	52	52
Iowa	54	53	53	54	57	56	54	56	57	56

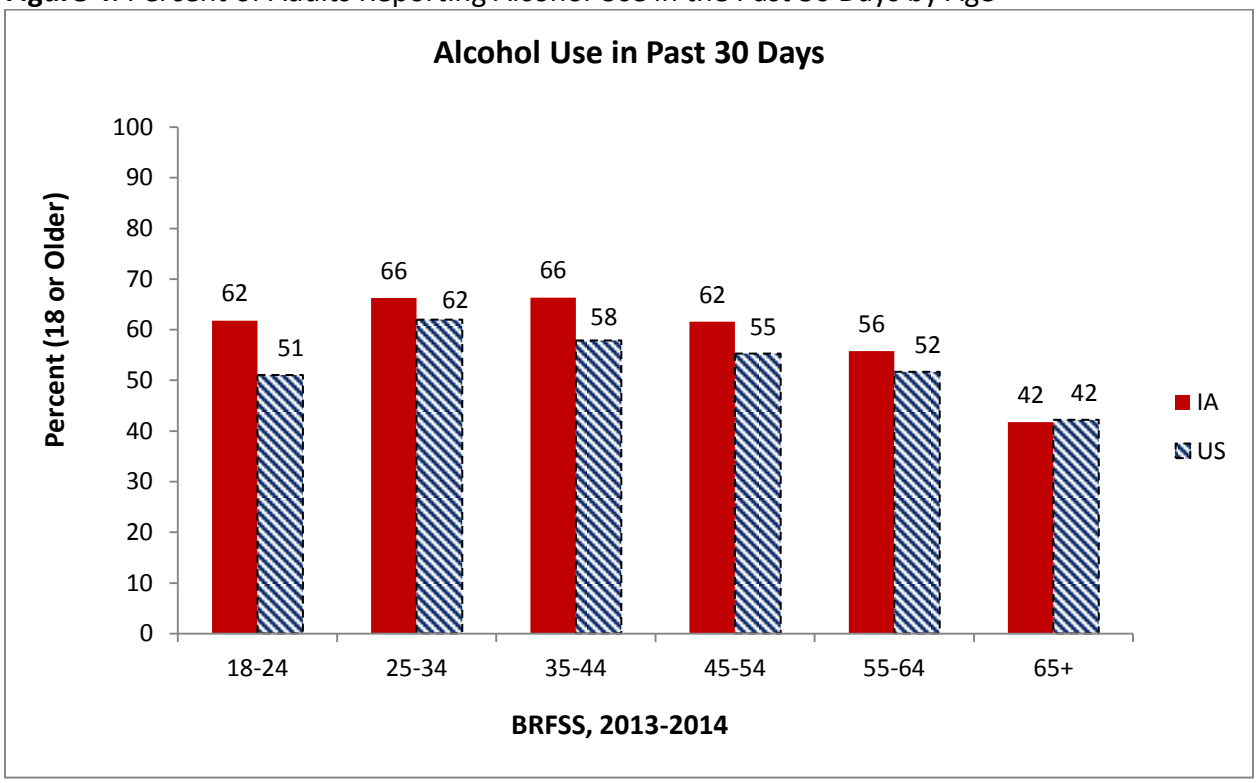
Based on the BRFSS survey, respondents were asked about their current alcohol use. The question asked was: "During the past 30 days, have you had at least one drink of any alcoholic beverage such as beer, wine, a malt beverage, or liquor?" and by "During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage?" The results in Figure 3 show the percentage of adults reporting alcohol use in the past 30 days by gender. The results showed that Iowa men had the highest percent (68 percent and 64 percent respectively) of alcohol use in the past 30 days in 2011 and 2014 compared to the national level of 63 and 60 respectively. Alcohol use in the past 30 days was higher among Iowa women in both 2013 (53 percent) and 2014 (52 percent) compared to the national values of 48 percent and 51 percent (Figure 3).

Figure 3: Percent of Adults Reporting Alcohol Use in the Past 30 Days by Gender



The 2013-2014 BRFSS data shown in Figure 4 compares the percentage of alcohol use by age group. The results showed that compared to the national level, Iowa adults had the highest alcohol use among age groups 25-34 and 35-44 at 66 percent and 66 percent, respectively. People ages 65 and older had the lowest percentage of alcohol use in Iowa, and slightly lower compared to the national values (Figure 4). Compared to the national data, Iowans 18-24 years were 11 percentage points higher than the nation in regards to alcohol use in the past 30 days (Figure 4).

Figure 4: Percent of Adults Reporting Alcohol Use in the Past 30 Days by Age



The data in Figure 5 compares the percent of adults reporting alcohol use in the past 30 days by education level. Based on this data, approximately 69 percent of Iowa college graduates reported more alcohol use compared to 67 percent for the national level (Figure 5).

The results indicated that alcohol use in the past 30 days was higher for all education levels in Iowa compared to the national level. The data appears to indicate increased alcohol use among high school or GED, some post-high school, and college graduates in Iowa compared to the national level.

Figure 5: Percent of Adult Reporting Alcohol Use in the Past 30 Days by Education Level

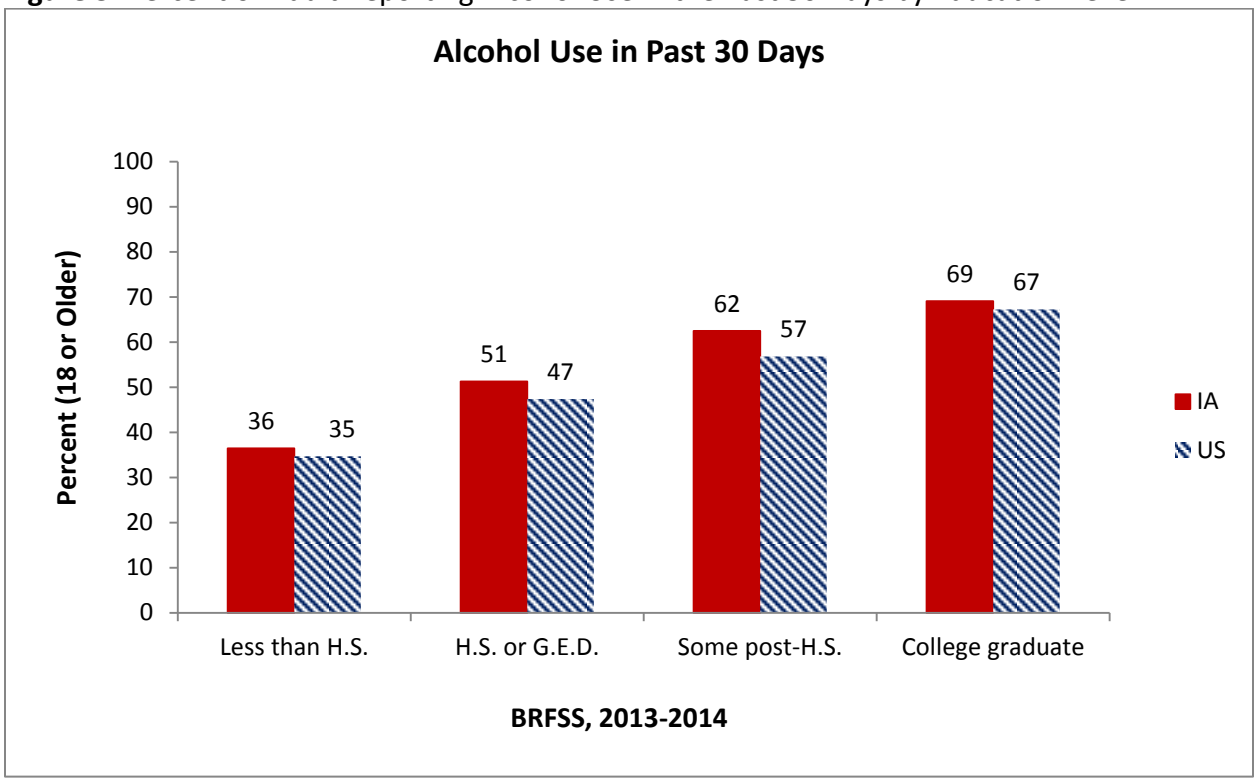
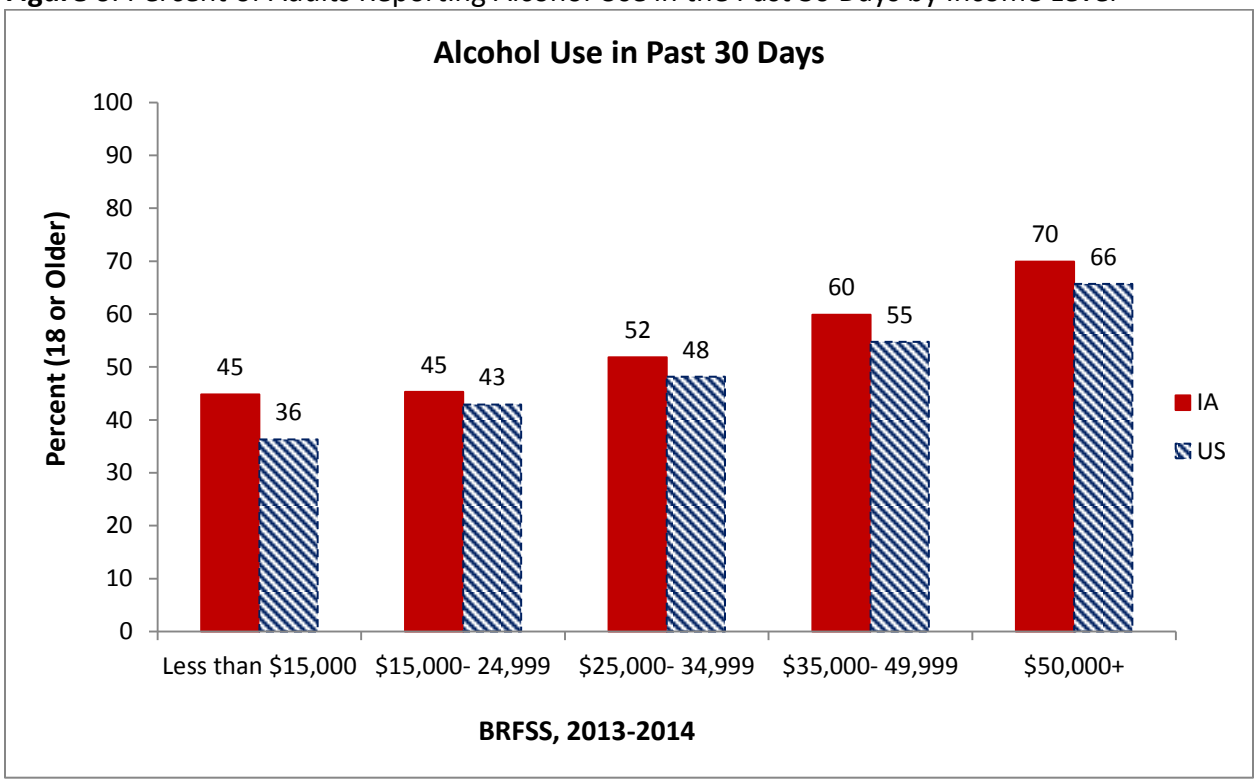


Figure 6 shows the percent of adults reporting alcohol use in the past 30 days by income level for the 2013-2014 BFRSS data. Approximately 70 percent of Iowa adults who make $50,000 or more reported alcohol use compared to 45 percent of adults who make less than $15,000 (Figure 6).

Compared to the national level, Iowa adults in all income levels reported more alcohol use. The increase in income level appears to influence the level of alcohol use in the past 30 days. Iowans who earn more income appear to use more alcohol compared to those who earn less. The data also showed the same trend at the national level.

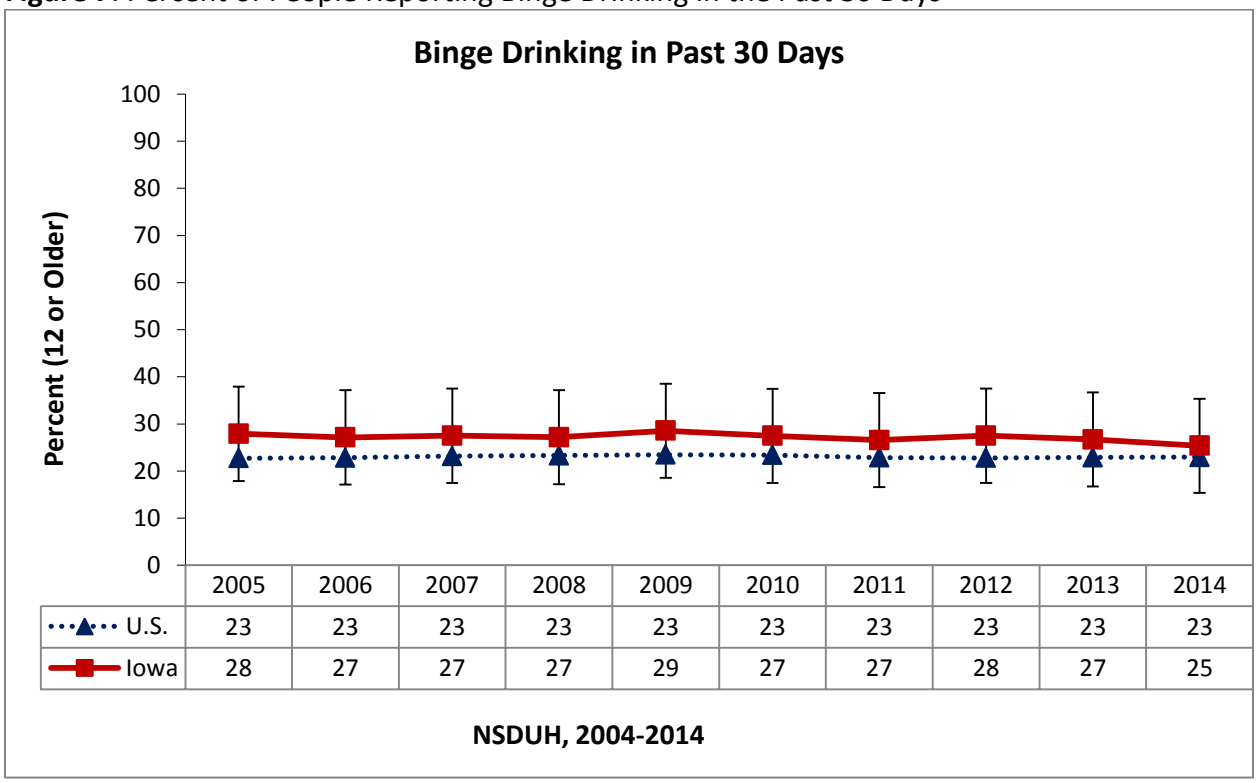
Figure 6: Percent of Adults Reporting Alcohol Use in the Past 30 Days by Income Level



Binge drinking is defined as having five or more alcohol drinks on one occasion for males and four drinks in females. Iowans binge drank more than the national rate. The 2005-2013 NSDUH data showed that Iowans had high rates of binge drinking compared to the national rates.

In 2014, the percentage of Iowans who reported binge drinking in the past 30 days was 25 percent compared to the national rate of 23 percent. National and Iowa data suggest that binge drinking rates have remained steady over the past ten years.

Figure 7: Percent of People Reporting Binge Drinking in the Past 30 Days

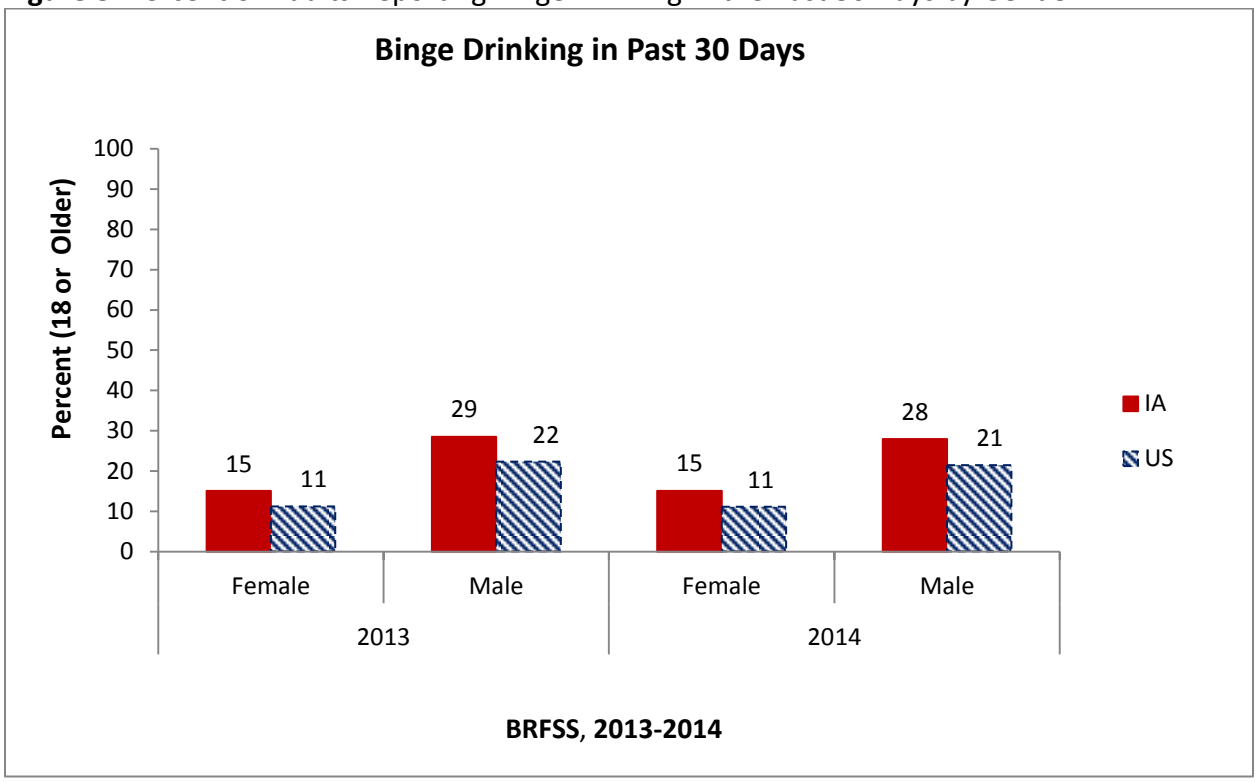


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
U.S.	23	23	23	23	23	23	23	23	23	23
Iowa	28	27	27	27	29	27	27	28	27	25

Iowa men engage in binge drinking at nearly twice the rate of Iowa women. Both sexes reported binge drinking at rates higher than the corresponding national rte.

The 2014 BRFSS data showed that 28 percent of Iowa men and 15 percent Iowa women binge drank more than their counterparts at the national level. Although men binge drank more than women, prevalence has continued to decline for both genders over the last several years.

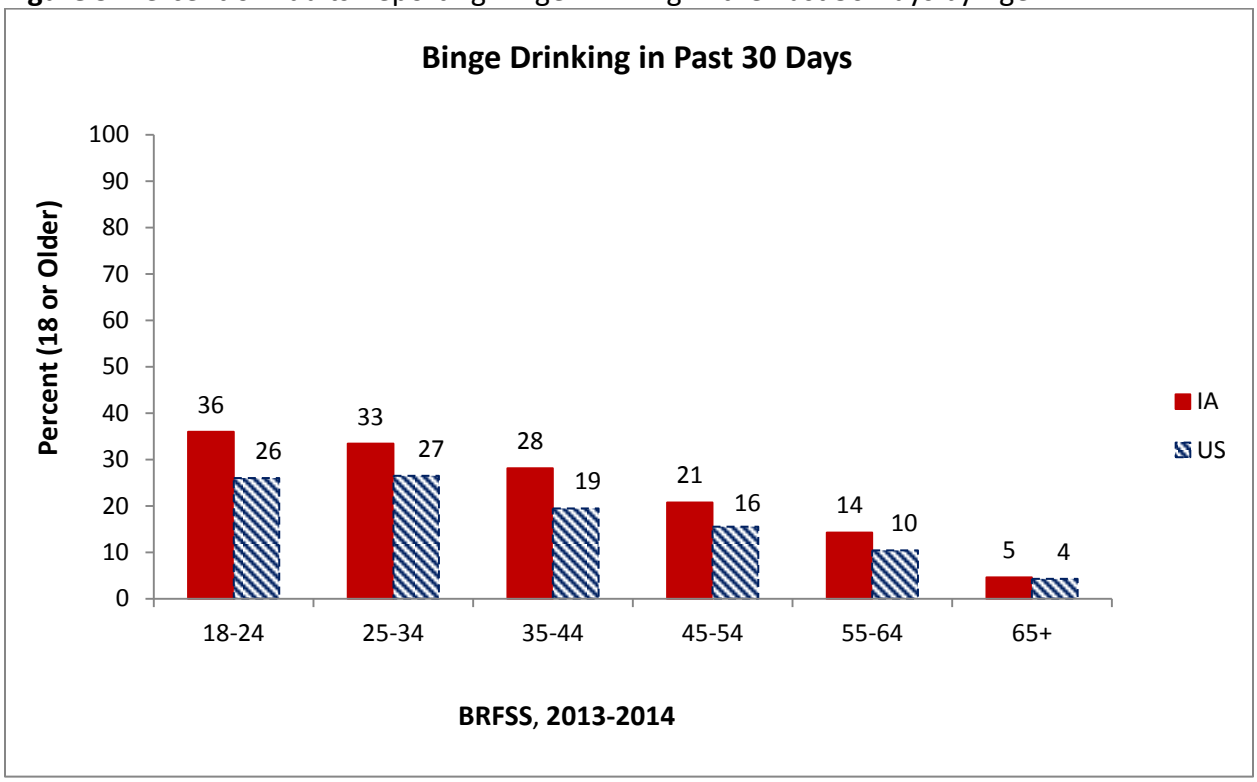
Figure 8: Percent of Adults Reporting Binge Drinking in the Past 30 Days by Gender



The 2013-2014 BRFSS data showed significant variations across Iowa age groups reporting binge drinking in the past 30 days. The data showed that 36.0 percent of Iowa adults aged 18-24-year old binge drank, more than any of the other age groups in the past 30 days (Figure 9).

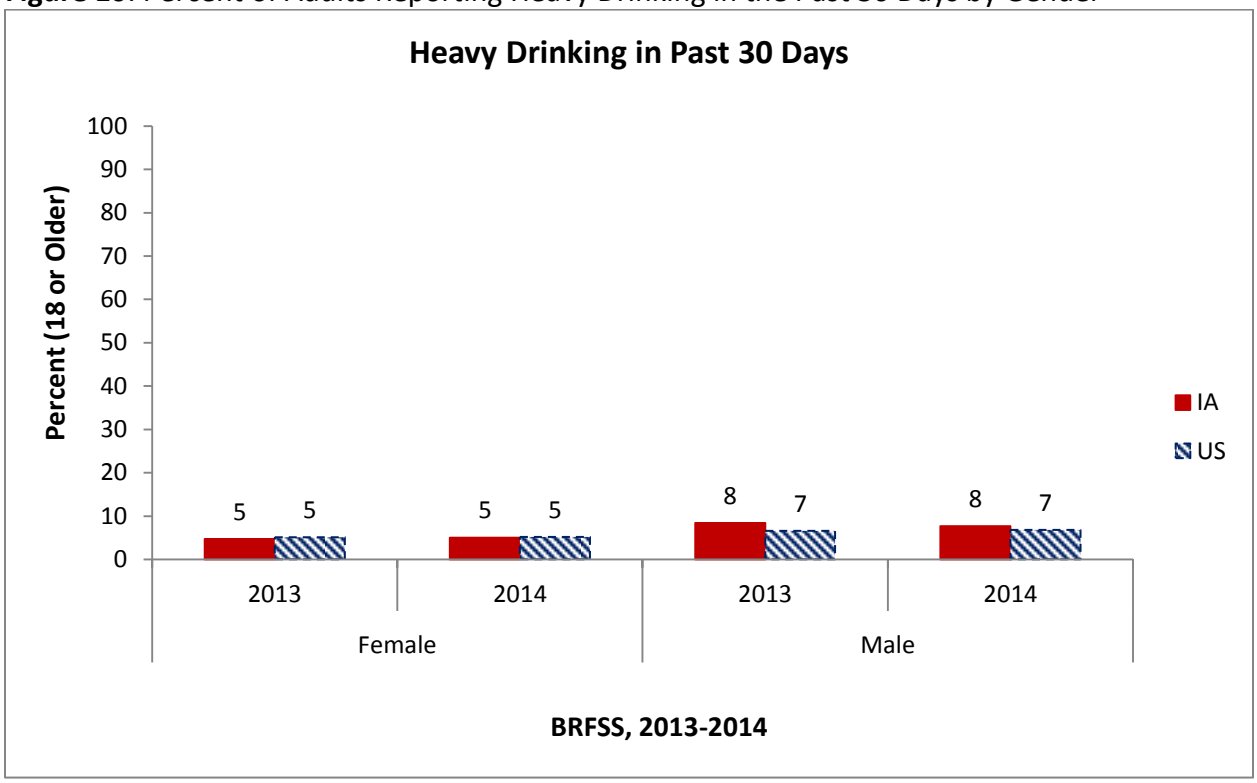
The second group of Iowa adults who reported binge drinking was respondents age 25-34 (33 percent), followed by respondents age 35-44 (28 percent for Iowa). Iowans age 65 and older reported a lower percentage of binge drinking (4 percent in Iowa and 4 percent in the U.S.; Figure 9).

Figure 9: Percent of Adults Reporting Binge Drinking in the Past 30 Days by Age



Heavy drinking is when adult men consume more than two drinks per day and adult women consume more than one drink per day. Figure 10 showed that Iowa men drank more than Iowa women. In 2014, heavy drinking in the past year decreased for Iowa men from 8 percent to 8 percent. Between 2013 and 2014, the percent of heavy drinking among U.S. men remained the same at 7 percent. In 2013, Iowa men reported high heavy drinking (8 percent) compared to the national rate (7 percent). Between 2013 and 2014, the percent of Iowa women who reported heavy drinking in the past 30 days remained the same at 5 percent.

Figure 10: Percent of Adults Reporting Heavy Drinking in the Past 30 Days by Gender



The percent of adults reporting the highest rate of heavy drinking in the 2013-2014 BRFSS survey were among 18-24-year old. Nearly 10 percent of Iowa adults 18-24 years reported heavy drinking compared to 8 percent at the national level (Figure 11). The other age group that reported a high rate of heavy drinking in the past 30 days in Iowa was the 45-54-year old.

Nearly 8 percent of 45-54-year old Iowa adults reported heavy drinking compared to 6 percent at the national level. Iowans aged 65 and older had the lowest rate (3 percent) of heavy drinking in the past 30 days compared to the national rate of 4 percent.

2013-2014 data showed that Iowa adults aged 18-24-year-old reported a significantly higher heavy drinking rate in the past 30 days compared to the rest of the age groups (Figure 11). These data suggests that certain age groups are at higher risk of heavy drinking.

Figure 11: Percent of Adults Reporting Heavy Drinking in the Past 30 Days by Age

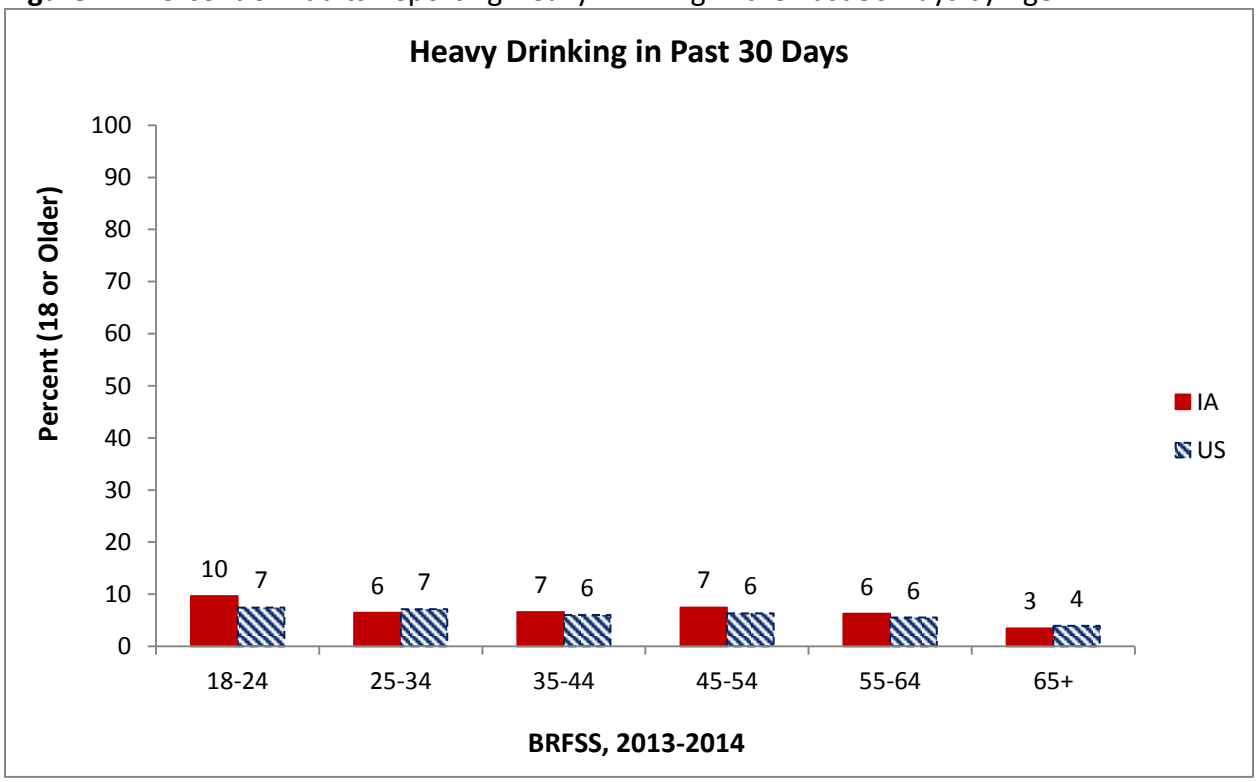
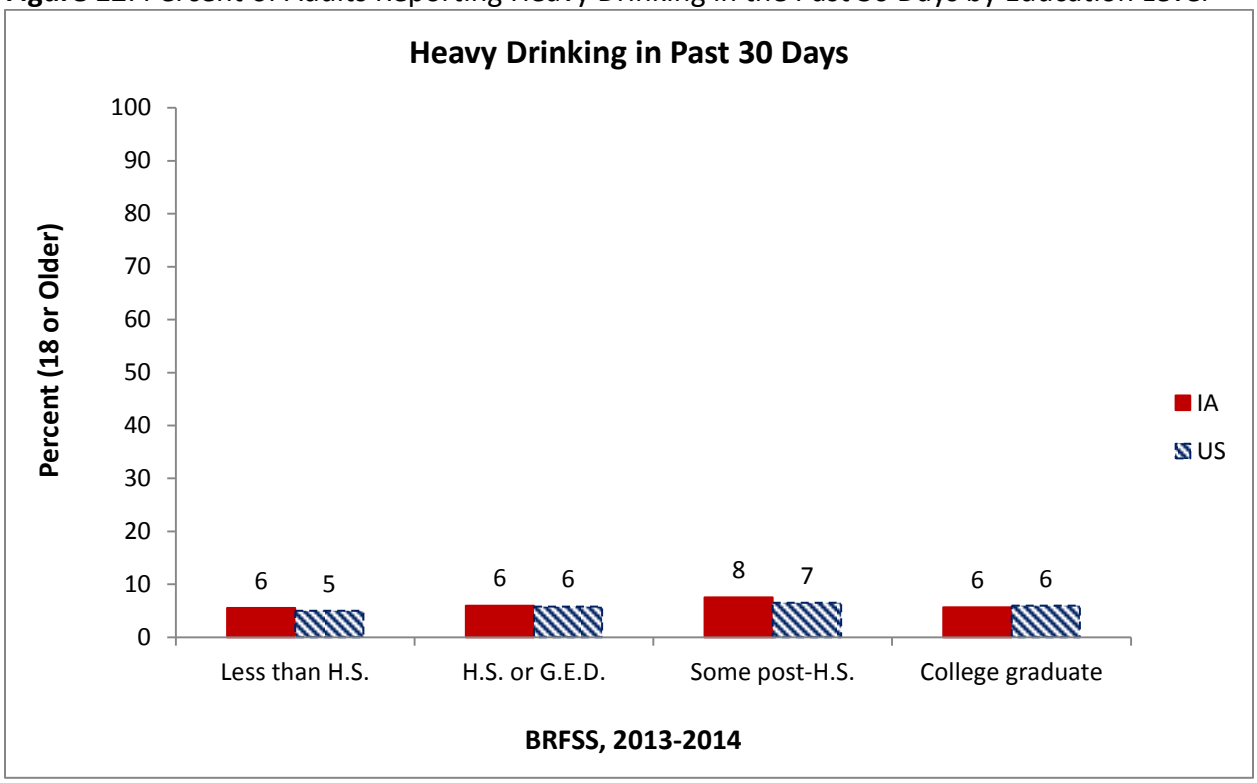


Figure 12 below shows the percentage of Iowa adults who reported heavy drinking in the past 30 days by education level. Respondents with some post-high school had the highest rate of heavy drinking compared to the other education levels and the U.S. rate.

Nearly 8 percent of Iowans with some post-high school reported heavy drinking in the past 30 days compared to 7 percent at the national level (Figure 12). Iowa adults with less than high school were fourth after high school or G.E.D.

Heavy drinking appeared to be lower among Iowans with less than high school compared to the other three levels of education. The rate of heavy drinking among Iowans was lower than (6 percent) compared to the national rate of 6 percent (Figure 12).

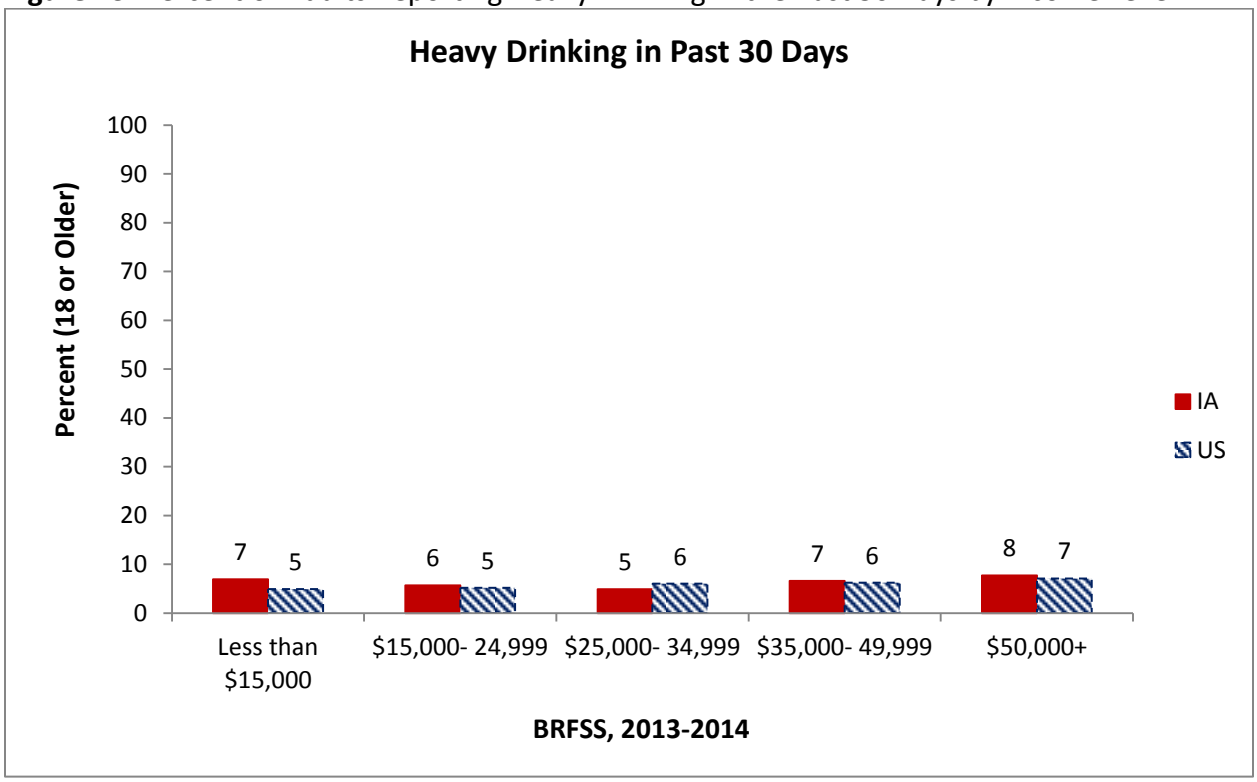
Figure 12: Percent of Adults Reporting Heavy Drinking in the Past 30 Days by Education Level



Income level appeared to influence people's behavior towards heavy drinking. Between 2013 and 2014, Iowans earning $25,000 – 34,999 reported the lowest heavy drinking compared to those earning $50,000 and over. Approximately 7 percent of Iowans earning $35,000-49,999 reported heavy drinking in the past 30 days compared to 6 percent at the national level (Figure 13).

Overall, compared to the national rate, Iowans at all income levels had the highest rate of heavy drinking in the past 30 days, except for Iowans earning $25,000-34,999 (Figure 13).

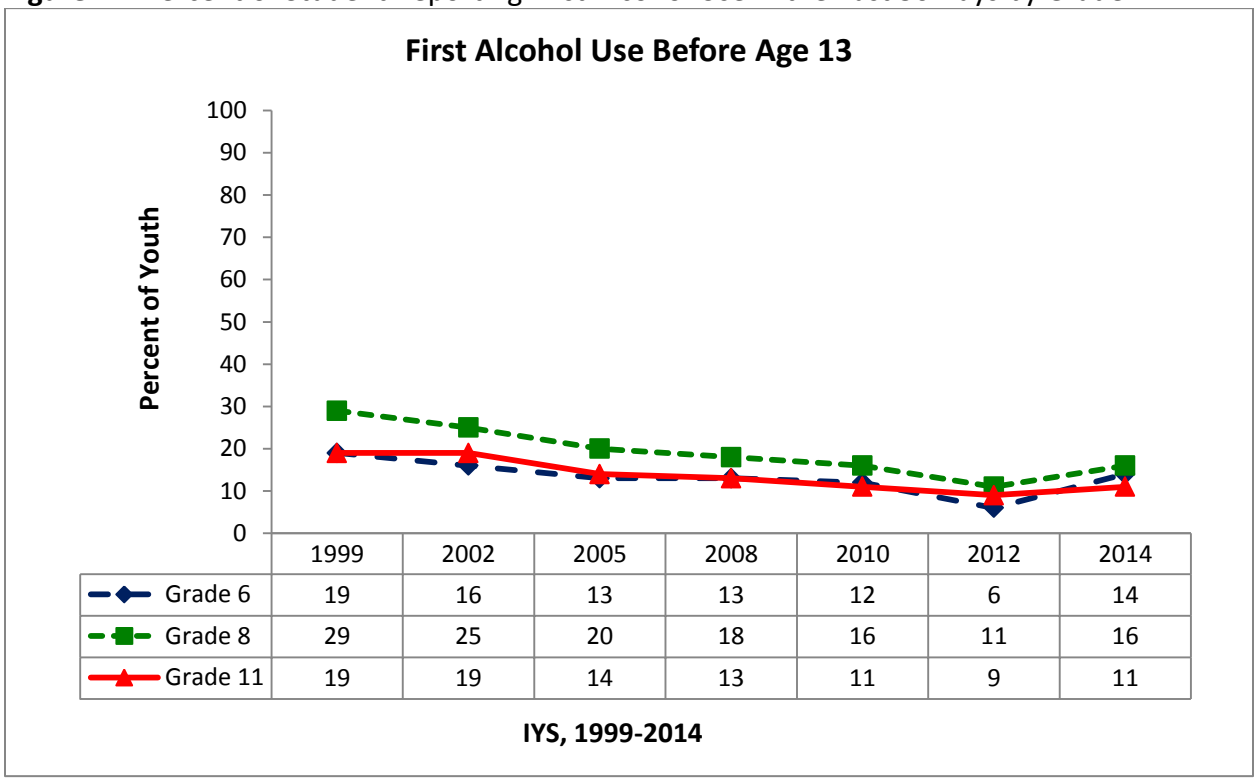
Figure 13: Percent of Adults Reporting Heavy Drinking in the Past 30 Days by Income Level



Youth Consumption Patterns

The Iowa Youth Survey is administered to Iowa youth in grades 6, 8, and 11. The 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*)." Based on the IYS survey results, youth in Grade 8 reported statistically significant drop (29 percent in 1999 to 14 percent in 2014) in the first use of alcohol before the age of 13 for 1999-2014. Between 2012 and 2014, the data showed statistically significant increase in all three grade levels.

Figure 14: Percent of Student Reporting First Alcohol Use in the Past 30 Days by Grade

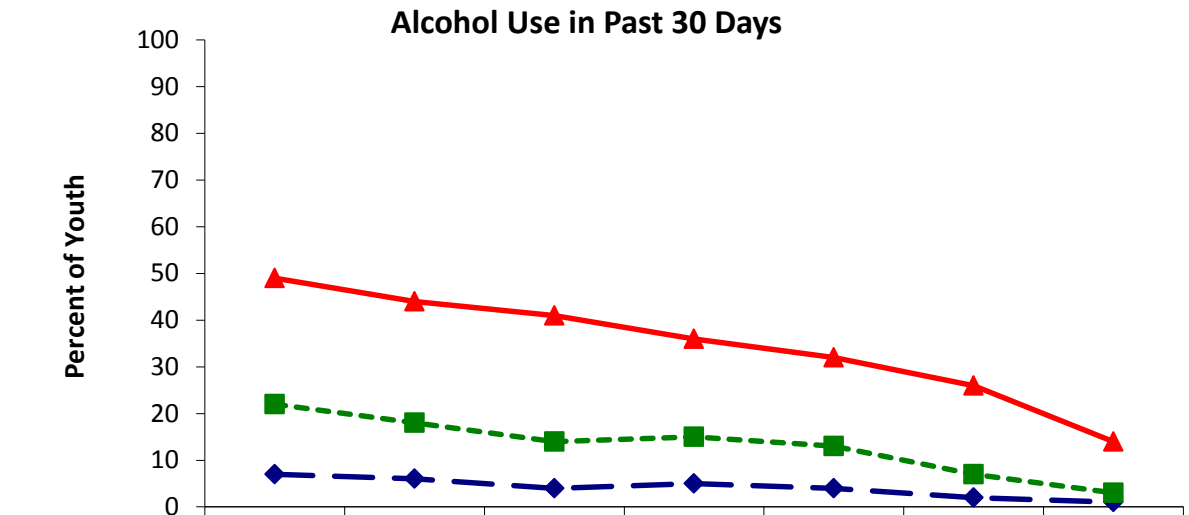


	1999	2002	2005	2008	2010	2012	2014
Grade 6	19	16	13	13	12	6	14
Grade 8	29	25	20	18	16	11	16
Grade 11	19	19	14	13	11	9	11

Alcohol use among Iowa youth has been decreasing for grades 6, 8, and 11. Figure 15 shows students who reported having at least one drink (glass, bottle, or can of beer; glass of wine, liquor, or mixed drink) in the past 30 days, or reported having five or more drinks on at least one day in the last 30 days.

Although Iowa youth continue to use alcohol, alcohol use across all three grades has declined. Amongst sixth grade students, that decline was six percentage points from 1999 to 2014, nineteen percentage points for eighth grade students, and thirty-five percentage points for eleventh graders.

Figure 15: Percent of Student Reporting Alcohol Use in the Past 30 Days by Grade



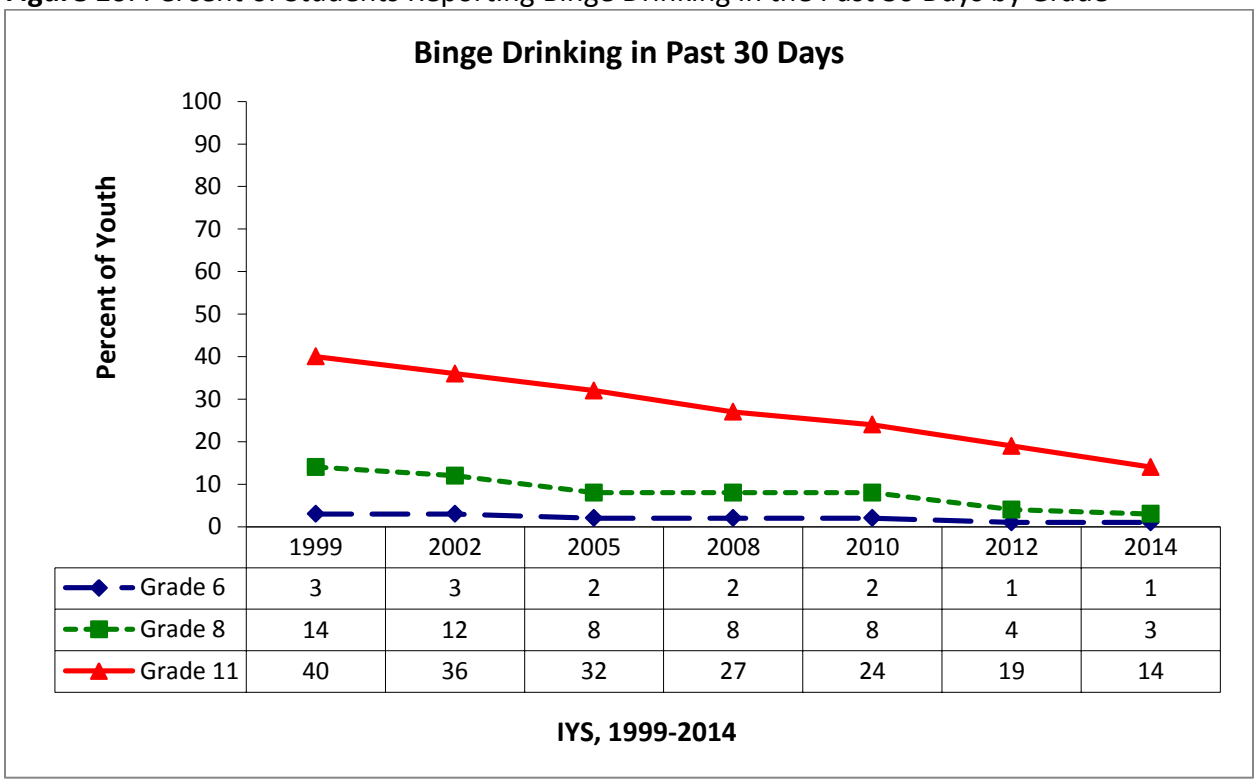
	1999	2002	2005	2008	2010	2012	2014
Grade 6	7	6	4	5	4	2	1
Grade 8	22	18	14	15	13	7	3
Grade 11	49	44	41	36	32	26	14

IYS, 1999-2014

Figure 16 shows the IYS data for students who reported having 5 or more drinks of alcohol (glasses, bottles or cans of beer; glasses of wine, liquor, mixed drinks) in a row, which is within a couple of hours in the last 30 days. Between 2005 and 2014, binge drinking rates for both grade 6 (averaging 2 percent) and grade 8 (averaging 8 percent) has been relatively stable.

Binge drinking has significantly decreased for grade 11, from 40 percent in 1999 to 14 percent in 2014; nearly a 26 percent decrease in the past fifteen years (Figure 16). The same was apparent in grades 6 and 8, about 2 percent and 11 percent decrease in the past fifteen years (Figure 16).

Figure 16: Percent of Students Reporting Binge Drinking in the Past 30 Days by Grade

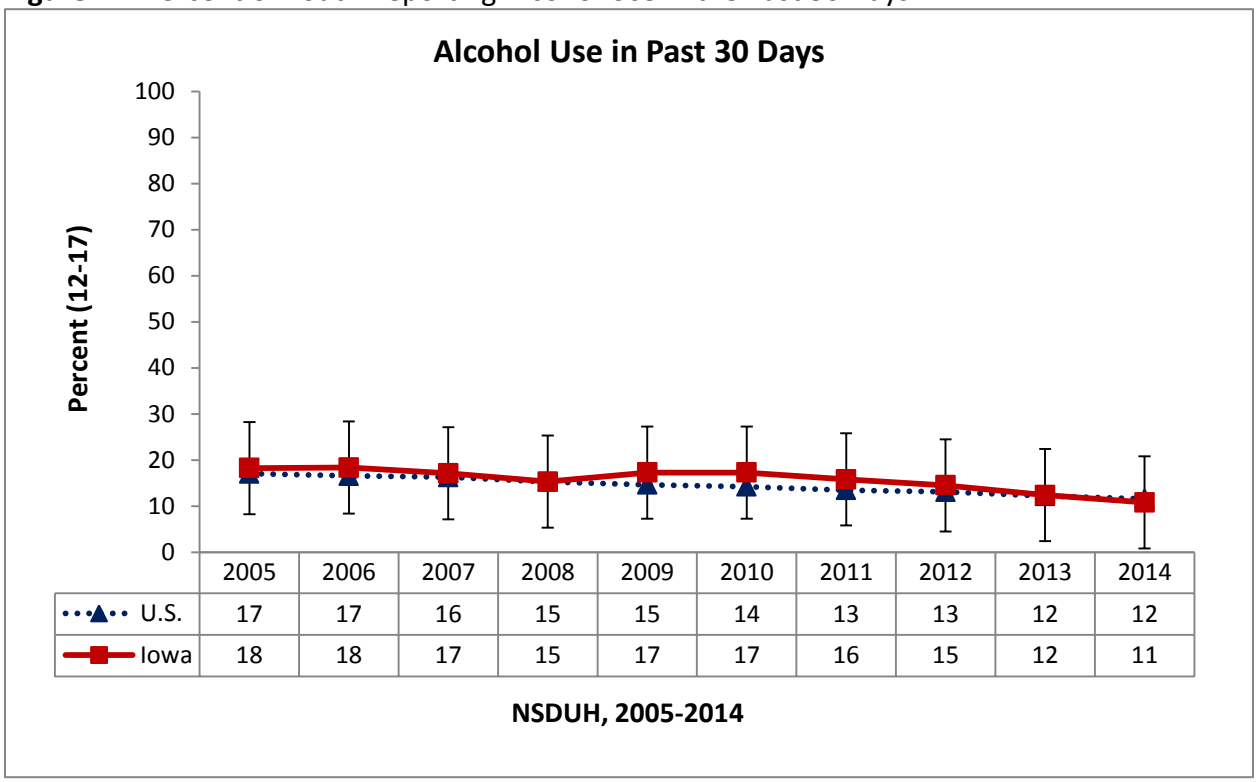


	1999	2002	2005	2008	2010	2012	2014
Grade 6	3	3	2	2	2	1	1
Grade 8	14	12	8	8	8	4	3
Grade 11	40	36	32	27	24	19	14

The 2005-2014 NSDUH data showed a gradual decrease in alcohol use in the past 30 days among Iowa youth. Between 2010 and 2014, alcohol use in the past 30 days has significantly decreased among Iowa youth from 17 percent in 2010 to 11 percent in 2014.

The 2014 NSDUH data showed that alcohol use in the past 30 days among Iowa youth was slightly lower (11 percent) than the national rate of 12 percent (Figure 17).

Figure 17: Percent of Youth Reporting Alcohol Use in the Past 30 Days

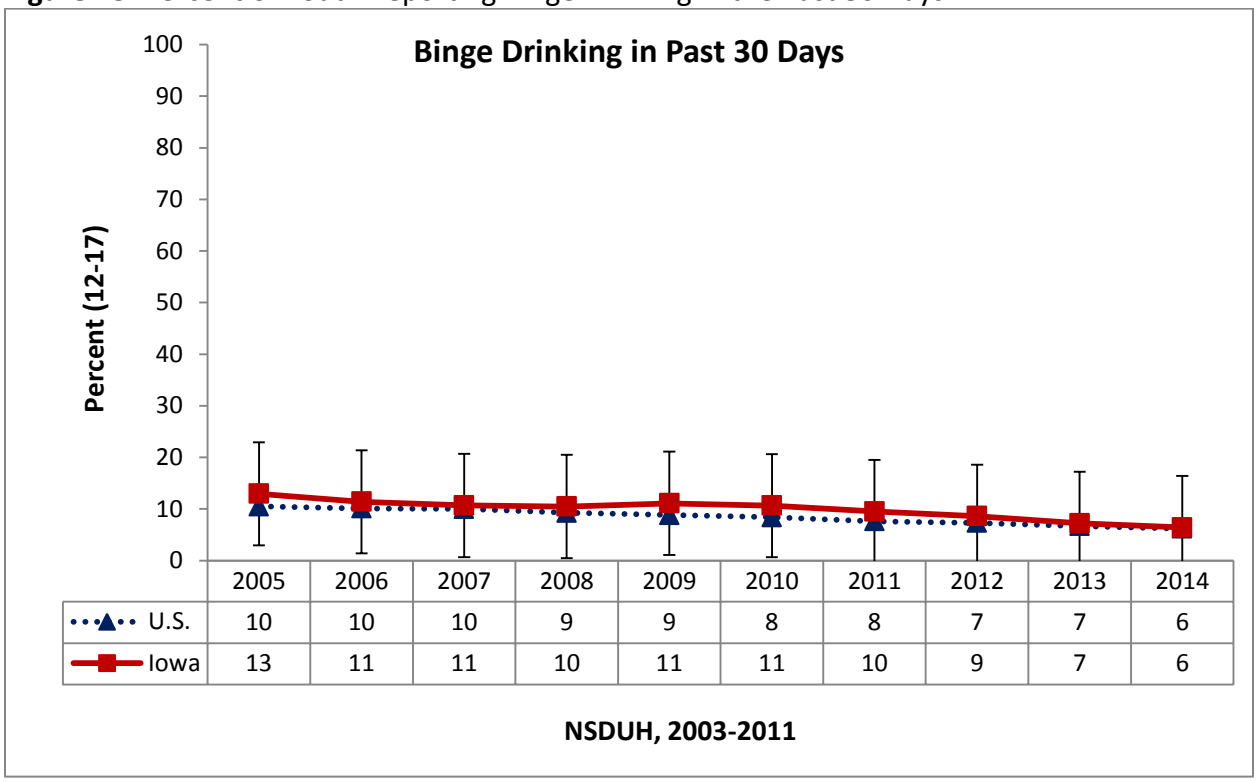


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
U.S.	17	17	16	15	15	14	13	13	12	12
Iowa	18	18	17	15	17	17	16	15	12	11

The rate of binge drinking among Iowa youth has significantly decreased since 2009. Although there has been a gradual decrease in binge drinking among Iowa youth, binge drinking rate among Iowa youth continue to be higher than the national rate.

In 2014, binge drinking among Iowa youth was 6 percent compared to the national rate of 6 percent for the same year (Figure 18). In 2013 (7 percent) and 2014 (7 percent), binge drinking among Iowa youth was similar to the national rate (Figure 18). The results show that Iowa youth binge drank similar to the national rate in the past 30 days.

Figure 18: Percent of Youth Reporting Binge Drinking in the Past 30 Days



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
U.S.	10	10	10	9	9	8	8	7	7	6
Iowa	13	11	11	10	11	11	10	9	7	6

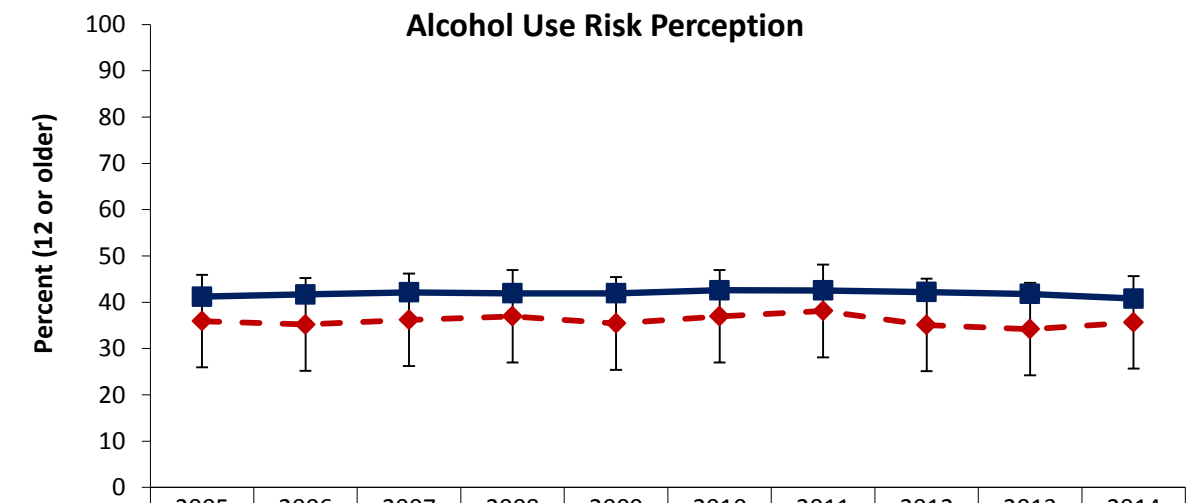
Alcohol Consumption Perception of Risk

Adults Perception of Risk

Figure 19 illustrates the 2005-2014 NSDUH data that show the percent of Iowans reporting alcohol consumption risk perception. The survey question looked at the consumption of five or more drinks of alcohol once or twice a week as a great risk to moderate risk. Individuals' perception of the risk associated with substance use is a significant factor of whether they would engage in substance use. People who perceive a high risk of harm are less likely to consume alcohol than those who perceive low risk of harm.

Figure 19 shows the percent of adults reporting "great to moderate risk" regarding their perception of risk toward the consumption of alcohol. Alcohol consumption risk perception for both Iowa and the U.S. were relatively stable, although Iowa experienced a slight increase in 2010 and 2011 in the past five years. Overall, the alcohol consumption risk perception for Iowa adults aged 12 and older remains lower than the U.S. rate. In 2014, alcohol consumption risk perception for Iowa aged 12 and older was 36 percent compared to 41 percent for the U.S. (Figure 19). Alcohol consumption risk perception appeared to be steady for both Iowans 12 and older and nation's 12 and older (Figure 19).

Figure 19: Percent of Population Reporting Alcohol Consumption Risk Perception



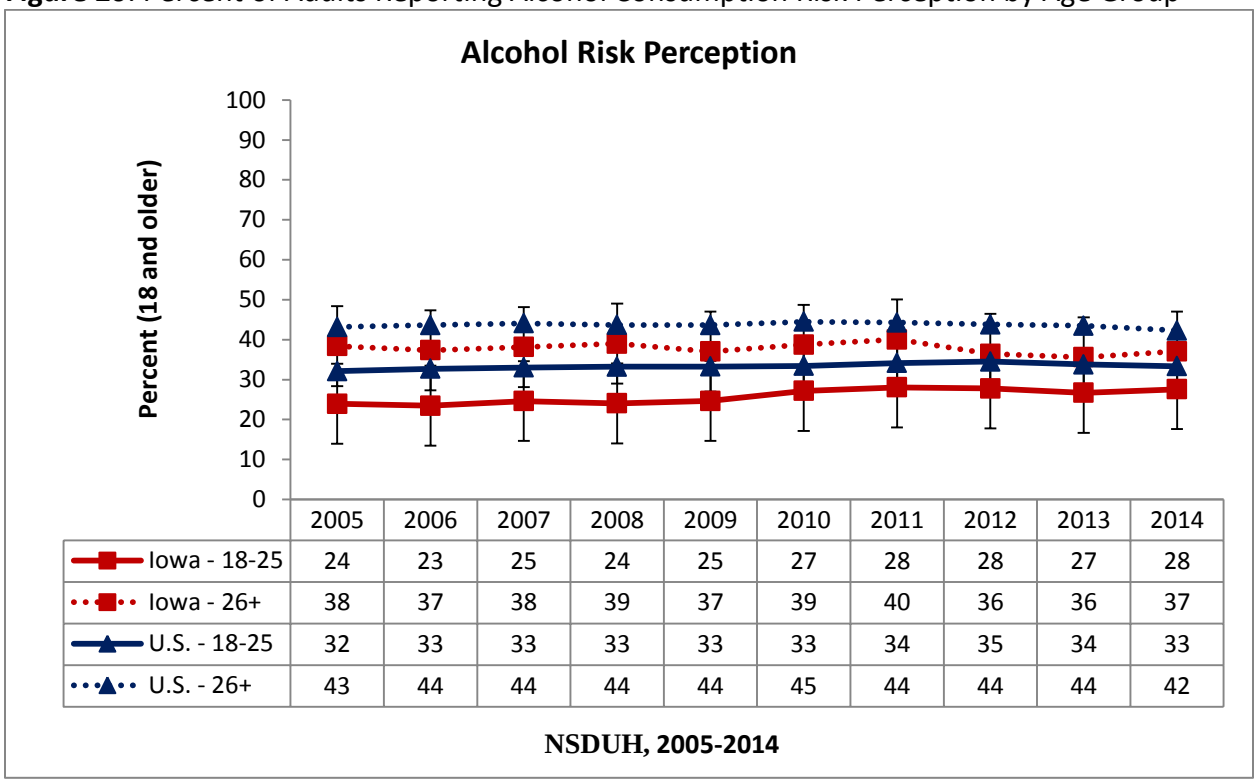
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
U.S.	41	42	42	42	42	43	43	42	42	41
Iowa	36	35	36	37	35	37	38	35	34	36

NSDUH, 2005-2014

Figure 20 shows adult alcohol consumption risk perception for respondents aged 18 and older for both Iowa and the U.S. The rates for adult alcohol consumption risk perception for Iowa adults were 36 percent in 2013 and 37 percent in 2014 compared to the national rates of 44 percent and 42 percent for the same years.

The data showed that Iowans aged 18-25 years had the lowest alcohol consumption risk perception compared to Iowans aged 26 years and older. In Iowa, alcohol consumption risk perception for individuals aged 26 and older had a statistically significant decrease from 40 percent in 2011 to 37 percent in 2014 (Figure 20). The 2014 NSDUH appears to show a slight increase in adult alcohol consumption risk perception for Iowans aged 18 to 25 years and 26 and older.

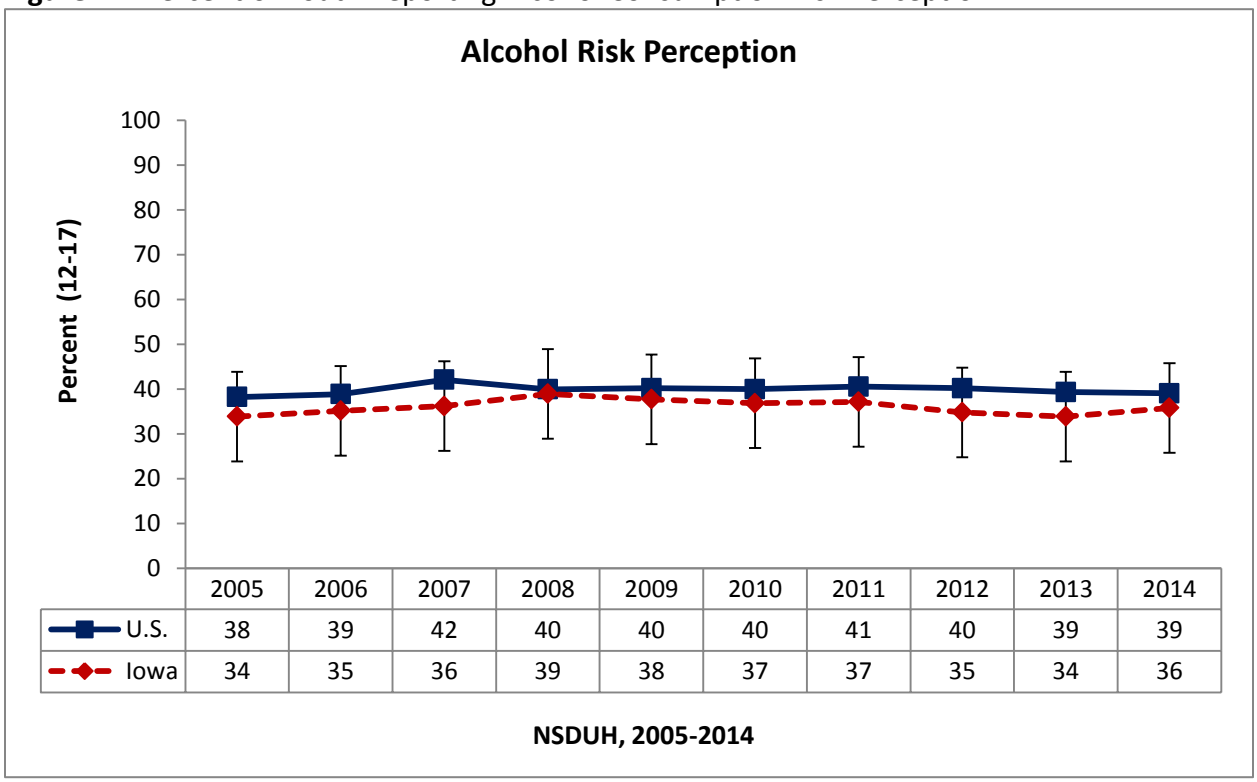
Figure 20: Percent of Adults Reporting Alcohol Consumption Risk Perception by Age Group



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa - 18-25	24	23	25	24	25	27	28	28	27	28
Iowa - 26+	38	37	38	39	37	39	40	36	36	37
U.S. - 18-25	32	33	33	33	33	33	34	35	34	33
U.S. - 26+	43	44	44	44	44	45	44	44	44	42

The alcohol consumption risk perceptions in Iowans aged 12- 17 years is significantly lower than the rate for the U.S. In 2014, alcohol consumption risk perception Iowa youth aged 12-17 years old was 36 percent compared to 39 percent for the U.S. (Figure 21). In 2014, alcohol consumption risk perception among Iowa youth was 3 percent lower than in 2008 (Figure 21). Alcohol consumption risk perception among individuals aged 12-17 years has significantly decreased between 2011 and 2013, but started to increase in 2014.

Figure 21: Percent of Youth Reporting Alcohol Consumption Risk Perception

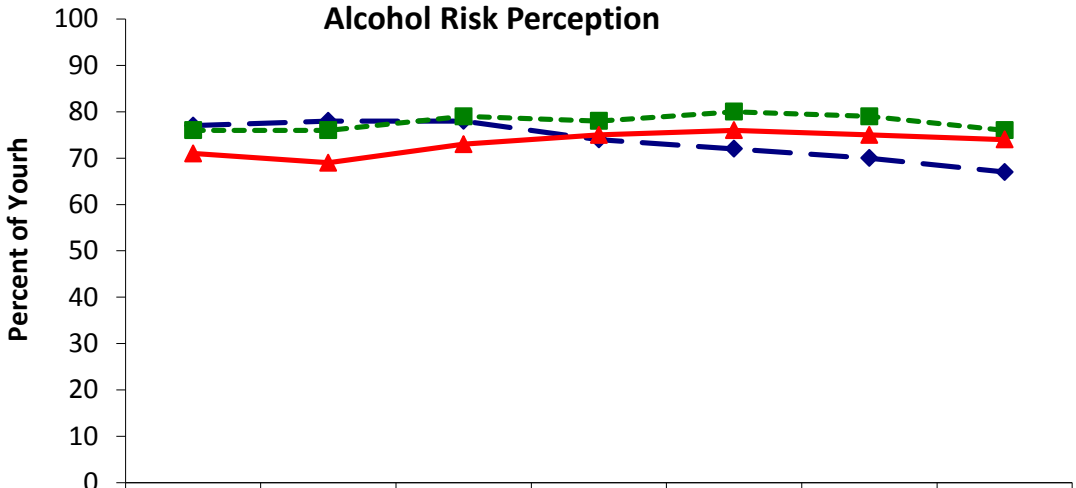


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
U.S.	38	39	42	40	40	40	41	40	39	39
Iowa	34	35	36	39	38	37	37	35	34	36

The 1999-2014 IYS showed a relatively different trend in youth alcohol consumption risk perception. The IYS asked Iowa youth about their attitude on the *consumption of five or more drinks of alcohol once or twice a week as a great risk to moderate risk*. Figure 22 illustrates the attitudes of Iowa youth towards alcohol consumption risk perception. The youth alcohol consumption risk perception for grade 6 respondents indicated a statistically significant decrease since 1999.

In 1999, the youth alcohol risk perception for grade 6 respondents was 77 percent compared to 67 percent in 2014, which is a 10 percent decrease (Figure 22). The 2014 IYS showed a 1 percent decrease in alcohol consumption risk perception for Iowa youth in grade 11, but 3 percent higher than the 1999 IYS data (Figure 22).

Figure 22: Percent of Students Reporting Alcohol Consumption Risk Perception by Grade



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

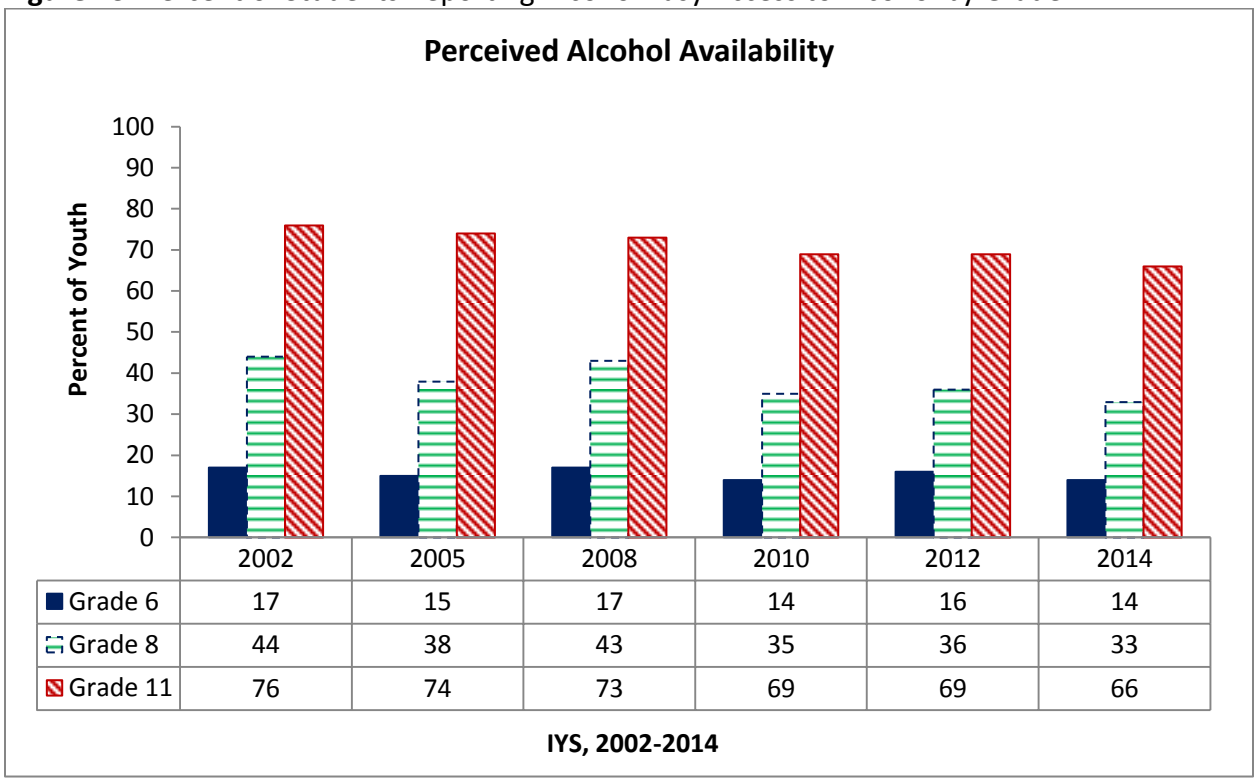
IYS, 1999-2014

Perceived Availability

IYS asked Iowa youth about their perception of alcohol 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 alcoholic beverages (beer, wine or liquor)?" The percent of students reporting easy access to alcohol has fluctuated since 2002 for all three grade levels, although there was a slight decrease in 2012.

In 2012 and 2014, the perception of youth who are in grade 11 decreased by 3 percent compared to 69 percent in 2010 and 2012 (Figure 23). Based on the IYS results, grade 11 youth had the highest percent of perceived alcohol availability among the three grade levels. Since 2002, the perceived alcohol availability among 8-grade respondents decreased by 11 percent (Figure 23). Grade level appeared to play a significant role in perceived alcohol availability among Iowa youth.

Figure 23: Percent of Students Reporting Alcohol Easy Access to Alcohol by Grade

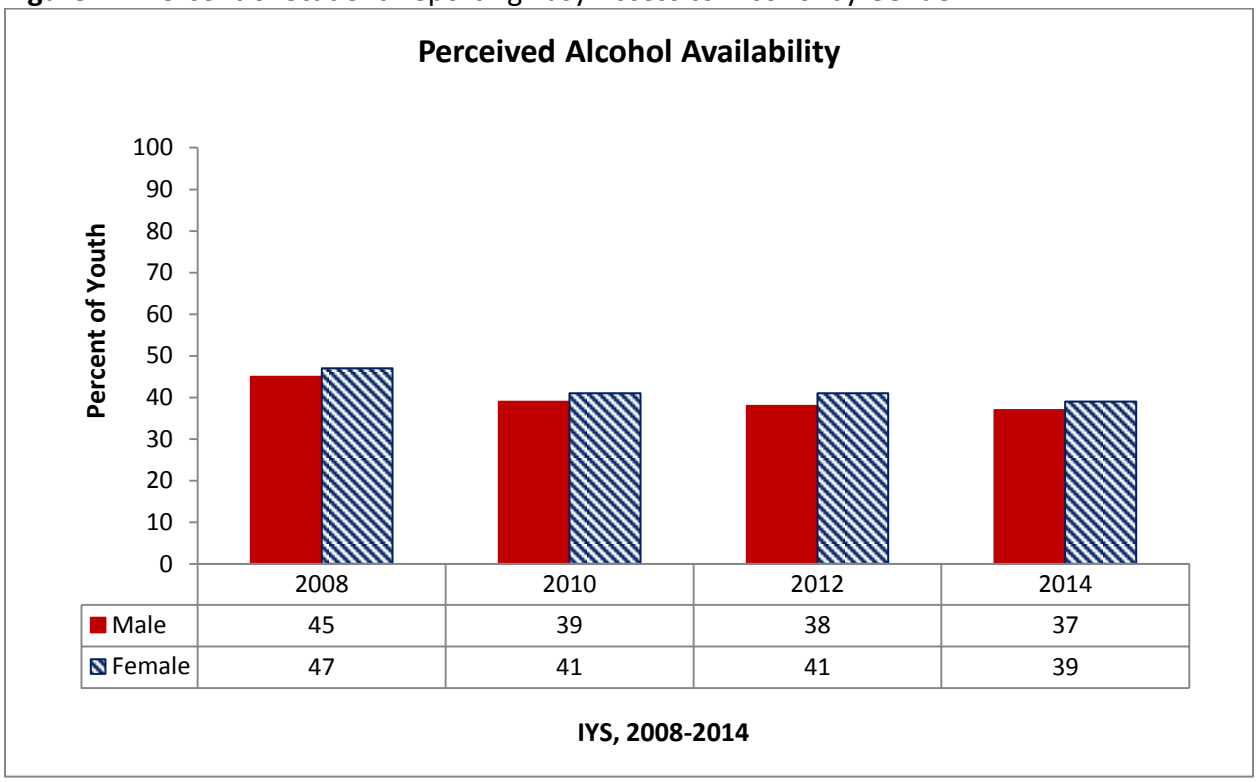


	2002	2005	2008	2010	2012	2014
Grade 6	17	15	17	14	16	14
Grade 8	44	38	43	35	36	33
Grade 11	76	74	73	69	69	66

In the IYS, youth were asked "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, or hard liquor (for example, vodka, whiskey, gin)?" Students' survey results were recorded based on gender.

In 2014, 37 percent of males and 39 percent of females reported easy access to alcohol compared to 45 percent of males and 47 percent of females in 2008 (Figure 24). The results showed that females were more likely to report easy access to alcohol than their counterpart males.

Figure 24: Percent of Student Reporting Easy Access to Alcohol by Gender

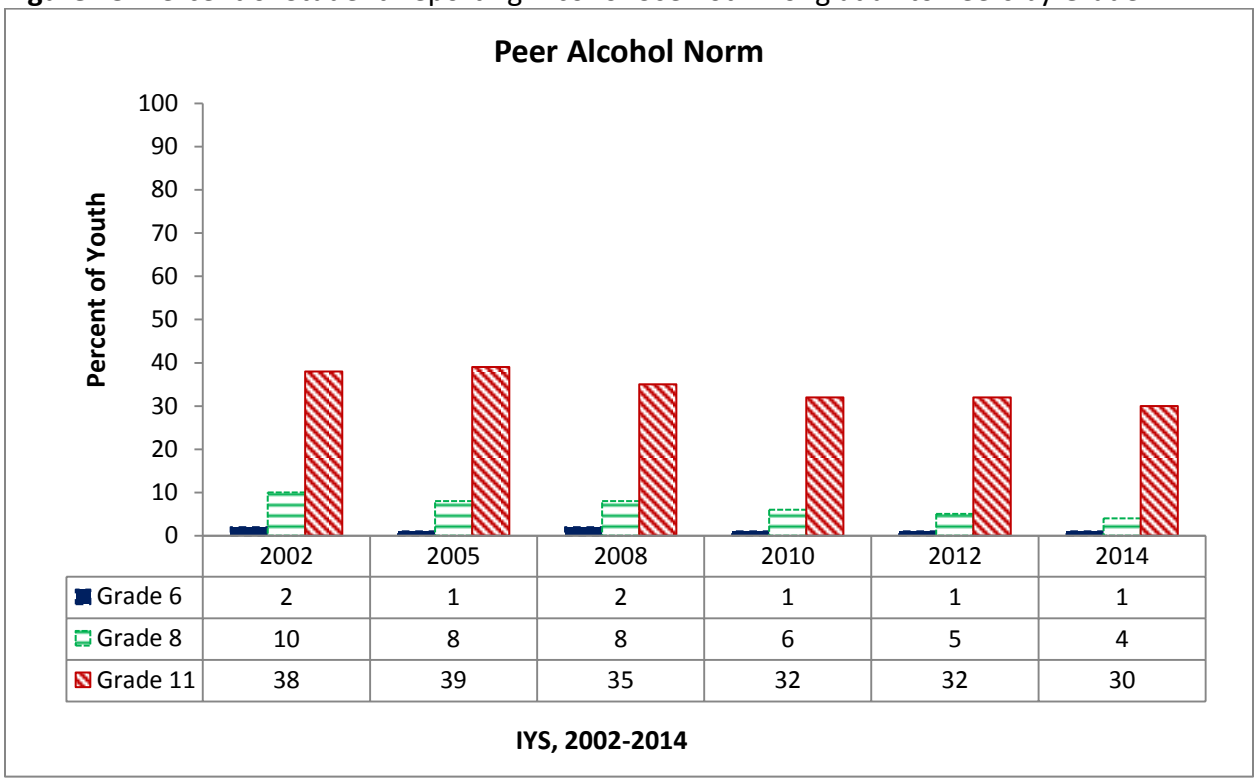


	2008	2010	2012	2014
Male	45	39	38	37
Female	47	41	41	39

Youth perception of peer alcohol consumption norms was evaluated in the IYS. Youth in all three grades (6, 8, and 11) were asked about whether alcohol consumption was not wrong at all to their peers. The results of the IYS showed a statistically significant difference among the three grades (6, 8, and 11).

The 2014 IYS data indicated that grade 6 students (1 percent) had the lowest peer alcohol norm perception followed by grade 8 (4 percent) and then grade 11 (30 percent; Figure 25). Grade level appeared to influence the peer alcohol norm among Iowa youth.

Figure 25: Percent of Student Reporting Alcohol Use not Wrong at all to Peers by Grade

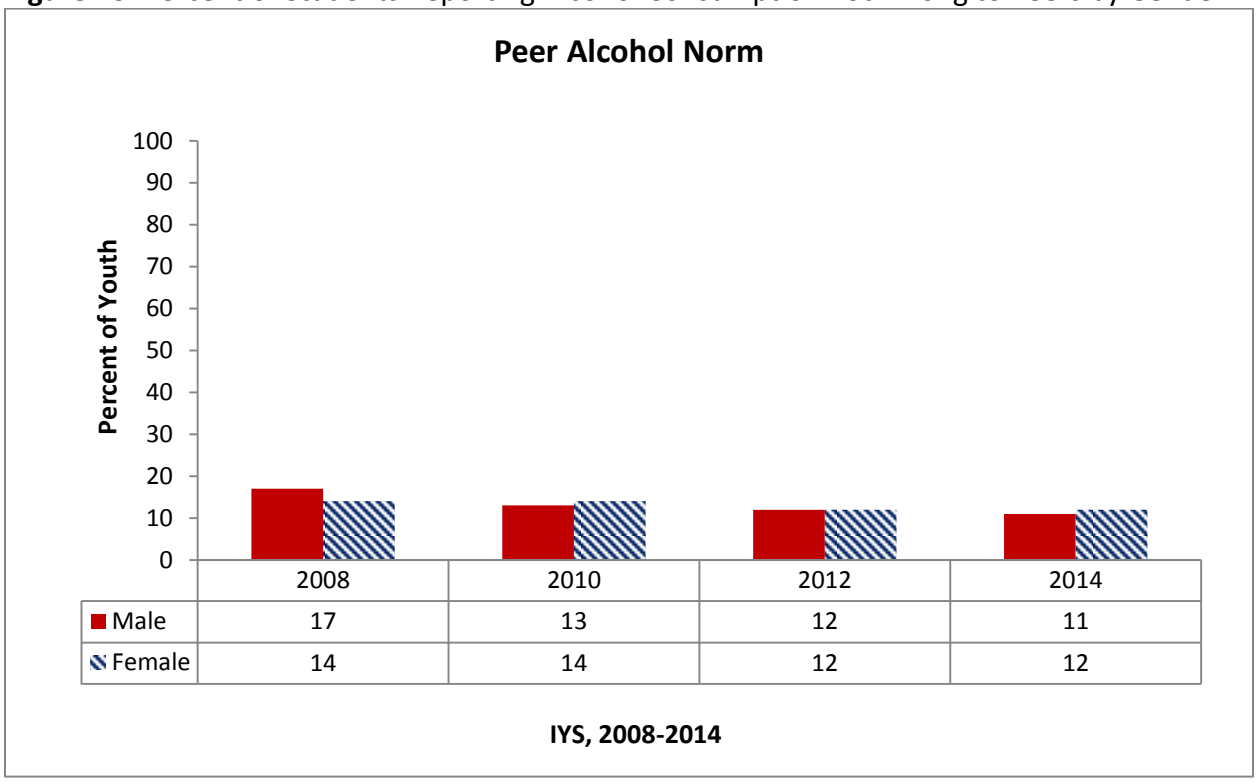


	2002	2005	2008	2010	2012	2014
Grade 6	2	1	2	1	1	1
Grade 8	10	8	8	6	5	4
Grade 11	38	39	35	32	32	30

The 2014 IYS data showed that 12 percent of females thought that alcohol consumption was not wrong to peers compared to 11 percent of males in the same year (Figure 26). In 2012, both genders tied with 12 percent reported alcohol consumption not wrong to peers (Figure 26).

In 2008, 17 percent of males and 14 percent of females reported that alcohol use was not wrong to peers (Figure 26). In 2010, there was a slight difference between males (13 percent) and females (14 percent; Figure 26). Overall, females reported a higher percentage of alcohol consumption not wrong to peers in 2010 and 2014 (Figure 26).

Figure 26: Percent of Students Reporting Alcohol Consumption not Wrong to Peers by Gender



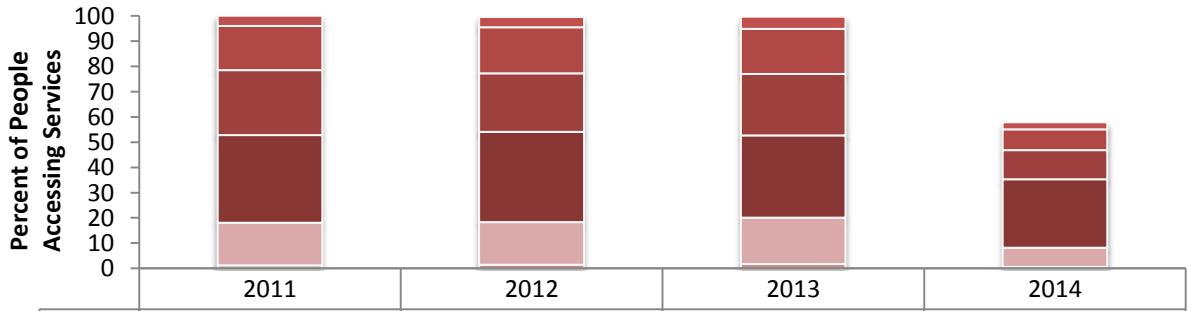
	2008	2010	2012	2014
Male	17	13	12	11
Female	14	14	12	12

Access to Recovery (ATR)

According to the 2011-2014 Access to Recovery (ATR) data, nearly 27 percent of individuals between the ages of 25-34 accessed services in 2014, compared to 33 percent in 2013, which is nearly a six percent lower for 2014 (Figure 27). In 2014, approximately 12 percent of individuals between the ages of 18-24 were served by ATR, indicating a decrease of nearly 50 percent compared with 2013 (Figure 27).

About 8 percent of Iowans aged 18-24 and 45-54 accessed ATR service in 2014, respectively (Figure 27). Overall, the data showed significant decreases for all age groups in the number of individuals served by ATR for the four years period except for individuals aged 65 and older, whose percent for access to service remained at zero over the years.

Figure 27: Age Distribution of ATR Clients Who Accessed Services



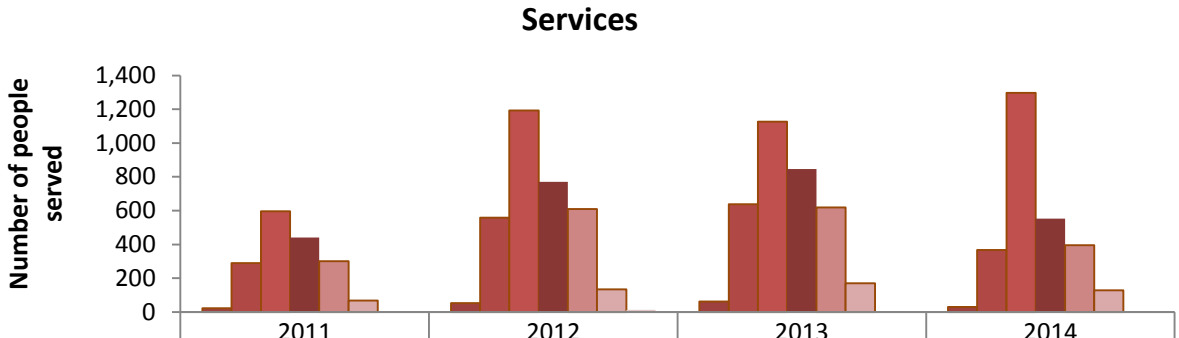
	2011	2012	2013	2014
65+	-	-	-	-
55-64	4	4	5	3
45-54	18	18	18	8
35-44	26	23	24	12
25-34	35	36	33	27
18-24	17	17	18	8
<18	1	2	2	1

ATR, 2011-2014

Figure 28 shows the number of Iowans served in the last four years. In 2014, nearly 4,790 Iowans received ATR services compared to 3,466 in 2013 (Figure 28). Individuals age 25-34 were the highest number served in the past years, compared to Iowans age 65 and older.

Nearly 1,297 of Iowan age 25-34 were served in 2014 compared to 5 of Iowans age 65 and older (Figure 28). Iowans age 45-54 were the second highest age groups served in 2014 followed by Iowans age 18-24. Age seems to play a significant role in the number of Iowans, who were served over the years.

Figure 28: Age Distribution of ATR Clients Served



	2011	2012	2013	2014
<18	23	52	61	30
18-24	290	558	637	367
25-34	597	1,192	1,127	1,297
35-44	441	770	847	552
45-54	300	610	618	396
55-64	68	133	170	129
65+	-	12	6	5

ATR, 2011-2014

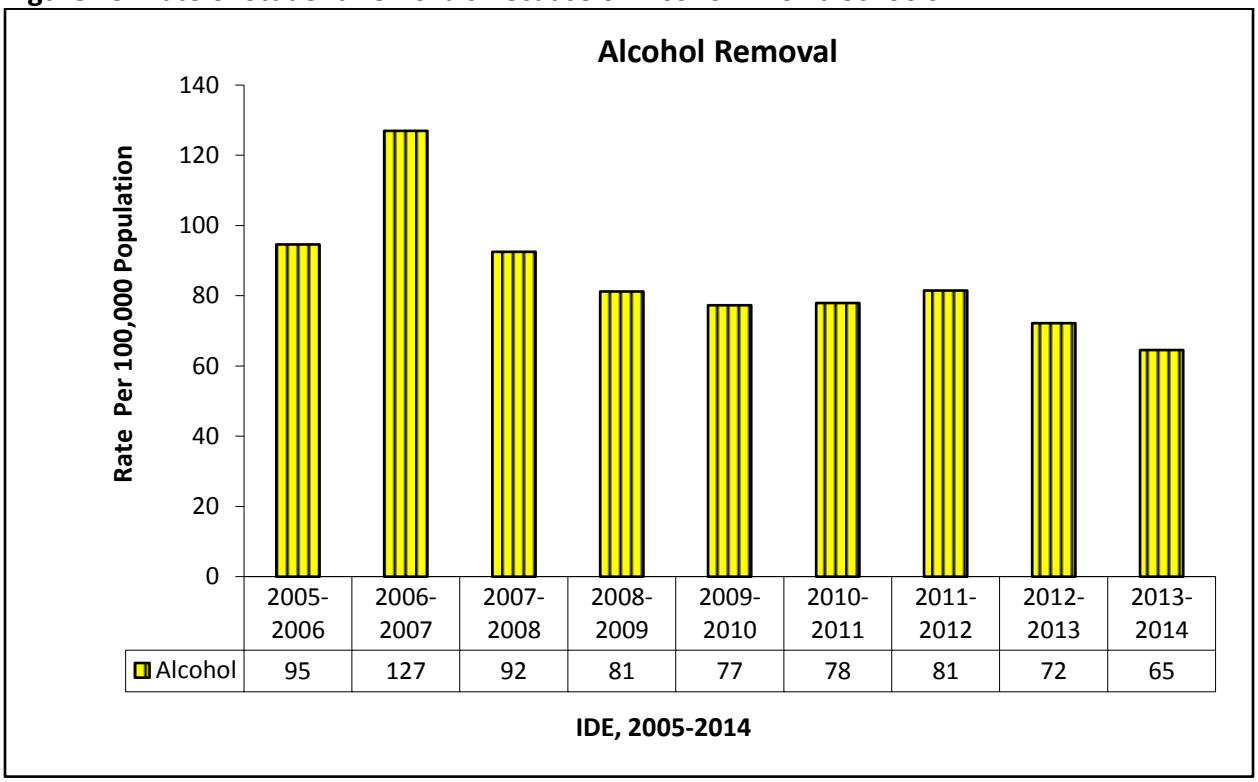
Consequences

Education Consequences

In 2006-2007, the rate of school suspensions and expulsions was 127, compared to 81 in 2011-2012 (Figure 29). School suspensions and removal rate in Iowa gradually decreased from 92 to 77 between 2007 and 2009, but quickly increased to 77 in 2010-2011 (Figure 29).

The rate of alcohol-related suspension and expulsion was significantly low in the school year 2013-2014 compared to 2006-2007 school year. In Iowa, the school year 2013-2014 had the lowest (65 per 100,000 students) suspension and expulsion rate (Figure 29). The data appears to be gradually decreasing since the school year 2006-2007.

Figure 29: Rate of Student Removals Because of Alcohol in Iowa Schools



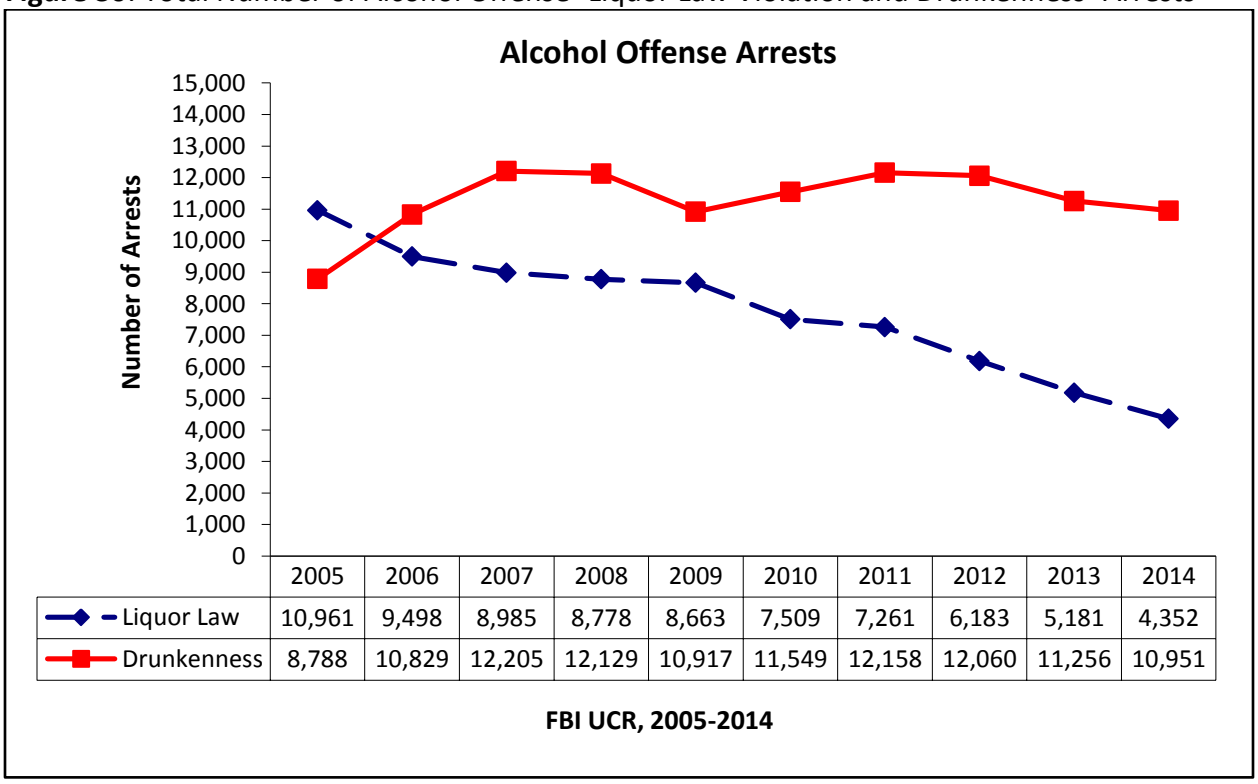
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Alcohol	95	127	92	81	77	78	81	72	65

Legal Consequences

Figure 30 shows the number of alcohol offense arrests due to drunkenness and liquor law violations. Drunkenness is when individuals drink alcoholic beverages to the extent that their mental faculties and physical coordination are substantially impaired. Liquor law violations means the violation of laws or ordinances prohibiting the manufacture, sale, purchase, transportation, possession, or use of alcoholic beverages, not including OWI or drunkenness offenses.

The 2005-2014 FBI-UCR data showed a significant decrease in liquor law violations in Iowa. Liquor law violations have been gradually decreasing since 2009. In 2011, there were 7,261 liquor law violations compared to 4,352 liquor law violations in 2014 (Figure 30). Arrest due to drunkenness decreased from 12,158 arrests in 2011 to 10,951 arrests in 2014 (Figure 30). The lowest number for arrest due to drunkenness was in 2005, with nearly 8,788 arrest compared to the highest number seen 2007, with nearly 12,502 arrest (Figure 30). Both liquor law violations and drunkenness arrests appear to be decreasing gradually since 2011.

Figure 30: Total Number of Alcohol Offense- Liquor Law Violation and Drunkenness- Arrests

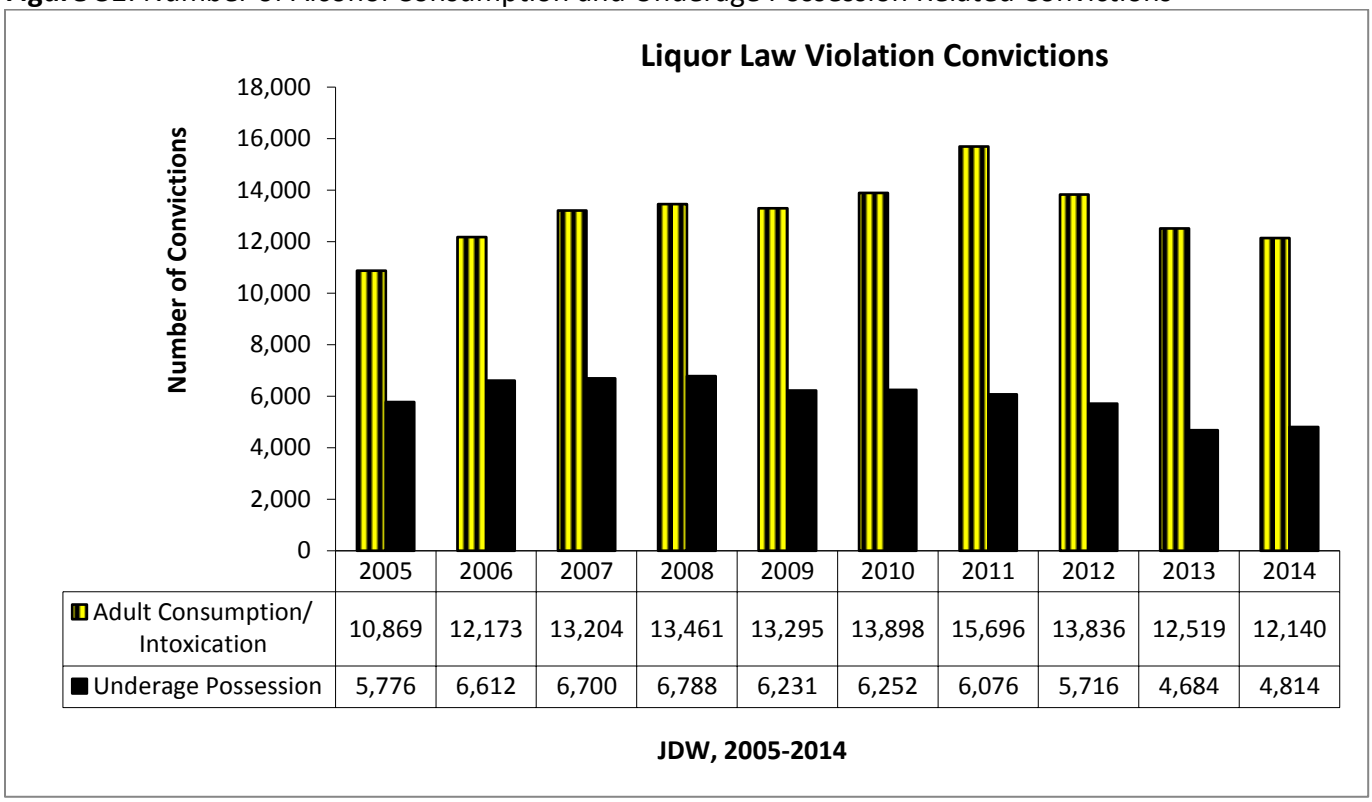


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Liquor Law	10,961	9,498	8,985	8,778	8,663	7,509	7,261	6,183	5,181	4,352
Drunkenness	8,788	10,829	12,205	12,129	10,917	11,549	12,158	12,060	11,256	10,951

The 2014 JDW data showed that the number of conviction for liquor violations in Iowa for adult consumption/intoxication decreased from 15,696 convictions in 2011 to 12,140 convictions in 2014 (Figure 31). Liquor law violation convictions for underage possession continued to decrease over the past five years.

Between 2010 and 2014, liquor law violation convictions for underage possession significantly decreased from 6,252 convictions in 2010 to 4,814 convictions in 2014 (Figure 31).

Figure 31: Number of Alcohol Consumption and Underage Possession Related Convictions

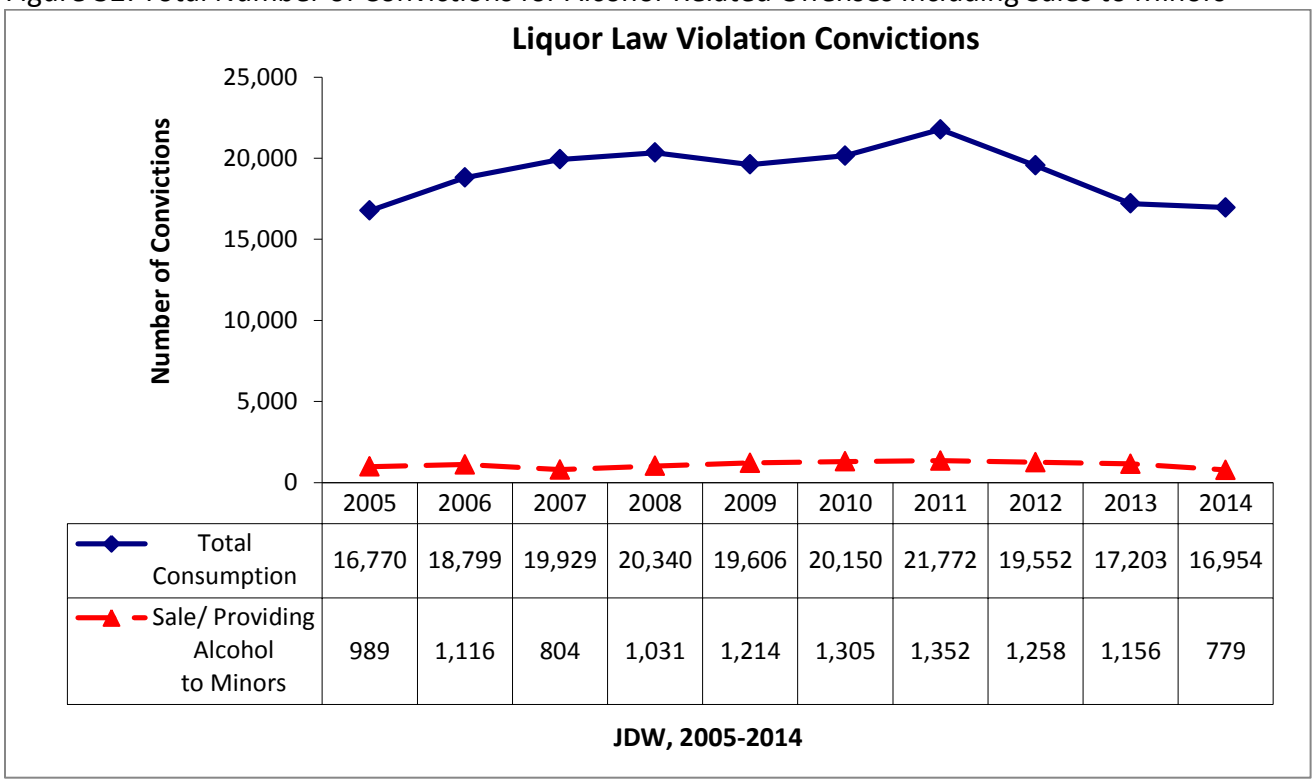


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Adult Consumption/ Intoxication	10,869	12,173	13,204	13,461	13,295	13,898	15,696	13,836	12,519	12,140
Underage Possession	5,776	6,612	6,700	6,788	6,231	6,252	6,076	5,716	4,684	4,814

Figure 32 shows the total number of convictions for alcohol-related offenses in Iowa including sales to minors. The total alcohol consumption liquor law violation conviction in Iowa was 16,954 convictions in 2014 compared to 21,772 convictions in 2011 (Figure 32).

Liquor law violation convictions for alcohol sale and providing alcohol to minors significantly decreased since 2008. In 2014, there were 779 convictions for sale and providing alcohol to minors compared to 1,156 in 2013, a decrease of more than 60 percent. On average, nearly 1,100 liquor law violation convictions related to alcohol sales/providing alcohol to minors occur each year in Iowa.

Figure 32: Total Number of Convictions for Alcohol-Related Offenses Including Sales to Minors

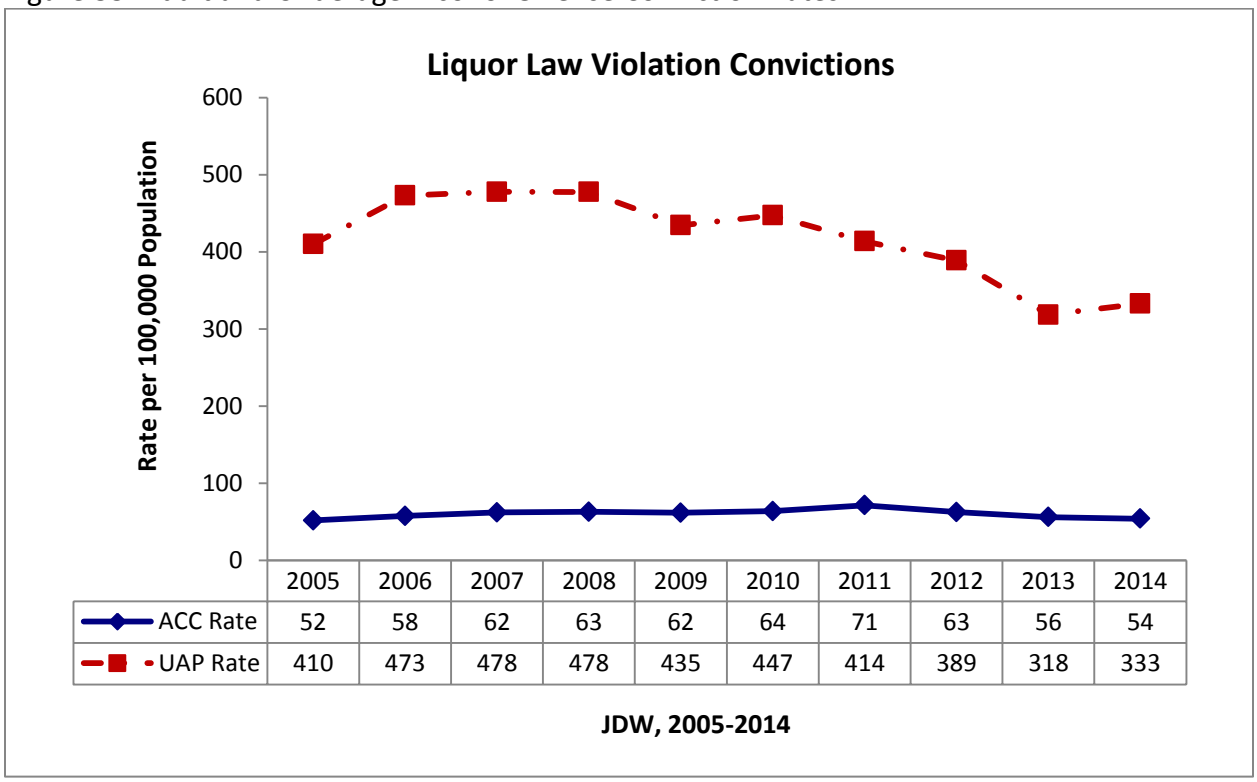


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Consumption	16,770	18,799	19,929	20,340	19,606	20,150	21,772	19,552	17,203	16,954
Sale/ Providing Alcohol to Minors	989	1,116	804	1,031	1,214	1,305	1,352	1,258	1,156	779

Figure 33 shows adult and underage alcohol offense conviction rates in Iowa. The rate per 100,000 population for underage alcohol possession (UAP) was 333 in 2014 compared to 435 in 2009 (Figure 33). The rates for underage alcohol offense convictions have been decreasing in the past five years.

Although the rates of alcohol consumption conviction (ACC) have been decreasing since 2010, the rates for UAP increased from 319 per 100,000 population to 33 per 100,000 population (Figure 33).

Figure 33: Adult and Underage Alcohol Offense Conviction Rates



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
ACC Rate	52	58	62	63	62	64	71	63	56	54
UAP Rate	410	473	478	478	435	447	414	389	318	333

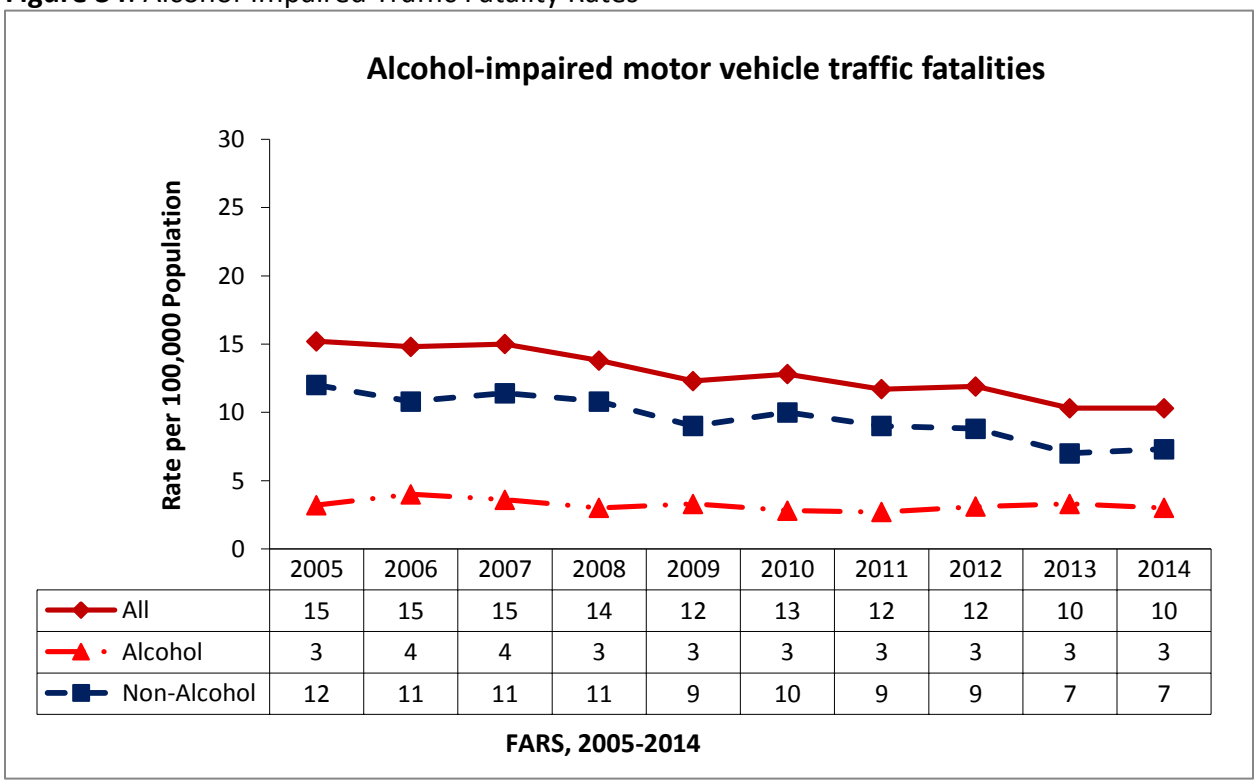
Notes: ACC= Alcohol Consumption Conviction; UAP = Underage Alcohol Possession

Alcohol Mortality

Alcohol-Impaired Motor Vehicle Traffic-Related Mortality

Alcohol-related motor vehicle traffic-related fatalities have been relatively stable since 2005. Alcohol-impaired motor vehicle traffic fatalities are described as the total number of alcohol-related deaths. The 2005-2014 FARS data in Figure 34 illustrate traffic fatalities rates per 100,000 population involving individuals who consumed alcohol. The data shows trending of the percent with Blood Alcohol Content (BAC) greater than 0.01. In 2013, alcohol-impaired motor vehicle traffic-related fatality rate associated with alcohol use was 3 fatalities per 100,000 population compared to 3 fatalities per 100,000 population in 2014 (Figure 34). Non-alcohol-impaired motor vehicle traffic-related fatalities had significantly decreased from 12 fatalities per 100,000 population in 2005 to 7 fatalities per 100,000 population in 2014 (Figure 34). Figure 34 showed that alcohol-related motor vehicle traffic-related fatalities were significantly higher in 2006 (4 fatalities per 100,000) compared to 2011 (3 fatalities per 100,000 population). Overall, motor vehicle traffic-related fatalities have significantly decreased from 15 fatalities per 100,000 population in 2005 to 10 fatalities per 100,000 population in 2014 (Figure 34).

Figure 34: Alcohol-Impaired Traffic Fatality Rates

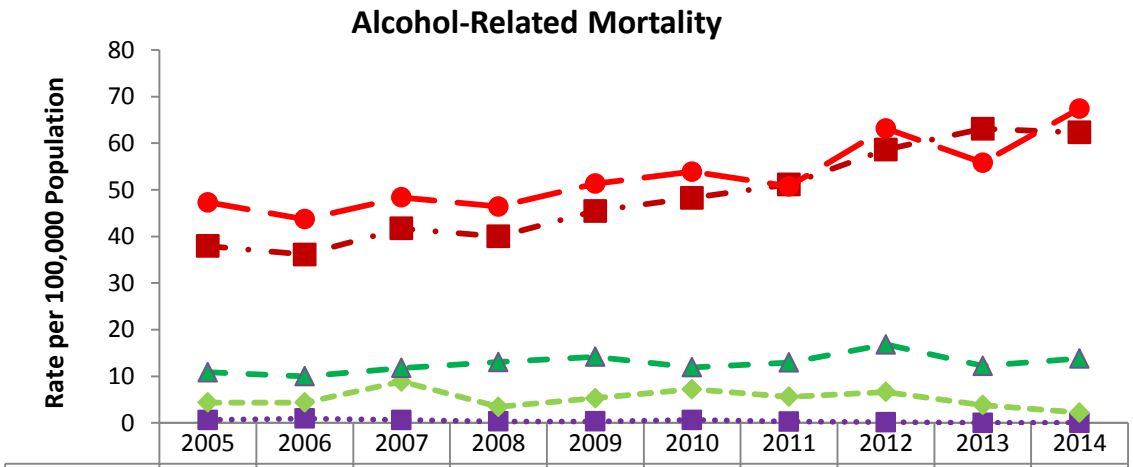


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
All	15	15	15	14	12	13	12	12	10	10
Alcohol	3	4	4	3	3	3	3	3	3	3
Non-Alcohol	12	11	11	11	9	10	9	9	7	7

Figure 35 shows alcohol-related mortality rates for Iowa between 2005 and 2014. Alcohol-related mortality has been increasing in Iowa over the past decade. In 2014, the rate of alcohol-related mortality was higher for Iowans aged 45-64 than for Iowans aged 18 and younger, 18-24, and 25-44. Iowans aged 18 and younger had the lowest rates of alcohol-related mortality compared to the rest of the aged groups.

Alcohol-related mortality among Iowans aged 18-24 decreased 50 percent from 2005 (4 per 100,000 population) to 2014 (2 per 100,000 population). For Iowans 45-64, the rates increased 64 percent over the same period, from 38 per 100,000 population to 62 per 100,000 population. Iowans 65 and older also saw an increase of 42 percent for alcohol-related mortality over the same period, from 47 per 100,000 population to 67 per 100,000 population. Overall, alcohol-related mortality has been rising for Iowans 45-64 and 65 and older over the past decades.

Figure 35: Alcohol Attributed Mortality by Age Group



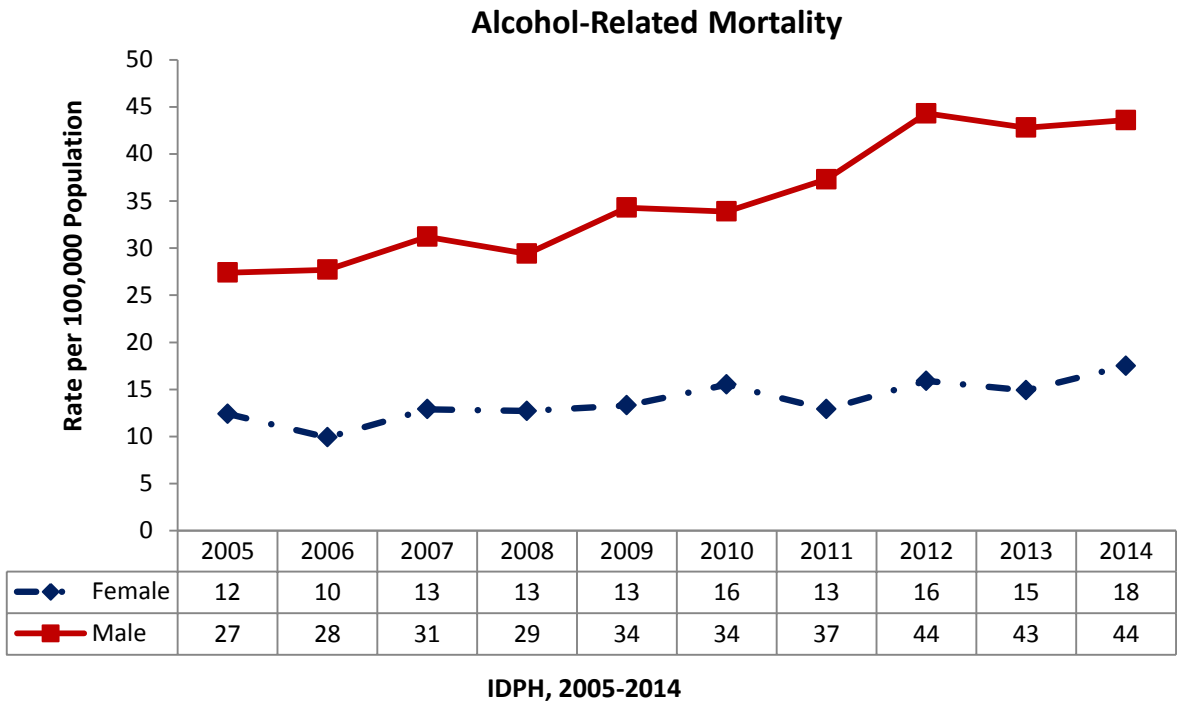
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<18	1	1	1	0	0	1	0	0	-	-
18-24	4	4	9	3	5	7	6	7	4	2
25-44	11	10	12	13	14	12	13	17	12	14
45-64	38	36	42	40	45	48	51	59	63	62
65+	47	44	48	46	51	54	51	63	56	67

IDPH, 2005-2014

Figure 36 shows the rates of alcohol-related mortality in Iowa. Alcohol-related mortality was higher among males than females in Iowa. In 2014, alcohol-related mortality among males was 44 per 100,000 population compared to 18 per 100,000 population for females.

The rates for alcohol-related mortality have significantly increased for both genders since 2005. Between 2005 and 2014, the rate of alcohol-related mortality for females increased 41 percent and 59 percent for males.

Figure 36: Alcohol-Related Mortality by Gender



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Female	12	10	13	13	13	16	13	16	15	18
Male	27	28	31	29	34	34	37	44	43	44

IDPH, 2005-2014

Figure 37 shows alcohol-related cirrhosis mortality rates for Iowans by gender. Since 2005, alcohol-related cirrhosis mortality in Iowa increased by 73 percent for males and 82 percent for females. Between 2005 and 2014, Iowa males had higher alcohol-related cirrhosis mortality rate than Iowa females and the state. The rate of cirrhosis mortality in 2014 was 10 percent for males compared to 4 percent for females (Figure 37). Alcohol-related cirrhosis mortality was the lowest for both genders in 2006, but continued to increase over the past eight years. Overall, Iowa males had the highest alcohol-related cirrhosis mortality rate compared to both Iowa females and the state of Iowa.

Figure 37: Alcohol-Related Cirrhosis Mortality by Gender

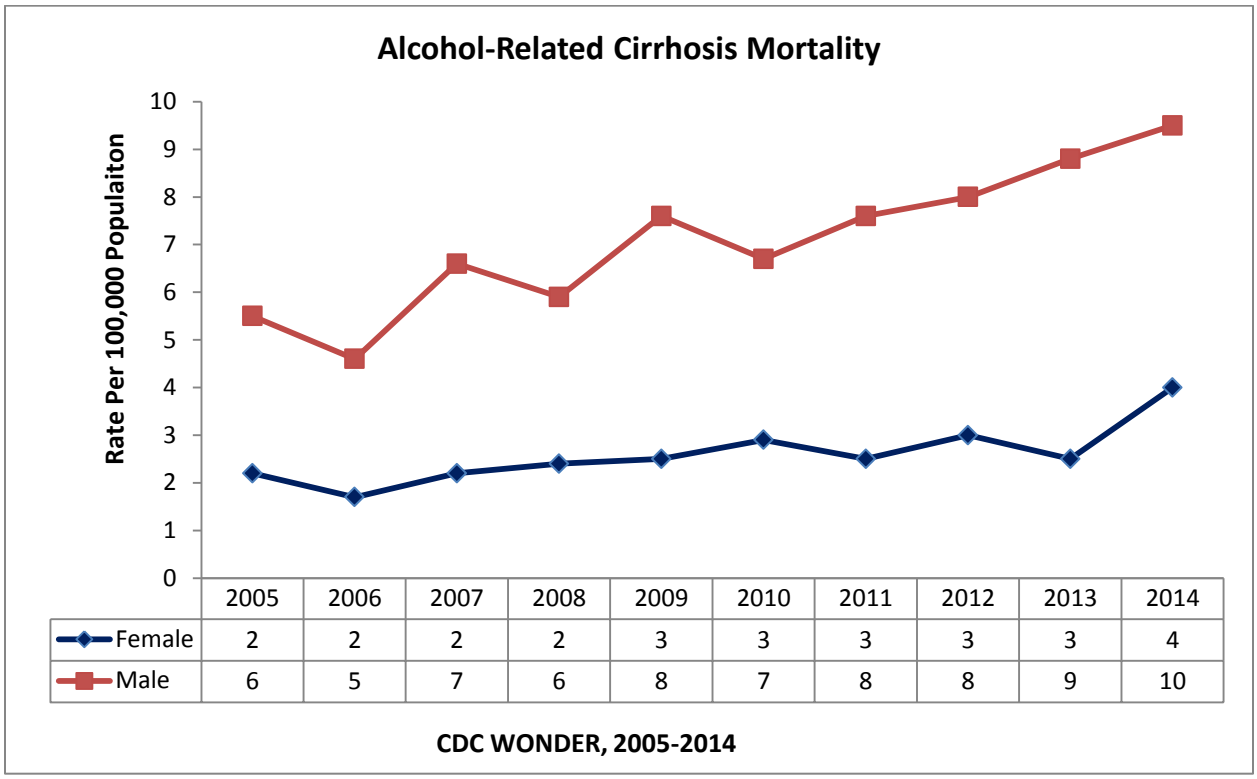
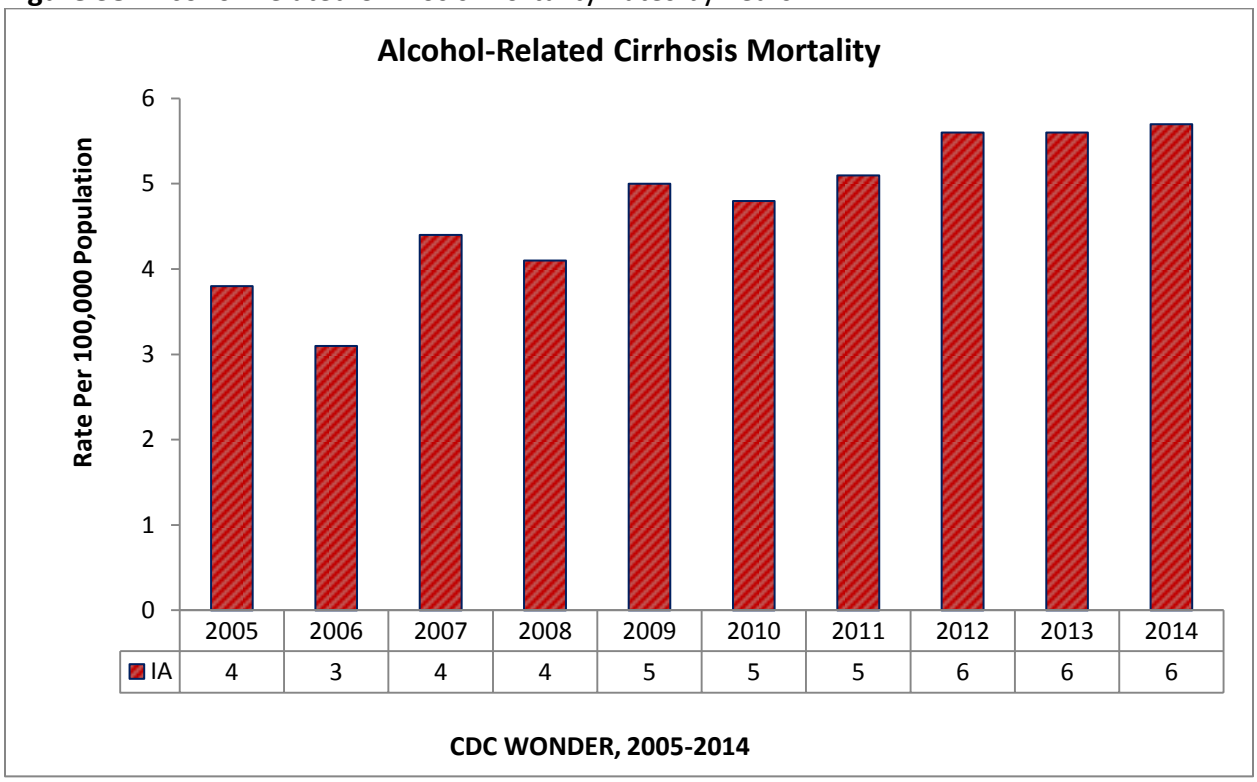


Figure 38 shows alcohol-related cirrhosis mortality rates for Iowa. The rate of alcohol-related cirrhosis mortality rates doubled since 2005. Alcohol-related cirrhosis mortality was at its lowest (3 per 100,000 population) in 2006 but increased significantly (6 per 100,000 population) in 2014.

Figure 38: Alcohol-Related Cirrhosis Mortality Rates by Years

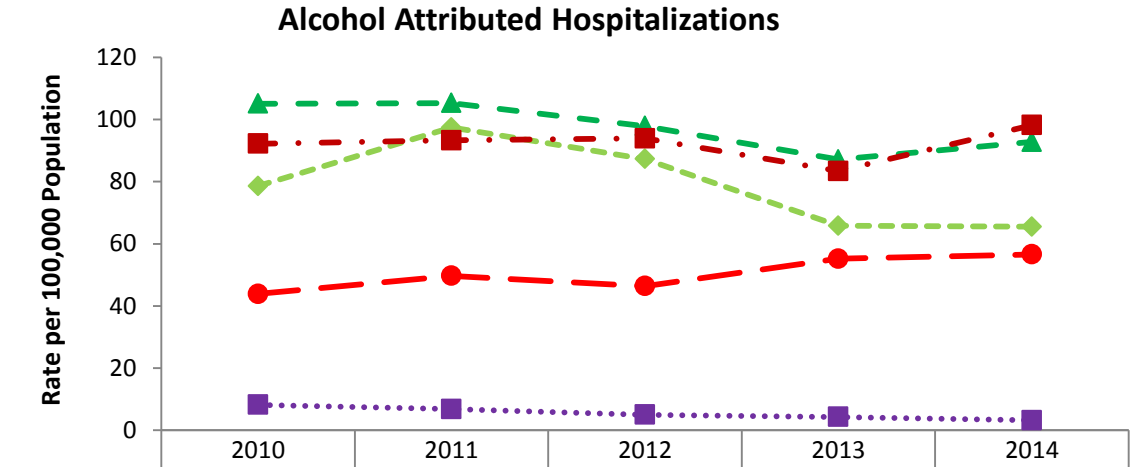


Alcohol Attributed Hospitalization

In Iowa, hospitalizations due to alcohol have increased for all age groups except for individuals aged 18 and younger. The rates of alcohol-attributed hospitalizations among Iowans aged 25-64 years old were higher than the rates for all the other ages. In 2014, Iowans 25-44 and 45-64 had the highest alcohol-attributed hospitalization rates compared to the rest of the age groups.

Alcohol attributed hospitalization rate significantly decreased (8 per 100,000 in 2010 to 3 per 100,000 population in 2014) among Iowans aged 18 and younger (Figure 39). Iowans aged 18-24 also noticed significant decrease (79 per 100,000 population in 2010 to 66 per 100,000 population in 2014) in alcohol attributed hospitalization rates.
The data also showed a significant increase (57 per 100,000 population) in alcohol-attributed hospitalizations among Iowans aged 65 or older in 2014 compared to 44 per 100,000 population in 2010. Overall, alcohol-attributed hospitalizations continued to decrease for all age groups in Iowa since 2010, but Iowa adults between the ages of 25 and 64 had the highest rates of alcohol-attributed hospitalization.

Figure 39: Alcohol-Attributed Hospitalizations by Age Group

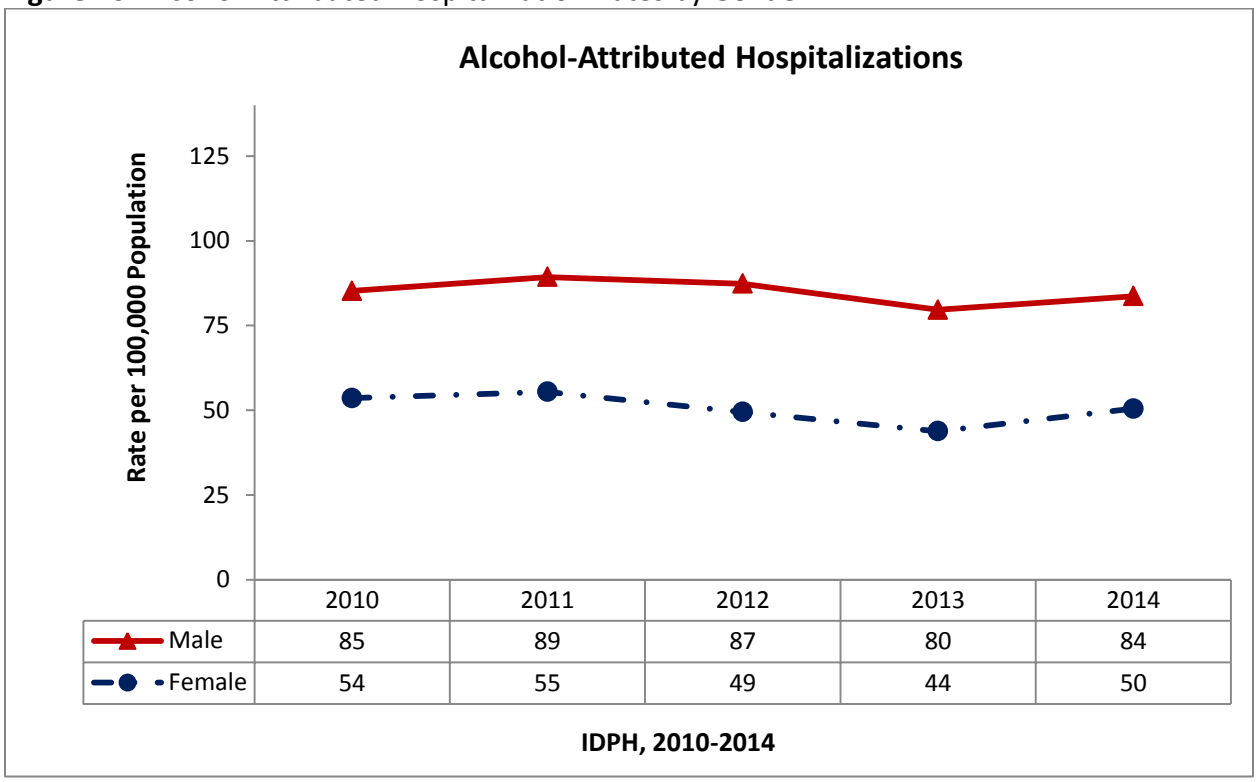


	2010	2011	2012	2013	2014
<18	8	7	5	4	3
18-24	79	97	87	66	66
25-44	105	105	98	87	93
45-64	92	93	94	83	98
65+	44	50	46	55	57

IDPH, 2010-2014

In Iowa, alcohol attributed hospitalizations rates were higher in males than females. In 2014, alcohol attributed hospitalization rate for Iowa males was 84 per 100,000 compared to 51 per 100,000 for Iowa females (Figure 40). The alcohol attributed hospitalization rates were slightly lower in 2014 for both genders compared to the rates seen in 2010 and 2011. Compared to females, males are more likely to be hospitalized with alcohol-related injuries than females in Iowa.

Figure 40: Alcohol-Attributed Hospitalization Rates by Gender



	2010	2011	2012	2013	2014
Male	85	89	87	80	84
Female	54	55	49	44	50

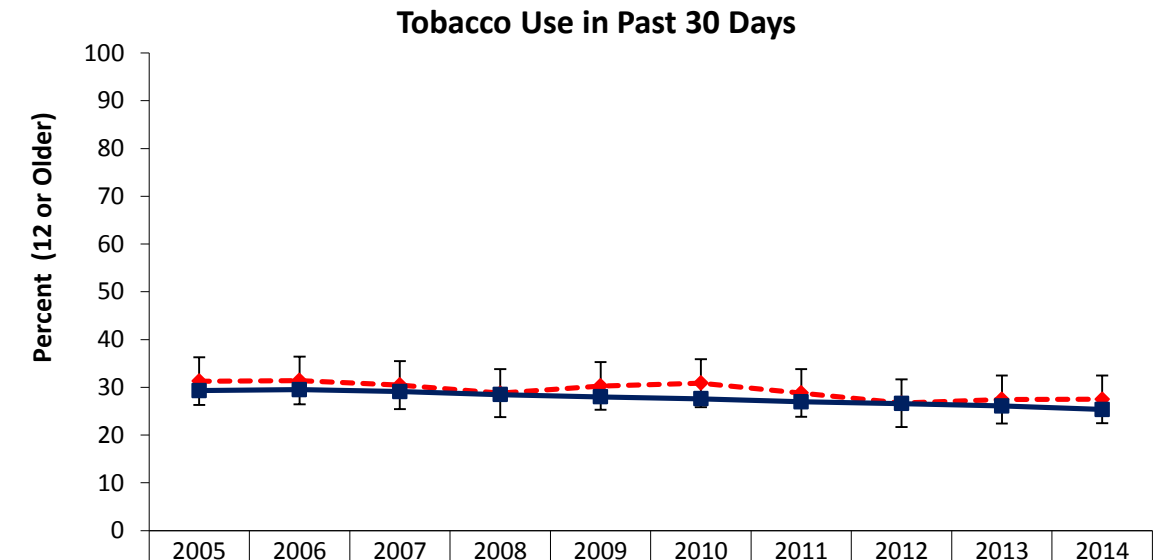
Tobacco Consumption

Adult Consumption Patterns

Tobacco use means the consumption of tobacco products such as cigarettes, smokeless tobacco (chewing tobacco or snuff), cigars, or pipe tobacco. Tobacco use among Iowans has been fluctuating in the past ten years. In 2005, 31.3 percent of Iowans reported that they had used tobacco in the past 30 days compared to 29.3 percent of the U.S. (Figure 41).

Tobacco use among Iowans has decreased since 2005, Figure 42 shows that the Iowa rate has consistently been higher than the national average. The percent of Iowans reporting tobacco use in the past 30 days remained stable from 2011-2014 (Figure 41).

Figure 41: Percent of People Reporting Tobacco Use in the Past 30 Days

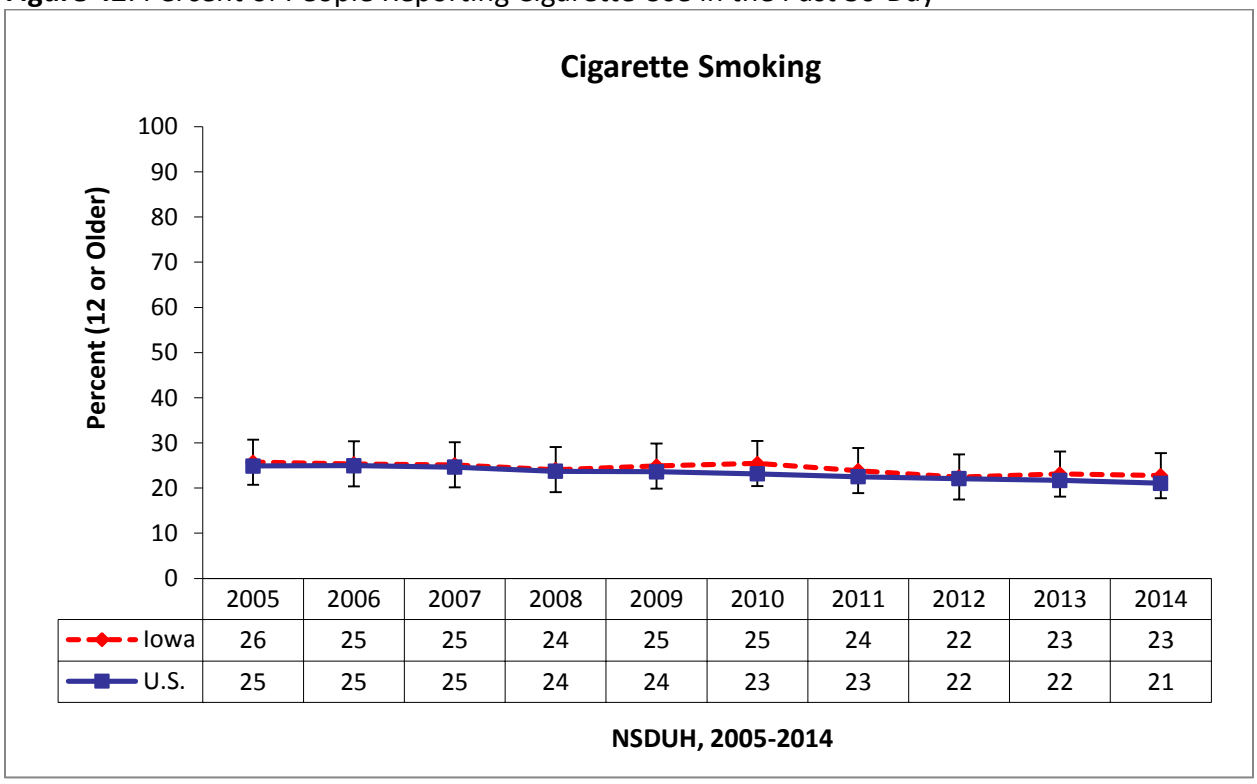


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	31.3	31.4	30.5	28.8	30.3	30.9	28.8	26.7	27.5	27.5
U.S.	29.3	29.5	29.1	28.5	28.0	27.6	27.0	26.6	26.1	25.4

NSDUH, 2005-2014

Figure 42 shows the percent of people aged 12 and 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 have a significant difference, nor were there significant differences in the previous years and the 2014 Iowa rates (Figure 42). Although there were some increases between 2009 and 2011, cigarette use has been gradually decreasing for both Iowa and the U.S.

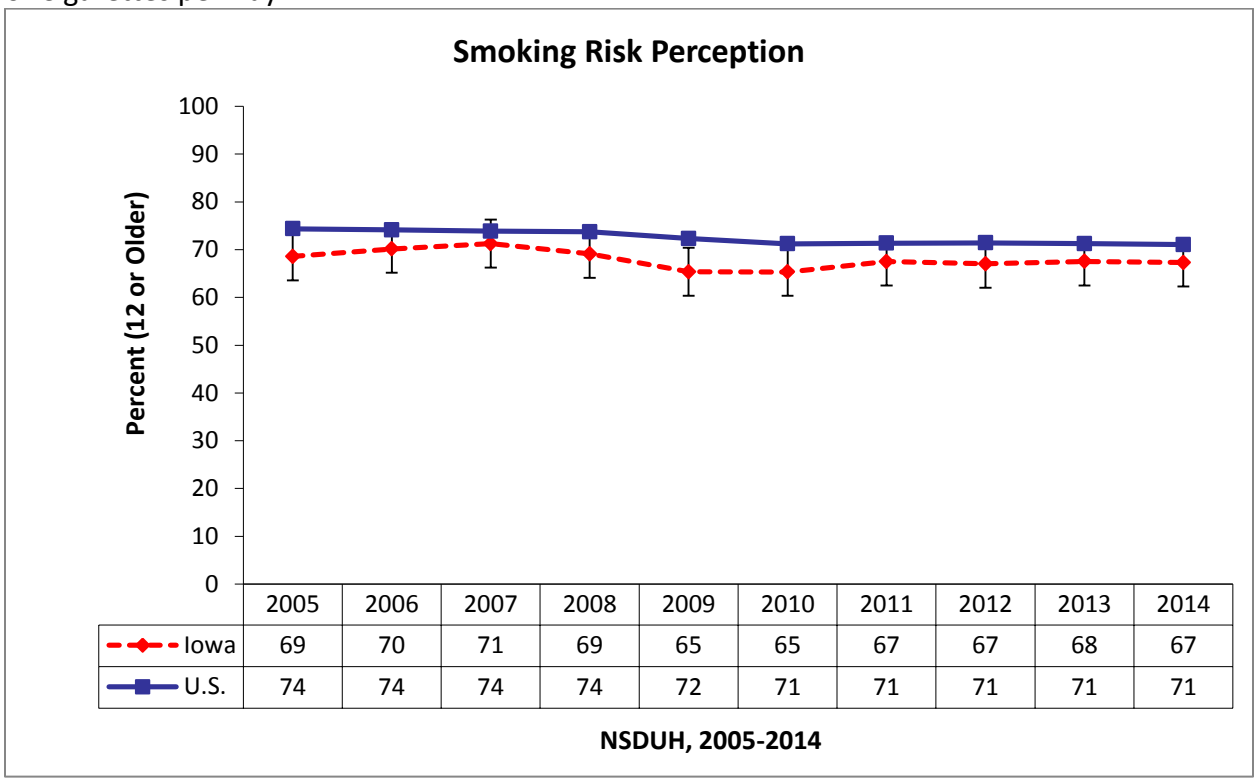
Figure 42: Percent of People Reporting Cigarette Use in the Past 30-Day



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	26	25	25	24	25	25	24	22	23	23
U.S.	25	25	25	24	24	23	23	22	22	21

The NSDUH survey asked respondents about whether they agreed that smoking one or more packs of cigarettes per day posed a "great risk" to one's health. Figure 43 indicates that Iowans agree that there were great health risks associated with cigarette smoking at very low levels compared to the U.S. In 2014, nearly 67 percent of Iowans reported the great risk of smoking one or more packs of cigarettes per day compared to 71 percent of people in the U.S. (Figure 43). Although the data have shown some decreases in the past ten years, smoking risk perception among Iowans aged 12 and older has been relatively stable.

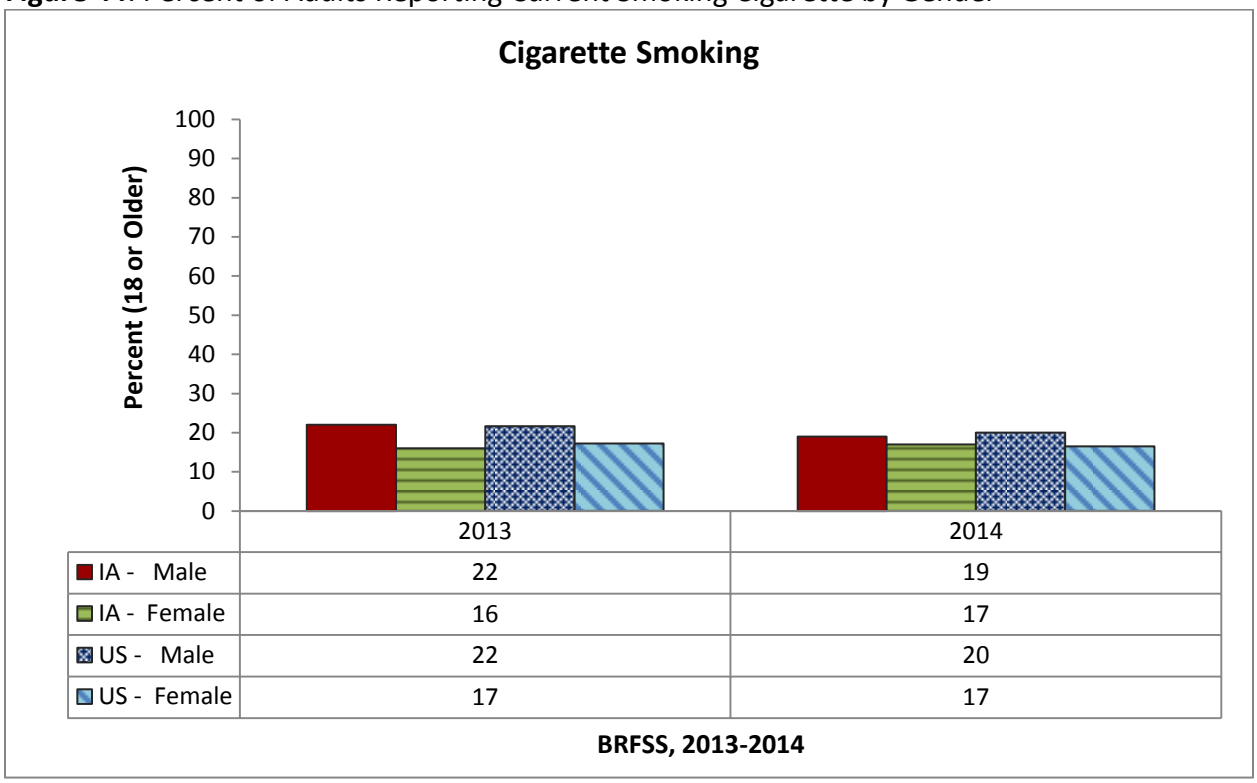
Figure 43: Percent of People Reporting Perceptions of Great Risk of Smoking One or More Packs of Cigarettes per Day



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	69	70	71	69	65	65	67	67	68	67
U.S.	74	74	74	74	72	71	71	71	71	71

The BRFSS polled Iowans whether they had smoked a cigarette every day, some days, or not at all in the past month. In 2013, the rate of adults who reported current cigarette smoking for males was 3 percent higher than the U.S. prevalence of 19 percent (Figure 44). For the same period, the state rate of cigarette smoking for Iowa females was 1 percent lower than the U.S. prevalence of 17 percent. In Figure 45, the 2014 data showed that the rate of cigarette smoking was lower than the U.S. prevalence for Iowa men, but higher (17 percent) among Iowa females than the U.S. females (17 percent; Figure 44).

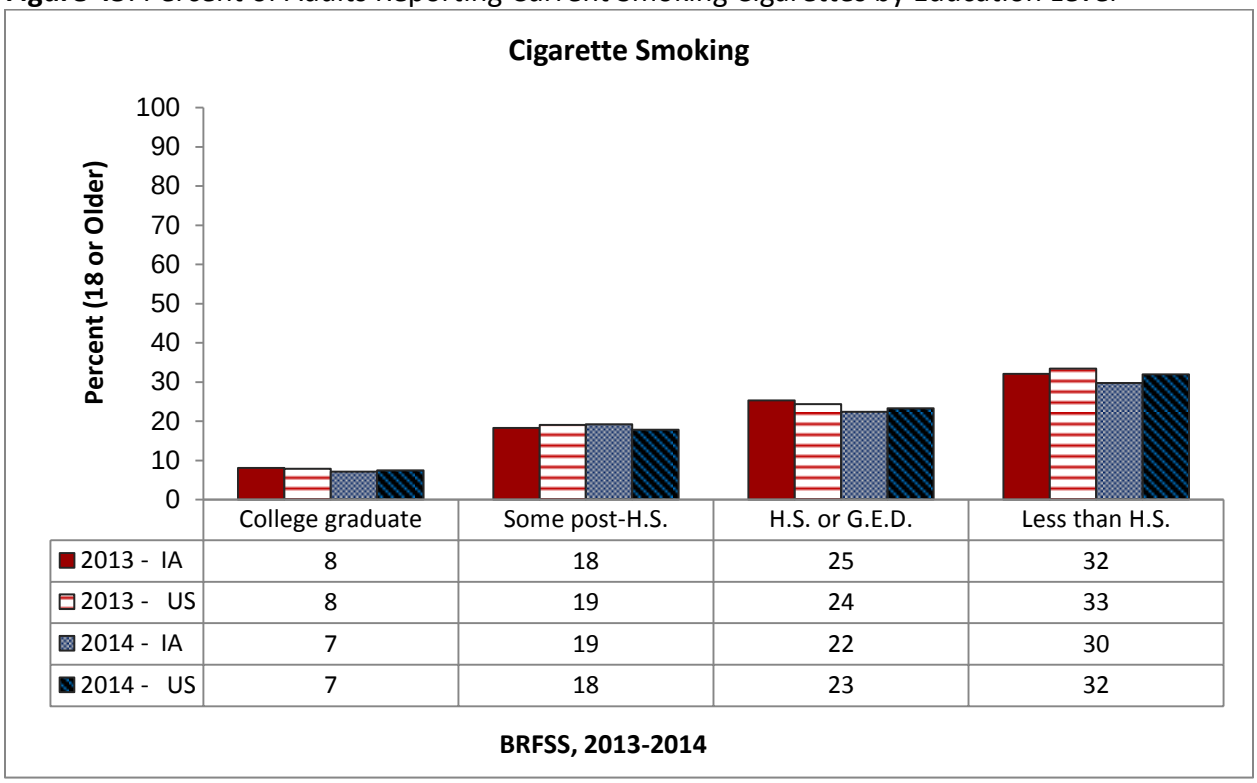
Figure 44: Percent of Adults Reporting Current Smoking Cigarette by Gender



	2013	2014
IA - Male	22	19
IA - Female	16	17
US - Male	22	20
US - Female	17	17

In 2014, cigarette smoking was higher (30 percent) among Iowans who had less than a high school (H.S.) diploma and lower (7 percent) among Iowans who were college graduates (Figure 45). Education level seemed to influence individual's cigarette smoking habits. The BRFSS data showed that Iowans with education level less than H.S. diploma reported high cigarette smoking in past month compared to Iowans who were college graduates (Figure 45). Those who had some post-H.S. and H.S. or General Educational Development (G.E.D.) reported low cigarette smoking in the past month compared to those with less than H.S. diploma.

Figure 45: Percent of Adults Reporting Current Smoking Cigarettes by Education Level

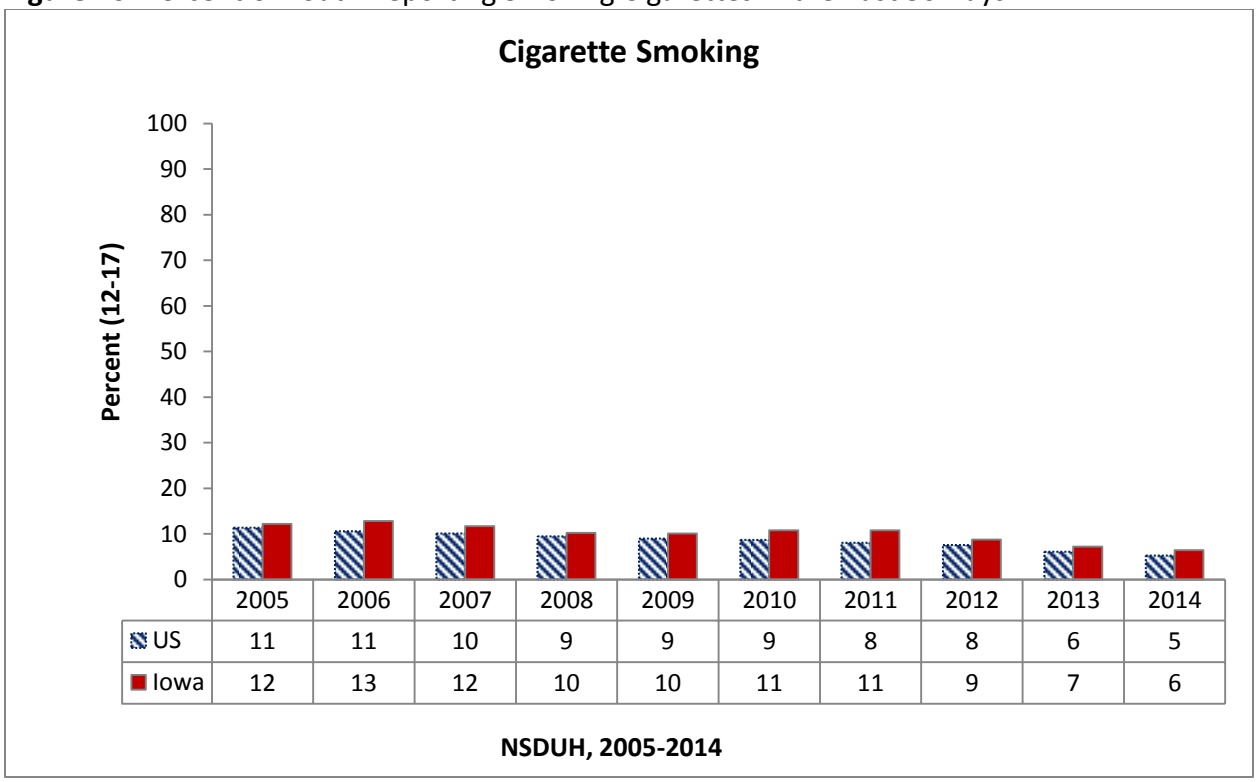


	College graduate	Some post-H.S.	H.S. or G.E.D.	Less than H.S.
2013 - IA	8	18	25	32
2013 - US	8	19	24	33
2014 - IA	7	19	22	30
2014 - US	7	18	23	32

Youth Consumption Patterns

In Iowa, youth 30 days cigarette use has significantly decreased from 12 percent in 2005 to 6 percent in 2014, a decrease of more than 50 percent in the past decade (Figure 46). Although cigarette smoking continues to decrease among Iowa youth, the rate of cigarette smoking was significantly higher among Iowa youth compared to the U.S. youth (Figure 46).

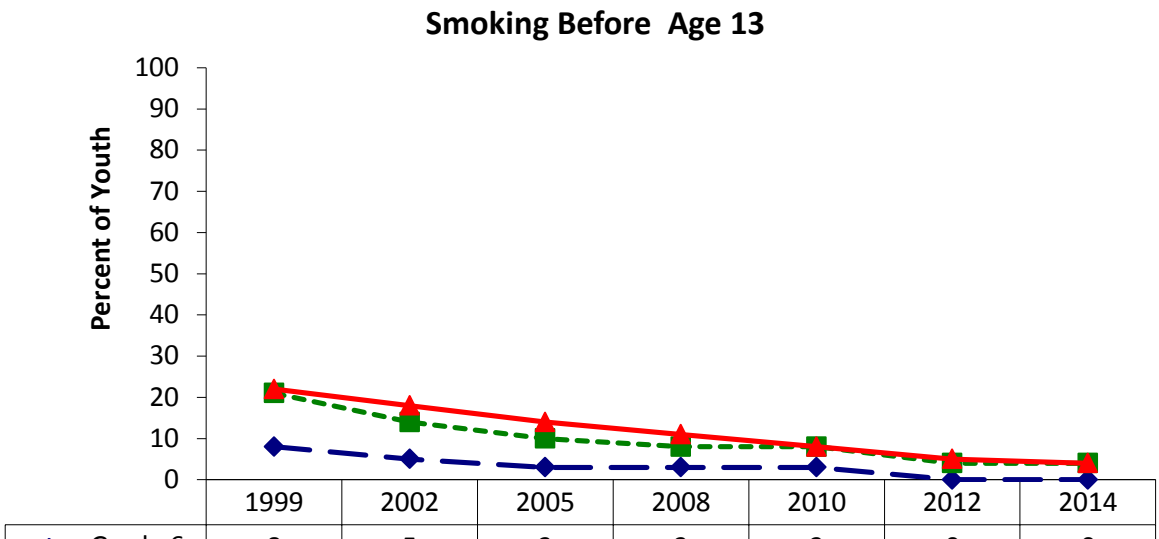
Figure 46: Percent of Youth Reporting Smoking Cigarettes in the Past 30 Days



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
US	11	11	10	9	9	9	8	8	6	5
Iowa	12	13	12	10	10	11	11	9	7	6

Iowa youth in grades 6, 8, and 11 were asked if they smoked their first cigarette before the age of 13 (Figure 47). The percent of grade 6 students reporting smoking before age 13 has dropped significantly from 8 percent in 1999 to 0 percent in 2012 and 2014 (Figure 47). Smoking before age 13 has significantly decreased for both grades 8 and 11. In 2014, only 4 percent of Iowa youth in grades 8 and 11 reported smoking before age 13 compared to 21 percent for grade 8 and 22 percent for grade 11 (Figure 47). Overall, in the past decade, smoking before age 13 has decreased significantly for all grade levels (grades 6, 8, and 11) in Iowa.

Figure 47: Percent of Students Reporting Smoking before Age 13



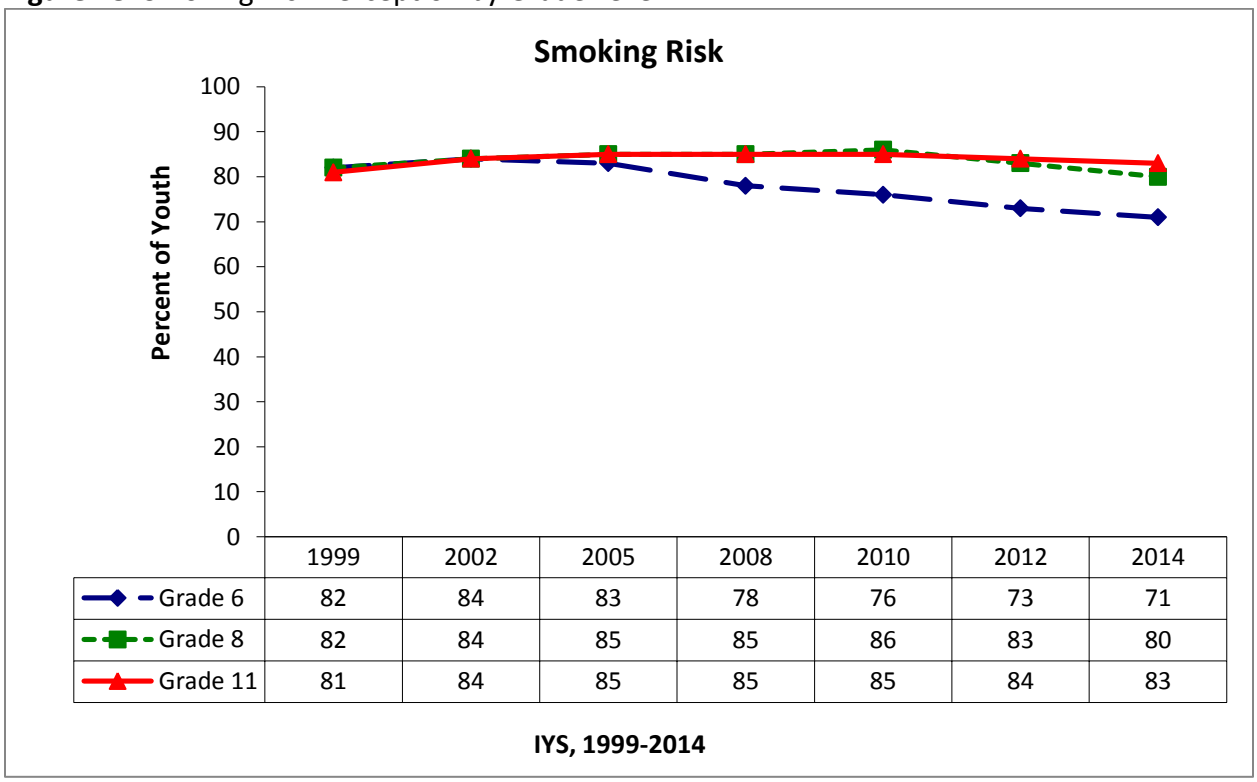
	1999	2002	2005	2008	2010	2012	2014
Grade 6	8	5	3	3	3	0	0
Grade 8	21	14	10	8	8	4	4
Grade 11	22	18	14	11	8	5	4

IYS, 1999-2014

Intervening Variables: Risk and Protective Factors

In the IYS survey, students were asked about their perception of risk of smoking cigarettes. The students were asked how much they thought they risked harming themselves if they smoked cigarettes every day. In 2012, the perception of smoking risk was 84 percent for grade 11, 83 percent of grade 8, and 73 percent for grade 6 (Figure 48). The perception of smoking risk was the same (82 percent) for both grade 6 and grade 8 students, but lower among grade 11 students for 1999(Figure 48). In 2014, the perception of risk of smoking cigarettes was slightly lower among all the grade levels (grade 6, 8, and 11) than in the previous years. In 2014, the rates were 71 percent for 6 grade, 80 percent for 8 grade and 83 percent for 11 grade (Figure 48). Grade level appeared to influence smoking risk perception among Iowa youth.

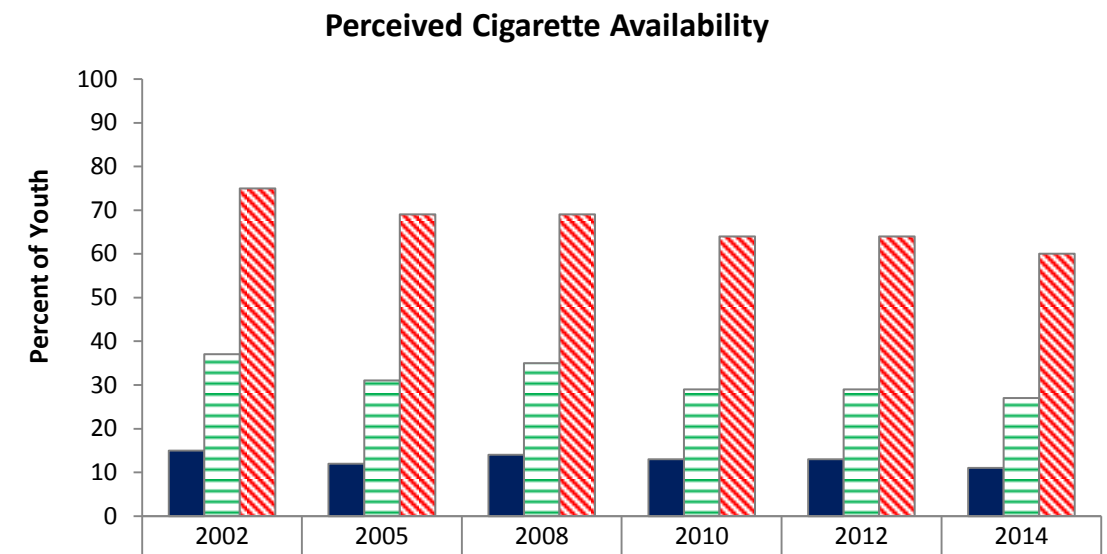
Figure 48: Smoking Risk Perception by Grade Level



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

Iowa youth in grades 6, 8, and 11 were surveyed about their perceived availability of cigarettes in the neighborhood. The students were asked how difficult do they think it would be for a kid their age to get cigarettes in their neighborhood or community. In 2012, the perceived cigarette availability was higher (64 percent) among 11th graders compared to 29 percent of 8th graders, and 13 percent of 6 graders (Figure 49). Since 2002, the perceived cigarette availability has decreased significantly (2 percent for grade 6, 8 percent for grade 8, and 11 percent for grade 11) for all three grade levels. These decreases continued into 2014, with 11 percent of 6 grade, 27 percent of 8 grade, and 60 percent of 11 grade reporting difficulty in getting cigarettes in their neighborhood or community.

Figure 49: Perceived Cigarette Availability by Grade Level

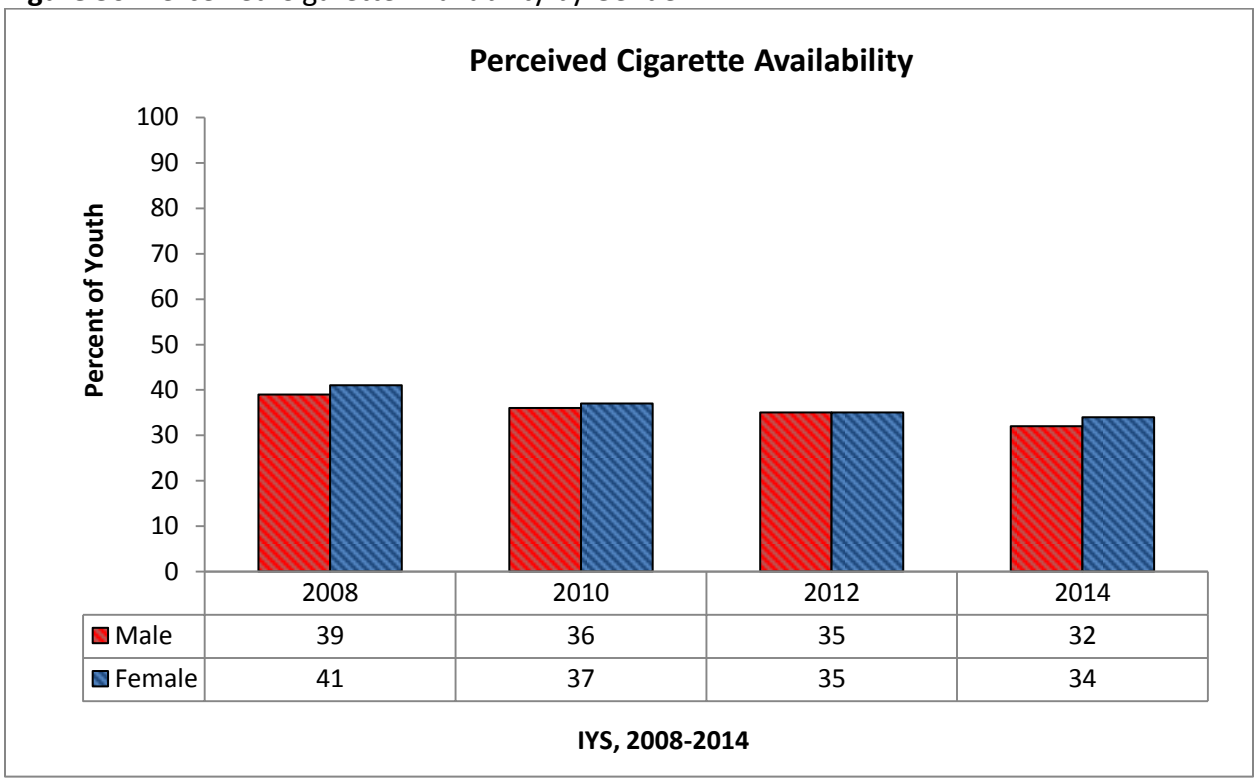


	2002	2005	2008	2010	2012	2014
Grade 6	15	12	14	13	13	11
Grade 8	37	31	35	29	29	27
Grade 11	75	69	69	64	64	60

IYS, 2002-2014

Figure 50 shows the percent of youth (6th, 8th, & 11th grades) who perceived cigarette availability in their community by gender. In 2008, there was a significant difference between males (39 percent) and females (41 percent) in regards to their perceptions of cigarette availability (Figure 50). In 2012, the perception of cigarette availability of Iowa youth was the same (35 percent) for both genders (Figure 50). In 2014, 32 percent of males and 34 percent of females reported that it was difficult to get cigarettes in their neighborhood or community. When the two genders were compared, females reported a higher perception of cigarette availability then males.

Figure 50: Perceived Cigarette Availability by Gender

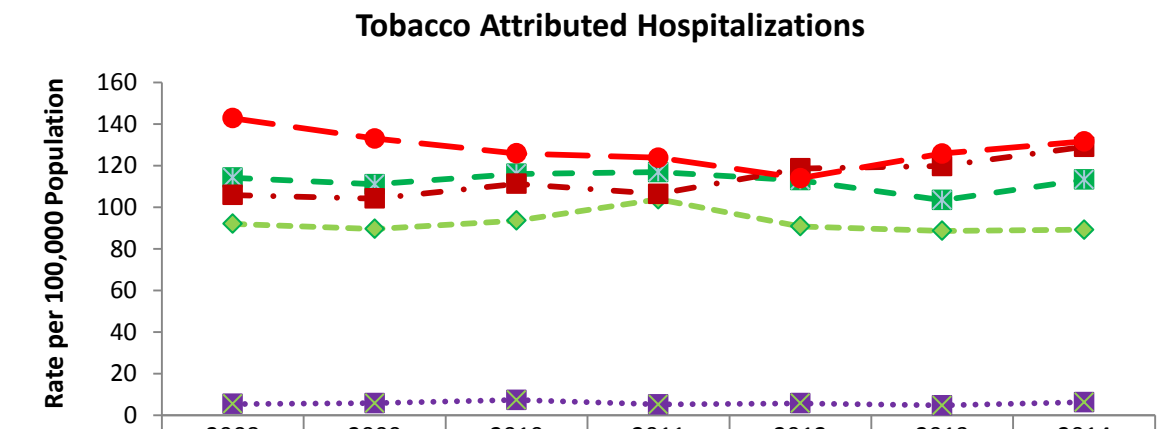


Tobacco Consequences

Tobacco-Associated Morbidity

Figure 51 illustrates the tobacco attributed hospitalizations for Iowans by age groups. The tobacco attributed hospitalization was associated with age. Iowans aged 65 and over had the highest tobacco attributed hospitalizations compared to the rest of the age groups. 2011-2014 saw significant increases in tobacco attributed hospitalizations for Iowans aged 45-64, nearly 16 percent increase, from 111 per 100,000 population in 2010 to 129 per 100,000 population in 2014 (Figure 51). For every death associated with tobacco, there were on average seven hospitalizations. In 2010 and 2011, tobacco attributed hospitalization remained the same for Iowans aged 25-44, and then began to decrease in 2012.

Figure 51: Tobacco Attributed Hospitalization Rates by Age Group

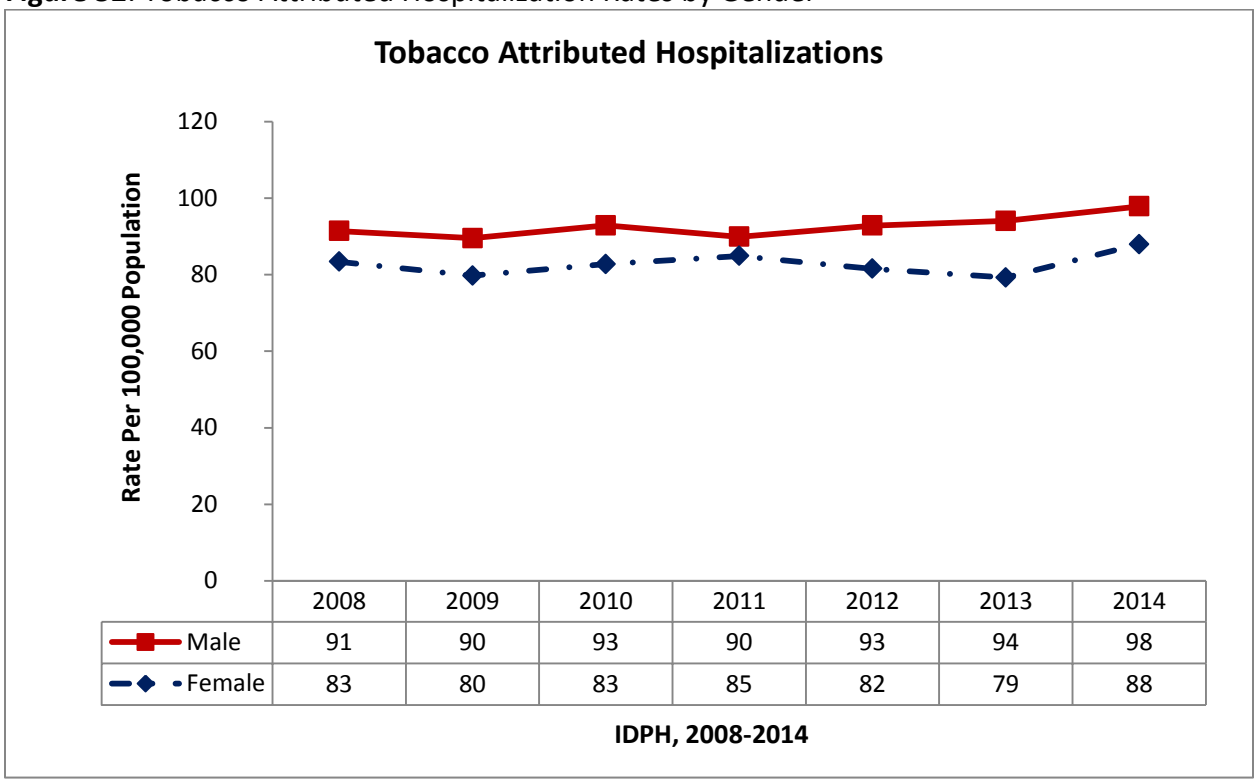


	2008	2009	2010	2011	2012	2013	2014
<18	5	6	7	5	6	5	6
18-24	92	90	94	104	91	89	89
25-44	114	111	116	117	113	103	113
45-64	106	104	111	106	119	120	129
65+	143	133	126	124	114	126	132

IDPH, 2008-2014

Figure 52 shows the tobacco attributed hospitalizations by gender. The rate of tobacco attributed hospitalization was associated with gender. In Iowa, males had the highest rates of tobacco attributed hospitalization compared to Iowa females. Tobacco attributed hospitalizations increased for both genders since 2008. In 2014, the tobacco attributed hospitalization rate for males was 98 per 100,000 population and 88 per 100,000 population for females, compared to 91 per 100,000 population for males and 83 per 100,000 population for females in 2008 (Figure 52).

Figure 52: Tobacco Attributed Hospitalization Rates by Gender

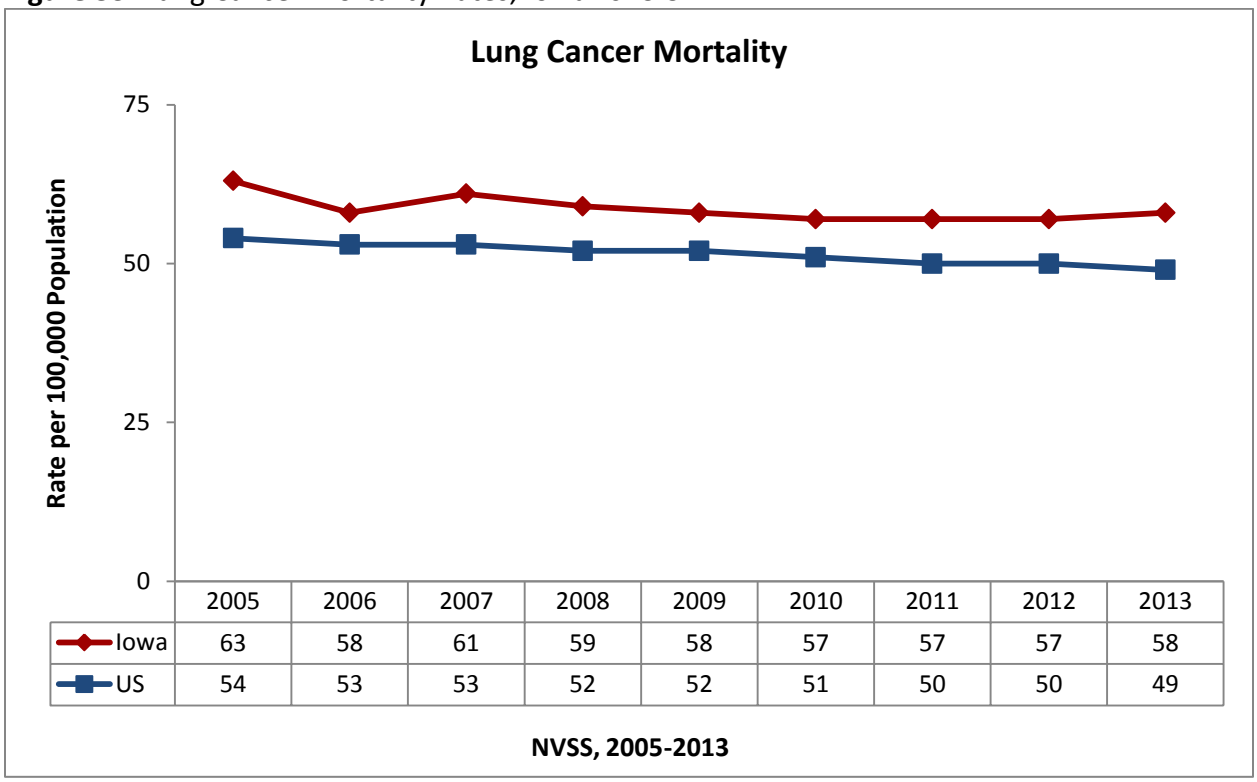


	2008	2009	2010	2011	2012	2013	2014
Male	91	90	93	90	93	94	98
Female	83	80	83	85	82	79	88

Tobacco-Associated Mortality

Figure 53 illustrates the lung cancer mortality rates for Iowa, and the U.S. Lung cancer mortality rate was higher among Iowans compared to the U.S. In 2013, the rate of lung cancer was 58 per 100,000 population compared to 49 per 100,000 population for the U.S. (Figure 53). The apparent upward trend in lung cancer rate (from 56 in 2011 to 59 in 2012) was noticeable in 2012.

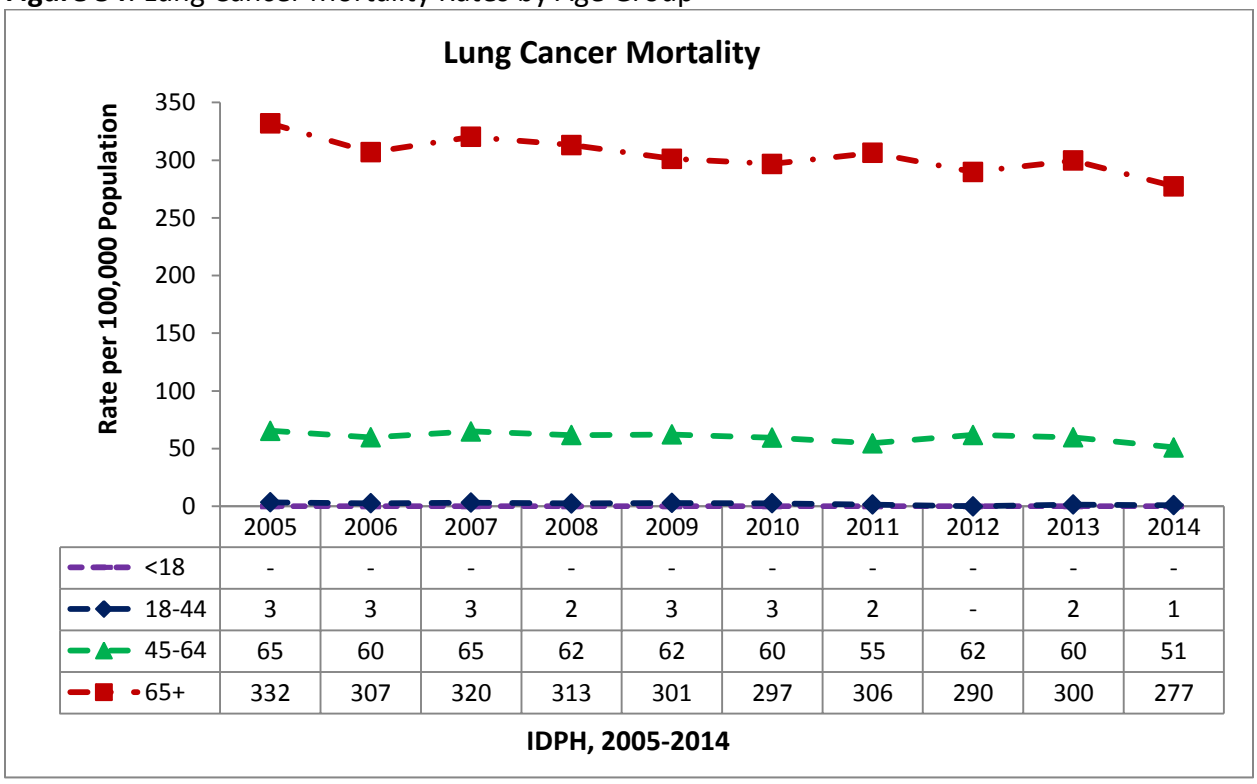
Figure 53: Lung Cancer Mortality Rates, Iowa vs. U.S.



	2005	2006	2007	2008	2009	2010	2011	2012	2013
Iowa	63	58	61	59	58	57	57	57	58
US	54	53	53	52	52	51	50	50	49

Figure 54 illustrates the lung cancer mortality rates by age groups for Iowans. The rate of cancer mortality rate was associated with age. The lung cancer rates were greater among people aged 65 and older compared to the rest of the age groups. Iowans aged 45-64 had the second highest rates of lung cancer mortality rate. The lung cancer mortality rates appeared to be decreasing for all the age groups.

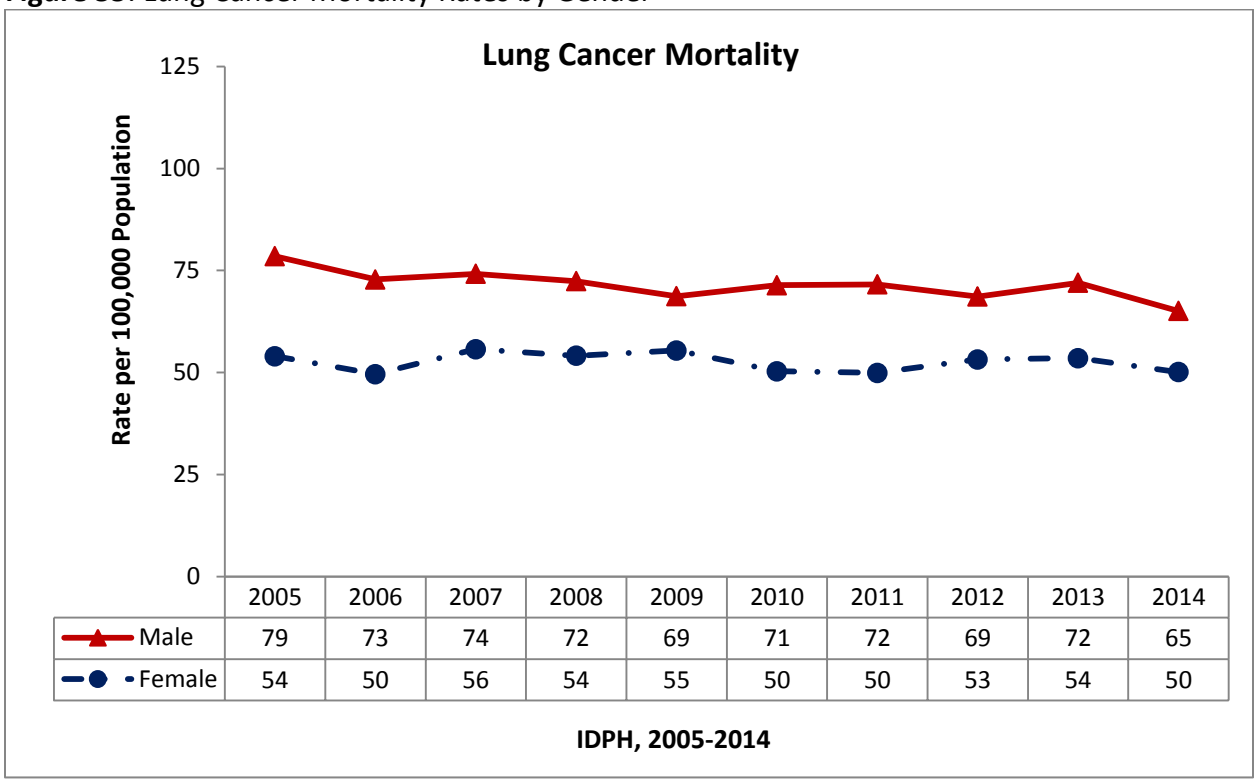
Figure 54: Lung Cancer Mortality Rates by Age Group



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<18	-	-	-	-	-	-	-	-	-	-
18-44	3	3	3	2	3	3	2	-	2	1
45-64	65	60	65	62	62	60	55	62	60	51
65+	332	307	320	313	301	297	306	290	300	277

Figure 55 shows the lung cancer mortality rates by gender. Iowa males had higher lung cancer mortality rate compared to Iowa females. The lung cancer mortality appeared to be associated with gender. The lung cancer mortality appeared to be making slight decreases in the past decades for both genders. Between 2005 and 2014, the lung cancer mortality rate decreased 13 percent among Iowa males and 74 percent among Iowa females (Figure 55).

Figure 55: Lung Cancer Mortality Rates by Gender



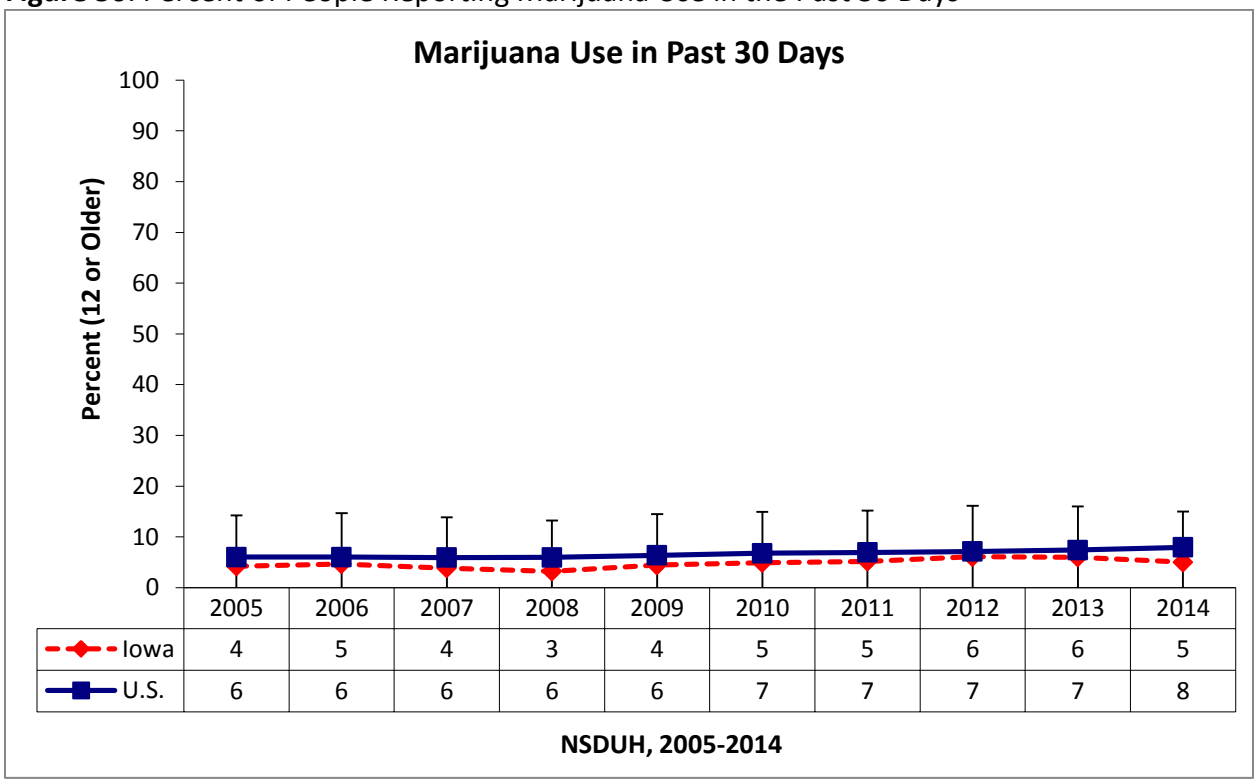
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male	79	73	74	72	69	71	72	69	72	65
Female	54	50	56	54	55	50	50	53	54	50

Illicit Drugs and Prescription Medications

Adult Consumption Patterns

In the 2005-2014 NSDUH survey, respondents were asked whether they had used marijuana in the past 30 days. The prevalence of Iowans aged 12 and older who reported marijuana use in the past 30 days in 2014 was 5 percent, slightly higher than in 2010 at 5 percent (Figure 56). In 2005, the prevalence of marijuana use among Iowans aged 12 and older was 4 percent and 6 percent for the U.S. (Figure 56). Marijuana use among people aged 12 and older was significantly higher for Iowa, with nearly 6 percent in 2012 and 6 percent in 2013. The data indicates a gradual increase in marijuana use among Iowans between 2008 and 2012, but a significant decrease in 2014.

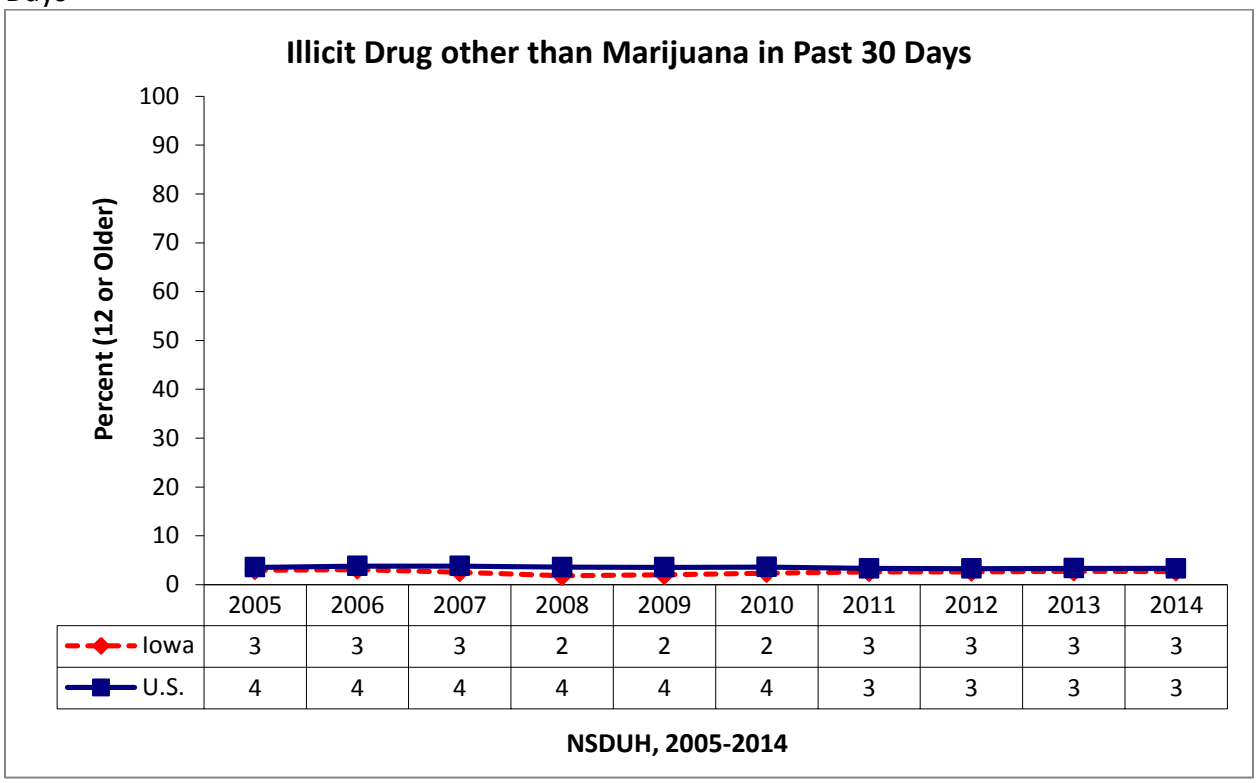
Figure 56: Percent of People Reporting Marijuana Use in the Past 30 Days



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	4	5	4	3	4	5	5	6	6	5
U.S.	6	6	6	6	6	7	7	7	7	8

In the 2005-2014 NSDUH survey, respondents were asked whether they had used illicit drugs other than marijuana in the past 30 days. In 2014, nearly 3 percent of Iowans reported using illicit drugs other than marijuana in the past 30 days, which is similar to the national rate of 3 percent (Figure 57). In Iowa, illicit drug other than marijuana use has remained steady since 2011. Illicit drug other than marijuana use remained the same for 2013 and 2014 at 3 percent (Figure 57). The U.S. has also seen relatively similar data in 2011, 2012, and 2014 (Figure 57).

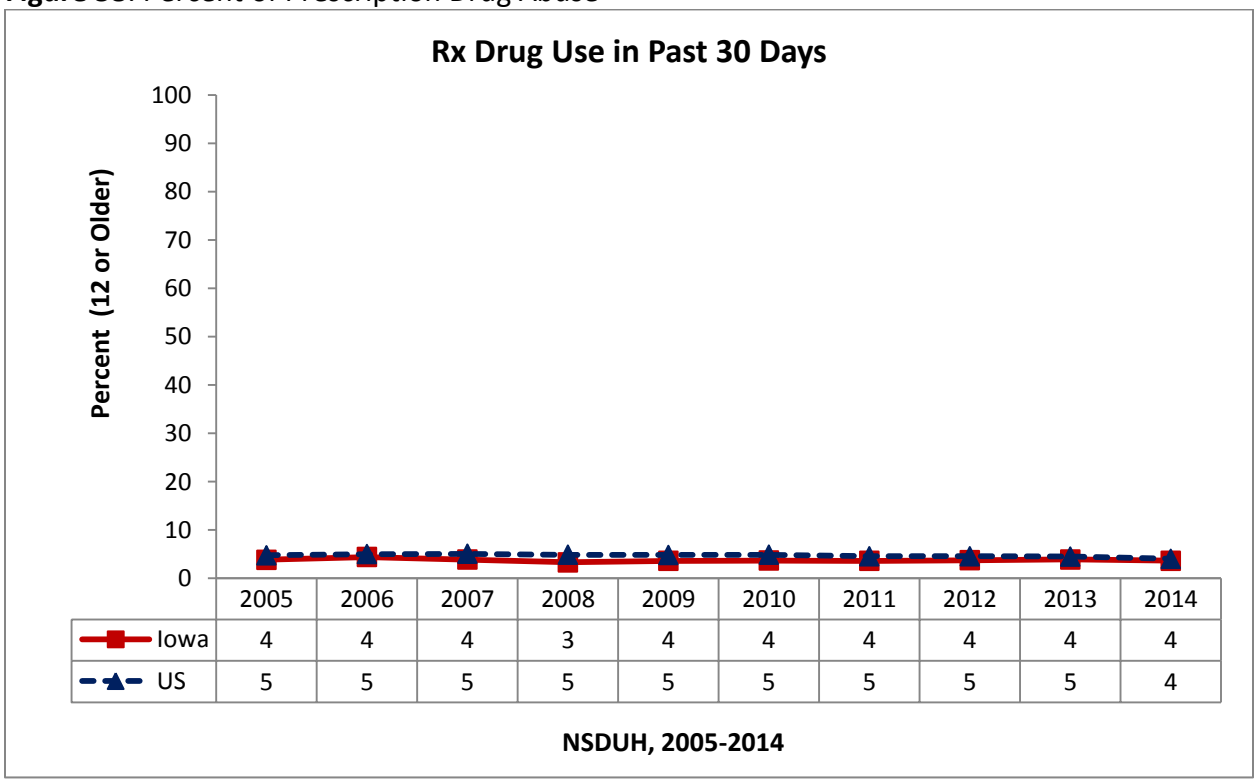
Figure 57: Percent of People Reporting Illicit Drugs other than Marijuana Use in the Past 30 Days



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	3	3	3	2	2	2	3	3	3	3
U.S.	4	4	4	4	4	4	3	3	3	3

The 2014 NSDUH survey has shown that Iowa's 4 percent prevalence of prescription drug abuse in the past 30 days was significantly lower than the U.S. prevalence of 4.1 percent (Figure 58). The prevalence of prescription drug abuse among Iowans aged 12 and older remained mostly similar since 2009 (Figure 58). Overall, the prevalence of prescription drug abuse for Iowa was lower than the U.S. prevalence over the years.

Figure 58: Percent of Prescription Drug Abuse

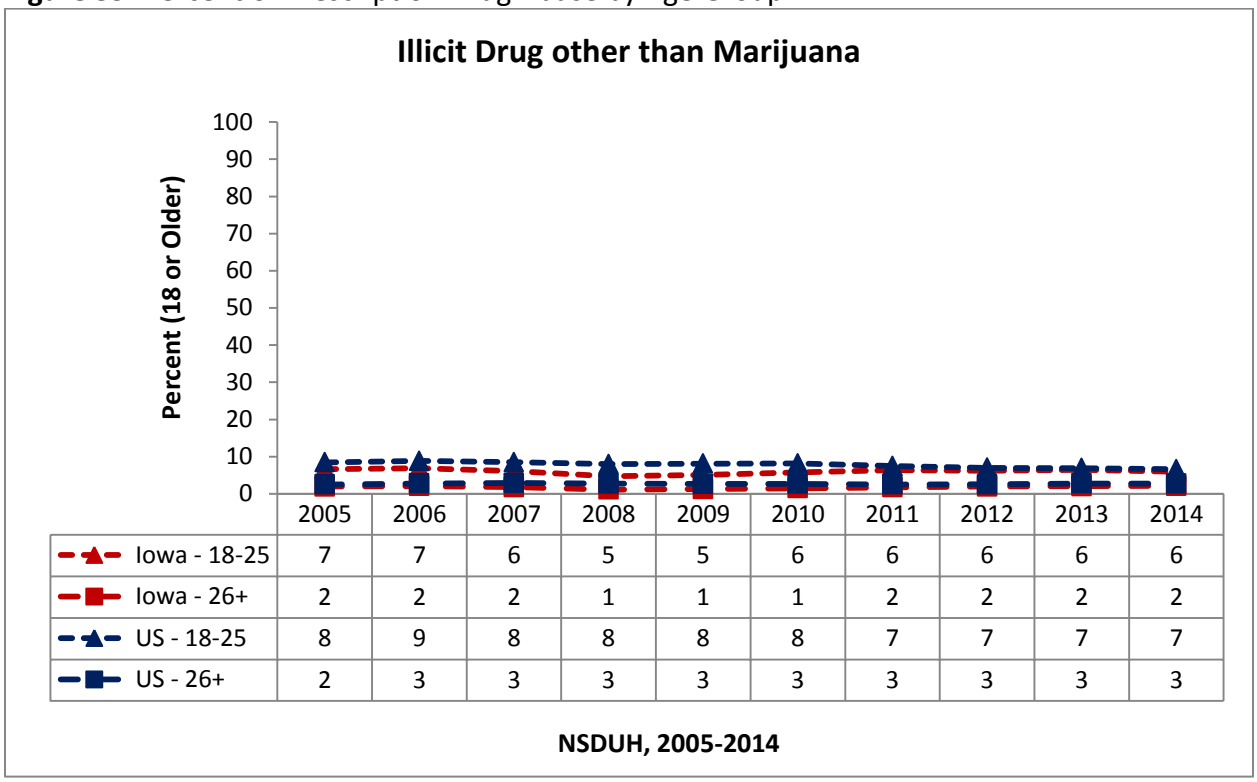


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	4	4	4	3	4	4	4	4	4	4
US	5	5	5	5	5	5	5	5	5	4

Figure 59 shows the percent of illicit drug other than marijuana by age in Iowa. In 2014, illicit drug other than marijuana prevalence for both Iowa and U.S. adults aged 18-28 years old indicated a slight decline from the previous NSDUH survey (Figure 59).

Illicit drug other than marijuana prevalence among Iowans aged 26 and older remained the same for both 2013 and 2014 at 2 percent. The illicit drug other than marijuana prevalence for Iowa adults was lower than the national rate (Figure 59). The data did not show any significant changes amongst the different age groups and between Iowa and the U.S.

Figure 59: Percent of Prescription Drug Abuse by Age Group

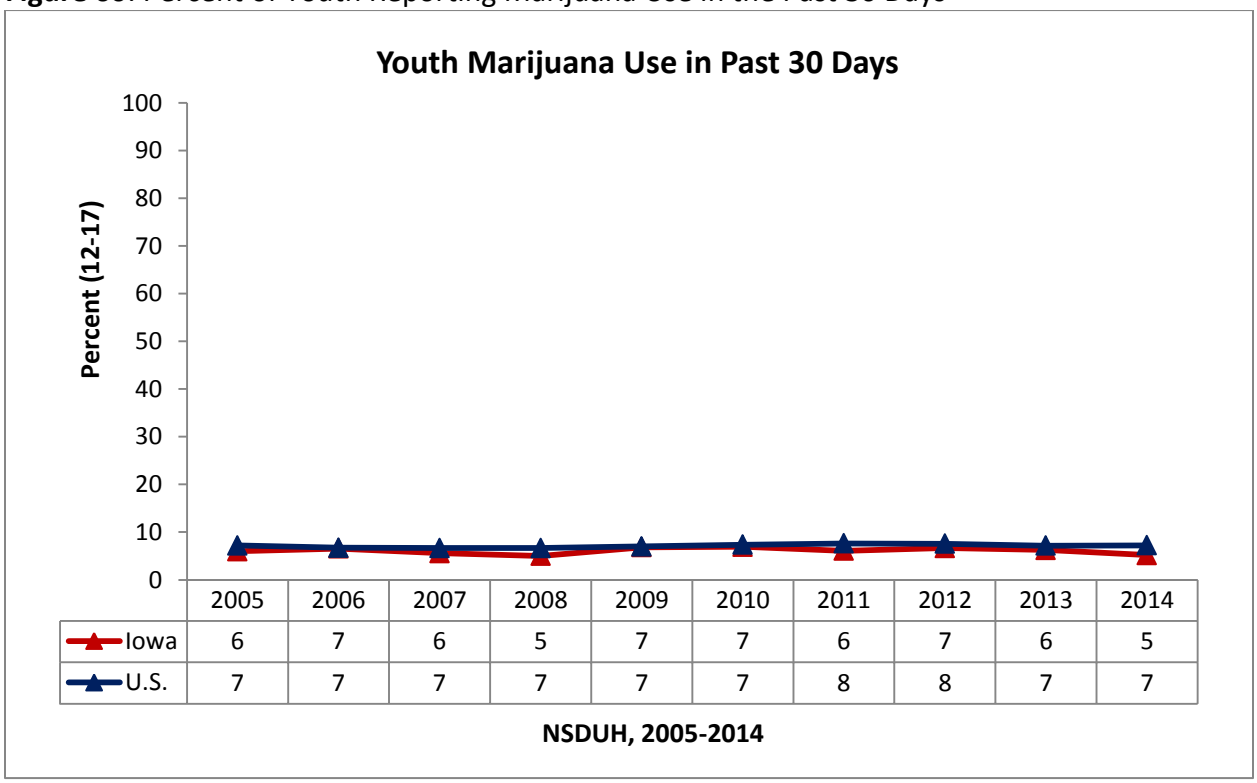


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa - 18-25	7	7	6	5	5	6	6	6	6	6
Iowa - 26+	2	2	2	1	1	1	2	2	2	2
US - 18-25	8	9	8	8	8	8	7	7	7	7
US - 26+	2	3	3	3	3	3	3	3	3	3

Youth Consumption Patterns

In the 2005-2014 NSDUH survey respondents were asked whether they had used marijuana in the past 30 days. In 2014, nearly 5 percent of Iowans aged 12-17 reported using marijuana in the past 30 days compared to 7 percent of the U.S. (Figure 60). Overall, the data showed that Iowa youth marijuana use prevalence was lower than or similar to the national prevalence over the years.

Figure 60: Percent of Youth Reporting Marijuana Use in the Past 30 Days

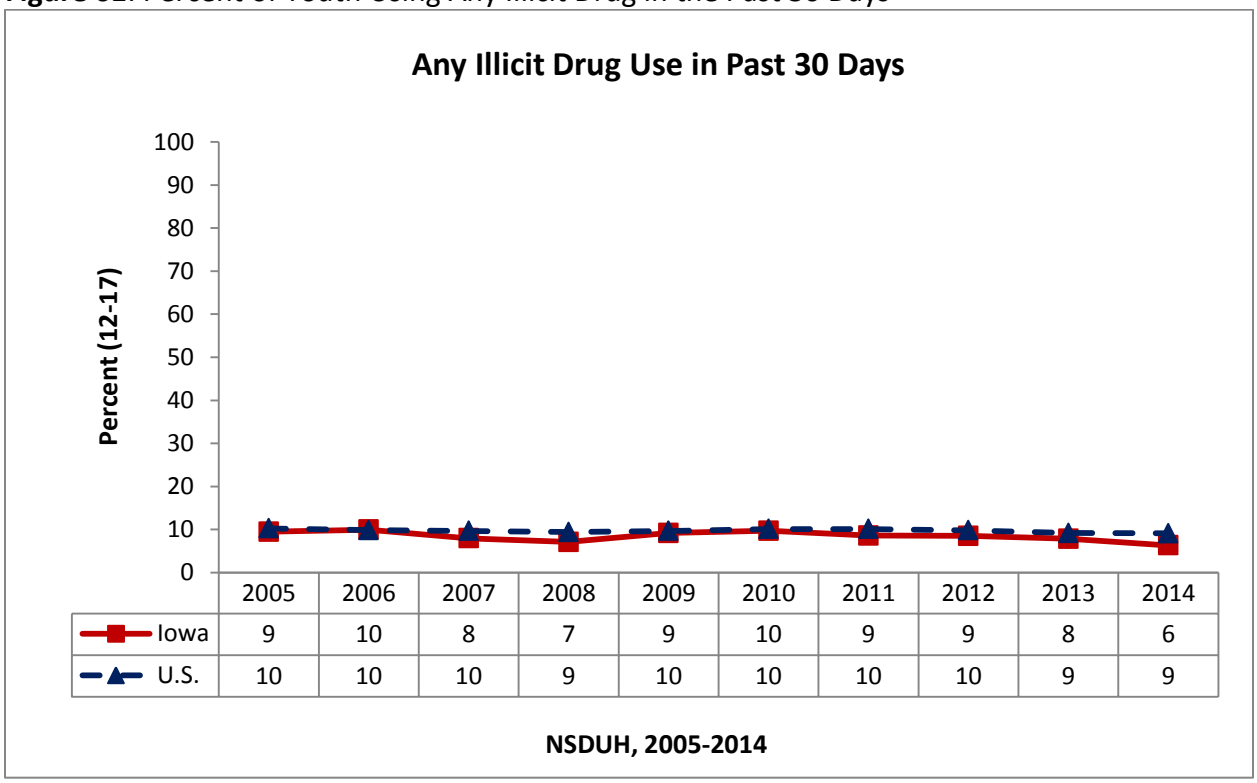


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	6	7	6	5	7	7	6	7	6	5
U.S.	7	7	7	7	7	7	8	8	7	7

The prevalence of any illicit drug use among Iowans aged 12-17 years old was 3 percent lower than the U.S. prevalence of 9 percent in 2014 (Figure 61). In Iowa, the prevalence of any illicit drug use decreased significantly from 10 percent to 6 percent between 2006 and 2014, respectively (Figure 61).

In 2008, the prevalence of any illicit drug use among Iowans increased significantly from 7 percent to 10 percent in 2010 (Figure 61). In 2014, the rate of any illicit drug in the past 30 days was 6 percent compared to 10 percent in 2010. The trend began to decline in 2011 and appeared to continue to decline in Iowa.

Figure 61: Percent of Youth Using Any Illicit Drug in the Past 30 Days

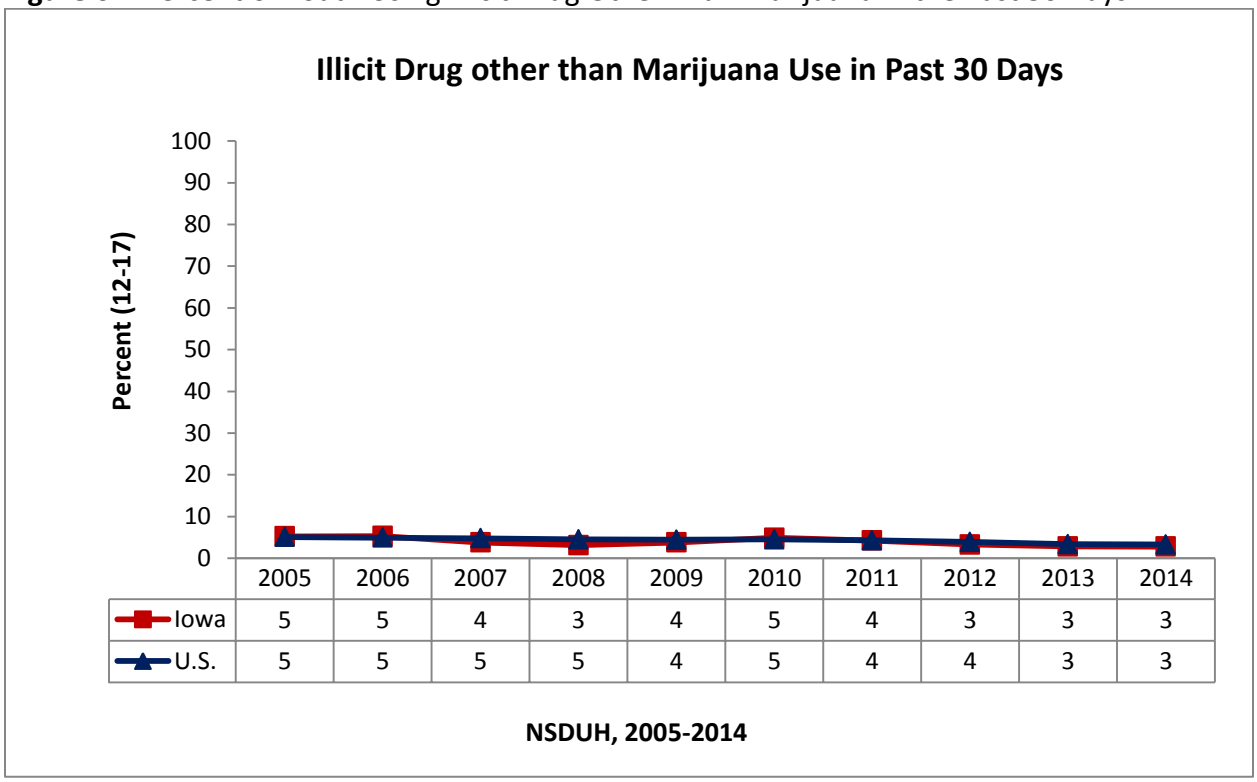


	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	9	10	8	7	9	10	9	9	8	6
U.S.	10	10	10	9	10	10	10	10	9	9

In Iowa, the prevalence of illicit drug other than marijuana use among youth aged 12-17 years old had dropped significantly between 2006 and 2008, from 5 percent to 3 percent (Figure 62). The prevalence of illicit drug other than marijuana use among the same age group showed a significant increase between 2009 (4 percent) and 2010 (5 percent), and then a relatively sharp decrease of 4 percent in 2011 (Figure 62).

The prevalence of illicit drug other than marijuana use was the same (4 percent) for both Iowa and the U.S. in 2011 compared to other years (Figure 62). In general, the prevalence of illicit drug other than marijuana use among youth aged 12-17 years old appeared to be decreasing in both Iowa and the U.S. in the past four years.

Figure 62: Percent of Youth Using Illicit Drug Other Than Marijuana in the Past 30 Days



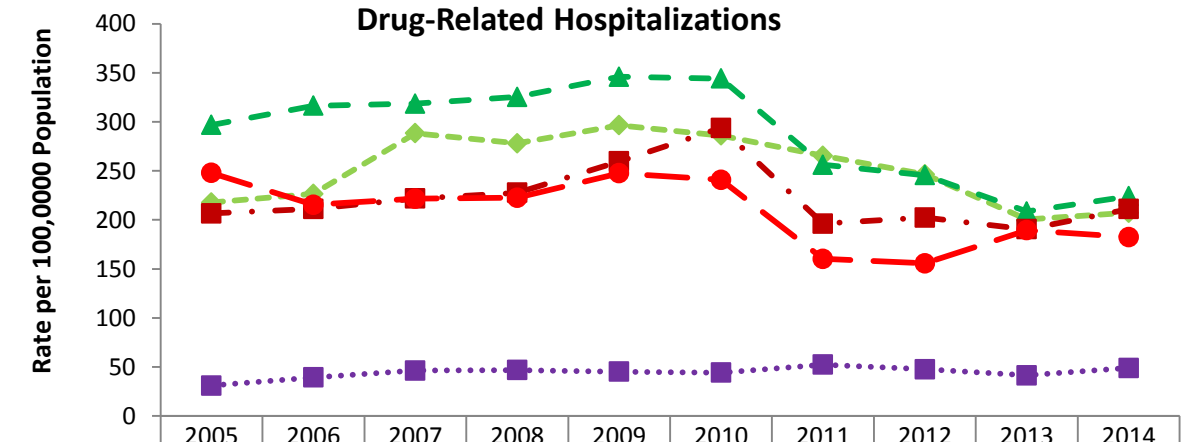
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Iowa	5	5	4	3	4	5	4	3	3	3
U.S.	5	5	5	5	4	5	4	4	3	3

Drug-Associated Morbidity

Figure 63 illustrates drug-related hospitalization rates by age groups for Iowa. The rate of drug-related hospitalizations increased more than 50 percent from 2005 (31per 100,000 population) to 2014 (49 per 100,000 population) for Iowans aged 18 and younger. Between 2010 and 2013, Iowans aged 25-44 and 45-64 experienced a significant decrease in drug-related hospitalizations. Iowans aged 25-44 had the highest rate of hospitalizations compared to the rest of the age groups.

Drug-related hospitalizations declined 26 percent among Iowans aged 65 and older from 2005 (248 per 100,000 population) to 2014 (182 per 100,000 population). Overall, in 2014, drug-related hospitalizations for Iowans aged 18-24, 25-44, 45-64, and 65 and older were significantly lower compared to 2005.

Figure 63: Drug-Related Hospitalization Rates by Age Group



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<18	31	39	46	47	45	44	52	48	41	49
18-24	218	226	288	278	297	286	265	246	201	207
25-44	297	316	319	325	346	344	256	246	209	224
45-64	207	211	222	228	260	294	196	202	190	211
65+	248	215	222	223	248	241	160	156	190	182

IDPH, 2005-2014

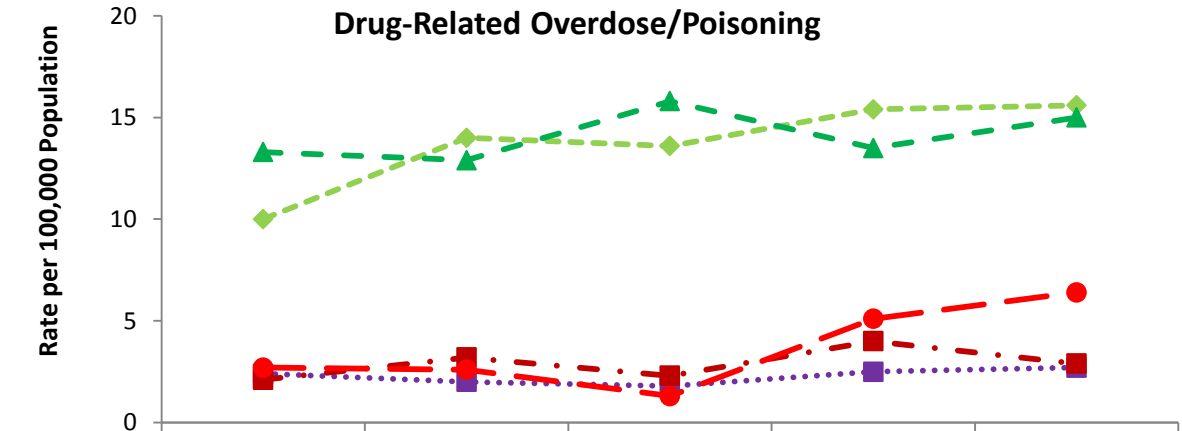
***Note**: The data for drug-related hospitalizations may look slightly different from previous Epi Profile data. This is because the data analysis for drug-related hospitalization was modified to align with the CDC's State Injury Indicators guidance.*

Drug-Related Mortality

In 2014, nearly 285 deaths in Iowa were drug-related compared to 247 in 2010 (IDPH, 2015). Figure 64 shows drug-related overdose/poisoning mortality rate for Iowa. The data showed that Iowans aged 25-44 had the highest (37 percent higher) drug-related overdose/poisoning rate compared the rest of the age groups in 2014. In 2014, drug-related overdose/poisoning mortality rates were similar for Iowans aged 25-44 and 45-64.

The drug-related overdose/poisoning was relatively stable for individuals aged 24 or younger. Iowans aged 85 and older saw a significant increase in drug-related overdose/poisoning in both 2013 (5 per 100,000 population) and 2014 (6 per 100,000 population). Overall, drug-related overdose/poisoning appear to be increasing in Iowa.

Figure 64: Drug-Related Overdose/Poisoning Mortality Rates by Age Group

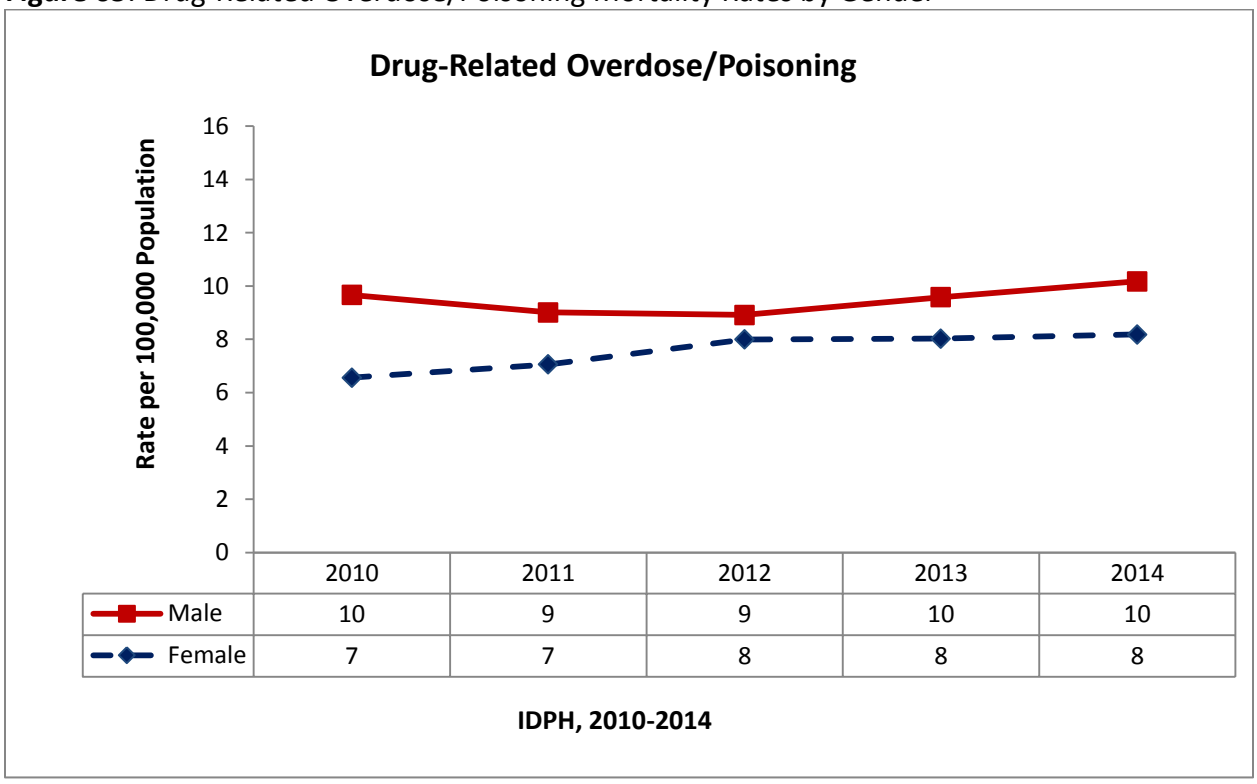


	2010	2011	2012	2013	2014
<24	2	2	2	3	3
25-44	10	14	14	15	16
45-64	13	13	16	14	15
65-84	2	3	2	4	3
85+	3	3	1	5	6

IDPH, 2010-2014

Figure 65 shows drug-related overdose/poisoning mortality rates for Iowa by gender and year. Iowa males had higher drug-related overdose/poisoning deaths compared to females and the state. Drug-related overdose/poisoning deaths increased for both genders over the past five years. Between 2010 and 2014, drug-related overdose/poisoning deaths among females increased 2 percent compared to 0.5 percent for males in Iowa.

Figure 65: Drug-Related Overdose/Poisoning Mortality Rates by Gender



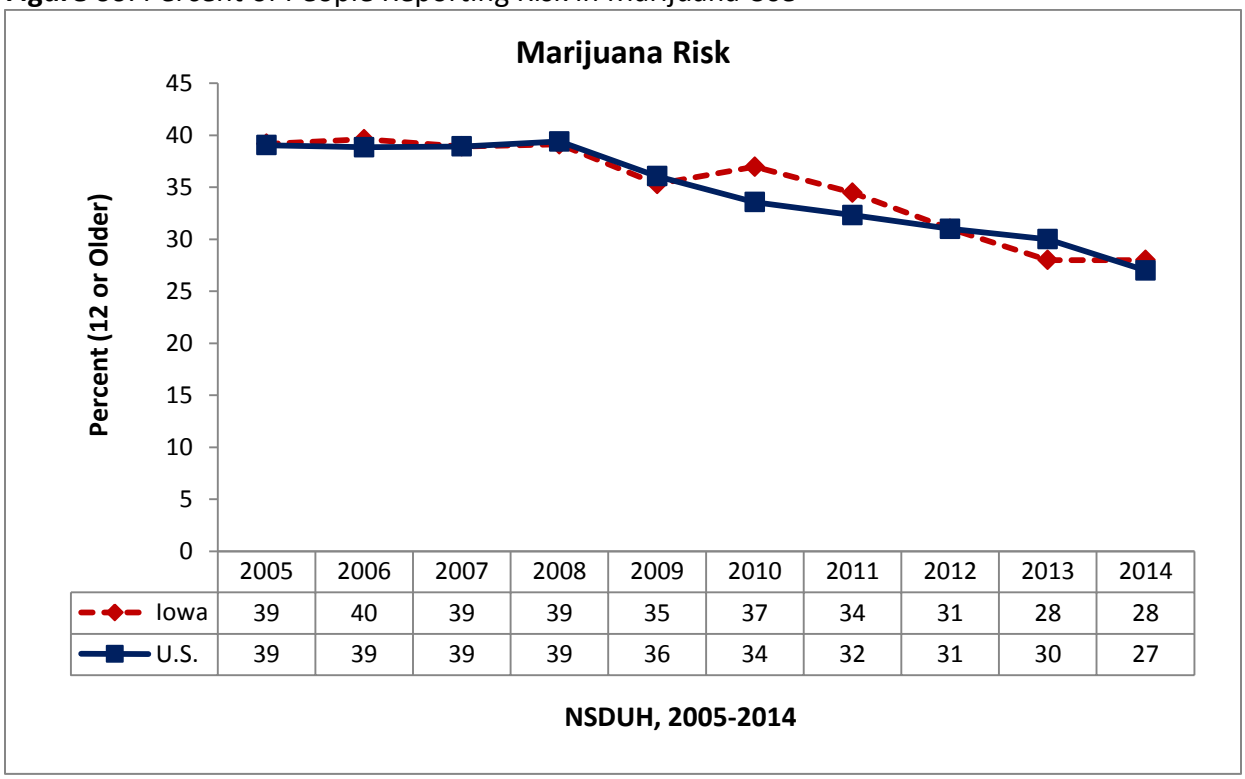
Intervening Variables

Risk and Protective Factors

The perception of risk for marijuana is how much people risk harming themselves physically or in other ways when they smoke marijuana once a month. In 2014, the percent of Iowans aged 12 or older who reported perceiving marijuana use as a risk was 28 percent compared to 27 percent for the U.S. (Figure 66).

The perception of risk for marijuana use among Iowans decreased significantly over the past decade, 11 percent decrease. The U.S. has also seen a significant decrease in the perception of risk for marijuana, 12 percent decrease in the past decade.

Figure 66: Percent of People Reporting Risk in Marijuana Use



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

Mental Health

Mental illness affects many Iowans. Major Depressive Episode (MDE) is defined as a period of at least two weeks when a person experienced a depressed mood or loss of interest or pleasure in daily activities and had a majority of the symptoms for depression as described in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

Figure 67 shows the percent of people who reported having MDE within the last year. These data compare Iowa to the U.S. trend. In 2014, 18 percent of Iowans aged 18-25 reported that they had mental illness in the past year compared to 31 percent in 2011. In 2012, the percent of mental illness among Iowa adults aged 26 or older was similar to the national rate, which was 18 percent. The data showed a relatively stable rate for any mental illness over the past three years for people aged 18 or older.

Figure 67: Percent of Adults with Any Mental Illness in the Past Year by Age Group

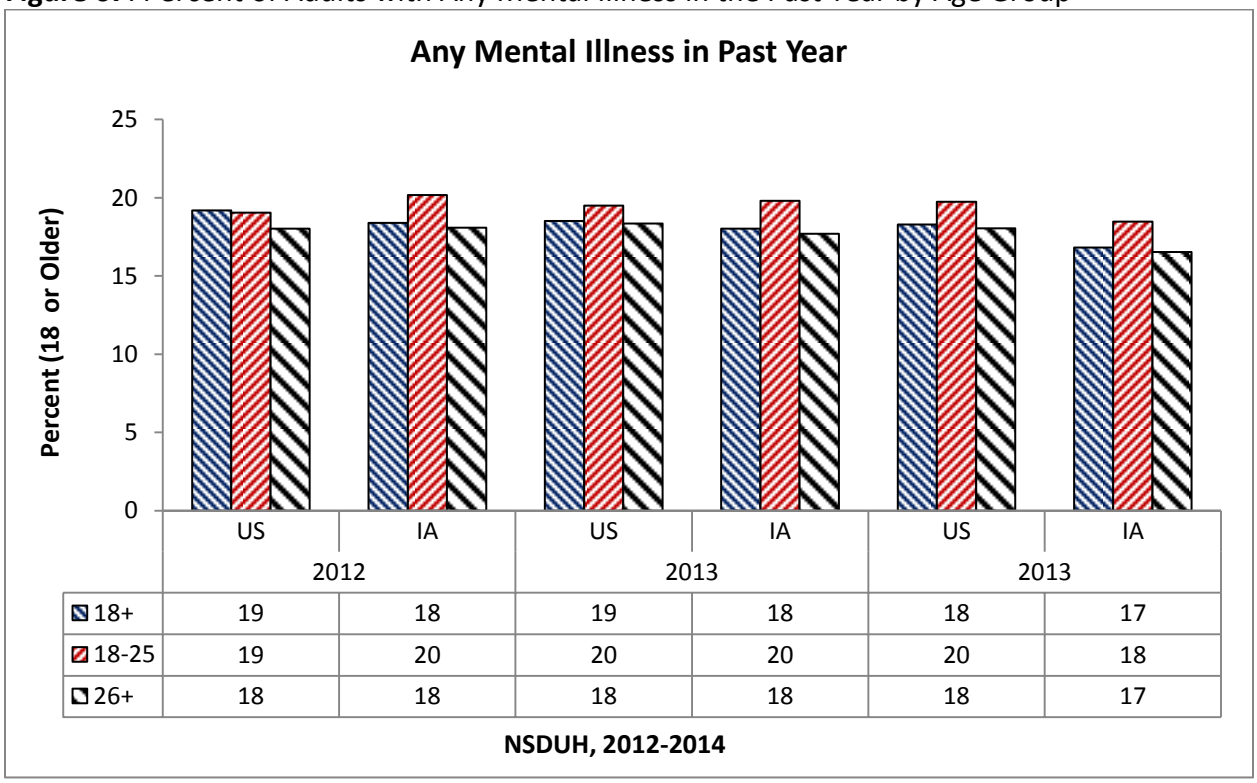
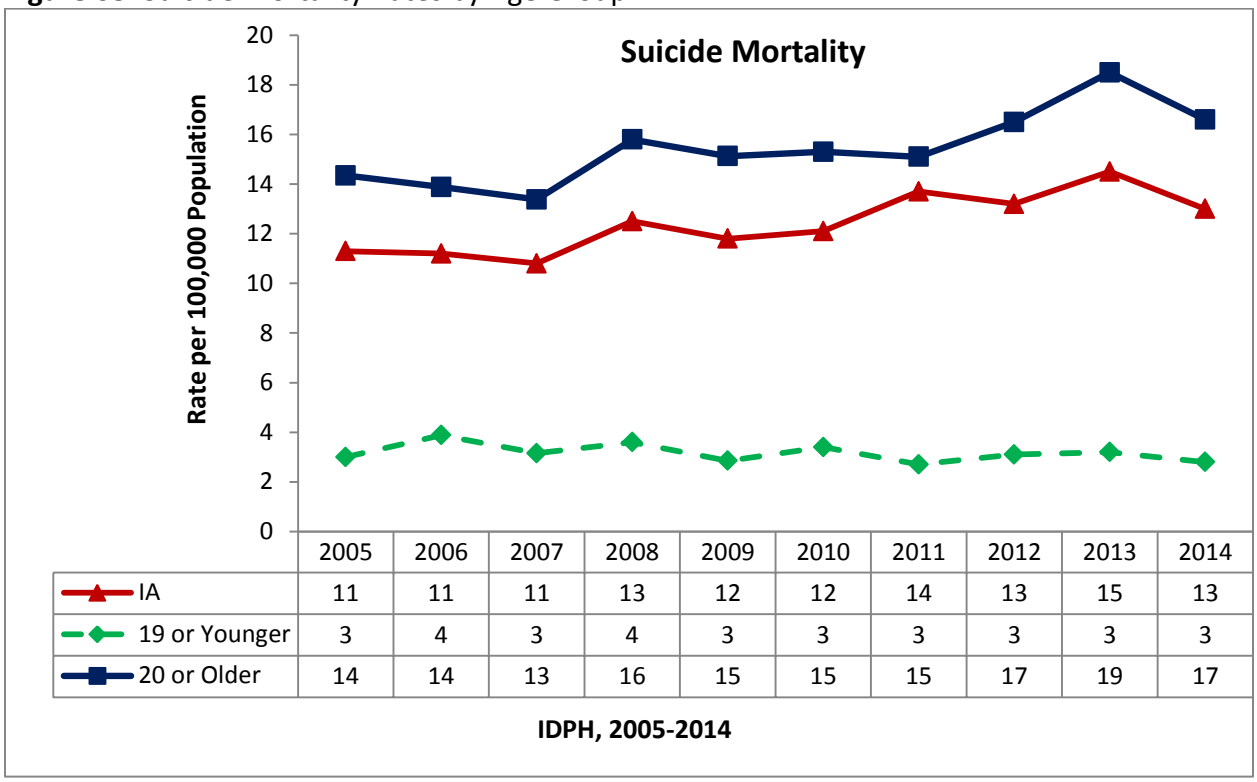


Figure 68 illustrates suicide mortality rates in Iowa. Suicide rates have significantly increased among Iowans aged 20 or older since 2005. The rates of suicides among Iowans aged 19 or younger have remained stable for the same time period.

The overall 2014 suicide rate for Iowa was 13 per 100,000 population compared to 11 per 100,000 population in 2005. Iowa adults over the age of 20 had five times the rate of youth 19 or younger. Compared to the overall state's suicide rates, the suicide rates among Iowans aged 20 or older was significantly higher than the state's suicide rates.

Figure 68: Suicide Mortality Rates by Age Group



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
IA	11	11	11	13	12	12	14	13	15	13
19 or Younger	3	4	3	4	3	3	3	3	3	3
20 or Older	14	14	13	16	15	15	15	17	19	17

Discussions

Iowa is a rural state with many of the same social and substance abuse problems as other rural states: erosion of rural life resulting from 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 for addressing substance abuse issues. Iowa is among the small number of states not dominated by a major metropolitan area. It is instead comprised of rural areas, small towns, and small cities. Its population is markedly older than most states, moderately educated, and less likely to be members of minority groups. In the future, it will be necessary to expand the current statewide epidemiological profile to understand how Iowa's fairly unique demographic and geographic characteristics affect substance use and abuse data in different areas of the state.

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. This situation resulted in three small cities with extraordinarily large numbers of students and young adults concentrated in one place and engaging in a lifestyle where alcohol is widely accessible and accepted. Iowa also has an unusually large number of private colleges (73) and nineteen state-supported colleges and universities ranging in size from very small (<5,000 – 85 percent), medium (5000-15,000 – 10 percent and large (>15,000 -5 percent; Campus Corner, n.d.). Iowa legislature has been forthcoming on policy to prevent substance abuse. Several legislations 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) and illicit drug, methamphetamine (Pseudo-ephedrine Act). Despite these efforts, the burden of substance abuse calls for statewide mobilization. Compared to the nation, Iowa does not differ from other states regarding tobacco and illicit drug consumption and consequences. However, the burden is not negligible. Moreover, with counties bordering other states such as Illinois, Missouri, and Nebraska having greater alcohol and tobacco consumption, there is a need to look into the factors that explain this phenomenon. Those factors may be casinos or lower alcohol and tobacco tax rates leading to "across-state-line shopping."

Iowa binge drinking prevalence is considerably higher than the national average. This situation may be intuitively understood from the data, on attitudes toward use and abuse of alcohol. Iowans have markedly higher levels of acceptance of drinking and lower fear of adverse consequences compared to other Americans. Iowa is ranked fifth in binge drinking prevalence associated with a lower perception of risk as reported by NSDUH.
At the time of the Iowa SPF SIG, underage alcohol use and adult binge drinking were selected as its main priorities for prevention. Despite an increase in the scope of this Epi Profile with the inclusion of other consumption and consequence indicators, the chosen SPF SIG priorities remained the key issues that required further attention. Even though tobacco use remains the leading cause of mortality and morbidity in the nation (CDC,

2008), this Epi Profile found over 2,000 hospitalizations occurring in Iowa because of alcohol-attributed injuries. Meanwhile, tobacco or drug morbidity rates in Iowa have stayed relatively lower than the national rates. The rise in prescription drugs mortality and morbidity in the nation and Iowa has reached a public health problem. Prescription drug abuse and its consequences need to part of the routine SEW surveillance activities along with the Iowa Partnerships for Success priorities.

Recommendations

Assessment

Assessment often requires the systematic gathering and evaluation of current substance abuse data and associated consequences. It is important to recommend readers to use the Epi Profile as a tool for county-wide or larger assessment. The Epi Profile could provide data related to population needs, including substance abuse and related consequences. The Epi Profile attempts to provide the readers with relevant resources to support effective prevention efforts in Iowa.

Collaboration

It is important to strengthen existing partnership and identify potential opportunities for effective collaboration. Agencies and other organizations at the state and local levels need to work actively to increase collaboration as it relates to data collection, analysis, and reporting. Collaboration could help improve appropriate data usage, eliminate data collection gaps or barriers, increase the use of data in assessments across systems, and reduce duplication. Collaborations will vary greatly based on the scope and system, but may include participation in joint planning committees, informal discussions on barriers faced or best reporting practices, or cross-posting of reports and data summaries.

Key Priority Areas

In the past years, SPF SIG program supported various Iowa communities to build effective services to deliver and sustain substance abuse services. It is recommended that substance abuse prevention agencies in the State of Iowa increase awareness of the prevalence and risk of substance abuse among groups with higher risks for substance abuse problems. Parents, teachers, law enforcement communities and other stakeholders need to be equipped with the knowledge, skills, and confidence to prevent substance abuse problems in Iowa.

Surveillance

A significant lag often occurs in the reporting of state and national data. Agencies and other organizations are recommended to review their reporting processes and identify reasonable steps that could be taken to allow for dissemination as quickly as possible. It is imperative for everyone that data are presented efficiently and as near real-time as is possible. It is further recommended that data gaps should be identified with interested parties participating in an active planning process to identify the most efficient process to address the gaps. Data gaps may be in what or how data are collected, analyzed, or reported. The sources used in the Epi Profile provide data about different populations that are impacted by substance abuse. The data from these sources contain important substance abuse indicators (e.g., 30-day alcohol use or perceived risk). The direction of these indicators across time provides measures of relative

changes in substance abuse behaviors and related consequences in the state. State and local agencies are encouraged to use this information to understand the impact of substance abuse in the state.

Data Usage

The Epi 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 A: Data Sources

Abbreviation	Data Source	Link
BRFSS	Behavioral Risk Factor Surveillance System	http://www.cdc.gov/brfss/
CDC	Centers for Disease Control and Prevention	http://www.cdc.gov/
CJJP	Criminal and Juvenile Justice Planning, Iowa Department of Human Rights	https://humanrights.iowa.gov/cjjp
DOE	Iowa Department of Education	https://www.educateiowa.gov/education-statistics
FARS	Fatality Analysis Reporting System	http://www.nhtsa.gov/FARS
HDD	Hospital Discharge Data. Contact IDPH.	http://www.idph.iowa.gov/
IYS	Iowa Youth Survey	http://www.iowayouthsurvey.iowa.gov/
NVSS	National Vital Statistics Systems	http://www.cdc.gov/nchs/nvss.htm
NSDUH	National Survey on Drug Use and Health	https://nsduhweb.rti.org/respweb/homepage.cfm
TEDS	Treatment Episode Data Set	http://wwwdasis.samhsa.gov/webt/newmapv1.htm

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.

Alcohol-Related Traffic Injuries: Number of drivers that were injured in crash with BAC>0.01.

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.

Drivers involved in fatal crashes that have had a drink (percent): Proportion of drivers in fatal crashes (limited to drivers only) that have BAC>0.01.

Fatal Car Crash Rates (per 100,000): Number of crashes resulting in fatalities divided by population times 100,000 (or a total number of Vehicle Miles Traveled).

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.

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.

- Gender-specific rate: A rate limited to a particular gender. The numerator is the number of cases in that gender; the denominator is the number of persons of that gender 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	
Alcohol-related Hospitalization	265.2, 291, 303, 305.0, 357.5, 425.5, 535.3, 571, 572.3, 655.4, 760.71, 790.3, 980.0, V79.1
Drug-Related Hospitalization	N 304, 305, 306, 962, 977; E850 (.0,2,4,7,8,9) E851-58, E935, E937-40, E950(.0-.5), E980
Tobacco-Related Hospitalization	162, 490-492, 305.1
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	F11-16, F18, F19, X40-43, X60-64, Y10-12
Suicide	X60 – X84, Y87.0
Tobacco-Related Mortality	C00-C15, C33, C34, J40 -J44

References

Centers for Disease Control and Prevention, National Center for Health Statistics. Compressed Mortality File 1999-2014 on CDC WONDER Online Database, released December 2015. Data are from the Compressed Mortality File 1999-2014 Series 20 No. 2T, 2015, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Retrieved from http://wonder.cdc.gov/cmf-icd10.html

The National Center on Addiction and Substance Abuse. (2009). Shoveling up II: The impact of substance abuse on federal, state and local budgets. Retrieved from http://www.centeronaddiction.org/addiction-research/reports/shoveling-ii-impact-substance-abuse-federal-state-and-local-budgets