Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2012

Wisconsin Department of Health Services

Prepared by the Office of Health Informatics,, Division of Public Health, in consultation with the Division of Mental Health and Substance Abuse Services and the University of Wisconsin Population Health Institute

Funded by the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA)

September 2012

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Penny Black of the University of Wisconsin Population Health Institute compiled data from the National Survey on Drug Use and Health, the Wisconsin Department of Transportation, and several other sources external to the Department of Health Services.

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Note: This report is available online at http://dhs.wisconsin.gov/stats/aoda.htm.

Table of Contents

Tables and Figures

Tables

Figures

Other Drug Consumption

Community and Individual Risk Factors

Executive Summary

The Wisconsin Department of Health Services remains strongly committed to moving toward need-based funding of services through improved data collection and analysis. One important aspect of prevention services is the ability to track the needs of communities through epidemiological factors. Based on identified needs, resources can be allocated to address the problem using evidence-based programming.

Like its 2010 counterpart, Wisconsin's *2012 Epidemiological Profile on Alcohol and Other Drug Use* presents data on the use and abuse of alcohol and other substances in Wisconsin and the resulting consequences. This edition of the Profile again includes data at the county level, to make it more useful in understanding and addressing substance abuse problems in Wisconsin communities. This 2012 report also includes a new section, "Community and Individual Risk Factors," providing data on factors that increase the risk of unsafe alcohol use and/or the illicit use of drugs.

Key Findings

Consequences of Alcohol and Other Drug Consumption

Many types of mortality, morbidity, and dangerous criminal behavior have been linked to the use of alcohol and other drugs. Given Wisconsin's high rate of alcohol consumption, it is not surprising that the rates at which Wisconsin experiences the consequences associated with alcohol use have also tended to be higher than the national average.

Since at least 2000, rates of alcohol dependence, alcohol abuse, and alcohol-related motor vehicle fatalities have been higher in Wisconsin than in the United States as a whole. (Wisconsin's motor vehicle fatality rate fell just below the U.S. rate in 2008.) Wisconsin has 1.4 times the national rate of arrests for operating a motor vehicle while intoxicated and more than three times the national rate of arrests for other liquor law violations. In 2006-2009 (the most recent data available), Wisconsin also had the highest rate in the nation of self-reported drinking and driving.

In brighter news, Wisconsin's rate of alcohol-related motor vehicle deaths decreased sharply in 2008, a drop that was largely sustained in 2009 and 2010. On the other hand, Wisconsin's rate of death from alcohol-related liver cirrhosis has risen since 2002. Wisconsin's rate of other alcohol-related deaths (other than liver cirrhosis and motor vehicle) has also increased. Nearly one-quarter of suicide deaths are estimated to be alcohol-related, and the rate of death from suicide in Wisconsin has increased in recent years.

The number of clients receiving publicly funded services for alcohol and other drug abuse decreased sharply from 2006 to 2010, falling below the level seen in 2001. Inflation-adjusted public expenditures for those services decreased 15% from 2006 to 2010 and 12% overall from 2001 to 2010.

Wisconsin's age-adjusted rate of drug-related deaths increased from 2002 to 2006 and then leveled off, but the 2010 rate was still nearly double the 2002 rate. The most prevalent category of drug mentioned on death certificates for drug-related deaths in 2010 was "other opioids," alone or in combination with other drugs, with benzodiazepines second and heroin third. All three of these categories of drugs have increased as a proportion of drug-related deaths, while cocaine has declined. The statewide rate of drug-related hospitalizations increased steadily from 2002 to 2010, as did total hospital charges for those hospitalizations. Wisconsin's rate of arrests for drug law violations remains lower than the national average.

Alcohol Consumption

Wisconsin's rates of alcohol use and misuse have been among the highest – if not the highest – in the nation. As of 2010, Wisconsin adults continue to have the highest rate of binge drinking among all U.S. states and territories. Wisconsin's per capita alcohol consumption and the rate of underage drinking (ages 12-20) both exceed national averages. Wisconsin's rate of heavy drinking among adults, while still higher than the national average, declined two percentage points in 2010.

Alcohol consumption patterns among high school students have also been improving somewhat. In recent years, the percent of Wisconsin high school students who started using alcohol before age 13 has been similar to the national average and decreasing, and Wisconsin no longer has the nation's highest rate of binge drinking among high school students. Binge drinking among young adults (ages 18-24) has declined 10 percentage points in Wisconsin since 2002.

Data for the years 2002-2010 consistently show that Wisconsin women of childbearing age are more likely to drink – and to binge drink – than their national counterparts. These findings are underscored by survey data about women who have recently given birth. New mothers in Wisconsin are more likely than their counterparts in other surveyed states to report they consumed alcohol in the three months before they became pregnant, and also more likely to report they consumed alcohol during the last three months of pregnancy.

Other Drug Consumption

As a whole, consumption patterns of illicit drugs in Wisconsin mirror national trends. Both lifetime and current use of marijuana in the United States and Wisconsin decreased for most of the past decade, although the latest data for Wisconsin show an upturn.

Both nationally and in Wisconsin, the misuse of prescription drugs for non-medical purposes continues to be a serious problem, especially among young adults. In 2008-2009, 13% of Wisconsin adults ages 18-25 reported using pain relievers for non-medical purposes. Among high school students in 2011, 18% reported illicit use of prescription drugs at some point in their lives.

Community and Individual Risk Factors

Community-level factors that heighten the risk of experiencing alcohol and other drug use problems include alcohol outlet density; i.e., the number of alcohol outlets in a community in relation to the size of its population. Individual factors that increase the risk of substance abuse include adverse experiences before age 18, such as substance abuse by household

members and/or parents, physical abuse and sexual abuse. Adult mental health issues such as depression and suicidal thoughts frequently co-occur with substance abuse problems. The report now includes data for these risk factors to provide additional context for the consumption data.

Conclusion

Areas of progress and of continuing need are clearly identified in this report. Wisconsin's rate of drinking among high school students has decreased since 2001, as has the proportion of Wisconsin students who report first consuming alcohol before age 13. Also decreasing steadily was the percentage of high school students who report binge drinking, although the rate remains unacceptably high at 24%. For the third year in a row, Wisconsin's rate of alcohol-related motor vehicle deaths was similar to the national rate after years of exceeding it. Wisconsin's rate of nonfatal injuries from alcohol-related crashes has been declining steadily.

Despite these positive changes, Wisconsin's rates of underage drinking and of underage binge drinking are both higher than national rates, and were unchanged from the most recent previous years examined. Wisconsin continues to have the highest rate of adult binge drinking in the nation. In addition, Wisconsin's rate of drug-related deaths nearly doubled from 2002 to 2010, with opioid-related overdoses as the most frequent cause.

While the increase in drug-related deaths has leveled off since 2006, the rate remains unacceptably high. The drug-related death rate surpassed mortality from alcohol-related motor vehicle crashes in 2004 and has been higher ever since. As documented in a recent report from the Controlled Substances Workgroup of the State Council on Alcohol and Other Drug Abuse, most of this increase in drug-related deaths is due to misuse of prescription drugs rather than illicit drugs.[1]

This mixed picture of progress and continuing challenges suggests an ongoing need to address the following priorities:

- Underage drinking (ages 12-20)
- Adult binge drinking (ages 18-34)
- Drinking among pregnant women
- Alcohol-related motor vehicle fatalities and injuries (especially among people ages 16 to 34)
- Drug-related deaths (with a focus on unintentional opioid-related overdoses and deaths among people ages 20-54).

The economic and health costs of substance abuse in Wisconsin are substantial, as are the related costs to the community of arrests and criminal offenses. Focus on these key areas will be useful in guiding the State's funding decisions regarding which problems to address and which interventions to use.

[1] Wisconsin State Council on Alcohol and Other Drug Abuse, Controlled Substances Workgroup. *Reducing Wisconsin's Prescription Drug Abuse: A Call to Action*. January 2012. http://scaoda.state.wi.us/docs/prevandspfsig/FINAL01032012CSWReport.pdf

Introduction

This report summarizes current data on the consequences and use of alcohol and other drugs in Wisconsin. It describes results for a variety of indicators, with charts and tables detailing key trends for Wisconsin in the consequences of alcohol and other drug use and in patterns of consumption. The Appendices provide information on indicator definitions, data sources, and sample sizes.

Data in this report primarily reflect trends at a statewide level. Where available, information by county has also been included.

In the sections on the consequences of alcohol and other drug use, this report includes data on both arrests and reported offenses. Both kinds of data have advantages and disadvantages. Reported offenses are not influenced by the laws and enforcement practices of a particular locality. Nevertheless, arrests provide a measure of the socioeconomic toll of these crimes. Data on reported offenses are only available for "index" crimes: burglary, theft, arson, motor vehicle theft, homicide, rape, robbery, and aggravated assault. Arrest data are available for a wider range of crimes.

New information in the 2012 report includes data on risk factors at the individual and community levels.

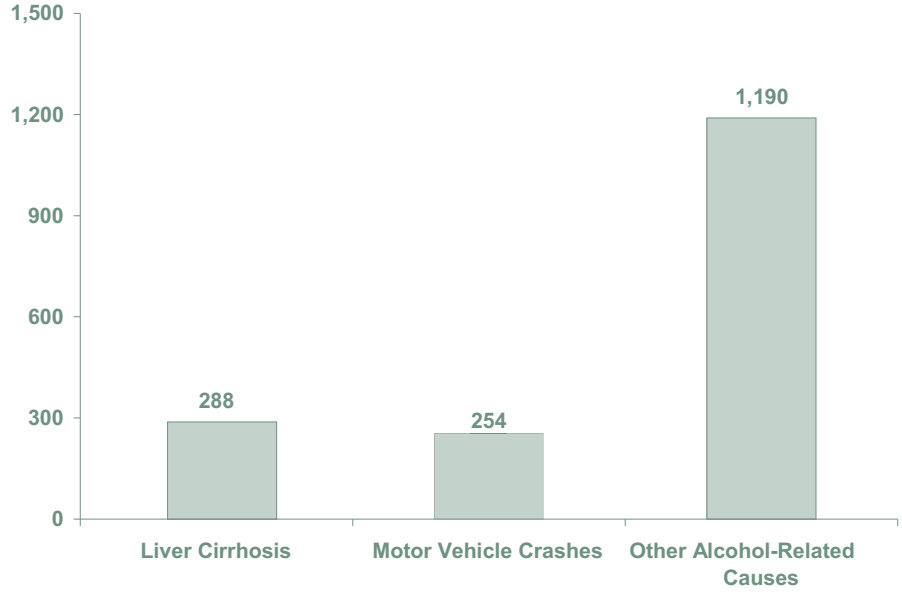
Narrative and Results

Consequences of Alcohol Consumption

In Wisconsin in 2010, at least 1,732 people died, 3,511 were injured, and 67,345 were arrested as a direct result of alcohol use and misuse. Given Wisconsin's high rate of alcohol consumption, it is not surprising that the consequences associated with alcohol use also tend to be higher than the national average. Rates of alcohol dependence and alcohol abuse continue to be higher in Wisconsin than in the United States. While rates of alcohol-related motor vehicle fatalities have also been higher in Wisconsin than the nation for many years, Wisconsin's rate of alcohol-related motor vehicle deaths fell below the U.S. rate in 2008 and just above it in 2009 and 2010.

Wisconsin has one-and-a-half times the national rate of arrests for operating a motor vehicle while intoxicated and more than three times the national rate of arrests for other liquor law violations. Wisconsin has generally experienced a lower rate of alcohol-related liver cirrhosis than the national average.

Figure 1. Number of alcohol-related deaths, Wisconsin, 2010



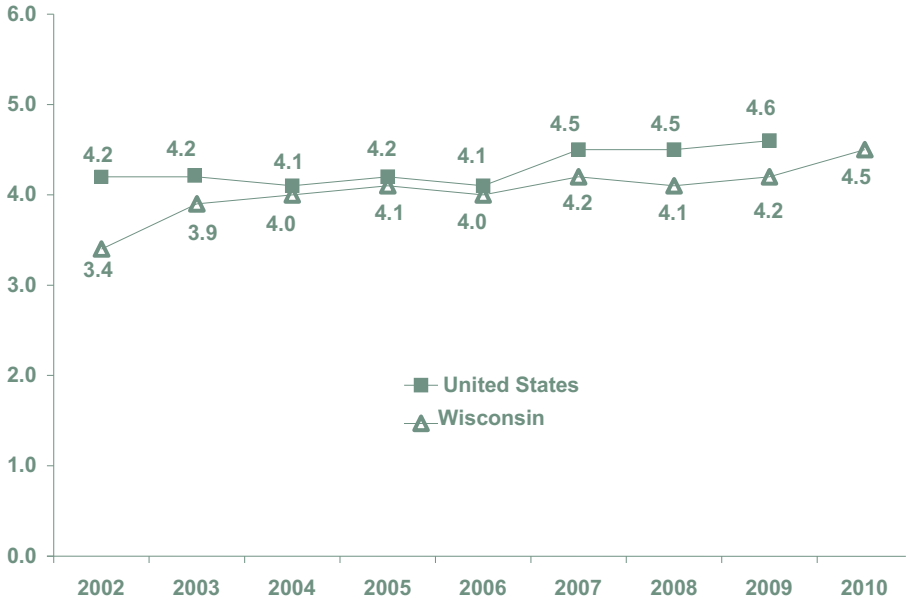
Sources: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services; deaths from motor vehicle crashes are from the Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Department of Transportation. See "Other Alcohol-Related Mortality" section, page 20, for a description of the "Other Alcohol-Related Causes" category of deaths.

Alcohol-Related Liver Cirrhosis Deaths

Mortality from alcohol-related liver cirrhosis is a direct consequence of chronic alcohol consumption.

- In 2010, 288 people in Wisconsin died due to alcohol-related liver cirrhosis, for an age-adjusted mortality rate of 4.5 deaths per 100,000 population (Figure 2 and Table 1).
- Between 2002 and 2010, Wisconsin's rate of mortality from alcohol-related liver cirrhosis rose from 3.4 to 4.5 per 100,000. The Wisconsin rate has been slightly below the U.S. rate in recent years.

Figure 2. Alcohol-related liver cirrhosis deaths, age-adjusted rate per 100,000 population, Wisconsin and the United States, 2002-2010



Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services; rates for the United States are from the Centers for Disease Control and Prevention: http://wonder.cdc.gov/mortSQL.html.

Table 1. Alcohol-related liver cirrhosis deaths, age-adjusted rate per 100,000 population and total number, Wisconsin and the United States, 2002-2010

		2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	Rate/100,000	4.2	4.2	4.1	4.2	4.1	4.5	4.5	4.6	
	Total number	12,121	12,360	12,548	12,928	13,050	14,406	14,864	15,183	
Wisconsin	Rate/100,000	3.4	3.9	4.0	4.1	4.0	4.2	4.1	4.2	4.5
	Total number	194	221	234	244	239	262	260	265	288

Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services; United States death certificate data compiled by the Centers for Disease Control and Prevention: http://wonder.cdc.gov/mortSQL.html.

Table 2. Alcohol-related liver cirrhosis deaths, average annual number and rate per 100,000 population, Wisconsin by county, 2002-2010 (combined years)

County	Annual Average Number	Rate per 100,000	County	Annual Average Number	Rate per 100,000
Adams	1	6.3	Marinette	3	5.8
Ashland	1	8.6	Marquette	1	5.9
Barron	2	3.8	Menominee	2	34.0
Bayfield	1	9.3	Milwaukee	46	5.0
Brown	10	4.3	Monroe	1	2.6
Buffalo	1	4.0	Oconto	2	5.8
Burnett	1	6.8	Oneida	2	6.5
Calumet	2	3.9	Outagamie	7	4.2
Chippewa	2	4.0	Ozaukee	4	4.1
Clark	1	1.6	Pepin	0	1.5
Columbia	3	4.6	Pierce	2	5.3
Crawford	1	3.9	Polk	3	6.7
Dane	18	3.9	Portage	2	2.6
Dodge	3	3.3	Price	0	2.9
Door	1	2.7	Racine	9	4.7
Douglas	2	4.5	Richland	0	1.8
Dunn	2	3.9	Rock	8	4.8
Eau Claire	3	2.9	Rusk	1	7.3
Florence	1	11.0	St. Croix	1	1.6
Fond du Lac	5	4.9	Sauk	3	5.4
Forest	1	12.1	Sawyer	2	10.4
Grant	1	1.5	Shawano	2	4.0
Green	1	3.1	Sheboygan	5	4.6
Green Lake	2	8.1	Taylor	0	0.6
Iowa	1	2.8	Trempealeau	1	5.2
Iron	0	6.6	Vernon	1	2.7
Jackson	1	5.0	Vilas	1	6.5
Jefferson	3	3.3	Walworth	7	6.9
Juneau	2	6.3	Washburn	1	5.3
Kenosha	6	4.0	Washington	4	3.1
Kewaunee	1	2.7	Waukesha	14	3.7
La Crosse	6	5.4	Waupaca	3	4.8
Lafayette	1	3.4	Waushara	1	5.8
Langlade	1	2.6	Winnebago	7	4.6
Lincoln	1	4.8	Wood	2	3.1
Manitowoc	2	2.8			
Marathon	6	4.9	**Wisconsin**	**245**	**4.4**

Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services.

Alcohol-Related Motor Vehicle Injuries and Fatalities

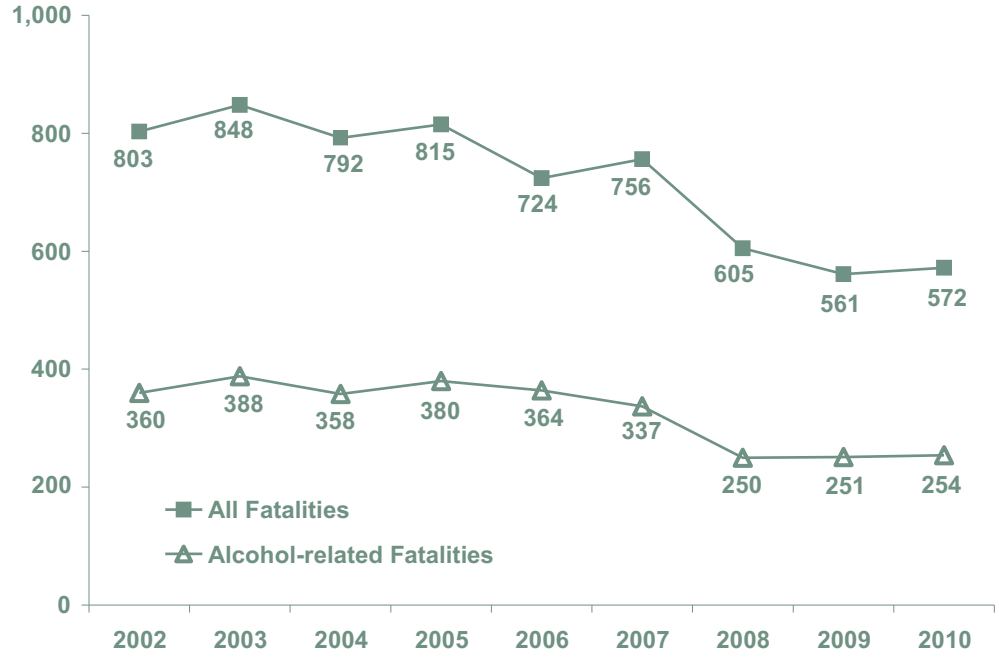
Many motor vehicle injuries and fatalities are a direct consequence of alcohol use and abuse.

- In 2010, 254 people in Wisconsin died in alcohol-related motor vehicle crashes according to the national Fatality Analysis Reporting System (Figure 3); this is down from 360 such deaths in 2002. Approximately 44% of all Wisconsin motor vehicle fatalities in 2010 were alcohol-related.

- Wisconsin's mortality rate from alcohol-related motor vehicle crashes fell just below the U.S. rate in 2008 (Figure 4, page 16) and remained close to that level in 2009 and 2010. The 2010 alcohol-related motor vehicle mortality rate was 4.5 per 100,000 population in Wisconsin and 4.3 per 100,000 in the United States.

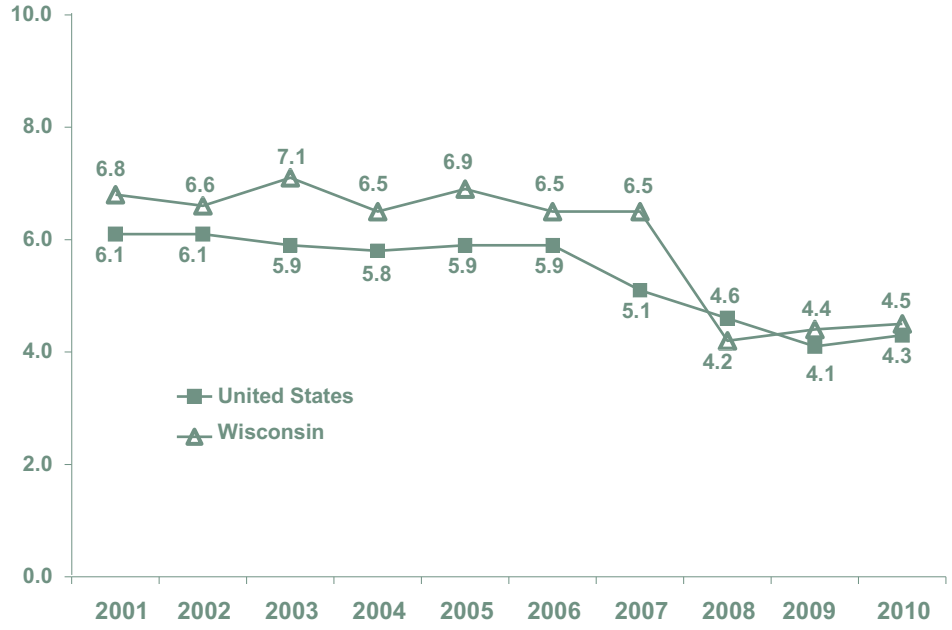
- Between 2002 and 2010, the total number of nonfatal alcohol-related motor vehicle injuries in Wisconsin dropped 47%, from 6,570 to 3,511. The rate of nonfatal injuries in alcohol-related crashes also fell during this period, to a low in 2010 of 62 injuries per 100,000 population (Figure 5, page 16).

Figure 3. Number of alcohol-related and total motor vehicle fatalities, Wisconsin, 2002-2010



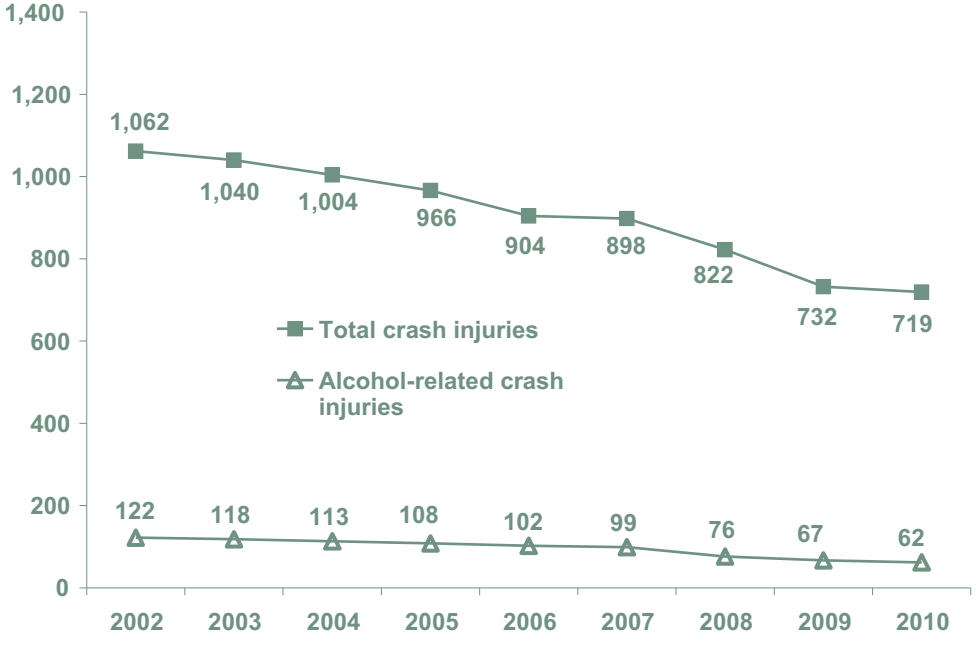
Source: Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Department of Transportation.

Figure 4. Alcohol-related motor vehicle deaths, rate per 100,000 population, Wisconsin and the United States, 2001-2010



Source: Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Department of Transportation.

Figure 5. Alcohol-related and total nonfatal motor vehicle injuries, rate per 100,000 population, Wisconsin, 2002-2010



Source: Numbers of injuries were drawn from final year crash statistics, Wisconsin Department of Transportation. (See http://www.dot.wisconsin.gov/drivers/drivers/traffic/crash/final.htm.) Rates were calculated as the number of nonfatal alcohol-related motor vehicle crash injuries divided by the total population X 100,000.

Table 3. Alcohol-related motor vehicle injuries and deaths, rates per 100,000 population, Wisconsin by county, 2007-2010

	Nonfatal Injury Rate per 100,000				Death Rate per 100,000			
County	2007	2008	2009	2010	2007	2008	2009	2010
Adams	131	184	104	101	5	29	0	19
Ashland	96	86	52	43	6	6	0	6
Barron	98	99	60	52	6	7	6	4
Bayfield	146	93	91	80	13	7	0	13
Brown	102	88	81	60	7	4	5	4
Buffalo	242	123	111	22	14	0	13	22
Burnett	78	104	177	97	0	0	11	0
Calumet	64	75	49	35	4	9	8	6
Chippewa	157	91	57	46	10	7	4	5
Clark	82	102	94	43	3	3	2	6
Columbia	56	107	77	62	23	2	5	4
Crawford	115	118	50	42	29	24	5	6
Dane	90	60	46	32	5	4	3	2
Dodge	116	82	86	47	8	7	8	3
Door	99	94	52	32	10	11	0	0
Douglas	98	66	49	34	9	2	0	2
Dunn	96	121	66	48	5	7	4	7
Eau Claire	75	64	46	28	2	3	1	2
Florence	137	126	149	113	0	0	0	23
Fond du Lac	127	95	59	37	9	0	1	1
Forest	128	92	152	75	10	20	0	11
Grant	115	103	94	72	10	6	3	4
Green	119	76	98	57	3	3	8	3
Green Lake	120	43	70	16	10	0	0	5
Iowa	167	98	69	34	8	4	8	8
Iron	250	48	112	51	30	0	0	17
Jackson	230	227	123	59	10	25	1	0
Jefferson	81	81	81	41	9	5	6	4
Juneau	137	79	100	75	4	15	7	4
Kenosha	162	136	109	60	6	9	4	4
Kewaunee	105	20	74	24	10	5	1	5
La Crosse	76	63	71	48	2	0	2	2
Lafayette	56	152	78	42	12	19	30	12
Langlade	80	123	86	55	19	5	1	5
Lincoln	79	88	29	42	7	3	0	7
Manitowoc	103	87	72	48	5	3	2	7
Marathon	95	90	67	40	6	2	5	2

Table 3. Alcohol-related motor vehicle injuries and deaths, rates per 100,000 population, Wisconsin by county, 2007-2010 (continued)

	Nonfatal Injury Rate per 100,000				Death Rate per 100,000			
County	2007	2008	2009	2010	2007	2008	2009	2010
Marinette	73	110	91	50	16	7	31	10
Marquette	190	67	32	45	0	0	0	13
Menominee	87	87	1	0	0	0	0	0
Milwaukee	74	51	42	32	3	2	2	3
Monroe	103	109	96	51	2	5	8	2
Oconto	130	131	78	56	26	8	10	16
Oneida	135	91	79	53	19	0	1	6
Outagamie	99	57	55	38	8	1	2	2
Ozaukee	53	50	47	36	2	4	3	1
Pepin	79	68	141	13	13	0	0	0
Pierce	125	99	44	46	15	8	9	15
Polk	177	93	105	86	7	14	15	5
Portage	98	88	79	56	6	4	1	11
Price	71	76	55	42	6	0	18	0
Racine	101	95	102	57	5	6	2	1
Richland	93	105	81	44	0	11	1	6
Rock	106	118	85	67	6	8	3	5
Rusk	150	61	70	61	13	7	1	0
St. Croix	104	67	70	32	9	5	6	1
Sauk	163	101	104	56	15	7	6	6
Sawyer	241	158	78	91	6	18	16	6
Shawano	214	149	107	98	7	12	11	2
Sheboygan	84	56	61	31	4	3	5	1
Taylor	101	93	109	58	15	10	0	10
Trempealeau	135	140	112	62	4	18	1	7
Vernon	150	97	70	44	3	3	0	7
Vilas	191	109	158	107	4	9	8	5
Walworth	129	78	62	54	4	1	2	3
Washburn	104	108	39	69	0	6	0	0
Washington	108	94	75	48	4	2	3	6
Waukesha	64	43	56	32	3	1	3	1
Waupaca	133	79	79	76	15	6	3	4
Waushara	80	61	55	69	8	12	0	4
Winnebago	86	60	55	51	6	3	2	4
Wood	63	53	32	33	5	0	1	1
Wisconsin	**99**	**76**	**67**	**45**	**6**	**4**	**4**	**4**

Source: *Wisconsin Traffic Crash Facts: Alcohol*, Wisconsin Department of Transportation. (Population data for county rate calculations are from the U.S. Census.) Injury rates include nonfatal injuries only, and are the number of injuries per 100,000 population.

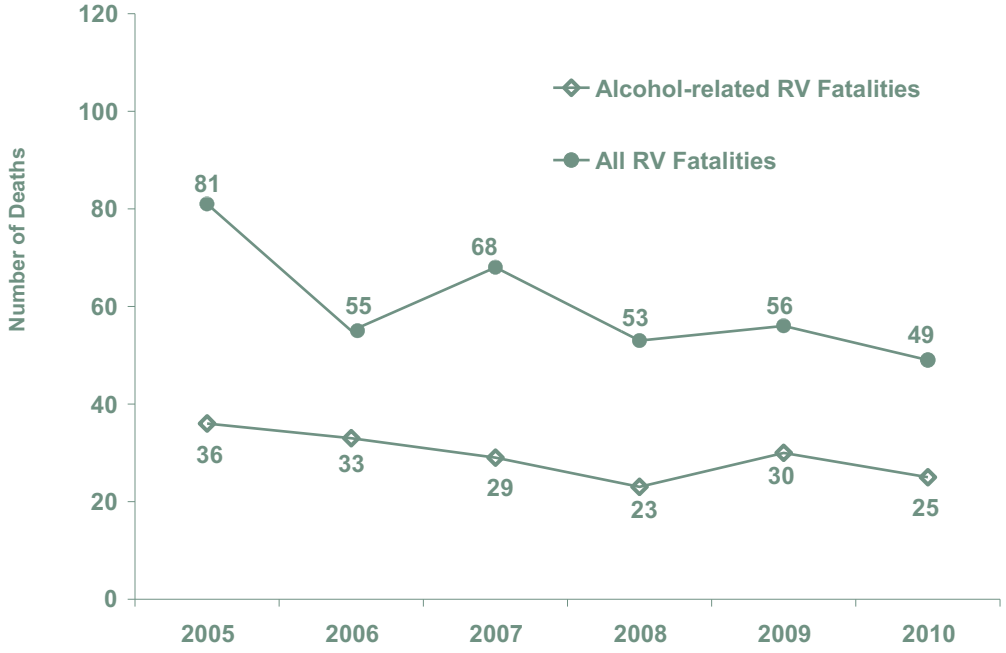
Recreational Vehicle Fatalities

Many recreational vehicle fatalities are a direct consequence of alcohol use and abuse. Recreational vehicles include boats, snowmobiles, and all-terrain vehicles (ATVs).

- In 2010, 25 of the 49 recreational vehicle deaths in Wisconsin were alcohol-related (Figure 6).

- Every year, a substantial percentage of recreational vehicle fatalities in Wisconsin are alcohol-related. In 2010, 51% of these deaths were alcohol-related, down from 60% in 2006 and similar to the proportion in 2009 (54%).

Figure 6. Recreational vehicle* fatalities, alcohol-related and total number, Wisconsin, 2005-2010



Source: All-Terrain Vehicle Enforcement and Safety Reports, 2005-2010, Wisconsin Department of Natural Resources. Available at http://www.dnr.state.wi.us/org/es/enforcement/reports.htm

* Note: Recreational vehicles include boats, snowmobiles, and ATVs.

Other Alcohol-Related Mortality

Alcohol use contributes to many different causes of death in varying degrees. For example, it contributes to 100 percent of alcohol-related liver cirrhosis deaths, but a smaller percentage of deaths from stroke. Alcohol-Related Disease Impact (ARDI) software from the Centers for Disease Control and Prevention identifies the proportion of deaths that are alcohol-related for a total of 54 chronic and acute conditions.[2]

- Alcohol-related causes other than alcoholic liver cirrhosis and alcohol-related motor vehicle crashes resulted in an estimated 1,190 deaths in Wisconsin in 2010 (see Figure 1, page 12). The most frequent causes of "other" alcohol-related deaths are mental and behavioral disorders due to alcohol, alcohol dependence syndrome, unspecified liver cirrhosis, homicide, poisoning, and suicide.

- The Wisconsin mortality rate from other alcohol-related causes increased from 18.0 deaths per 100,000 in 2002 to 20.9 deaths per 100,000 in 2010 (Figure 7).

- Based on combined data for 2002-2010 at the county level (Table 4, next page), the mortality rate from other alcohol-related causes ranged between 11.2 per 100,000 population in St. Croix County to 30.3 per 100,000 in Milwaukee County.

Figure 7. Other alcohol-related deaths, rate per 100,000 population, Wisconsin, 2002-2010

Source: Wisconsin resident death certificates, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.

Note: These are alcohol-related deaths other than those due to alcoholic liver cirrhosis and alcohol-related motor vehicle crashes. Deaths included are based on Alcohol-Related Disease Impact (ARDI) software specifications; see Appendix 2, "Mortality" section.

[2] For each of these 54 conditions, ARDI specifies a distinct fraction of cases attributable to alcohol. The number of alcohol-attributable deaths can be estimated by multiplying the number of deaths for each condition by the specified alcohol-attributable fraction and summing over conditions. This method was used to estimate the total number of alcohol-related deaths in Wisconsin, as well as the subset of "other" alcohol-related deaths (other than those from alcoholic liver cirrhosis and motor vehicle crashes).

Table 4. Other alcohol-related deaths, average annual number and rate per 100,000 population, Wisconsin by county, 2002-2010 (combined years)

County	Annual Average Number	Rate per 100,000	County	Annual Average Number	Rate per 100,000
Adams	4	21.1	Marinette	8	17.3
Ashland	3	17.9	Marquette	4	28.6
Barron	8	16.5	Menominee	1	29.1
Bayfield	3	21.4	Milwaukee	284	30.3
Brown	40	16.4	Monroe	8	17.4
Buffalo	2	14.3	Oconto	7	17.2
Burnett	4	24.4	Oneida	6	16.0
Calumet	5	11.5	Outagamie	23	13.2
Chippewa	11	19.0	Ozaukee	10	12.1
Clark	5	14.6	Pepin	1	16.2
Columbia	10	18.9	Pierce	5	12.9
Crawford	3	19.3	Polk	8	18.7
Dane	68	14.7	Portage	10	14.8
Dodge	15	17.4	Price	3	18.6
Door	6	20.3	Racine	38	19.5
Douglas	10	23.2	Richland	3	18.4
Dunn	6	14.1	Rock	29	18.4
Eau Claire	14	14.4	Rusk	2	16.0
Florence	1	19.8	St. Croix	9	11.2
Fond du Lac	18	17.7	Sauk	11	18.5
Forest	3	28.7	Sawyer	4	24.6
Grant	7	13.4	Shawano	8	18.0
Green	6	15.8	Sheboygan	21	18.2
Green Lake	4	19.6	Taylor	3	17.3
Iowa	4	15.4	Trempealeau	4	15.5
Iron	1	21.5	Vernon	5	16.3
Jackson	4	20.6	Vilas	6	27.5
Jefferson	12	15.4	Walworth	16	15.8
Juneau	7	24.7	Washburn	3	18.4
Kenosha	32	19.8	Washington	22	17.3
Kewaunee	3	13.8	Waukesha	67	17.6
La Crosse	20	18.1	Waupaca	11	20.5
Lafayette	3	16.3	Waushara	4	16.1
Langlade	5	22.2	Winnebago	30	18.6
Lincoln	7	23.2	Wood	12	16.4
Manitowoc	19	23.3			
Marathon	22	17.0	**Wisconsin**	**1,083**	**19.4**

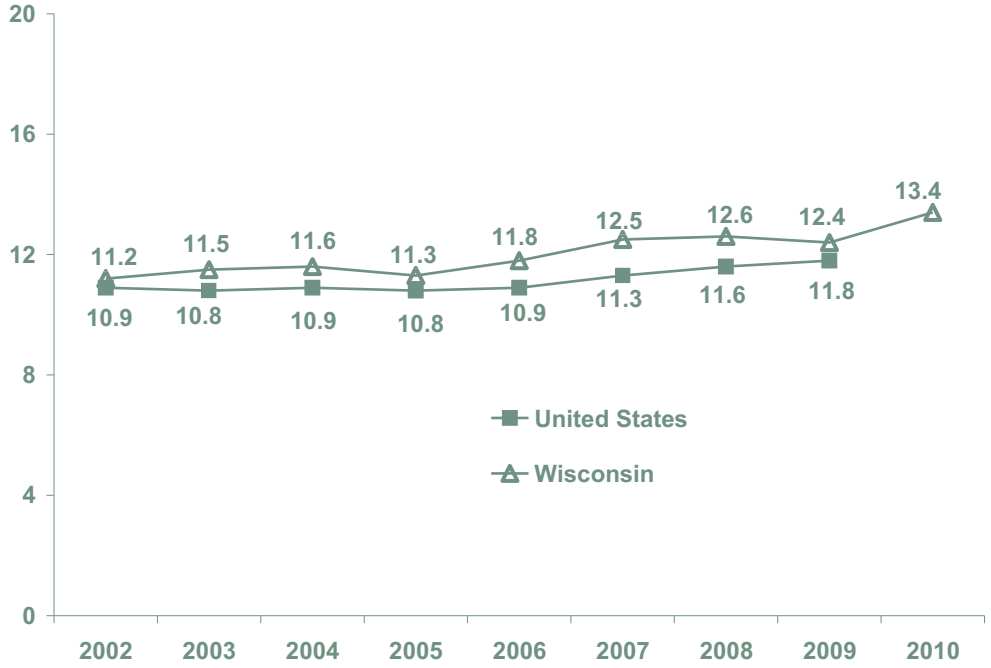
Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services.
Note: Rate includes all alcohol-related deaths other than alcoholic liver cirrhosis and motor vehicle deaths.

Deaths from suicide make up a substantial part of these "other" alcohol-related deaths. According to estimates developed by the Centers for Disease Control and Prevention, alcohol use contributes to nearly one-quarter (23%) of deaths from suicide.[3]

- In 2010, there were 792 suicide deaths among Wisconsin residents (Table 5, next page). Alcohol use is estimated to have contributed to 182 of these deaths.

- From 2002 to 2010, the mortality rate from suicide increased in Wisconsin, from 11.2 to 13.4 per 100,000 population (Figure 8).

Figure 8. Suicide deaths, age-adjusted rate per 100,000 population, Wisconsin and United States, 2002-2010



Source: Wisconsin resident death certificates, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.

[3] Centers for Disease Control and Prevention. Alcohol Related Disease Impact (ARDI) application, 2010. Available at http://apps.nccd.cdc.gov/DACH_ARDI/Default.aspx.

- During the years 2002-2009, the suicide mortality rate was higher in Wisconsin than in the United States as a whole (Table 5). National figures are not yet available for 2010.

Table 5. Suicide deaths, age-adjusted rate per 100,000 population and total number, Wisconsin and the United States, 2002-2010

		2002	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
United States	Rate/100,000	10.9	10.8	10.9	10.8	10.9	11.3	11.6	11.8	
	Total number	31,595	31,422	32,363	32,559	33,200	34,529	35,969	36,837	
Wisconsin	Rate/100,000	11.2	11.5	11.6	11.3	11.8	12.5	12.6	12.4	13.4
	Total number	626	642	656	639	668	724	737	724	792

Source: Wisconsin resident death certificates, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services; United States death certificate data compiled by the Centers for Disease Control and Prevention: http://wonder.cdc.gov/mortSQL.html.

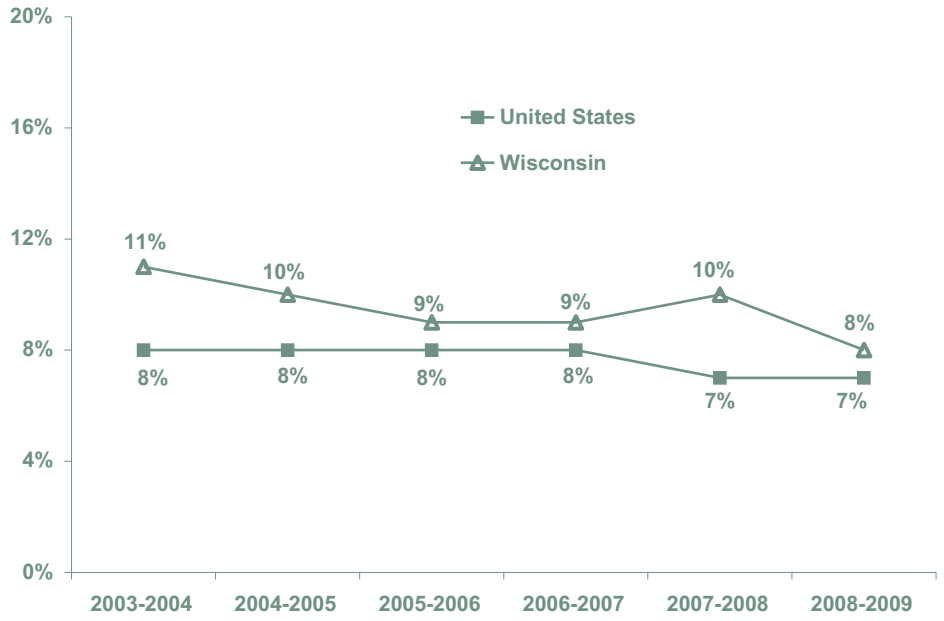
Alcohol Dependence or Abuse

Alcohol dependence and abuse are direct consequences of alcohol misuse.[4]

- From 2003 to 2009, the reported rate of alcohol dependence or abuse among the Wisconsin population age 12 and older declined from 11% in 2003-2004 to 8% in 2008-2009. The national rate was 8% for most years, declining to 7% in the two most recent periods (Figure 9).

- In Wisconsin, young adults ages 18 to 25 had a notably higher rate of alcohol dependence or abuse than other age groups (Table 6).

Figure 9. Prevalence of alcohol dependence and abuse, age 12 and older, Wisconsin and the United States, 2002-2008



Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

Table 6. Prevalence of alcohol dependence and abuse, age 12 and older by age, Wisconsin, 2003-2009

Age	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
12-17	7%	9%	8%	6%	7%	7%	7%
18-25	23%	25%	24%	22%	23%	22%	20%
26+	7%	9%	8%	6%	7%	7%	6%

Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

[4] See definitions of "dependence" and "abuse," page 92.

Alcohol-Related Hospitalizations

The number of alcohol-related hospitalizations in Wisconsin increased approximately 9% between 2002 and 2010, from 44,733 to 48,718 (Table 7). The rate of these hospitalizations increased from 2002 to 2008, from 819 to 884 per 100,000 population, before declining in 2009 and 2010 to 857 per 100,000.

Charges for alcohol-related hospitalizations likewise increased, from $595 million in 2002 to more than $1.1 billion in 2010 (Figure 10). (These amounts are not adjusted for inflation.) Hospital charges are the total facility charges for the length of stay and are not the same as actual costs paid by any payer; also, they do not include physician or other ancillary charges.

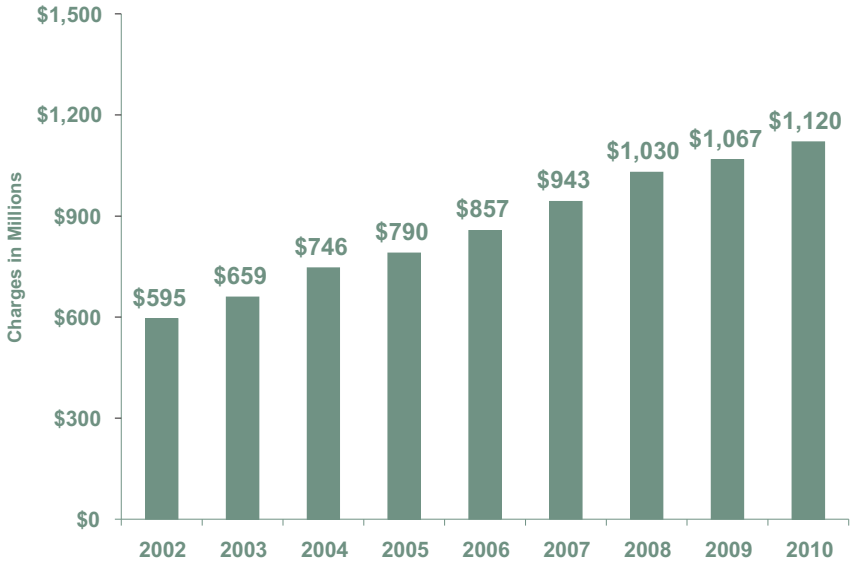
In 2009-2010, the counties with the highest rates of alcohol-related hospitalizations (at least 25% above the state average) were Ashland, Eau Claire, Forest, La Crosse, Marquette, Menominee, Milwaukee, Vilas, and Wood (Table 8).

Table 7. Alcohol-related hospitalizations, rate per 100,000 population and total number, Wisconsin, 2002-2010

	2002	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Rate/100,000	819	808	835	848	859	877	884	856	857
Number	44,733	44,405	46,276	47,313	48,178	49,478	50,119	48,625	48,718

Source: Wisconsin hospital inpatient discharge database, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.

Figure 10. Alcohol-related hospital charges, in millions, Wisconsin, 2002-2010



Source: Wisconsin hospital inpatient discharge database, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.

Note: Charges are not the same as actual costs paid by any payer; see Technical Notes.

Table 8. Alcohol-related hospitalizations, rate per 100,000 population and total number, Wisconsin by county, 2008-2010

County	Number in 2010	Rate per 100,000	
		2008-2009	2009-2010
Adams	144	634	666
Ashland	264	1,416	1,509
Barron	367	835	801
Bayfield	147	830	865
Brown	2,030	873	845
Buffalo	83	629	609
Burnett	85	513	530
Calumet	119	308	268
Chippewa	521	882	846
Clark	242	903	793
Columbia	518	950	944
Crawford	115	741	694
Dane	3,706	754	765
Dodge	675	694	726
Door	211	770	756
Douglas	49	107	104
Dunn	281	611	628
Eau Claire	1,115	1,144	1,140
Florence	19	205	325
Fond du Lac	829	689	735
Forest	111	1,321	1,209
Grant	207	459	398
Greene	231	665	667
Green Lake	171	701	797
Iowa	155	591	595
Iron	42	707	765
Jackson	175	1,136	967
Jefferson	491	690	619
Juneau	213	939	861
Kenosha	1,624	965	967
Kewaunee	138	639	684
La Crosse	1,285	1,131	1,123
Lafayette	80	633	552
Langlade	200	845	917
Lincoln	312	947	1,022
Manitowoc	665	776	804
Marathon	1,318	992	980
Marinette	415	861	905

Table 8. Alcohol-related hospitalizations, rate per 100,000 population and total number, Wisconsin by county, 2008-2010 (continued)

County	Number in 2010	Rate per 100,000	
		2008-2009	2009-2010
Marquette	154	1,093	1,086
Menominee	106	2,670	2,600
Milwaukee	10,393	1,145	1,101
Monroe	336	710	704
Oconto	260	750	715
Oneida	320	952	909
Outagamie	1,364	774	767
Ozaukee	631	695	718
Pepin	35	511	471
Pierce	155	428	388
Polk	258	672	648
Portage	590	816	815
Price	126	849	920
Racine	1,926	1,031	990
Richland	133	821	765
Rock	1,310	807	811
Rusk	123	858	847
St. Croix	270	387	338
Sauk	568	870	867
Sawyer	153	917	937
Shawano	341	807	823
Sheboygan	972	814	822
Taylor	126	611	614
Trempealeau	266	927	909
Vernon	234	798	813
Vilas	350	1,802	1,663
Walworth	709	659	681
Washburn	148	796	867
Washington	924	669	682
Waukesha	3,069	798	789
Waupaca	425	873	835
Waushara	202	735	779
Winnebago	1,581	919	919
Wood	811	1,203	1,136
Wisconsin	**48,718**	**870**	**856**

Source: Wisconsin hospital inpatient discharge database, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.

Note: Hospitalization numbers and rates are based on patient's county of residence.

Drinking and Driving

- In 2010, an estimated 4% of Wisconsin adults age 18 and older reported drinking and driving in the past month, the same percentage as in 2002 (Figure 11).

- While comparable national data on past-month drinking and driving are not available, data for 2006-2009 on drinking and driving *in the past year* suggested that Wisconsin continues to have the highest rate of drinking and driving in the nation (24% of drivers age 16 and older).[5]

Figure 11. Prevalence of past-month drinking and driving, Wisconsin, 2002-2010

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

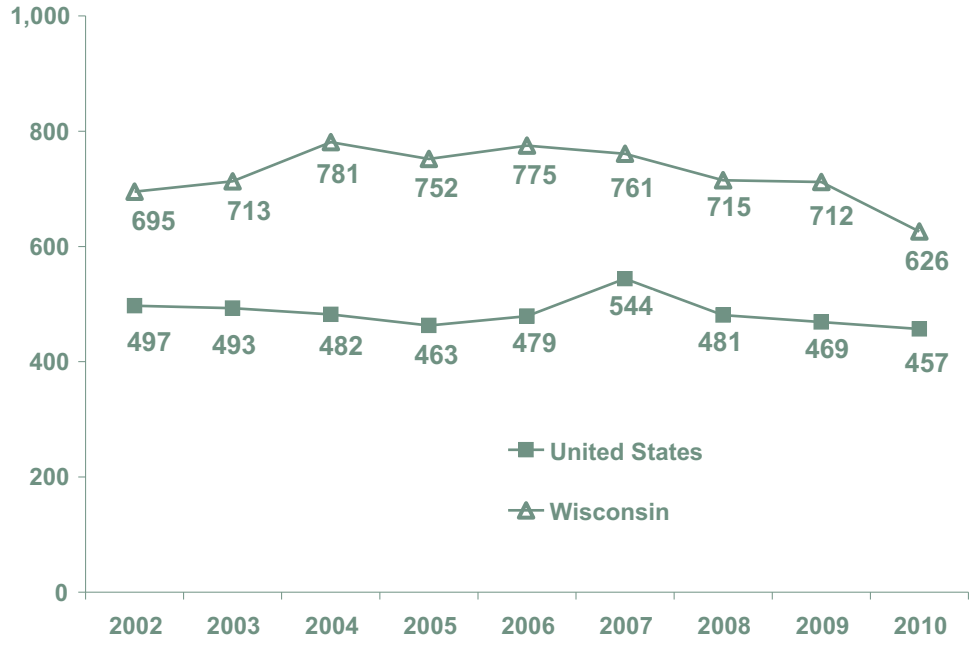
Note: Data are not available for this measure for 2003 or 2009.

[5] Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health. *The NSDUH Report*, State Estimates of Drunk and Drugged Driving. Dec. 9, 2010.

Alcohol-Related Crime and Arrests

- In 2010, there were 35,577 arrests in Wisconsin for operating a motor vehicle while intoxicated (OWI) and 31,768 arrests for other liquor law violations.
- Arrest rates for OWI and liquor law violations have been consistently higher in Wisconsin than nationally (Figure 12 and Figure 13).
- Wisconsin's rate of arrests for OWI declined to 626 per 100,000 population in 2010, after rates of more than 700 during the previous seven years. On July 3, 2003, Wisconsin became the 43rd state to enact legislation lowering the prohibited BAC (Blood/Breath Alcohol Concentration) level for operating a motor vehicle while intoxicated to 0.08 percent BAC (from 0.1 percent BAC). The change became effective September 30, 2003.

Figure 12. Arrests (adult and juvenile) for operating a motor vehicle while intoxicated (OWI), rate per 100,000 population, Wisconsin and the United States, 2002-2010



Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

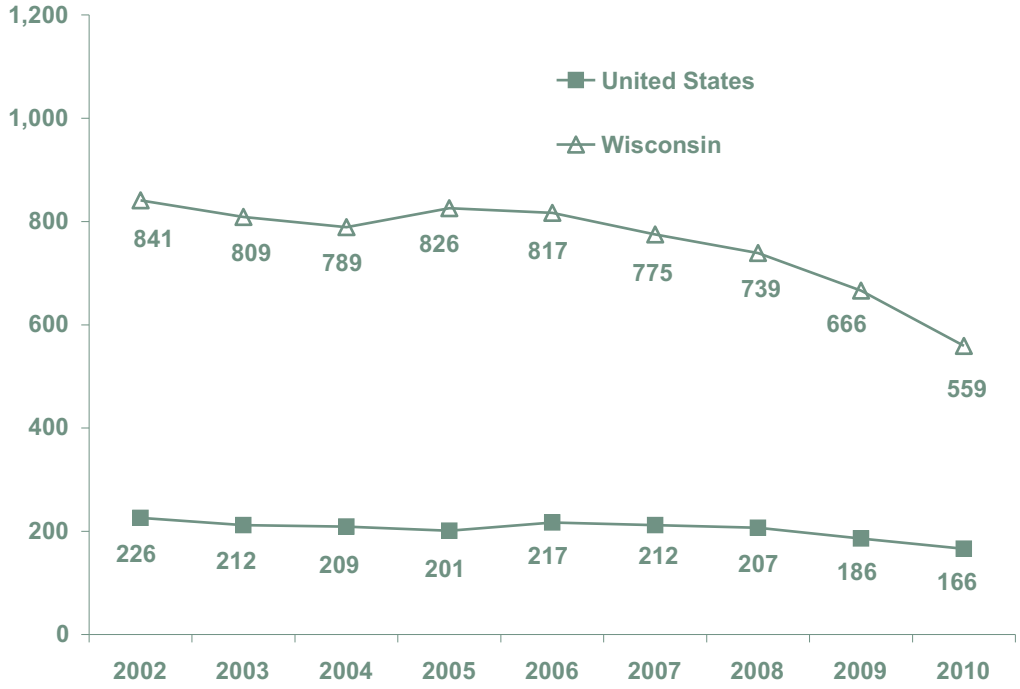
Note: Effective September 30, 2003, Wisconsin defines "operating while intoxicated" as driving while blood alcohol concentration (BAC) is 0.08 percent or higher. Prior to that date, the prohibited BAC was 0.1.

According to the Wisconsin Office of Justice Assistance, liquor law violations are "violations of state or local laws or ordinances prohibiting the manufacture, sale, purchase, transportation, possession, or use of alcoholic beverages, not including driving under the influence and drunkenness."

- Wisconsin's arrest rate for liquor law violations declined nearly every year from 2002 to 2010, with the decline accelerating beginning in 2006. Nevertheless, it remains much higher than the national rate.

- From 2002 to 2010, Wisconsin's arrest rate for liquor law violations was more than three times the national rate. In 2010, for example, the Wisconsin rate was 559 arrests per 100,000 population compared to the national rate of 166 arrests per 100,000 (Figure 13).

Figure 13. Liquor law arrests (adult and juvenile), rate per 100,000 population, Wisconsin and the United States, 2002-2010



Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; and *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

Table 9. Operating a motor vehicle while intoxicated (OWI) and liquor law arrests, rate per 100,000 population, Wisconsin by county, 2009 and 2010

	OWI Arrests Rate per 100,000		Liquor Law Arrests Rate per 100,000	
County	2009	2010	2009	2010
Adams	997	1,040	182	57
Ashland	584	551	537	514
Barron	606	558	430	408
Bayfield	188	340	0	20
Brown	874	590	981	685
Buffalo	928	682	36	37
Burnett	771	479	102	78
Calumet	299	270	267	155
Chippewa	581	578	404	444
Clark	607	940	343	326
Columbia	999	765	601	623
Crawford	247	0	247	0
Dane	753	536	924	663
Dodge	680	626	549	593
Door	917	749	624	507
Douglas	686	564	670	553
Dunn	758	673	1,656	1,717
Eau Claire	733	775	2,039	1,666
Florence	862	972	59	0
Fond du Lac	724	681	715	589
Forest	411	1,053	166	699
Grant	675	555	1,596	1,180
Green	576	548	431	521
Green Lake	481	378	507	493
Iowa	561	481	308	211
Iron	992	1,200	548	744
Jackson	803	499	89	29
Jefferson	634	590	617	402
Juneau	307	214	95	49
Kenosha	515	411	863	719
Kewaunee	393	345	493	306
La Crosse	710	603	1,794	1,374
Lafayette	571	392	902	440
Langlade	386	385	80	170
Lincoln	636	442	597	296
Manitowoc	627	658	662	528
Marathon	677	567	489	523

Table 9. Operating a motor vehicle while intoxicated (OWI) and liquor law arrests, rate per 100,000 population, Wisconsin by county, 2009 and 2010 (continued)

	OWI Arrests Rate per 100,000		Liquor Law Arrests Rate per 100,000	
County	2009	2010	2009	2010
Marinette	411	515	495	443
Marquette	583	454	0	6
Menominee	4,615	3,946	173	142
Milwaukee	480	529	360	313
Monroe	606	542	622	392
Oconto	390	361	444	266
Oneida	916	861	863	1,153
Outagamie	761	645	706	651
Ozaukee	448	420	685	492
Pepin	500	402	302	187
Pierce	1,049	724	612	497
Polk	1,376	882	64	63
Portage	415	481	460	504
Price	567	593	277	304
Racine	432	369	275	336
Richland	511	444	291	228
Rock	680	653	562	511
Rusk	577	502	302	346
St. Croix	484	339	558	630
Sauk	1,098	960	1,727	1,313
Sawyer	1,053	1,135	159	169
Shawano	900	820	968	486
Sheboygan	983	867	584	583
Taylor	690	372	554	459
Trempealeau	668	538	438	409
Vernon	400	306	108	74
Vilas	997	1,232	510	779
Walworth	868	685	1,438	1,504
Washburn	516	823	298	415
Washington	711	591	698	538
Waukesha	628	543	326	263
Waupaca	577	519	275	254
Waushara	504	621	353	433
Winnebago	830	892	1,004	940
Wood	874	888	889	618
Wisconsin	**712**	**626**	**666**	**559**

Source: *Arrests in Wisconsin*, 2009 and 2010, Wisconsin Office of Justice Assistance.

Note: Statewide rate calculations include arrests not identified by county.

Consequences of Illicit Drug Consumption

Illicit drug use leads to many health and societal effects including arrests, dependence, abuse and even death. Wisconsin rates of dependence, abuse and deaths due to illicit drug use are similar to, or lower than, national averages. The rate of arrests for drug law violations is also lower in Wisconsin than nationally.

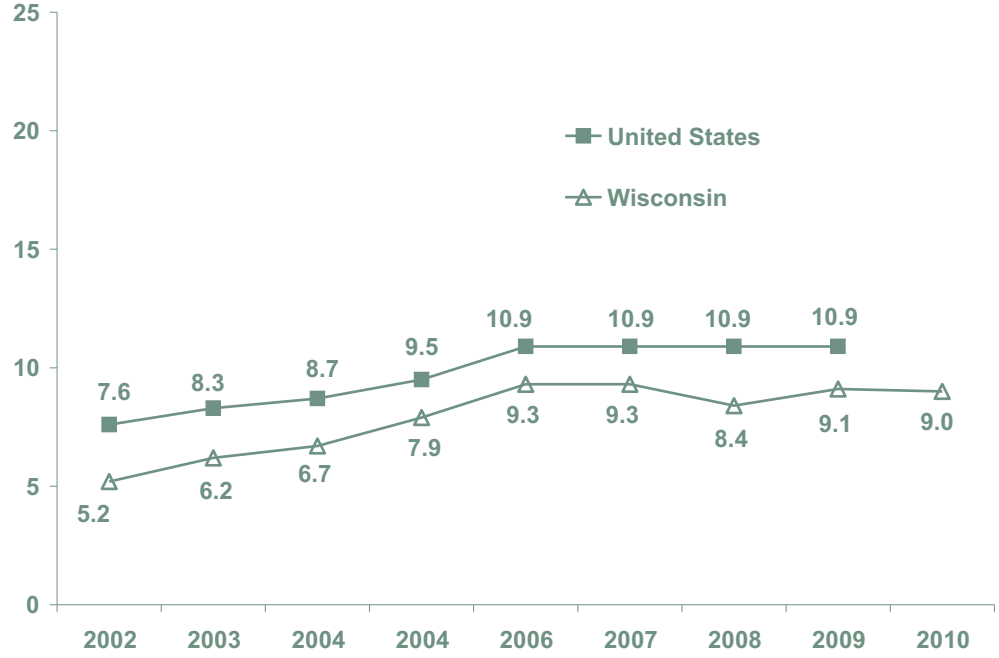
Mortality

Drug-related deaths are a direct consequence of illicit drug use.

- In 2010, 512 Wisconsin residents died as a direct consequence of illicit drug use (Table 10). Wisconsin's number of drug-related deaths has exceeded 500 in four of the past five years.

- Wisconsin's age-adjusted mortality rate of drug-related deaths increased from 5.2 deaths per 100,000 population in 2002 to 9.0 deaths per 100,000 in 2010 (Figure 14).

Figure 14. Drug-related deaths, age-adjusted rate per 100,000 population, Wisconsin and the United States, 2002-2010



Source: Wisconsin resident death certificates, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services; rates for the United States are from the Centers for Disease Control and Prevention: http://wonder.cdc.gov/mortSQL.html.

Table 10. Drug-related deaths, age-adjusted rate per 100,000 population and total number, Wisconsin and the United States, 2002-2010

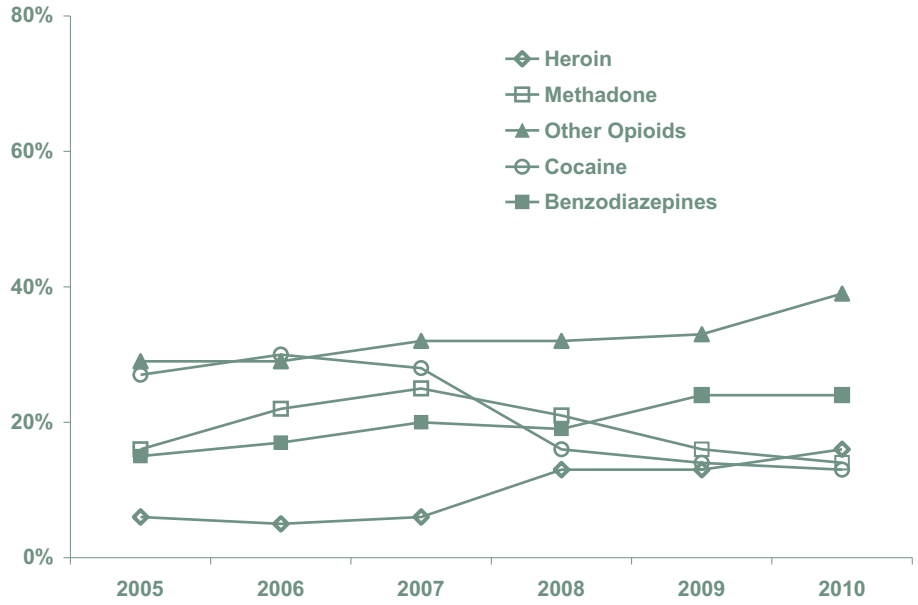
		2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	Rate/100,000	7.6	8.3	8.7	9.5	10.9	10.9	10.9	10.9	
	Total number	21,797	24,230	25,670	28,214	32,639	33,258	33,300	33,639	
Wisconsin	Rate/100,000	5.2	6.2	6.7	7.9	9.3	9.3	8.4	9.1	9.0
	Total number	287	344	383	448	526	526	482	525	512

Source: Wisconsin resident death certificates, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services; United States death certificate data compiled by the Centers for Disease Control and Prevention: http://wonder.cdc.gov/mortSQL.html.

- The proportion of Wisconsin drug-related deaths in which heroin is mentioned on the death certificate more than doubled between 2005 and 2010 (Figure 15). The proportion with a mention of other opioids, the most prevalent category, increased by approximately 33%, and the proportion with a mention of benzodiazepines increased by 60%. Mentions of cocaine, on the other hand, decreased by half.

- Overall, current trends in illicit drugs-of-choice appear to be reflected in the specific drugs cited in death reports.

Figure 15. Proportion of drug-related deaths involving opioids, cocaine and/or benzodiazepines, Wisconsin, 2005-2010



Source: Wisconsin resident death certificates, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.

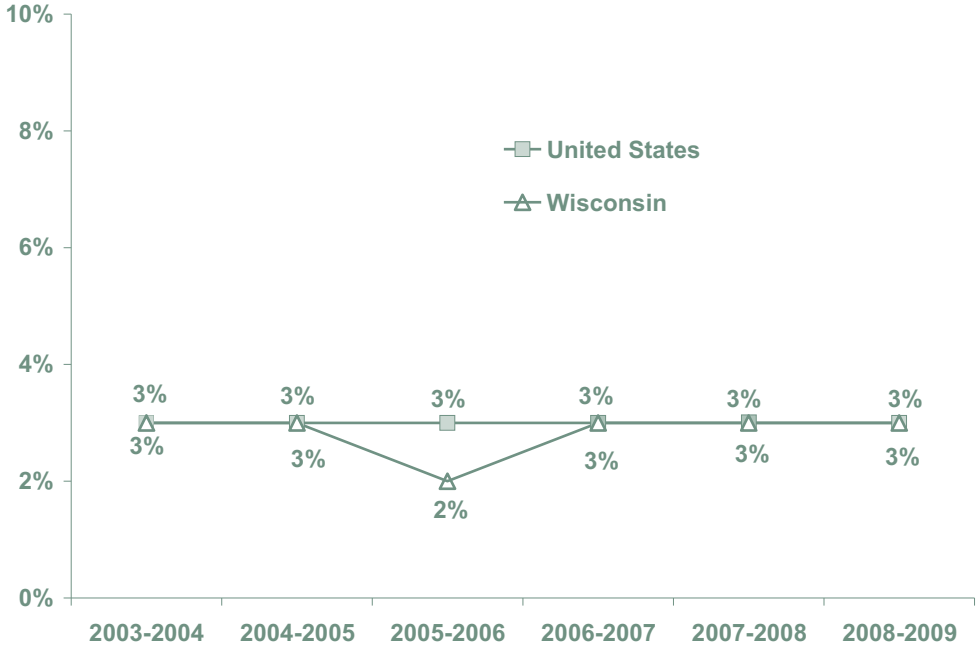
Note: Other opioids include synthetic narcotic pain relievers such as oxycodone and hydrocodone, as well as morphine and its derivatives. Benzodiazepines include central nervous system depressants such as Valium, Librium, and Xanax. More than one drug may be mentioned in the death record.

Drug Dependence or Abuse

Drug dependence and abuse are direct consequences of illicit drug use.[6]

- For most years from 2003 through 2009, the rate of dependence on or abuse of illicit drugs was the same (3%) for Wisconsin and the United States (Figure 16).

Figure 16. Prevalence of drug dependence and abuse, age 12 and older, Wisconsin and the United States, 2003-2009



Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

[6] See definitions of "dependence" and "abuse," page 92.

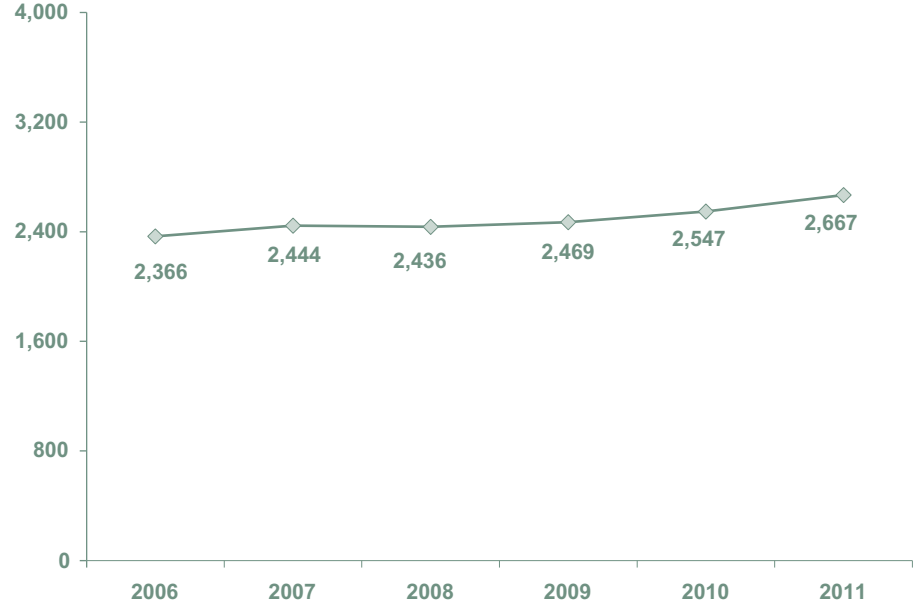
Hepatitis C Incidence

Many new cases of hepatitis C, a serious infectious disease that can lead to lasting liver damage, are a direct consequence of illicit drug use.

Users who inject heroin also risk contracting HIV, hepatitis C, and other infectious diseases. The most commonly reported risk factor associated with new hepatitis C infections in the United States is injection drug use. It is estimated that 60% of new hepatitis C virus infections are a result of injection drug use,[7] and that 65%-90% of long-term injection drug users are infected with hepatitis C.[8]

Recent Wisconsin data show that hepatitis C incidence (newly reported cases) increased 13% from 2006 to 2011 (Figure 17).

Figure 17. Reported cases of hepatitis C in Wisconsin, 2006-2011



Source: Bureau of Communicable Diseases and Emergency Response, Division of Public Health, Wisconsin Department of Health Services.

Note: Case counts may change as more cases are reported; figure reflects cases reported as of June 2012. Data were provided on June 20, 2012, by Marisa Stanley, MPH, epidemiologist with the Wisconsin AIDS/HIV and Adult Viral Hepatitis programs in the Bureau of Communicable Diseases and Emergency Response.

[7] Alter MJ. Hepatitis C virus infection in the United States. *Journal of Hepatology* 1999; 31(suppl. 1): 88-91.
[8] Hagan H, Pouget ER, Des Jarlais DC, and Lelutiu-Weinberger C. 2008. Meta-regression of hepatitis C virus infection in relation to time since onset of illicit drug injection: The influence of time and place. *American Journal of Epidemiology* 168(10):1099-1109.

Drug-Related Hospitalizations

- There were 15,135 Wisconsin hospitalizations defined as drug-related in 2010, an increase of 38% since 2002 (Table 11). Drug-related hospitalizations include such diagnoses as drug psychoses, drug dependence, drug-related polyneuropathy, and accidental and purposeful poisoning by drugs.

- Charges for drug-related hospitalizations in Wisconsin totaled $287 million in 2010, an increase of 126% from the $127 million in 2002 (Figure 18). (These amounts are not adjusted for inflation.)

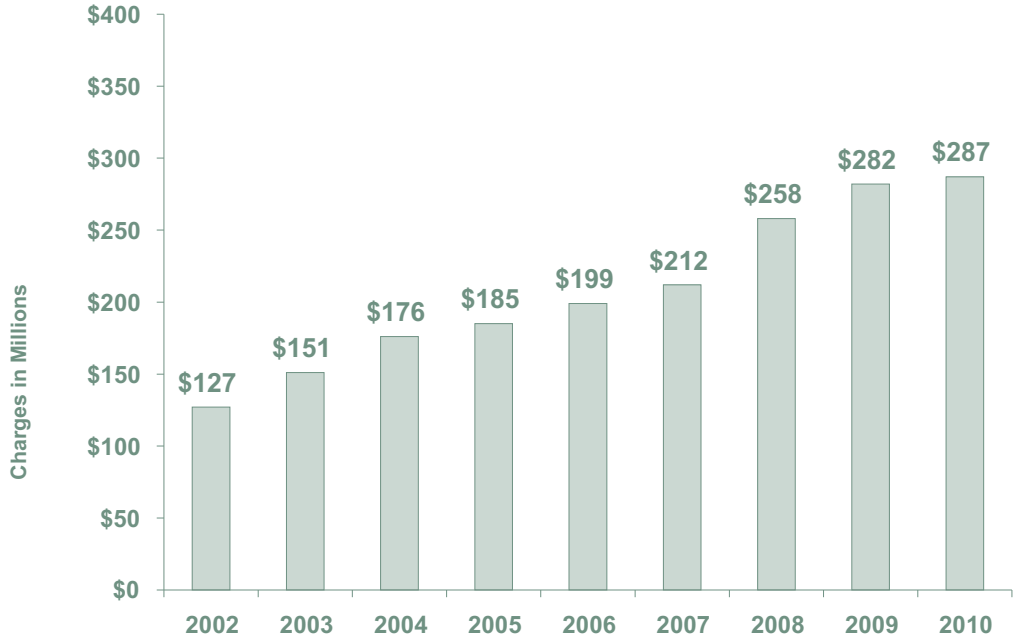
- In 2009-2010, the counties with the highest rates of drug-related hospitalizations (at least 25% above the state average) were Ashland, Bayfield, Eau Claire, Forest, La Crosse, Menominee, Milwaukee, Vilas and Wood (Table 12).

Table 11. Drug-related hospitalizations, rate per 100,000 population and total number, Wisconsin, 2002-2010

	2002	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Rate/100,000	201	217	243	246	247	251	260	257	266
Number	10,990	11,949	13,454	13,723	13,859	14,178	14,756	14,605	15,135

Source: Wisconsin hospital inpatient discharge database, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.

Figure 18. Hospital charges for drug-related hospitalizations, in millions, Wisconsin, 2002-2010



Source: Wisconsin hospital inpatient discharge database, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.

Note: Hospital charges are the total facility charges for the length of stay and are not the same as actual costs paid by any payer; also, they do not include physician or other ancillary charges (see Technical Notes).

Table 12. Drug-related hospitalizations, rate per 100,000 population and total number, Wisconsin by county, 2008-2010

County	Number in 2010	Rate per 100,000	
		2008-2009	2009-2010
Adams	34	176	168
Ashland	114	604	656
Barron	109	214	217
Bayfield	51	354	329
Brown	546	207	209
Buffalo	31	203	236
Burnett	33	186	197
Calumet	42	50	63
Chippewa	199	273	312
Clark	55	209	192
Columbia	172	267	268
Crawford	43	172	235
Dane	1,251	241	247
Dodge	217	170	213
Door	39	137	141
Douglas	29	45	61
Dunn	90	199	207
Eau Claire	411	347	401
Florence	5	117	126
Fond du Lac	287	214	259
Forest	35	302	369
Grant	46	94	94
Green	72	122	160
Green Lake	46	186	229
Iowa	36	176	163
Iron	13	287	268
Jackson	52	255	251
Jefferson	119	164	152
Juneau	64	268	237
Kenosha	432	270	259
Kewaunee	27	144	139
La Crosse	398	305	354
Lafayette	18	147	133
Langlade	65	294	308
Lincoln	83	313	288
Manitowoc	168	206	197
Marathon	316	242	235
Marinette	94	241	203

Table 12. Drug-related hospitalizations, rate per 100,000 population and total number, Wisconsin by county, 2008-2010 (continued)

County	Number in 2010	Rate per 100,000	
		2008-2009	2009-2010
Marquette	42	300	293
Menominee	21	541	520
Milwaukee	3,795	407	398
Monroe	116	210	218
Oconto	76	173	181
Oneida	118	312	318
Outagamie	337	191	190
Ozaukee	226	253	251
Pepin	13	72	113
Pierce	52	154	132
Polk	85	207	193
Portage	199	265	274
Price	30	260	253
Racine	484	258	246
Richland	46	239	226
Rock	407	276	261
Rusk	32	216	217
St. Croix	84	110	103
Sauk	150	235	246
Sawyer	49	275	272
Shawano	87	189	190
Sheboygan	300	245	253
Taylor	34	153	141
Trempealeau	65	164	212
Vernon	64	188	222
Vilas	102	474	484
Walworth	186	164	178
Washburn	43	206	234
Washington	251	176	188
Waukesha	948	258	251
Waupaca	103	194	184
Waushara	51	192	217
Winnebago	419	229	248
Wood	278	373	381
Wisconsin	**15,135**	**259**	**262**

Source: Wisconsin hospital inpatient discharge database, Division of Public Health, Wisconsin Department of Health Services.

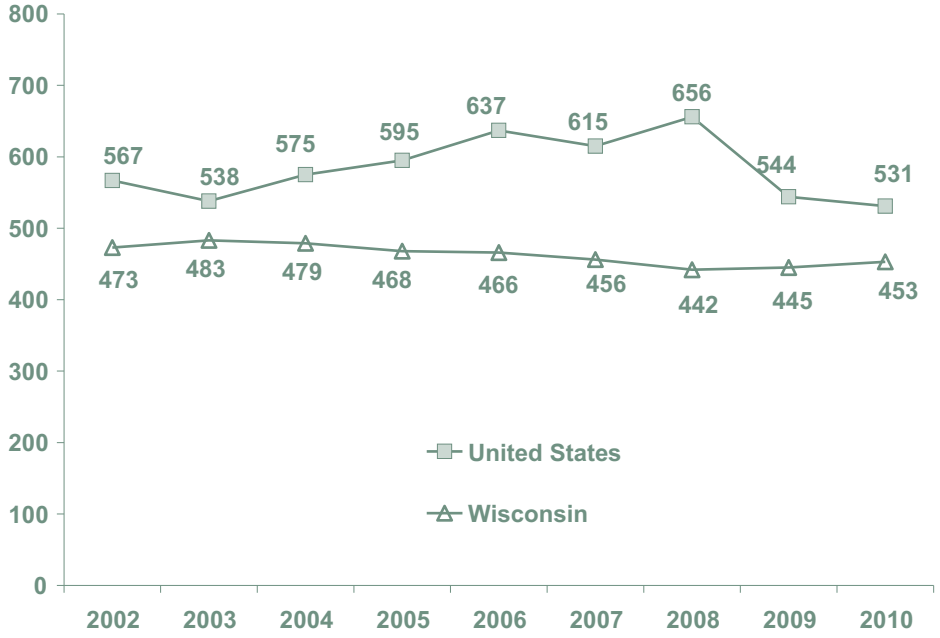
Note: Hospitalization numbers and rates are based on patient's county of residence.

Drug-Related Crime and Arrests

The Wisconsin Office of Justice Assistance defines drug law violations as the violation of laws prohibiting the production, distribution, and/or use of certain controlled substances and the equipment or devices utilized in their preparation and/or use; they include the unlawful cultivation, manufacture, distribution, sales, purchase, use, possession, transportation, or importation of any controlled drug or narcotic substance.

- There were 25,750 arrests in Wisconsin for drug law violations in 2010, a number little changed since 2002 (25,774 arrests).
- From 2002 to 2010, the rate of drug law arrests was lower in Wisconsin than the national average (Figure 19).
- In contrast to the national pattern, Wisconsin's rate of drug law arrests showed small annual decreases from 2004 to 2008. In 2010, the rate of drug law arrests in Wisconsin was 453 per 100,000 population.

Figure 19. Drug law arrests (adult and juvenile), rate per 100,000 population, Wisconsin and the United States, 2002-2010



Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; and *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

Note: These two data sources provide rates per 100,000 population for reported index crimes (property offenses and violent offenses), plus numbers of arrests for index crimes and numbers of crimes/arrests for non-index crimes. Where rates were not directly obtained, rates per 100,000 population were calculated using the standard formula: rate = number / population x 100,000.

Table 13. Drug law arrests, rate per 100,000 population, Wisconsin by county, 2009 and 2010

	Rate per 100,000			Rate per 100,000	
County	2009	2010	County	2009	2010
Adams	442	331	Marinette	359	271
Ashland	298	285	Marquette	288	195
Barron	186	192	Menominee	910	803
Bayfield	10	107	Milwaukee	738	822
Brown	468	396	Monroe	604	454
Buffalo	486	589	Oconto	181	226
Burnett	181	116	Oneida	354	533
Calumet	67	110	Outagamie	369	363
Chippewa	306	282	Ozaukee	268	242
Clark	61	75	Pepin	171	268
Columbia	564	398	Pierce	269	251
Crawford	29	0	Polk	132	115
Dane	375	349	Portage	165	140
Dodge	266	278	Price	271	247
Door	310	299	Racine	475	451
Douglas	279	297	Richland	247	261
Dunn	232	299	Rock	520	511
Eau Claire	594	572	Rusk	361	359
Florence	313	339	St. Croix	225	168
Fond du Lac	286	276	Sauk	441	405
Forest	274	312	Sawyer	193	254
Grant	59	72	Shawano	414	503
Green	252	304	Sheboygan	417	349
Green Lake	528	257	Taylor	136	309
Iowa	87	266	Trempealeau	216	160
Iron	326	287	Vernon	276	212
Jackson	490	308	Vilas	325	392
Jefferson	340	301	Walworth	847	895
Juneau	62	105	Washburn	282	566
Kenosha	525	579	Washington	349	487
Kewaunee	218	185	Waukesha	267	266
La Crosse	570	723	Waupaca	250	221
Lafayette	270	273	Waushara	393	282
Langlade	443	360	Winnebago	487	478
Lincoln	330	324	Wood	380	435
Manitowoc	292	373			
Marathon	184	281	**Wisconsin**	**445**	**453**

Source: *Arrests in Wisconsin*, 2009 and 2010, Wisconsin Office of Justice Assistance.

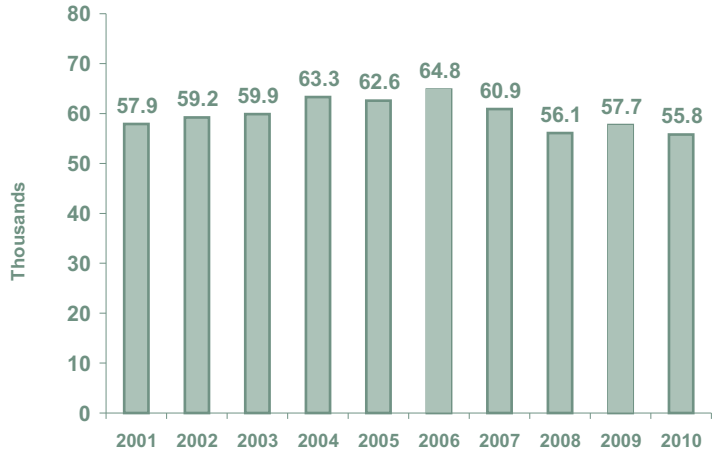
Consequences Associated with More Than One Substance (Alcohol and Other Drugs)

Publicly Funded Treatment

- The number of alcohol and other drug abuse clients receiving publicly funded services in Wisconsin decreased sharply from 2006 to 2010 — from 64,806 to 55,840, a decline of 14% (Figure 20).

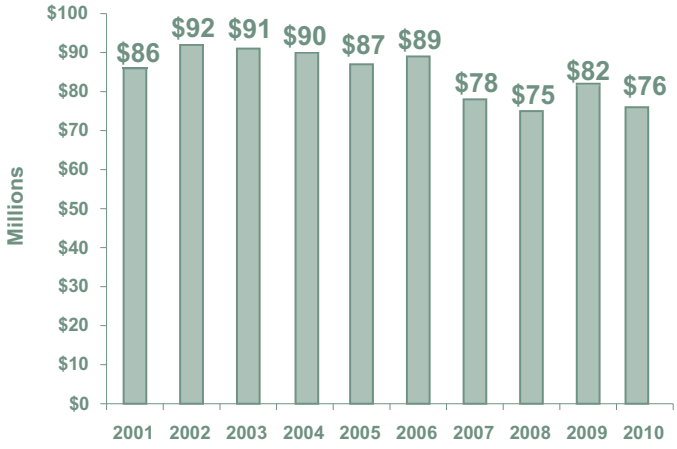
- Public funds expended for alcohol and other drug abuse treatment in Wisconsin also declined recently, from an inflation-adjusted high of $92 million in 2002 to a low of $75 million in 2008 (Figure 21). The net decrease from 2001 to 2010 was 12%.

Figure 20. Number of alcohol and other drug abuse clients (in thousands) receiving services with public funds, Wisconsin, 2001-2010



Source: Human Services Reporting System, Division of Mental Health and Substance Abuse Services, Wisconsin Department of Health Services.

Figure 21. Public funds expended (in millions) for alcohol and other drug abuse treatment, Wisconsin, 2001-2010 (adjusted to 2010 dollars)



Source: Human Services Reporting System, Division of Mental Health and Substance Abuse Services, Wisconsin Department of Health Services. Note: Dollar amounts have been adjusted for inflation.

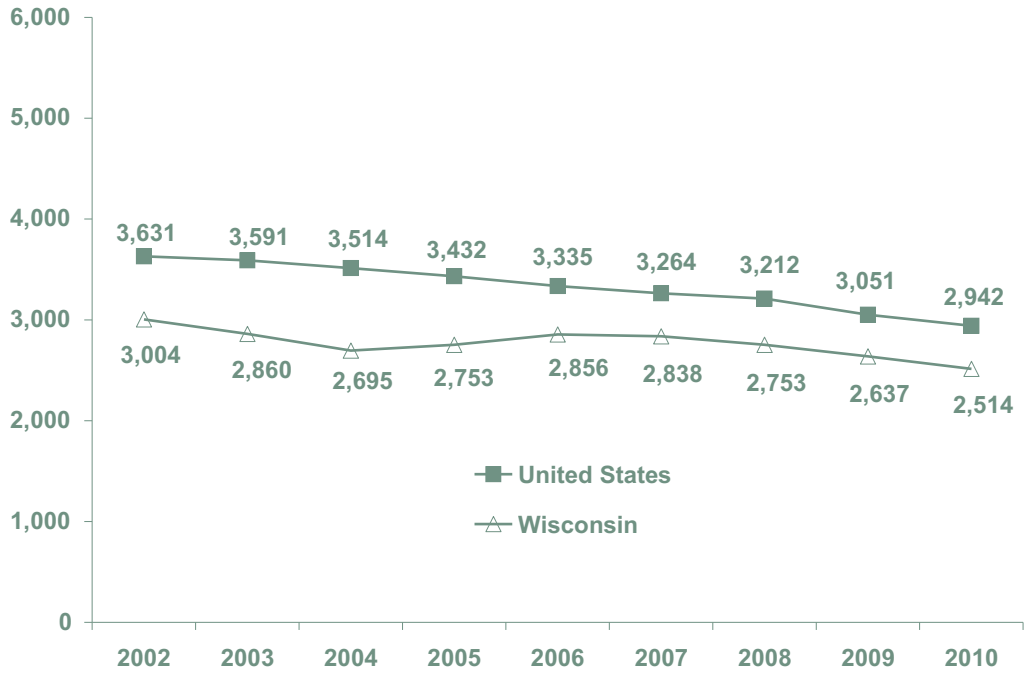
Crime and Arrests Associated with Alcohol and Drugs

Drug-related property crimes include burglary, larceny, and motor vehicle theft, often committed to obtain money to purchase drugs. Drug-attribution rates for property crime range from approximately 7% for motor vehicle theft to 30% for burglary and larceny.

Drinking by perpetrator or victim increases the risk of assaults and assault-related injuries. Approximately 23% of sexual assaults, 30% of physical assaults, and 3% of robberies are attributable to alcohol use.[9]

- Between 2002 and 2010, Wisconsin's rates of reported property crimes and violent crimes were far lower than U.S. rates (Figure 22 and Figure 23).
- In 2002, 3,004 property crimes were reported per 100,000 Wisconsin residents; by 2010, this rate had fallen to 2,514.

Figure 22. Reported property crime offenses, rate per 100,000 population, Wisconsin and the United States, 2002-2010

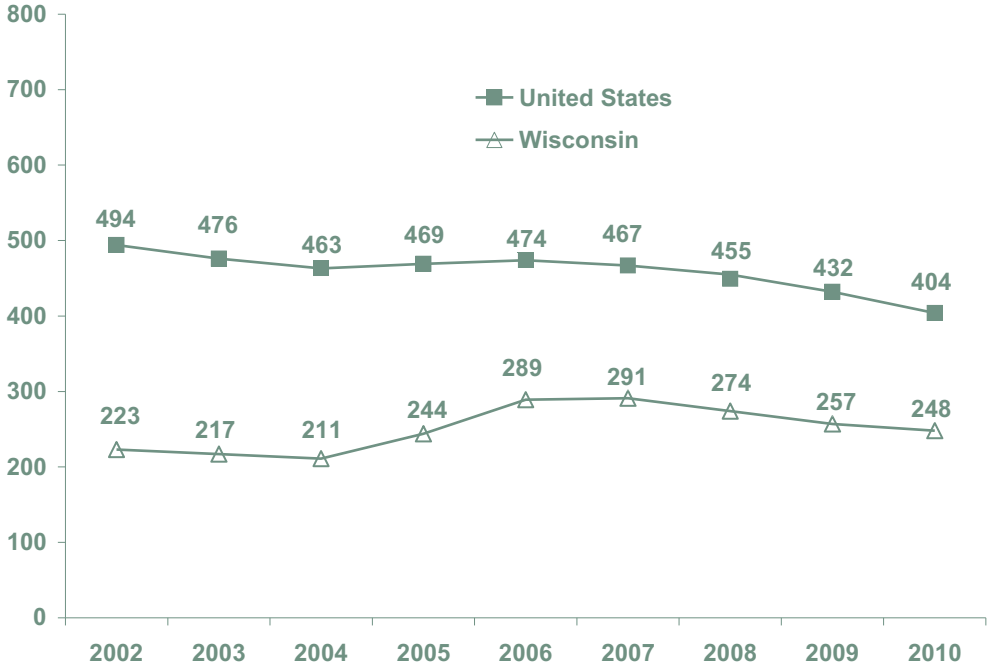


Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

[9] *The Economic Costs of Alcohol and Drug Abuse in the United States, 1992*, National Institute on Drug Abuse, citing analysis by The Lewin Group.

- Wisconsin's rate of violent crimes reported per 100,000 increased from 223 in 2002 to a high of 291 in 2007, then decreased to 248 per 100,000 in 2010 (Figure 23).

Figure 23. Reported violent crime offenses (adult and juvenile), rate per 100,000 population, Wisconsin and the United States, 2002-2010



Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

Table 14. Reported property crimes, rate per 100,000 population and total number, Wisconsin by county, 2009 and 2010

	2009		2010	
County	Number	Rate per 100,000	Number	Rate per 100,000
Adams	557	2,594	464	2,223
Ashland	545	3,250	434	2,686
Barron	681	1,437	630	1,373
Bayfield	220	1,378	289	1,925
Brown	4,939	2,004	4,670	1,883
Buffalo	66	471	101	743
Burnett	301	1,813	280	1,811
Calumet	389	844	546	1,115
Chippewa	1,127	1,823	934	1,496
Clark	511	1,485	386	1,113
Columbia	1,147	2,047	1,029	1,811
Crawford	177	1,018	0	0
Dane	13,604	2,835	13,920	2,852
Dodge	1,380	1,549	1,362	1,534
Door	331	1,116	268	965
Douglas	1,686	3,791	2,028	4,592
Dunn	684	1,571	612	1,395
Eau Claire	2,138	2,154	2,374	2,404
Florence	84	1,645	127	2,871
Fond du Lac	1,689	1,664	1,646	1,620
Forest	175	1,714	250	2,687
Grant	714	1,405	890	1,738
Green	653	1,792	677	1,838
Green Lake	301	1,558	329	1,727
Iowa	258	1,073	308	1,300
Iron	158	2,338	143	2,417
Jackson	425	2,105	378	1,849
Jefferson	1,466	1,806	1,555	1,858
Juneau	529	1,935	470	1,763
Kenosha	4,423	2,706	4,322	2,597
Kewaunee	262	1,241	250	1,215
La Crosse	3,073	2,705	2,799	2,442
Lafayette	211	1,295	210	1,247
Langlade	777	3,658	765	3,829
Lincoln	576	1,899	638	2,220
Manitowoc	1,107	1,325	1,066	1,309
Marathon	2,224	1,648	2,329	1,737

Table 14. Reported property crimes, rate per 100,000 population and total number, Wisconsin by county, 2009 and 2010 (continued)

	2009		2010	
County	Number	Rate per 100,000	Number	Rate per 100,000
Marinette	1,012	2,297	1,024	2,453
Marquette	269	1,762	270	1,753
Menominee	227	4,919	186	4,395
Milwaukee	48,103	5,118	44,605	4,706
Monroe	599	1,349	1,026	2,297
Oconto	765	1,976	727	1,930
Oneida	956	2,509	971	2,697
Outagamie	4,253	2,413	4,351	2,462
Ozaukee	960	1,104	858	993
Pepin	73	960	45	602
Pierce	827	2,041	814	1,984
Polk	561	1,232	571	1,292
Portage	1,388	1,971	1,274	1,820
Price	206	1,327	237	1,674
Racine	5,671	2,867	5,426	2,777
Richland	183	1,006	143	794
Rock	4,602	2,867	4,767	2,973
Rusk	317	2,079	270	1,830
St. Croix	1,373	1,694	1,372	1,627
Sauk	2,253	3,719	2,074	3,346
Sawyer	494	2,810	539	3,255
Shawano	837	1,982	656	1,564
Sheboygan	2,949	2,529	2,393	2,072
Taylor	339	1,707	349	1,687
Trempealeau	361	1,276	399	1,385
Vernon	329	1,106	256	860
Vilas	681	2,991	718	3,350
Walworth	2,223	2,191	2,104	2,058
Washburn	288	1,652	295	1,854
Washington	2,338	1,784	2,205	1,672
Waukesha	5,449	1,421	5,247	1,346
Waupaca	1,106	2,066	1,206	2,301
Waushara	443	1,758	440	1,796
Winnebago	3,920	2,373	3,325	1,991
Wood	1,752	2,303	1,565	2,094
Wisconsin	**147,695**	**2,600**	**142,187**	**2,500**

Source: *Crime in Wisconsin*, 2009 and 2010, Wisconsin Office of Justice Assistance (numbers).

Table 15. Reported violent crimes, rate per 100,000 population and total number, Wisconsin by county, 2009 and 2010

	2009		2010	
County	Number	Rate per 100,000	Number	Rate per 100,000
Adams	45	210	30	144
Ashland	56	334	32	198
Barron	30	63	40	87
Bayfield	37	232	27	180
Brown	557	226	455	183
Buffalo	2	14	9	66
Burnett	29	175	21	136
Calumet	19	41	20	41
Chippewa	51	82	72	115
Clark	58	169	96	277
Columbia	123	219	97	171
Crawford	23	132	0	0
Dane	1,164	243	1,262	259
Dodge	68	76	55	62
Door	12	40	8	29
Douglas	81	182	82	186
Dunn	43	99	26	59
Eau Claire	142	143	172	174
Florence	8	157	9	203
Fond du Lac	160	158	170	167
Forest	4	39	8	86
Grant	63	124	82	160
Green	40	110	47	128
Green Lake	6	31	9	47
Iowa	17	71	22	93
Iron	12	178	18	304
Jackson	7	35	13	64
Jefferson	195	240	207	247
Juneau	49	179	66	248
Kenosha	339	207	321	193
Kewaunee	9	43	12	58
La Crosse	249	219	206	180
Lafayette	8	49	3	18
Langlade	19	89	39	195
Lincoln	57	188	51	177
Manitowoc	95	114	92	113
Marathon	205	152	170	127

Table 15. Reported violent crimes, rate per 100,000 population and total number, Wisconsin by county, 2009 and 2010 (continued)

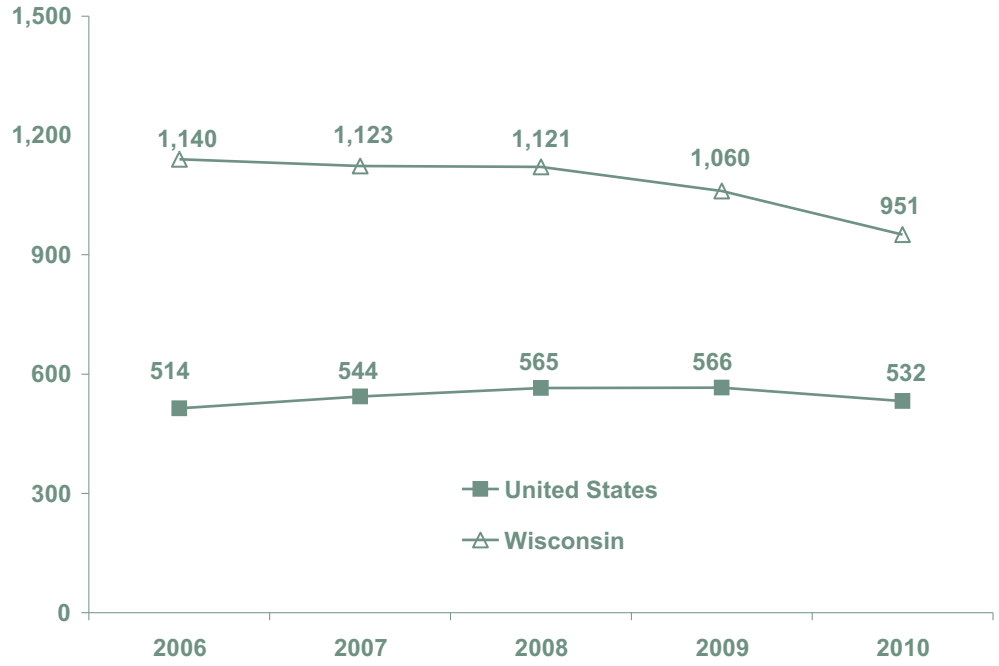
	2009		2010	
County	Number	Rate per 100,000	Number	Rate per 100,000
Marinette	29	66	27	65
Marquette	14	92	9	58
Menominee	36	780	34	803
Milwaukee	7,321	779	6,907	729
Monroe	43	97	76	170
Oconto	11	28	20	53
Oneida	29	76	33	92
Outagamie	252	143	351	199
Ozaukee	31	36	37	43
Pepin	10	131	2	27
Pierce	45	111	52	127
Polk	116	255	126	285
Portage	77	109	70	100
Price	16	103	12	85
Racine	591	299	511	262
Richland	9	49	2	11
Rock	397	247	397	248
Rusk	14	92	14	95
St. Croix	44	54	37	44
Sauk	96	158	122	197
Sawyer	32	182	28	169
Shawano	40	95	36	86
Sheboygan	159	136	176	152
Taylor	13	65	12	58
Trempealeau	17	60	15	52
Vernon	14	47	11	37
Vilas	24	105	27	126
Walworth	112	110	103	101
Washburn	7	40	17	107
Washington	98	75	89	67
Waukesha	304	79	263	67
Waupaca	67	125	57	109
Waushara	25	99	21	86
Winnebago	385	233	353	211
Wood	22	29	23	31
Wisconsin	**14,582**	**257**	**14,120**	**248**

Source: *Crime in Wisconsin*, 2009 and 2010, Wisconsin Office of Justice Assistance (numbers).

- Interestingly, arrest rates for property crimes are far higher in Wisconsin than in the United States, considering that the rates of reported offenses are far lower (see Figure 22, page 43).

- Property crime arrest rates in Wisconsin decreased in 2009 and 2010 (Figure 24).

Figure 24. Property crime arrests (adult and juvenile), rate per 100,000 population, Wisconsin and the United States, 2006-2010



Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

- Wisconsin's arrest rate for violent crime remains lower than the United States rate (Figure 25).

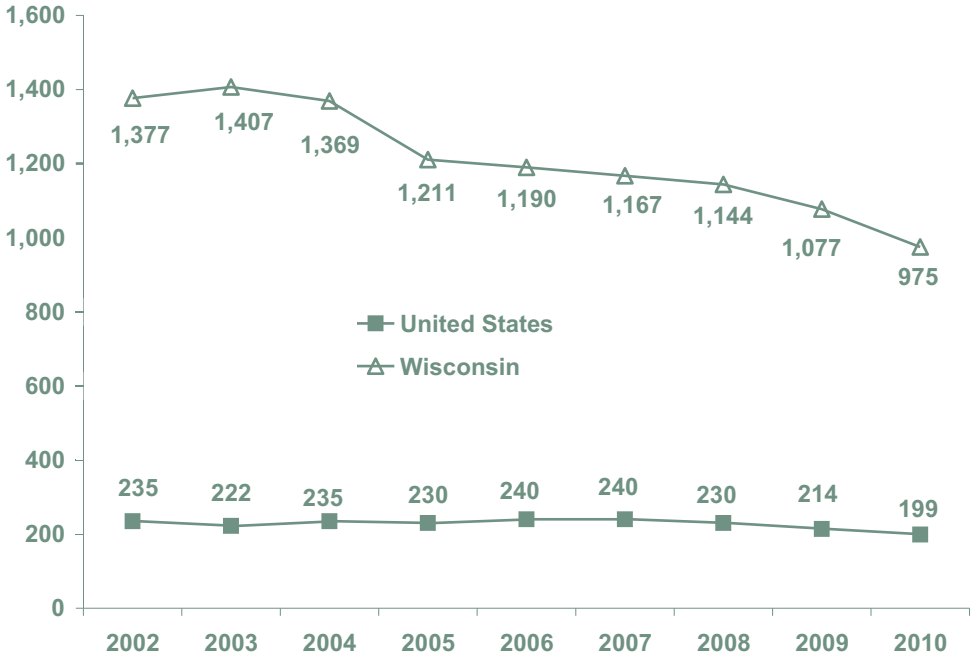
Figure 25. Violent crime arrests (adult and juvenile), rate per 100,000 population, Wisconsin and the United States, 2002-2010

Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

- Wisconsin's rate of disorderly conduct arrests was nearly five times the national rate in 2010 (Figure 26).

- The disorderly conduct arrest rate has declined in Wisconsin since 2003 but remains far higher than the U.S. rate. Some of this difference reflects a difference in what is included in this category nationally vs. in Wisconsin: the national rate excludes arrests for "drunkenness."

Figure 26. Disorderly conduct arrests (adult and juvenile), rate per 100,000 population, Wisconsin and the United States, 2002-2010



Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

Notes: These two sources provide rates per 100,000 population for reported index crimes (property offenses and violent offenses), plus numbers of arrests for index crimes and numbers of crimes/arrests for non-index crimes. Where rates were not directly obtained, rates per 100,000 population were calculated using the standard formula: rate = number / population x 100,000.

The U.S. has a separate category for "drunkenness" arrests, so disorderly conduct arrests nationally can only be loosely compared with Wisconsin in terms of alcohol arrests, and likely underestimate alcohol-related arrests nationally. Comparisons of disorderly conduct arrests between Wisconsin and the U.S. should be made with caution.

Table 16. Disorderly conduct arrests, rate per 100,000 population, Wisconsin by county, 2009 and 2010

	Rate per 100,000			Rate per 100,000	
County	2009	2010	County	2009	2010
Adams	615	800	Marinette	574	515
Ashland	1,121	966	Marquette	360	519
Barron	722	754	Menominee	1,300	1,678
Bayfield	313	386	Milwaukee	1,538	1,399
Brown	837	679	Monroe	1,273	1,513
Buffalo	393	486	Oconto	777	887
Burnett	458	239	Oneida	1,021	1,217
Calumet	265	249	Outagamie	1,148	1,099
Chippewa	621	767	Ozaukee	538	451
Clark	520	467	Pepin	368	428
Columbia	1,128	1,015	Pierce	1,034	870
Crawford	178	0	Polk	283	249
Dane	1,291	731	Portage	482	633
Dodge	999	847	Price	921	1,059
Door	644	497	Racine	1,157	1,158
Douglas	769	765	Richland	687	499
Dunn	684	892	Rock	1,432	1,468
Eau Claire	1,324	1,248	Rusk	957	766
Florence	313	339	St. Croix	737	618
Fond du Lac	874	834	Sauk	1,113	1,052
Forest	1,332	1,515	Sawyer	609	749
Grant	1,387	1,078	Shawano	1,243	1,047
Green	595	546	Sheboygan	1,838	1,689
Green Lake	740	740	Taylor	831	822
Iowa	540	448	Trempealeau	859	639
Iron	873	1,048	Vernon	535	504
Jackson	976	1,081	Vilas	597	705
Jefferson	1,332	1,187	Walworth	1,496	1,274
Juneau	677	649	Washburn	1,130	1,075
Kenosha	1,066	1,007	Washington	1,023	1,040
Kewaunee	455	637	Waukesha	495	437
La Crosse	1,412	1,227	Waupaca	887	874
Lafayette	1,295	820	Waushara	897	780
Langlade	574	791	Winnebago	1,207	1,231
Lincoln	1,094	1,159	Wood	1,203	1,294
Manitowoc	1,126	1,159			
Marathon	813	782	**Wisconsin**	**1,077**	**975**

Source: *Arrests in Wisconsin*, 2009 and 2010, Wisconsin Office of Justice Assistance.

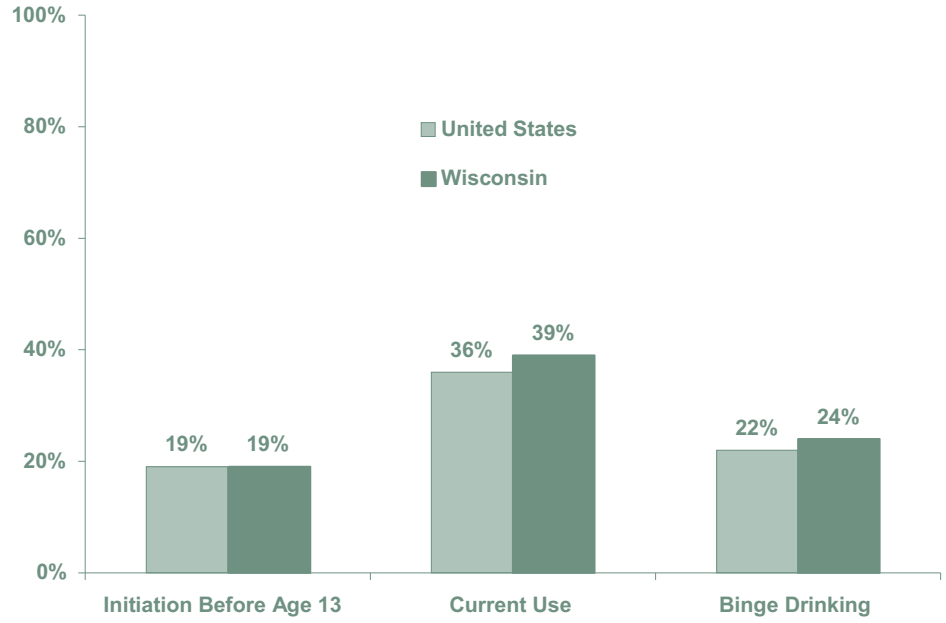
Alcohol Consumption

Wisconsin has consistently high rates of adult alcohol consumption and binge drinking compared to other states and the U.S. as a whole. Binge drinking is particularly entrenched in Wisconsin. Wisconsin's rate of binge drinking has been the highest in the nation among adults, regardless of age or sex, for many years, as documented by the Behavioral Risk Factor Surveillance System (BRFSS). Results from the National Survey on Drug Use and Health also consistently place Wisconsin in the top few states on current alcohol use and binge drinking. BRFSS results for 2010 indicate that, among adults, Wisconsin still has the highest prevalence of current alcohol consumption and binge drinking among U.S. states and territories.

Mirroring this pattern among adults, the prevalence of alcohol use among high school youth in Wisconsin has also been higher than the national rate in the recent past. Nevertheless, some progress in reducing youth consumption has been made. This improvement includes an apparent downward trend in binge drinking among Wisconsin high school students, at 24% in 2011, down from 28%-34% during the period 2001-2007.

From 2001 through 2007, Wisconsin high school youth had the highest prevalence of current alcohol use in the nation. As of 2009 this trend was broken, with Wisconsin dropping out of the top few states in youth alcohol consumption. In 2011, Wisconsin high school youth had the eighth highest prevalence of current alcohol use, tied with two other states; thus the progress suggested by the earlier reduction appears to be sustained. Figure 27 summarizes the most recent alcohol consumption data for high school students in Wisconsin and the nation.

Figure 27. Prevalence of alcohol use among high school students, Wisconsin and the United States, 2011

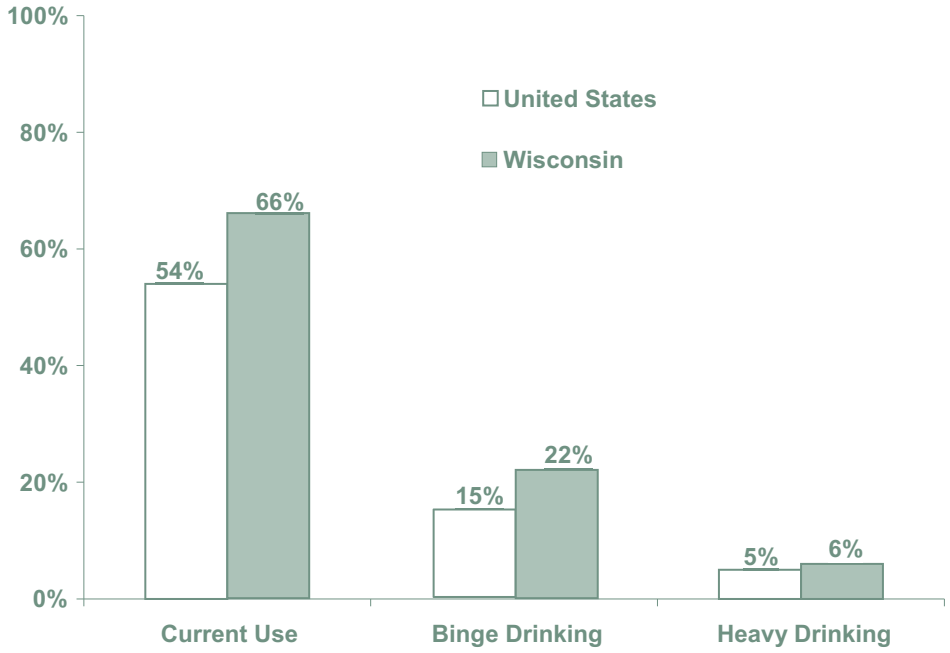


Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

Wisconsin rates of adult alcohol use remained higher than national averages in 2010 for all categories of consumption, including current use, binge drinking and heavy drinking (Figure 28). As in previous years, Wisconsin's adult binge drinking rate was highest in the nation.

Per capita alcohol consumption also remained higher in Wisconsin than the nation in 2009. Underage drinking (ages 12-20) was higher than the national prevalence for the time period 2008-2009. Rates of current drinking and binge drinking among women of childbearing age (ages 18-44) were higher than the U.S. median for all states and territories (BRFSS, 2010). Rates of drinking in the three months immediately before pregnancy and the last three months of pregnancy were also higher in Wisconsin than the median for all surveyed states, based on 2007-2008 data from the Pregnancy Risk Assessment Monitoring System.

Figure 28. Prevalence of alcohol use among adults, Wisconsin and the United States, 2010



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services; and U.S. Centers for Disease Control and Prevention.

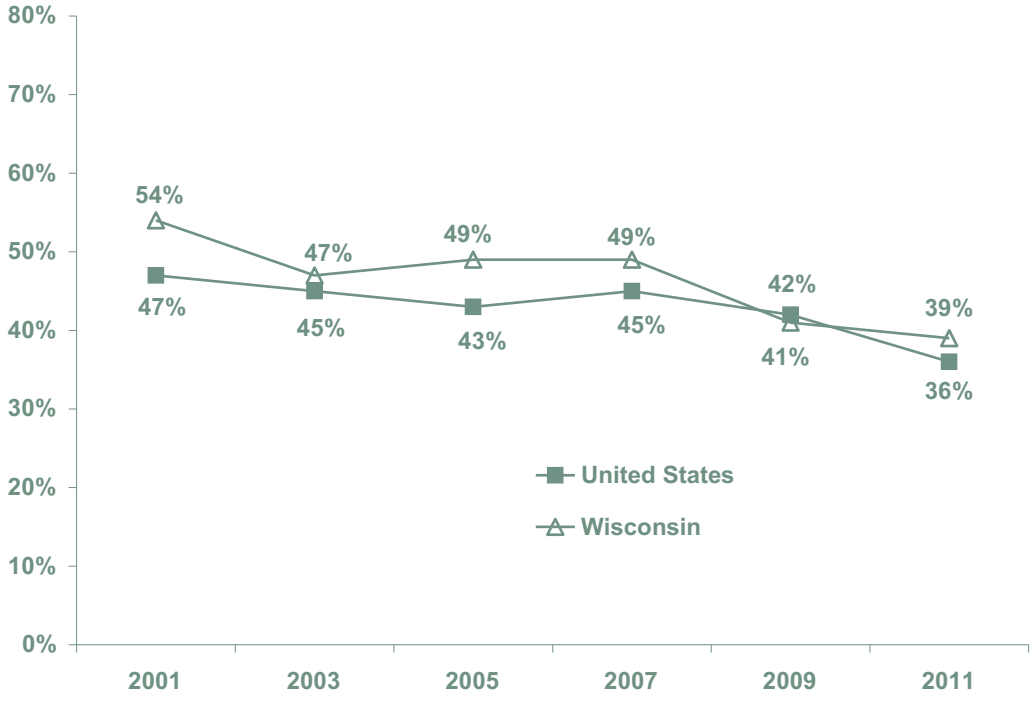
Current Alcohol Use

- The prevalence of current alcohol use among high school students and adults in Wisconsin has been consistently high. Current alcohol use (at least one drink in the past 30 days) was reported by 39% of Wisconsin high school students in 2011 and 66% of Wisconsin adults (age 18 and older) in 2010 (Figures 29 and 30).

- Although still high, rates of current alcohol use have declined among both high school students and adults in Wisconsin. Among students, current alcohol use declined from 54% in 2001 to 39% in 2011.

- In 2009-2011, African American students were least likely to report current drinking (Table 17).

Figure 29. Prevalence of current alcohol use among high school students, Wisconsin and the United States, 2001-2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

Table 17. Prevalence of current alcohol use among high school students, by race/ethnicity, Wisconsin, 2003-2011

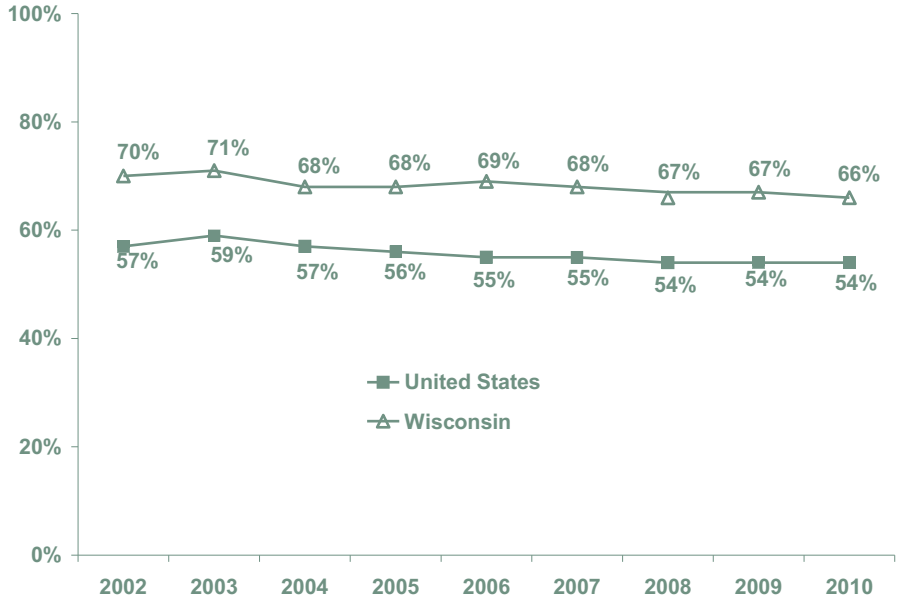
Race/Ethnicity	2003-2005	2005-2007	2007-2009	2009-2011
White	50%	51%	47%	41%
African American	30%	33%	33%	28%
Hispanic/Latino	45%	43%	42%	37%
Asian/Pacific Islander	42%	39%	32%	37%
American Indian or Alaskan Native	55%	51%	47%	46%*
Multiracial	44%	53%	52%	45%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction; U.S. Centers for Disease Control and Prevention.

* Interpret with caution due to small number of cases.

- Among Wisconsin adults, current alcohol use declined from 70% in 2002 to 66% in 2010 (Figure 30).
- Adults aged 25 to 44 reported the highest prevalence of current alcohol use among the age groups measured (Table 18).
- Among Wisconsin adults by race/ethnicity, whites reported the highest prevalence of current alcohol use in 2008-2010 (68%), followed by Hispanics (61%), American Indians (51%), African Americans (49%), and Asians (46%) (Table 19).

Figure 30. Prevalence of current alcohol use among adults (age 18 and older), Wisconsin and United States, 2002-2010



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services; and U.S. Centers for Disease Control and Prevention.

Note: Current alcohol use is defined as at least one drink of alcohol in the past 30 days.

Table 18. Prevalence of current alcohol use among adults (age 18 and older), by age and sex, Wisconsin, 2002-2010

Year	U.S.	Wisconsin	18-24	25-44	45-64	65+	Males	Females	Females 18-44
2002	57%	70%	73%	77%	68%	56%	76%	64%	71%
2003	59%	71%	71%	75%	73%	61%	76%	67%	70%
2004	57%	68%	67%	73%	69%	57%	74%	62%	66%
2005	56%	68%	62%	74%	71%	56%	74%	62%	65%
2006	55%	69%	65%	76%	71%	54%	75%	63%	66%
2007	55%	68%	70%	75%	68%	56%	75%	62%	68%
2008	54%	67%	56%	74%	69%	56%	71%	63%	68%
2009	54%	67%	61%	74%	68%	53%	74%	60%	64%
2010	54%	66%	53%	73%	68%	55%	70%	62%	68%

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

Table 19. Prevalence of current alcohol use among adults (age 18 and older), by race/ethnicity, Wisconsin, 2001-2010

Year	African American	American Indian	Asian	Hispanic	White
2001-2003	51%	65%	50%	64%	72%
2002-2004	48%	69%	49%	65%	71%
2003-2005	49%	65%	52%	66%	70%
2004-2006	48%	65%	57%	67%	69%
2005-2007	53%	64%	64%	64%	70%
2006-2008	55%	56%	56%	62%	69%
2007-2009	55%	59%	55%	60%	69%
2008-2010	49%	51%	46%	61%	68%

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

Table 20. Prevalence of current alcohol use among adults (age 18 and older), Wisconsin by county, 2004-2008

County	2004-2006	2005-2007	2006-2008	County	2004-2006	2005-2007	2006-2008
Adams	64%	61%	57%	Marinette	70%	73%	67%
Ashland	64%	71%	60%	Marquette	63%	62%	60%
Barron	51%	51%	58%	Menominee	61%	65%	61%
Bayfield	64%	59%	65%	Milwaukee	66%	66%	63%
Brown	75%	71%	73%	Monroe	56%	52%	57%
Buffalo	66%	67%	66%	Oconto	60%	67%	70%
Burnett	64%	55%	56%	Oneida	68%	69%	67%
Calumet	70%	74%	74%	Outagamie	74%	73%	68%
Chippewa	61%	58%	70%	Ozaukee	77%	74%	76%
Clark	53%	51%	48%	Pepin	62%	61%	71%
Columbia	65%	67%	68%	Pierce	62%	69%	75%
Crawford	57%	59%	64%	Polk	71%	71%	67%
Dane	74%	75%	78%	Portage	73%	69%	68%
Dodge	66%	64%	66%	Price	63%	62%	53%
Door	70%	73%	74%	Racine	66%	67%	67%
Douglas	62%	67%	72%	Richland	60%	66%	59%
Dunn	71%	62%	63%	Rock	63%	64%	62%
Eau Claire	68%	70%	70%	Rusk	56%	61%	58%
Florence	58%	57%	61%	St. Croix	74%	75%	74%
Fond du Lac	72%	73%	70%	Sauk	65%	65%	67%
Forest	53%	47%	57%	Sawyer	57%	60%	70%
Grant	55%	70%	64%	Shawano	65%	64%	59%
Green	63%	65%	64%	Sheboygan	76%	77%	75%
Green Lake	69%	66%	62%	Taylor	75%	72%	65%
Iowa	54%	63%	69%	Trempealeau	57%	59%	60%
Iron	70%	55%	62%	Vernon	64%	62%	62%
Jackson	68%	58%	59%	Vilas	67%	69%	70%
Jefferson	59%	60%	59%	Walworth	63%	64%	60%
Juneau	64%	62%	55%	Washburn	76%	66%	63%
Kenosha	63%	62%	64%	Washington	69%	71%	71%
Kewaunee	71%	73%	73%	Waukesha	75%	74%	74%
La Crosse	60%	64%	65%	Waupaca	59%	60%	66%
Lafayette	62%	62%	68%	Waushara	69%	58%	56%
Langlade	56%	60%	69%	Winnebago	68%	68%	70%
Lincoln	61%	58%	62%	Wood	62%	63%	61%
Manitowoc	67%	69%	68%				
Marathon	67%	69%	71%	**Wisconsin**	**68%**	**68%**	**68%**

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

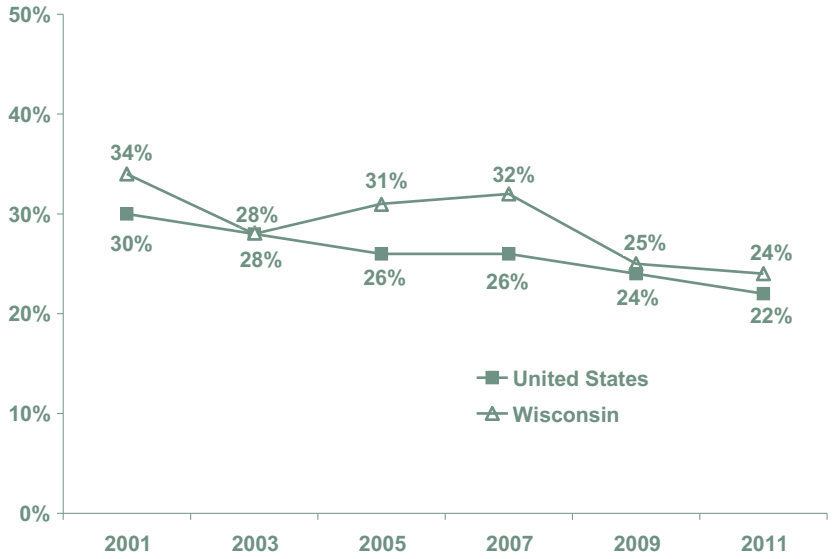
Binge Drinking

- The Youth Risk Behavior Survey defines binge drinking as five or more drinks of alcohol in a row.

- In 2011, 24% of Wisconsin high school students reported binge use of alcohol. This represents a sharp decline from the beginning of the decade (34%) and sustains the decline seen in 2009 (Figure 31). Wisconsin students may be achieving the same drop in binge drinking as was seen during the decade for U.S. high school students as a whole.

- As in previous years, binge drinking prevalence in 2009-2011 was lowest among African American students (Table 21).

Figure 31. Prevalence of binge drinking among high school students, Wisconsin and the United States, 2001-2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

Table 21. Binge drinking among high school students, by race/ethnicity, Wisconsin, 2001-2011

Race/Ethnicity	*2001-2003*	*2003-2005*	*2005-2007*	*2007-2009*	*2009-2011*
White	33%	31%	33%	30%	26%
African American	16%	15%	15%	14%	12%
Hispanic/Latino	35%	28%	26%	25%	20%
Asian or Pacific Islander	24%	24%	22%	20%	25%
American Indian or Alaskan Native	49%	42%	41%	35%	30%*
Multiracial	25%	26%	36%	34%	29%

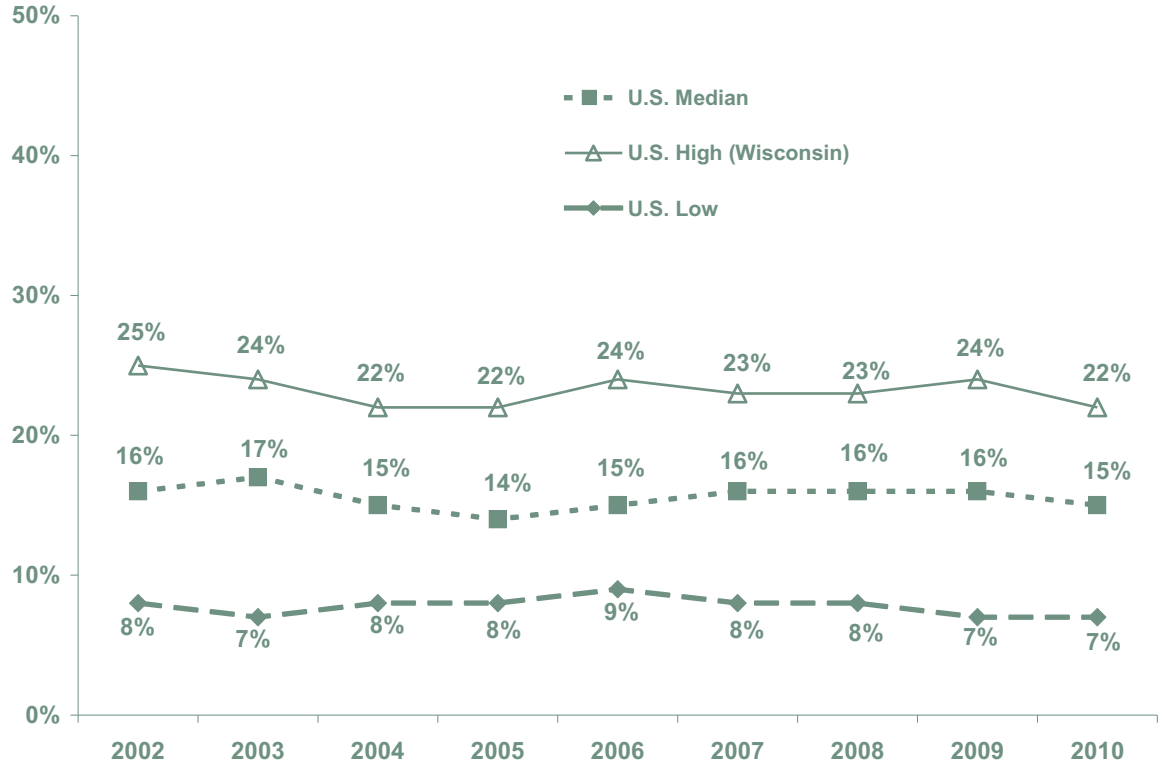
Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction; U.S. Centers for Disease Control and Prevention.

* Interpret with caution due to small number of cases.

The Centers for Disease Control and Prevention (CDC) defines binge drinking as five or more drinks on one occasion for men, and four or more drinks on one occasion for women. Prior to 2006, it was defined as five or more drinks for both sexes.

- The prevalence of binge drinking among Wisconsin adults (age 18 and older) in 2010 was 22% (Figure 32). As in previous years, this was the highest state prevalence of binge drinking in the United States.

Figure 32. Prevalence of adult binge drinking, range of state estimates: Low, high, and United States median, 2002-2010



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services; and U.S. Centers for Disease Control and Prevention.

Note: The median is the midpoint of the range of estimates for all U.S. states and territories.

- In 2010, binge drinking in Wisconsin was highest among adults ages 18 to 44, and among men (Table 22). African Americans had a lower rate of binge drinking than other racial/ethnic groups (Table 23).

- Binge drinking among young adults ages 18 to 24 apparently declined from 41% in 2002 to 31% in 2010 (Table 22), although this result should be viewed with caution given the evidence that landline-only telephone survey results may increasingly be underestimating binge drinking prevalence (see next bullet). Binge drinking declined among men, from 36% in 2002 to 28% in 2010. Binge drinking also declined among American Indians, from 35% in 2002-2004 to 25% in 2008-2010 (Table 23).

- A note about the cell phone-only population and binge drinking: Current evidence from the Behavioral Risk Factor Surveillance System (BRFSS), of which the Wisconsin Behavioral Risk Factor Survey is a part, and the National Health Interview Survey indicates that the cell phone-only population has a higher prevalence of binge drinking than the population with landline telephones, and estimates using data from only landline interviews may underestimate binge drinking by as much as 2 to 3 percentage points. The BRFSS now collects both landline and cell phone interview data, and CDC is scheduled to release combined landline and cell phone BRFSS data for all states and territories for the year 2011 (not yet available as this report was prepared).

Table 22. Prevalence of binge drinking among adults (age 18 and older), by sex and age, Wisconsin, 2002-2010

Year	U.S.	Wisconsin	18-24	25-44	45-64	65+	Males	Females	Females (18-44)
2002	16%	25%	41%	33%	19%	5%	36%	14%	22%
2003	17%	25%	43%	31%	18%	6%	33%	15%	25%
2004	15%	22%	37%	29%	17%	5%	31%	14%	21%
2005	14%	22%	33%	28%	21%	4%	32%	12%	18%
2006	15%	24%	38%	32%	20%	6%	33%	16%	24%
2007	16%	23%	36%	29%	20%	8%	27%	17%	25%
2008	16%	23%	31%	31%	20%	8%	28%	17%	24%
2009	16%	24%	37%	33%	19%	8%	32%	16%	24%
2010	15%	22%	31%	29%	20%	5%	28%	16%	23%

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

Table 23. Prevalence of binge drinking among adults (age 18 and older), by race/ethnicity, Wisconsin, 2002-2010

Year	African American	American Indian	Asian	Hispanic/ Latino	White
2002-2004	15%	35%	15%	28%	24%
2003-2005	15%	31%	16%	28%	23%
2004-2006	14%	32%	17%	28%	22%
2005-2007	16%	29%	18%	25%	24%
2006-2008	17%	25%	17%	21%	24%
2007-2009	17%	23%	20%	24%	24%
2008-2010	14%	25%	23%	25%	23%

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

Table 24. Prevalence of binge drinking among adults (age 18 and older), Wisconsin by county, three-year pooled estimates, 2004-2008

County	2004-2006	2005-2007	2006-2008	County	2004-2006	2005-2007	2006-2008
Adams	35%	28%	22%	Marinette	19%	25%	25%
Ashland	28%	35%	26%	Marquette	29%	27%	21%
Barron	16%	17%	26%	Menominee	24%	37%	34%
Bayfield	29%	18%	18%	Milwaukee	22%	22%	21%
Brown	26%	25%	25%	Monroe	26%	25%	26%
Buffalo	34%	28%	23%	Oconto	26%	32%	33%
Burnett	*	16%	17%	Oneida	22%	16%	19%
Calumet	32%	30%	38%	Outagamie	30%	34%	30%
Chippewa	18%	16%	20%	Ozaukee	18%	17%	17%
Clark	20%	21%	23%	Pepin	*	25%	19%
Columbia	24%	33%	29%	Pierce	21%	29%	31%
Crawford	22%	21%	25%	Polk	16%	22%	26%
Dane	21%	22%	25%	Portage	24%	24%	20%
Dodge	25%	25%	24%	Price	*	23%	21%
Door	20%	22%	25%	Racine	23%	23%	25%
Douglas	28%	32%	25%	Richland	21%	25%	17%
Dunn	38%	31%	18%	Rock	26%	26%	24%
Eau Claire	34%	35%	30%	Rusk	*	13%	16%
Florence	33%	24%	28%	St. Croix	25%	23%	25%
Fond du Lac	24%	25%	22%	Sauk	29%	28%	22%
Forest	*	21%	22%	Sawyer	*	19%	25%
Grant	19%	31%	28%	Shawano	26%	24%	21%
Green	19%	22%	23%	Sheboygan	28%	29%	32%
Green Lake	26%	20%	16%	Taylor	30%	30%	28%
Iowa	23%	27%	24%	Trempealeau	25%	22%	26%
Iron	30%	20%	29%	Vernon	23%	26%	28%
Jackson	28%	21%	17%	Vilas	*	16%	15%
Jefferson	22%	25%	23%	Walworth	22%	20%	21%
Juneau	19%	16%	18%	Washburn	*	16%	16%
Kenosha	18%	17%	19%	Washington	21%	22%	23%
Kewaunee	39%	35%	32%	Waukesha	16%	14%	18%
La Crosse	19%	18%	17%	Waupaca	22%	22%	24%
Lafayette	21%	14%	17%	Waushara	17%	12%	21%
Langlade	27%	29%	29%	Winnebago	22%	23%	24%
Lincoln	20%	24%	23%	Wood	17%	15%	19%
Manitowoc	28%	36%	27%				
Marathon	23%	24%	22%	**Wisconsin**	23%	23%	24%

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

* Estimate not reliable

Note: Apparent changes across time based on these estimates are not necessarily statistically significant, and should be interpreted with caution.

Heavy Use of Alcohol

- The Centers for Disease Control and Prevention defines heavy drinking as more than two drinks per day for men and more than one drink per day for women.

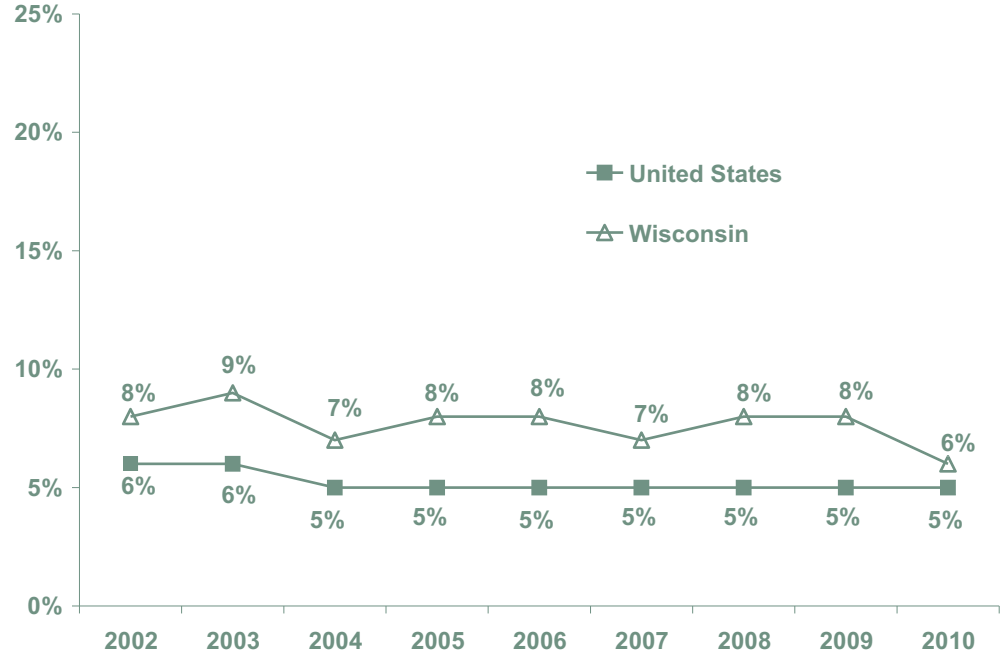
- The prevalence of heavy use of alcohol among Wisconsin adults (age 18 and older) remained at or near 8% from 2002 to 2009 but declined in 2010 to 6% (Figure 33). Wisconsin's rate was consistently higher than the national average (5% in 2010).

- Heavy use of alcohol is highest among young adults, ages 18-24 (Table 25). In 2009, 14% of this age group in Wisconsin reported heavy drinking. (There were too few cases in this age group in 2010 to produce a reliable estimate.)

- In 2010, the prevalence of heavy drinking was 7% among men and 6% among women. Men had higher rates of heavy drinking than women in most years since 2002.

- In 2008-2010, heavy use of alcohol was reported most frequently by Hispanics/Latinos (13%) and American Indians (12%) (Table 26). Estimates for American Indians should be interpreted with caution, as they are based on small sample sizes and have large standard errors relative to the size of the estimates.

Figure 33. Prevalence of heavy drinking among adults, Wisconsin and the United States, 2002-2010



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services; and U.S. Centers for Disease Control and Prevention.

Table 25. Prevalence of heavy drinking among adults (age 18 and older), by age and sex, Wisconsin, 2002-2010

Year	U.S.	Wisconsin	18-24	25-44	45-64	65+	Males	Females	Females 18-44
2002	6%	8%	12%	9%	7%	4%	10%	6%	7%
2003	6%	9%	15%	9%	8%	4%	9%	8%	9%
2004	5%	7%	14%	7%	7%	4%	9%	6%	8%
2005	5%	8%	11%	8%	8%	3%	9%	7%	8%
2006	5%	8%	12%	8%	8%	4%	8%	8%	10%
2007	5%	7%	10%	6%	7%	4%	7%	7%	7%
2008	5%	8%	14%	7%	8%	5%	9%	7%	7%
2009	5%	8%	14%	8%	6%	6%	9%	6%	7%
2010	5%	6%	not reliable	7%	8%	3%	7%	6%	6%

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

Table 26. Prevalence of heavy drinking among adults (age 18 and older), by race/ethnicity, Wisconsin, 2002-2010

Year	African American	American Indian	Asian	Hispanic/ Latino	White
2002-2004	5%	13%	3%	10%	8%
2003-2005	5%	9%	2%	12%	8%
2004-2006	5%	7%	3%	11%	8%
2005-2007	7%	5%	2%	9%	7%
2006-2008	7%	10%	4%	8%	7%
2007-2009	6%	11%	not reliable	10%	7%
2008-2010	6%	12%	not reliable	13%	7%

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

Note: Estimates for American Indian and Asian groups should be interpreted with caution, as they are based on small sample sizes and have large standard errors relative to the size of the estimates.

Per Capita Consumption

- Between 2001 and 2009, per capita consumption of alcohol in Wisconsin rose from 2.7 to 3.0 gallons per person (Figure 34). Per capita consumption is gallons of ethanol consumed per person, based on the population age 14 and older.
- Wisconsin's per capita consumption was notably higher than the national average every year (Figure 34).
- Wisconsin's per capita consumption, 3.0 gallons, is equal to 384 fluid ounces, or 768 drinks (each alcoholic drink equals 0.5 ounces of ethanol).

Figure 34. Per capita alcohol consumption, in gallons, Wisconsin and the United States, 2001-2009

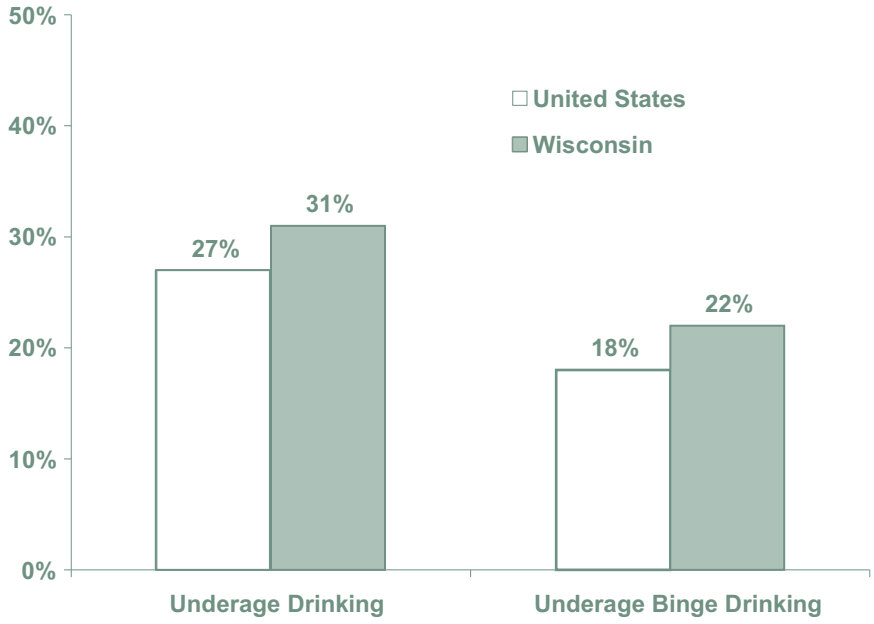
Source: *Apparent per Capita Alcohol Consumption: National, State and Regional Trends, 1977-2009.* National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, U.S. Department of Health and Human Services. Accessed March 22, 2012 at http://pubs.niaaa.nih.gov/publications/surveillance.htm

Underage Drinking

- Compared to the United States as a whole, Wisconsin has higher rates of underage drinking, defined by the National Survey on Drug Use and Health as drinking by youth ages 12 to 20. Wisconsin youth are more likely to report both current drinking (at least one drink in the past month) and binge drinking (five or more drinks on one occasion in the past month).

- In 2008-2009, 22% of Wisconsin youth ages 12-20 reported binge drinking in the past month (Figure 35), the same percentage as in 2007-2008 (not shown).

Figure 35. Prevalence of underage drinking, Wisconsin and the United States, 2008-2009



Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services.

Notes: NSDUH defines "underage" drinking as drinking among youth 12-20 years of age; current drinking as alcohol use in the past month; and binge drinking as five or more drinks on at least one day in the past month.

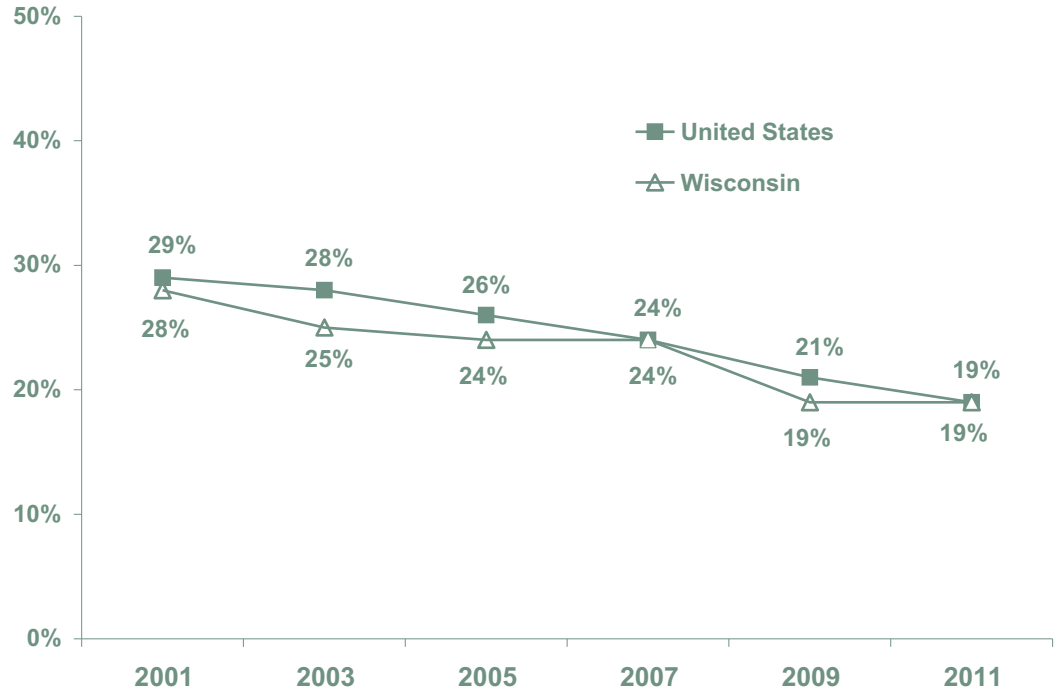
For purposes of clarification, NSDUH data are presented here because they include estimates for ages 12-20, which is an appropriate age span for underage drinking. The other major sources of data on alcohol use, the Behavioral Risk Factor Survey and the Youth Risk Behavior Survey, only provide data for adults 18 and older (the BRFS) and high school students (the YRBS).

Age of Initiation

- The percent of Wisconsin high school students who initiated alcohol use before age 13 declined between 2001 and 2011, from 28% to 19% (Figure 36). Prevalence of before-age-13 initiation among boys exceeded that among girls in each of those years (Table 27).

- During 2009-2011, Hispanic/Latino, American Indian, and multiracial students were most likely to report initiating alcohol use before age 13 (Table 28). From 2001-2003 to 2009-2011, white and Asian students showed clear decreases in the prevalence of initiation before age 13.

Figure 36. Prevalence of alcohol use initiation before age 13 among high school students, Wisconsin and the United States, 2001-2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

Note: The Youth Risk Behavior Survey asks high school students whether they began using alcohol "other than a few sips" before age 13.

Table 27. Prevalence of alcohol use initiation before age 13 among high school students, by sex, Wisconsin, 2001-2011

Sex	2001	2003	2005	2007	2009	2011
Female	27%	22%	19%	20%	17%	16%
Male	30%	29%	28%	27%	22%	21%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction; U.S. Centers for Disease Control and Prevention.

Table 28. Prevalence of alcohol use initiation before age 13 among high school students, by race/ethnicity, Wisconsin, 2001-2011

Race/Ethnicity	2001-2003	2003-2005	2005-2007	2007-2009	2009-2011
White	26%	23%	23%	20%	17%
African American	31%	27%	26%	28%	23%
Hispanic/Latino	27%	30%	30%	30%	27%
Asian or Pacific Islander	30%	30%	22%	20%	19%
American Indian or Alaskan Native	**	**	**	**	27%*
Multiracial	30%	34%	31%	28%	29%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction; U.S. Centers for Disease Control and Prevention.

* Interpret with caution due to small number of cases.
** Too few cases in sample to produce a reliable estimate.

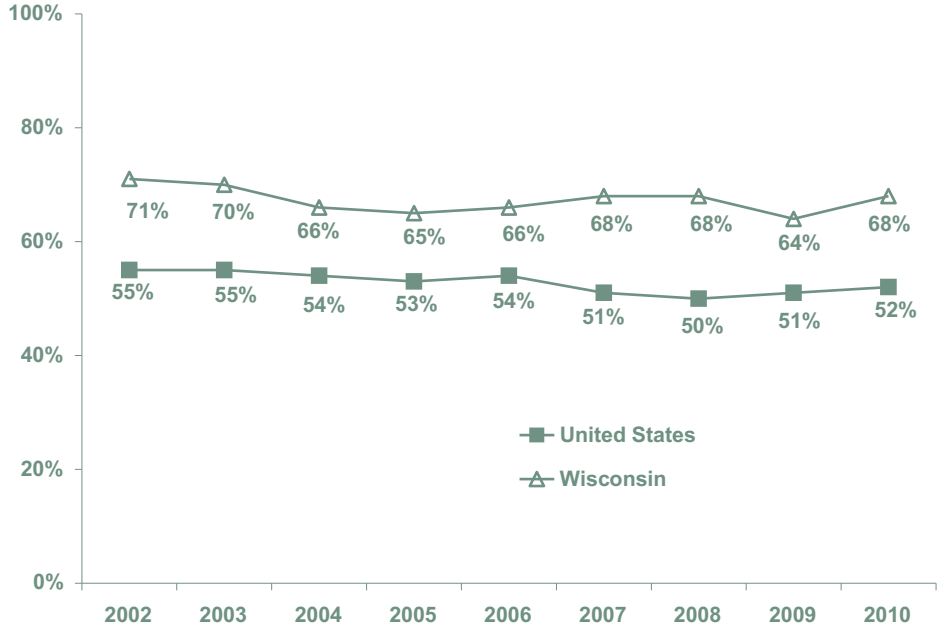
Alcohol Use by Women of Childbearing Age

Alcohol use can impair decision-making and contribute to risk-taking behaviors, including sexual behaviors; an unplanned pregnancy may be one result. An accumulation of evidence also indicates that alcohol use during pregnancy can harm the developing fetus. In 2004, the Centers for Disease Control and Prevention (CDC) reported that Wisconsin was among the states with the highest rates of high-risk drinking among women of childbearing age.[10] More recent BRFSS results, shown below, indicate that the Wisconsin prevalence of binge drinking in this age group of women is still much higher than the national median.

- Wisconsin women of childbearing age are more likely to drink than women nationally (Figure 37). In 2010, 68% of Wisconsin women ages 18-44 said they had at least one alcoholic drink in the past 30 days; this compares with 52% of women in the United States.

- Binge drinking is much more prevalent among Wisconsin women of childbearing age, compared with their national counterparts. In 2010, among women ages 18-44, 23% in Wisconsin and 15% nationally said they had consumed four or more drinks on one occasion in the past 30 days (Figure 38).

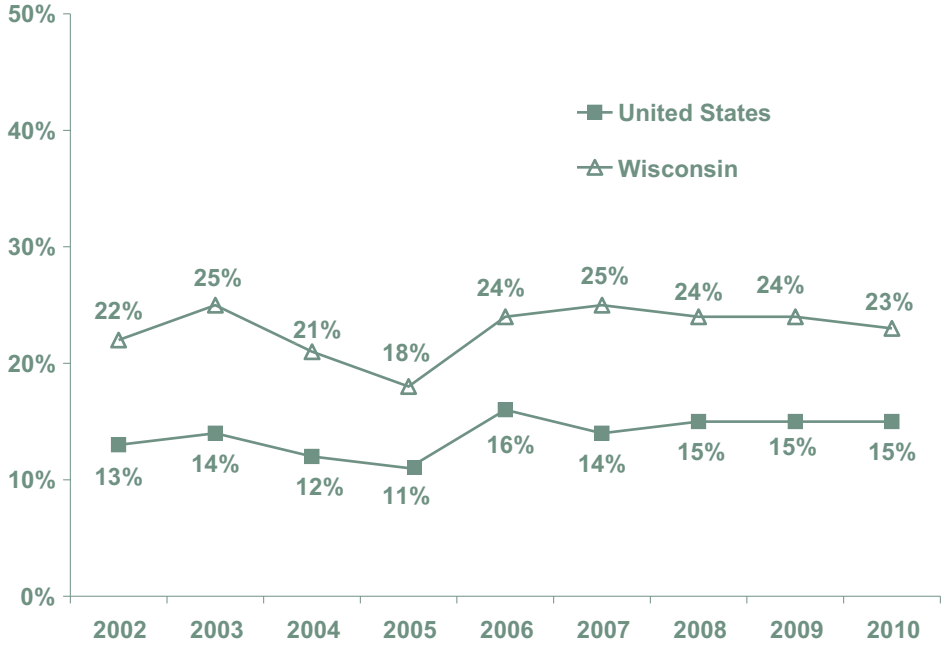
Figure 37. Prevalence of current alcohol use among women ages 18-44, Wisconsin and the United States, 2002-2010



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services; and U.S. Centers for Disease Control and Prevention.

[10] U.S. Centers for Disease Control and Prevention (2004). Alcohol consumption among women who are pregnant or who might become pregnant – United States, 2002. *Morbidity and Mortality Weekly Report*, 53(50), 1178-1181.

Figure 38. Prevalence of binge drinking among women ages 18-44, Wisconsin and the United States, 2002-2010



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services; and U.S. Centers for Disease Control and Prevention.

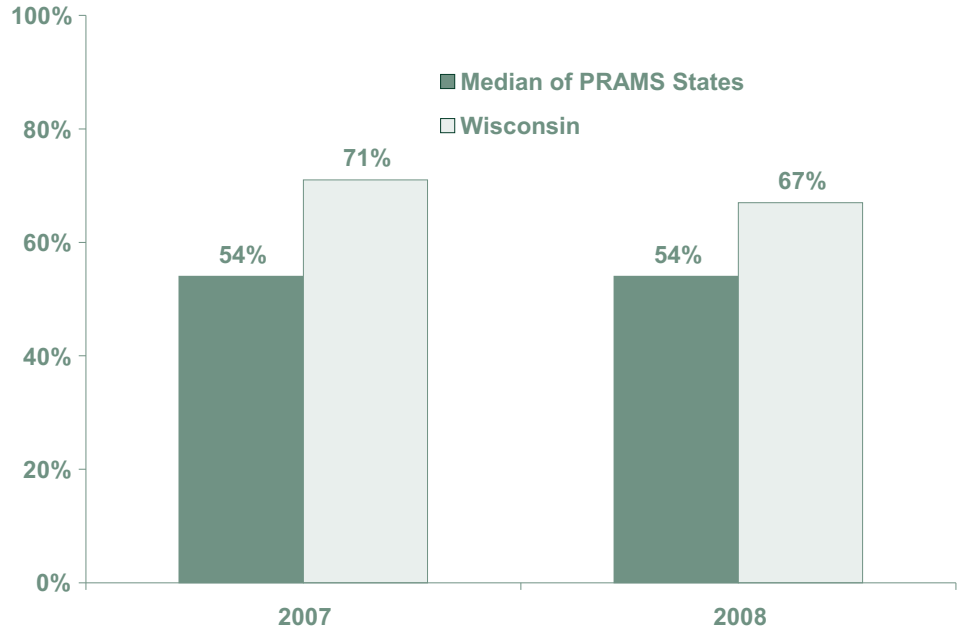
Drinking Before and During Pregnancy

The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing survey of new mothers conducted jointly by the Centers for Disease Control and Prevention and state health departments. Wisconsin began participating in PRAMS in 2007.

- In this survey of women who have recently given birth, Wisconsin women are more likely to report drinking both before and during pregnancy.

- In 2008, the most recent year for which there is comparable national data, 67% of new mothers in Wisconsin reported they consumed alcohol in the three months before they became pregnant. This was 13 percentage points higher than the median for all states participating in PRAMS (54%) (Figure 39).

Figure 39. Proportion of new mothers reporting they consumed alcohol in the three months before pregnancy, Wisconsin and PRAMS states*



Source: Pregnancy Risk Assessment Monitoring Systems (PRAMS), Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services; U.S. Centers for Disease Control and Prevention.

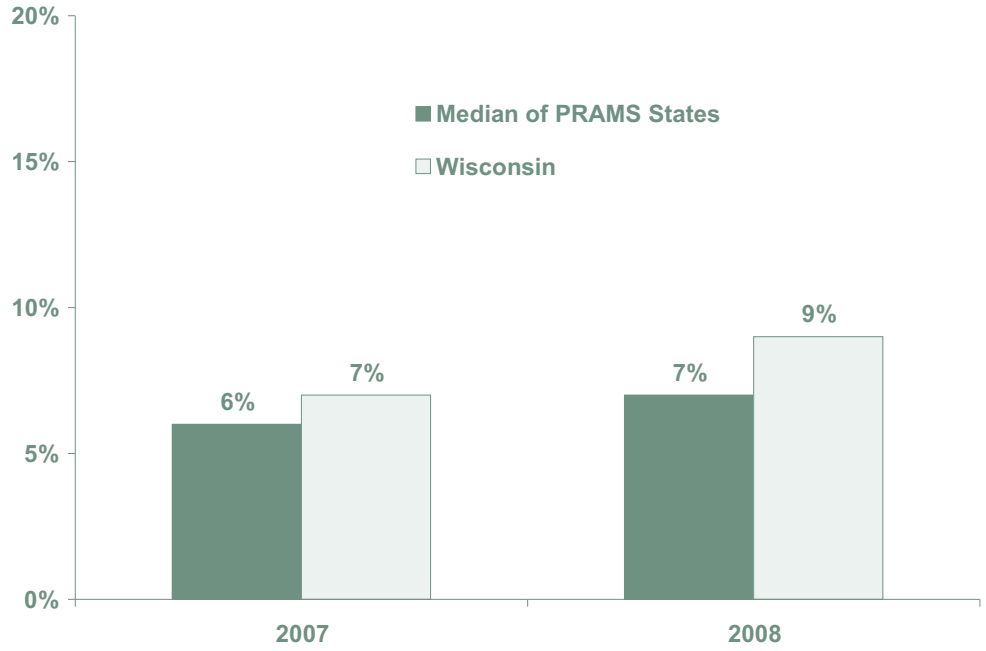
* PRAMS states/sites:

In 2007, 29 states but 30 sites (New York state and New York City were two sites).

In 2008, 29 states (New York excludes New York City).

- The proportion of new mothers who reported they drank alcohol during pregnancy was much lower than the proportion who reported drinking before pregnancy. Still, 9% of new mothers in Wisconsin (vs. 7% of new mothers in all surveyed states) reported they consumed alcohol during the last three months of their recent pregnancy (Figure 40).

Figure 40. Proportion of new mothers reporting they consumed alcohol in the last three months of pregnancy, Wisconsin and PRAMS states*



Source: Pregnancy Risk Assessment Monitoring Systems (PRAMS), Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services; U.S. Centers for Disease Control and Prevention.

* PRAMS states/sites:

In 2007, 29 states but 30 sites (New York state and New York City were two sites).

In 2008, 29 states (New York excludes New York City).

Other Drug Consumption

The use of drugs other than alcohol remains a problem in Wisconsin. As a whole, consumption patterns of illicit drugs in Wisconsin mirror national trends (Table 29).

Wisconsin high school students and their national counterparts show similar patterns of experimentation with illicit drugs, with some rates slightly lower in Wisconsin. Data on lifetime use ("ever used") for 2011 show that marijuana continues to be the drug most frequently reported by Wisconsin high school students, with misuse of prescription drugs second (Figure 41).

Rates of illicit drug use and non-medical use of prescription pain relievers are highest among young adults ages 18-25 (Figure 42).

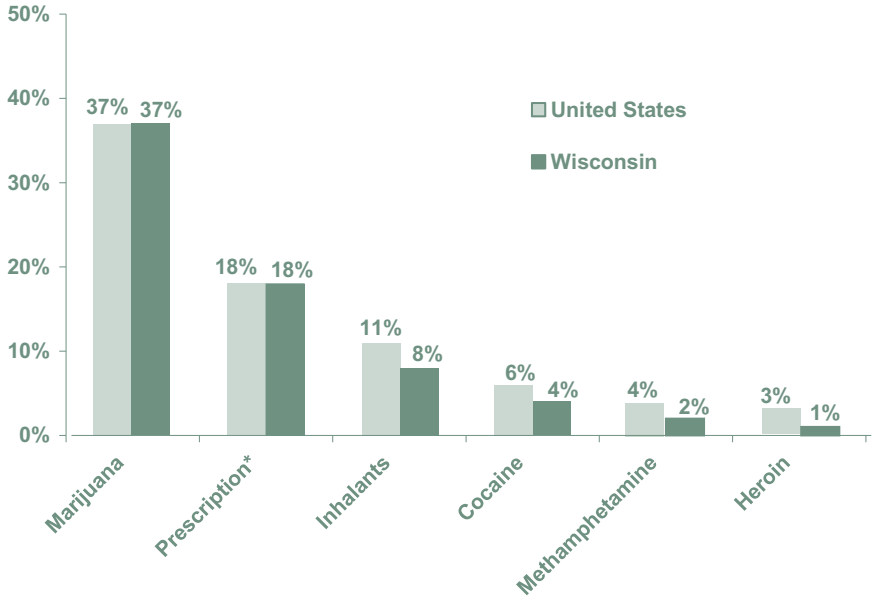
Table 29. Prevalence of past year and past month use of illicit drugs, age 12 and older, Wisconsin and the United States, 2008-2009

	Past Year		*Past Month*	
	Wisconsin	United States	Wisconsin	United States
Any illicit drugs	--	--	8%	8%
Illicit drugs other than marijuana	--	--	3%	4%
Marijuana	11%	11%	6%	6%
Cocaine	3%	2%	--	--
Non-medical use of pain relievers	5%	5%	--	--

Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

Note: Dash (--) indicates data not available.

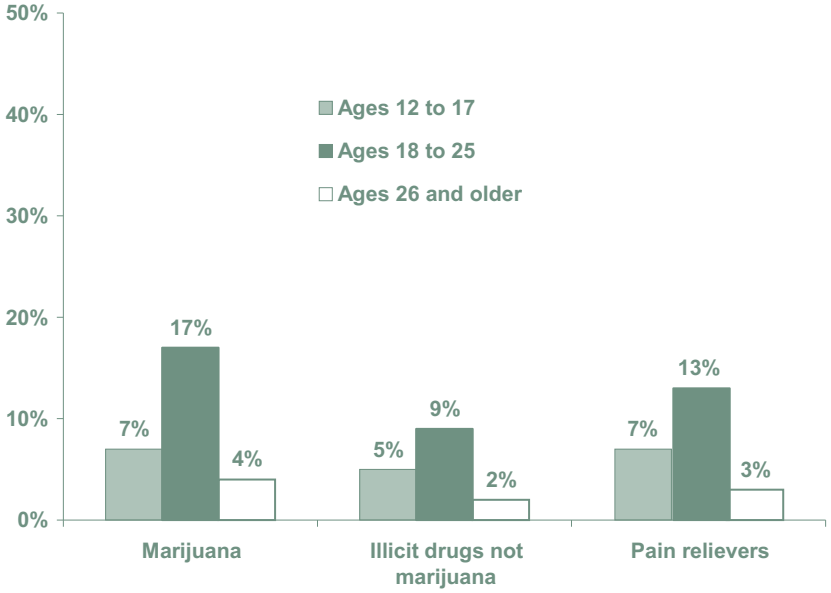
Figure 41. Prevalence of lifetime use of illicit drugs among high school students, Wisconsin and the United States, 2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

* Use of prescription drugs without a prescription (question wording: "…such as OxyContin, Percocet, Vicodin, Codeine, Adderall, Ritalin or Xanax").

Figure 42. Prevalence of use of marijuana, illicit drugs other than marijuana, and pain relievers for non-medical purposes, age 12 and older by age group, Wisconsin, 2008-2009



Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

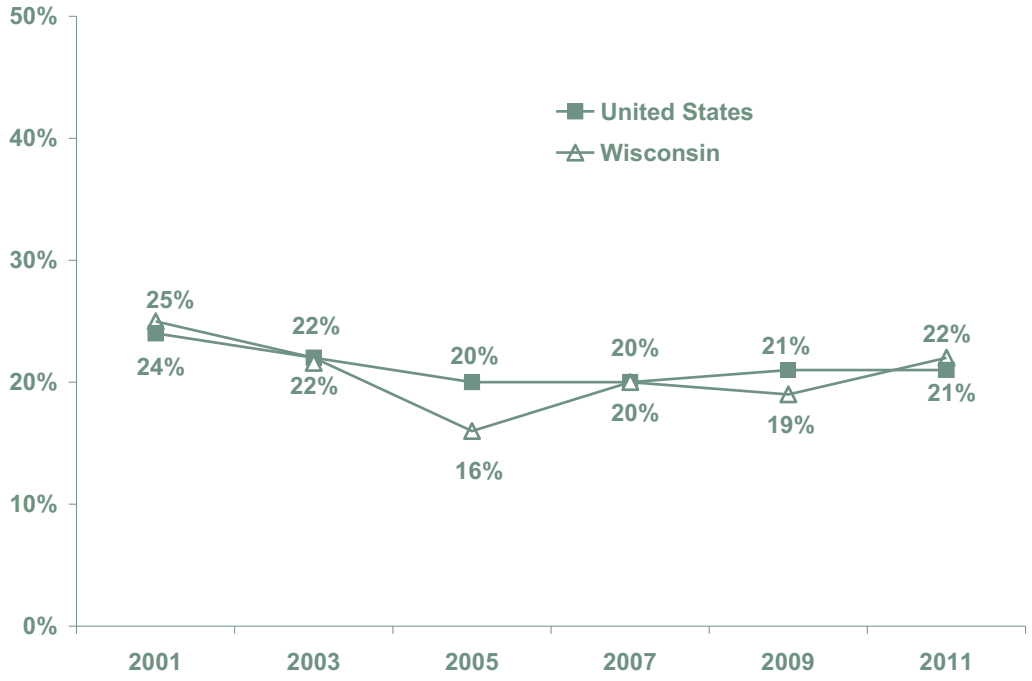
Note: Use of marijuana and use of illicit drugs other than marijuana are use in the past month; use of pain relievers is use in the past year.

Marijuana

Arrests for marijuana possession accounted for 77% of all drug possession arrests in Wisconsin in 2010.[11] Marijuana use can cause impaired coordination and problems with thinking and perception, and carries some risk of addiction among heavy users.[12]

- Between 2001 and 2011, the prevalence of current marijuana use among Wisconsin high school students fluctuated but showed no sustained change (Figure 43). In 2011, 22% of high school students reported using marijuana in the past 30 days.

Figure 43. Prevalence of current marijuana use among high school students, Wisconsin and the United States, 2001-2011



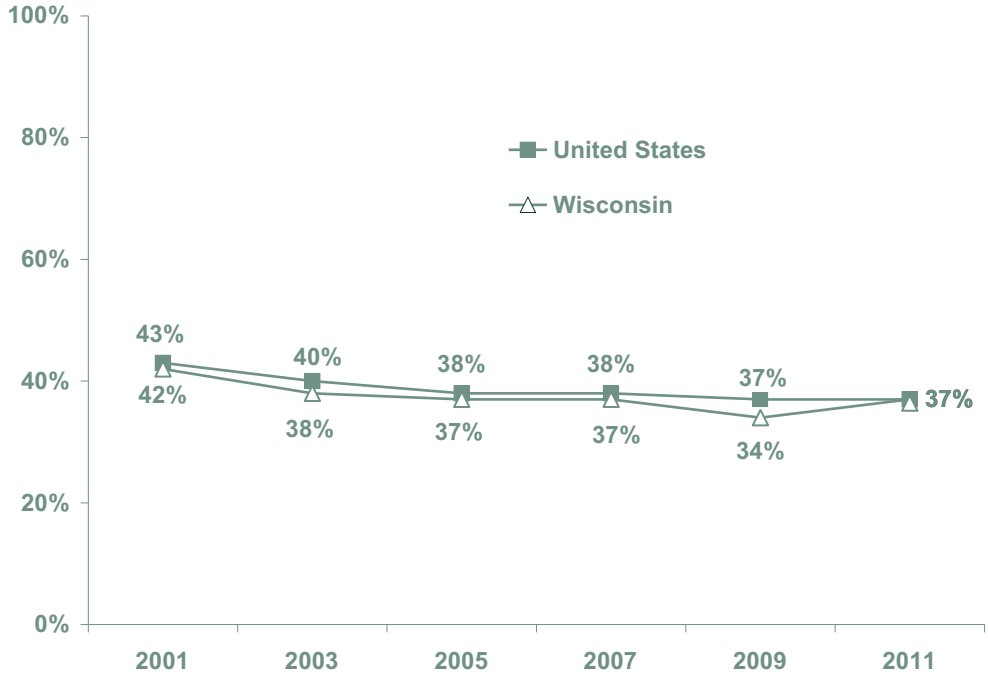
Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

[11] Wisconsin Office of Justice Assistance. *Arrests in Wisconsin, 2010*. July 2011.
[12] National Institute on Drug Abuse. Drug Facts: Marijuana (revised November 2010). Accessed May 18, 2012, at http://www.drugabuse.gov/publications/drugfacts/marijuana.

- The proportion of Wisconsin high school students who had ever used marijuana fell from 2001 (42%) to 2009 (34%) but increased again thereafter (Figure 44).

- In 2011, 37% of Wisconsin high school students had tried marijuana at least once.

Figure 44. Prevalence of lifetime marijuana use among high school students, Wisconsin and the United States, 2001-2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

- Among Wisconsin high school students in 2009-2011, current marijuana use was highest for African American students (34%) and American Indian/Alaskan Native students (32%) (Table 30). In 2009-2011, 20% of Wisconsin high school students overall reported current marijuana use (not shown).

- Higher proportions of American Indian, multiracial, and African American students reported having tried marijuana before age 13 (Table 31) compared to the average for all Wisconsin high school students (6% in 2009-2011, not shown).

- In Wisconsin, the prevalence of current marijuana use was similar among high school students (22% in 2011; Figure 43, page 75) and young adults ages 18 to 25 (17% in 2008-2009; Figure 42, page 74). The prevalence for adults ages 26 and older was 4% in 2008-2009 (Figure 42).

Table 30. Prevalence of current marijuana use among high school students, by race/ethnicity, Wisconsin, 2003-2011

Race/Ethnicity	*2003-2005*	*2005-2007*	*2007-2009*	*2009-2011*
White	18%	16%	18%	18%
African American	31%	32%	31%	34%
Hispanic/Latino	22%	24%	23%	18%
Asian or Pacific Islander	16%	10%	10%	16%
American Indian or Alaskan Native	27%	26%	37%	32%
Multiracial	20%	24%	24%	26%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

Table 31. Prevalence of marijuana use initiation before age 13 among high school students, by race/ethnicity, Wisconsin, 2003-2011

Race/Ethnicity	*2003-2005*	*2005-2007*	*2007-2009*	*2009-2011*
White	6%	10%	5%	4%
African American	20%	23%	14%	13%
Hispanic/Latino	13%	16%	**	6%
Asian or Pacific Islander	10%	6%	6%	9%
American Indian or Alaskan Native	19%	**	17%	23%*
Multiracial	13%	14%	13%	15%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

* Interpret with caution due to small number of cases.
** Too few cases in sample to produce a reliable estimate.

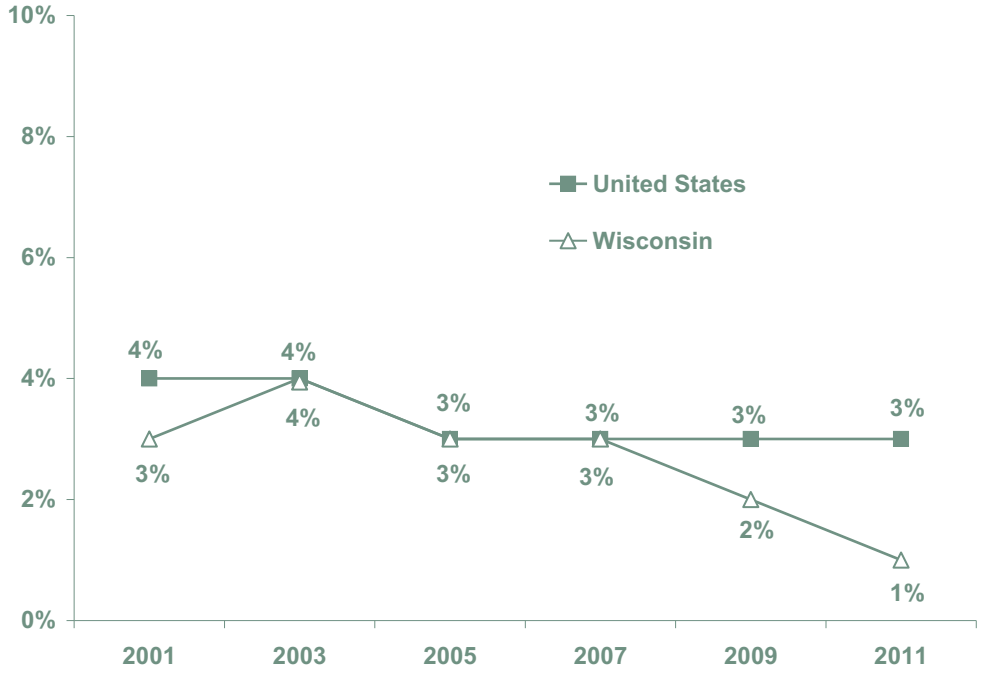
Cocaine

Cocaine users face the possibilities of arrest, dependence, injury and even death. Compared with non-users, cocaine users are more likely to experience a hemorrhagic stroke (sudden bleeding in the brain) at a significantly earlier age, and experience poorer outcomes after treatment.[13] Cocaine continues to be the most frequently mentioned illicit substance reported to the Drug Abuse Warning Network (DAWN) by hospital emergency departments nationwide.[14]

- The prevalence of current cocaine use among Wisconsin high school students decreased from 3% in 2001 to 1% in 2011 (Figure 45).

- Nevertheless, pockets of higher use remain evident. Young adults ages 18-25 have a higher rate of using illicit drugs such as cocaine than other age groups (Figure 42, page 74).

Figure 45. Current cocaine use among high school students, Wisconsin and the United States, 2001-2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

[13] Esse K., Fossati-Bellani M., Traylor A., and Martin-Schild S. Epidemic of illicit drug use, mechanisms of action/ addiction and stroke as a health hazard. Brain Behav. 2011 September; 1(1): 44-54. Accessed June 19, 2012, at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3217673/.

[14] National Institute on Drug Abuse. Drug Facts: Drug-Related Hospital Emergency Room Visits (revised May 2011). Accessed May 18, 2012, at http://www.drugabuse.gov/publications/drugfacts/drug-related-hospital-emergency-room-visits.

Table 32. Prevalence of current cocaine use among high school students, by race/ethnicity, Wisconsin, 2001-2011

Race/Ethnicity	*2001-2003*	*2003-2005*	*2005-2007*	*2007-2009*	*2009-2011*
White	3%	3%	3%	2%	1%
African American	5%	6%	3%	**	2%
Hispanic/Latino	7%	6%	3%	**	**
Asian or Pacific Islander	7%	3%	4%	**	**
American Indian or Alaskan Native	**	**	**	**	**
Multiracial	3%	7%	7%	5%	4%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

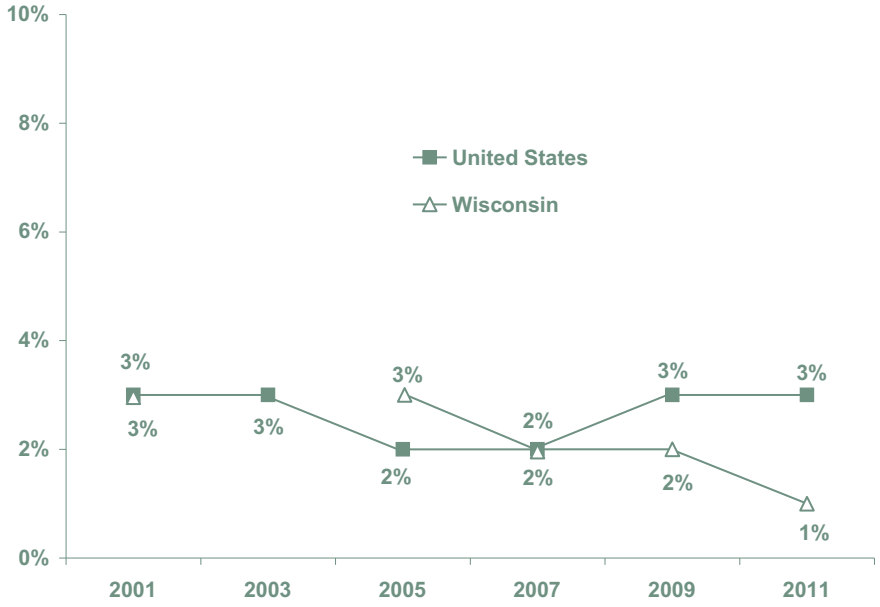
** Too few cases in sample to produce a reliable estimate.

Heroin

One of the most significant risks a heroin user faces is dependence on the drug. Users who inject heroin also risk contracting HIV, hepatitis C, and other infectious diseases. Most new hepatitis C infections in the United States each year are among injection drug users.

- The prevalence of lifetime heroin use among high school students in Wisconsin declined from 3% in 2001 to 1% in 2011 (Figure 46). During 2009-2011, the prevalence of lifetime heroin use was highest among African American and multiracial students (Table 33).

Figure 46. Prevalence of lifetime heroin use among high school students, Wisconsin and the United States, 2001-2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention. (Note: Wisconsin data for 2003 not available.)

Table 33. Prevalence of lifetime heroin use among high school students, by race/ethnicity, Wisconsin, 2001-2011

Race/Ethnicity	*2001-2005**	*2005-2007*	*2007-2009*	*2009-2011*
White	2%	2%	1%	1%
African American	4%	3%	3%	5%
Hispanic/Latino	5%	4%	3%	**
Asian or Pacific Islander	10%	6%	3%	**
American Indian or Alaskan Native	**	**	**	**
Multiracial	9%	9%	6%	4%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

* Question on heroin use was not asked in 2003.
* * Too few cases to produce a reliable estimate.

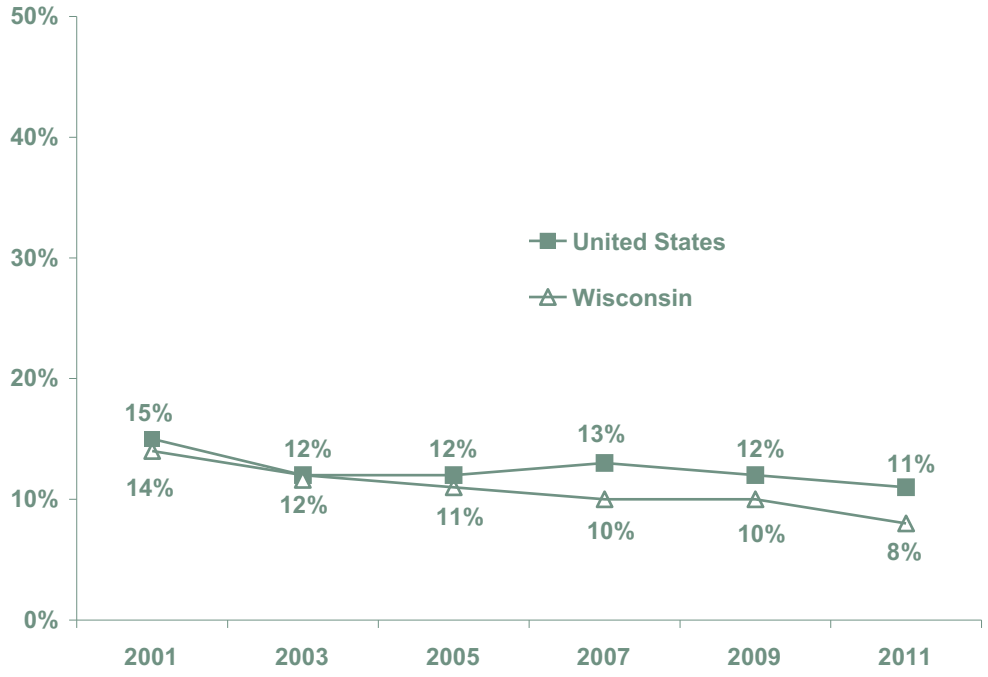
Inhalants

Prolonged sniffing of the highly concentrated chemicals in solvents or aerosol sprays can induce irregular and rapid heart rhythms and lead to heart failure and death within minutes of a session of prolonged sniffing. This syndrome, known as "sudden sniffing death," can result from a single session of inhalant use. Chronic exposure to inhalants can produce significant, sometimes irreversible, damage to the heart, lungs, liver, and kidneys.

In addition to the toxic dangers of inhalants, research has shown that toluene, a solvent in many inhalants, promotes euphoria in the brain in the same way that cocaine, amphetamine/ methamphetamine, PCP, and nicotine promote euphoria. This finding emphasizes the addictive nature of inhalants.[15]

- The prevalence of lifetime inhalant use among high school students continues to drop. Nevertheless, 8% of Wisconsin high school students in 2011 reported having used inhalants to get high at some point in their lifetime (Figure 47).

Figure 47. Prevalence of lifetime inhalant use among high school students, Wisconsin and the United States, 2001-2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

[15] U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), National Clearinghouse for Alcohol and Drug Information, 2005.

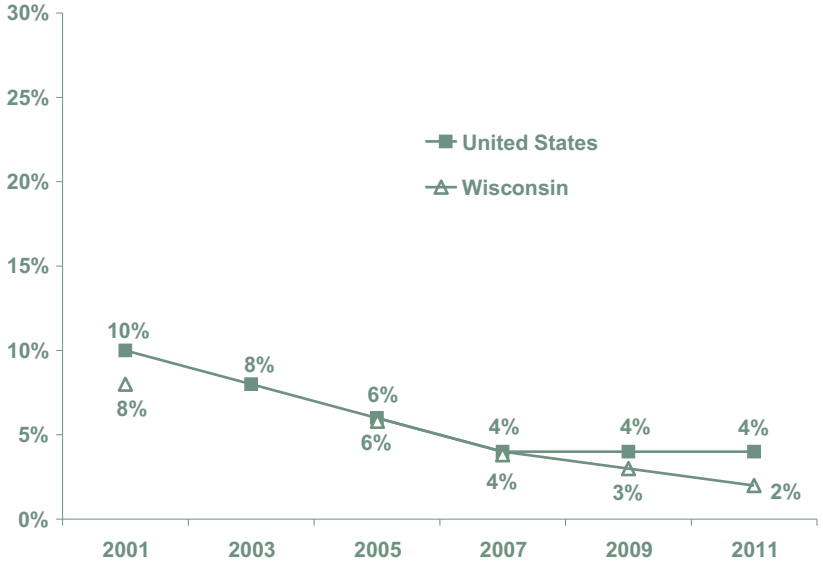
Methamphetamines

As well as being highly addictive, methamphetamine use can lead to neurological damage and psychotic behaviors.

- Lifetime methamphetamine use among Wisconsin high school students decreased between 2001 and 2011, following a national trend. The prevalence of lifetime methamphetamine use among Wisconsin high school students was 8% in 2001 and 2% in 2011 (Figure 48).

- Among high school students in 2009-2011, white students reported the lowest prevalence of lifetime methamphetamine use (2%), while multiracial students reported the highest (7%, Table 34).

Figure 48. Lifetime methamphetamine use among high school students, Wisconsin and the United States, 2001-2011



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention. (Question on methamphetamine use was not asked in 2003.)

Table 34. Prevalence of lifetime methamphetamine use among high school students, by race/ethnicity, Wisconsin, 2001-2011

Race/Ethnicity	*2001-2005**	*2005-2007*	*2007-2009*	*2009-2011*
White	6%	5%	3%	2%
African American	3%	3%	4%	5%
Hispanic/Latino	7%	6%	**	**
Asian or Pacific Islander	13%	10%	8%	6%
American Indian or Alaskan Native	**	**	**	**
Multiracial	15%	8%	7%	7%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.

* Question on methamphetamine use was not asked in 2003.
* * Too few cases to produce a reliable estimate.

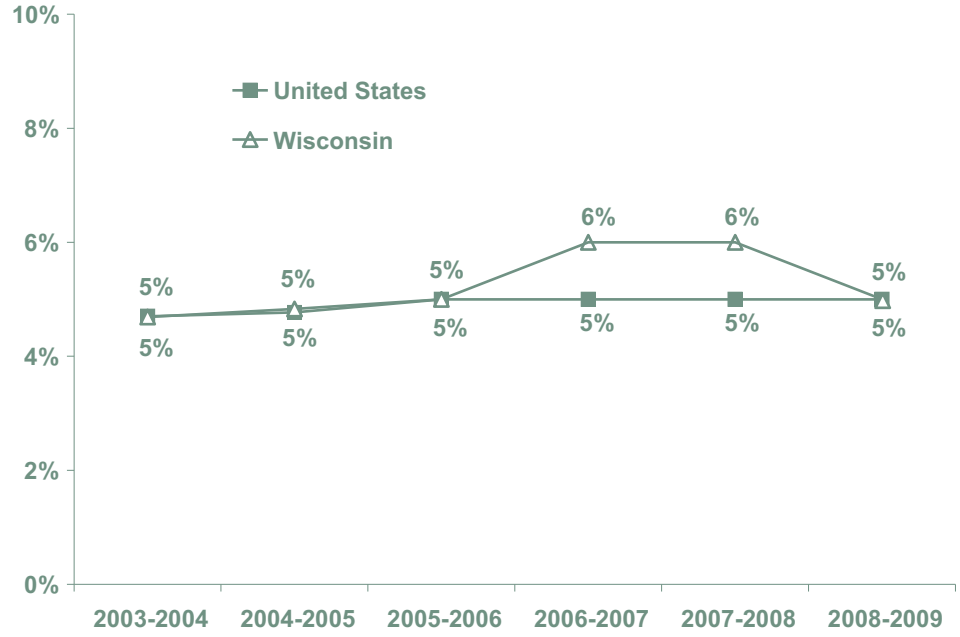
Non-Medical Use of Prescription Drugs

Non-medical use of prescription drugs continues to be a problem in Wisconsin. Nationally, emergency department visits involving non-medical use of two types of prescription drugs (opioid analgesics and benzodiazepines) more than doubled from 2004 to 2008. Emergency department visits for misused prescription and over-the-counter drugs are now as common as visits for use of illicit drugs.[16] National data show that overdose deaths involving opioid pain relievers (analgesics) now exceed deaths involving heroin and cocaine combined.[17]

- Eighteen percent (18%) of Wisconsin high school students in 2011 reported using prescription drugs ("such as OxyContin, Percocet, Vicodin, Adderal, Ritalin, or Xanax") for non-medical purposes at some point in their lives (Figure 41, page 74). This was down from 21% in 2009 and 23% in 2007.

- During 2008-2009, 5% of Wisconsin residents ages 12 and older reported using pain relievers for non-medicinal purposes in the past year (Figure 49). This was the same prevalence reported nationally (5%). The prevalence of use was highest among young adults ages 18 to 25 (13%, Figure 42).

Figure 49. Prevalence of use of prescription pain relievers for non-medical purposes in the past year, age 12 and older, Wisconsin and the United States, 2003-2009



Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

[16] Centers for Disease Control and Prevention. 2010. Emergency department visits involving non-medical use of selected prescription drugs—United States, 2004-2008. *Morbidity and Mortality Weekly Report*. June 18, 2010 / 59(23); 705-709.
[17] Centers for Disease Control and Prevention. 2011. Vital Signs: Overdoses of prescription opioid pain relievers—United States, 1999-2008. *Morbidity and Mortality Weekly Report*. Nov. 4, 2011 / 60(43);1487-1492.

Community and Individual Risk Factors

Community-level factors that heighten the risk of experiencing problems with alcohol and other drug use include alcohol outlet density; that is, the per capita number of alcohol outlets in a community. Individual factors that increase the risk of alcohol and other drug use include childhood victimization, post-traumatic stress disorder and other effects of trauma, and depression.

Alcohol Outlet Density

Community-level factors that heighten the risk of experiencing problems with alcohol include the per capita number of alcohol outlets in a community.[18]

Table 35 (next two pages) shows Wisconsin county-level information about the number of alcohol licenses in relation to the number of people in the county.

- In 2011-2012, the overall alcohol outlet density in Wisconsin was 1.5 outlets per 500 people.

- Differences in alcohol outlet density by county are difficult to interpret. Rural counties may have a higher number of outlets relative to population, but these outlets may be small and serve many fewer people than a single outlet in a large city. Also, county-level rates may mask great variations in density for various locations within a given county.

[18] Popova S, Giesbrecht N, Bekmuradov D, and Patra J. Hours and days of sale and density of alcohol outlets: impacts on alcohol consumption and damage: a systematic review. Alcohol and Alcoholism (2009) 44 (5): 500-516. http://alcalc.oxfordjournals.org/content/44/5/500.full

Table 35. Alcohol outlet density (licenses per 500 population), by county, Wisconsin 2011-2012

County	2011 Population	2011-2012 Licenses Issued	Licenses per 500 Population
Adams	20,935	100	2.4
Ashland	16,064	115	3.6
Barron	45,925	163	1.8
Bayfield	15,036	150	5.0
Brown	249,192	662	1.3
Buffalo	13,620	84	3.1
Burnett	15,448	97	3.1
Calumet	49,109	128	1.3
Chippewa	62,610	228	1.8
Clark	34,719	141	2.0
Columbia	56,850	179	1.6
Crawford	16,600	96	2.9
Dane	489,331	1,110	1.1
Dodge	88,789	277	1.6
Door	27,765	248	4.5
Douglas	44,176	210	2.4
Dunn	43,787	109	1.2
Eau Claire	99,012	241	1.2
Florence	4,337	43	5.0
Fond du Lac	101,740	307	1.5
Forest	9,180	83	4.5
Grant	51,280	202	2.0
Green	36,884	108	1.5
Green Lake	19,091	89	2.3
Iowa	23,720	101	2.1
Iron	5,828	89	7.6
Jackson	20,475	99	2.4
Jefferson	83,794	277	1.7
Juneau	26,725	136	2.5
Kenosha	166,632	400	1.2
Kewaunee	20,594	104	2.5
La Crosse	114,919	324	1.4
Lafayette	16,880	81	2.4
Langlade	19,901	116	2.9
Lincoln	28,668	154	2.7
Manitowoc	81,406	288	1.8
Marathon	134,414	410	1.5

Table 35. Alcohol outlet density (licenses per 500 population), by county, Wisconsin 2011-2012 (continued)

County	2011 Population	2011-2012 Licenses Issued	Licenses per 500 Population
Marinette	41,719	227	2.7
Marquette	15,392	71	2.3
Menominee	4,202	27	3.2
Milwaukee	948,369	1,960	1.0
Monroe	44,877	132	1.5
Oconto	37,723	196	2.6
Oneida	35,962	259	3.6
Outagamie	177,455	491	1.4
Ozaukee	86,530	215	1.2
Pepin	7,461	47	3.1
Pierce	41,085	121	1.5
Polk	44,244	159	1.8
Portage	70,370	227	1.6
Price	14,000	102	3.6
Racine	195,225	504	1.3
Richland	18,045	54	1.5
Rock	160,287	326	1.0
Rusk	14,703	90	3.1
St. Croix	61,951	277	2.2
Sauk	16,600	201	6.1
Sawyer	41,954	228	2.7
Shawano	115,569	369	1.6
Sheboygan	84,503	198	1.2
Taylor	20,681	99	2.4
Trempealeau	28,905	137	2.4
Vernon	29,849	102	1.7
Vilas	21,444	240	5.6
Walworth	102,485	334	1.6
Washburn	15,900	100	3.1
Washington	132,206	322	1.2
Waukesha	390,267	760	1.0
Waupaca	52,392	214	2.0
Waushara	24,531	102	2.1
Winnebago	167,245	426	1.3
Wood	74,669	232	1.6
Wisconsin	**5,694,236**	**17,298**	**1.5**

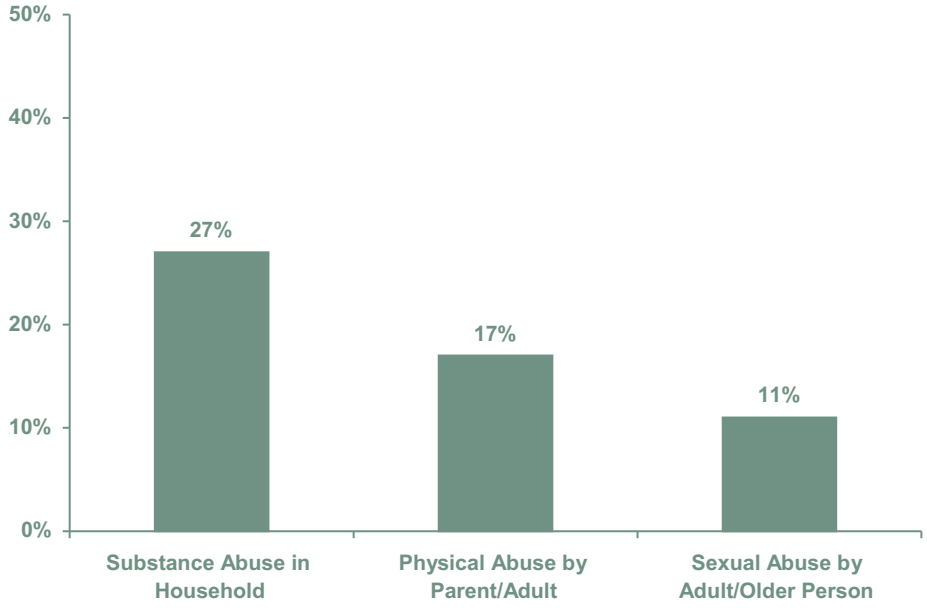
Source: Wisconsin Department of Revenue, reflecting liquor licenses issued and reported to the DOR for the period beginning July 1, 2011 and expiring July 1, 2012. Population estimates for January 1, 2011, are from the Wisconsin Department of Administration.

Early Life Experiences

Certain early-life experiences are known to be associated with a higher risk for adult mental health problems and substance abuse. These experiences include childhood physical abuse, sexual abuse, and substance abuse in the household. The relationship between childhood experiences and adult substance abuse was documented in a recent Wisconsin report.[19]

- In 2010, 27% of Wisconsin adults reported they experienced substance abuse in their home environment while growing up (Figure 50).
- Seventeen percent (17%) reported being physically abused ("hit, beaten or kicked") by a parent or another adult "more than once."
- Eleven percent (11%) reported they had been sexually abused as a child ("ever touched by, or made to touch, an adult or person at least five years older, or forced to have sex by an adult or a person at least five years older").

Figure 50. Prevalence of physical abuse, sexual abuse, or home environment substance abuse before age 18, Wisconsin 2010



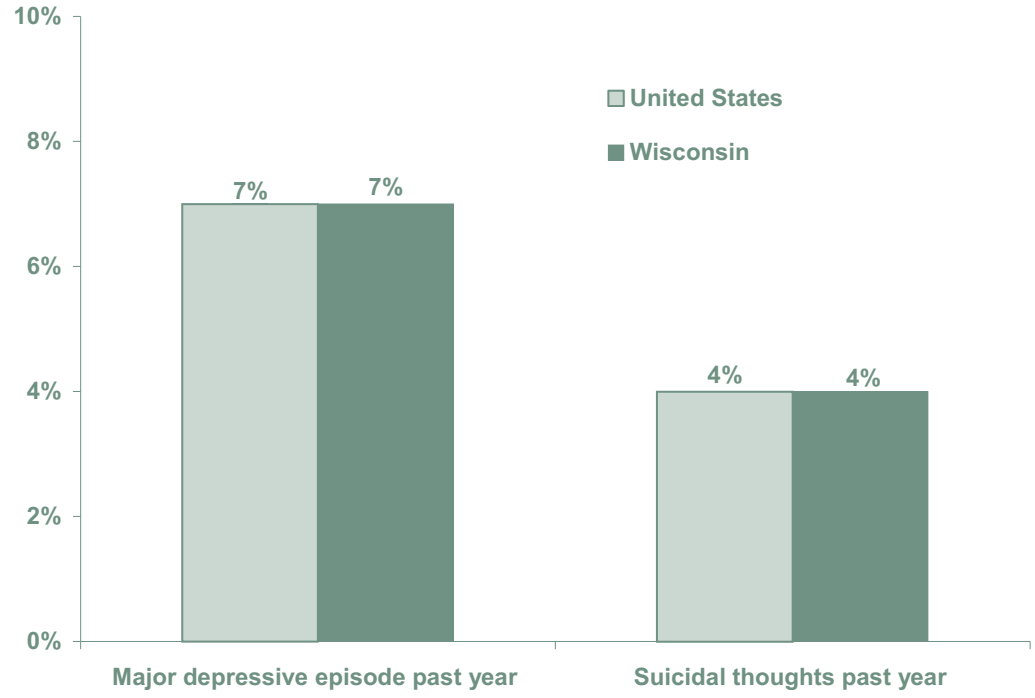
Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services.

[19] O'Connor C., Finkbiner C., and Watson L. (2012). Adverse Childhood Experiences in Wisconsin: Findings from the 2010 Behavioral Risk Factor Survey. Madison, Wisconsin: Wisconsin Children's Trust Fund and Child Abuse Prevention Fund of Children's Hospital & Health System. http://wichildrenstrustfund.org/files/WisconsinACEs.pdf

Substance abuse and mental health problems frequently co-occur.[20]

- In 2008-2009, an estimated 7% of Wisconsin adults reported experiencing a "major depressive episode" in the past year, and 4% reported serious suicidal thoughts in the past year (Figure 51).

Figure 51. Prevalence of major depressive episode and serious suicidal thoughts in past year, Wisconsin and the United States, 2008-2009



Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

[20] Wisconsin Department of Health Services. *Linking Mental and Physical Health: Results from the Wisconsin Behavioral Risk Factor Survey* (P00066). Prepared by the Bureau of Health Information and Policy, Division of Public Health; and the Bureau of Prevention, Treatment and Recovery, Division of Mental Health and Substance Abuse Services. April 2009. Available at http://www.dhs.wisconsin.gov/stats/brfs.htm.

Conclusion

The social, economic and health costs of substance abuse in Wisconsin continue to be high. The latest available data show that Wisconsin has 1.4 times the national rate of arrests for OWI (operating a motor vehicle while intoxicated) and more than three times the national rate of arrests for liquor law violations. For most years since 2000, Wisconsin's rate of deaths due to alcohol-related motor vehicle crashes was higher than the national average as well.

These high rates of alcohol-related consequences are not surprising given Wisconsin's high rate of alcohol consumption. Wisconsin has the highest rate of adult binge drinking in the nation. Wisconsin continues to have the nation's highest rate of drinking and driving. Per capita alcohol consumption in Wisconsin is higher than the national average. Rates of underage drinking (by youth ages 12-20) and underage binge drinking are also higher compared to rates for the United States.

Wisconsin has recently made progress in reducing alcohol consumption among youth. The rate of drinking among Wisconsin high school students declined from 2001 to 2011. Combined with a steadily increasing age of initiation, and falling rates of underage binge drinking, Wisconsin continues to show improvement in youth alcohol use.

In another welcome change, alcohol-related motor vehicle deaths have decreased. For the three most recent years, Wisconsin's rate of alcohol-related motor vehicle fatalities has been similar to the national rate after years of exceeding it.

Wisconsin rates of drug-related deaths and drug law arrests continue to be lower than national averages. However, the rate of drug-related deaths in Wisconsin increased steadily from 2000 to 2006 before leveling off in subsequent years. The 2010 rate of drug-related deaths was nearly twice what it was at the beginning of the decade.

In response to the growing problem of misuse and abuse of pharmaceutical drugs, both nationally and in Wisconsin, the State Council on Alcohol and Other Drug Abuse established a Controlled Substances Workgroup to examine this issue. In January 2012 the Workgroup issued a report of its findings, documenting Wisconsin's prevalence of and recommendations to reduce and prevent the abuse and misuse of pharmaceutical drugs. The report identifies the prescription drugs most often abused in Wisconsin, including drugs of abuse with high consequences. It also examines the role of community coalitions, substance abuse prevention and treatment providers, law enforcement and the judicial system, the medical community, schools, and legislative and state agencies in preventing this abuse.

An important aspect of prevention services is the ability to track the needs of communities through epidemiological factors. Resources can then be allocated to address the problem using evidence-based programming. As part of Wisconsin's data-driven approach to prevention funding, this Profile (and earlier editions) have identified key consequences of alcohol and other drug abuse in the state. The priorities defined in this series of Profiles are being used to assist local organizations/governments to address those specific consequences.

Based on the latest available data presented in this report, addressing the following five priorities remains critical for Wisconsin communities:

- Underage drinking (ages 12-20)
- Adult binge drinking (ages 18-34)
- Drinking among pregnant women
- Alcohol-related motor vehicle fatalities and injuries (especially among people ages 16 to 34)
- Drug-related deaths (with a focus on unintentional opioid-related overdoses and deaths among people ages 20-54).

The *2012 Wisconsin Epidemiological Profile on Alcohol and Other Drug Use* focuses on key problem areas at both the state and local levels to guide Wisconsin's funding decisions for the greatest potential impact.

APPENDIX 1
Indicator Definitions

Measures of Consequences

Mortality

- Number of deaths – Numbers of cause-specific deaths were derived from Wisconsin and United States death certificate data. See Appendix 2 ("Mortality data" section) for details about the data source and methods.

- Age-adjusted mortality rate – Age-adjusted rates per 100,000 population were calculated using the direct method based on the year 2000 U.S. standard population.

Motor Vehicle Deaths and Injuries

Alcohol-related motor vehicle crashes are those in which at least one driver, pedestrian or bicyclist was drinking before the crash.

- Alcohol-related motor vehicle deaths – Deaths resulting from alcohol-related crashes that occur within 30 days of the crash. Includes drivers, passengers, pedestrians and bicyclists.

  Note: Alcohol-related motor vehicle death data in this report come from two sources: the Fatality Analysis Reporting System (national and state-level deaths) and the *Traffic Crash Facts* report produced by the Wisconsin Department of Transportation (county-specific deaths). For more information about how the two sources compile total numbers of deaths, see Appendix 2, "Other Data Sources for this Report."

- Alcohol-related motor vehicle injuries – Nonfatal injuries resulting from motor vehicle crashes where alcohol was determined to be a factor, including injuries to drivers, passengers, pedestrians and bicyclists.

Hospitalizations

- Numbers of hospitalizations – The number of hospitalizations (hospital inpatient discharges) related to alcohol and the number related to use of other drugs. See Appendix 3, "Wisconsin inpatient hospitalization data" section, for details about the data source and methods.

- Hospitalization rate – The rate of alcohol-related hospitalizations per 100,000 population, and the rate of other drug-related hospitalizations per 100,000 population.

- Hospital charges – Total hospital charges for alcohol-related hospitalizations, and total hospital charges for drug-related hospitalizations. Hospital charges are the total facility charges for the entire length of stay. Charges are not the same as the actual costs paid by any particular payer, which depend on negotiated discounts and other

arrangements, and do not include physicians' and other professional fees. Hospital charges in this report have not been adjusted for inflation.

Crime and Arrests

- Wisconsin and county – Crimes and arrests reported by Wisconsin law enforcement agencies using the Wisconsin Uniform Crime Reporting System to the Federal Bureau of Investigation (FBI) and the Wisconsin Office of Justice Assistance (OJA) Statistical Analysis Center. Crime rates per 100,000 population are defined and calculated as the number of crimes divided by population, multiplied by 100,000.

- United States – Crimes and arrests reported to the FBI by law enforcement agencies using the Uniform Crime Reporting System.

Dependence or Abuse

- Alcohol or Drug Abuse – DSM-IV definition of abuse is one or more of the following in the same 12-month period:

  1) Recurring use resulting in failure to fulfill important role obligations, 2) recurrent use in situations in which it is physically hazardous, 3) recurrent substance-related legal problems, and 4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance. In addition, symptoms have never met criteria for dependence.

- Alcohol or Drug Dependence - DSM-IV definition of dependence is three or more of the following in the same 12-month period:

  1) Tolerance, 2) withdrawal, 3) substance often taken in larger amounts or over a longer period than intended, 4) persistent desire or unsuccessful efforts to cut down or control substance use, 5) a great deal of time spent in activities necessary to obtain the substance, use it, or recover from its effects, 6) important social, occupational, or recreational activities given up or reduced because of substance use, 7) use continued despite knowledge of having a persistent physical or psychological problem that is likely to have been caused or exacerbated by the substance.

For information about the incorporation of DSM-IV definitions of substance abuse and dependence into National Survey on Drug Use and Health measures, go to: http://www.oas.samhsa.gov/Dependence/appendixc.htm

Publicly Funded Treatment

The number of alcohol and other drug abuse clients in Wisconsin receiving publicly funded services and the total public funds expended for alcohol and other drug abuse treatment in the state were obtained from the Human Services Reporting System, Division of Mental Health and Substance Abuse Services, Wisconsin Department of Health Services. No comparable United States data on public funds expenditures were available.

The reported total public funds expended were adjusted for inflation to 2008 dollars (the most recent year of data) using the U.S. Bureau of Labor Statistics Consumer Price Index Inflation Calculator (http://www.bls.gov). The CPI inflation calculator uses the average Consumer Price Index for a given calendar year. Data represent changes in prices of all goods and services purchased for consumption by urban households. For the current year, the latest monthly index value is used.

Measures of Consumption: Alcohol

Age of Initiation

Youth Risk Behavior Survey (YRBS): The percentage of students who used alcohol ("more than a few sips") before age 13.

Current Alcohol Use

- Youth Risk Behavior Survey (YRBS): At least one drink of alcohol on one or more of the past 30 days.
- Behavioral Risk Factor Survey (BRFS): At least one drink of alcohol in the past 30 days.

Binge Drinking

- Youth Risk Behavior Survey (YRBS): Five or more drinks of alcohol in a row on one or more of the past 30 days.
- Behavioral Risk Factor Survey (BRFS): Five or more drinks on one occasion, one or more times in the past 30 days (both sexes, through 2005). As of 2006, the threshold for women was changed to four drinks on one occasion in the past 30 days.

Heavy Use of Alcohol

Behavioral Risk Factor Survey (BRFS): More than two drinks per day for men and more than one drink per day for women.

Per Capita Consumption of Alcohol

National Institute on Alcohol Abuse and Alcoholism (NIAA): Per capita gallons of ethanol sold in a state, based on the population age 14 and older.

Underage Drinking

National Survey on Drug Use and Health (NSDUH): Drinking among youth 12-20 years of age, with current drinking defined as alcohol use in the past month, and binge drinking as five or more drinks on at least one day in the past month.

Measures of Consumption: Illicit Drugs

Age of Initiation (Marijuana)

Youth Risk Behavior Survey (YRBS): The percentage of students who tried marijuana for the first time before age 13.

Current Use of Illicit Drugs

- **Current use of marijuana**
  - National Survey on Drug Use and Health (NSDUH): Smoked marijuana in the last month.

  - Youth Risk Behavior Survey (YRBS): Used marijuana one or more times during the past 30 days.

- **Current use of cocaine**
  - National Survey on Drug Use and Health (NSDUH): Used cocaine in the last year.
  - Youth Risk Behavior Survey (YRBS): Used any form of cocaine one or more times during the past 30 days.

- **Current use of illicit drugs other than marijuana**
  - Youth Risk Behavior Survey (YRBS): Used any illicit drugs other than marijuana in the past 30 days.
  - National Survey on Drug Use and Health (NSDUH): Used any illicit drugs other than marijuana in the past month.

- **Current use of pain relievers for non-medical purposes**
  - Youth Risk Behavior Survey (YRBS): Used pain relievers for non-medical purposes in the past 30 days.
  - National Survey on Drug Use and Health (NSDUH): Used pain relievers for non-medical purposes in the past year.

Lifetime Use of Illicit Drugs

- **Lifetime use of marijuana**, Youth Risk Behavior Survey (YRBS): Ever used marijuana, one or more times.

- **Lifetime use of cocaine**, Youth Risk Behavior Survey (YRBS): Ever used any form of cocaine, one or more times.

- **Lifetime use of inhalants**, Youth Risk Behavior Survey (YRBS): Ever "sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high," one or more times.

- **Lifetime use of heroin,** Youth Risk Behavior Survey (YRBS): Ever used heroin, one or more times.

- **Lifetime use of methamphetamines**, Youth Risk Behavior Survey (YRBS): Ever used methamphetamines, one or more times.

APPENDIX 2
Data Sources

Survey Data: Sample Sizes and Error

Much of the data in this report come from surveys of the Wisconsin population. Estimates derived from surveys differ in their level of precision. Although sample size is not the only factor in determining the amount of potential error in a point estimate, it can provide a general guide. Estimates based on surveys with smaller sample sizes will tend to have wider confidence intervals than estimates from surveys with larger samples.

Readers should also note that sample sizes provided in the table below are for all of Wisconsin. Sample sizes will be much smaller for subgroups of the population, particularly racial subgroups. Although the report includes very few estimates for groups with a sample size smaller than 100, all subgroup estimates should be interpreted with confidence intervals ranging from plus or minus 4 percentage points to plus or minus 10 percentage points.

Table A1 shows Wisconsin statewide sample sizes for the Behavioral Risk Factor Survey (BRFS), the Youth Risk Behavior Survey (YRBS), the National Survey on Drug Use and Health (NSDUH), and the Pregnancy Risk Assessment Monitoring System (PRAMS). Details of each survey follow the table.

Table A1. Survey data included in this report: Wisconsin sample sizes

Survey	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
BRFS—Main sample	2,721	3,605	4,356	4,054	4,503	4,900	4,831	5,021	4,729	4,553	4,781	
BRFS—County oversample*							3,701	2,414	2,346			
YRBS		2,120		2,121		2,389		2,094		2,434		3,043
NSDUH**			887	887	917	915	915	968	883	943		
PRAMS								1,874	1,878			

* BRFS county estimates in the report are based on three-year aggregations of data (2004-2006, 2005-2007 and 2006-2008) and are weighted to represent county populations.

** NSDUH estimates in the report are based on two-year aggregations of data.

Methodological Information about the Surveys

Behavioral Risk Factor Survey (BRFS)

www.cdc.gov/brfss and dhs.wisconsin.gov/stats/BRFS.htm
The Wisconsin Behavioral Risk Factor Survey is a representative, statewide telephone survey of adults age 18 and older. The Wisconsin BRFS is part of the national Behavioral Risk Factor Surveillance System (BRFSS), a collaboration between the U.S. Centers for Disease Control and Prevention (CDC) and health departments in all states and U.S. territories. BRFSS is state-based and does not have a separate national sample. National BRFSS estimates are the medians (midpoints) of the distributions of state-level estimates. CDC weights BRFSS data by state to account for non-response and sample design, and to adjust for the demographic characteristics of state populations. Wisconsin county-specific BRFS estimates in this report were calculated using a three-year aggregated data file re-weighted to represent each county's population. BRFSS now conducts both landline and cell phone interviews in all states and territories, and the first public release of combined landline-cell phone data will be for the year 2011.

BRFSS landline sampling procedures exclude adults living in institutions and other group quarters. CDC calculates post-survey weights for each state's/territory's annual BRFSS landline results and provides weighting variables for use in analyzing the data. Weighted results in this report are representative of state and territory adult populations residing in households with landline telephones.

Early estimates indicate that the cell phone-only population has a higher rate of binge drinking than the population with landline telephones (Blumberg and Luke, 2009; 2008 Wisconsin BRFS Cell Phone Pilot, unpublished data); this differences does not appear to be solely a function of the younger average age of cell phone-only users. Accordingly, given the continuing increase in cell-only telephone users (now approximately 20% of the population), binge drinking estimates based only on landline survey data are likely to underestimate prevalence by 2 to 3 percentage points. (Reference: Blumberg, S.J. and J.V. Luke. 2009. “Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July-December, 2008.” U.S. Centers for Disease Control and Prevention.)

Youth Risk Behavior Survey (YRBS)

www.dpi.state.wi.us/sspw/yrbsindx.html
The Youth Risk Behavior Surveillance System, of which the Wisconsin Youth Risk Behavior Survey is a part, is a school-based survey conducted among students in grades 9-12 in public high schools. The Youth Risk Behavior Survey (YRBS) has both national and state samples. The state and national samples are separate, and in some cases, schools may be selected as part of both samples. The YRBS is conducted every two years in odd-numbered years. The Wisconsin Department of Public Instruction (DPI) oversees the administration of the Wisconsin YRBS.

Sampling for state YRBS follows a two-stage cluster design. Schools are selected as clusters using probability proportional to size, and classes are randomly selected within schools from among required subjects or time periods.

Sampling for the national YRBS is a three-stage procedure, with counties and groups of counties as the first stage.

National Survey on Drug Use and Health (NSDUH)

nsduhweb.rti.org/
The National Survey on Drug Use and Health (formerly the National Household Survey on Drug Abuse) is a scientific, annual survey of the U.S. population age 12 and older, sponsored by the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) in the U.S. Department of Health and Human Services. The universe of NSDUH respondents includes persons living in households, non-institutionalized group quarters (including shelters, rooming houses, college dormitories, migrant workers' camps and halfway houses), and civilians living on military bases. Interviews are conducted face-to-face at the respondent's residence.

NSDUH uses small-area estimation (SAE) to produce estimates for most states, including Wisconsin, as state-level samples are not large enough to produce direct estimates.

Additional information about NSDUH methodology can be found at http://www.oas.samhsa.gov/nhsda/methods.cfm#2k6.

PRAMS (Pregnancy Risk Assessment Monitoring System)

The Pregnancy Risk Assessment Monitoring System, or PRAMS, is a system of state-level surveys of women who have recently given birth, coordinated by the Centers for Disease Control and Prevention. The number of states participating in PRAMS varies slightly from year to year, but generally is between 28 and 30.

PRAMS uses a multi-wave mailed survey, sent to monthly random samples of new mothers, with telephone follow-up to non-responders. PRAMS asks new mothers about their experiences, risk behaviors and health before, during and shortly after pregnancy. Some PRAMS questions are mandated by CDC and are common to all participating states, while other questions are selected by states in keeping with their own priorities and available local funding. Wisconsin PRAMS uses both English and Spanish mailed materials and conducts telephone interviews in both languages.

The Wisconsin PRAMS Program is located in the Division of Public Health, Office of Health Informatics. More information is available at http://www.cdc.gov/prams/ and http://www.dhs.wisconsin.gov/births/prams/.

Other Data Sources for this Report

Mortality Data

Data on deaths of Wisconsin residents from alcoholic liver cirrhosis, alcohol-related causes *other than* cirrhosis and motor vehicle crashes, and drug-related causes were obtained by the Health Analytics Section of the Division of Public Health from Wisconsin resident death certificate files. U.S. data were obtained from CDC Wonder (http://wonder.cdc.gov/mortSQL.html), Centers for Disease Control and Prevention.

Data on alcohol-related crash deaths were obtained from the Fatality Analysis Reporting System (see below).

Data on deaths from recreational vehicle crashes are from the Wisconsin Department of Natural Resources (http://dnr.wi.gov/).

Estimating other alcohol-related mortality: The numbers of alcohol-related deaths from causes other than alcoholic liver cirrhosis and motor vehicle crashes were estimated from the Wisconsin mortality file using Alcohol-Related Disease Impact (ARDI) specifications from the National Center for Chronic Disease Prevention and Health Promotion. (See http://apps.nccd.cdc.gov/ARDI/HomePage.aspx). These specifications define 54 conditions or groups of conditions and associate each with a distinct fraction of cases attributable to alcohol. Staff from the Division of Public Health, Office of Health Informatics, used the ARDI specifications to identify deaths from these conditions with the ICD-10 codes specifying underlying causes of death. The alcohol-attributable deaths were then estimated by multiplying the number for each condition by the associated alcohol-attributable fraction and summing over conditions.

- A table showing the alcohol-related conditions, their ICD-10 codes, and the alcohol-attributable mortality fraction for each is available by request from the Division of Public Health, Office of Health Informatics (DHShealthstats@wisconsin.gov).

Fatality Analysis Reporting System (FARS)

Mortality data on traffic crashes in Wisconsin and the United States are from the Fatality Analysis Reporting System, a comprehensive, national traffic fatality data system produced in conjunction with the National Highway Traffic Safety Administration (NHTSA). FARS incorporates data from multiple sources to arrive at the total number of deaths, by state, attributable to motor vehicle crashes, for both overall crashes and crashes where alcohol was a factor. FARS draws on the following sources of data:

- Police accident reports (PARS)
- State vehicle registration files
- State driver licensing files
- State highway department data
- Vital statistics
- Death certificates
- Coroner/medical examiner reports
- Hospital medical records
- Emergency medical service reports

For additional information about FARS, see: http://www.nhtsa.gov/FARS

Wisconsin Inpatient Hospitalization Data

Data on inpatient discharges are reported quarterly by all non-federal Wisconsin hospitals, as required by Wisconsin statute and rule. These data are extensively edited and corrected.

Estimating alcohol-related hospitalizations: As was done for alcohol-related mortality, the numbers of alcohol-related hospitalizations were estimated from Wisconsin inpatient hospitalization data using Alcohol-Related Disease Impact (ARDI) specifications from the National Center for Chronic Disease Prevention and Health Promotion. (See http://apps.nccd.cdc.gov/ARDI/HomePage.aspx). These specifications define 54 conditions or groups of conditions and associate each with a distinct fraction of cases attributable to

alcohol. Staff from the Office of Health Informatics used the ARDI specifications to identify hospitalizations for these conditions with the ICD-9 codes specifying the principal diagnosis and the first eight other reported diagnoses. The alcohol-attributable hospitalizations were then estimated by multiplying the number for each condition by the associated alcohol-attributable fraction and summing over conditions.

- A table showing the alcohol-related conditions, their ICD-9 codes, and the alcohol-attributable fraction for each is available by request from the Health Analytics Section of the Office of Health Informatics (DHShealthstats@wisconsin.gov).

Drug-related hospitalizations: Drug-related hospitalizations were defined using the following ICD-9 codes:

ICD-9 Code	*Description*
292	Drug psychoses
304	Drug dependence
357.6	Polyneuropathy due to drugs
E850-E858	Accidental poisoning by drugs, medicinal substances, and biologicals
E980.0-E980.5	Poisoning by drugs and medicinal substances, unknown whether accidentally or purposefully inflicted

In the Office of Health Informatics, hospital data system records for all Wisconsin residents hospitalized as inpatients in a Wisconsin hospital and discharged in the years 2007-2008 and 2009-2010 were examined for the presence of the defined drug-related conditions in the ICD-9-coded principal diagnosis or any of the first eight other diagnoses reported.

Population Estimates, Statewide and by County

The Department of Health Services, Office of Health informatics, produces mid-year population estimates for the counties and state of Wisconsin by age groups, sex, race and ethnicity for non-Census years. These estimates are used to calculate population-based health statistics, including the rates in this report except those obtained directly from national sources. The population data used to calculate the rates in this report are available from the Wisconsin Interactive Statistics on Health (WISH) population module: http://dhs.wisconsin.gov/wish/main/wis_pop/wis_pop_home.htm

Crimes and Arrests in Wisconsin
http://oja.wi.gov/category.asp?linkcatid=1324&linkid=709&locid=97

Prepared annually by the Wisconsin Office of Justice Assistance Statistical Analysis Center, *Crime in Wisconsin* and *Arrests in Wisconsin* (formerly a single report titled *Crime and Arrests in Wisconsin*) provide numbers of crimes and arrests among adults and juveniles at the state and county levels. Crimes are reported by local law enforcement agencies using the Uniform Crime Reporting System.

It should be noted that the Office of Justice Assistance emphasizes sub-county-level crime rates, and in some instances shifts crime and population data from one county to another to provide more accurate information about city-level crime. For example, the city of Appleton includes areas in three counties, Calumet, Winnebago and Outagamie, and OJA shifts crime and population data for the portions of Appleton lying in Calumet and Winnebago Counties to Outagamie County in order to produce one Appleton city rate. Calumet County is particularly

affected by this practice, although all three counties are affected to some degree, and caution should be exercised in interpreting their rates.

Crime in the United States (CIUS)
http://www.fbi.gov/ucr/ucr.htm

Produced annually by the Federal Bureau of Investigation, U.S. Department of Justice, CIUS provides national and (some) state-level data on crimes and arrests. Data are transmitted to the FBI by state and local law enforcement agencies using the Uniform Crime Reporting System.

Wisconsin Traffic Crash Facts
http://www.dot.wisconsin.gov/safety/motorist/crashfacts/

Wisconsin Traffic Crash Facts is produced annually by the Wisconsin Department of Transportation and includes a separate sub-report on the role of alcohol in motor vehicle crash injuries and deaths. Injury and fatality data in the report are based on information provided to the state Division of Motor Vehicles in reports submitted by police officers on the scene of crashes.

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Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2012

Wisconsin Department of Health Services
P-45718-12 (09/2012)