Wisconsin Epidemiological Profile on Alcohol and Other Drugs, 2016

Wisconsin
Department of Health Services

University of Wisconsin
Population Health Institute
SCHOOL OF MEDICINE AND PUBLIC HEALTH

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

November 2016

Acknowledgements

The Wisconsin Department of Health Services (DHS) would like to thank the following people who contributed their expertise in developing the *Wisconsin Epidemiological Profile on Alcohol and Other Drugs, 2016*.

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

Suggested Citation
Wisconsin Department of Health Services, Division of Care and Treatment Services and Division of Public Health. **Wisconsin Epidemiological Profile on Alcohol and Other Drugs, 2016** (P-45718-16). Prepared by the Division of Care and Treatment Services, Division of Public Health, and the University of Wisconsin Population Health Institute. November 2016.

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Acronyms

ACEs	Adverse Childhood Experiences
AEDS	Alcohol Epidemiological Data System
ARDI	Alcohol-Related Disease Impact
ATVs	All-Terrain Vehicles
BAC	Blood Alcohol Content
BCD	Bureau of Communicable Diseases
BJIA	Bureau of Justice Information and Analysis
BPTR	Bureau of Prevention Treatment and Recovery
BRFS	Behavioral Risk Factor Survey (Wisconsin)
BRFSS	Behavioral Risk Factor Surveillance System (National)
BTS	Bureau of Transportation Safety
CDC	Centers for Disease Control and Prevention
CIUS	Crime in the United States
CM	Clinical Modification
CPI	Consumer Price Index
DCTS	Division of Care and Treatment Services (Formerly DMHSAS)
DHS	Department of Health Services (Wisconsin)
DHHS	Department of Health and Human Services (federal)
DMHSAS	Division of Mental Health and Substance Abuse Services (Currently DCTS)
DMV	Division of Motor Vehicles
DNR	Department of Natural Resources
DOJ	Department of Justice
DOR	Department of Revenue
DOT	Department of Transportation
DPH	Division of Public Health
DPI	Department of Public Instruction
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders Fourth Edition
DSPS	Department of Safety and Professional Services
ECC	Ethanol Conversion Coefficients
FARS	Fatality Analysis Reporting System
FASD	Fetal Alcohol Spectrum Disorders
FBI	Federal Bureau of Investigation
HCV	Hepatitis C virus
HIV	Human Immunodeficiency Virus
HSRS	Human Services Reporting System (used through 2012, now PPS)
ICD	International Statistical Classification of Diseases and Related Health Problems
ISES	Individual Student Enrollment System
MSAs	Metropolitan Statistical Areas
NAS	Neonatal Abstinence Syndrome
NCHS	National Center for Health Statistics
NHTSA	National Highway Traffic Safety Administration
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NIDA	National Institute on Drug Abuse
NSDUH	National Survey on Drug Use and Health
OHI	Office of Health Informatics
OJA	Office of Justice Assistance
OWI	Operating While Intoxicated
PARS	Police Accident Reports
PPS	Program Participation System

PRAMS	Pregnancy Risk Assessment Monitoring System
RSE	Relative Standard Errors
SAE	Small Area Estimation
SCAODA	State Council on Alcohol and Other Drug Abuse
SAMHDA	Substance Abuse and Mental Health Data Archive
SAMHSA	Substance Abuse and Mental Health Services Administration
SEOW	State Epidemiological Outcomes Workgroup
TEDS	Treatment Episode Data Set
UCR	Uniform Crime Reporting System
WISEdash	Wisconsin Information System for Education Data Dashboard
WISH	Wisconsin Interactive Statistics on Health
WHO	World Health Organization
YRBS	Youth Risk Behavior Survey (Wisconsin)
YRBSS	Youth Risk Behavior Surveillance System (National)

Executive Summary

The Wisconsin Department of Health Services (DHS) studies the patterns, causes, and effects of substance use to inform its prevention priorities. This effort started in 2006 with the establishment of the State Epidemiological Outcomes Workgroup (SEOW). Soon after, the first Epidemiological Profile on Alcohol and Other Drug Use in Wisconsin was published. New reports have been published every other year since 2006.

The *Wisconsin Epidemiological Profile on Alcohol and Other Drugs, 2016*, is a compilation of data from various sources. The indicators cover substance use, misuse, and abuse as well as the resulting consequences. Also included is a review of factors at the community and individual levels that increase the risk for substance use, misuse, and abuse. From each data source, this report presents the most recent available year of data, trend information from previous years, and United States (U.S.) comparisons when available. County-level data tables are included when available to assist in developing local needs assessments.

Alcohol Use Remains High
The per capita alcohol consumption rate in Wisconsin is 1.3 times higher than the national rate. The alcohol consumption rate for adults is 10 percentage points above the national rate (63% vs. 53%). Heavy drinking among adults is more common in Wisconsin than the nation as a whole. Wisconsin's rate of adult binge drinking (22%) is third highest across all states and U.S. territories. Wisconsin women of childbearing age consume alcohol at levels higher than their national peers.

Consequences of Alcohol Consumption Outpace National Rates
Given Wisconsin's alcohol consumption patterns, it is not surprising that the rates at which Wisconsin experiences the consequences associated with alcohol use have also tended to be higher than national rates. Since 2008, rates of alcohol abuse and dependence have been higher in Wisconsin than the nation as a whole. Wisconsin's rate of death from alcohol-related liver cirrhosis has risen since 2008 as has the rate of alcohol-related deaths from causes other than liver cirrhosis. The latest available data show that Wisconsin has 1.2 times the national rate of arrests for operating while intoxicated (OWI) and almost three times the national rate of arrests for liquor law violations. However, since 2010, Wisconsin's rate of alcohol-related motor vehicle deaths has been similar to the national rate.

Patterns of Other Drug Use Follow National Trends
Across the country and in Wisconsin there has been a surge in the use of prescription drugs for nonmedical purposes. The misuse of these substances is most prevalent among young adults. In 2013-2014, 9 percent of Wisconsin adults age 18-25 reported using pain relievers for nonmedical purposes in the past year. Among high school students in 2013, 15 percent reported illicit use of prescription drugs at some point in their lives.

Deaths Due to Improper Drug Use Increase
Wisconsin's age-adjusted rate of drug-related deaths increased from 2010 to 2015. Wisconsin's number of drug-related deaths has exceeded 500 in nine of the past 10 years. In 2015, 873 Wisconsin residents died as a direct consequence of illicit drug use. The most prevalent category of drug mentioned on death certificates for drug-related deaths in 2015 was "other opioids," by itself or in combination with other drugs. Heroin was the second most prevalent category and benzodiazepines were third. Wisconsin's rate of drug-related deaths is lower than the national rate.

Positive Trends Emerging
Wisconsin's rate of drinking among high school students has decreased since 2005, as has the proportion of Wisconsin students who initiate alcohol use before age 13. Also decreasing steadily is the

percentage of high school students who engage in binge drinking, now below the national rate. For the fifth 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 also has been declining steadily. While national rates for current and lifetime use of marijuana increased slightly in 2013, the Wisconsin rates decreased.

Five Areas of Focus

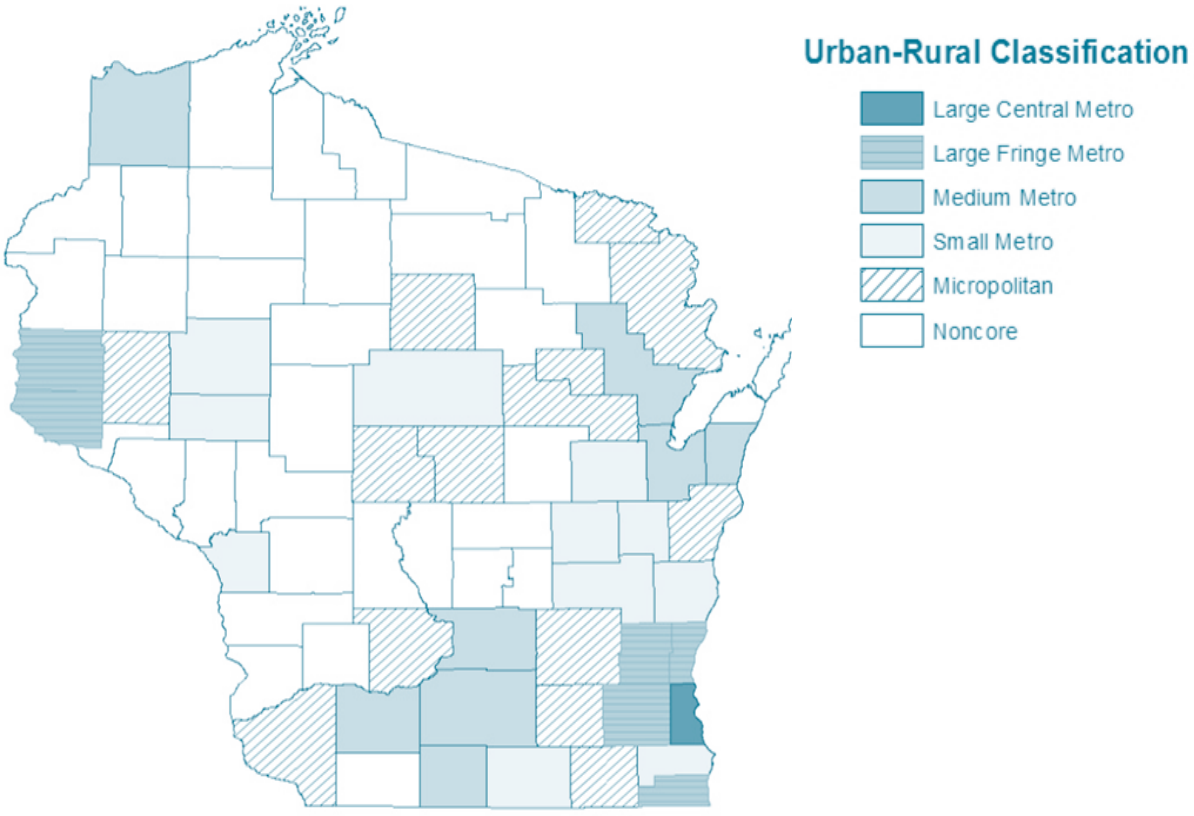
Based on the data presented in this report, DHS and its community partners are committed to addressing the following substance use issues that impact the health and safety of all state residents.

- Underage drinking (ages 12-20)
- Adult binge drinking (ages 18-34)
- Drinking among pregnant women
- Drinking and driving (especially among people ages 16 to 34)
- Opioid use for nonmedical purposes (with a focus on people ages 20-54).

Wisconsin Overview

Wisconsin is home to an estimated 5.8 million residents (U.S. Census Population Estimates, 2015). Wisconsin has a predominantly White population (86%), which is followed in size by Black or African American (6.3%), Asian (2.3%), two or more races (1.8%), and American Indian and Alaska Native (1.0%). In addition, 5.9 percent of Wisconsin residents are Hispanic or Latino.

Wisconsin covers more than 54,000 square miles. The state includes 72 counties; 190 cities, 407 villages, and 1,255 towns; and 11 federally recognized tribal nations (Wisconsin Demographic Services Center, 2015). There are very urban areas, such as Milwaukee County, with about 3,933 people per square mile, and very rural areas, such as Iron County with about 8 people per square mile (U.S. Census Bureau, 2010 Census; and Wisconsin Demographic Services Center 2015 Final Estimates).



Source: Ingram, D.D., and Franco, S.J. (2014). 2013 NCHS urban-rural classification scheme for counties. National Center for Health Statistics. Vital Health Stat 2(166). http://www.cdc.gov/nchs/data/series/sr_02/sr02_166.pdf
Note: See Appendix 1 for definitions of urban-rural classifications.

It is within the context of these demographic characteristics that substance use, misuse, and abuse in Wisconsin must be examined.

Consequences

Consequences of Alcohol Consumption

Alcohol is the most frequently consumed substance of use and misuse in Wisconsin, contributing to consequences that affect all state residents.

In 2015, alcohol was a factor in at least 2,008 deaths and 2,907 motor vehicle crash injuries in Wisconsin. In 2013, the economic burden resulting from excessive alcohol use totaled $6.8 billion dollars.[1]

Causes of death and injury can be either fully attributable to alcohol or partially attributable in a specified fraction to alcohol (see Alcohol-Related Deaths, below). Alcohol is also a factor in a large proportion of property and violent crimes (in addition to homicide, which is included in "other alcohol-related causes of death"), and the number of crimes attributable to alcohol are not currently quantifiable as they are for deaths and injuries.

Alcohol-Related Deaths

Alcohol is a factor in many causes of death. Some causes, such as alcoholic liver cirrhosis and alcohol-related motor vehicle crash deaths, are 100 percent attributable to alcohol, while fractions for other causes are much smaller. The Alcohol-Related Disease Impact (ARDI) software application specifications from the U.S. Centers for Disease Control and Prevention (CDC) identify 54 chronic and acute conditions for which a proportion, or fraction, of deaths is attributable to excessive alcohol use.[2] These proportions were applied to Wisconsin death records in 2015. Of the 51,251 deaths in Wisconsin in 2015, approximately 2,008 were attributable to excessive alcohol use. Of the alcohol-related deaths, 58 percent were due to acute conditions; 42 percent were due to chronic conditions.

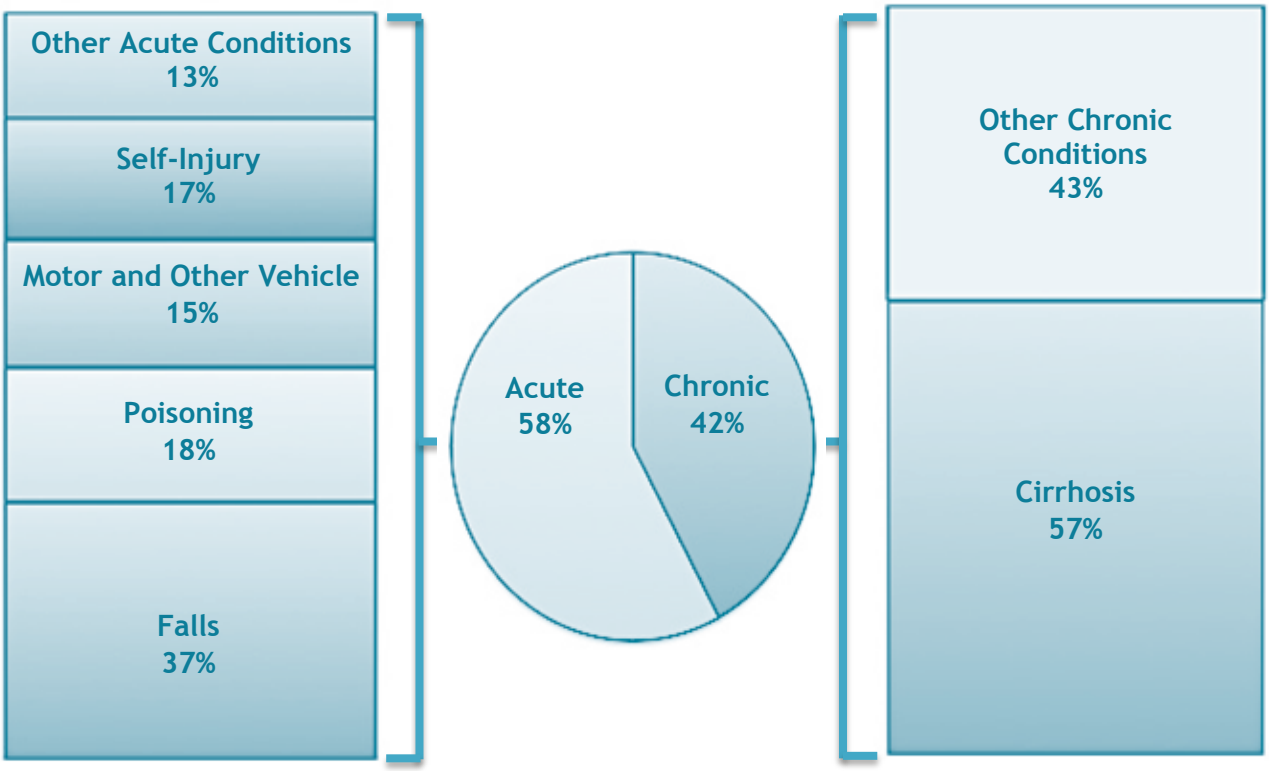
[1] Black P.D. and Paltzer J.T. (2013). The Burden of Excessive Alcohol Use in Wisconsin. University of Wisconsin Population Health Institute.

[2] For each of the 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).

In Wisconsin in 2015, the majority (58%) of alcohol-attributable deaths were from acute causes, such as motor-vehicle crashes, falls, and poisonings. The remaining 42 percent of alcohol-related deaths were from chronic conditions such as liver cirrhosis and cancer (Figure 1). Alcohol-attributable acute causes of death in the "other" category include homicide, drowning, firearm injury, hypothermia, aspiration, occupational injury, and child maltreatment. For more information on the International Statistical Classification of Diseases and Related Health Problems (ICD) codes corresponding to chronic and acute conditions included in the "other" category, see https://nccd.cdc.gov/DPH_ARDI/Info/Methods.aspx

The state-level rate of "other" alcohol-related deaths per 100,000 population has been gradually trending upward since 2004, and was at 25.9 deaths per 100,000 population in 2015 (not shown).

Figure 1. Alcohol-related deaths, Wisconsin by cause, 2015



Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services.
Note: Wisconsin resident deaths from acute (1,157) and chronic (851) alcohol-related causes in 2015 totaled 2,008.

Acute Conditions

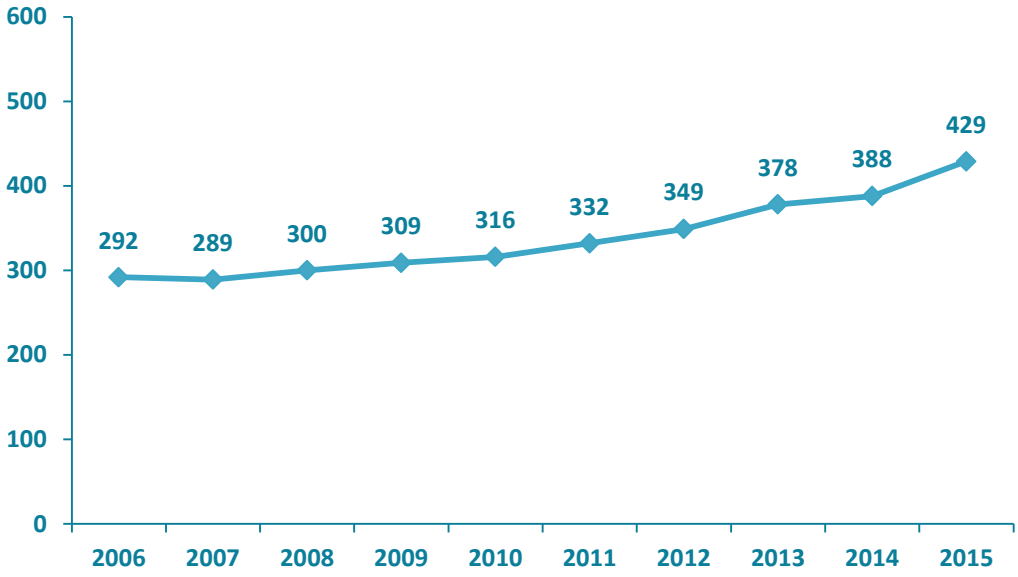
Falls and poisoning are the two largest categories of acute alcohol-related deaths identified by the ARDI application.

Alcohol-Related Fall Deaths

Based on ARDI specifications, the alcohol-attributable fraction of deaths from falls is 32 percent. In 2015, 429 deaths from fall-related injuries were attributable to alcohol, exceeding the number of deaths from alcoholic liver cirrhosis (354). Older adults particularly are at risk for death from falls, including those where alcohol is a factor. Overall, approximately 85 percent of fall deaths occur in the age group 65 and older; thus it is likely that in 2015, approximately 365 fall-related deaths attributable to alcohol involved adults in this age group.

Fall deaths are gradually increasing in tandem with the aging of the population (Figure 2). As with younger age groups, older adults in Wisconsin consume alcohol at somewhat higher levels than their age peers in the U.S. as a whole.[3] There is also evidence that binge drinking thresholds should be lower for older adults based on changes in metabolism, increased potential for drug interactions, and more numerous medical problems that occur with advancing age.[4] Thus, fall deaths and injuries related to alcohol are likely to increase in the state as the population continues to age.

Figure 2. Alcohol-attributable fall deaths (all age groups), Wisconsin, 2006-2015



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

3 Behavioral Risk Factor Surveillance System (BRFSS) trends over time indicate that Wisconsin adults are more likely to consume alcohol excessively across all age groups compared to adults in other states and the nation as a whole.

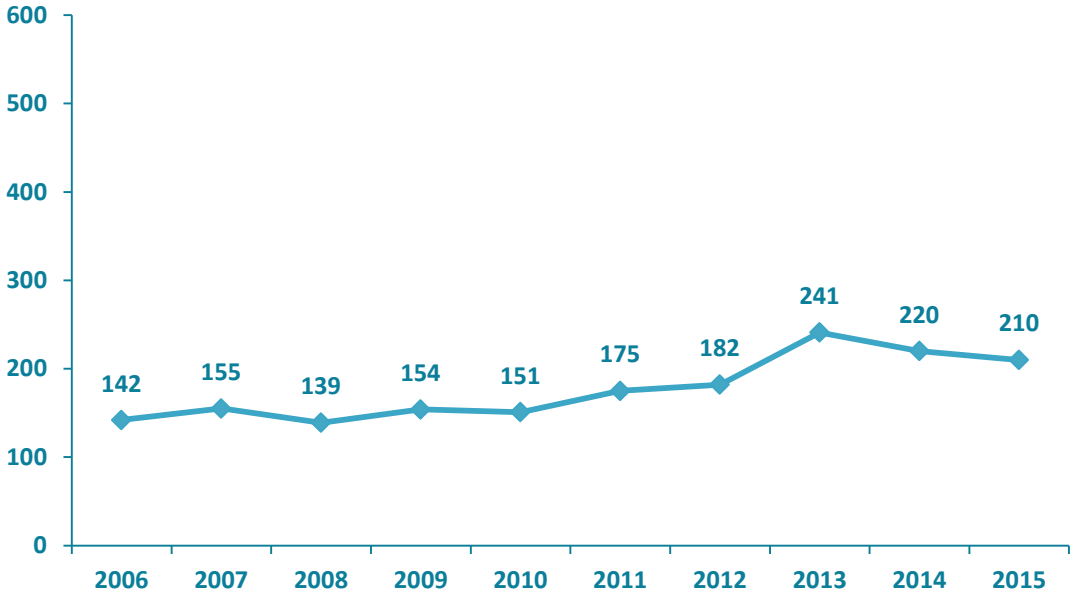
4 Merrick, E.L., Horgan, C. M., Hodgkin, D., Garnick, D.W., Houghton, S.F., Panas, L., . . . Blow, F.C. 2007. Unhealthy drinking patterns in older adults: Prevalence and associated characteristics. *Journal of the American Geriatrics Society*, *56*(2), 214-233.

Alcohol-Related Poisoning Deaths

Based on ARDI specifications, the alcohol-attributable fraction of poisoning deaths is 29 percent (excludes acute alcohol poisoning, which is 100 percent attributable to alcohol).

The number of poisoning deaths attributable to alcohol increased from 142 in 2006 to 210 in 2015 (Figure 3).

Figure 3. Alcohol-attributable poisoning deaths (all age groups), Wisconsin, 2006-2015



Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services
Note: Excludes acute alcohol poisonings, which are 100 percent attributable to alcohol.

Alcohol-Related Motor and Recreational Vehicle Deaths

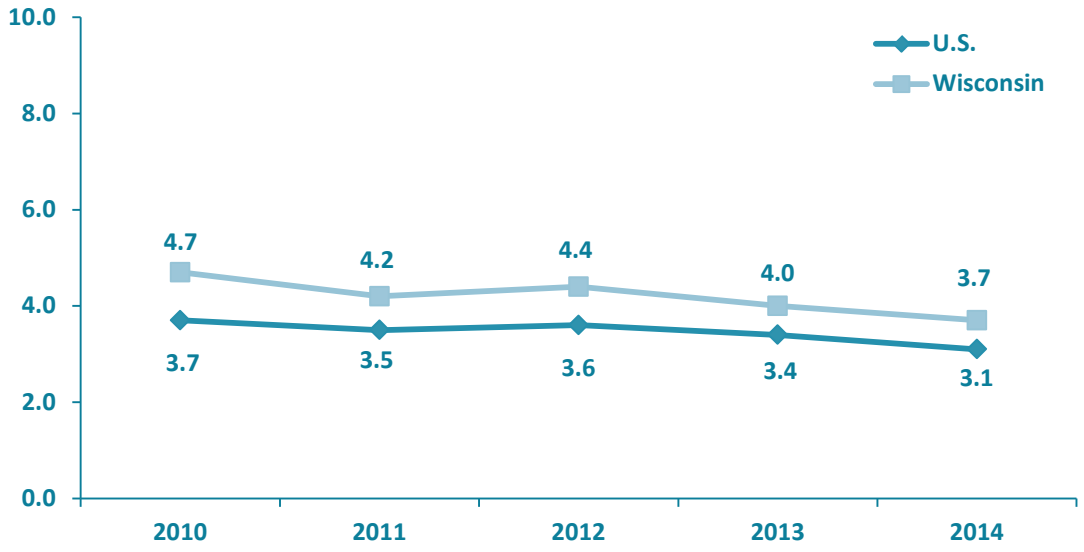
Alcohol-Impaired Driving Fatalities

While Wisconsin remains above the national average for alcohol-related motor vehicle deaths, both the national and state rates have decreased since 2012 (Figure 4).

Of the 212 alcohol-involved traffic fatalities in 2014, 78 percent involved individuals with a blood alcohol content (BAC) above the .08 legal limit (Fatality Analysis Reporting System [FARS]).

Of the 507 traffic fatalities in Wisconsin in 2014, 42 percent were alcohol-related, meaning the deaths involved individuals with a BAC of .01 or above. In the U.S. in 2014, 30 percent of all traffic fatalities were alcohol-related.

Figure 4. Alcohol-related motor vehicle deaths, rate per 100,000 population, Wisconsin and the U.S., 2010-2014 (BAC = .01+)



Source: Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Department of Transportation.
Note: Due to a change in the definition of alcohol-impaired driving fatalities by the National Traffic Safety Administration, the rates reported in previous versions of this report using the old definition are no longer available. The rates in this figure have been updated to reflect the new definition.

Table 1. Alcohol-related motor vehicle deaths, rate per 100,000 population, Wisconsin by county, 2010-2014

	Death Rate per 100,000				
County	2010	2011	2012	2013	2014
Adams	19	10	5	0	5
Ashland	6	6	0	6	0
Barron	4	0	0	7	0
Bayfield	20	13	13	7	0
Brown	4	4	2	2	1
Buffalo	22	0	7	0	15
Burnett	0	0	19	13	13
Calumet	6	2	6	0	4
Chippewa	5	6	6	8	2
Clark	6	3	0	12	3
Columbia	4	9	7	4	2
Crawford	6	6	0	0	6
Dane	2	2	3	3	3
Dodge	3	3	2	1	3
Door	0	4	0	4	4
Douglas	2	7	9	5	2
Dunn	7	0	0	9	5
Eau Claire	2	3	4	2	2
Florence	23	0	23	0	0
Fond du Lac	1	5	7	2	2
Forest	11	22	22	33	0
Grant	6	6	0	4	4
Green	3	8	3	8	0
Green Lake	5	10	0	0	5
Iowa	8	8	0	13	0
Iron	17	0	0	17	0
Jackson	0	5	10	5	0
Jefferson	4	4	1	5	2
Juneau	4	15	11	15	4
Kenosha	4	3	3	5	4
Kewaunee	5	10	0	5	0
La Crosse	2	3	3	0	2
Lafayette	12	24	0	12	0
Langlade	5	5	15	5	15
Lincoln	7	3	14	7	3
Manitowoc	7	5	7	6	10
Marathon	2	4	2	5	1

Table 1. Alcohol-related motor vehicle deaths, rate per 100,000 population, Wisconsin by county, 2010-2014 (continued)

	Death Rate per 100,000				
County	2010	2011	2012	2013	2014
Marinette	12	14	14	2	5
Marquette	13	6	13	0	0
Menominee	0	0	0	0	0
Milwaukee	3	2	3	2	2
Monroe	2	4	4	4	0
Oconto	19	8	5	3	11
Oneida	6	3	3	11	3
Outagamie	3	2	2	1	2
Ozaukee	1	1	8	2	0
Pepin	0	0	0	0	27
Pierce	15	10	17	0	5
Polk	5	11	11	0	9
Portage	11	1	10	6	4
Price	0	0	0	7	0
Racine	1	4	1	3	4
Richland	17	11	6	6	28
Rock	5	6	6	1	2
Rusk	0	7	0	0	0
St. Croix	1	6	2	0	2
Sauk	8	0	3	3	11
Sawyer	6	6	6	6	0
Shawano	2	14	5	2	2
Sheboygan	1	3	2	3	2
Taylor	10	5	5	5	5
Trempealeau	7	3	0	7	3
Vernon	7	7	23	0	7
Vilas	5	9	5	19	0
Walworth	3	7	5	5	4
Washburn	0	0	6	13	6
Washington	8	2	5	2	2
Waukesha	1	2	3	2	2
Waupaca	8	11	4	10	2
Waushara	4	16	12	4	12
Winnebago	4	5	2	3	2
Wood	1	3	0	4	1
Wisconsin	**4**	**4**	**4**	**3**	**3**

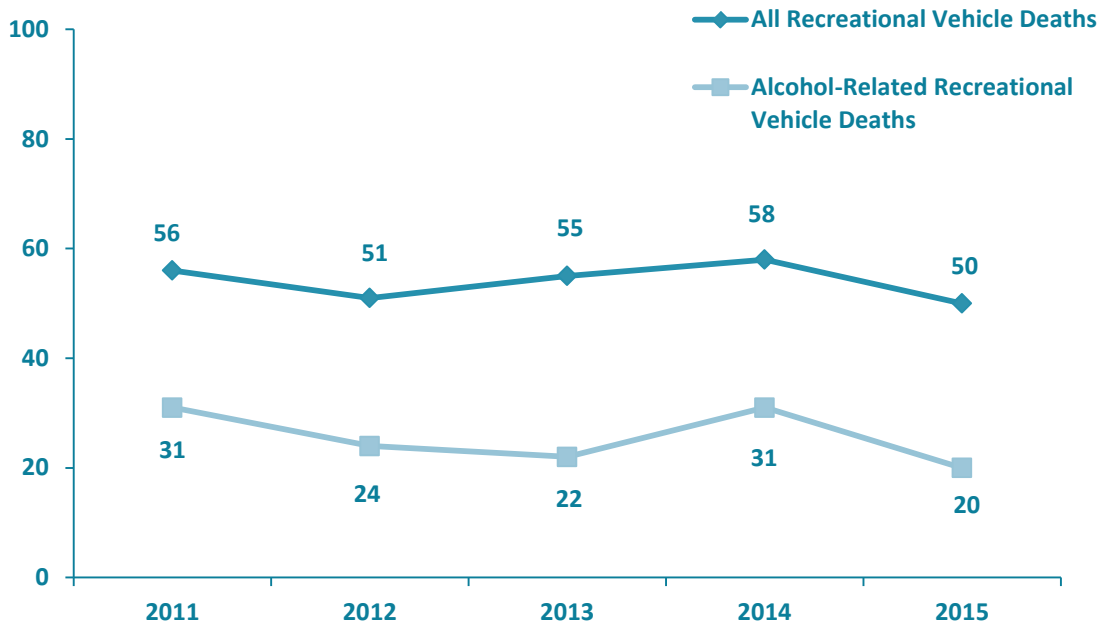
Source: Bureau of Transportation Safety, Wisconsin Department of Transportation; population data for county rate calculations are from the U.S. Census.

Alcohol-Related Recreational Vehicle Deaths

In 2015, 40 percent of recreational vehicle deaths in Wisconsin were alcohol-related. Recreational vehicles include all-terrain vehicles (ATVs), boats, and snowmobiles (Figure 5).

Deaths involving snowmobile operators and/or passengers represent the highest percentage of alcohol-related fatalities among recreational vehicle users. During the 2014-2015 season, 75 percent of snowmobile deaths were alcohol-related, up from 57 percent during the 2013-2014 season.

Figure 5. Recreational vehicle deaths, alcohol-related and total number, Wisconsin, 2011-2015



Source: *Snowmobile Safety and Enforcement Reports*, *All-Terrain Vehicle Enforcement and Safety Reports*, and *Wisconsin Boating Program Reports*, Wisconsin Department of Natural Resources.

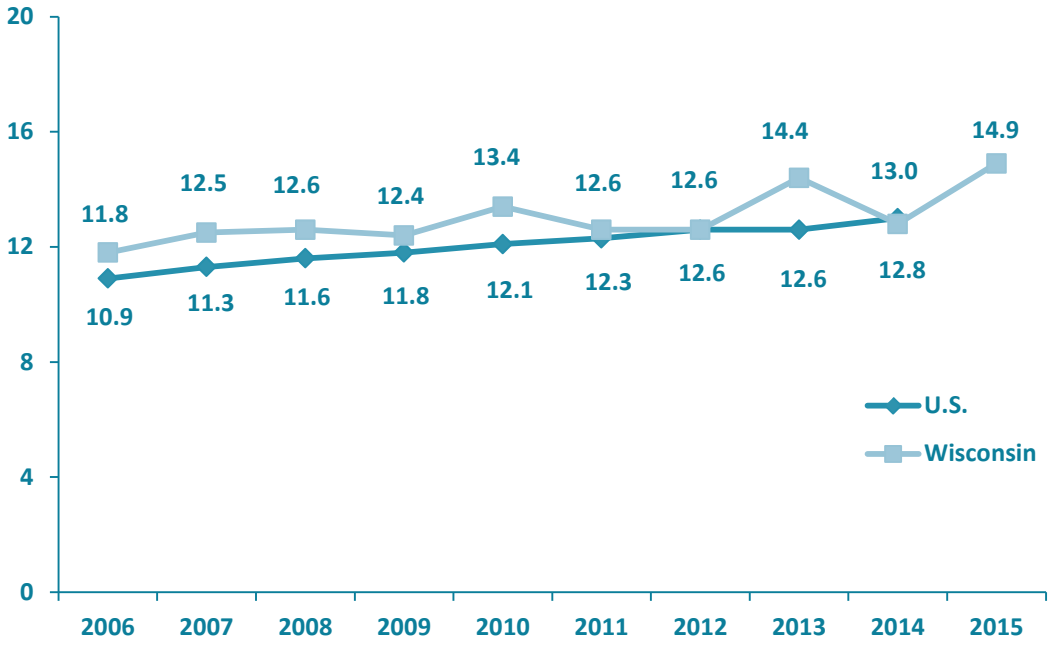
Alcohol-Related Suicide Deaths

The fraction of suicides where alcohol is a factor is 23 percent based on ARDI specifications. In 2015, there were 859 suicides in Wisconsin, of which approximately 198 were attributable to alcohol based on the ARDI specifications. Wisconsin's rate of suicide remained slightly higher or close to the national rate as of 2014, the most recent year for which comparison data are available. (National figures are not yet available for 2015).

The mortality rate from suicide increased in Wisconsin, from 12.8 in 2014 to 14.9 in 2015 per 100,000 population (Figure 6). The suicide rates presented in Figure 6 are age-adjusted for purposes of comparison between Wisconsin and the U.S. in order to remove the effects of differences in age distributions between the two populations.

In 2014, the suicide mortality rate in Wisconsin was close to the rate of the U.S. (Table 2).

Figure 6. Suicide deaths, age-adjusted rate per 100,000 population, Wisconsin and U.S., 2006-2015



Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention Wonder.
Note: 2015 U.S. data not available at the time of publishing.

Table 2. Suicide deaths, age-adjusted rate per 100,000 population and total number, Wisconsin and the U.S., 2008-2015

		2008	2009	2010	2011	2012	2013	2014	2015
U.S.	Rate/100,000	11.6	11.8	12.1	12.3	12.6	12.6	13.0	
	Total number	35,969	36,837	38,307	39,442	40,600	41,149	42,773	
Wisconsin	Rate/100,000	12.6	12.4	13.4	12.6	12.6	14.4	12.8	14.9
	Total number	737	724	792	736	734	853	736	859

Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention Wonder: http://wonder.cdc.gov/mortSQL.html.
Note: 2015 U.S. data not available at the time of publishing.

Chronic Conditions

Alcohol-Related Liver Cirrhosis Deaths

Alcohol-related liver cirrhosis refers to liver damage caused by heavy drinking over an extended period of time. Wisconsin's age-adjusted rate of alcohol cirrhosis mortality has been slightly below rates for the nation as a whole for a number of years. However, Wisconsin rates have been rising slightly over the past few years, reaching 5.2 per 100,000 population in 2015 (354 deaths). National comparison data is not available for 2015 (Table 3).

Table 3. Alcohol-related liver cirrhosis deaths, age-adjusted rate per 100,000 population and total number, Wisconsin and the U.S., 2008-2015

		2008	2009	2010	2011	2012	2013	2014	2015
U.S.	Rate/100,000	4.5	4.6	4.7	4.8	5	5.1	5.4	
	Total number	14,864	15,183	15,990	16,749	17,419	18,146	19,388	
Wisconsin	Rate/100,000	4.1	4.2	4.5	4.4	4.9	4.9	5.1	5.2
	Total number	260	265	288	291	317	333	352	354

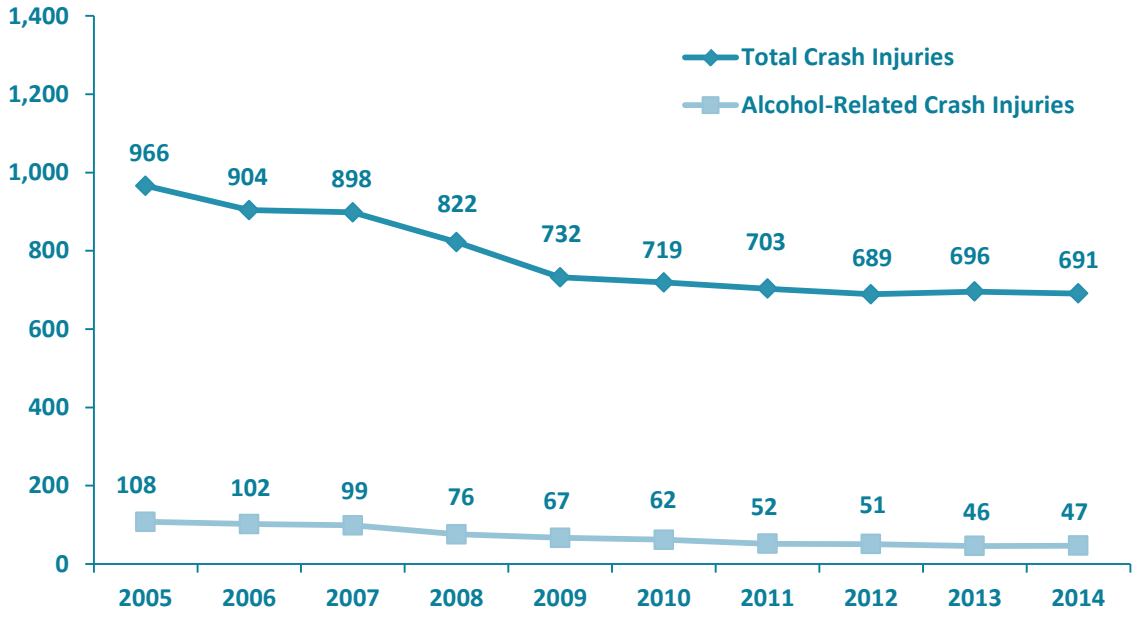
Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services/ Centers for Disease Control and Prevention Wonder: http://wonder.cdc.gov/mortSQL.html.
Note: 2015 U.S. data not available at the time of publishing.

Alcohol-Related Illnesses and Injuries

Alcohol-Related Motor Vehicle Injuries

Total motor vehicle crashes involving injuries in Wisconsin decreased in 2014, while the number of alcohol-related motor vehicle crash injuries increased by one. This slight increase interrupted a gradual downward trend in the annual number of alcohol-related motor vehicle crash injuries (Figure 7).

Figure 7. Alcohol-related and total nonfatal motor vehicle injuries, rate per 100,000 population, Wisconsin, 2005-2014



Source: Bureau of Transportation Safety, Wisconsin Department of Transportation; population data for county rate calculations are from the U.S. Census.

Table 4. Alcohol-related motor vehicle injuries, rate per 100,000 population, Wisconsin by county, 2010-2014

	Nonfatal Injury Rate per 100,000				
County	*2010*	*2011*	*2012*	*2013*	*2014*
Adams	125	53	96	116	111
Ashland	74	12	75	37	44
Barron	70	48	54	37	33
Bayfield	107	80	119	79	126
Brown	86	49	55	53	45
Buffalo	29	103	140	81	104
Burnett	129	90	97	84	39
Calumet	49	24	69	44	36
Chippewa	75	54	59	36	55
Clark	52	52	52	49	35
Columbia	84	90	51	39	39
Crawford	78	48	72	72	60
Dane	43	38	37	41	43
Dodge	62	80	55	53	59
Door	43	75	57	75	43
Douglas	43	32	68	16	36
Dunn	59	50	50	32	70
Eau Claire	37	36	45	46	40
Florence	136	228	68	45	67
Fond du Lac	49	51	49	39	48
Forest	97	76	119	98	33
Grant	90	51	64	37	72
Green	76	70	100	95	70
Green Lake	26	47	58	26	68
Iowa	42	76	38	50	118
Iron	85	34	34	51	17
Jackson	98	58	73	44	87
Jefferson	56	54	43	45	69
Juneau	116	60	71	78	105
Kenosha	84	67	89	58	52
Kewaunee	34	73	48	29	58
La Crosse	60	53	62	49	44
Lafayette	65	101	59	59	112
Langlade	70	60	25	66	56
Lincoln	70	35	24	38	45
Manitowoc	64	53	44	42	58
Marathon	51	57	36	50	30

Table 4. Alcohol-related motor vehicle injuries, rate per 100,000 population, Wisconsin by county, 2010-2014 (continued)

	Nonfatal Injury Rate per 100,000				
County	*2010*	*2011*	*2012*	*2013*	*2014*
Marinette	60	55	82	96	70
Marquette	65	13	72	118	39
Menominee	0	0	0	94	46
Milwaukee	46	41	37	37	32
Monroe	67	73	47	75	59
Oconto	85	66	56	64	66
Oneida	72	70	42	28	81
Outagamie	59	40	43	37	37
Ozaukee	46	66	54	23	42
Pepin	27	94	94	148	54
Pierce	66	46	46	39	36
Polk	109	109	109	66	59
Portage	93	44	69	49	61
Price	71	50	93	36	86
Racine	76	68	47	38	56
Richland	55	94	28	61	39
Rock	95	77	70	62	72
Rusk	75	41	55	27	41
St. Croix	46	37	42	35	42
Sauk	92	81	85	82	86
Sawyer	97	102	114	72	66
Shawano	124	124	77	69	65
Sheboygan	43	38	33	36	23
Taylor	73	82	73	63	48
Trempealeau	80	45	65	38	85
Vernon	60	50	60	63	46
Vilas	149	103	51	158	79
Walworth	72	56	54	61	52
Washburn	101	82	76	38	63
Washington	59	61	60	66	43
Waukesha	44	30	32	27	30
Waupaca	113	95	63	86	50
Waushara	106	130	78	41	45
Winnebago	64	46	57	46	45
Wood	40	55	46	34	55
Wisconsin	**62**	**52**	**51**	**46**	**47**

Source: Bureau of Transportation Safety, Wisconsin Department of Transportation; population data for county rate calculations are from the U.S. Census.

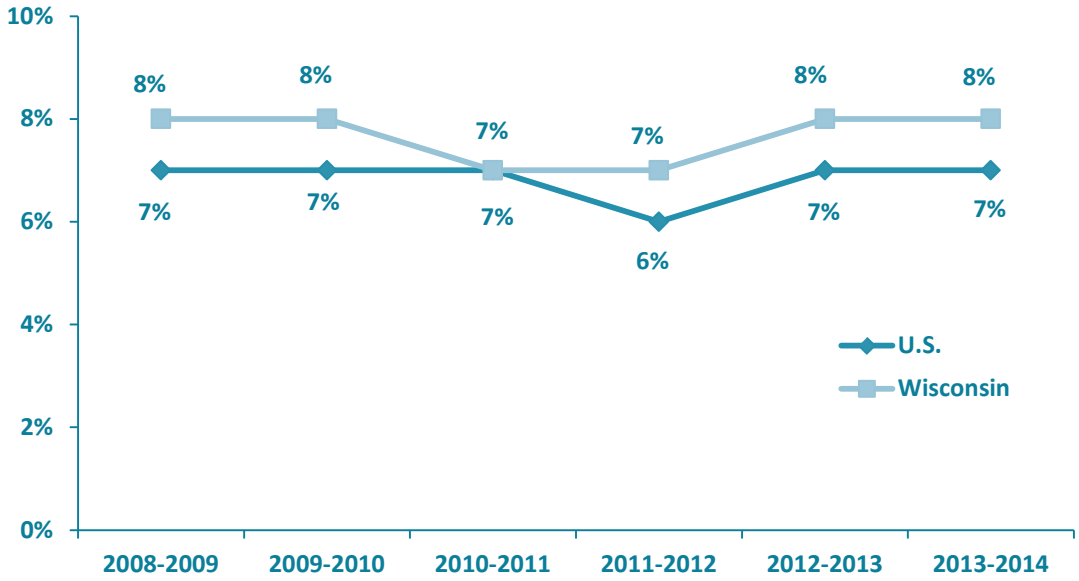
Alcohol Abuse or Dependence

The Diagnostic and Statistical Manual of Mental Disorder, Fourth Edition (DSM-IV), defines alcohol abuse and dependence based on experiences over a 12-month period. For the DSM-IV definition of abuse and dependence, see Appendix 1.

The estimated percentage of Wisconsin residents age 12 and older with alcohol abuse and dependence was 8 percent in 2013-2014 (Figure 8).

Since 2009-2010, Wisconsin young adults age 18 to 25 have had higher rates of alcohol abuse and dependence than other age groups (Table 5).

Figure 8. Alcohol abuse and dependence, age 12 and older, Wisconsin and the U.S., 2008-2014



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

Table 5. Alcohol abuse and dependence, age 12 and older, Wisconsin by age, 2009-2014

Age	*2009-2010*	*2010-2011*	*2011-2012*	*2012-2013*	*2013-2014*
12-17	5%	4%	3%	4%	4%
18-25	17%	15%	15%	16%	17%
26+	6%	6%	6%	7%	7%

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

Alcohol-Related Hospitalizations

The number of alcohol-related hospitalizations in Wisconsin decreased approximately 6 percent between 2007 and 2014, from 49,478 to 46,532. The rate of alcohol-related hospitalizations has declined in rate since 2010 (Table 6).

Charges for alcohol-related hospitalizations (adjusted for inflation) increased, from $947 million in 2005 to more than $1.3 billion in 2014 (Figure 9). Hospital charges are the total facility charges for the length of stay and are not the same as actual costs paid by any payer; they do not include physician or other ancillary charges.

Table 6. Alcohol-related hospitalizations, rate per 100,000 population and total number, Wisconsin, 2007-2014

	2007	2008	2009	2010	2011	2012	2013	2014
Rate/100,000	877	884	856	857	831	841	804	810
Number	49,478	50,119	48,625	48,718	47,343	48,074	46,060	46,532

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

Figure 9. Alcohol-related hospital charges (inflation-adjusted to 2014 dollars), in millions, Wisconsin, 2005-2014

Source: Wisconsin hospital inpatient discharge database, Division of Public Health, Wisconsin Department of Health Services.
Note: Charges are not the same as actual costs paid by any payer; see Appendix 1. Charges shown have been adjusted for inflation to 2014 dollars.

Table 7. Alcohol-related hospitalizations, total number and two-year rates per 100,000 population, Wisconsin by county, 2012-2014

County	Number in 2014	Rate per 100,000	
		2012-2013	2013-2014
Adams	114	465	505
Ashland	210	1,442	1,388
Barron	343	773	756
Bayfield	115	855	822
Brown	1,714	717	680
Buffalo	67	709	563
Burnett	67	473	447
Calumet	137	252	259
Chippewa	543	859	823
Clark	260	785	761
Columbia	490	828	832
Crawford	97	645	570
Dane	3,497	705	678
Dodge	608	692	674
Door	177	650	613
Douglas	51	88	97
Dunn	276	645	632
Eau Claire	1,021	1,078	977
Florence	12	147	224
Fond du Lac	800	750	772
Forest	118	1,196	1,308
Grant	206	352	374
Green	252	640	657
Green Lake	116	795	656
Iowa	118	465	466
Iron	37	970	780
Jackson	153	924	838
Jefferson	503	620	598
Juneau	246	800	859
Kenosha	1,504	893	889
Kewaunee	127	650	597
La Crosse	1,101	915	925
Lafayette	80	448	471
Langlade	133	794	697
Lincoln	308	914	983
Manitowoc	593	760	749
Marathon	1,021	804	758

Table 7. Alcohol-related hospitalizations, total number and two-year rates per 100,000 population, Wisconsin by county, 2012-2014 (continued)

County	Number in 2014	Rate per 100,000	
		2012-2013	2013-2014
Marinette	311	790	775
Marquette	134	940	839
Menominee	77	2,207	1,885
Milwaukee	10,897	1,144	1,143
Monroe	303	665	655
Oconto	210	600	603
Oneida	354	1,049	1,014
Outagamie	1,302	681	690
Ozaukee	662	736	739
Pepin	41	525	574
Pierce	110	318	275
Polk	257	523	530
Portage	614	777	827
Price	116	892	882
Racine	1,944	984	988
Richland	120	739	738
Rock	1,522	918	922
Rusk	104	642	642
St. Croix	270	331	326
Sauk	482	803	770
Sawyer	142	767	822
Shawano	293	732	706
Sheboygan	911	881	832
Taylor	77	494	423
Trempealeau	216	712	689
Vernon	166	642	631
Vilas	353	1,532	1,592
Walworth	714	677	696
Washburn	108	636	631
Washington	1,018	716	734
Waukesha	2,874	782	742
Waupaca	401	742	738
Waushara	179	724	706
Winnebago	1,251	828	768
Wood	781	1,153	1,079
Wisconsin	**46,532**	**822**	**807**

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. Attributable fractions based on ARDI software are at: https://nccd.cdc.gov/DPH_ARDI/default/default.aspx.

Alcohol-Related Offenses

Alcohol-Related Crime and Arrests

Operating a Motor Vehicle While Intoxicated

Results from the National Survey on Drug Use and Health's (NSDUH) "*State Estimates of Drunk and Drugged Driving*" report released in 2012[5] indicate the prevalence of alcohol-impaired driving in Wisconsin—like binge drinking—are among the highest in the nation. Using several combined years of survey data, NSDUH estimated that 24 percent of Wisconsin residents ages 16 and older drove impaired by alcohol within the previous year, almost twice the national rate of 13 percent.

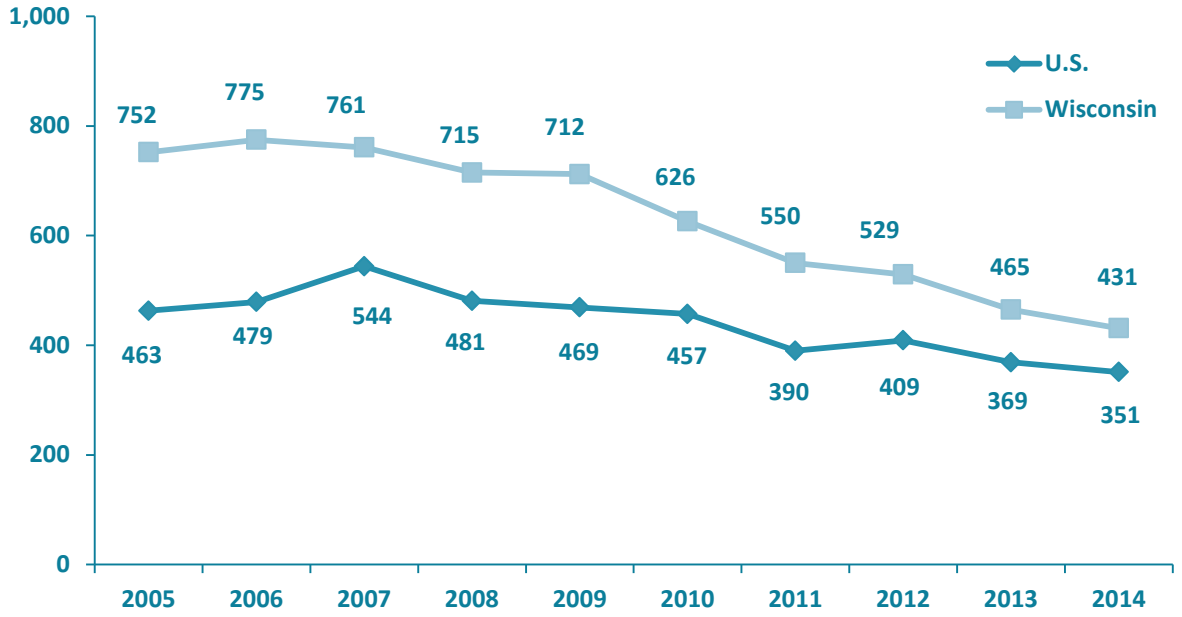
Given this, it is not surprising that rates of OWI arrests and convictions of repeat OWI offenders are higher in Wisconsin than in the nation as a whole (Figure 10). In 2014, 24,754 people were arrested for OWI in Wisconsin. Of the 24,012 drivers convicted of an OWI in 2014, 15,277 were first offense OWI; 7,913 were for second to fourth offense OWI; 759 were fifth to seventh offense OWI; and 63 had had eight or more OWI offenses (Wisconsin Department of Transportation [DOT]). Of drivers convicted of OWI offenses in 2014, 1,132 were under the age of 21 at the time of the violation.

The median BAC test result for 2014 OWI citations was 0.16 percent, twice the legal limit.

Wisconsin is the only state where the first OWI offense is a traffic violation. The first OWI offense is only criminalized if the driver is convicted of causing injury or death while operating while intoxicated or if a person under age 16 is present in the vehicle. Nevertheless, Wisconsin has 1.2 times the national rate of OWI arrests, and 2.9 times the national rate of other liquor law violations.

[5] Substance Abuse and Mental Health Services Administration. (2012). The NSDUH report: State estimates of drunk and drugged driving. http://www.samhsa.gov/data/2k12/NSDUH109/SR109StateEstDrunkDrugDriving2012.htm

Figure 10. Arrests (adult and juvenile) for operating a motor vehicle while intoxicated (OWI), rate per 100,000 population, Wisconsin and the U.S., 2005-2014



Source: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance (2005 -2012); Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center (2013-2014), Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice, Criminal Justice Information Services Division, Federal Bureau of Investigation, U.S. Department of Justice.

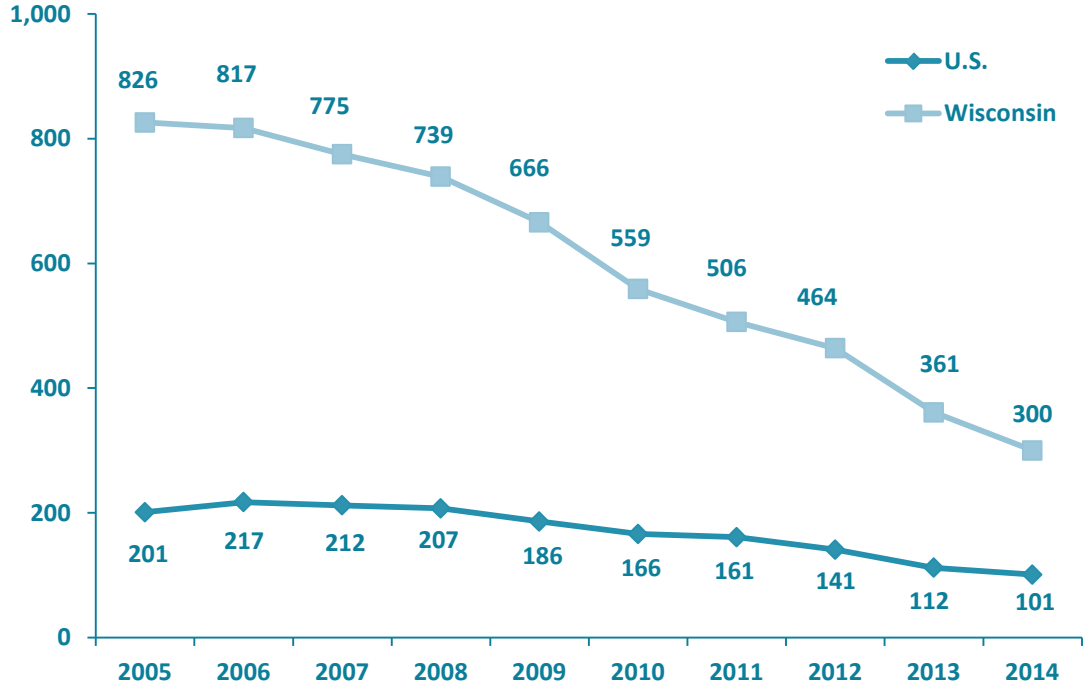
Liquor Law Violations

According to the Wisconsin Department of Justice, 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 has declined every year from 2006 to 2014. Nevertheless, it remains above the national rate (Figure 11).

In 2014, 18 percent of all liquor law arrests in Wisconsin were of juveniles.

Figure 11. Liquor law arrests (adult and juvenile), rate per 100,000 population, Wisconsin and the U.S., 2005-2014



Source: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance (2005 -2012); Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center (2013-2014), Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice, Criminal Justice Information Services Division, Federal Bureau of Investigation, U.S. Department of Justice.

Table 8. Operating a motor vehicle while intoxicated (OWI) and liquor law arrests, rate per 100,000 population, Wisconsin by county, 2013 and 2014

	OWI Arrests Rate per 100,000		*Liquor Law Arrests Rate per 100,000*	
County	*2013*	*2014*	*2013*	*2014*
Adams	613	596	43	92
Ashland	218	168	317	112
Barron	131	118	26	39
Bayfield	311	206	20	53
Brown	380	269	380	290
Buffalo	806	393	0	59
Burnett	480	402	58	39
Calumet	232	172	212	114
Chippewa	446	294	240	129
Clark	352	286	136	98
Columbia	726	604	344	275
Crawford	103	362	0	199
Dane	381	372	305	419
Dodge	397	383	348	209
Door	580	476	326	311
Douglas	426	447	338	494
Dunn	475	550	1,353	1,322
Eau Claire	576	482	975	939
Florence	1,057	1,029	0	0
Fond du Lac	450	469	318	229
Forest	381	629	218	217
Grant	502	387	967	621
Green	450	482	333	439
Green Lake	499	609	252	236
Iowa	328	340	194	76
Iron	408	642	289	270
Jackson	466	692	39	34
Jefferson	430	349	357	227
Juneau	246	187	67	64
Kenosha	328	301	635	680
Kewaunee	257	267	189	136
La Crosse	489	436	1,123	964
Lafayette	421	485	712	414
Langlade	461	446	61	96
Lincoln	402	237	267	52
Manitowoc	443	440	363	301
Marathon	483	426	398	292

Table 8. Operating a motor vehicle while intoxicated (OWI) and liquor law arrests, rate per 100,000 population, Wisconsin by county, 2013 and 2014 (continued)

	OWI Arrests Rate per 100,000		*Liquor Law Arrests Rate per 100,000*	
County	*2013*	*2014*	*2013*	*2014*
Marinette	399	624	387	246
Marquette	424	379	7	0
Menominee	4,112	2,605	23	0
Milwaukee	386	316	139	125
Monroe	629	502	274	251
Oconto	74	48	64	45
Oneida	531	670	423	406
Outagamie	518	486	443	348
Ozaukee	402	374	540	461
Pepin	378	500	27	27
Pierce	397	253	478	377
Polk	757	780	134	34
Portage	344	445	225	298
Price	542	357	314	93
Racine	327	366	111	110
Richland	246	280	73	129
Rock	404	402	289	235
Rusk	355	301	266	61
St. Croix	285	276	194	79
Sauk	634	575	1,552	758
Sawyer	897	807	150	60
Shawano	696	563	457	328
Sheboygan	411	388	264	199
Taylor	536	397	116	121
Trempealeau	471	426	106	61
Vernon	382	412	33	37
Vilas	839	818	890	367
Walworth	759	744	1,117	767
Washburn	498	511	372	183
Washington	452	444	303	189
Waukesha	410	427	167	114
Waupaca	544	644	204	141
Waushara	462	476	90	160
Winnebago	578	507	665	501
Wood	556	513	349	242
Wisconsin	**465**	**431**	**361**	**300**

Source: Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center, Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice. Note: Wisconsin Department of Natural Resources and Division of State Patrol crime data are included in the statewide total, and are not included in specific counties.

Alcohol-Related School Suspensions and Expulsions

Public school districts in Wisconsin are required to report discipline data about suspensions, expulsions, and other removals to the Wisconsin Department of Public Instruction (DPI). According to DPI, suspensions are "absences from the school imposed by the school administration for disciplinary reasons" and expulsions are "sanctions imposed on students by formal school board action which, for purposes of discipline, prohibit students from attending school."

Rates of public school suspensions and expulsions vary for multiple reasons, including differences in the prevalence of behaviors related to alcohol use and difference in policies or diversion programs related to whether a suspension or expulsion is issued. The data reported in Table 9 includes all grade levels (K-12).

Table 9. Alcohol-related suspensions and expulsions in public schools, rate per 1,000 students, Wisconsin by county, 2013-2014 school year

County	Number of Incidents	Rate/1,000 Students	County	Number of Incidents	Rate/1,000 Students
Adams	5	3.1	Marinette	1	0.2
Ashland	0	0.0	Marquette	0	0.0
Barron	1	0.1	Menominee	1	1.2
Bayfield	1	0.7	Milwaukee*	57	0.4
Brown	25	0.6	Monroe	3	0.4
Buffalo	0	0.0	Oconto	0	0.0
Burnett	1	0.4	Oneida	0	0.0
Calumet	1	0.3	Outagamie	26	0.7
Chippewa	4	0.4	Ozaukee	7	0.6
Clark	0	0.0	Pepin	0	0.0
Columbia	1	0.1	Pierce	1	0.1
Crawford	2	0.9	Polk	11	1.5
Dane	57	0.8	Portage	10	1.1
Dodge	3	0.4	Price	1	0.5
Door	1	0.3	Racine*	47	1.6
Douglas	6	0.9	Richland	0	0.0
Dunn	1	0.2	Rock	9	0.3
Eau Claire	20	1.4	Rusk	3	1.5
Florence	0	0.0	Saint Croix	0	0.0
Fond du Lac	23	1.5	Sauk	6	0.5
Forest	0	0.0	Sawyer	1	0.4
Grant	0	0.0	Shawano	9	1.6
Green	2	0.4	Sheboygan	4	0.2
Green Lake	1	0.3	Taylor	1	0.3
Iowa	3	0.8	Trempealeau	0	0.0
Iron	0	0.0	Vernon	1	0.2
Jackson	0	0.0	Vilas	1	0.4
Jefferson	13	1.0	Walworth	7	0.4
Juneau	2	0.5	Washburn	1	0.4
Kenosha	23	0.8	Washington	6	0.3
Kewaunee	1	0.3	Waukesha	44	0.7
La Crosse	5	0.3	Waupaca	0	0.0
Lafayette	1	0.3	Waushara	0	0.0
Langlade	0	0.0	Winnebago	28	1.2
Lincoln	7	1.5	Wood	14	1.1
Manitowoc	2	0.2			
Marathon	16	0.8	**Wisconsin**	**528**	**0.6**

Source: WISEdash Public Portal, Wisconsin Department of Public Instruction.
*Milwaukee and Racine county data include charter schools.
Note: Each incident is counted separately regardless of whether repeat infractions are by the same or different students.

Consequences of Other Drug Consumption

For the purpose of this report, "other drugs" refers to both illicit drugs and prescription drugs used for medical and nonmedical purposes. Many data sources do not separate these two categories. When possible, this report includes drug-specific information.

Like alcohol, the arrest, illnesses, injuries, and deaths resulting from other drug use, misuse, and abuse impacts all state residents. Wisconsin rates of abuse, dependence, and deaths due to other drug use are similar to, or lower than, national rates. The rate of arrests for drug law violations is also lower in Wisconsin than nationally.

Other Drug-Related Deaths

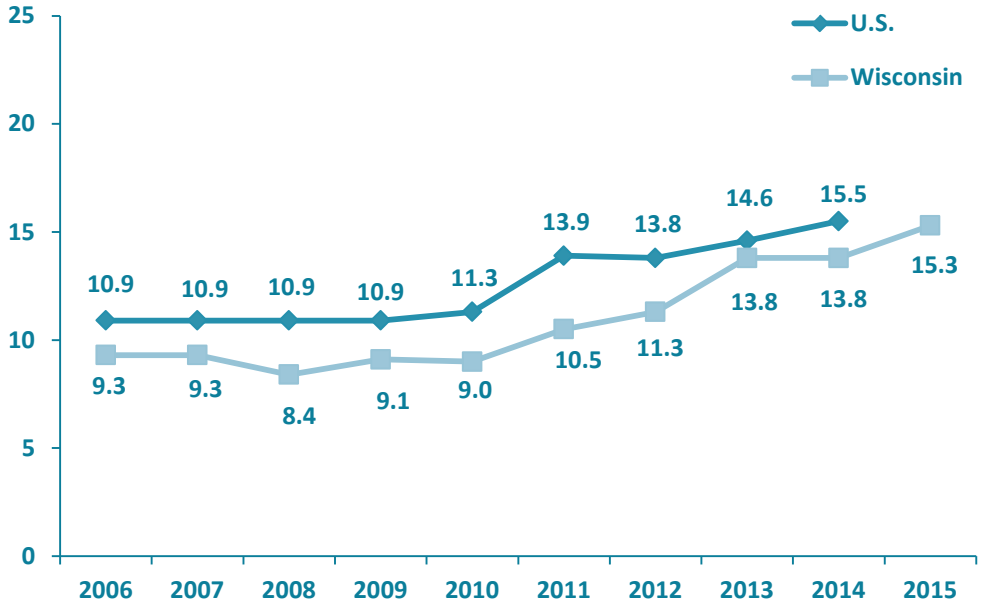
There is evidence of change over time in the pattern and volume of drug-related deaths in Wisconsin. Between 2006 and 2015, the increase in overall drug-related deaths that began in earlier years continued (Figure 12 and Table 10). The rate of drug deaths in Wisconsin remained lower than the national rate through 2014, the most recent year for which U.S. data are available.

Wisconsin's age-adjusted rate of drug-related mortality increased from 9.3 deaths per 100,000 population in 2006 to 15.3 deaths per 100,000 in 2015 (Figure 12).

Wisconsin's number of drug-related deaths has exceeded 500 in seven of the past eight years. In 2015, 873 Wisconsin residents died as a direct consequence of illicit drug use (Table 10).

Drug-related motor vehicle fatalities have increased substantially in the past 10 years. In 2014, 21 percent of all motor vehicles injuries were drug-related, up from 3 percent in 1994 (Bureau of Transportation Safety [BTS], DOT).

Figure 12. Drug-related deaths, age-adjusted rate per 100,000 population, Wisconsin and the U.S., 2006-2015



Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention Wonder: http://wonder.cdc.gov/mortSQL.html.

Table 10. Drug-related deaths, age-adjusted rate per 100,000 population and total number, Wisconsin and the U.S., 2008-2015

		2008	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*
U.S.	**Rate/100,000**	10.9	10.9	11.3	13.9	13.8	14.6	15.5	
	Total number	33,300	33,639	35,059	43,544	43,819	46,471	49,714	
Wisconsin	**Rate/100,000**	8.4	9.1	9.0	10.5	11.3	13.8	13.8	15.3
	Total number	482	525	512	601	633	792	795	873

Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services/ Centers for Disease Control and Prevention Wonder: http://wonder.cdc.gov/mortSQL.html.

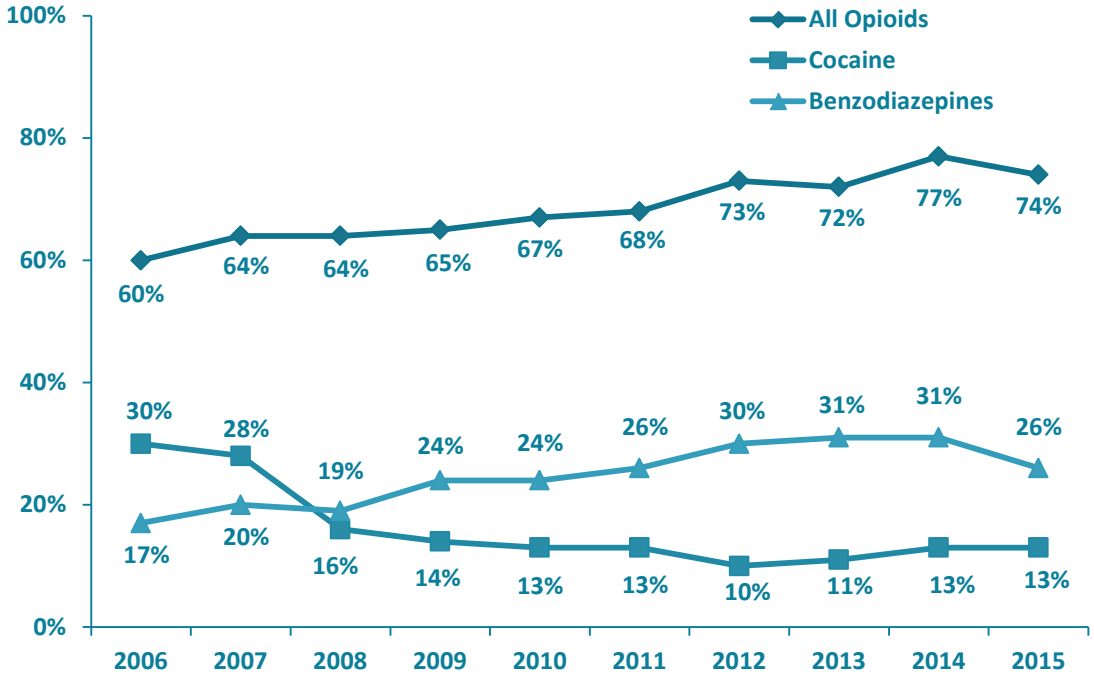
Annual numbers of heroin and other opioid-related deaths in the state increased steadily from 2006 to 2015. The proportion of drug deaths with a mention of opioids, the largest category, increased from 60 to 74 percent.

The proportion of drug deaths with a mention of benzodiazepines increased from 17 to 26 percent between 2006 and 2015, with a peak of 31 percent in 2013 and 2014, while mentions of cocaine have decreased steadily since 2006 (Figure 13).

Between 2006 and 2015, the proportion of drug deaths where heroin is mentioned increased more than fivefold, from 5 to 32 percent (Figure 14).

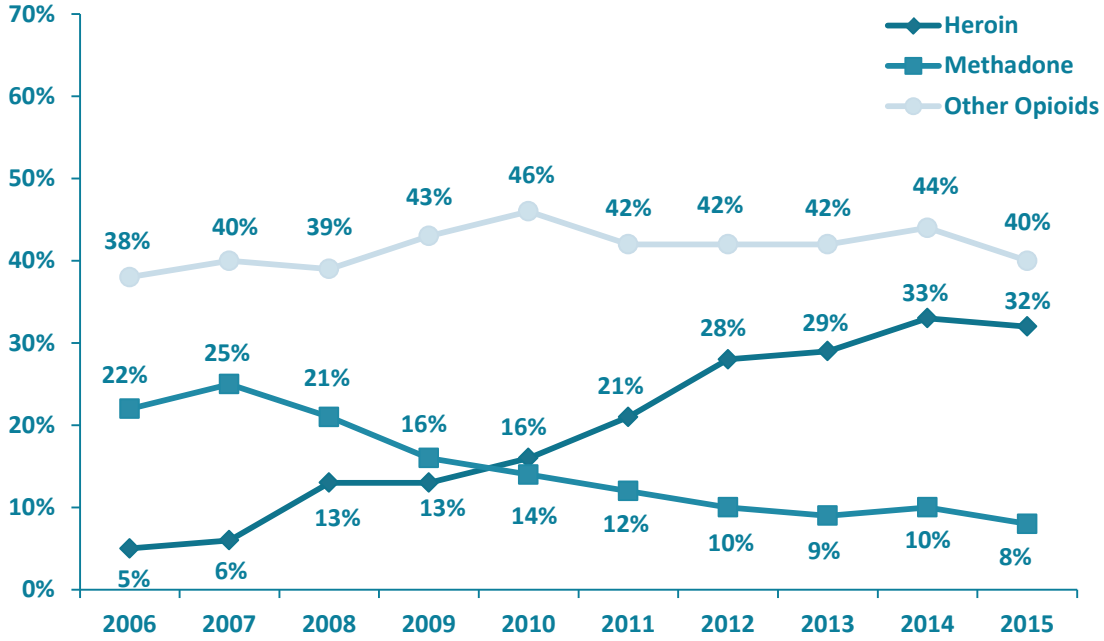
Overall, what is known about current trends in drugs-of-choice appears to be reflected in the death reports. A steady rise in the mentions of heroin in drug-related deaths may reflect increasing substitution of heroin for prescription drugs among opioid users due to heroin's lower cost and increasing availability. With no standards for consistency or dosing as with prescription drugs, heroin use carries significant risk of overdose.

Figure 13. Proportion of drug-related deaths involving opioids, cocaine and/or benzodiazepines, Wisconsin, 2006-2015



Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services.
Note: Opioids include heroin, methadone, and other opioids, including synthetic narcotic pain relievers such as oxycodone and hydrocodone, as well as morphine and its derivatives. More than one substance may be mentioned in the death record. Benzodiazepines include central nervous system depressants such as Valium®, Librium®, and Xanax®. More than one drug may be mentioned in the death record.

Figure 14. Proportion of heroin, methadone, and other opioid-related deaths, Wisconsin, 2006-2015



Source: Wisconsin resident death certificates, Division of Public Health, Wisconsin Department of Health Services.
Note: Other opioids refer to any prescription opioids—with morphine-like effects. More than one substance may be mentioned in the death record. Some opioid deaths involve both heroin and prescription opioids.

Other Drug-Related Illnesses and Injuries

Other Drug Abuse or Dependence

Rates of illicit drug abuse or dependence among people age 12 and older in Wisconsin have stayed relatively consistent since 2009 at about 3 percent (not shown). There are differences between age groups, however. In 2013-2014, Wisconsin residents ages 18-25 were more likely to abuse or be dependent on illicit drugs (7%) than were those ages 12-17 (4%) or over age 26 (2%).

Table 11. Illicit drug abuse or dependence in the past year, age 12 and older, Wisconsin by age, 2009-2014

Age	*2009-2010*	*2010-2011*	*2011-2012*	*2012-2013*	*2013-2014*
12-17	5%	4%	4%	4%	4%
18-25	7%	6%	6%	7%	7%
26+	2%	2%	1%	1%	2%

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

Neonatal Abstinence Syndrome (NAS)

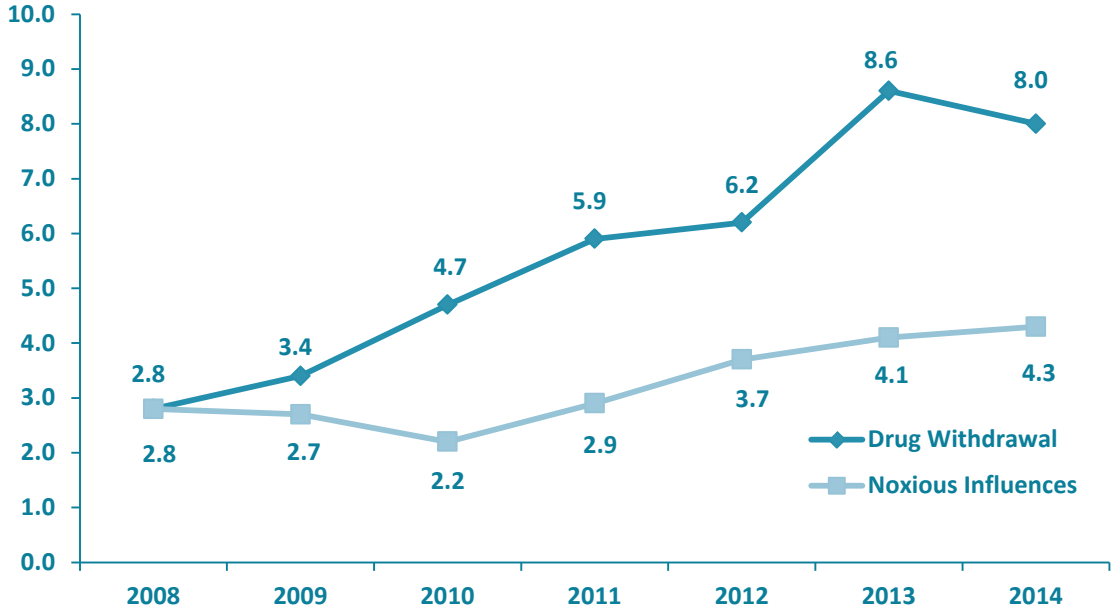
Neonatal Abstinence Syndrome (NAS) refers to the effects on a fetus or newborn of maternal drug use. It involves either drug withdrawal symptoms or "noxious influences"[6] of drugs.

Drug withdrawal refers to babies who are born addicted because their mothers are drug-dependent.

Noxious influences refer to babies exposed to substances through the placenta or breast milk but who are not necessarily addicted.

The number of cases of NAS in Wisconsin is on the rise due in part to an increased use of prescription drugs and heroin. Since 2008, the rate of NAS from drug withdrawal has increased more sharply than the NAS rate from noxious influences (Figure 15).

Figure 15. Neonatal Abstinence Syndrome (NAS) cases, rates per 1,000 hospital births, Wisconsin, 2008-2014



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

[6] Noxious influences affecting the fetus or newborn through placenta or breast milk include narcotics, alcohol, cocaine, hallucinogens, and unspecified substances.

Hepatitis C

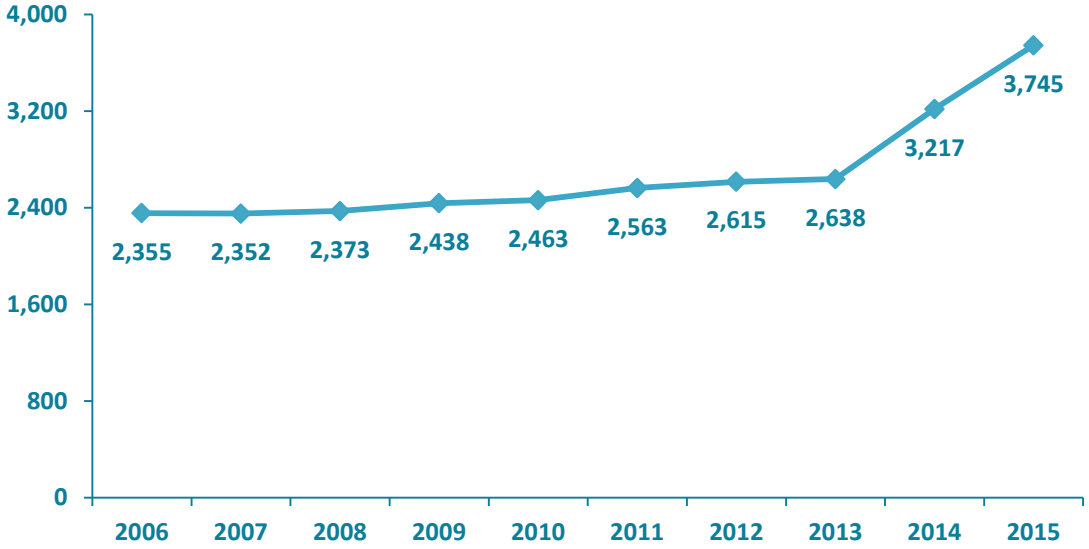
Hepatitis C virus (HCV) is the most common blood-borne infection in the U.S. and outbreaks of HCV have coincided with prior misuse of prescription opioids.[7, 8, 9] Strong evidence supports the link between the equipment used for injecting drugs and transmission of HCV. It is estimated that 50 percent of people who inject drugs become infected with HCV within five years of injecting.[10] When HCV infection is undiagnosed and untreated, it can cause adverse health effects, most importantly cirrhosis of the liver, liver cancer, and liver failure. Based on national estimates of age, sex, and race-specific prevalence of HCV antibody, approximately 90,000 Wisconsin residents have evidence of HCV infection.[11]

In Wisconsin, between 2011 and 2015, an average of 2,955 people with HCV infection were reported annually (Figure 16). The rate of HCV infections among people age 15-29 more than doubled during that time period, from 40 to 87 cases per 100,000 population (Figure 17). Surveillance data suggests that most HCV infections in this age group resulted from recent injection drug use.

Human immunodeficiency virus (HIV) infection is also a risk of injection drug use, although this risk is less common than HCV infection. In 2015, five out of 225 individuals newly diagnosed with HIV in Wisconsin reported injection drug use.[12]

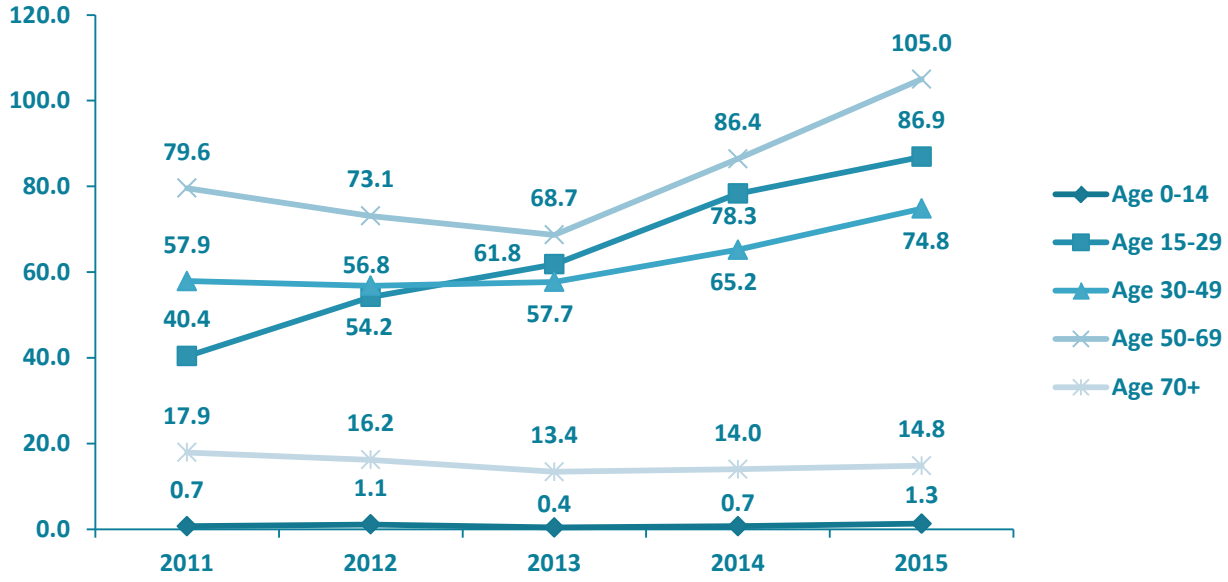
[7] Centers for Disease Control and Prevention. (2012). Notes from the field: Hepatitis C virus infections among young adults—rural Wisconsin, 2010. *Morbidity and Mortality Weekly Report*, *61*(10), 358.
[8] Centers for Disease Control and Prevention. (2011). Notes from the field: Risk factors for Hepatitis C virus infections among young adults—Massachusetts, 2010. *Morbidity and Mortality Weekly Report*, *60*(42), 1457-1458.
[9] Centers for Disease Control and Prevention. (2008). Use of enhanced surveillance for Hepatitis C virus infection to detect a cluster among young injection drug users—New York, November 2014—April 2007. *Morbidity and Mortality Weekly Report*, *57*(19), 517-521.
[10] Hagan, H., Pouget, E.R., Des Jarlais, D.C., 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.
[11] Wisconsin Department of Health Services, AIDS/HIV Program. (2016). Wisconsin Hepatitis C virus surveillance annual review, 2015: Newly reported cases, prevalent cases, and trends. https://www.dhs.wisconsin.gov/publications/p00440-2015.pdf
[12] Wisconsin Department of Health Services, AIDS/HIV Program. (2016). Wisconsin HIV/AIDS surveillance annual review: New diagnoses, prevalent cases, and deaths through December 31, 2015. https://www.dhs.wisconsin.gov/publications/p0/p00484.pdf

Figure 16. Number of newly reported cases of Hepatitis C virus, Wisconsin, 2006-2015



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

Figure 17. Newly reported cases of Hepatitis C virus, rate per 100,000 population, Wisconsin by age, 2011-2015



Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services.
Note: The increased rate of HCV among older adults is probably the result of a new recommendation to screen people born during 1945-1965 for chronic HCV.

Other Drug-Related Hospitalizations

The number of drug-related hospitalizations in Wisconsin increased steadily between 2007 and 2012, but decreased in 2013 and 2014. There were 14,710 Wisconsin hospitalizations defined as drug-related in 2014 (Table 12). Drug-related hospitalizations include such diagnoses as drug psychoses, drug dependence, drug-related polyneuropathy, and accidental and purposeful poisoning by drugs.

Total charges for drug-related hospitalizations, inflation-adjusted to 2014 dollars, rose each year between 2006 and 2013, but dropped slightly in 2014 (Figure 18).

Charges for drug-related hospitalizations in Wisconsin totaled $327 million in 2012, an increase of 49 percent from $233 million in 2006 (Figure 18).

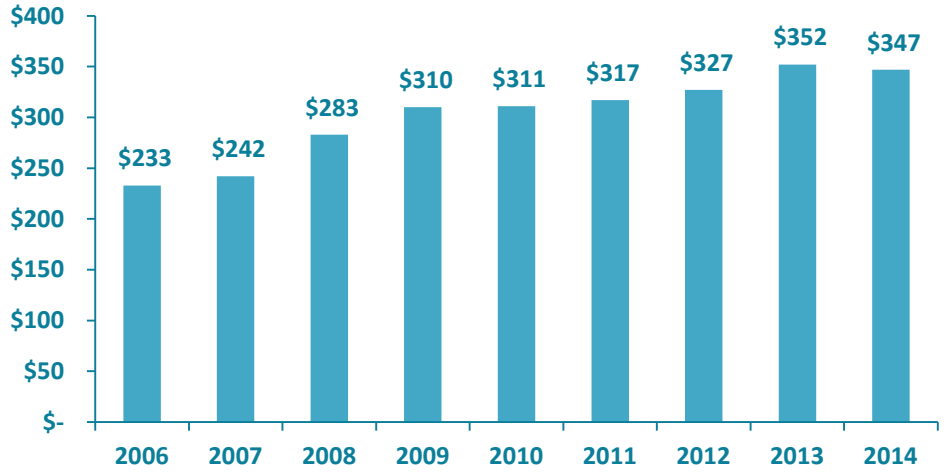
Several counties in southeastern and northeastern Wisconsin had increases in two-year drug hospitalization rates from 2012-2013 to 2013-2014 (Table 13). Caution should be used in interpreting the changes, especially for small counties where minor changes in numbers can produce large increases in rates.

Table 12. Drug-related hospitalizations, rate per 100,000 population and total number, Wisconsin, 2007-2014

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*
Rate/100,000	251	260	257	266	267	270	266	256
Number	14,178	14,756	14,605	15,135	15,224	15,454	15,220	14,710

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

Figure 18. Drug-related hospitalization charges, in millions, Wisconsin, 2006-2014 (inflation-adjusted to 2014 dollars)



Source: Wisconsin hospital inpatient discharge database, 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 Appendix 1).

Table 13. Drug-related hospitalizations, total number and rate per 100,000 population, Wisconsin by county, 2012-2014

County	Number in 2014	Rate per 100,000	
		2012-2013	2013-2014
Adams	32	159	172
Ashland	123	698	709
Barron	94	232	219
Bayfield	54	378	414
Brown	434	203	184
Buffalo	32	236	248
Burnett	25	233	188
Calumet	40	85	91
Chippewa	207	312	307
Clark	44	179	163
Columbia	134	281	242
Crawford	16	166	115
Dane	963	205	191
Dodge	191	220	226
Door	32	93	107
Douglas	11	54	37
Dunn	129	240	270
Eau Claire	348	373	340
Florence	3	56	45
Fond du Lac	227	263	245
Forest	36	386	407
Grant	42	81	83
Green	65	207	195
Green Lake	32	205	165
Iowa	38	128	134
Iron	20	306	364
Jackson	47	275	230
Jefferson	166	185	201
Juneau	73	226	248
Kenosha	489	260	271
Kewaunee	27	136	138
La Crosse	347	319	299
Lafayette	16	107	83
Langlade	31	235	175
Lincoln	51	241	221
Manitowoc	274	343	360
Marathon	162	207	157

Table 13. Drug-related hospitalizations, total number and rate per 100,000 population, Wisconsin by county, 2012-2014 (continued)

County	Number in 2014	Rate per 100,000	
		2012-2013	2013-2014
Marinette	76	230	186
Marquette	33	245	222
Menominee	24	458	524
Milwaukee	4,256	452	451
Monroe	108	275	259
Oconto	36	176	138
Oneida	88	320	292
Outagamie	362	184	198
Ozaukee	227	260	256
Pepin	6	128	101
Pierce	54	109	114
Polk	64	175	166
Portage	136	273	225
Price	20	189	157
Racine	489	238	255
Richland	45	187	221
Rock	505	286	307
Rusk	36	130	174
St. Croix	80	118	102
Sauk	158	233	235
Sawyer	40	229	253
Shawano	49	147	124
Sheboygan	304	285	275
Taylor	17	104	102
Trempealeau	64	243	213
Vernon	55	171	179
Vilas	95	457	468
Walworth	192	220	202
Washburn	32	265	230
Washington	299	231	229
Waukesha	1,036	262	253
Waupaca	85	198	181
Waushara	42	186	186
Winnebago	323	213	198
Wood	219	315	296
Wisconsin	**14,710**	**268**	**261**

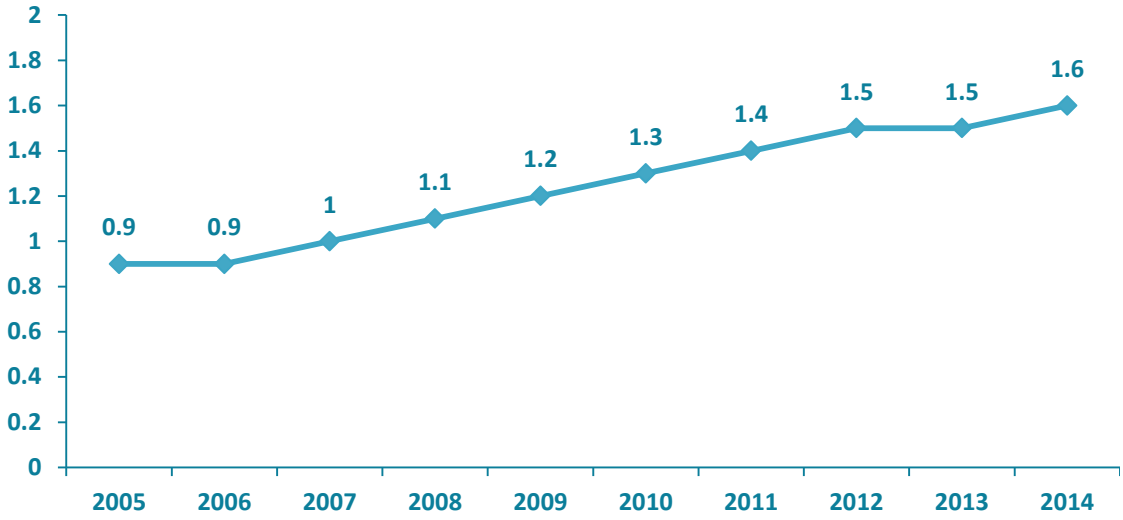
Source: Wisconsin hospital inpatient discharge database, Division of Public Health, Wisconsin Department of Health Services.
Note: Hospitalization numbers and rates are based on patient's county of residence.

Opioid-Related Hospitalizations

Rates of hospitalization for prescription drug abuse and dependence without regard to payment source provides a broader look at the problem of prescription drug misuse.

Wisconsin's opioid-related hospitalizations rate has not leveled off and has gradually increased over the years (Figure 19). Twenty-nine of Wisconsin's 72 counties (40%) experienced increases in opioid-related hospitalization between 2012 and 2014 (Table 14).

Figure 19. Opioid-related hospitalizations per 1,000 population, Wisconsin, 2005-2014



Source: Wisconsin hospital inpatient discharge database, Division of Public Health, Wisconsin Department of Health Services.
Note: These are hospitalizations for opioid dependence or non-dependent abuse, including methadone, codeine, and morphine, excluding heroin and opium where possible (see diagnosis codes in Appendix 2).

Table 14. Opioid-related hospitalizations per 1,000 population, Wisconsin by county, 2012-2014 (moving two-year rates)

County	2012-2013	2013-2014	County	2012-2013	2013-2014
Adams	0.9	0.9	Marinette	1.3	1.0
Ashland	3.5	3.7	Marquette	1.8	1.6
Barron	0.9	0.8	Menominee	2.0	2.6
Bayfield	1.7	1.8	Milwaukee	2.4	2.7
Brown	0.8	0.7	Monroe	1.8	1.7
Buffalo	1.7	1.7	Oconto	0.6	0.6
Burnett	1.6	1.3	Oneida	1.6	1.6
Calumet	0.5	0.6	Outagamie	0.7	0.9
Chippewa	1.6	1.7	Ozaukee	1.5	1.5
Clark	0.9	1.0	Pepin	0.7	0.4
Columbia	1.8	1.8	Pierce	0.5	0.4
Crawford	0.8	0.5	Polk	0.8	0.7
Dane	1.3	1.3	Portage	1.4	1.1
Dodge	1.3	1.5	Price	1.0	1.1
Door	0.3	0.4	Racine	1.4	1.5
Douglas	0.3	0.2	Richland	1.2	1.4
Dunn	1.3	1.6	Rock	1.8	2.0
Eau Claire	2.1	1.9	Rusk	0.7	0.8
Florence	0.6	0.6	St. Croix	0.6	0.5
Fond du Lac	1.4	1.4	Sauk	1.5	1.4
Forest	2.2	2.8	Sawyer	1.4	1.7
Grant	0.5	0.4	Shawano	0.7	0.7
Green	1.4	1.3	Sheboygan	1.7	1.7
Green Lake	1.0	0.8	Taylor	0.3	0.5
Iowa	0.9	0.8	Trempealeau	1.4	1.3
Iron	1.7	2.3	Vernon	1.0	0.9
Jackson	2.0	1.7	Vilas	3.0	3.0
Jefferson	1.1	1.2	Walworth	1.2	1.2
Juneau	1.3	1.4	Washburn	1.4	1.3
Kenosha	1.5	1.7	Washington	1.3	1.5
Kewaunee	0.5	0.6	Waukesha	1.7	1.7
La Crosse	1.6	1.6	Waupaca	0.9	0.9
Lafayette	0.6	0.4	Waushara	0.9	1.1
Langlade	1.2	1.0	Winnebago	1.0	1.1
Lincoln	1.2	1.3	Wood	1.9	1.4
Manitowoc	2.2	2.7			
Marathon	1.1	0.8	**Wisconsin**	1.5	1.5

Source: Wisconsin hospital inpatient discharge database, Division of Public Health, Wisconsin Department of Health Services.
Note: These are hospitalizations for opioid dependence or non-dependent abuse, including methadone, codeine, and morphine, excluding heroin and opium where possible (see diagnosis codes in Appendix 2).

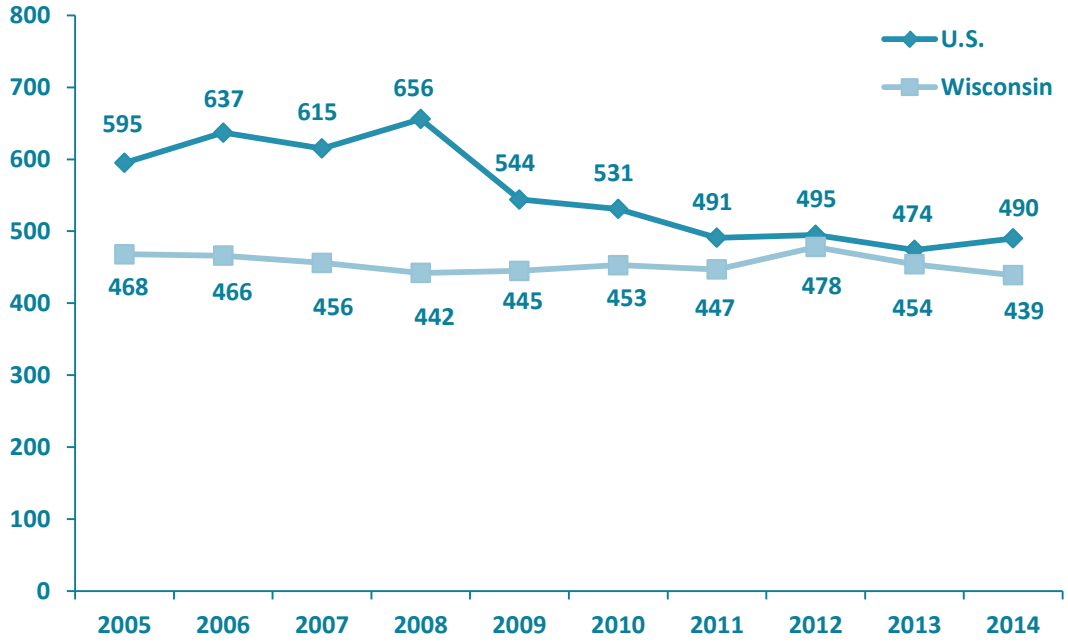
Other Drug-Related Offenses

Other Drug-Related Crime and Arrests

Drug law violations are defined 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. This includes the unlawful cultivation, manufacture, distribution, sale, purchase, use, possession, transportation, or importation of any controlled drug or narcotic substance.

In 2014, there were 25,229 arrests for drug law violations in Wisconsin; 12 percent of drug law arrests were of juveniles. Arrests for possession made up 82 percent of all drug law arrests; the remainders were for sales and manufacturing.

Figure 20. Drug law arrests (adult and juvenile), rate per 100,000 population, Wisconsin and the U.S., 2005-2014



Source: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance (2005-2012); Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center (2013-2014), Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice, Criminal Justice Information Services Division, Federal Bureau of Investigation, U.S. Department of Justice.

Table 15. Drug law arrests, rate per 100,000 population, Wisconsin by county, 2013 and 2014

	Rate per 100,000			Rate per 100,000	
County	2013	2014	County	2013	2014
Adams	309	378	Marinette	449	477
Ashland	274	491	Marquette	189	275
Barron	57	185	Menominee	2,209	1706
Bayfield	132	106	Milwaukee	597	544
Brown	536	399	Monroe	406	410
Buffalo	621	341	Oconto	61	29
Burnett	44	356	Oneida	473	389
Calumet	202	122	Outagamie	477	357
Chippewa	178	103	Ozaukee	259	277
Clark	40	35	Pepin	297	243
Columbia	735	600	Pierce	458	219
Crawford	66	229	Polk	243	266
Dane	341	315	Portage	201	308
Dodge	320	351	Price	221	157
Door	408	375	Racine	596	600
Douglas	548	467	Richland	73	201
Dunn	491	401	Rock	430	473
Eau Claire	708	824	Rusk	341	280
Florence	540	246	St. Croix	253	322
Fond du Lac	296	288	Sauk	487	56
Forest	925	542	Sawyer	307	843
Grant	199	181	Shawano	402	977
Green	209	300	Sheboygan	408	193
Green Lake	357	431	Taylor	208	319
Iowa	147	139	Trempealeau	239	334
Iron	85	169	Vernon	203	173
Jackson	175	382	Vilas	611	860
Jefferson	448	388	Walworth	770	620
Juneau	146	243	Washburn	460	662
Kenosha	553	622	Washington	401	337
Kewaunee	296	267	Waukesha	290	254
La Crosse	725	823	Waupaca	321	356
Lafayette	273	308	Waushara	245	414
Langlade	840	720	Winnebago	622	535
Lincoln	565	390	Wood	328	360
Manitowoc	253	352			
Marathon	362	541	**Wisconsin**	**454**	**439**

Source: Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center, Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice.

Other Drug-Related School Suspensions and Expulsions

Rates of public school suspensions and expulsions vary by county for multiple reasons, including differences in the prevalence of behaviors related to drug activity and differences in policies or diversion programs. A few counties have consistently higher rates of suspensions and expulsions than others, and while spikes can be seen in certain years, there are no consistent upward trends. Data for the 2013-2014 school year are shown in Table 16.

According to the Department of Public Instruction, drug-related means related to use, possession, sale, or solicitation of drugs identified in 21 USC Section 812(c). These offenses do NOT include use, possession, sale, or solicitation of alcohol or tobacco. The data reported includes all grade levels (K-12).

Table 16. Drug-related suspensions and expulsions, per 1,000 students, Wisconsin public schools by county, 2013-2014 school year

County	Number of Incidents	Rate/1,000 Students	County	Number of Incidents	Rate/1,000 Students
Adams	10	6.1	Marinette	19	3.0
Ashland	8	3.0	Marquette	1	0.6
Barron	5	0.7	Menominee	18	21.5
Bayfield	0	0.0	Milwaukee	662	4.7
Brown	165	3.8	Monroe	22	3.1
Buffalo	3	1.4	Oconto	8	1.9
Burnett	15	5.9	Oneida	12	2.8
Calumet	1	0.3	Outagamie	85	2.4
Chippewa	47	5.1	Ozaukee	13	1.0
Clark	12	2.4	Pepin	0	0.0
Columbia	10	1.1	Pierce	13	1.7
Crawford	1	0.5	Polk	14	1.9
Dane	256	3.4	Portage	45	4.8
Dodge	12	1.4	Price	2	1.0
Door	9	2.5	Racine	151	5.1
Douglas	24	3.8	Richland	0	0.0
Dunn	13	2.1	Rock	140	5.0
Eau Claire	48	3.4	Rusk	4	2.0
Florence	0	0.0	Saint Croix	38	2.6
Fond du Lac	59	3.8	Sauk	55	4.6
Forest	5	3.2	Sawyer	9	4.0
Grant	14	2.0	Shawano	11	2.0
Green	12	2.1	Sheboygan	14	0.7
Green Lake	3	1.0	Taylor	2	0.6
Iowa	6	1.7	Trempealeau	6	1.0
Iron	1	1.3	Vernon	8	2.0
Jackson	6	1.9	Vilas	3	1.1
Jefferson	27	2.1	Walworth	66	4.1
Juneau	5	1.3	Washburn	4	1.5
Kenosha	101	3.4	Washington	45	2.2
Kewaunee	1	0.3	Waukesha	97	1.5
La Crosse	41	2.5	Waupaca	11	1.2
Lafayette	0	0.0	Waushara	16	6.0
Langlade	12	3.9	Winnebago	107	4.7
Lincoln	21	4.4	Wood	25	2.0
Manitowoc	21	1.9			
Marathon	54	2.7	**Wisconsin**	**2,754**	**3.2**

Source: WISEdash Public Portal, Wisconsin Department of Public Instruction.
*Milwaukee and Racine data include charter schools.
Note: Each incident is counted separately regardless of whether repeat infractions are by the same or different students.

Consequences of Alcohol and Other Drug Consumption

Treatment

Data on the primary substance related to admissions to publicly funded treatment (Table 17) suggest widespread abuse of opioids, including heroin, throughout the state. Admissions for heroin, as one of the top three substances, are currently clustered largely in urban counties and counties in close proximity to urban areas.

Over the years, the percentages of treatment admissions for alcohol and cocaine have decreased, the latter substantially, while percentages of admissions for opioids (including heroin) almost tripled between 2005 and 2014. Admissions for marijuana and "other drugs" have also increased as a percentage of treatment admissions for substance abuse (Table 17).

The number of clients receiving treatment in the publicly funded sector continues a decline that began in 2009. As of 2014, the number who received services was 37,720, down from a high of 64,806 in 2006 (Figure 21). The first year of the federal health insurance mandate was 2014, which impacted publicly funded treatment. Fewer individuals needed publicly funded substance use treatment because they obtained commercial health insurance or Medicaid coverage for services.

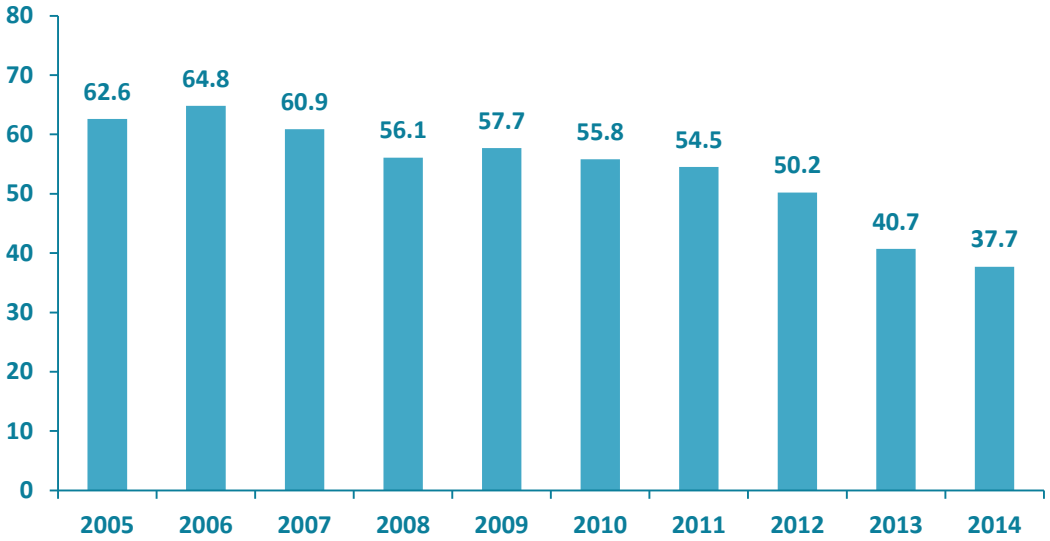
Public funds expended for alcohol and other drug abuse treatment in Wisconsin have also declined, from a high of $83 million in 2006 to a low of $67 million in 2015 (Figure 22).

Table 17. Percent of treatment admissions, Wisconsin by primary substance, 2005-2014

Year	Alcohol*	Heroin	Other Opiates**	Cocaine/ Crack	Marijuana/ Hashish	All Others
2005	69.4%	3.7%	3.0%	11.5%	9.2%	3.2%
2006	68.7%	2.9%	3.1%	12.1%	10.8%	2.4%
2007	70.8%	3.1%	4.1%	7.6%	9.0%	1.6%
2008	74.3%	3.4%	4.1%	7.6%	9.0%	1.6%
2009	72.2%	4.5%	5.2%	6.9%	9.4%	1.8%
2010	71.6%	4.7%	5.6%	6.1%	9.6%	2.4%
2011	69.5%	6.7%	6.2%	5.7%	9.7%	2.2%
2012	68.1%	7.3%	6.8%	5.7%	9.2%	2.9%
2013	62.6%	10.4%	7.0%	5.0%	11.4%	3.5%
2014	63.0%	11.7%	6.0%	4.1%	10.7%	4.7%

Source: Treatment Episode Data Set (TEDS), Substance Abuse and Mental Health Data Archive (SAMHDA), U.S. Department of Health and Human Services.
*Alcohol alone or with secondary drug.
** Opiates and synthetics with morphine-like effects.

Figure 21. Number of alcohol and other drug abuse clients (in thousands) receiving services with public funds, Wisconsin, 2005-2014



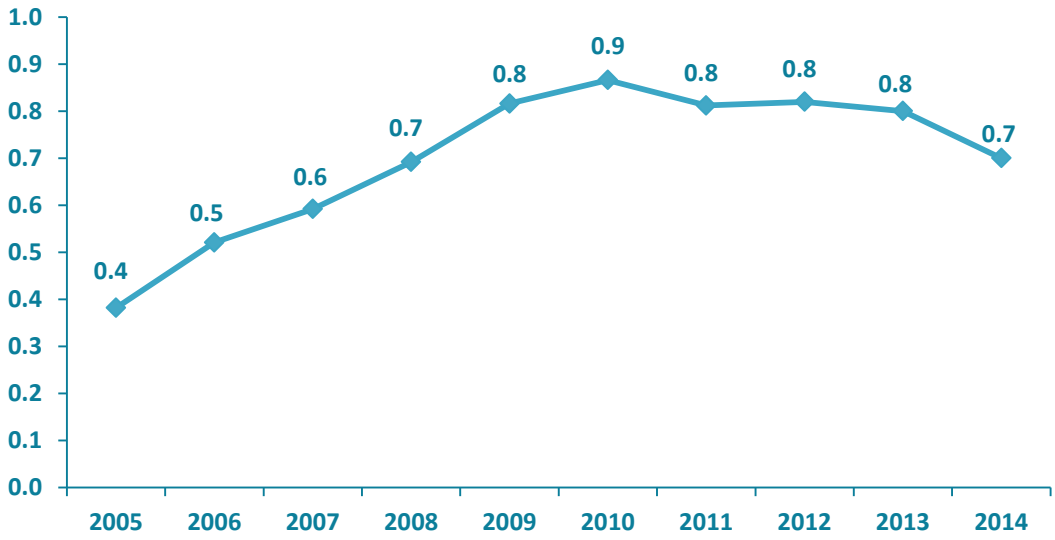
Source: Human Services Reporting System (through 2012) and Program Participation System (2013 and following), Division of Care and Treatment Services, Wisconsin Department of Health Services.
Note: 2014 was the first year of the federal health insurance mandate which impacted publicly-funded treatment. Fewer persons needed publicly funded treatment because they obtained commercial health insurance or Medicaid.

Figure 22. County-authorized, public funds expended (in millions) for alcohol and other drug abuse treatment, Wisconsin, 2006-2015

Source: Human Services Reporting System (through 2012) and Program Participation System (2013 and following), Division of Care and Treatment Services, Wisconsin Department of Health Services.

Youth and young adults ages 12-25 are one of the population groups most affected by prescription drug misuse. A steady increase over time in publicly funded treatment admissions for this type of drug abuse among youth is evident in Figure 23. It is important to note that this does not necessarily mean an increase in drug treatment overall, but is likely related to a gradual shift from abuse of other drugs, such as cocaine, to the abuse of prescription drugs.

Figure 23. County-authorized, publicly funded treatment for prescription drug* abuse, ages 12-25, service admissions per 1,000 population, Wisconsin, 2005-2014



Source: Human Services Reporting System (through 2012) and Program Participation System (2013 and following), Division of Care and Treatment Services, Wisconsin Department of Health Services.
Note: * Includes painkillers, stimulants, sedatives and tranquilizers. The first year of the federal health insurance mandate was 2014, which impacted publicly funded treatment. Fewer persons needed publicly funded treatment because they obtained commercial health insurance or Medicaid.

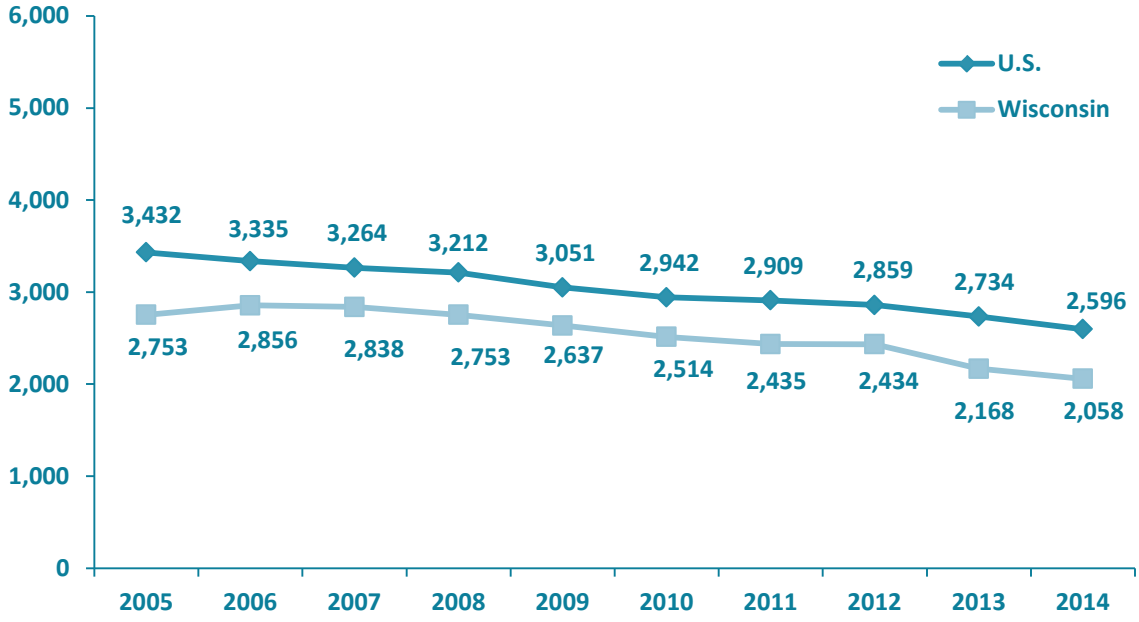
Alcohol and Other Drug-Related Offenses

Alcohol and Other Drug-Related Crime and Arrests

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

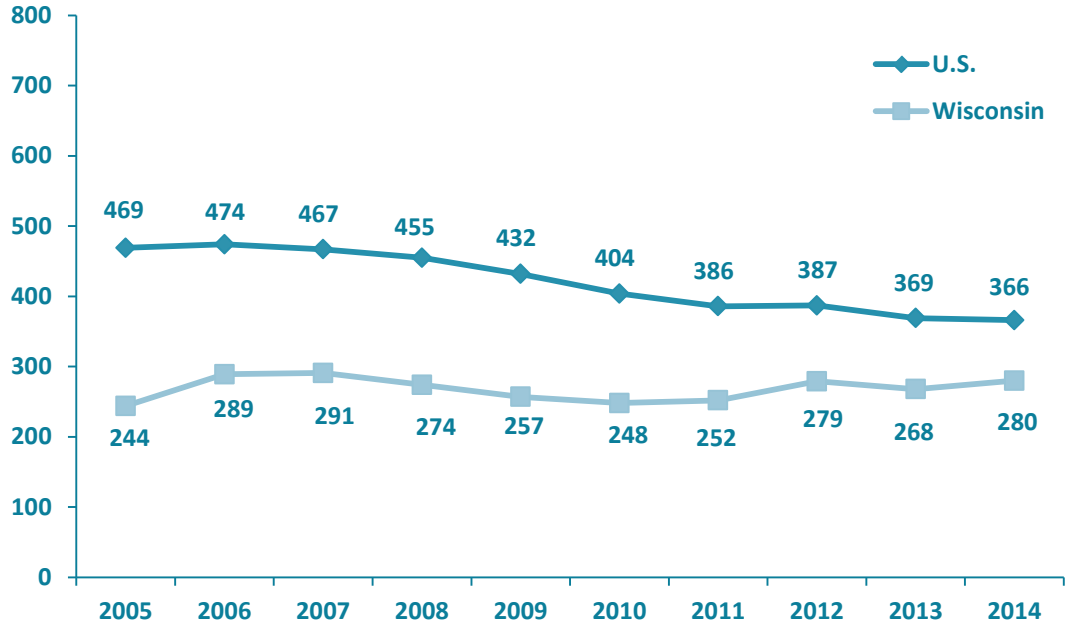
Between 2005 and 2014, Wisconsin's rates of reported property crime and violent crimes were consistently lower than U.S. rates (Figure 24 and Figure 25).

Figure 24. Property crime offenses, rate per 100,000 population, Wisconsin and the U.S., 2005-2014



Source: Crime and Arrests in Wisconsin, Wisconsin Office of Justice Assistance (2005-2012), Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center (2013-2014), Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice, U.S. Department of Justice.
Note: Wisconsin rates were calculated using population estimates from the U.S. Census. National rates per 100,000 were obtained directly from the source and are estimates derived from rates of growth and U.S. Census data.

Figure 25. Violent crime offenses (adult and juvenile), rate per 100,000 population, Wisconsin and the U.S., 2005-2014



Source: Crime and Arrests in Wisconsin, Wisconsin Office of Justice Assistance (2005-2012), Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center (2013-2014), Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice, U.S. Department of Justice.
Note: Wisconsin rates were calculated using population estimates from the U.S. Census. National rates per 100,000 were obtained directly from the source and are estimates derived from rates of growth and U.S. Census data.

Table 18. Property crimes, total number and rate per 100,000 population, Wisconsin by county, 2013 and 2014

	2013		2014	
County	Number	Rate/100,000	Number	Rate/100,000
Adams	588	2,837	489	2,369
Ashland	471	2,932	389	2,419
Barron	210	458	202	440
Bayfield	212	1,404	144	955
Brown	4,966	1,962	3,706	1,453
Buffalo	88	651	102	756
Burnett	540	3,501	514	3,330
Calumet	269	543	235	470
Chippewa	835	1,325	804	1269
Clark	279	805	202	583
Columbia	821	1,447	637	1,121
Crawford	187	1,129	251	1,514
Dane	12,600	2,505	11,305	2,221
Dodge	1,317	1,483	1,009	1,132
Door	283	1,013	297	1,062
Douglas	2,007	4,549	2,035	4,615
Dunn	695	1,580	742	1,680
Eau Claire	1,953	1,942	2,091	2,070
Florence	86	1,934	104	2,326
Fond du Lac	1,620	1,587	1,564	1,527
Forest	148	1,610	105	1,138
Grant	764	1,475	564	1,074
Green	546	1,480	473	1,280
Green Lake	294	1543	322	1,691
Iowa	233	980	214	898
Iron	53	902	91	1,538
Jackson	255	1,237	348	1,683
Jefferson	1,379	1,639	1,272	1,511
Juneau	427	1,593	336	1,255
Kenosha	3,460	2,068	3,418	2,039
Kewaunee	247	1,200	195	947
La Crosse	2,455	2,108	2,424	2,067
Lafayette	161	955	161	952
Langlade	607	3,073	541	2,744
Lincoln	461	1,597	273	951
Manitowoc	1,302	1,605	1,475	1,822
Marathon	2,019	1,496	1,760	1,301

Table 18. Property crimes, total number and rate per 100,000 population, Wisconsin by county, 2013 and 2014 (continued)

	2013		2014	
County	Number	Rate/100,000	Number	Rate/100,000
Marinette	787	1,890	680	1,639
Marquette	189	1,234	203	1,327
Menominee	126	2,961	119	2,744
Milwaukee	39,746	4,175	39,503	4,150
Monroe	699	1,544	572	1,260
Oconto	156	413	173	457
Oneida	553	1,539	540	1,502
Outagamie	2,953	1,642	3,297	1,820
Ozaukee	902	1,037	758	867
Pepin	67	903	66	892
Pierce	654	1,595	638	1,552
Polk	475	1,080	471	1,071
Portage	1,111	1,571	1,001	1,415
Price	177	1,262	189	1,351
Racine	4,813	2,465	4,450	2,278
Richland	113	631	79	442
Rock	4,027	2,512	4,049	2,524
Rusk	177	1,208	176	1,203
St. Croix	1,011	1,180	1,062	1,232
Sauk	1,672	2,678	1,559	2,492
Sawyer	265	1,595	203	1,222
Shawano	662	1,584	552	1,322
Sheboygan	2,073	1,799	1,992	1,727
Taylor	230	1,111	180	871
Trempealeau	222	758	221	754
Vernon	273	908	281	933
Vilas	472	2,200	440	2,046
Walworth	1,727	1,680	1,678	1,630
Washburn	335	2,113	290	1,829
Washington	2,092	1,575	1,719	1,290
Waukesha	4,761	1,212	4,614	1,171
Waupaca	979	1,870	965	1,845
Waushara	371	1,518	294	1,205
Winnebago	2,952	1,752	2,865	1,698
Wood	1,336	1,793	1,305	1,752
Wisconsin	**124,248**	**2,168**	**118,277**	**2,058**

Source: Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center, Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice. Note: Wisconsin Department of Natural Resources and Division of State Patrol crime data are included in the statewide total, and are not included in specific counties.

Table 19. Violent crimes, total number and rate per 100,000 population, Wisconsin by county, 2013 and 2014

	2013		2014	
County	Number	Rate/100,000	Number	Rate/100,000
Adams	54	261	40	194
Ashland	45	280	45	280
Barron	18	39	12	26
Bayfield	29	192	27	179
Brown	592	234	596	234
Buffalo	0	0	9	67
Burnett	27	175	36	233
Calumet	20	40	20	40
Chippewa	57	90	74	117
Clark	14	40	8	23
Columbia	86	152	73	128
Crawford	14	85	19	115
Dane	1,185	263	1,128	222
Dodge	42	47	51	57
Door	25	89	10	36
Douglas	97	220	85	193
Dunn	57	130	69	156
Eau Claire	152	151	136	135
Florence	9	202	3	67
Fond du Lac	186	182	187	183
Forest	21	228	18	195
Grant	79	153	60	114
Green	41	111	33	89
Green Lake	10	52	10	53
Iowa	17	72	32	134
Iron	8	136	7	118
Jackson	28	136	17	82
Jefferson	172	204	106	126
Juneau	55	205	57	213
Kenosha	331	198	348	208
Kewaunee	7	34	9	44
La Crosse	138	118	137	117
Lafayette	9	53	12	71
Langlade	17	86	13	66
Lincoln	40	139	42	146
Manitowoc	107	132	123	152
Marathon	133	99	128	95

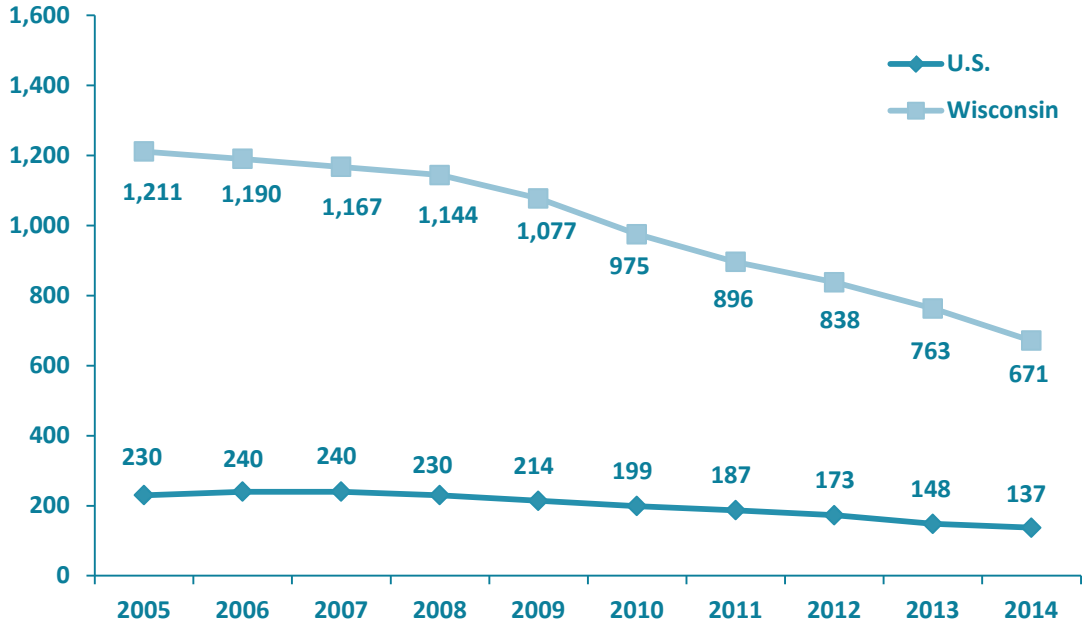
Table 19. Violent crimes, total number and rate per 100,000 population, Wisconsin by county, 2013 and 2014 (continued)

	2013		2014	
County	Number	Rate/100,000	Number	Rate/100,000
Marinette	23	55	17	41
Marquette	1	7	1	7
Menominee	40	940	26	599
Milwaukee	8,649	908	9,459	994
Monroe	59	130	59	130
Oconto	11	29	7	18
Oneida	66	184	67	186
Outagamie	272	151	274	151
Ozaukee	21	24	49	56
Pepin	5	67	8	108
Pierce	60	146	35	85
Polk	109	248	102	232
Portage	79	112	67	95
Price	24	171	12	86
Racine	354	181	419	214
Richland	3	17	3	17
Rock	346	216	373	232
Rusk	20	136	19	130
St. Croix	53	62	49	57
Sauk	68	109	59	94
Sawyer	28	168	30	181
Shawano	28	67	27	65
Sheboygan	165	143	186	161
Taylor	21	101	18	87
Trempealeau	16	55	17	58
Vernon	21	70	22	73
Vilas	71	331	53	246
Walworth	90	88	79	77
Washburn	26	164	33	208
Washington	85	64	89	67
Waukesha	271	69	237	60
Waupaca	55	105	77	147
Waushara	19	78	22	90
Winnebago	270	160	294	174
Wood	28	38	25	34
Wisconsin	**15,381**	**268**	**16,099**	**280**

Source: Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center, Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice. Note: Wisconsin Department of Natural Resources and Division of State Patrol crime data are included in the statewide total, and are not included in specific counties.

The disorderly conduct arrest rate in Wisconsin has declined since 2005 but remains far higher than the U.S. rate. Wisconsin's rate of disorderly conduct arrests was nearly five times the national rate in 2014 (Figure 26). This disparity probably reflects a difference in what is included in this category in Wisconsin versus nationally. Specifically, the national rate excludes arrests for "drunkenness," whereas the Wisconsin rate includes public intoxication or drunkenness in its more general category of "disorderly conduct." That being said, Wisconsin's rates are decreasing more sharply than U.S. rates (a 45% versus 40% decline, respectively, since 2005).

Figure 26. Disorderly conduct arrests (adult and juvenile), rate per 100,000 population, Wisconsin and the U.S., 2005-2014



Source: Crime and Arrests in Wisconsin, Wisconsin Office of Justice Assistance (2005-2012), Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center (2013-2014), Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice, Criminal Justice Information Services, Federal Bureau of Investigation, U.S. Department of Justice.

Table 20. Disorderly conduct arrests, rate per 100,000 population, Wisconsin by county, 2013 and 2014

	Rate per 100,000			Rate per 100,000	
County	2013	2014	County	2013	2014
Adams	487	581	Marinette	615	540
Ashland	710	634	Marquette	418	386
Barron	137	244	Menominee	3,336	2,352
Bayfield	517	192	Milwaukee	976	757
Brown	663	518	Monroe	848	744
Buffalo	222	467	Oconto	270	203
Burnett	1,005	570	Oneida	481	509
Calumet	222	182	Outagamie	702	583
Chippewa	541	388	Ozaukee	494	438
Clark	277	150	Pepin	175	365
Columbia	876	847	Pierce	697	409
Crawford	36	181	Polk	448	312
Dane	700	629	Portage	296	394
Dodge	814	672	Price	635	579
Door	648	454	Racine	663	617
Douglas	877	875	Richland	525	626
Dunn	914	652	Rock	1,298	1,225
Eau Claire	875	797	Rusk	785	601
Florence	450	157	St. Croix	396	383
Fond du Lac	816	809	Sauk	915	715
Forest	1,381	1,192	Sawyer	385	343
Grant	819	516	Shawano	761	826
Green	629	677	Sheboygan	1,145	1,151
Green Lake	924	783	Taylor	676	537
Iowa	362	269	Trempealeau	492	368
Iron	153	304	Vernon	485	442
Jackson	704	895	Vilas	979	925
Jefferson	1,173	910	Walworth	1,007	1,152
Juneau	504	564	Washburn	599	467
Kenosha	828	786	Washington	915	813
Kewaunee	496	388	Waukesha	373	358
La Crosse	1,066	965	Waupaca	703	814
Lafayette	825	763	Waushara	679	697
Langlade	815	745	Winnebago	971	913
Lincoln	758	369	Wood	1,094	999
Manitowoc	582	595			
Marathon	699	622	**Wisconsin**	**763**	**671**

Source: Wisconsin Uniform Crime Reporting (UCR) Data Dashboard Center, Bureau of Justice Information and Analysis (BJIA), Wisconsin Department of Justice.

Consumption

Alcohol Consumption

Alcohol consumption in Wisconsin is consistently higher than other states and territories and the U.S. as a whole. Binge drinking is an entrenched practice among Wisconsin adults, as evidenced by a long-term trend in Behavioral Risk Factor Surveillance System (BRFSS) estimates that consistently rank Wisconsin highest or second-highest nationally (Figure 32, page 72). Recent changes in BRFSS methodology, which included sampling of the cell phone-only population segment and improved data weighting, have not altered this pattern.

In 2011, BRFSS added cell phone sampling to its methodology in order to capture the portion of the population that was increasingly missed with traditional landline telephone survey sampling. Results from the National Health Interview Survey, a face-to-face interview survey, had previously indicated that adults in the cell phone-only population segment were more likely to binge drink than those with a landline telephone,[13] and BRFSS data with combined cell phone and landline samples have supported this early finding. In most states, including Wisconsin, BRFSS binge drinking estimates increased by 1 percent, 2 percent, or more with the 2011 changes.

BRFSS results indicate that in 2014, Wisconsin continued to have a prevalence of current alcohol consumption above the national median (63% versus 53%) among adults, and the third highest prevalence of adult binge drinking (22%) among U.S. states and territories (Figure 28). Wisconsin's rates of adult alcohol use remained higher than national averages in 2014 for all categories of consumption, including current use, binge drinking, and heavy drinking (Figure 28). Results from the NSDUH also consistently place Wisconsin in the top one or two states on current alcohol use and binge drinking.

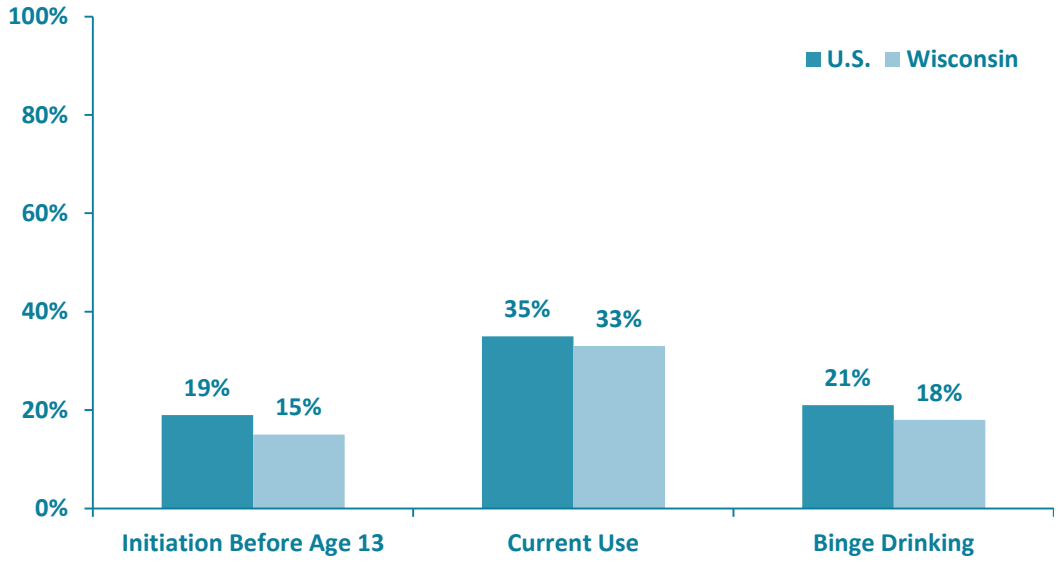
As with adults, the prevalence of alcohol use among high school students has been higher in Wisconsin than nationally in the recent past, but this pattern is changing. Data from the Wisconsin Youth Risk Behavior Survey (YRBS) have begun to show a downward trend in current alcohol consumption, binge drinking, and early initiation of alcohol among high school students in Wisconsin, suggesting that progress has been made with concerted efforts to reduce youth and underage drinking. Some of these changes mirror national trends.

From 2001 through 2007, YRBS data indicated that Wisconsin had the highest prevalence of current alcohol use among high school students in the nation. A downward trend began in 2009 and was sustained in 2011, when Wisconsin had the eighth-highest prevalence of current alcohol use. As of 2013, Wisconsin was lower than the U.S. as a whole on all three alcohol consumption measures among high school students: initiation before age 13, current alcohol use, and binge drinking (Figure 27).

[13] Blumberg, S. J. and Luke, J. V. (2009). Wireless substitution: Early release of estimates from the National Health Interview Survey, July-December 2008. National Center for Health Statistics. http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200905.htm

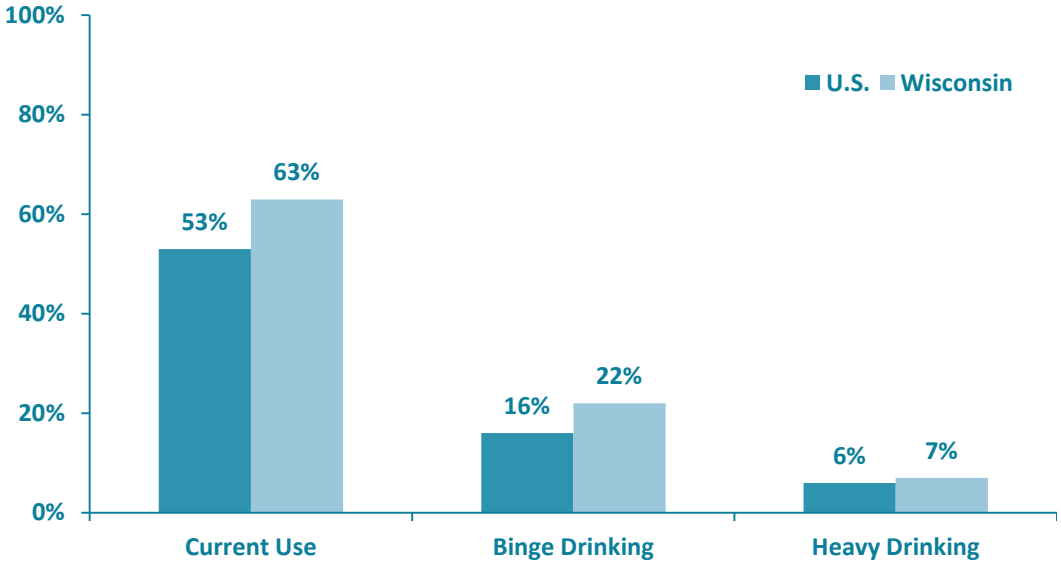
Wisconsin YRBS weighted data was not achieved for 2015 due to a limited data sample. The most recent Wisconsin weighted data from 2013 will continue to be used in the epidemiological profile until 2017 data is collected and made available. Moving forward, U.S. 2015 YRBS weighted data is included to display the national trend.

Figure 27. Alcohol use among high school students, Wisconsin and the U.S., 2013



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Figure 28. Alcohol use among adults, Wisconsin and the U.S. median, 2014

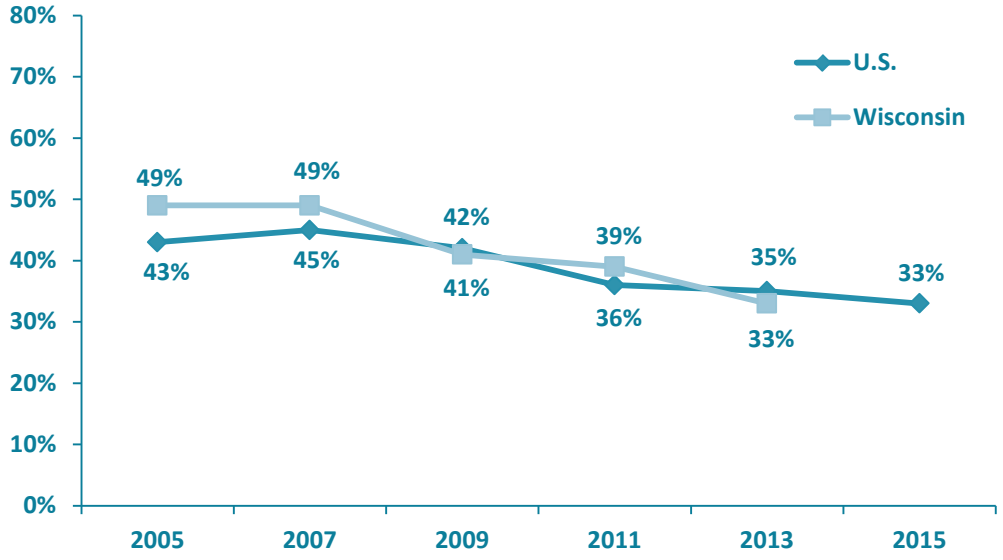


Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services; and U.S. Centers for Disease Control and Prevention.

Current Alcohol Use

Historically, the prevalence of current alcohol use among high school students and adults in Wisconsin has been high. Current alcohol use (at least one drink in the past 30 days) by high school students in Wisconsin has been dropping in recent years and was reported by 33 percent of Wisconsin high school students in 2013. This is below the national prevalence for the second time in three years (Figure 29). However, 65 percent of Wisconsin adults (age 18 and older) reported current alcohol use in 2013 (Figure 30). Current alcohol use remains lowest among African American high school youth compared to youth in other race/ethnicity groups (Table 21).

Figure 29. Current alcohol use among high school students, Wisconsin and the U.S., 2003-2015



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Table 21. Current alcohol use among high school students, Wisconsin by race/ethnicity, 2005-2013

Race/Ethnicity	*2005-2007*	*2007-2009*	*2009-2011*	*2011-2013*
White	51%	47%	41%	37%
African American	33%	33%	28%	25%
Hispanic/Latino	43%	42%	37%	34%
Asian/Pacific Islander	39%	32%	37%	34%
American Indian or Alaskan Native	51%	47%	46%*	51%*
Multiracial	53%	52%	45%	39%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction; U.S. Centers for Disease Control and Prevention.
Note: * Interpret with caution due to small number of cases. 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Long-term trends in adult alcohol consumption based on data from the BRFSS are only valid through 2010, due to changes in BRFSS methodology. Beginning with 2011, new trends are being established based on combined landline and cell phone sample data and a new weighting methodology. There are indications that these methodological changes produce slightly higher estimates of adult alcohol consumption and binge drinking, but more years of data are needed to verify the differences.

The prevalence of current alcohol use among Wisconsin adults has dropped only slightly since the early 2000s. Wisconsin's current alcohol use remains highest, or second highest, in the nation from year to year. Alcohol use is highest among younger adults and males, although women of childbearing age also consume alcohol at a higher rate than adults in the U.S. overall (Table 22).

According to 2012-2014 BRFSS estimates, White adults continue to have the highest rate of current alcohol use, followed by Hispanic and African American adults. Asians and American Indians have the lowest rates of current alcohol use compared to adults in other race/ethnicity groups (Table 23).

Figure 30. Current alcohol use among adults (age 18 and older), Wisconsin and U.S. median, 2005-2014

Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Current alcohol use is defined as at least one drink of alcohol in the past 30 days. Differences between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

Table 22. Current alcohol use among adults (age 18 and older), Wisconsin by age and sex, and U.S. median, 2005-2014

Year	U.S.	Wisconsin	18-24	25-44	45-64	65+	Males	Females	Females 18-44
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%
2011	57%	67%	68%	70%	70%	56%	70%	64%	67%
2012	55%	64%	65%	68%	66%	53%	69%	60%	63%
2013	55%	63%	62%	71%	66%	53%	69%	60%	63%
2014	53%	63%	55%	67%	66%	56%	70%	57%	57%

Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Difference between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

Table 23. Current alcohol use among adults (age 18 and older), Wisconsin by race/ethnicity, 2004-2014

Year	African American	American Indian	Asian	Hispanic	White
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%
2011-2013	53%	44%	53%	57%	67%
2012-2014	53%	45%	48%	53%	66%

Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Differences between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

Table 24. Current alcohol use among adults (age 18 and older), Wisconsin by county,2011-2014

County	2011-2013	2012-2014	County	2011-2013	2012-2014
Adams	62%	62%	Marinette	50%	56%
Ashland	57%	60%	Marquette	54%	52%
Barron	53%	56%	Menominee	52%	53%
Bayfield	66%	59%	Milwaukee	61%	59%
Brown	71%	68%	Monroe	57%	54%
Buffalo	64%	54%	Oconto	62%	64%
Burnett	64%	65%	Oneida	66%	64%
Calumet	76%	77%	Outagamie	64%	67%
Chippewa	63%	61%	Ozaukee	75%	74%
Clark	51%	51%	Pepin	70%	67%
Columbia	64%	67%	Pierce	74%	63%
Crawford	60%	52%	Polk	66%	66%
Dane	71%	68%	Portage	68%	70%
Dodge	68%	61%	Price	63%	60%
Door	69%	67%	Racine	62%	62%
Douglas	47%	44%	Richland	60%	63%
Dunn	70%	67%	Rock	60%	58%
Eau Claire	68%	65%	Rusk	63%	65%
Florence	72%	73%	St. Croix	64%	67%
Fond du Lac	74%	65%	Sauk	61%	68%
Forest	65%	62%	Sawyer	65%	62%
Grant	66%	61%	Shawano	61%	56%
Green	67%	67%	Sheboygan	64%	63%
Green Lake	52%	61%	Taylor	70%	70%
Iowa	60%	60%	Trempealeau	63%	60%
Iron	63%	69%	Vernon	61%	56%
Jackson	69%	61%	Vilas	71%	67%
Jefferson	67%	61%	Walworth	67%	68%
Juneau	58%	54%	Washburn	65%	58%
Kenosha	66%	60%	Washington	69%	75%
Kewaunee	60%	66%	Waukesha	73%	72%
La Crosse	72%	70%	Waupaca	65%	71%
Lafayette	58%	59%	Waushara	72%	62%
Langlade	52%	64%	Winnebago	62%	64%
Lincoln	56%	61%	Wood	62%	64%
Manitowoc	66%	62%			
Marathon	68%	69%	**Wisconsin**	**64%**	**65%**

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

Binge Drinking

Based on differences between men and women in metabolizing alcohol, the CDC defines binge drinking as five or more drinks on one occasion for men and four or more drinks on one occasion for women. The YRBS uses the threshold of five or more drinks for both sexes, and may slightly underestimate binge drinking among high school girls.

Methodological note: In 2011, BRFSS added cell phone sampling to its methodology in order to capture the portion of the population that was increasingly missed with traditional landline telephone survey sampling. That same year, the BRFSS post-survey weighting methodology was also changed. These changes rule out direct comparisons with BRFSS estimates from 2010 and earlier. Results from the National Health Interview Survey, a face-to-face interview survey, had indicated prior to 2011 that adults in the cell phone-only population segment were more likely to binge drink than were those with landline telephones,[14] and BRFSS data with combined cell phone and landline samples have supported this early finding. In most states, including Wisconsin, BRFSS binge drinking estimates increased by 1 percent, 2 percent, or more with the 2011 changes.

As of 2012, Wisconsin's overall adult binge drinking prevalence, at 25 percent, continued to be the highest in the nation. However, in 2014 Wisconsin dropped to third in adult binge drinking prevalence, at 22 percent, based on BRFSS results. Additional years of data are needed to determine if this indicates a trend. The prevalence of binge drinking remains above 25 percent for young adults and males (Table 27).

Binge drinking intensity is reflected in the actual number of drinks consumed in a binge drinking episode. Although the threshold for binge drinking is four or five drinks (women versus men), among Wisconsin adult binge drinkers the average maximum number of drinks consumed is far higher than the threshold—as much as eight or nine drinks for some groups in the 2013-2014 time period (Table 25).

Table 25. Average maximum number of alcoholic drinks on one occasion past 30 days, Wisconsin by age group and sex, 2005-2014 (binge drinkers only)

Year	18-24	25-34	35-44	45-64	65+	Males	Females	Total
2005-2006	8.9	8.9	7.5	6.6	5.5	8.3	5.9	7.6
2007-2008	10.0	8.7	7.4	6.7	5.2	9.1	6.0	7.9
2009-2010	10.0	8.6	8.0	6.8	5.4	9.0	6.2	8.0
2011-2012	9.0	10.2	8.0	7.6	6.7*	9.9	6.5	8.6
2013-2014	8.6	8.7	7.6	6.8	5.3	8.7	5.7	7.6

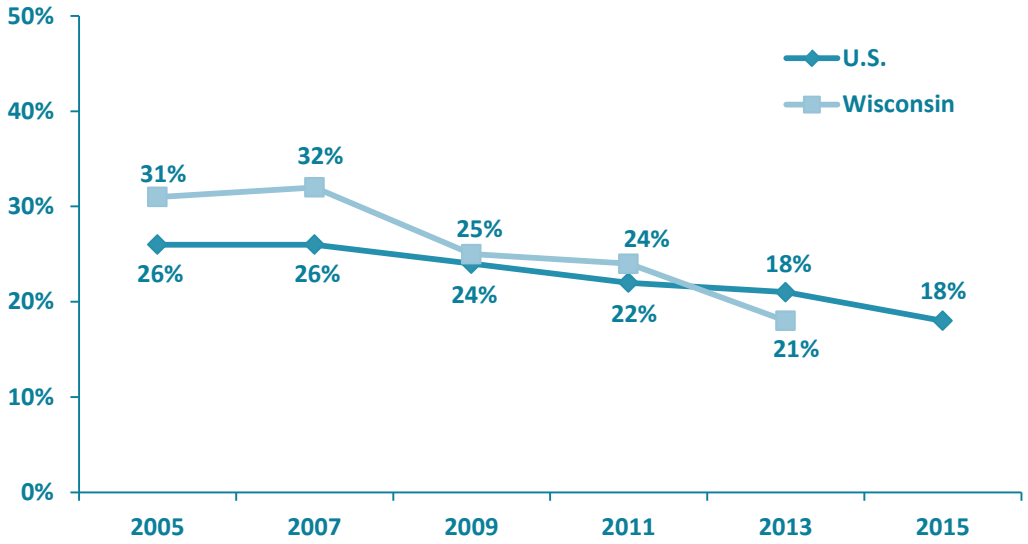
Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: *Interpret with caution due to confidence interval half-width > 1.5. The addition of cell phone-only respondents beginning in 2011 may have increased binge drinking estimates. Differences between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

[14] Blumberg, S. J. and Luke, J. V. (2009). Wireless substitution: Early release of estimates from the National Health Interview Survey, July-December 2008. National Center for Health Statistics. http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200905.htm

In 2013, 18 percent of Wisconsin high school students engaged in binge drinking, a decline from 24 percent in 2011. This continues a trend across several years of reduced binge drinking among high school youth, with Wisconsin's rate now lower than the rate for the U.S. as a whole. Binge drinking among high school students in the U.S. is also trending downward, although the drop is less steep than in Wisconsin (Figure 31).

White, multiracial, and American Indian youth in Wisconsin report the highest levels of binge drinking; however, the 2011-2013 prevalence for American Indian youth should be interpreted with caution due to small sample sizes (Table 26).

Figure 31. Binge drinking among high school students, Wisconsin and the U.S., 2005-2015



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

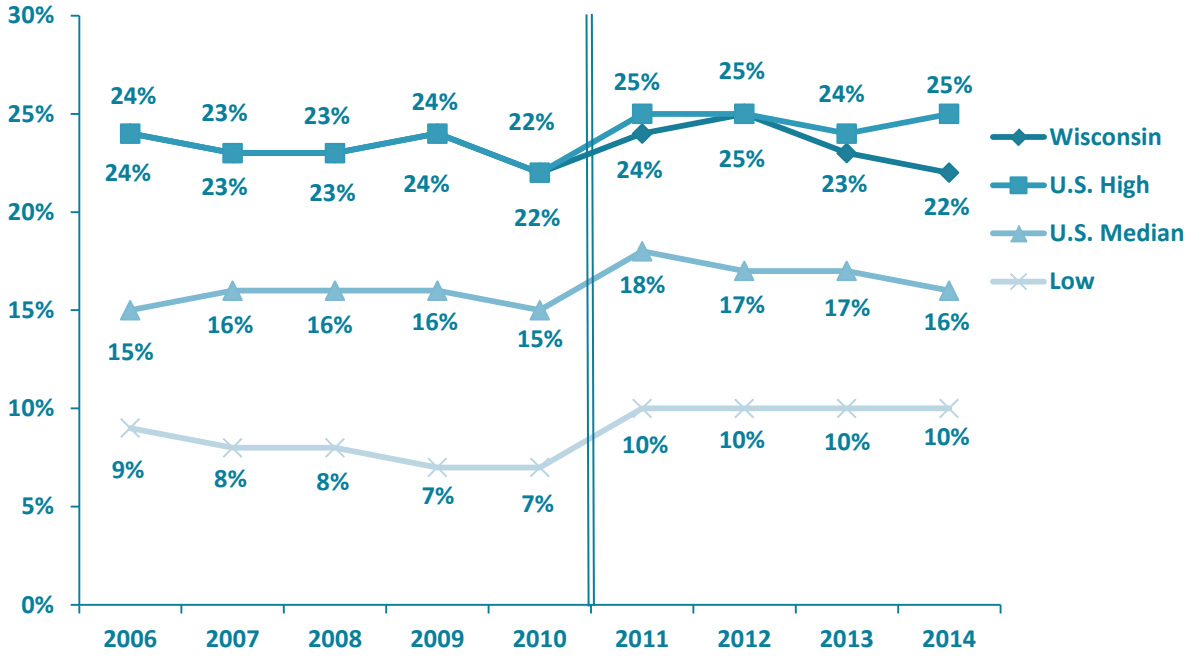
Table 26. Binge drinking among high school students, Wisconsin by race/ethnicity, 2003-2013

Race/Ethnicity	*2003-2005*	*2005-2007*	*2007-2009*	*2009-2011*	*2011-2013*
White	31%	33%	30%	26%	22%
African American	15%	15%	14%	12%	12%
Hispanic/Latino	28%	26%	25%	20%	18%
Asian or Pacific Islander	24%	22%	20%	25%	21%
American Indian or Alaskan Native	42%	41%	35%	30%*	40%*
Multiracial	26%	36%	34%	29%	23%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction; U.S. Centers for Disease Control and Prevention.
* Interpret with caution due to confidence interval half-width >10%.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

The prevalence of binge drinking among Wisconsin adults 18 and older in 2014 was 22 percent (Figure 32). This placed Wisconsin third among states and territories, which is a promising sign and may indicate progress in reduction of adult binge drinking. Additional years of data will be needed to verify the presence of a trend.

Figure 32. Adult binge drinking, range of state estimates: low, high, and U.S. median, 2006-2014



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: The median is the midpoint of the range of estimates for all U.S. states and territories. Differences between groups and time periods may not be statically significant. Double line indicates trend break due to methodological changes.

Young adults and males in Wisconsin have higher rates of binge drinking than older adults and women; however, women of childbearing age (18-44) have a higher rate of binge drinking (20%) than U.S. adults overall (16%) (Table 27). Among race/ethnicity groups, Hispanics had the highest binge drinking prevalence for the three-year time period 2012-2014 (Table 28).

Table 27. Binge drinking among adults (age 18 and older), Wisconsin by age and sex, and U.S. median, 2005-2014

Year	U.S.	Wisconsin	18-24	25-44	45-64	65+	Males	Females	Females 18-44
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%
2011	18%	24%	41%	32%	19%	7%	31%	17%	27%
2012	17%	25%	43%	32%	22%	7%	30%	20%	29%
2013	17%	23%	39%	31%	19%	6%	29%	16%	26%
2014	16%	22%	30%	29%	21%	9%	29%	15%	20%

Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Differences between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

Table 28. Binge drinking among adults (age 18 and older), Wisconsin by race/ethnicity, 2004-2014

Year	African American	American Indian	Asian	Hispanic/ Latino	White
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%
2011-2013	24%	21%	14%	29%	24%
2012-2014	19%	22%	14%	28%	24%

Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Differences between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

Table 29. Binge drinking among adults (age 18 and older), Wisconsin by county, three-year pooled estimates, 2011-2014

County	2011-2013	2012-2014	County	2011-2013	2012-2014
Adams	22%	19%	Marinette	17%	21%
Ashland	22%	20%	Marquette	nr	nr
Barron	24%	25%	Menominee	26%	23%
Bayfield	21%	15%	Milwaukee	23%	22%
Brown	26%	27%	Monroe	20%	17%
Buffalo	nr	nr	Oconto	17%	23%
Burnett	17%	18%	Oneida	19%	19%
Calumet	37%	31%	Outagamie	25%	28%
Chippewa	25%	17%	Ozaukee	26%	27%
Clark	18%	18%	Pepin	27%	27%
Columbia	30%	31%	Pierce	35%	30%
Crawford	28%	22%	Polk	16%	18%
Dane	25%	25%	Portage	27%	27%
Dodge	27%	25%	Price	26%	22%
Door	16%	18%	Racine	24%	25%
Douglas	14%	12%	Richland	28%	25%
Dunn	27%	25%	Rock	18%	18%
Eau Claire	28%	27%	Rusk	nr	19%
Florence	12%	13%	St. Croix	31%	29%
Fond du Lac	18%	19%	Sauk	29%	27%
Forest	21%	20%	Sawyer	23%	20%
Grant	30%	28%	Shawano	20%	20%
Green	19%	22%	Sheboygan	26%	23%
Green Lake	nr	21%	Taylor	25%	29%
Iowa	17%	18%	Trempealeau	29%	26%
Iron	27%	24%	Vernon	24%	18%
Jackson	34%	19%	Vilas	23%	21%
Jefferson	22%	18%	Walworth	23%	26%
Juneau	22%	18%	Washburn	30%	20%
Kenosha	24%	23%	Washington	19%	22%
Kewaunee	nr	nr	Waukesha	27%	22%
La Crosse	31%	28%	Waupaca	21%	23%
Lafayette	nr	nr	Waushara	nr	22%
Langlade	22%	22%	Winnebago	23%	22%
Lincoln	19%	20%	Wood	22%	23%
Manitowoc	19%	21%			
Marathon	29%	28%	**Wisconsin**	**24%**	**23%**

Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: nr = not reliable: relative standard error >30%

Heavy Use of Alcohol

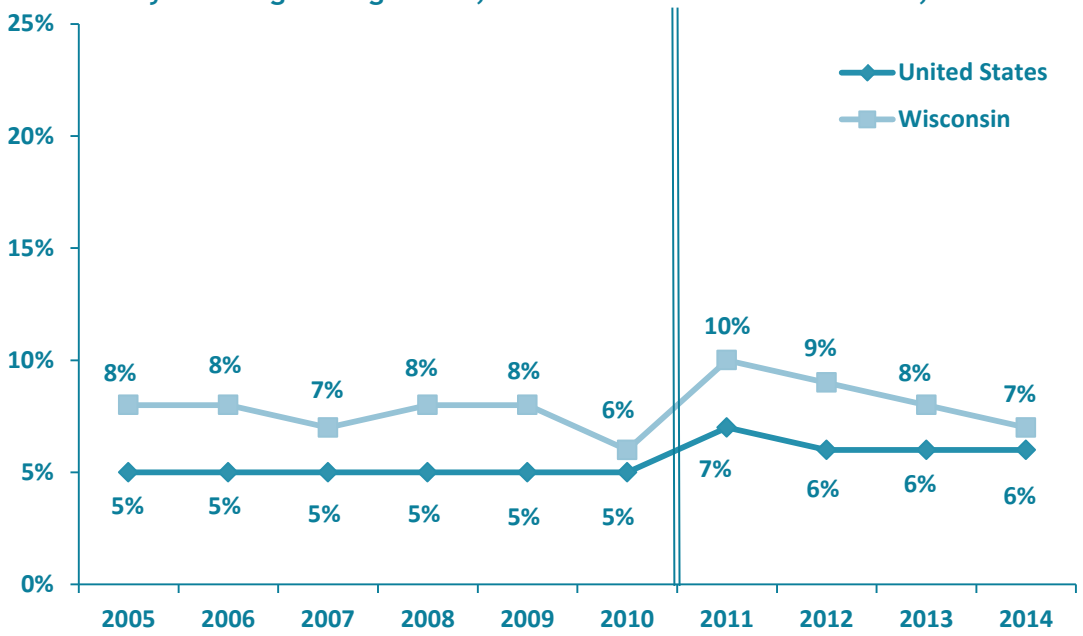
The CDC defines heavy alcohol consumption as an average of more than two drinks per day for men and an average of more than one drink per day for women. As with binge drinking, the difference in definitions by sex is based on the different rates at which men and women metabolize alcohol. Wisconsin's heavy drinking rate has been consistently higher than the national rate since 2005.

The prevalence of heavy use of alcohol among Wisconsin adults 18 and older remained at or near 8 percent from 2005 to 2009 (Figure 33). In 2011, methodological changes were instituted in BRFSS sampling and weighting, which may help to account for a spike in 2011 to 10 percent (see pgs. 64, 70, and Appendix 2 about methodological changes).

In most years, heavy use of alcohol is highest among young adults ages 18-24 and adults ages 45-64 (Table 30). In 2014, 8 percent of these age groups in Wisconsin were heavy drinkers. As Table 30 shows, women are as likely as men to drink heavily.

Among race/ethnicity groups, African Americans are more likely to drink heavily based on combined data from 2012 to 2014 (Table 31). However, the estimate of heavy drinking for American Indians and Asians is not available for comparison, as the relative standard errors for these groups are too large (>30%). See Appendix 2 for information on the relative standard error.

Figure 33. Heavy drinking among adults, Wisconsin and the U.S. median, 2005-2014



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Differences between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

Table 30. Heavy drinking among adults (age 18 and older), Wisconsin by age and sex, and U.S. median, 2005-2014

Year	U.S.	Wisconsin	18-24	25-44	45-64	65+	Males	Females	Females 18-44
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%	**	7%	8%	3%	7%	6%	6%
2011	7%	10%	11%	13%	9%	5%	11%	8%	10%
2012	6%	9%	10%	9%	9%	6%	8%	9%	10%
2013	6%	8%	9%	9%	8%	4%	8%	7%	9%
2014	6%	7%	8%	7%	8%	6%	8%	7%	7%

Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Differences between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

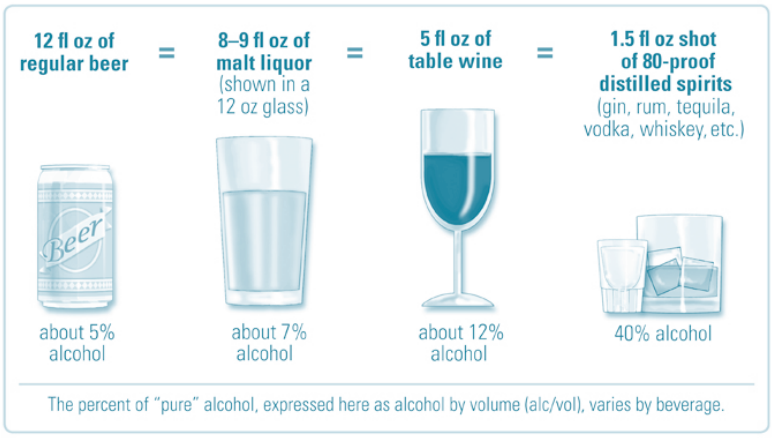
Table 31. Heavy drinking among adults (age 18 and older), Wisconsin by race/ethnicity, 2004-2014

Year	African American	American Indian	Asian	Hispanic/ Latino	White
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%	**	10%	7%
2008-2010	6%	12%	**	13%	7%
2011-2013	9%	**	**	6%	9%
2012-2014	7%	5%	**	5%	6%

Source: Behavioral Risk Factor Survey, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: ** Estimate not reliable due to relative standard error >30% (see Appendix 2). Differences between groups may not be statistically significant. Double line indicates trend break due to methodological changes.

Per Capita Alcohol Consumption

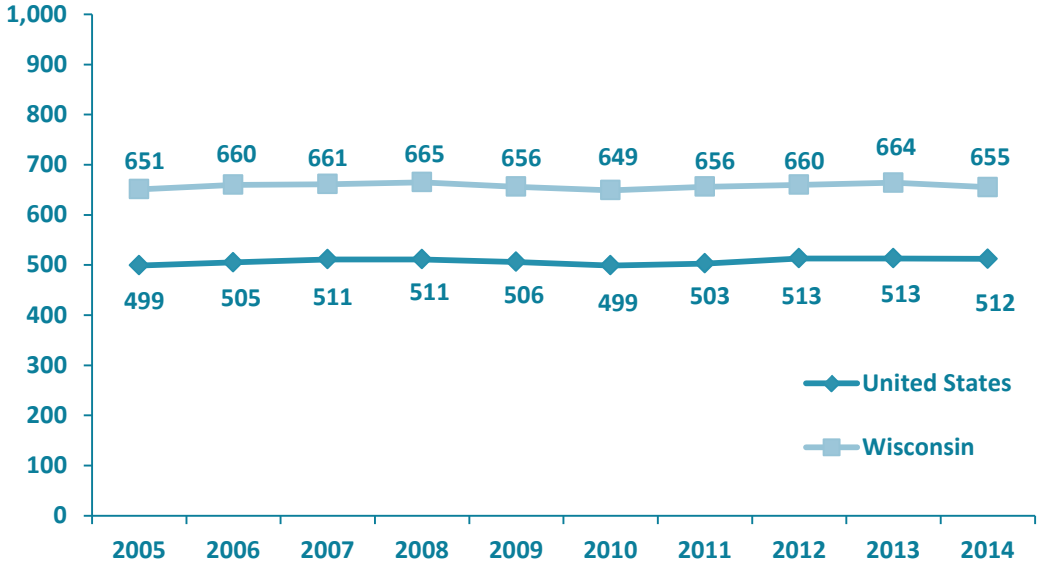
Per capita consumption is the average amount of alcohol consumed per person, based on the population age 14 and older. Standard drink serving sizes are 12 ounces of beer, 8-9 ounces of malt liquor, 5 ounces of wine, or 1.5 ounces of distilled spirits or liquor.



Source: National Institute on Alcohol Abuse and Alcoholism (NIAAA). What is a standard drink? https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/what-standard-drink

In 2014, Wisconsin's consumption was 655 standard drinks per person (Figure 34), which is equivalent to approximately 334 servings of beer, 76 servings of wine, and 245 servings of liquor, well above the national average.

Figure 34. Per capita alcohol consumption of standard drinks, age 14 and older, Wisconsin and the U.S., 2005-2014



Source: National Institute on Alcohol Abuse and Alcoholism (NIAAA), Alcohol Epidemiologic Data System. (2016). Apparent per capita alcohol consumption: National, state and regional trends, 1977-2014. http://pubs.niaaa.nih.gov/publications/surveillance104/CONS14.htm

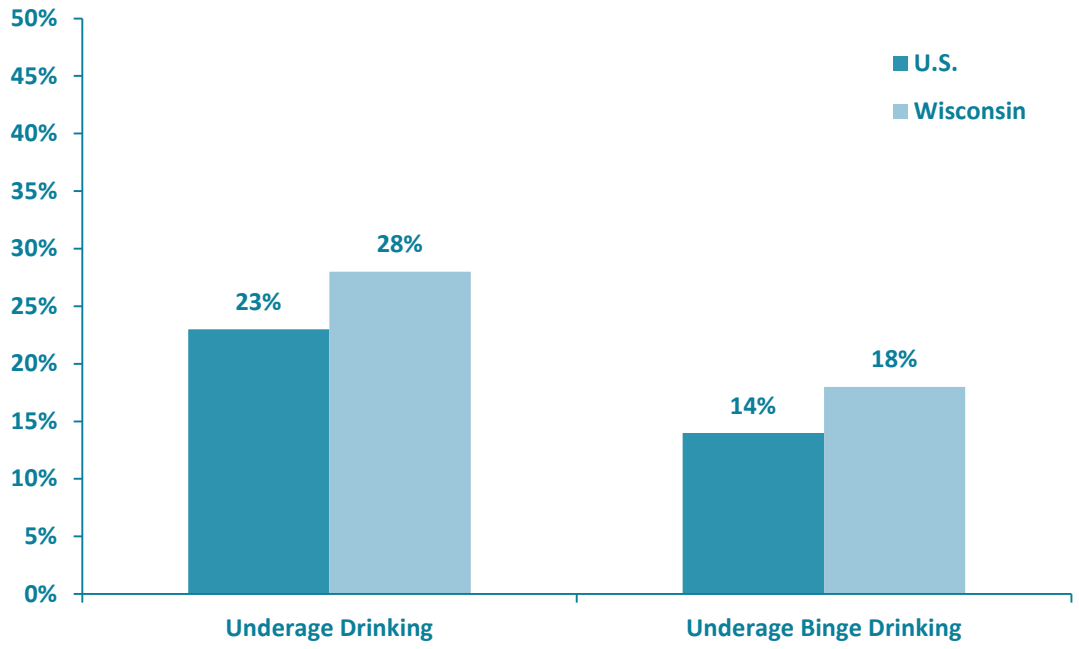
Underage Drinking

For purposes of clarification, NSDUH data are presented here because they include estimates for young people ages 12-20, which is an appropriate age span for estimating underage drinking. The other major sources of data on alcohol use, the BRFS and the YRBS, only provide data for adults ages 18 and older and high school students respectively.

While current alcohol use reported by Wisconsin high school students was below the national prevalence in 2013 (Figure 27, page 65), underage drinking, defined by the NSDUH as drinking by youth ages 12 to 20, is higher in Wisconsin than the nation as a whole. Wisconsin youth are more likely to report both current drinking (at least one drink in the past month) and binge drinking (defined by NSDUH as five or more drinks on one occasion in the past month).

In 2013-2014, 28 percent of Wisconsin youth ages 12-20 reported current alcohol use (Figure 35). This is down from 29 percent in 2012-2013 (not shown). In addition, 18 percent of Wisconsin youth ages 12-20 reported binge drinking in the past month. This has stayed the same since 2010 (not shown).

Figure 35. Underage drinking, Wisconsin and the U.S., 2013-2014



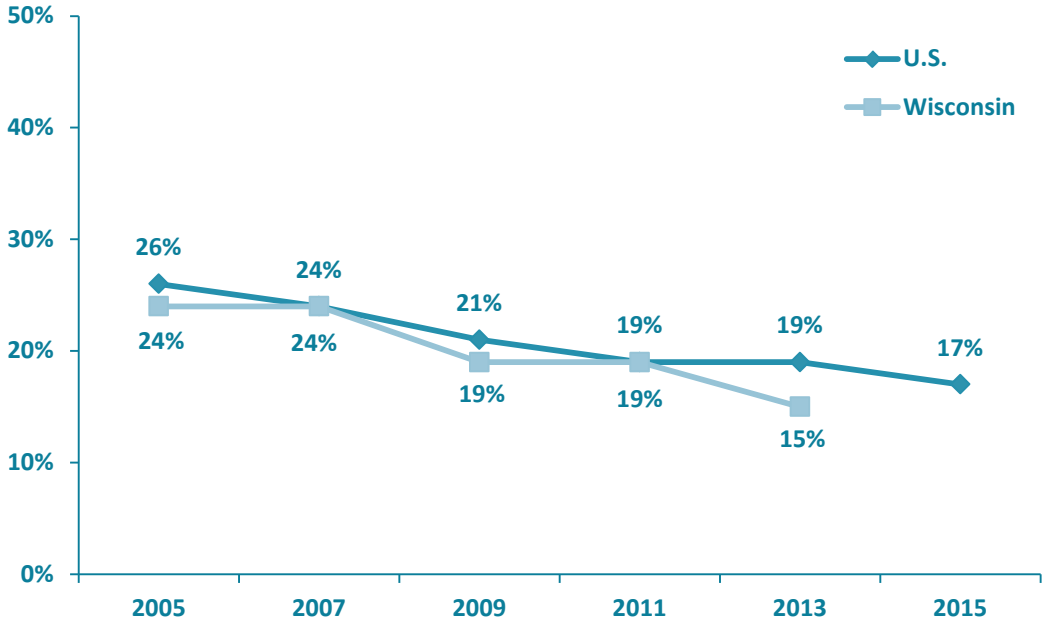
Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services.

Age of Initiation

The percent of Wisconsin high school students who had initiated alcohol use before age 13 declined between 2005 and 2013, from 24 to 15 percent (Figure 36). Prevalence of before-age-13 initiation among boys exceeded that among girls in each of those years (Table 32). However, the gap between males and females has virtually closed on this measure.

From 2011 to 2013, Hispanic/Latino, American Indian, and multiracial students were most likely to report initiating alcohol use before age 13 (Table 33).

Figure 36. Alcohol use initiation before age 13 among high school students, Wisconsin and the U.S., 2005-2015



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. 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Table 32. Alcohol use initiation before age 13 among high school students, Wisconsin by sex, 2005-2013

Sex	*2005*	*2007*	*2009*	*2011*	*2013*
Female	19%	20%	17%	16%	14%
Male	28%	27%	22%	21%	15%

Source: Youth Risk Behavior Surveillance Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Table 33. Alcohol use initiation before age 13 among high school students, Wisconsin by race/ethnicity, 2005-2013

Race/Ethnicity	*2005-2007*	*2007-2009*	*2009-2011*	*2011-2013*
White	23%	20%	17%	15%
African American	26%	28%	23%	18%
Hispanic/Latino	30%	30%	27%	25%
Asian or Pacific Islander	22%	20%	19%	17%
American Indian or Alaskan Native	31%*	17%*	27%*	35%*
Multiracial	31%	28%	29%	23%

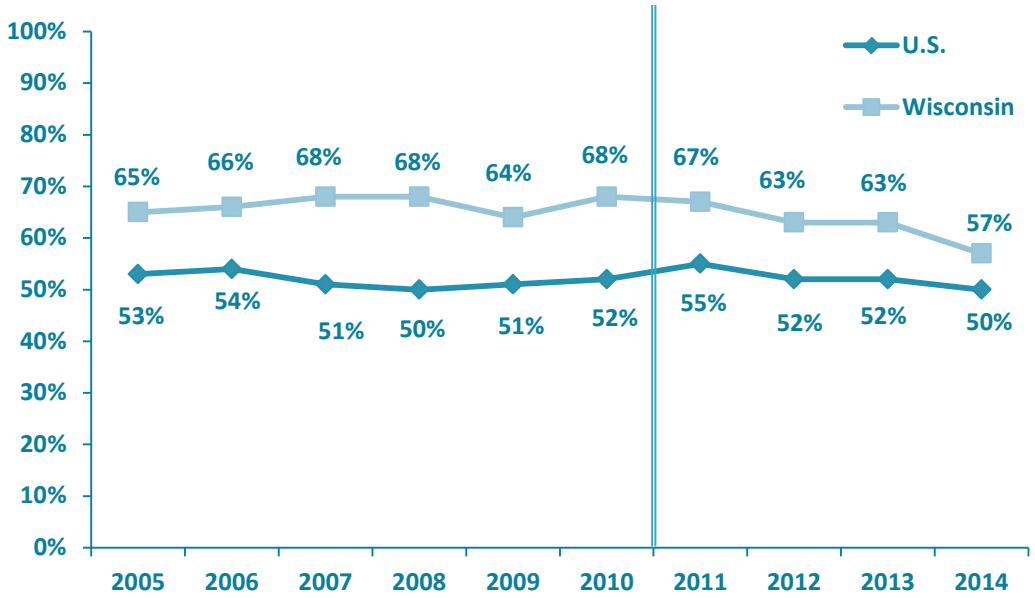
Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
* Interpret with caution due to confidence interval half-width >10%.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Alcohol Use by Women of Childbearing Age

Recent BRFS results indicate that current alcohol use among Wisconsin women of childbearing age is still much higher than the national prevalence. In 2014, 57 percent of Wisconsin women ages 18-44 consumed alcohol in the previous 30 days compared to a prevalence of 50 percent in all states and U.S. territories (Figure 37).

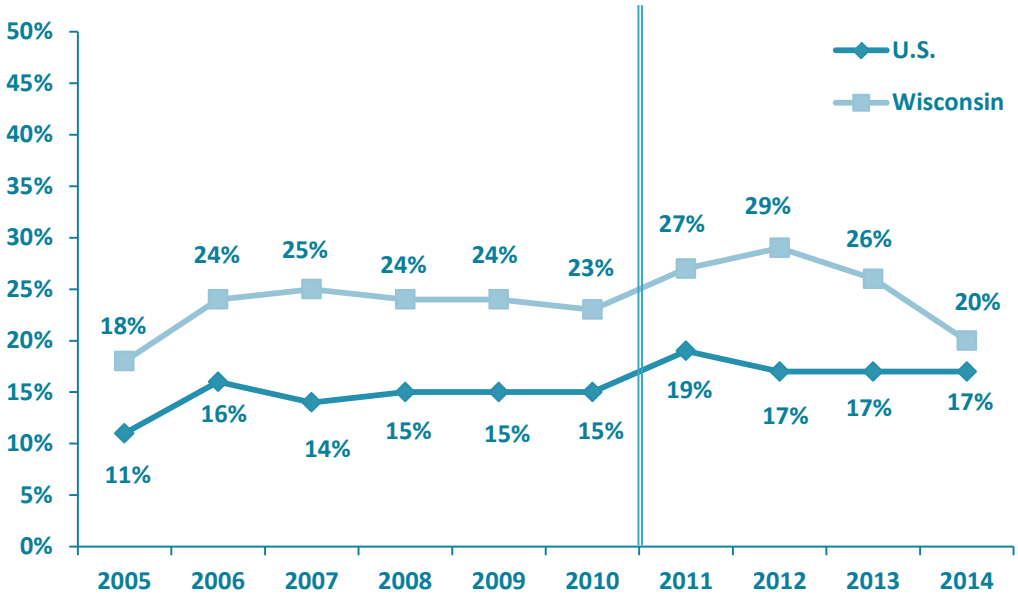
Binge drinking among women is defined by the CDC as four or more alcohol drinks on one occasion. Past-month binge drinking, an indicator of excessive alcohol consumption, is also more prevalent among Wisconsin women in this age group compared to women in all states and territories (20% versus 17%, Figure 38).

Figure 37. Current alcohol use among women ages 18-44, Wisconsin and the U.S. median, 2005-2014



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Difference between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

Figure 38. Binge drinking among women ages 18-44, Wisconsin and the U.S. median, 2005-2014



Source: Behavioral Risk Factor Surveillance System, Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Differences between groups and time periods may not be statistically significant. Double line indicates trend break due to methodological changes.

Drinking Before and During Pregnancy

The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing annual survey of new mothers conducted by state health departments and coordinated by the CDC. Wisconsin began participating in PRAMS in 2007. PRAMS contacts women three to six months after a live birth to ask about health and risk behaviors prior to, during, and shortly after pregnancy. Weighted PRAMS data represent the population of new mothers for the identified year.

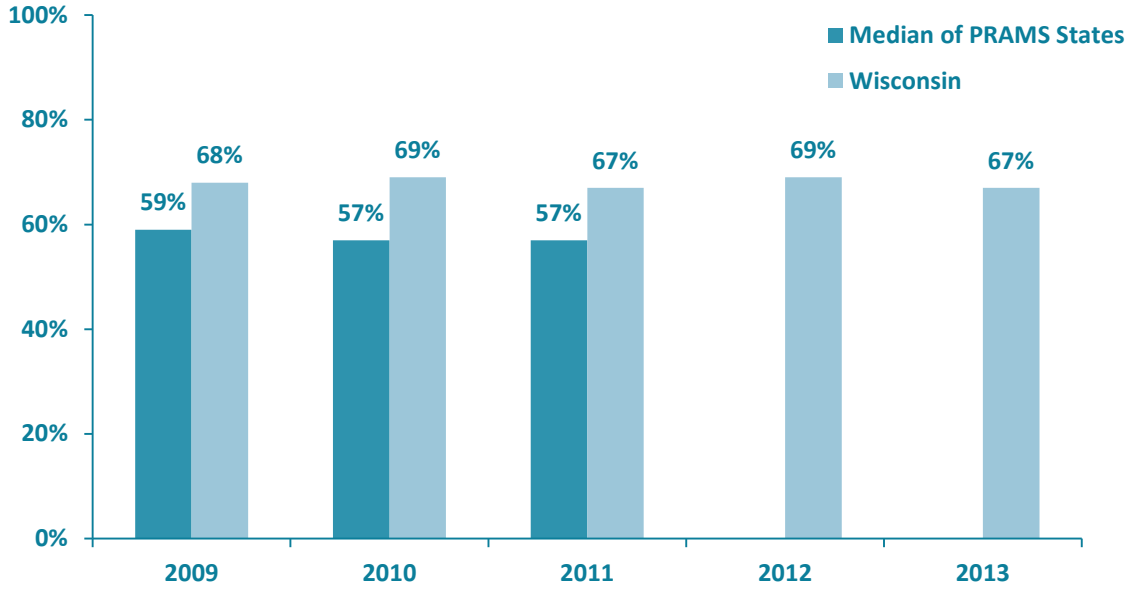
In 2011, the most recent year for which there is comparable national data, 67 percent of new mothers in Wisconsin consumed alcohol in the three months before they became pregnant. (Figure 39).

The proportion of new mothers who drank alcohol during the last three months of pregnancy was much lower than the proportion that drank during the three months before pregnancy. Still, 8 percent of new mothers in Wisconsin consumed alcohol during the last three months of their recent pregnancy (Figure 40).

Drinking during pregnancy is a concern because of fetal alcohol spectrum disorders (FASD). FASD is an umbrella term describing the range of effects that can occur in an individual whose mother drank alcohol during pregnancy. These effects may include physical, mental, behavioral, and/or learning disabilities with possible lifelong implications.[15] FASD have been associated with alcohol consumption patterns that produce high BACs, such as binge drinking.[16]

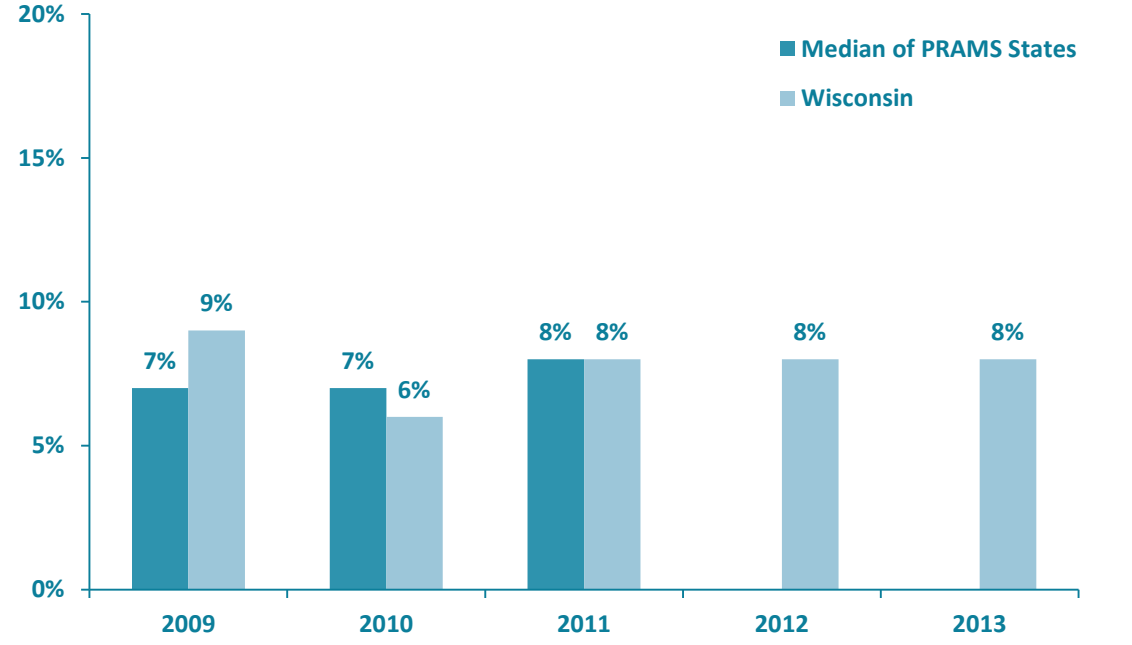
[15] Substance Abuse and Mental Health Services Administration. (2007). The physical effects of fetal alcohol spectrum disorders.
[16] Centers for Disease Control and Prevention. (2012). Alcohol use and binge drinking among women of childbearing age – U.S., 2006-2010. *Morbidity and Mortality Weekly Report*, *61*(28), 534-538. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6128a4.htm?s_cid=mm6128a4_e%0D%0A

Figure 39. Alcohol consumption in the three months before pregnancy, Wisconsin and PRAMS states, 2009-2013



Source: Pregnancy Risk Assessment Monitoring System (PRAMS), Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Data for U.S. was not available for 2012 and 2013. Not every state collects PRAMS data.

Figure 40. New mothers who consumed alcohol in the last three months of pregnancy, Wisconsin and PRAMS states, 2009-2013



Source: Pregnancy Risk Assessment Monitoring System (PRAMS), Division of Public Health, Wisconsin Department of Health Services/Centers for Disease Control and Prevention.
Note: Data for U.S. was not available for 2012 and 2013. Not every state collects PRAMS data.

Other Drug Consumption

Illicit Drug Consumption

The use of drugs other than alcohol remains a problem in Wisconsin. Overall, consumption patterns of illicit drugs in Wisconsin mirror national trends (Table 34).

Based on results from the 2013 YRBS, Wisconsin high school students have lower lifetime use rates than students in the nation as a whole in the use of all four categories of drugs shown (Figure 41).[17] Marijuana continues to be the drug most frequently used by Wisconsin high school students, with misuse of prescription drugs second, followed by inhalants and cocaine (Figure 41).

Rates of marijuana, other illicit drugs, and nonmedical use of prescription pain relievers are consistently highest among young adults ages 18-25 (Figure 42).

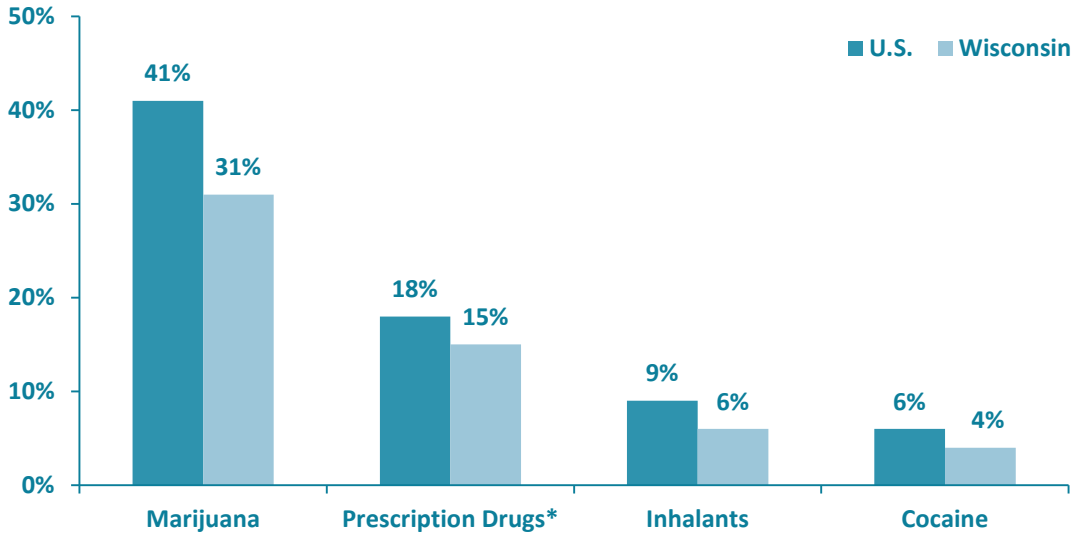
Table 34. Past year and past month use of other drugs, age 12 and older, Wisconsin and the U.S., 2013-2014

	Past Year		*Past Month*	
	Wisconsin	*U.S.*	*Wisconsin*	*U.S.*
Any illicit drugs	3%*	3%*	10%	8%
Illicit drugs other than marijuana	--	--	3%	3%
Marijuana	13%	12%	8%	6%
Cocaine	2%	2%	--	--
Nonmedical use of pain relievers	4%	4%	--	--

Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.
Note: Dashes -- indicate data not available. * indicates past year dependence on or abuse of illicit drugs.

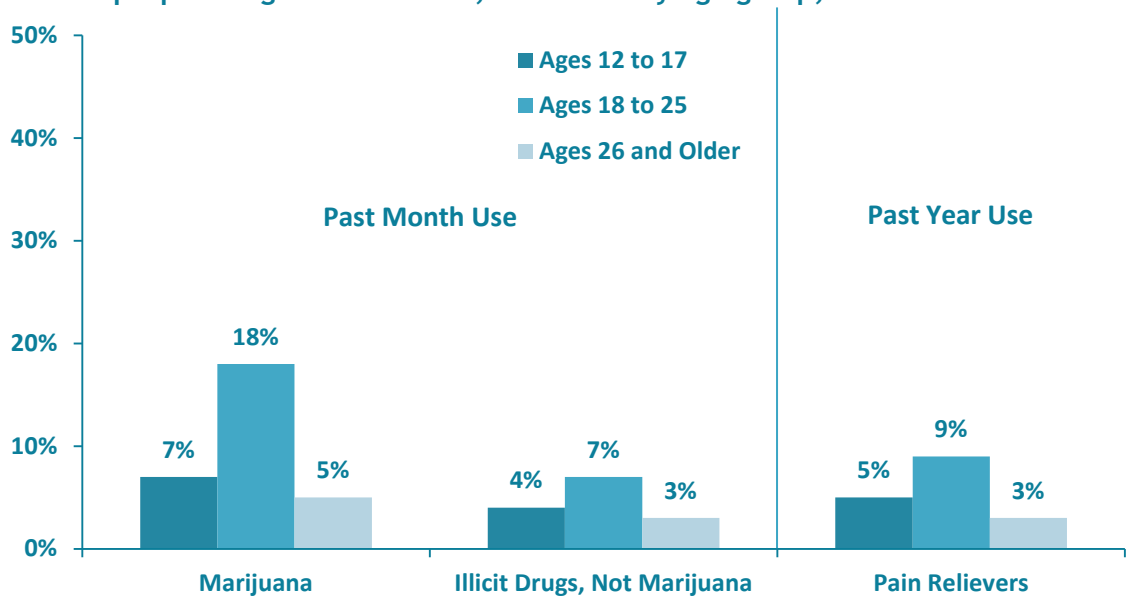
[17] Wisconsin YRBS did not ask about heroin use in 2013.

Figure 41. Lifetime use of illicit drugs among high school students, Wisconsin and the U.S., 2013



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®").
Note: Wisconsin YRBS did not ask about heroin use in 2013. 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Figure 42. Use of marijuana, illicit drugs other than marijuana, and pain relievers for nonmedical purposes age 12 and older, Wisconsin by age group, 2013-2014



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 is use in the past month; use of pain relievers is use in the past year.

Marijuana

Marijuana use has a wide range of effects. It seriously impairs judgment and motor coordination and, contrary to common belief, marijuana can be addictive.

Short-term effects include problems with memory and learning, distorted perception, difficulty in thinking, problem solving, and loss of coordination.[18]

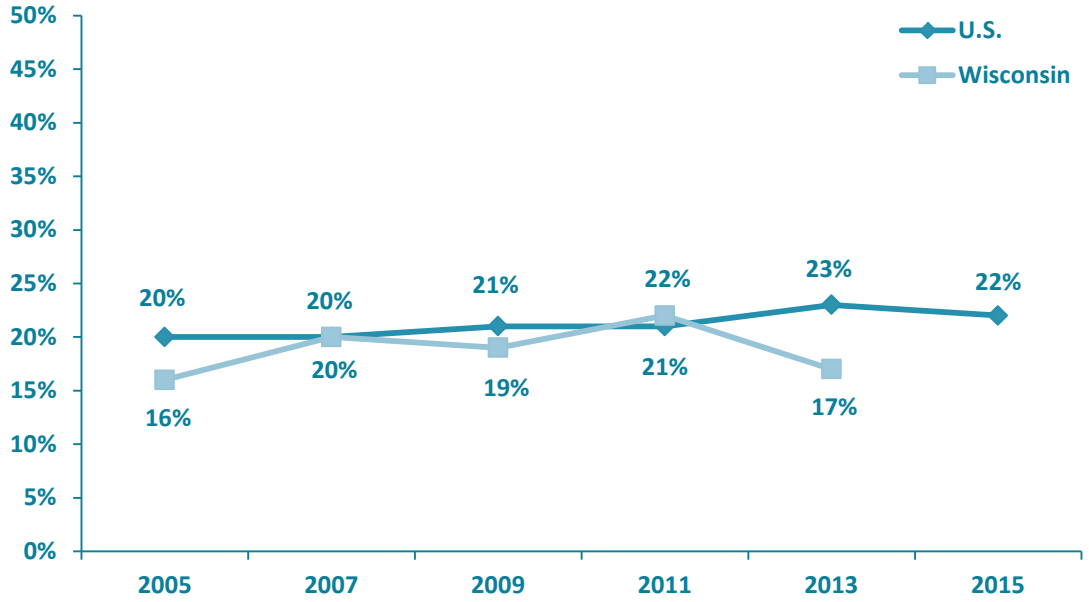
Long-term marijuana use affects brain development. For individuals who start using marijuana as teenagers, the drug may affect how the brain builds connections between the different areas of the brain where thinking, memory, and learning functions take place. Individuals who use marijuana heavily often report having lower life satisfaction, poorer mental health, poorer physical health, and more relationship problems.[19]

YRBS results indicate current marijuana use—defined as use within the previous 30 days—among Wisconsin high school students has been similar to, or slightly lower than, use among high school students nationally for several years (Figure 43). In 2013, current use dropped to 17 percent in Wisconsin, compared to 23 percent nationally.

As with current use, lifetime use of marijuana among high school students has increased slightly in recent years in the U.S. The prevalence of lifetime use was similar in the state and nationally from 2005 to 2011 (Figure 44). Wisconsin's prevalence dropped noticeably in 2013, but more data is needed to determine whether this signals a trend.

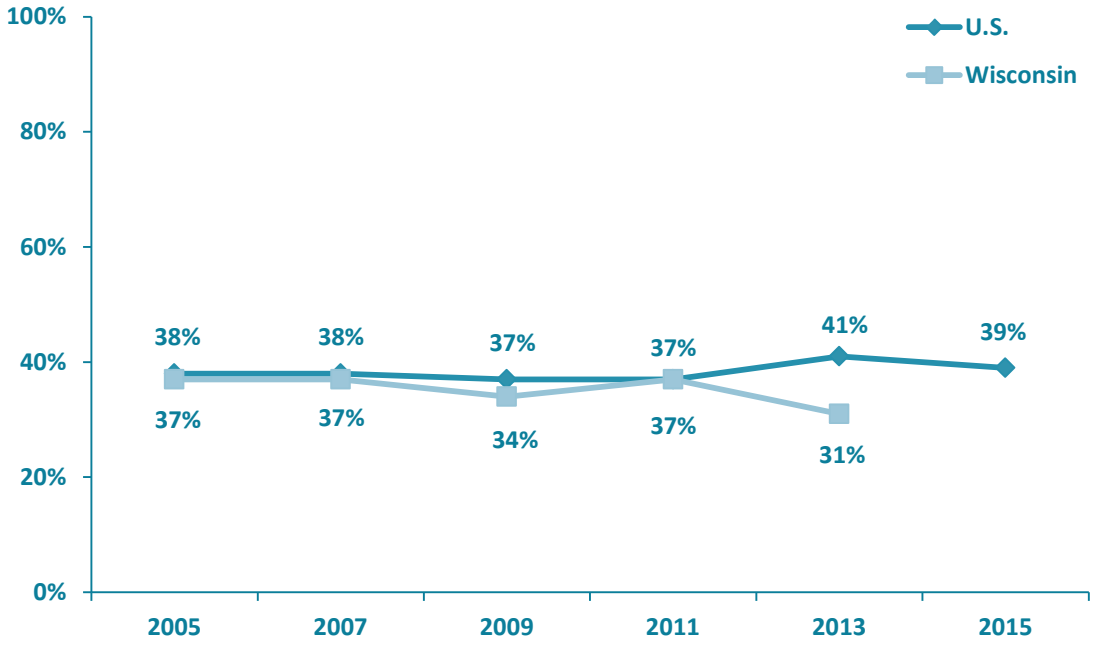
[18] Substance Abuse and Mental Health Services Administration. (2016). Marijuana (cannabis). http://www.samhsa.gov/atod/marijuana
[19] National Institute on Drug Abuse. (2016). DrugFacts—What is marijuana? http://www.drugabuse.gov/publications/drugfacts/marijuana

Figure 43. Current marijuana use among high school students, Wisconsin and the U.S., 2005-2015



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Figure 44. Lifetime marijuana use among high school students, Wisconsin and the U.S., 2005-2015



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

In the years 2011 and 2013 combined, current marijuana use was highest among African American, American Indian, and multiracial high school students (Table 35).

The overall prevalence of marijuana initiation before age 13 among Wisconsin high school students was 6 percent in 2011-2013 (YRBS, not shown). Early initiation of marijuana use was highest among African American, American Indian, and multiracial high school students (Table 36); however, the estimate for American Indian students should be interpreted with caution, as the confidence interval half-width is large.

Table 35. Current marijuana use among high school students, Wisconsin by race/ethnicity, 2005-2013

Race/Ethnicity	*2005-2007*	*2007-2009*	*2009-2011*	*2011-2013*
White	16%	18%	18%	17%
African American	32%	31%	34%	34%
Hispanic/Latino	24%	23%	18%	18%
Asian or Pacific Islander	10%	10%	16%	16%
American Indian or Alaskan Native	26%	37%	32%	39%*
Multiracial	24%	24%	26%	29%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
* Interpret with caution due to confidence interval half-width >10%.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Table 36. Marijuana use before age 13 among high school students, Wisconsin by race/ethnicity, 2005-2013

Race/Ethnicity	*2005-2007*	*2007-2009*	*2009-2011*	*2011-2013*
White	10%	5%	4%	4%
African American	23%	14%	13%	15%
Hispanic/Latino	16%	**	6%	8%
Asian or Pacific Islander	6%	6%	9%	8%
American Indian or Alaskan Native	**	17%	23%*	31%*
Multiracial	14%	13%	15%	14%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
* Interpret with caution due to confidence interval half-width >10%.
** Estimate not reliable due to relative standard error of 30%.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

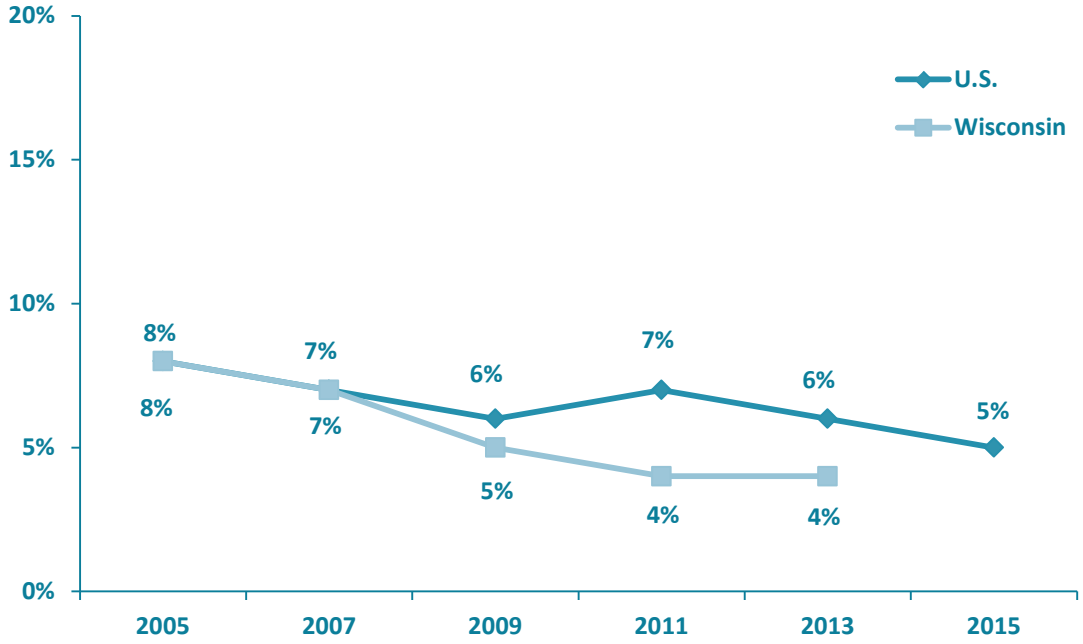
Cocaine

Cocaine users face the possibilities of arrest, drug dependence, injury, and 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.[20]

Lifetime use of cocaine among high school students in Wisconsin dropped steadily from 2005 to 2013, and has been lower than the national prevalence since 2009 (Figure 45).

Due to small sample sizes, estimates by race/ethnicity for lifetime cocaine use are not shown.

Figure 45. Lifetime cocaine use among high school students, Wisconsin and the U.S., 2005-2015



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

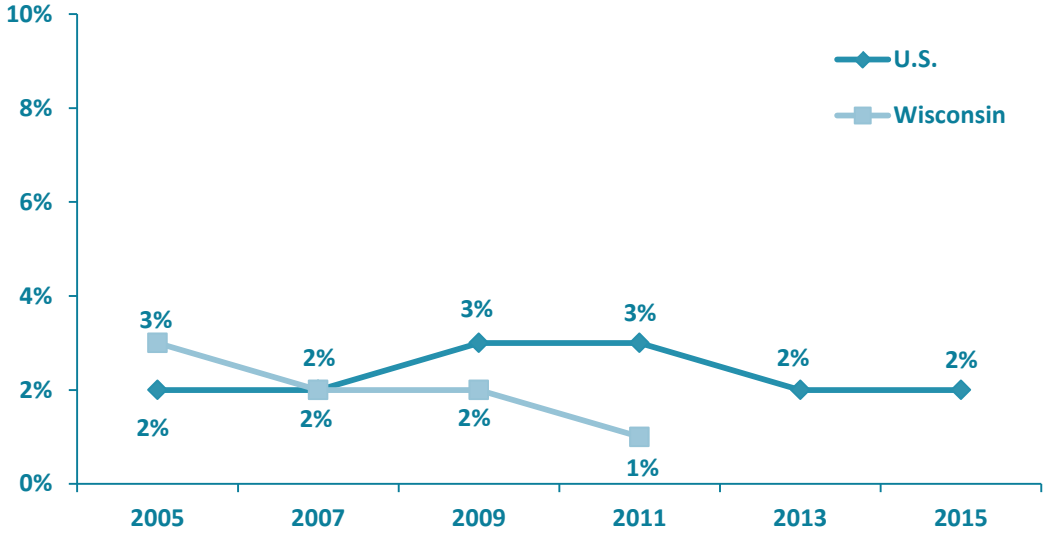
[20] Esse, K., Fossati-Bellani, M., Traylor A., and Martin-Schild, S. (2011). Epidemic of illicit drug use, mechanisms of action/addiction and stroke as a health hazard. *Brain Behavior*, *1*(1), 44-54.

Heroin

One of the most significant risks a heroin user faces is dependence on the drug. Users who inject heroin also risk contracting HIV, HCV, and other infectious diseases. Most new HCV infections in the U.S. each year are among injection drug users. Data presented include the most recent YRBS for which lifetime use of heroin was asked (2011).

The prevalence of lifetime heroin use among high school students in Wisconsin declined from 2 percent in 2005 to 1 percent in 2011 (Figure 46). New data on heroin use among Wisconsin high school students are not available for 2013 or 2015.

Figure 46. Lifetime heroin use among high school students, Wisconsin and the U.S., 2005-2015



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Table 37. Lifetime heroin use among high school students, Wisconsin by race/ethnicity, 2005-2011

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

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
** Estimate not reliable due to relative standard error of 30%.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

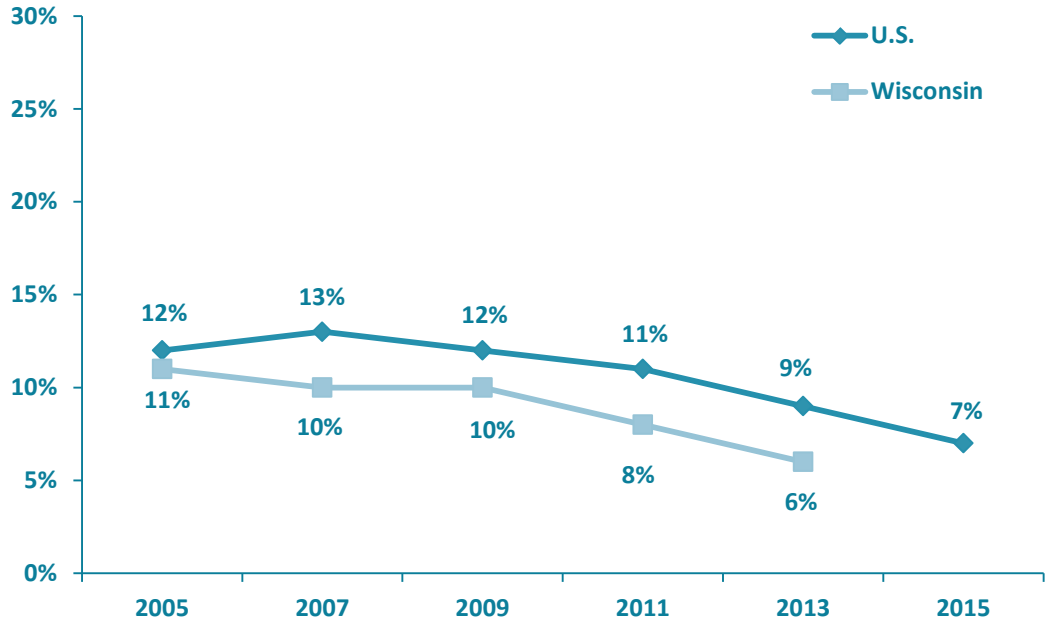
Inhalants

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. This syndrome, known as sudden sniffing death, can result from a single session of inhalant use. The effects of use include lightheadedness, hallucinations, delusions, and many feel less inhibited and less in control. Chronic exposure to inhalants can produce significant, sometimes irreversible, damage to the heart, lungs, liver, and kidneys.[21]

Lifetime use of inhalants among Wisconsin high school youth dropped steadily across the time period 2005 to 2013 (Figure 47), and was 6 percent in 2013, about half of what it was in 2005.

In 2013, lifetime use of inhalants among high school students remained higher than lifetime cocaine use both in Wisconsin (6% versus 4%, respectively) and nationally (9% versus 6%, respectively).

Figure 47. Lifetime inhalant use among high school students, Wisconsin and the U.S., 2005-2015



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

[21] National Institute on Drug Abuse. (2012). DrugFacts—Inhalants. https://www.drugabuse.gov/publications/drugfacts/inhalants

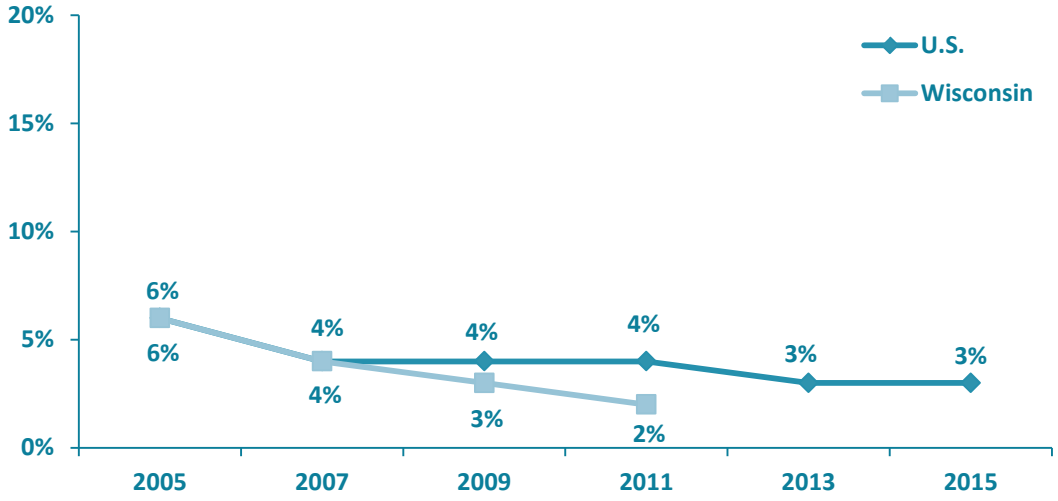
Methamphetamine

As well as being highly addictive, methamphetamine use can lead to neurological damage and psychotic behaviors. Data presented are from the YRBS for years in which the question on lifetime use of methamphetamine was asked.

Lifetime methamphetamine use among Wisconsin high school students decreased between 2001 and 2011, following a national trend (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 38).

Figure 48. Lifetime methamphetamine use among high school students, Wisconsin and the U.S., 2005-2015



Source: Youth Risk Behavior Surveillance System, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
Note: Question on methamphetamine use was not asked in 2013. 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Table 38. Lifetime methamphetamine use among high school students, Wisconsin by race/ethnicity, 2005-2011

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

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
** Estimate not reliable due to relative standard error >30%.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

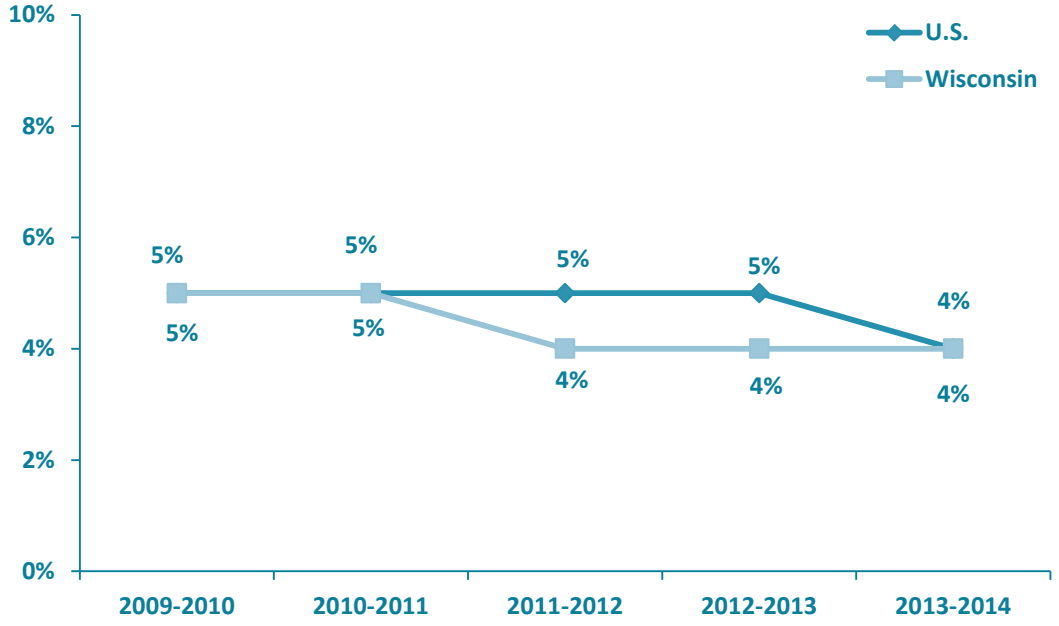
Nonmedical Use of Prescription Drugs

Wisconsin is in the midst of an epidemic of nonmedical use of prescription drugs. Nationally, narcotic-pain-reliever-related emergency department visits involving nonmedical use of pharmaceuticals increased 117 percent from 2005 to 2011, and leveled off from 2008 to 2011. Among narcotic pain reliever-related emergency department visits involving nonmedical use that occurred in 2011, 44 percent involved narcotic pain relievers only. In the remaining 56 percent of these visits, additional drugs were involved, the most common of which were antianxiety medication and insomnia medication (28 percent).[22] In 2014, the national rate of drug overdose deaths involving natural and semisynthetic opioids (e.g., morphine, oxycodone, and hydrocodone), 3.8 per 100,000, was the highest among opioid overdose deaths, and increased 9 percent from 3.5 per 100,000 in 2013.[23]

As of 2013, 15 percent of Wisconsin high school students reported using prescription drugs (such as OxyContin®, Percocet®, Vicodin®, codeine, Adderall®, Ritalin®, or Xanax®) for nonmedical purposes at some point in their lives (Figure 41, page 86).

During 2013-2014, 4 percent of Wisconsin residents age 12 and older reported using pain relievers for nonmedical purposes in the past year (Figure 49), which is the same as the national average. The prevalence of past year use was highest among young adults age 18 to 25 (9%, Figure 42, page 86).

Figure 49. Use of prescription pain relievers for nonmedical purposes in the past year, age 12 and older, Wisconsin and the U.S., 2009-2014



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

[22] Crane, E.H. (2015). The CBHSQ report: Emergency department visits involving narcotic pain relievers. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Administration.
[23] Centers for Disease Control and Prevention. (2016). Increases in drug and opioid overdose deaths—U.S., 2000-2014. *Morbidity and Mortality Weekly Report*, *64*(50), 1378-1382.

Risk Factors

Risk factors are characteristics at the biological, psychological, family, community, or cultural level that precede and are associated with a higher likelihood of problem outcomes.

Community-level factors that heighten the risk of experiencing problems with alcohol and drug use include the availability, accessibility, acceptability, and affordability of substances. Individual factors that increase the risk of alcohol and other drug use include childhood victimization, posttraumatic stress disorder, and other effects of trauma and depression.

Risk factors that affect behavioral health (both substance use disorders and mental illness) outcomes are referred to as "shared risk factors." Some shared risk factors are listed below.

- Shared societal risk factors include social norms and laws favorable to substance use, as well as racism and a lack of economic support.
- Shared community risk factors include neighborhood poverty and violence.
- Shared relationship risk factors include intimate partner violence, parents who use drugs and or alcohol or who suffer from mental illness, child abuse and or maltreatment, and inadequate supervision.
- Shared individual risk factors include a person's genetic predisposition to addiction or exposure to alcohol prenatally.[24]

Community-Level Risk Factors for Substance Use Disorders

Alcohol Availability

Community-level factors that heighten the risk of experiencing problems with alcohol include the per capita number of alcohol outlets in a community.[25] Table 39 shows the number of alcohol licenses in relation to the number of people in Wisconsin counties. In 2014-2015, 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.

[24] Substance Abuse and Mental Health Services Administration. (2015). Risk and protective factors. http://www.samhsa.gov/capt/practicing-effective-prevention/prevention-behavioral-health/risk-protective-factors.

[25] Popova, S., Giesbrecht, N., Bekmuradov, D., and Patra, J. (2009). Hours and days of sale and density of alcohol outlets: Impacts on alcohol consumption and damage: A systematic review. *Alcohol and Alcoholism*, *44*(5), 500-516.

Table 39. Alcohol outlet density: licenses per 500 population, Wisconsin by county, 2014-2015

County	2014 Population*	Total Licenses Issued	Licenses/ 500 people	# Class A Licenses Issued	# Class B Licenses Issued
Adams	20,844	99	2.4	19	81
Ashland	16,071	98	3.0	22	76
Barron	46,020	156	1.7	43	120
Bayfield	15,059	143	4.7	31	116
Brown	253,156	624	1.2	179	444
Buffalo	13,594	85	3.1	21	64
Burnett	15,462	96	3.1	28	70
Calumet	49,715	124	1.2	27	102
Chippewa	63,038	224	1.8	53	174
Clark	34,697	145	2.1	36	108
Columbia	56,795	209	1.8	59	155
Crawford	16,628	84	2.5	26	56
Dane	502,251	1,130	1.1	333	911
Dodge	89,203	269	1.5	63	209
Door	27,976	257	4.6	71	186
Douglas	44,196	196	2.2	39	161
Dunn	43,917	110	1.3	34	81
Eau Claire	100,477	236	1.2	63	173
Florence	4,450	44	4.9	11	39
Fond du Lac	102,424	295	1.4	81	219
Forest	9,253	78	4.2	14	63
Grant	52,603	200	1.9	65	147
Green	36,822	111	1.5	28	83
Green Lake	19,114	83	2.2	21	65
Iowa	23,809	108	2.3	31	78
Iron	5,915	98	8.3	36	88
Jackson	20,630	93	2.3	24	73
Jefferson	83,974	273	1.6	88	196
Juneau	26,934	131	2.4	31	100
Kenosha	167,258	373	1.1	129	282
Kewaunee	20,652	96	2.3	19	76
La Crosse	116,740	304	1.3	80	246
Lafayette	16,914	78	2.3	21	57
Langlade	19,847	111	2.8	34	80
Lincoln	28,816	151	2.6	34	118
Manitowoc	81,320	275	1.7	64	211
Marathon	134,803	387	1.4	101	284

Table 39. Alcohol outlet density: licenses per 500 population, Wisconsin by county, 2014-2015 (continued)

County	2014 Population*	Total Licenses Issued	Licenses/ 500 People	# Class A Licenses Issued	# Class B Licenses Issued
Marinette	41,605	223	2.7	63	161
Marquette	15,399	73	2.4	20	53
Menominee	4,236	8	0.9	5	3
Milwaukee	949,741	1,890	1.0	460	1,460
Monroe	45,339	151	1.7	45	106
Oconto	38,014	190	2.5	38	150
Oneida	36,082	244	3.4	43	195
Outagamie	180,022	510	1.4	137	372
Ozaukee	87,116	238	1.4	56	181
Pepin	7,445	43	2.9	14	42
Pierce	41,107	124	1.5	35	94
Polk	44,237	165	1.9	55	111
Portage	70,882	231	1.6	49	186
Price	14,155	98	3.5	24	75
Racine	195,461	457	1.2	141	314
Richland	17,995	56	1.6	18	43
Rock	160,104	328	1.0	80	249
Rusk	14,790	83	2.8	18	65
St. Croix	85,735	283	1.7	54	145
Sauk	62,092	179	1.4	113	198
Sawyer	16,676	198	5.9	31	146
Shawano	41,859	375	4.5	44	155
Sheboygan	115,362	198	0.9	94	285
Taylor	20,733	99	2.4	23	77
Trempealeau	29,184	131	2.2	40	96
Vernon	29,977	100	1.7	27	72
Vilas	21,523	228	5.3	47	182
Walworth	102,837	330	1.6	80	248
Washburn	15,948	94	2.9	28	70
Washington	133,071	303	1.1	77	226
Waukesha	392,761	777	1.0	216	559
Waupaca	52,435	218	2.1	51	170
Waushara	24,511	103	2.1	32	73
Winnebago	168,216	403	1.2	89	317
Wood	74,954	229	1.5	64	168
Wisconsin	**5,732,981**	**16,934**	**1.5**	**4,470**	**12,839**

Source: Wisconsin Department of Revenue (DOR), reflecting liquor licenses issued and reported to the DOR for the period beginning July 1, 2014, and expiring July 1, 2015.
*Wisconsin Department of Administration estimates.
*See Appendix 1 for list of license classes included in each category.
Note: Some establishments are issued more than one type of liquor license. The reported total number of licenses per county is the number of establishments issued a license. The numbers reported for A and B licenses are the total for that license type.

Other Drug Availability

The school environment, where students function on a daily basis, conveys information about which behaviors are acceptable or unacceptable in society as a whole. Activity related to illegal substances is a major concern in schools, particularly in high schools (see also suspensions and expulsions related to alcohol or drugs pages 36 and 52).

The YRBS asks high school students if they were "offered, sold or given an illegal drug on school property" in the past 12 months. As Table 40 indicates, 20 percent of students overall, and 25 percent or more of African American, American Indian, Hispanic and multiracial students, were presented with the opportunity to obtain an illegal drug at school during the time period 2011 to 2013 (two separate years combined). This is a slight reduction from previous years.

Table 40. Offered an illegal drug on school property, high school students, Wisconsin, by race/ethnicity, 2005-2013

Race/Ethnicity	*2005-2007*	*2007-2009*	*2009-2011*	*2011-2013*
White	20%	20%	19%	18%
African American	30%	30%	28%	25%
Hispanic/Latino	38%	36%*	32%	30%
Asian or Pacific Islander	27%	20%	18%	16%
American Indian or Alaskan Native	32%*	26%*	20%*	31%*
Multiracial	27%	27%	31%	28%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
*Interpret with caution due to confidence interval half-width > 10%.
Note: Differences between groups may not be statistically significant. Survey question wording: "was offered, sold or given an illegal drug on school property in the past 12 months." 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Perception of Harm

Parental attitudes about substance use can influence the consumption behavior of children and adolescents. The belief that others do not approve of alcohol or other drug use can be a deterrent to initiating use.

Table 41 shows Wisconsin YRBS results indicating the proportion of high school students, by race/ethnicity, who perceive that their parents would disapprove of their using alcohol two or more times per month. Clear majorities of students from all racial and ethnic backgrounds believe their parents would disapprove of this behavior. White students are less likely to perceive parental disapproval (66%) compared to students in other race/ethnicity groups.

Table 41. Perceived parental disapproval of alcohol use, high school students, Wisconsin, by race/ethnicity, 2007-2013

Race/Ethnicity	*2007-2009*	*2009-2011*	*2011-2013*
White	62%	37%	66%
African American	74%	74%	72%
Hispanic/Latino	68%*	68%	74%
Asian or Pacific Islander	68%	75%	72%
American Indian or Alaskan Native	69%*	66%*	73%*
Multiracial	63%	67%	69%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction and U.S. Centers for Disease Control and Prevention.
*Interpret with caution due to confidence interval half-width >10%.
Note: 2015 Wisconsin YRBS weighted data missing due to limited data sample.

Shared Risk Factors for Mental Illnesses and Substance Use Disorders

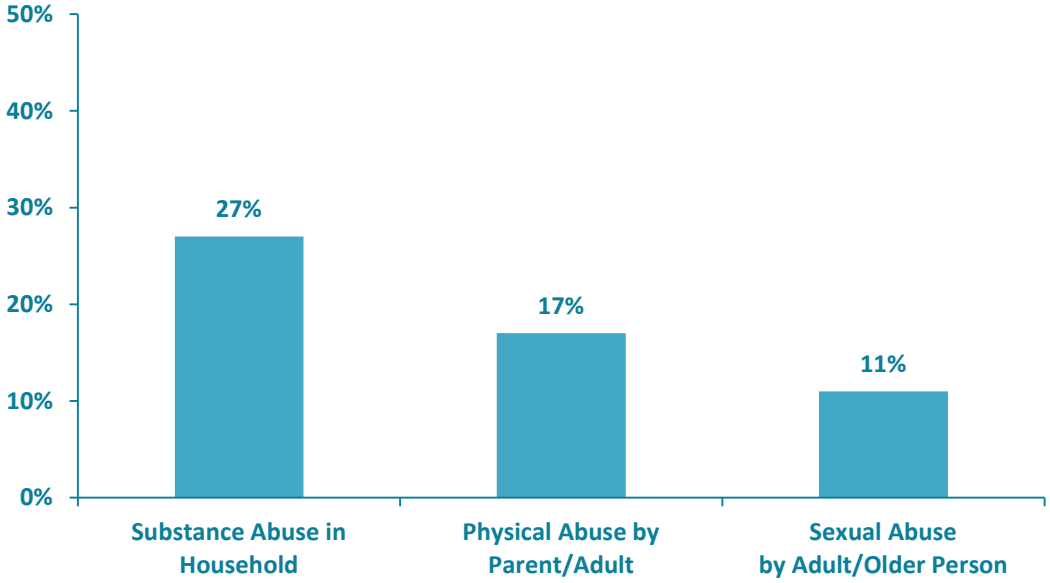
Early Life Experiences

Certain early-life experiences are known to be associated with a higher risk for both adult mental illnesses and substance use disorders. Adverse Childhood Experiences (ACEs) are negative life events or experiences that occur during childhood and have the potential to impede healthy development. These experiences include childhood physical abuse, sexual abuse, and substance abuse in the household. ACEs are linked to the following health threats among Wisconsin adults:

- Higher rates of depression
- Increased health risk behaviors
- Poor general health
- Occurrence of chronic health conditions[26]

In 2014, 27 percent of Wisconsin adults reported they experienced substance abuse in their home environment while growing up, 17 percent reported being physically abused (hit, beaten, or kicked) by a parent or another adult once or more than once, and 11 percent 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).

Figure 50. Percent of adults who experienced physical or sexual abuse, or home environment substance abuse before age 18, Wisconsin, 2014



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

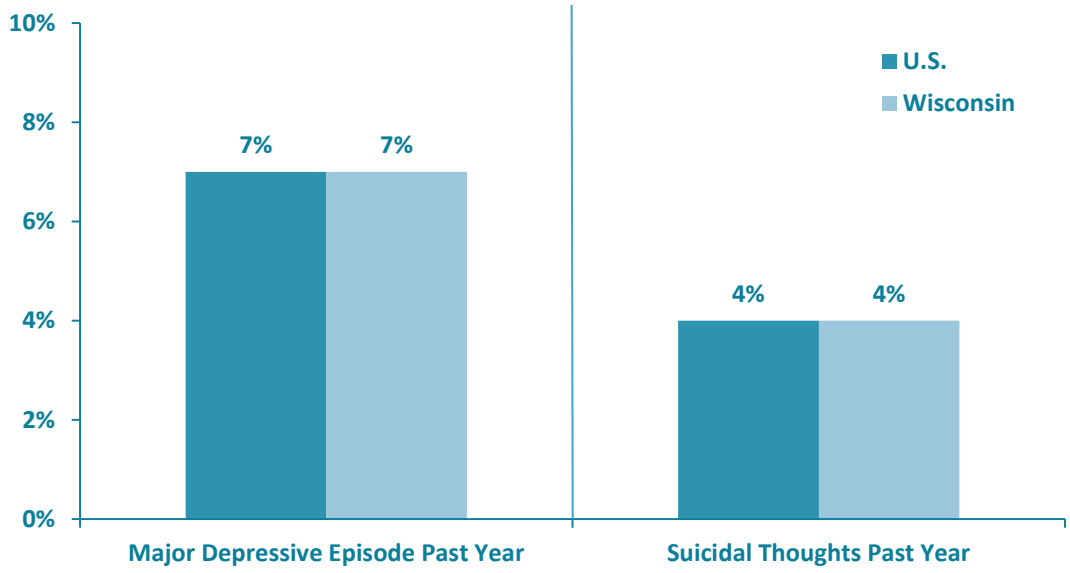
[26] Wisconsin Child Abuse and Neglect Prevention Board. (2016). The influence of adverse childhood experiences on the health of Wisconsin citizens in adulthood (revised version). https://preventionboard.wi.gov/Documents/WisconsinACEBrief%282011-13%29WEB_9.16.pdf

Depression and Suicide

Mental illnesses and substance use disorders frequently co-occur. Moreover, treatment for mental illnesses such as anxiety and depression can include the prescribing of controlled substances. This creates conditions for potential abuse and diversion of prescription medications.

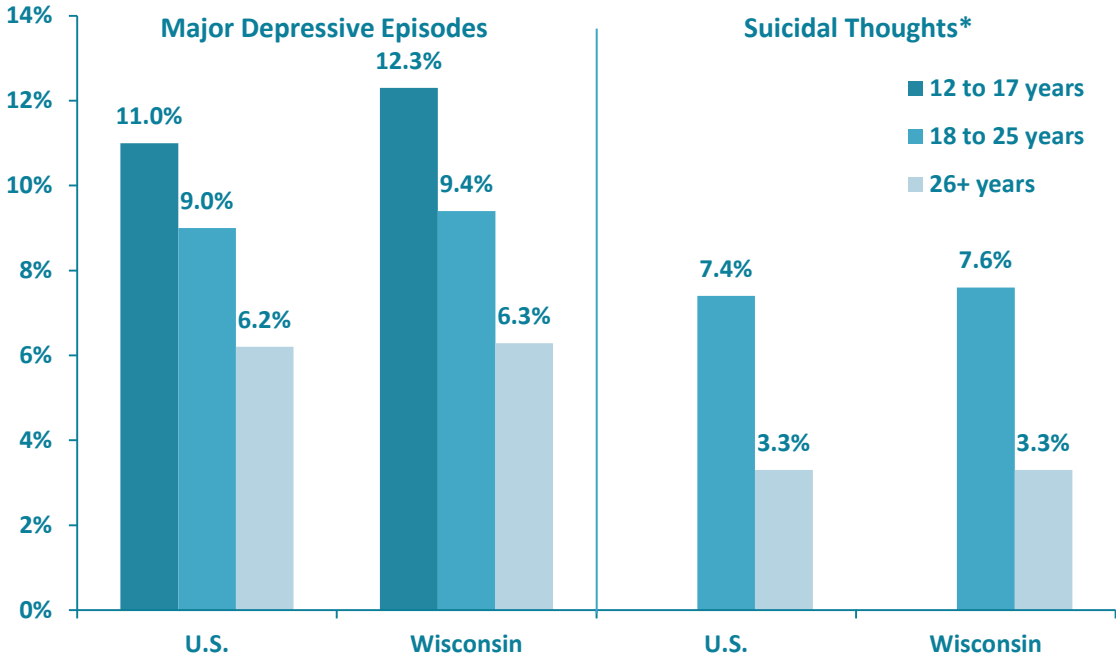
In 2013-2014, an estimated 7 percent of Wisconsin adults reported experiencing a "major depressive episode" in the past year, and 4 percent reported having serious suicidal thoughts in the past year (Figure 51). These are the same percentages seen nationally; however, there are slight differences between age groups in Wisconsin versus the nation (Figure 52).

Figure 51. Major depressive episode and serious suicidal thoughts in the past year, age 18 and older, Wisconsin and the U.S., 2013-2014



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

Figure 52. Major depressive episode and serious suicidal thoughts in the past year, Wisconsin and the U.S. by age, 2013-2014



Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.
Note: Data not available for suicidal thoughts for the population age 12 to 17 years.

APPENDIX 1
Indicator Definitions

Wisconsin Overview – Measure of Urban and Rural Counties

The 2013 NCHS Urban-Rural Classification Scheme for Counties is a county-level scheme with six levels: four metropolitan (large central metro, large fringe metro, medium metro, and small metro) and two nonmetropolitan (metropolitan and noncore). Counties are assigned to one of these six levels based on: 1) their status under the February 2013 Office of Management and Budget's delineation of metropolitan statistical areas (MSA) and nonmetropolitan statistical areas, 2) the population size of MSAs, and 3) the location of principal city populations within the largest MSAs (1 million or more population). From the most urban to the most rural, the six levels of the 2013 NCHS scheme are defined according to the following classification rules:

Metropolitan categories

- Large central metro—Counties in MSAs of 1 million or more population that: 1) contain the entire population of the largest principal city of the MSA, or 2) have their entire population contained in the largest principal city of the MSA, or 3) contain at least 250,000 inhabitants of any principal city of the MSA.
- Large fringe metro—Counties in MSAs of 1 million or more population that did not qualify as large central metro counties.
- Medium metro—Counties in MSAs of populations of 250,000 to 999,999.
- Small metro—Counties in MSAs of populations less than 250,000.

Nonmetropolitan categories

- Micropolitan—Counties in micropolitan statistical areas.
- Noncore—Nonmetropolitan counties that did not qualify as metropolitan.

Measures of Consequences

Mortality

- Number of deaths—Numbers of cause-specific deaths were derived from Wisconsin and U.S. 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.

Abuse or Dependence

- Alcohol and Drug Abuse—definition of abuse by the DSM-IV 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—definition of dependence by the DSM-IV 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 NSDUH measures, go to: http://www.samhsa.gov/data/sites/default/files/NSDUH-MethodSummDefs2014/NSDUH-MethodSummDefs2014.htm

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 2, "Wisconsin inpatient hospitalization data" section, for details about the data source and methods. Each hospitalization is one inpatient stay. A person may have more than one stay in any time period. Wisconsin residents hospitalized in another state are not included. Some border counties will have rates significantly higher than those estimated here.
- 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 been adjusted for inflation to 2014 dollars.

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. 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.
- U.S.—Crimes and arrests reported to the FBI by law enforcement agencies using the UCR System.

School Suspensions and Expulsions

Drug-related and alcohol-related suspension and expulsions from school are reported by school districts to the Individual Student Enrollment System (ISES). The number of incidents was obtained for each school district from its Wisconsin School District Performance Report. Incidents per 1,000 students are defined and calculated as the number of incidents divided by the count of enrolled student on the fall count date (third Friday of September), obtained from Wisconsin Information System for Education Data Dashboard (WISEdash), multiplied by 1,000. Although some school districts cross county lines, districts were reported within the county listed in WISEdash.

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 (HSRS) (through 2012) and Program Participation System (PPS) from 2013 to present, DCTS, DHS. No comparable U.S. data on public funds expenditures were available.

Measures of Consumption: Alcohol

Age of Initiation

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

Current Alcohol Use

- YRBS: At least one drink of alcohol on one or more of the past 30 days.
- BRFS: At least one drink of alcohol in the past 30 days.

Binge Drinking

- YRBS: Five or more drinks of alcohol in a row on one or more of the past 30 days.
- 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

BRFS: More than two drinks per day for men and more than one drink per day for women.

Per Capita Consumption of Alcohol

The NIAAA reports data on per capita gallons of ethanol (pure alcohol) sold in a state, based on the population age 14 and older. Ethanol conversion coefficients (ECC)—the proportion of pure alcohol for each beverage type (beer, wine, and liquor)—and standard drink serving sizes were used to convert gallons of ethanol into the number of standard drinks.

1 gallon = 128 ounces

$$\frac{\text{(reported gallons * 128)}}{\text{(standard drink size * EEC)}} = \text{Number of standard drinks by type of alcohol.}$$

EEC
Beer: 0.045, Wine: 0.129, Spirits: 0.411

Standard drink size
Beer: 12 ounces, Wine: 5 ounces, Spirits: 1.5 ounces

Details about the methodology used to determine gallons of ethanol consumed per capita and EEC can be found at:
http://pubs.niaaa.nih.gov/publications/surveillance104/CONS14.htm

Underage Drinking

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: Other Drugs

Age of Initiation (Marijuana)

YRBS: The percentage of high school students who tried marijuana for the first time before age 13.

Current Use of Other Drugs

- **Current use of marijuana**
  - NSDUH: Smoked marijuana in the last month.
  - YRBS: Used marijuana one or more times during the past 30 days.
- **Current use of illicit drugs other than marijuana**
  - YRBS: Used any illicit drugs other than marijuana in the past 30 days.
  - NSDUH: Used any illicit drugs other than marijuana in the past month.
- **Current use of pain relievers for nonmedical purposes**
  YRBS: Used pain relievers for nonmedical purposes in the past 30 days.

Lifetime Use of Illicit Drugs

- **Lifetime use of marijuana**
  YRBS: Ever used marijuana, one or more times.
- **Lifetime use of cocaine**
  YRBS: Ever used any form of cocaine, one or more times.

- **Lifetime use of inhalants**
  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**
  YRBS: Ever used heroin, one or more times.
- **Lifetime use of methamphetamine**
  YRBS: Ever used methamphetamines, one or more times.

Past Year Use of Prescription Drugs for Nonmedical Purposes
NSDUH: Used pain relievers for nonmedical purposes in the past year.

Measures of Risk Factors

Alcohol Outlet Density

- Class A liquor licenses include all Class "A" beer (off-sale), Class A liquor (off-sale), and Class A beer/Class A liquor (includes wine) off-sale only.

- Class B liquor licenses include all Class "B" beer only (on/off-sale), Class "B" Liquor only (winery), and "Class B" beer, and "Class B" liquor.

APPENDIX 2
Data Sources

This report includes data from a variety of data sources. Descriptions of types and sources of data are provided below.

Survey Data: Sample Sizes and Error

The sample sizes in Table A1 below are for the whole state. Sample numbers for specific segments of the population, such as race/ethnicity groups, are smaller—in some instances much smaller—which reduces the precision and reliability of estimates.[27] In this report, the relative standard errors (RSE) of estimates were used to determine their reliability, and thus to determine whether or not the estimates should be reported. Where RSE was greater than 30 percent, estimates were not reported.[28]

As indicators of reliability, sample size and RSE are typically consistent with each other; where they differ, we used RSE as the deciding factor. For estimates where RSE was within the acceptable range but the 95 percent confidence interval half-width was greater than 10 percent, a caution was added about data interpretation.

Table A1 shows Wisconsin statewide sample sizes for the BRFS, the YRBS, the NSDUH, and the PRAMS. Details of each survey follow the table.

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

Survey	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
BRFS*	4,503	4,900	8,532	7,435	7,075	4,553	4,781	5,302	5,299	6,589	7,045	6,188
YRBS**		2,389		2,094		2,434		3,043		2,843		**
NSDUH***	917	915	915	968	883	943	889	902	875	867	945	
PRAMS				1,874	1,878	1,863	1,778	2,761	2,697	2,939		

* BRFS county estimates in the report are based on three-year aggregations of data (2005-2007, 2006-2008, and 2008-2010) and are weighted to represent county populations.
** 2015 Wisconsin YRBS weighted data missing due to limited data sample. The most recent Wisconsin weighted data from 2013 will continue to be used in the epidemiological profile until 2017 data is collected and made available. Moving forward, U.S. 2015 YRBS weighted data is included to display the national trend.
*** NSDUH estimates in the report are based on two-year aggregations of data. See page 111 for NSDUH description of data.

[27] As an example, the 2013 YRBS sample numbers for American Indian and Hispanic high school students are 37 and 69, respectively. Although the YRBS estimates by race/ethnicity used in the report are for two survey years combined, the total American Indian sample size for 2011 and 2013 is only 58.
[28] RSE is the standard error of an estimate divided by the estimate itself, multiplied by 100. A RSE of 30 percent is the cut-off used by most federal health surveys for publishing estimates.

Methodological Information about the Surveys

Behavioral Risk Factor Survey (BRFS)

www.cdc.gov/brfss and dhs.wisconsin.gov/stats/BRFS.htm
The Wisconsin BRFS is a representative, statewide telephone survey of adults age 18 and older. The Wisconsin BRFS is part of the national BRFSS, a collaboration between the 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 reweighted to represent each county's population.

BRFSS now samples both landline and cellular telephone numbers in all states and territories. Estimates using combined landline and cell phone BRFSS data from 2011 and forward should not be directly compared to estimates from earlier years, due to both the addition of cell phone sampling and the implementation of a new weighting methodology. Trends identified before 2011 are assumed to be broken as of that year.

BRFSS landline sampling and respondent selection excludes adults living in institutions or other group quarters. Cell phone interview protocol includes verification of the age of the informant/respondent (to include only adults ages 18+), and verification of type of residence. College students living in dormitories are eligible for the cell phone interview, although very few actually appear in the sample. BRFSS results are representative of the adult population with either a landline or cellular telephone, or both, and who reside in non-institutional settings. The CDC weights each state's landline and cell phone data as one (combined) state-level data file.

Youth Risk Behavior Survey (YRBS)

http://dpi.wi.gov/sspw/yrbs and https://nccd.cdc.gov/youthonline/App/Default.aspx
The YRBSS, of which the Wisconsin's YRBS is a part, is a school-based survey conducted among students in grades 9-12 in public high schools. The 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 in odd-numbered years. The Wisconsin 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.

Wisconsin YRBS weighted data was not achieved for 2015 due to limited data sample. The most recent Wisconsin weighted data from 2013 will continue to be used in the epidemiological profile until 2017 data is collected and made available. Moving forward, U.S. 2015 YRBS weighted data is included to display the national trend.

National Survey on Drug Use and Health (NSDUH)

nsduhweb.rti.org/
The NSDUH (formerly the National Household Survey on Drug Abuse) is a scientific, annual survey of the U.S. population age 12 and older, sponsored by SAMHSA in the U.S. Department of Health and Human Services (DHHS). NSDUH respondents include 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.

The NSDUH uses small area estimation (SAE) to produce estimates for most states, including Wisconsin, as its state-level sample sizes are too small to produce direct estimates. The NSDUH state-level estimates of drunk and drugged driving are an exception and are direct estimates using four years of survey data.

Additional information about NSDUH methodology can be found at http://www.samhsa.gov/data/population-data-nsduh/reports?tab=33

Pregnancy Risk Assessment Monitoring System (PRAMS)

PRAMS, is an ongoing survey of new mothers conducted jointly by the CDC and state health departments. PRAMS asks new mothers about their experiences, social circumstances, risk behaviors, and health before, during, and shortly after pregnancy. Wisconsin began participating in PRAMS in 2007. As of 2016, PRAMS operates in 47 states, two major cities, one tribal health board jurisdiction, and Puerto Rico, and represents approximately 83 percent of all live births in the U.S.

In Wisconsin, each month a stratified sample of approximately 235 mothers is randomly selected from recent Wisconsin birth certificates. An introductory letter is mailed to each woman in the sample two to four months after the baby's birth. The PRAMS survey is mailed a few days later. A reminder letter as well as a second and third survey packet is sequentially mailed to mothers who do not respond. Mothers who do not respond to the mailings are telephoned to attempt to complete an interview. Some PRAMS questions are required by CDC and are common to all participating states, while other questions are selected by states to inform and evaluate current and emerging state and partner public health priorities, programs, and policies. Wisconsin PRAMS uses both English and Spanish mailed materials and conducts telephone interviews in both languages.

The Wisconsin PRAMS Program is a collaboration between the Bureau of Community Health Promotion and Office of Health Informatics (OHI), Division of Public Health (DPH), DHS. More information is available at http://www.cdc.gov/prams/ and https://www.dhs.wisconsin.gov/stats/prams/index.htm.

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 OHI, DPH from Wisconsin resident death certificate files. U.S. data was obtained from CDC Wonder (http://wonder.cdc.gov/mortSQL.html).

Data on alcohol-related crash deaths were obtained from the FARS (see below).

Data on deaths from recreational vehicle crashes are from the DNR (http://dnr.wi.gov/).

Estimating other alcohol-related mortality

ICD-10 is the standard set of codes used to identify causes of death recorded on death and health records. http://www.who.int/classifications/icd/en/

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 ARDI specifications from the National Center for Chronic Disease Prevention and Health Promotion (see https://nccd.cdc.gov/DPH_ARDI/default/default.aspx). These specifications define 54 conditions or groups of conditions and associate each with a distinct fraction of cases attributable to alcohol. Staff from OHI in the Division of Public Health used the ARDI specifications to identify deaths from these conditions with the ICD-10 codes specifying underlying causes of death. Alcohol-attributable deaths for specific causes were estimated by multiplying the number for each condition by the associated alcohol-attributable fraction. Total "other" alcohol-attributable deaths were estimated by summing over the 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 OHI (DHShealthstats@wisconsin.gov).

Deaths from opioids (including heroin)

Wisconsin opioid-related deaths were defined using the following ICD-10 codes:

Heroin-related deaths
Underlying cause of death equal to: X40-44, X60-64, X85, or Y10-14; AND contributing cause of death equal to: T40.1 (Poisoning by narcotics and psychodysleptics – Heroin).

Opiate-related deaths
Underlying cause of death equal to: X40-44, X60-64, X85, or Y10-Y14; AND contributing cause of death equal to: T40.2 (Poisoning by narcotics and psychodysleptics—Other opioids), T40.3 (Poisoning by narcotics and psychodysleptics—Methadone), or T40.4 (Poisoning by narcotics and psychodysleptics—Other synthetic narcotics).

Fatality Analysis Reporting System (FARS)

Mortality data on traffic crashes in Wisconsin and the U.S. is from the FARS, 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 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

ICD-9 is the 9th revision of the International Classification of Diseases system defined by the World Health Organization (WHO). The clinical modification (CM) of ICD-9, or ICD-9-CM, for use in hospitalization diagnosis coding, is defined by the U.S. Centers for Medicaid Services and updated annually. http://www.cdc.gov/nchs/icd/icd9cm.htm

As was done for alcohol-related mortality, the numbers of alcohol-related hospitalizations were estimated from Wisconsin inpatient hospitalization data using ARDI specifications from the National Center for Chronic Disease Prevention and Health Promotion. (See https://nccd.cdc.gov/DPH_ARDI/default/default.aspx.) These specifications define 54 conditions or groups of conditions and associate each with a distinct fraction of cases attributable to alcohol. Staff from OHI used the ARDI specifications to identify hospitalizations for these conditions with the ICD-9-CM codes specifying the principal diagnosis and the first eight other reported diagnoses. Total 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-CM codes, and the alcohol-attributable fraction for each is available by request from the Health Analytics Section of the OHI (DHShealthstats@wisconsin.gov).

Drug-related hospitalizations

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

ICD-9-CM 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

A person may have more than one stay in any given time period. Wisconsin residents hospitalized in another state are not included.

In OHI, hospital data system records for all Wisconsin residents hospitalized as inpatients in a Wisconsin hospital and discharged in the years shown in the tables were examined for the presence of the defined drug-related conditions in the ICD-9-CM principal diagnosis code or any of the first eight other diagnoses reported.

NAS was defined using the following ICD-9-CM codes:

ICD-9-CM Code	*Description*
779.5	Drug withdrawal
760.7	Noxious influences affecting fetus or newborn through placenta or breast milk

Population Estimates, Statewide and by County

OHI 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
https://wilenet.org/html/justice-programs/programs/justice-stats/library.htm

Prepared annually by the Department of Justice (DOJ), *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 UCR System. These reports provided data from 2005-2012. Data from 2013 and after were retrieved using the Wisconsin UCR Data Dashboard Center, BJIA in the DOJ: http://www.doj.state.wi.us/dles/bjia/ucr-arrest-data.

DOJ 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 DOJ 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 U.S. (CIUS)
https://ucr.fbi.gov/crime-in-the-u.s

Produced annually by the FBI, 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 UCR System.

School District Populations by County, Wisconsin
WISEdash
http://wisedash.dpi.wi.gov/Dashboard/portalHome.jsp

DPI publishes data that it collects each year from all Wisconsin public schools based on federal and state requirements via a data portal called the WISEdash. While some school districts cross county lines, districts were reported within the county listed in WISEdash. Student enrollment by district was also obtained through WISEdash based on the fall count date (third Friday of September).

Wisconsin District and School Performance Reports
https://apps2.dpi.wi.gov/sdpr/spr.action

Each year, DPI also provides public performance reports for all public schools and districts in Wisconsin covering topics such as achievement test results, attendance, high school completion, participation, staffing, finance, and discipline. Data about disciplinary removals and the incidents leading to those removals are reported to the ISES. Specific data regarding drug-related and alcohol-related suspensions are made available by school year and district through the annual performance reports.

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

Wisconsin Traffic Crash Facts is produced annually by DOT 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 (DMV) in reports submitted by police officers on the scene of crashes. The *2013 and 2014 Wisconsin Traffic Crash Facts* reports were not available at the time this report was developed. Data were provided directly from BTS within DOT.

P-45718-16 (11/2016)