

# Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008

## Wisconsin Department of Health Services

- Division of Mental Health and Substance Abuse Services
- Division of Public Health

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

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

# Executive Summary

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

Like its 2006 counterpart, Wisconsin's 2008 "Epidemiological Profile on Alcohol and Other Drug Use" presents data on the use and abuse of alcohol and other substances in Wisconsin and the resulting consequences. This edition of the Profile includes new sources of data, and data at the county level, to make it more useful in understanding and addressing substance abuse problems in Wisconsin.

## Key Findings

### Consequences of Alcohol and Other Drug Consumption

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

Rates of alcohol dependence, alcohol abuse, and alcohol-related motor vehicle fatalities are higher in Wisconsin than in the United States as a whole. Wisconsin has one-and-a-half times the national rate of arrests for operating a motor vehicle while intoxicated and more than three times the national rate of arrests for other liquor law violations. Wisconsin also has the highest rate in the nation of self-reported drinking and driving.

Wisconsin's rate of alcohol-related motor vehicle deaths has been decreasing in recent years, although more slowly than the overall rate of motor vehicle deaths. One surprising finding is that Wisconsin has had a lower rate of alcohol-related liver cirrhosis than the national average, although this difference may be disappearing. Wisconsin's rate of other alcohol-related deaths (other than liver cirrhosis and motor vehicle) has increased since 1999.

The number of clients receiving publicly funded services for alcohol and other drug abuse increased 11% between 1997 and 2006, while inflation-adjusted public expenditures for those services increased just 4%.

From 1999 to 2006, Wisconsin's age-adjusted rate of drug-related deaths increased; the statewide rate of drug-related hospitalizations has also increased in recent years. Wisconsin's rate of arrests for drug law violations remains lower than the national average but has increased since 1997.

### Alcohol Consumption

Wisconsin's rates of alcohol use and misuse are among the highest - if not the highest - in the nation. As of 2006, Wisconsin adults continue to have the highest rates of alcohol consumption, binge drinking and heavy drinking among all U.S. states and territories, and Wisconsin rates of underage drinking (ages 12-20) exceed national levels. As of 2007, Wisconsin high school students have a binge drinking rate that is the third highest of reported states, and the highest rate of current alcohol use.

In good news, high school students in both Wisconsin and the nation are decreasingly likely to report they began alcohol use before age 13. Also, binge drinking among young adults (ages 18-24) has declined in Wisconsin since 2000.

Data for the most recent decade consistently show that Wisconsin women of childbearing age are more likely to drink - and to binge drink - than their national counterparts. This has important implications for unplanned pregnancy and infant health.

### Other Drug Consumption

The use of drugs other than alcohol also remains a problem in Wisconsin. As a whole, consumption patterns of illicit drugs in Wisconsin mirror national trends with few exceptions. One notable trend was in the use of marijuana. In 1997, the prevalence of both lifetime and current use of marijuana was lower than the national average. Over the next four years, however, these measures rose until they were nearly identical to the national averages. Since 2001, both lifetime and current use of marijuana in the United States and Wisconsin have decreased at similar rates. Both nationally and in Wisconsin, the misuse of prescription drugs for non-medical purposes has emerged as a problem, especially among young adults.

### Conclusion

Areas of need are clearly identified in this report. Wisconsin data for 2006 reflect a higher prevalence of alcohol use and binge drinking in adults, especially young adults, compared to the country as a whole. Underage drinking and underage binge drinking also occur at higher rates in Wisconsin, as does drinking among women of childbearing age. Concerning illicit drug use, Wisconsin rates of death and hospitalization from drug use have been increasing. From 1996 to 2006, Wisconsin's arrest rate for liquor law violations was more than three times the national rate; arrests for operating while intoxicated also occur at a higher rate in Wisconsin.

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

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# I Introduction

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This report summarizes current data on the consequences and use of alcohol and other drugs in Wisconsin. The Executive Summary is followed by a narrative with charts and tables detailing key trends for Wisconsin in the consequences of alcohol and other drug use and in patterns of consumption. The Appendixes provide information on indicator definitions, data sources, and sample sizes.

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

Please note that tobacco use and its consequences are outside the scope of the 2008 profile. The Tobacco Prevention and Control Program in the Department of Health Services regularly publishes information about the epidemiology of tobacco use in Wisconsin and works with partners to address tobacco control needs at the local and statewide level.

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

New kinds of information in this edition of the Profile include data on drinking among women of childbearing age from the Behavioral Risk Factor Surveillance System, data on alcohol-related motor vehicle deaths from the national Fatality Assessment Reporting System, and data on alcohol- and drug-related hospitalizations from Wisconsin hospital inpatient data files.

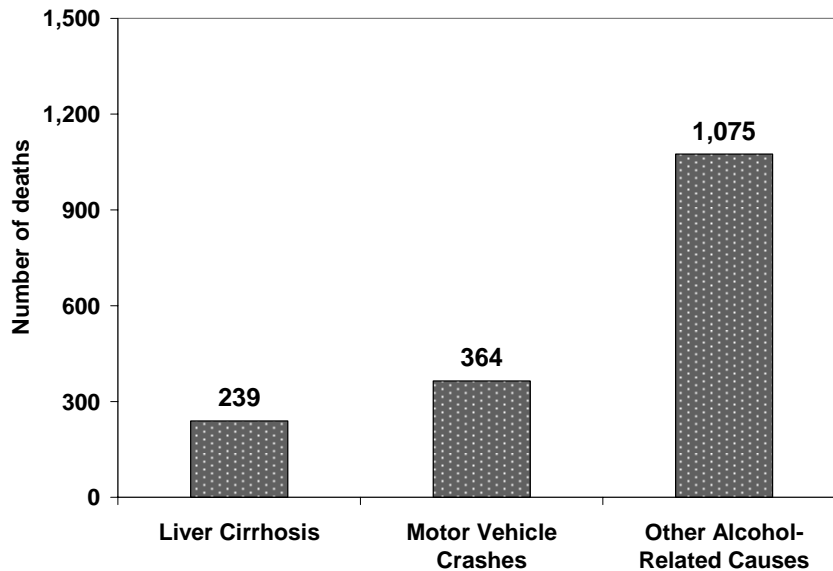
# Narrative and Results

## Consequences of Alcohol Consumption

In Wisconsin in 2006, at least 1,678 people died, 5,654 were injured, and 88,000 were arrested as a direct result of alcohol use and misuse. Given Wisconsin's high rate of alcohol consumption, it is not surprising that the consequences associated with alcohol use also tend to be higher than the national average. Rates of alcohol dependence, alcohol abuse, and alcohol-related motor vehicle fatalities are higher in Wisconsin than in the United States.

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

Figure 1. Number of alcohol-related deaths, Wisconsin 2006



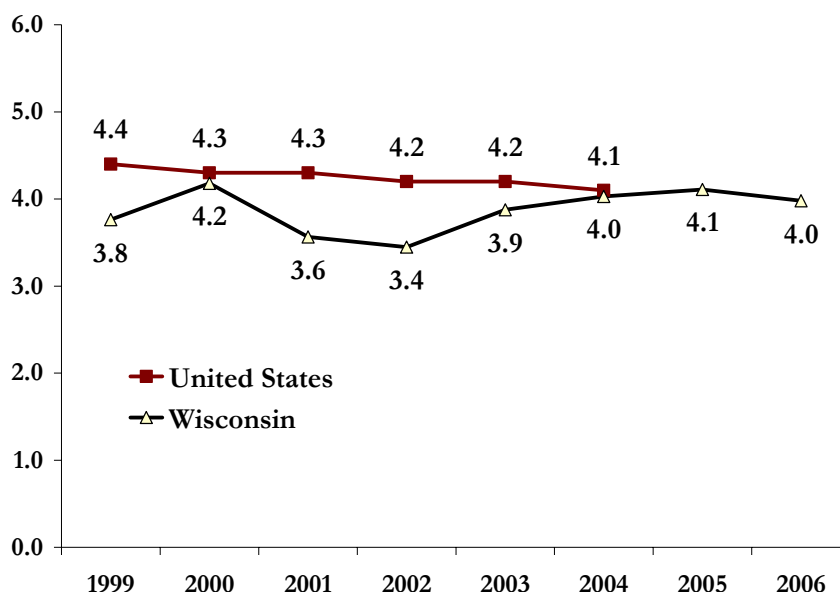
Sources: Wisconsin resident death certificates, Bureau of Health Information and Policy, Wisconsin Department of Health Services; deaths from motor vehicle crashes are from the Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Department of Transportation. See "Other Alcohol-Related Mortality" section, page 19, for a description of the "Other Alcohol-Related Causes" category of deaths.

## Alcohol-Related Liver Cirrhosis Deaths

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

- In 2006, 239 people in Wisconsin died due to alcohol-related liver cirrhosis, for an age-adjusted mortality rate of 4.0 deaths per 100,000 population (Figure 2 and Table 1).
- Although the rate of mortality due to alcohol-related liver cirrhosis has been generally lower in Wisconsin than nationally, between 2002 and 2006 the rate in Wisconsin rose from 3.4 to 4.0.

Figure 2. Age-adjusted rate of alcohol-related liver cirrhosis deaths per 100,000 population, Wisconsin and the United States, 1999-2006



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

Table 1. Age-adjusted rate and total number of alcohol-related liver cirrhosis deaths, Wisconsin and the United States, 1999-2006

		1999	2000	2001	2002	2003	2004	2005	2006
<i>United States</i>	Rate/100,000	4.4	4.3	4.3	4.2	4.2	4.1		
	Total number	11,958	12,109	12,207	12,121	12,360	12,548		
<i>Wisconsin</i>	Rate/100,000	3.8	4.2	3.6	3.4	3.9	4.0	4.1	4.0
	Total number	199	225	197	194	221	234	244	239

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

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**Table 2. Alcohol-related liver cirrhosis deaths per 100,000 population, Wisconsin by county, 1999-2006 (combined years)**

County	Annual Average Number	Rate	County	Annual Average Number	Rate
Adams	1	6.8	Marinette	2	5.4
Ashland	1	5.9	Marquette	1	5.0
Barron	2	4.1	Menominee	1	29.7
Bayfield	1	8.2	Milwaukee	45	4.8
Brown	11	4.6	Monroe	1	3.0
Buffalo	1	6.3	Oconto	2	4.7
Burnett	1	5.5	Oneida	2	5.1
Calumet	1	2.9	Outagamie	6	3.4
Chippewa	1	2.4	Ozaukee	3	3.4
Clark	0	0.7	Pepin	0	1.7
Columbia	2	3.0	Pierce	2	4.6
Crawford	1	4.4	Polk	1	3.2
Dane	19	4.2	Portage	1	1.8
Dodge	2	2.7	Price	0	2.4
Door	1	4.4	Racine	9	4.8
Douglas	3	6.6	Richland	0	1.4
Dunn	2	4.0	Rock	6	3.9
Eau Claire	2	2.4	Rusk	1	4.9
Florence	1	9.7	St. Croix	3	4.8
Fond du Lac	4	3.7	Sauk	1	7.5
Forest	1	11.2	Sawyer	2	3.9
Grant	1	1.2	Shawano	5	4.6
Green	1	3.3	Sheboygan	1	1.8
Green Lake	1	5.8	Taylor	0	1.9
Iowa	1	3.8	Trempealeau	1	5.0
Iron	0	5.5	Vernon	1	2.2
Jackson	1	5.8	Vilas	1	5.8
Jefferson	3	4.2	Walworth	5	5.0
Juneau	2	7.4	Washburn	1	4.6
Kenosha	4	2.8	Washington	3	2.5
Kewaunee	1	3.0	Waukesha	13	3.6
La Crosse	5	4.4	Waupaca	2	4.5
Lafayette	0	2.3	Waushara	1	4.7
Langlade	1	3.6	Winnebago	5	3.1
Lincoln	1	3.3	Wood	2	2.3
Manitowoc	2	2.2			
Marathon	6	4.6	<b>Wisconsin</b>	<b>219</b>	<b>4.0</b>

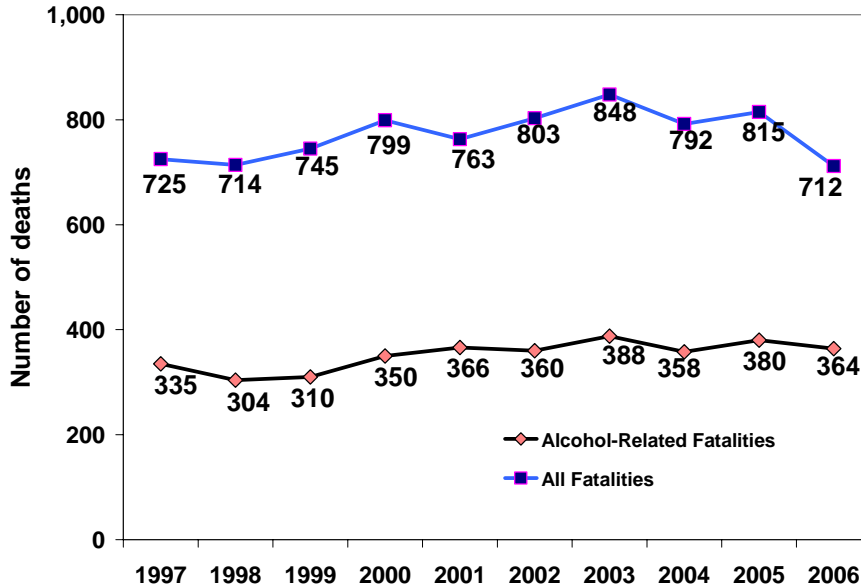
Source: Wisconsin resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services.

## Motor Vehicle Injuries and Fatalities

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

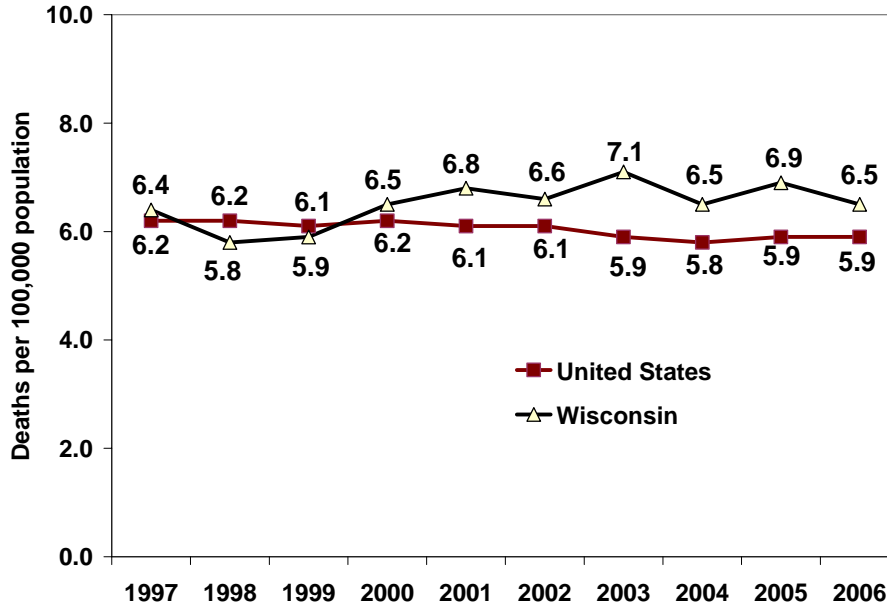
- In 2006, 364 people in Wisconsin died in alcohol-related motor vehicle crashes according to the national Fatality Analysis Reporting System. Approximately 51% of all Wisconsin motor vehicle fatalities in 2006 were alcohol-related (Figure 3).
- Wisconsin’s mortality rate from alcohol-related motor vehicle crashes has been higher than the United States rate since 2000 (Figure 4, page 15). In 2006, the alcohol-related motor vehicle mortality rate was 6.6 per 100,000 population in Wisconsin and 5.9 per 100,000 in the United States.
- Between 1997 and 2006, the total number of nonfatal alcohol-related motor vehicle injuries in Wisconsin dropped 17%, from 6,797 to 5,654. The rate of nonfatal injuries in alcohol-related crashes has also fallen during this period, to a low in 2006 of 102 injuries per 100,000 population (Figure 5, page 15).

Figure 3. Alcohol-related and total motor vehicle fatalities, Wisconsin, 1997-2006



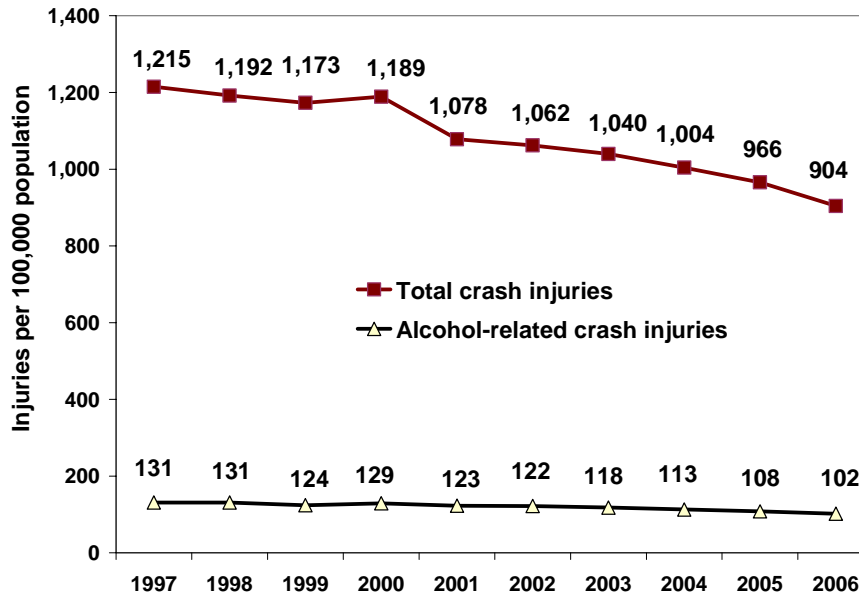
Source: Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Department of Transportation.

Figure 4. Alcohol-related motor vehicle deaths per 100,000 population, Wisconsin and the United States, 1997-2006



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

Figure 5. Alcohol-related motor vehicle injuries per 100,000 population, Wisconsin 1997-2006



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

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**Table 3. Alcohol-related motor vehicle injury rates and death rates per 100,000 population, Wisconsin by county, 2004-2006**

County	Nonfatal Injury Rate		Death Rate	
	2004-2005	2005-2006	2004-2005	2005-2006
Adams	174	178	19	10
Ashland	78	127	9	15
Barron	121	94	5	11
Bayfield	119	112	7	7
Brown	125	111	4	5
Buffalo	180	201	18	0
Burnett	242	239	21	9
Calumet	59	72	6	5
Chippewa	149	145	11	12
Clark	126	84	9	9
Columbia	161	156	12	7
Crawford	117	135	20	18
Dane	116	101	4	4
Dodge	132	107	5	6
Door	125	88	5	7
Douglas	112	114	3	6
Dunn	114	114	8	5
Eau Claire	90	82	3	6
Florence	290	242	50	30
Fond du Lac	107	108	4	4
Forest	150	111	15	10
Grant	123	118	7	9
Green	119	103	6	10
Green Lake	110	117	10	8
Iowa	130	120	9	8
Iron	98	198	0	15
Jackson	148	149	15	8
Jefferson	133	113	8	9
Juneau	180	172	13	13
Kenosha	170	161	9	8
Kewaunee	67	96	10	14
La Crosse	98	81	4	5
Lafayette	175	169	18	12
Langlade	123	114	7	10
Lincoln	169	121	2	5
Manitowoc	113	116	5	5
Marathon	106	90	7	6

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**Table 3. Alcohol-related motor vehicle injury rates and death rates per 100,000 population, Wisconsin by county, 2004-2006 (continued)**

County	Nonfatal Injury Rate		Death Rate	
	2004-2005	2005-2006	2004-2005	2005-2006
Marinette	217	185	20	17
Marquette	172	174	20	30
Menominee	175	185	22	22
Milwaukee	71	75	3	3
Monroe	147	142	9	8
Oconto	136	130	20	13
Oneida	188	171	1	1
Outagamie	92	92	4	5
Ozaukee	58	56	2	4
Pepin	128	102	7	7
Pierce	117	127	4	4
Polk	130	145	8	7
Portage	106	107	8	6
Price	134	96	3	3
Racine	102	105	5	5
Richland	111	103	5	8
Rock	148	126	8	9
Rusk	154	175	7	3
St. Croix	106	99	5	2
Sauk	171	165	10	8
Sawyer	245	214	18	21
Shawano	166	137	18	7
Sheboygan	88	86	6	4
Taylor	152	147	8	5
Trempealeau	192	175	13	16
Vernon	111	144	7	15
Vilas	216	210	4	11
Walworth	133	123	13	10
Washburn	151	171	21	24
Washington	108	101	5	4
Waukesha	67	63	2	2
Waupaca	130	148	10	11
Waushara	174	149	8	12
Winnebago	98	101	5	3
Wood	97	87	5	3
<b>Wisconsin</b>	<b>111</b>	<b>105</b>	<b>6</b>	<b>6</b>

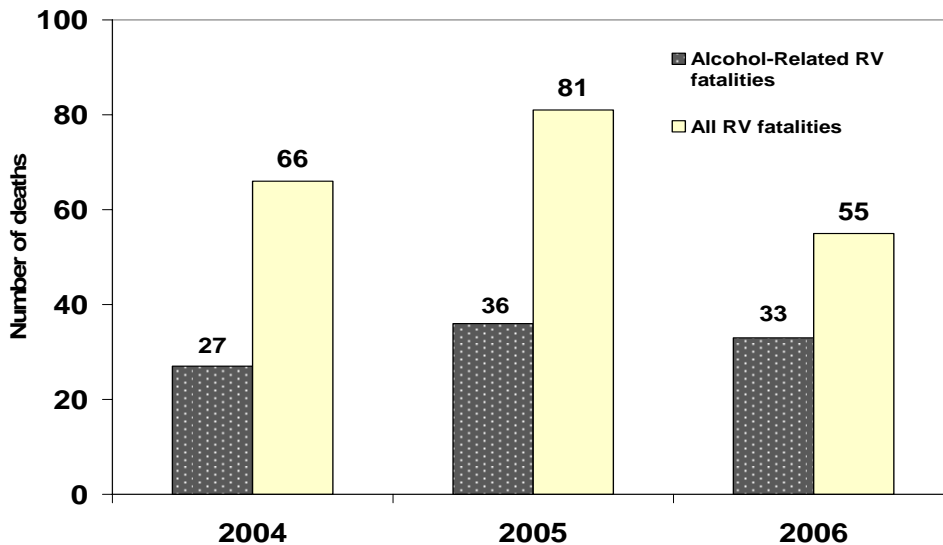
Source: *Wisconsin Traffic Crash Facts: Alcohol*, Wisconsin Department of Transportation. (Population data for county rate calculations are from the U.S. Census.) Injury rates include nonfatal injuries only, and are the number of injuries per 100,000 population.

## Recreational Vehicle Fatalities

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

- In 2006, 33 of the 55 recreational vehicle deaths in Wisconsin were alcohol-related (Figure 6).
- An increasing percentage of recreational vehicle fatalities in Wisconsin are alcohol-related. In 2006, 60% of these deaths were alcohol-related (up from 41% in 2004 and 44% in 2005).

Figure 6. Alcohol-related recreational vehicle fatalities, Wisconsin, 2004-2006



Source: Compiled from the following Wisconsin Department of Natural Resources reports available online:

- Boating Fatality Summaries, 2004-2006:  
<http://www.dnr.state.wi.us/org/es/enforcement/safety/boatstats06.htm>  
<http://www.dnr.state.wi.us/org/es/enforcement/safety/boatstats05.htm>  
<http://www.dnr.state.wi.us/org/es/enforcement/safety/boatstats04.htm>
- Snowmobile Enforcement and Safety Reports, 2003-2004, 2004-2005, 2005-2006:  
[http://dnr.wi.gov/org/es/enforcement/docs/Snowmobile\\_incident\\_Report\\_03\\_04.pdf](http://dnr.wi.gov/org/es/enforcement/docs/Snowmobile_incident_Report_03_04.pdf)  
<http://www.dnr.state.wi.us/Orq/es/enforcement/safety/snowstats05.htm>  
<http://www.dnr.state.wi.us/Orq/es/enforcement/safety/snowstats06.htm>
- All-Terrain Vehicle Enforcement and Safety Reports, 2004-2006:  
<http://dnr.wi.gov/org/es/enforcement/safety/atvsaf.html>

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

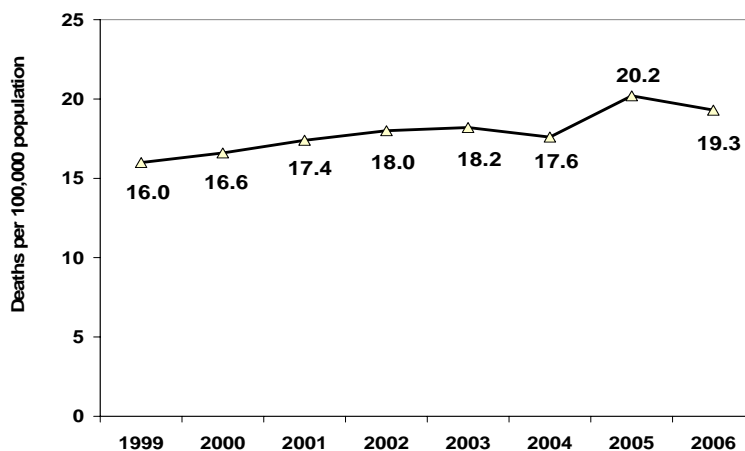
## Other Alcohol-Related Mortality

Alcohol use contributes to many different causes of death in varying degrees. For example, it contributes to 100% of alcohol-related liver cirrhosis deaths, but a smaller percentage of deaths from stroke. Alcohol-Related Disease Impact (ARDI) software from the Centers for Disease Control and Prevention identifies fractional alcohol-related mortality for a total of 63 chronic and acute conditions.

For each of these 63 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).

- Alcohol-related causes other than alcoholic liver cirrhosis and motor vehicle crashes accounted for an estimated 1,075 deaths in Wisconsin in 2006 (see Figure 1, page 11). The most frequent causes of “other” alcohol-related deaths are mental and behavioral disorders due to alcohol, alcohol dependence syndrome, unspecified liver cirrhosis, homicide, non-alcohol poisoning, and suicide.
- The Wisconsin mortality rate from other alcohol-related causes increased from 16.0 deaths per 100,000 in 1999 to 19.3 deaths per 100,000 in 2006.
- Based on combined data for 1999-2006 at the county level (Table 4, next page), the mortality rate from other alcohol-related causes ranged between 8.7 per 100,000 in Calumet County to 29.2 per 100,000 in Marquette and Milwaukee counties.

Figure 7. Other alcohol-related deaths per 100,000 population, Wisconsin, 1999-2006



Source: Wisconsin resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

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

## Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008

Table 4. Other alcohol-attributable deaths per 100,000 population, Wisconsin by county, 1999-2006 (combined years)

County	Annual Average Number	Rate	County	Annual Average Number	Rate
Adams	4	19.2	Marinette	7	15.1
Ashland	3	20.0	Marquette	4	29.2
Barron	7	15.9	Menominee	1	27.0
Bayfield	3	20.5	Milwaukee	274	29.2
Brown	34	14.5	Monroe	7	17.6
Buffalo	2	15.2	Oconto	5	14.6
Burnett	4	24.2	Oneida	6	16.2
Calumet	4	8.7	Outagamie	19	11.5
Chippewa	11	18.6	Ozaukee	10	12.0
Clark	4	12.5	Pepin	1	13.5
Columbia	9	17.0	Pierce	5	11.9
Crawford	3	19.6	Polk	6	14.3
Dane	59	13.4	Portage	9	13.4
Dodge	11	12.2	Price	3	18.9
Door	6	21.5	Racine	37	19.2
Douglas	9	21.2	Richland	3	18.0
Dunn	4	10.4	Rock	24	15.4
Eau Claire	12	12.5	Rusk	3	17.1
Florence	1	9.7	St. Croix	9	16.2
Fond du Lac	16	16.0	Sauk	5	28.5
Forest	2	22.5	Sawyer	7	16.1
Grant	6	12.7	Shawano	19	16.3
Green	5	13.4	Sheboygan	7	9.7
Green Lake	3	15.6	Taylor	4	19.0
Iowa	3	13.4	Trempealeau	4	15.0
Iron	1	20.2	Vernon	5	18.8
Jackson	3	16.1	Vilas	5	20.9
Jefferson	11	13.6	Walworth	13	14.0
Juneau	6	22.2	Washburn	3	17.5
Kenosha	30	19.5	Washington	18	14.6
Kewaunee	3	15.8	Waukesha	58	15.7
La Crosse	18	16.3	Waupaca	10	19.3
Lafayette	2	13.1	Waushara	4	16.3
Langlade	3	16.1	Winnebago	24	15.0
Lincoln	6	20.8	Wood	11	14.6
Manitowoc	18	22.0			
Marathon	19	15.1	Wisconsin	976	17.9

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

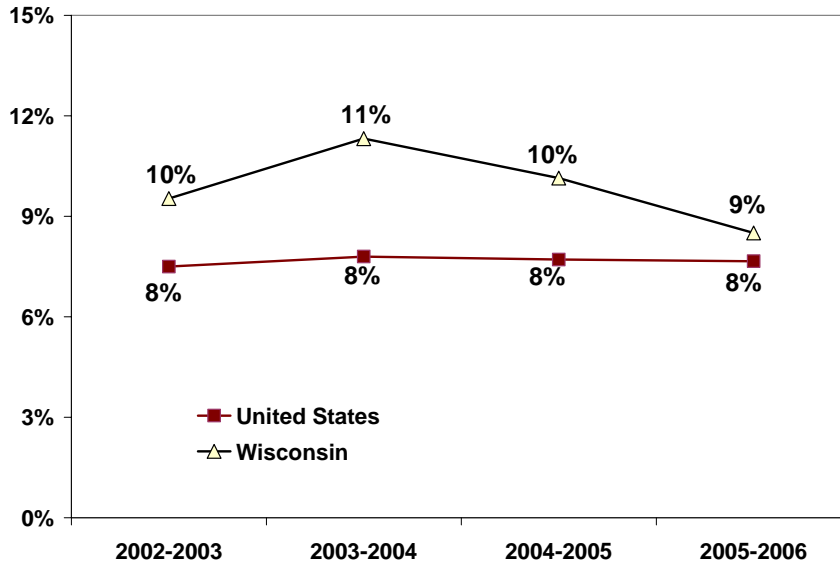
Note: Rate includes all alcohol-related deaths other than alcoholic liver cirrhosis and motor vehicle deaths.

## Dependence or Abuse

Dependence and abuse are direct consequences of alcohol misuse.

- From 2002 to 2006, the reported rate of alcohol dependence or abuse ranged between 9% and 11% of the Wisconsin population age 12 and older compared to a steady 8% nationally (Figure 8).
- In Wisconsin, young adults ages 18 to 25 had a notably higher rate of alcohol dependence or abuse than other ages (Table 5).

Figure 8. Prevalence of alcohol dependence and abuse, age 12 and older, Wisconsin, 2002-2006



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. Prevalence of alcohol dependence and abuse, age 12 and older by age, Wisconsin, 2002-2006

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

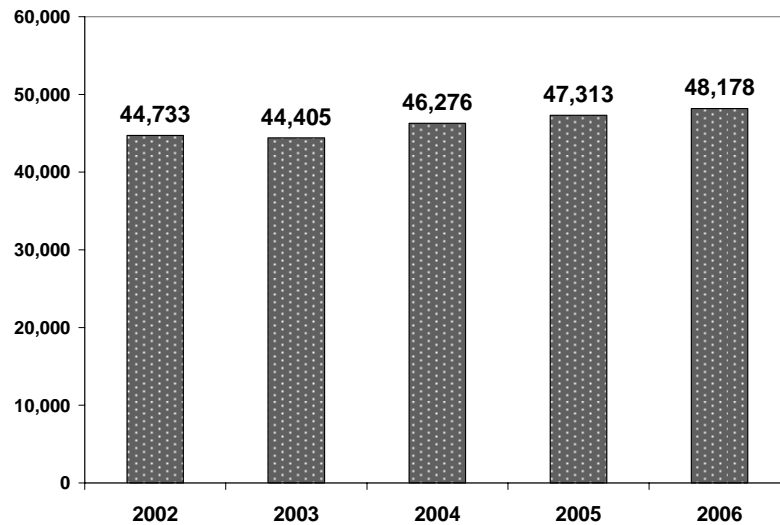
Source: National Survey of Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

## Alcohol-related Hospitalizations

The number of alcohol-related hospitalizations in Wisconsin increased approximately 8% in recent years, from 44,733 in 2002 to 48,178 in 2006 (Figure 9).

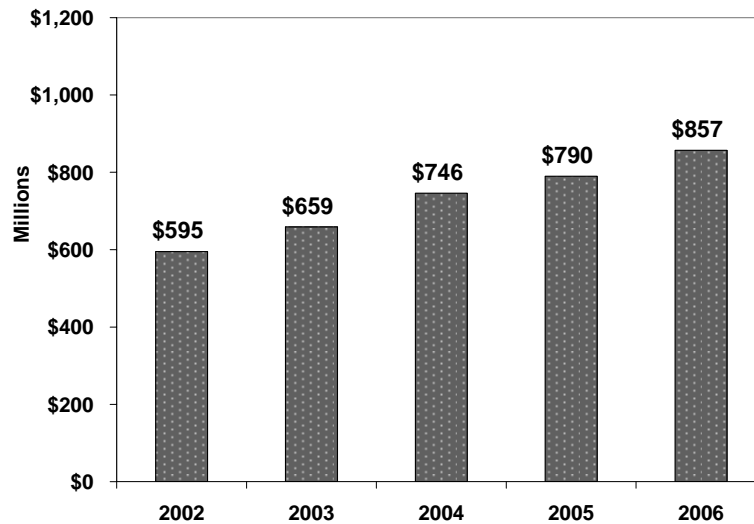
Charges for alcohol-related hospitalizations have likewise increased, from \$595 million in 2002 to \$857 million in 2006 (Figure 10). (These amounts are not adjusted for inflation.) Hospital charges are the total facility charges for the length of stay and are not the same as actual costs paid by any payer; also, they do not include physician or other ancillary charges.

Figure 9. Number of alcohol-related hospitalizations, Wisconsin, 2002-2006



Source: Wisconsin hospital inpatient discharge file, Wisconsin Hospital Association Information Center, Inc.

Figure 10. Alcohol-related hospital charges, in millions, Wisconsin 2002-2006



Source: Wisconsin hospital inpatient discharge file, Wisconsin Hospital Association Information Center, Inc.

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

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

**Table 6. Alcohol-related hospitalizations, Wisconsin by county, 2004-2006**

County	Number			Rate per 100,000 Population	
	2004	2005	2006	2004-2005	2005-2006
Adams	112	156	137	649	703
Ashland	253	258	251	1,534	1,536
Barron	392	368	400	831	837
Bayfield	185	167	133	1,162	990
Brown	1,870	1,910	1,961	794	808
Buffalo	71	65	90	490	556
Burnett	115	87	84	612	518
Calumet	111	117	123	259	271
Chippewa	563	544	535	932	897
Clark	300	285	266	858	808
Columbia	444	497	485	854	886
Crawford	151	111	127	765	696
Dane	3,148	3,239	3,216	701	700
Dodge	613	611	579	695	672
Door	217	235	231	798	824
Douglas	72	70	86	161	177
Dunn	220	283	267	605	657
Eau Claire	957	988	1,035	1,033	1,071
Florence	14	17	10	310	272
Fond du Lac	694	697	689	703	698
Forest	97	78	110	874	947
Grant	316	331	325	652	662
Greene	212	213	213	608	601
Green Lake	157	129	100	746	598
Iowa	128	148	162	588	655
Iron	58	46	59	781	798
Jackson	184	198	203	973	1,012
Jefferson	602	574	589	746	730
Juneau	262	267	259	1,013	982
Kenosha	1,411	1,599	1,525	943	969
Kewaunee	115	124	117	576	578
La Crosse	1,208	1,214	1,227	1,114	1,118
Lafayette	93	104	94	604	607
Langlade	178	171	168	839	820
Lincoln	302	275	286	953	928
Manitowoc	801	791	647	972	878
Marathon	1,230	1,245	1,188	964	939
Marinette	426	382	386	932	887

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

**Table 6. Alcohol-related hospitalizations, Wisconsin by county, 2004-2006 (continued)**

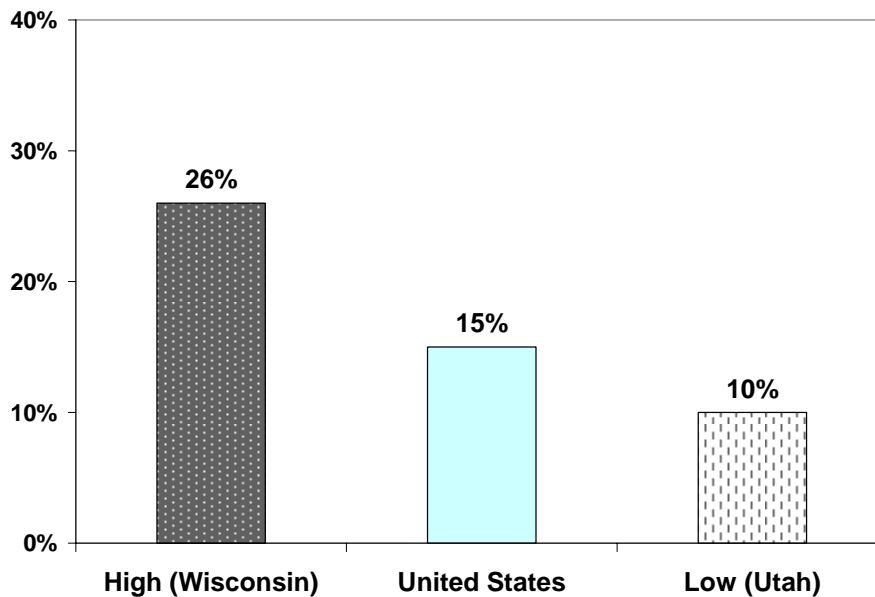
County	Number			Rate per 100,000 Population	
	2004	2005	2006	2004-2005	2005-2006
Marquette	166	144	113	1,025	844
Menominee	123	123	107	2,686	2,506
Milwaukee	10,507	10,992	11,346	1,163	1,216
Monroe	318	315	350	746	776
Oconto	254	266	252	692	685
Oneida	413	396	456	1,092	1,155
Outagamie	1,019	1,201	1,191	653	696
Ozaukee	562	512	571	625	628
Pepin	58	46	52	702	666
Pierce	172	178	188	451	466
Polk	253	255	262	576	580
Portage	453	438	499	660	694
Price	166	142	131	1,008	903
Racine	1,720	1,905	1,838	931	955
Richland	122	129	141	682	735
Rock	1,193	1,246	1,251	777	788
Rusk	147	137	140	932	916
St. Croix	313	328	324	423	415
Sauk	517	475	514	864	853
Sawyer	250	227	228	1,410	1,336
Shawano	294	298	324	717	752
Sheboygan	949	959	1,095	835	896
Taylor	113	108	86	560	493
Trempealeau	313	264	255	1,044	929
Vernon	205	212	187	722	685
Vilas	319	315	323	1,423	1,427
Walworth	741	693	792	724	739
Washburn	161	156	161	955	953
Washington	935	922	970	741	746
Waukesha	2,559	2,624	2,833	686	718
Waupaca	432	438	448	827	842
Waushara	190	172	176	731	700
Winnebago	1,229	1,264	1,313	784	805
Wood	830	839	896	1,109	1,157
<b>Wisconsin</b>	<b>46,276</b>	<b>47,313</b>	<b>48,178</b>	<b>848</b>	<b>861</b>

Source: Wisconsin inpatient hospital discharge data, Wisconsin Hospital Association Information Center, Inc.  
 Note: Hospitalization numbers and rates are based on patient's county of residence.

## Drinking and Driving

- Wisconsin has the highest prevalence of self-reported drinking and driving of any state in the nation (Figure 11).
- Based on combined data for the years 2004-2006, an estimated 26% of current drivers age 18 and older in Wisconsin drove under the influence of alcohol in the past 12 months (“past year”). This was markedly higher than the percentage among all current drivers in the nation (15%).

Figure 11. Driving under the influence of alcohol in the past year, states with the highest and lowest prevalence and the United States, 2004-2006 (combined)

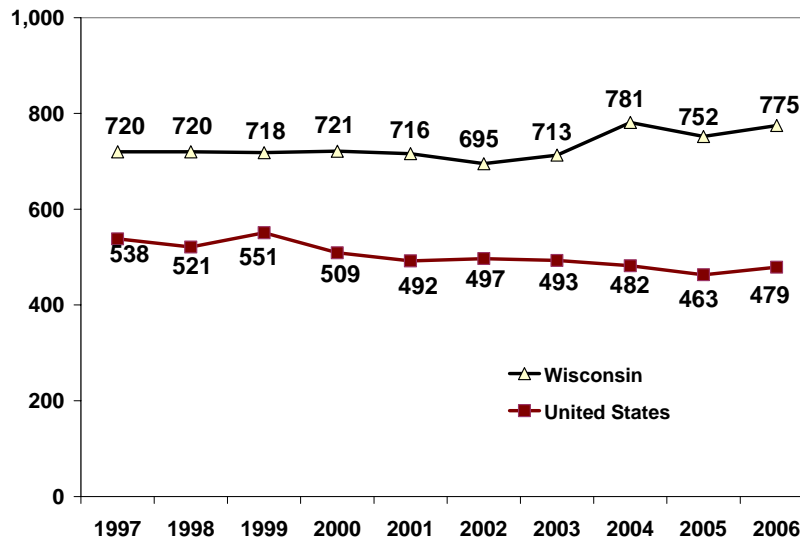


Source: National Survey of Drug Use and Health, Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services.

## Crime and Arrests

- In 2006, there were 43,056 arrests in Wisconsin for operating a motor vehicle while intoxicated (OWI) and 45,387 arrests for other liquor law violations.
- Arrest rates for operating while intoxicated (OWI) and liquor law violations have been consistently higher in Wisconsin than nationally (Figure 12 and Figure 13).
- Wisconsin’s rate of arrests for OWI remained relatively steady from 1997 to 2003 (range: 695-721 per 100,000 population), but increased in subsequent years (range: 752-781). On July 3, 2003, Wisconsin became the 43<sup>rd</sup> state to enact legislation lowering the prohibited BAC (Blood/Breath Alcohol Concentration) level for operating while intoxicated to 0.08 percent BAC (from 1.0 percent BAC). The change became effective September 30, 2003.

Figure 12. Rate of arrests (adult and juvenile) for operating while intoxicated (OWI) per 100,000 population, Wisconsin and the United States, 1997-2006



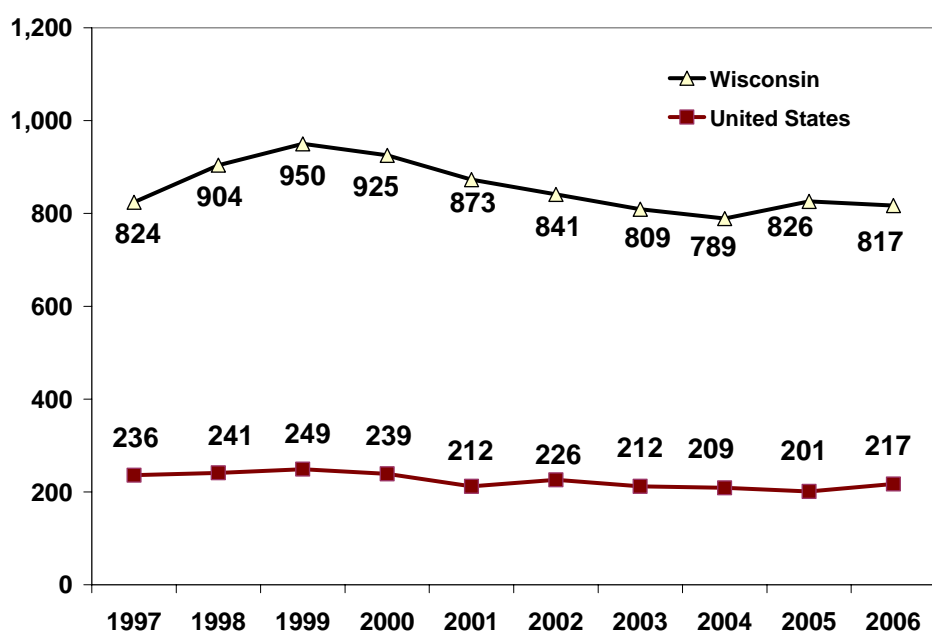
Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

Note: Effective September 30, 2003, Wisconsin defines “operating while intoxicated” as driving while blood alcohol concentration (BAC) is 0.08 percent or higher. Prior to that date, the prohibited BAC was 1.0.

Liquor law violations are a direct consequence of alcohol misuse. The category of “liquor law violations” includes all state or local liquor law violations with the exception of driving under the influence (operating while intoxicated).

- From 1997 to 2006, Wisconsin's arrest rate for liquor law violations was more than three times the national rate. In 2006, for example, the Wisconsin rate was 817 arrests per 100,000 population compared to the national rate of 217 arrests per 100,000 (Figure 13).

Figure 13. Rate of liquor law arrests (adult and juvenile) per 100,000 population, Wisconsin and the United States, 1997-2006



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

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

Table 7. Operating while intoxicated (OWI) and liquor law arrests per 100,000 population, Wisconsin by county, 2005 and 2006

County	OWI Arrests per 100,000 Population		Liquor Law Arrests per 100,000 Population	
	2005	2006	2005	2006
Adams	989	1,089	0	101
Ashland	565	454	632	860
Barron	672	734	567	617
Bayfield	449	541	218	191
Brown	478	614	945	841
Buffalo	587	907	272	144
Burnett	1,252	1,225	121	170
Calumet	415	460	265	262
Chippewa	577	746	367	561
Clark	645	487	443	431
Columbia	1,181	1,001	1,131	927
Crawford	514	358	414	346
Dane	750	749	1,291	1,136
Dodge	731	692	526	696
Door	1,295	1,230	871	812
Douglas	710	962	1,303	1,291
Dunn	714	662	1,880	2,330
Eau Claire	687	749	1,752	1,961
Florence	905	830	40	20
Fond du Lac	1,238	1,332	703	535
Forest	1,195	1,253	452	515
Grant	813	778	1,170	1,402
Green	793	633	563	689
Green Lake	871	914	845	909
Iowa	501	623	433	379
Iron	1,278	1,415	1,113	877
Jackson	1,103	1,098	172	287
Jefferson	638	978	410	744
Juneau	393	387	168	242
Kenosha	579	556	971	991
Kewaunee	648	398	657	614
La Crosse	944	866	2,911	2,203
Lafayette	392	276	1,288	1,129
Langlade	203	451	63	383
Lincoln	495	491	495	620
Manitowoc	1,247	1,624	1,070	1,448
Marathon	678	730	698	757

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

**Table 7. Operating while intoxicated (OWI) and liquor law arrests per 100,000 population, Wisconsin by county, 2005 and 2006 (continued)**

County	OWI Arrests per 100,000 Population		Liquor Law Arrests per 100,000 Population	
	2005	2006	2005	2006
Marinette	763	412	576	319
Marquette	748	1,215	7	0
Menominee	2,336	2,306	2,860	1,240
Milwaukee	418	397	588	549
Monroe	762	916	774	1,030
Oconto	348	319	677	825
Oneida	1,173	1,044	1,403	1,297
Outagamie	827	885	1,081	1,195
Ozaukee	725	571	708	721
Pepin	732	1,065	434	683
Pierce	685	587	647	643
Polk	1,006	719	212	69
Portage	685	649	1,048	1,062
Price	926	873	381	467
Racine	523	527	460	438
Richland	842	998	853	502
Rock	681	816	608	579
Rusk	1,184	1,030	1,026	890
St. Croix	522	602	719	761
Sauk	1,115	1,301	1,311	1,358
Sawyer	489	773	130	117
Shawano	1,079	1,213	987	899
Sheboygan	1,094	1,180	749	806
Taylor	582	643	430	602
Trempealeau	575	712	716	680
Vernon	568	510	203	127
Vilas	909	1,005	587	478
Walworth	1,032	1,106	1,635	1,893
Washburn	542	744	331	558
Washington	843	641	827	801
Waukesha	743	740	405	384
Waupaca	837	1,042	380	482
Waushara	492	514	311	393
Winnebago	803	742	1,085	1,083
Wood	900	875	1,130	980
<b>Wisconsin</b>	<b>752</b>	<b>775</b>	<b>826</b>	<b>817</b>

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

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

## Consequences of Illicit Drug Consumption

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

### Mortality

Deaths due to drug use are a direct consequence of illicit drug use.

- In 2006, 526 Wisconsin residents died as a direct consequence of illicit drug use (Table 8).
- The age-adjusted mortality rate of drug-related deaths has increased in Wisconsin, from 3.1 deaths per 100,000 population in 1999 to 9.3 deaths per 100,000 in 2006.

Table 8. Age-adjusted mortality rate and total number of drug-related deaths, Wisconsin and the United States, 1999-2006

		1999	2000	2001	2002	2003	2004	2005	2006
<i>United States</i>	Rate/100,000	5.6	5.7	6.2	7.6	8.3	8.7		
	Total number	15,635	16,113	17,813	21,797	24,230	25,670		
<i>Wisconsin</i>	Rate/100,000	3.1	4.0	4.1	5.2	6.2	6.7	7.9	9.3
	Total number	167	213	223	287	344	383	448	526

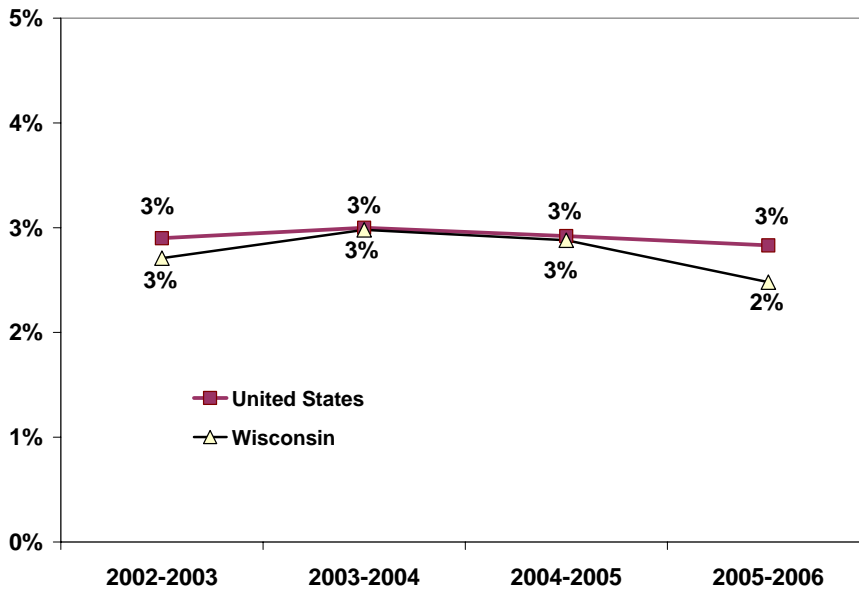
Source: Wisconsin resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services; United States death certificate data compiled by the Centers for Disease Control and Prevention: <http://wonder.cdc.gov/mortSQL.html>.

## Dependence or Abuse

Dependence and abuse are direct consequences of illicit drug use.

- During 2002 through 2005, the rate of dependence on or abuse of illicit drugs was the same (3%) for Wisconsin and the United States (Figure 14).
- Wisconsin's rate of drug dependence or abuse for 2005-2006 was 2%.

Figure 14. Prevalence of drug dependence and abuse, age 12 and older, Wisconsin, 2002-2006

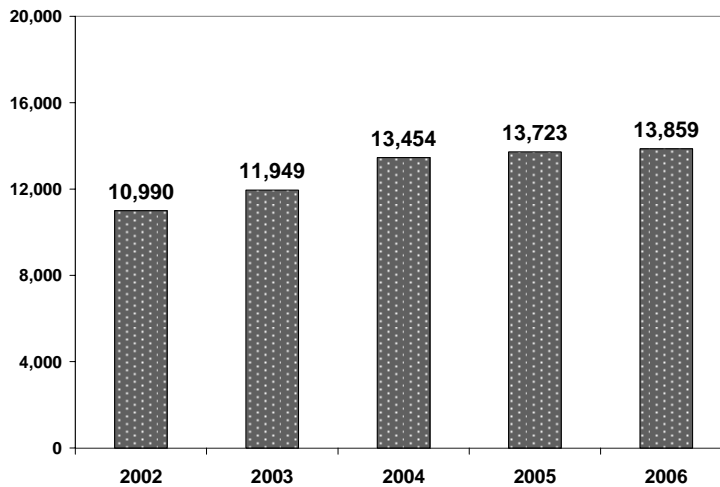


Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

## Hospitalizations

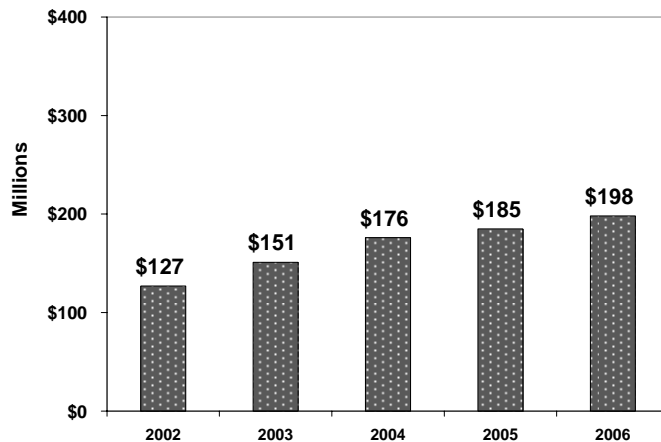
- There were 13,859 Wisconsin hospitalizations defined as drug-related in 2006, an increase of 26% since 2002 (Figure 15). Drug-related hospitalizations include such diagnoses as drug psychoses, drug dependence, drug-related polyneuropathy, and accidental and purposeful poisoning by drugs.
- Charges for drug-related hospitalizations in Wisconsin totaled \$198 million in 2006, an increase of 56% from the \$127 million in 2002 (Figure 16). (These amounts are not adjusted for inflation.)

Figure 15. Number of drug-related hospitalizations, Wisconsin, 2002-2006



Source: Wisconsin hospital inpatient discharge file, Wisconsin Hospital Association Information Center, Inc.

Figure 16. Hospital charges for drug-related hospitalizations, in millions, Wisconsin, 2002-2006



Source: Wisconsin hospital inpatient discharge file, Wisconsin Hospital Association Information Center, Inc.  
Note: Hospital charges are the total facility charges for the length of stay and are not the same as actual costs paid by any payer; also, they do not include physician or other ancillary charges (see Technical Notes).

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

Table 9. Drug-related hospitalizations, Wisconsin by county, 2004-2006

County	Number			Rate per 100,000 Population	
	2004	2005	2006	2004-2005	2005-2006
Adams	37	43	47	194	216
Ashland	110	100	115	630	649
Barron	115	107	90	243	215
Bayfield	42	47	46	294	307
Brown	377	453	439	174	186
Buffalo	17	14	25	112	140
Burnett	65	32	31	294	191
Calumet	20	15	21	40	41
Chippewa	181	168	183	294	292
Clark	73	62	61	198	180
Columbia	114	125	141	217	240
Crawford	28	28	24	164	152
Dane	1,014	1,054	1,032	227	226
Dodge	154	140	124	167	149
Door	36	48	46	148	166
Douglas	23	20	28	49	54
Dunn	76	88	57	197	173
Eau Claire	264	308	308	304	326
Florence	1	13	7	140	202
Fond du Lac	229	233	232	233	234
Forest	28	30	44	290	373
Grant	70	69	63	140	133
Green	51	33	43	120	107
Green Lake	38	27	22	170	128
Iowa	30	47	47	164	199
Iron	32	25	30	428	418
Jackson	47	54	53	257	270
Jefferson	102	130	148	147	174
Juneau	69	66	69	259	252
Kenosha	403	412	456	255	269
Kewaunee	26	24	20	120	106
La Crosse	259	262	253	240	236
Lafayette	12	19	12	95	95
Langlade	68	56	63	298	288
Lincoln	74	65	61	230	208
Manitowoc	181	200	171	233	226
Marathon	257	219	262	185	186
Marinette	91	72	87	188	184

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

**Table 9. Drug-related hospitalizations, Wisconsin by county, 2004-2006 (continued)**

County	Number			Rate per 100,000 Population	
	2004	2005	2006	2004-2005	2005-2006
Marquette	38	34	35	238	226
Menominee	18	18	12	393	327
Milwaukee	3,837	3,940	3,877	421	426
Monroe	67	82	83	176	193
Oconto	42	61	57	137	156
Oneida	126	137	141	355	377
Outagamie	237	244	255	141	145
Ozaukee	156	154	210	180	211
Pepin	13	13	13	176	177
Pierce	58	74	74	170	189
Polk	109	113	95	252	233
Portage	109	135	161	181	219
Price	54	42	33	314	248
Racine	497	508	513	258	261
Richland	33	30	32	171	169
Rock	462	438	445	287	279
Rusk	36	50	30	282	264
St. Croix	106	95	89	133	117
Sauk	153	134	156	250	250
Sawyer	49	52	45	299	285
Shawano	57	39	45	116	102
Sheboygan	318	320	342	279	289
Taylor	21	23	16	111	99
Trempealeau	46	53	36	179	159
Vernon	52	41	46	161	149
Vilas	79	79	93	355	385
Walworth	171	180	206	177	192
Washburn	57	33	31	271	192
Washington	229	222	210	180	170
Waukesha	810	853	867	220	226
Waupaca	85	97	72	173	161
Waushara	48	29	30	156	119
Winnebago	267	253	276	163	165
Wood	200	239	272	292	341
<b>Wisconsin</b>	<b>13,454</b>	<b>13,723</b>	<b>13,859</b>	<b>246</b>	<b>249</b>

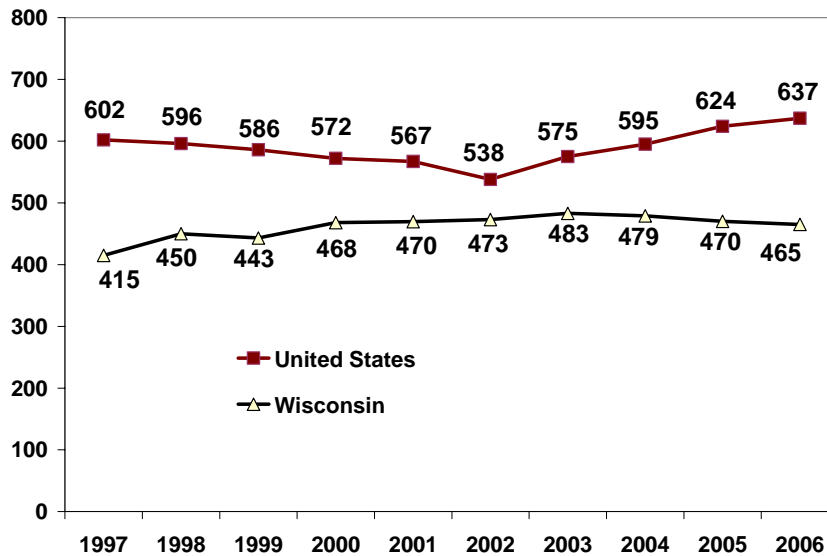
Source: Wisconsin inpatient hospital discharge data, Wisconsin Hospital Association Information Center, Inc.  
 Note: Hospitalization numbers and rates are based on patient's county of residence.

## Crime and Arrests

Drug law violations are a direct consequence of illicit drug use.

- There were 26,193 arrests in Wisconsin for drug law violations in 2006, an increase of 22% since 1997 (21,522 arrests).
- From 1996 to 2006, the rate of drug law arrests was lower in Wisconsin than the national average (Figure 17).
- During these years, Wisconsin’s rate of drug law arrests ranged between 415 and 483 arrests per 100,000 Wisconsin residents. The rate of drug law arrests in Wisconsin was 465 per 100,000 population in 2006.

Figure 17. Rate of drug law arrests (adult and juvenile) per 100,000 population, Wisconsin and the United States, 1996-2006



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

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

## Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008

Table 10. Arrests for drug law violations per 100,000 population, Wisconsin by county, 2005 and 2006

County	Arrests per 100,000 population		County	Arrests per 100,000 population	
	2005	2006		2005	2006
Adams	221	355	Marinette	207	162
Ashland	499	442	Marquette	518	460
Barron	327	196	Menominee	2118	2806
Bayfield	429	647	Milwaukee	719	692
Brown	462	617	Monroe	687	637
Buffalo	401	331	Oconto	212	269
Burnett	538	261	Oneida	792	468
Calumet	120	63	Outagamie	394	442
Chippewa	287	294	Ozaukee	247	207
Clark	202	123	Pepin	203	109
Columbia	668	592	Pierce	292	206
Crawford	6	12	Polk	402	330
Dane	354	369	Portage	235	282
Dodge	309	398	Price	585	307
Door	377	309	Racine	521	572
Douglas	489	377	Richland	98	365
Dunn	379	419	Rock	472	440
Eau Claire	731	663	Rusk	421	385
Florence	40	162	St. Croix	248	282
Fond du Lac	258	283	Sauk	410	439
Forest	532	727	Sawyer	306	533
Grant	238	223	Shawano	559	560
Green	310	331	Sheboygan	386	419
Green Lake	376	512	Taylor	207	189
Iowa	119	215	Trempealeau	284	353
Iron	286	338	Vernon	176	161
Jackson	309	267	Vilas	443	362
Jefferson	494	434	Walworth	1075	1034
Juneau	105	134	Washburn	307	246
Kenosha	572	552	Washington	527	538
Kewaunee	211	192	Waukesha	380	361
La Crosse	634	544	Waupaca	306	313
Lafayette	288	319	Waushara	77	112
Langlade	593	659	Winnebago	442	460
Lincoln	531	391	Wood	722	487
Manitowoc	292	377			
Marathon	323	281	<b>Wisconsin</b>	470	465

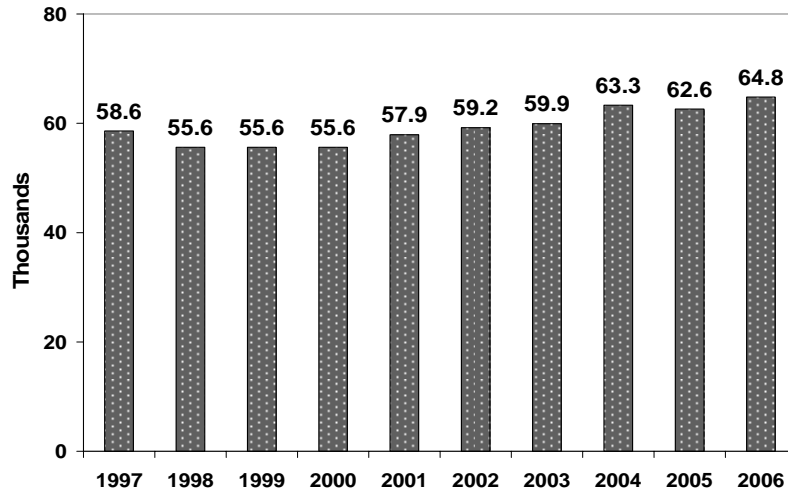
Source: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance.

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

### Publicly Funded Treatment

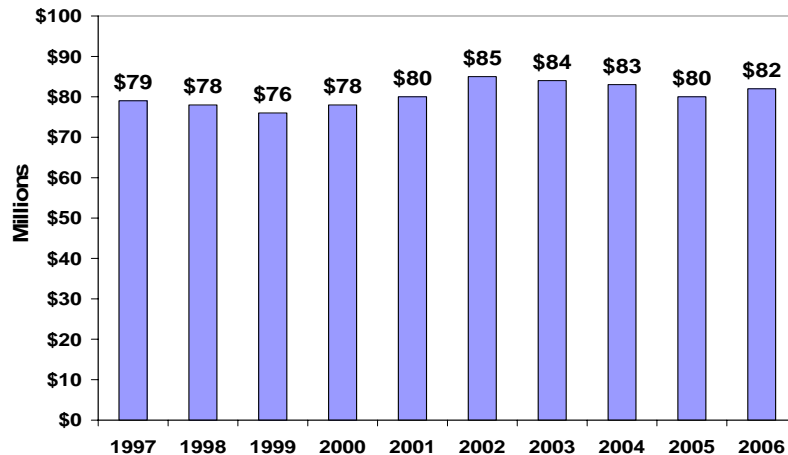
- The number of alcohol and other drug abuse clients receiving publicly funded services in Wisconsin increased by 11% from 1997 to 2006—from 58,646 to 64,806 (Figure 18).
- Public funds expended for alcohol and other drug abuse treatment in Wisconsin rose from an inflation-adjusted \$79 million in 1997 to \$85 million in 2002 (8%), then decreased to \$82 million in 2006 (Figure 19). The net increase from 1997 to 2006 was 4%.

Figure 18. Number of alcohol and other drug abuse clients (in thousands) receiving services with public funds, Wisconsin, 1997-2006



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

Figure 19. Public funds expended (in millions) for alcohol and other drug abuse treatment, Wisconsin, 1997-2006 (adjusted to 2006 dollars)



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

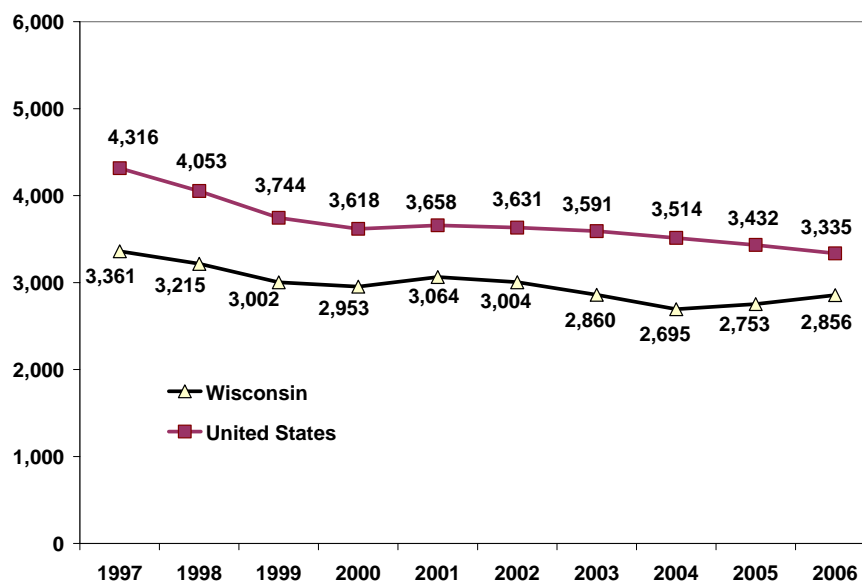
## Crime and Arrests

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

Drinking by perpetrator or victim increases the risk of assaults and assault-related injuries. Approximately 23% of sexual assaults, 30% of physical assaults, and 3% of robberies are attributable to alcohol use.<sup>1</sup>

- Between 1996 and 2006, Wisconsin's rates of reported property crimes and violent crimes were far lower than U.S. rates (Figure 20 and Figure 21). Wisconsin rates for these crimes declined for most of the decade.
- In 1996, 3,361 property crimes were reported per 100,000 Wisconsin residents; by 2006, this rate had fallen to 2,856.

Figure 20. Rate of reported property crime offenses per 100,000 population, Wisconsin and the United States, 1996-2006

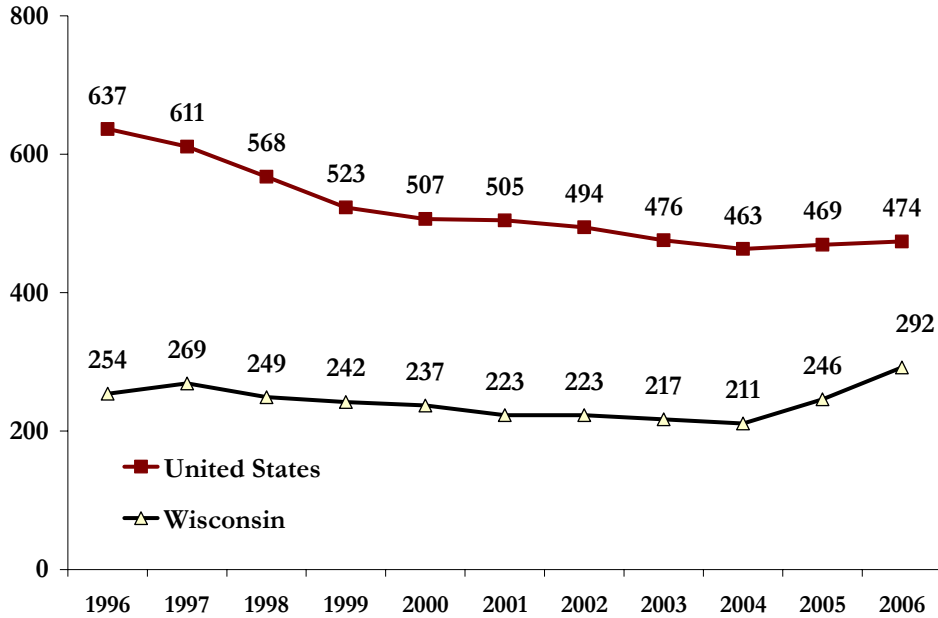


Sources: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance; *Crime in the United States*, U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division.

<sup>1</sup> *The Economic Costs of Alcohol and Drug Abuse in the United States, 1992*, National Institute on Drug Abuse, citing analysis by The Lewin Group. See: [http://www.nida.nih.gov/EconomicCosts/Table6\\_8.html](http://www.nida.nih.gov/EconomicCosts/Table6_8.html).

- Wisconsin’s rate of violent crimes reported per 100,000 decreased from 254 in 1996 to 211 in 2004, but then increased to a high of 292 in 2006 (Figure 21).

Figure 21. Rate of reported violent crime offenses (adult and juvenile) per 100,000 population, Wisconsin and United States, 1996-2006



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

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

Table 11. Reported property crimes, Wisconsin by county, 2005 and 2006

County	2005		2006	
	Number	Rate	Number	Rate
Adams	27	130	110	528
Ashland	515	3,097	516	3,125
Barron	782	1,706	742	1,617
Bayfield	235	1,552	322	2,126
Brown	5,872	2,457	5,825	2,425
Buffalo	141	1,009	117	842
Burnett	390	2,360	303	1,837
Calumet	308	698	357	801
Chippewa	928	1,547	1,044	1,731
Clark	355	1,041	362	1,062
Columbia	1,422	2,568	1,451	2,617
Crawford	164	957	195	1,143
Dane	13,889	3,032	13,812	2,978
Dodge	1,085	1,232	1,191	1,338
Door	227	801	385	1,365
Douglas	1,936	4,379	1,801	4,088
Dunn	857	2,055	911	2,170
Eau Claire	2,597	2,760	2,819	2,975
Florence	134	2,694	143	2,894
Fond du Lac	1,755	1,767	1,844	1,858
Forest	257	2,580	210	2,121
Grant	599	1,206	613	1,242
Green	508	1,445	530	1,485
Green Lake	316	1,649	346	1,807
Iowa	318	1,349	332	1,398
Iron	131	1,970	128	1,969
Jackson	330	1,670	448	2,257
Jefferson	1,606	2,025	1,858	2,322
Juneau	613	2,294	490	1,825
Kenosha	4,094	2,550	4,168	2,573
Kewaunee	275	1,320	221	1,061
La Crosse	2,626	2,410	3,012	2,753
Lafayette	171	1,048	154	945
Langlade	723	3,487	838	4,062
Lincoln	641	2,114	790	2,620
Manitowoc	1,799	2,195	1,864	2,276
Marathon	2,305	1,788	2,473	1,899

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

Table 11. Reported property crimes, Wisconsin by county, 2005 and 2006 (continued)

County	2005		2006	
	Number	Rate	Number	Rate
Marinette	882	2,032	843	1,951
Marquette	157	1,030	147	965
Menominee	126	2,751	186	4,046
Milwaukee	49,431	5,363	51,333	5,610
Monroe	925	2,169	1,059	2,461
Oconto	767	2,036	812	2,139
Oneida	774	2,092	861	2,341
Outagamie	4,315	2,523	4,646	2,690
Ozaukee	974	1,132	1,111	1,287
Pepin	53	718	55	751
Pierce	1,004	2,575	891	2,263
Polk	606	1,367	575	1,284
Portage	1,616	2,391	1,633	2,420
Price	198	1,301	159	1,060
Racine	6,886	3,519	6,840	3,488
Richland	172	935	227	1,238
Rock	5,802	3,683	5,914	3,716
Rusk	378	2,487	292	1,940
St. Croix	1,401	1,816	1,336	1,670
Sauk	1,996	3,457	2,161	3,709
Sawyer	522	3,075	554	3,244
Shawano	953	2,306	956	2,309
Sheboygan	2,970	2,591	3,357	2,925
Taylor	281	1,422	289	1,474
Trempealeau	356	1,281	357	1,271
Vernon	278	957	265	908
Vilas	657	2,942	667	2,980
Walworth	2,431	2,435	2,596	2,570
Washburn	284	1,711	300	1,799
Washington	2,313	1,833	2,439	1,912
Waukesha	5,432	1,433	6,054	1,589
Waupaca	1,031	1,961	1,164	2,209
Waushara	340	1,372	449	1,802
Winnebago	3,411	2,139	3,726	2,320
Wood	1,756	2,334	1,729	2,312
<b>Wisconsin</b>	<b>152,409</b>	<b>2,753</b>	<b>158,708</b>	<b>2,856</b>

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

Note: Rates are per 100,000 population.

Table 12. Reported violent crimes, Wisconsin by county, 2005 and 2006

County	2005		2006	
	Number	Rate	Number	Rate
Adams	15	72	9	43
Ashland	56	337	64	388
Barron	48	105	34	74
Bayfield	55	363	43	284
Brown	555	232	627	261
Buffalo	7	50	1	7
Burnett	42	254	39	237
Calumet	15	34	15	34
Chippewa	29	48	59	98
Clark	22	65	23	67
Columbia	75	136	64	115
Crawford	4	23	2	12
Dane	1,159	253	1,323	285
Dodge	44	50	59	66
Door	9	32	13	46
Douglas	68	154	80	182
Dunn	57	137	56	133
Eau Claire	165	175	154	163
Florence	5	101	4	81
Fond du Lac	122	123	214	216
Forest	29	291	44	444
Grant	60	121	61	124
Green	16	45	22	62
Green Lake	14	73	12	63
Iowa	14	59	23	97
Iron	12	180	19	292
Jackson	12	61	18	91
Jefferson	134	169	167	209
Juneau	123	460	66	246
Kenosha	296	184	405	250
Kewaunee	8	38	8	38
La Crosse	170	156	230	210
Lafayette	8	49	7	43
Langlade	59	285	18	87
Lincoln	39	129	35	116
Manitowoc	196	239	193	236
Marathon	183	142	204	157

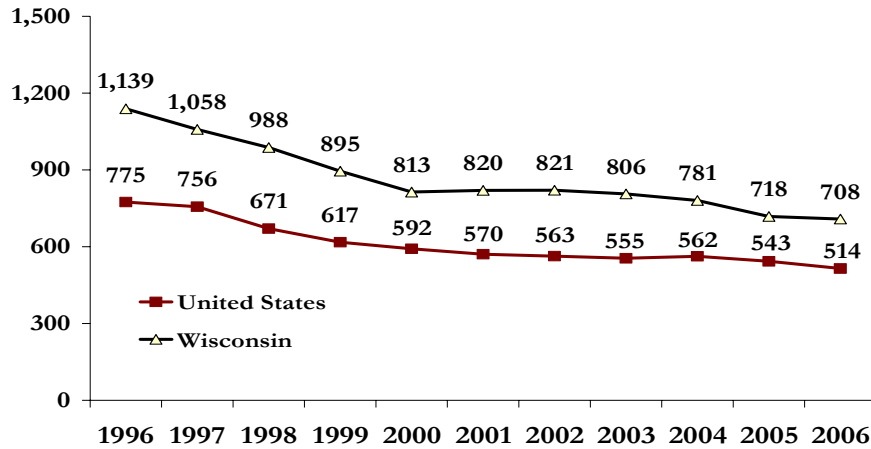
Table 12. Reported violent crimes, Wisconsin by county, 2005 and 2006 (continued)

County	2005		2006	
	Number	Rate	Number	Rate
Marinette	33	76	21	49
Marquette	7	46	5	33
Menominee	30	655	32	696
Milwaukee	6,881	747	8,717	953
Monroe	58	136	86	200
Oconto	25	66	44	116
Oneida	50	135	54	147
Outagamie	227	133	258	149
Ozaukee	33	38	41	48
Pepin	11	149	8	109
Pierce	41	105	47	119
Polk	49	111	42	94
Portage	136	201	98	145
Price	22	145	29	193
Racine	446	228	532	271
Richland	57	310	65	354
Rock	412	262	386	243
Rusk	44	290	23	153
St. Croix	39	51	65	81
Sauk	75	130	95	163
Sawyer	10	59	26	152
Shawano	26	63	36	87
Sheboygan	122	106	134	117
Taylor	18	91	16	82
Trempealeau	21	76	17	61
Vernon	13	45	18	62
Vilas	21	94	27	121
Walworth	73	74	101	100
Washburn	15	90	23	138
Washington	77	61	96	75
Waukesha	215	57	239	63
Waupaca	53	101	44	84
Waushara	15	61	17	68
Winnebago	310	194	328	204
Wood	30	40	36	48
<b>Wisconsin</b>	<b>13,620</b>	<b>246</b>	<b>16,221</b>	<b>292</b>

Source: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance (numbers). Rates per 100,000 were calculated using U.S. Census estimates of county populations.

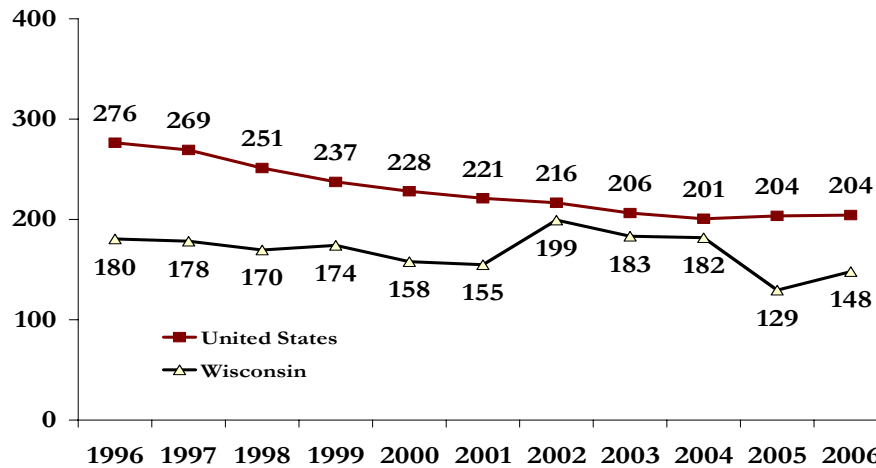
- Interestingly, arrest rates for property crimes were far higher in Wisconsin than in the United States, considering that the rates of reported offenses are far lower. Property crime arrest rates in Wisconsin decreased significantly between 1996 and 2000 and have continued to fall slowly (Figure 22).
- Wisconsin data on violent crime arrest rates show an increase in 2002 that is largely attributable to a change in reporting in Milwaukee County (Office of Justice Assistance, *Crime and Arrests in Wisconsin 2002* report). Before 2002 and since that year, Wisconsin's arrest rate for violent crime fell; it remains lower than the United States rate (Figure 23).

Figure 22. Rate of property crime arrests (adult and juvenile) per 100,000 population, Wisconsin and the United States, 1996-2006



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

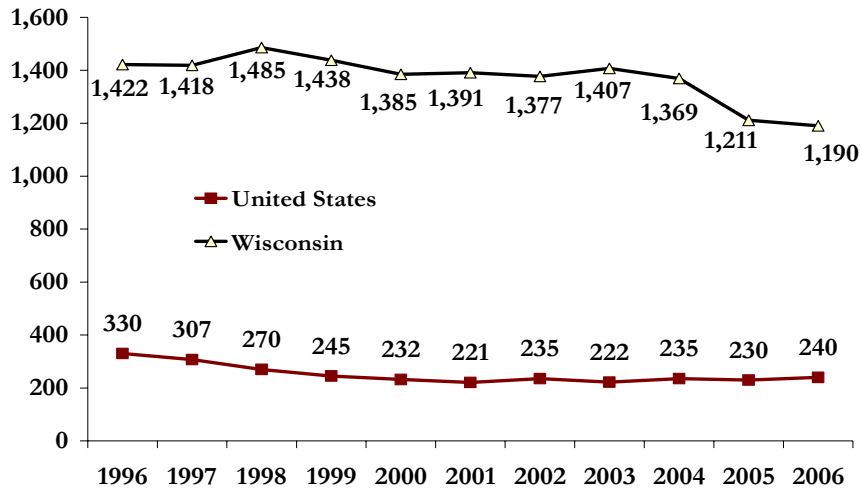
Figure 23. Rate of violent crime arrests (adult and juvenile) per 100,000 population, Wisconsin and the United States, 1996-2006



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

- Wisconsin’s rate of disorderly conduct arrests was nearly five times the national rate between 1996 and 2004 (Figure 24). The disorderly conduct arrest rate has declined in Wisconsin since 2003 but remains markedly higher than the U.S. rate.

Figure 24. Rate of disorderly conduct arrests (adult and juvenile) per 100,000 population, Wisconsin and the United States, 1996-2006



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

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

**Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008**

**Table 13. Disorderly conduct arrests per 100,000 population, Wisconsin by county, 2005 and 2006**

County	Arrests per 100,000 population		County	Arrests per 100,000 population	
	2005	2006		2005	2006
Adams	778	777	Marinette	664	650
Ashland	890	1,133	Marquette	564	552
Barron	864	1,033	Menominee	2,314	2,589
Bayfield	640	687	Milwaukee	1,757	1,723
Brown	907	993	Monroe	2,183	2,133
Buffalo	444	187	Oconto	1,049	1,141
Burnett	629	612	Oneida	1,208	1,128
Calumet	417	446	Outagamie	1,279	1,312
Chippewa	614	650	Ozaukee	566	639
Clark	633	563	Pepin	542	532
Columbia	1,051	1,194	Pierce	1,102	828
Crawford	339	193	Polk	765	721
Dane	1,206	1,210	Portage	644	679
Dodge	925	953	Price	690	787
Door	653	667	Racine	1,416	1,152
Douglas	977	901	Richland	581	992
Dunn	971	1,046	Rock	1,727	1,534
Eau Claire	1,547	1,527	Rusk	2,040	1,727
Florence	281	182	St. Croix	1,038	1,082
Fond du Lac	1,022	946	Sauk	1,491	1,462
Forest	2,018	1,586	Sawyer	454	989
Grant	1,182	1,422	Shawano	1,459	1,541
Green	719	950	Sheboygan	2,317	2,393
Green Lake	965	945	Taylor	678	653
Iowa	704	804	Trempealeau	755	709
Iron	1,549	784	Vernon	355	463
Jackson	952	1,199	Vilas	578	648
Jefferson	1,528	1,313	Walworth	1,517	1,426
Juneau	999	923	Washburn	940	942
Kenosha	1,028	979	Washington	1,552	1,343
Kewaunee	614	475	Waukesha	543	524
La Crosse	1,870	1,645	Waupaca	871	941
Lafayette	766	663	Waushara	633	751
Langlade	516	586	Winnebago	1,305	1,345
Lincoln	1,224	1,466	Wood	1,313	1,287
Manitowoc	1,501	1,618			
Marathon	848	917	<b>Wisconsin</b>	<b>1,220</b>	<b>1,203</b>

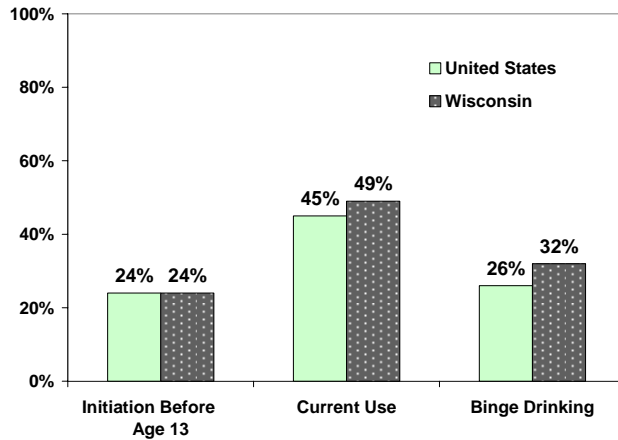
Source: *Crime and Arrests in Wisconsin*, Wisconsin Office of Justice Assistance.

## Alcohol Consumption

Wisconsin has arguably the highest prevalence of alcohol use in the United States. In recent years, the percent of high school students who initiated alcohol use before age 13 has been similar to the national average and decreasing. However, current use of alcohol among both youth and adults is the highest in the country.

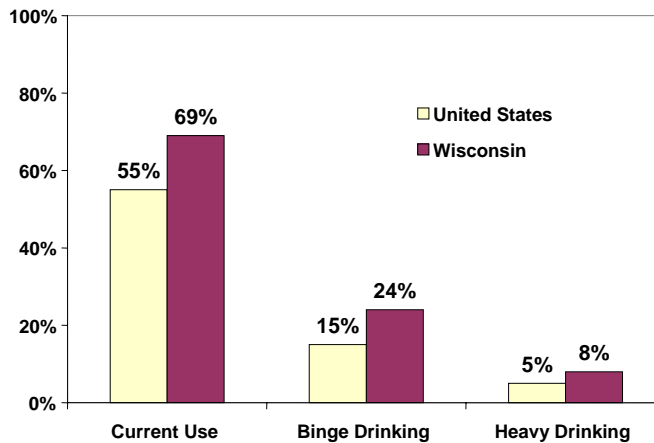
In 2007, Wisconsin high school students reported the highest rate of current alcohol use (49%) among all reporting states, and the third highest rate of binge drinking (32%). Among adults in 2006, Wisconsin reported the highest rates of binge drinking (24%), current alcohol use (69%), and heavy drinking (8%) in the country. Per capita consumption was also among the highest in the nation (2.92 gallons per person in 2005). Compared to the United States as a whole, Wisconsin had higher rates of underage drinking (ages 12-20), underage binge drinking, and drinking among women of childbearing age.

Figure 25. Alcohol use among high school students, Wisconsin and the United States, 2007



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

Figure 26. Alcohol use among adults, Wisconsin and the United States, 2006

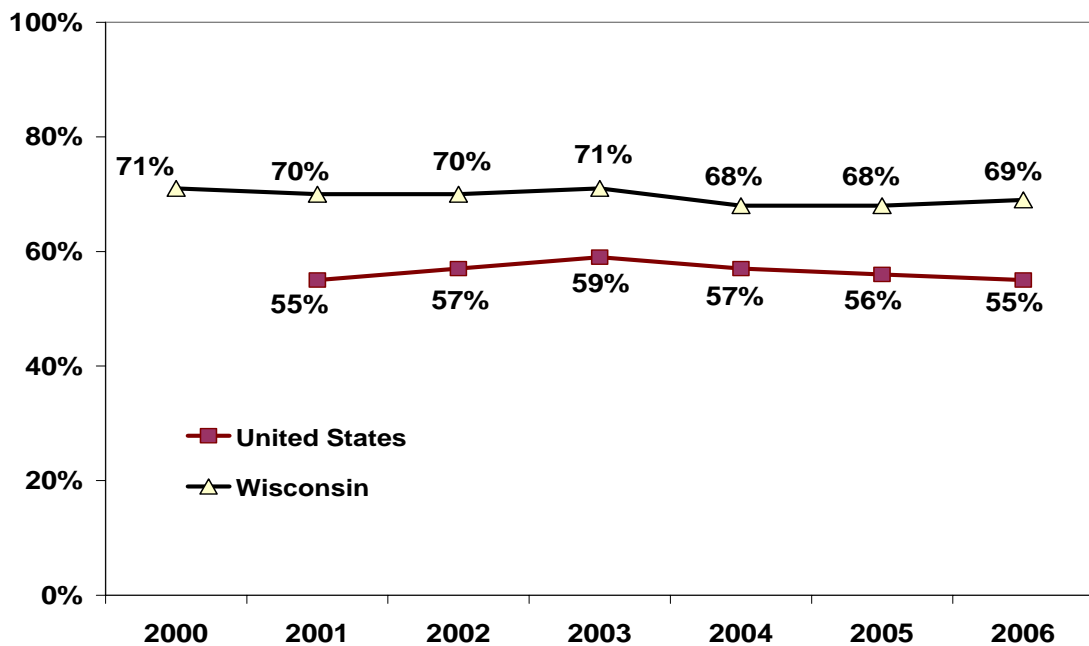


Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services; Behavioral Risk Factor Surveillance System, U.S. Centers for Disease Control and Prevention.

## Current Alcohol Use

- The prevalence of current alcohol use among adults and high school students in Wisconsin has been consistently high. Current alcohol use was reported by 69% of Wisconsin adults (age 18 and older) in 2006 and 49% of Wisconsin high school students in 2007 (Figures 27 and 28).
- Wisconsin adults ages 25 to 44 reported the highest prevalence of current alcohol use among the age groups measured (Table 14).
- Among Wisconsin racial/ethnic groups, white adults reported the highest prevalence of current alcohol use in 2004-2006 (69%), followed by Hispanics (67%), American Indians (65%), Asians (57%), and African Americans (48%) (Table 15).

Figure 27. Current alcohol use among adults (age 18+), Wisconsin and United States, 2000-2006



Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

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

## Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008

Table 14. Current alcohol use, adults age 18+, by age and sex, Wisconsin, 2000-2006

Year	U.S.	Wisconsin	18-24	25-44	45-64	65+	Males	Females	Females 18-44
2000		71%	77%	76%	71%	59%	79%	65%	70%
2001		70%	72%	75%	71%	59%	77%	64%	69%
2002	57%	70%	73%	77%	68%	56%	76%	64%	71%
2003	59%	71%	71%	75%	73%	61%	76%	67%	70%
2004	57%	68%	67%	73%	69%	57%	74%	62%	66%
2005	56%	68%	62%	74%	71%	56%	74%	62%	65%
2006	55%	69%	65%	76%	71%	54%	75%	63%	66%

Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

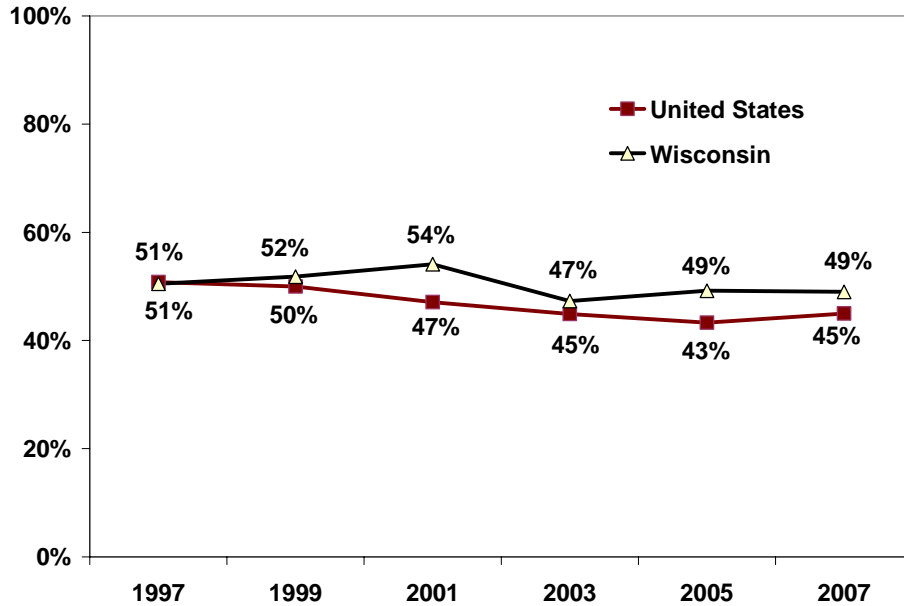
Table 15. Current alcohol use, adults 18+, by race/ethnicity, Wisconsin, 2000-2006

	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006
African American	45%	51%	48%	49%	48%
American Indian	69%	65%	69%	65%	65%
Asian	52%	50%	49%	52%	57%
Hispanic	61%	64%	65%	66%	67%
White	72%	72%	71%	70%	69%

Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

- In 2007, nearly half (49%) of Wisconsin high school students reported current alcohol use (at least one drink in the past 30 days). This was higher than the United States rate (45%).
- African American students were least likely to report current drinking (Table 16).

Figure 28. Current alcohol use among high school students, Wisconsin and the United States, 1997-2007



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

Table 16. Current alcohol use, high school students by race/ethnicity, Wisconsin, 1999-2007

Race/Ethnicity	1999-2001	2001-2003	2003-2005	2005-2007
White—not Hispanic	55%	53%	50%	51%
African American—not Hispanic	27%	28%	30%	33%
Hispanic	55%	50%	45%	43%
Asian/Pacific Islander	39%	41%	42%	39%
American Indian	73%	69%	55%	51%
Multiracial	54%	43%	44%	53%

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

## Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008

Table 17. Prevalence of current alcohol use among adults 18 and older, Wisconsin by county, 2004-2006

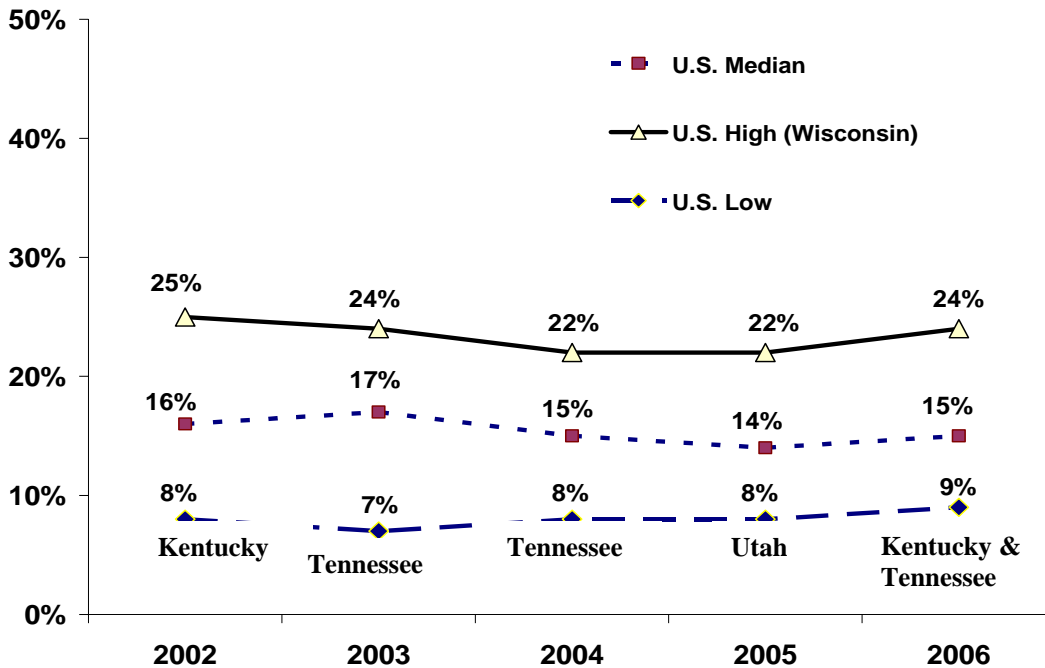
County	Percent	County	Percent
Adams	64%	Marinette	63%
Ashland	64%	Marquette	61%
Barron	51%	Menominee	66%
Bayfield	64%	Milwaukee	56%
Brown	75%	Monroe	60%
Buffalo	66%	Oconto	68%
Burnett	64%	Oneida	74%
Calumet	70%	Outagamie	77%
Chippewa	61%	Ozaukee	62%
Clark	53%	Pepin	62%
Columbia	65%	Pierce	71%
Crawford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

Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

## Binge Drinking

- The prevalence of binge drinking among Wisconsin adults (age 18 and older) in 2006 was 24% (Figure 29). This was the highest state prevalence of binge drinking in the United States.
- Binge drinking in Wisconsin was highest among men, young adults ages 18 to 24, American Indians and Hispanics (Tables 18 and 19).
- One favorable trend is that binge drinking among young adults ages 18 to 24 declined in recent years: from 49% in 2000 to a low of 33% in 2005 (Table 18). The rate increased to 38% in 2006.

Figure 29. Adult binge drinking prevalence: Range of state estimates: Low, high, and United States median, 2002-2006



Source: Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention.

Note: Binge drinking is defined as five or more drinks on one occasion, one or more times in the past 30 days (both sexes, through 2005). As of 2006, the binge drinking threshold for women was changed to four drinks on one occasion in the past 30 days.

## Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008

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**Table 18. Binge drinking among adults (age 18+) by sex and age, Wisconsin, 2000-2006**

	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
Male	36%	37%	36%	33%	31%	32%	33%
Female	16%	15%	14%	15%	14%	12%	16%
Female 18-44	24%	24%	22%	25%	21%	18%	24%
Ages 18-24	49%	47%	41%	43%	37%	33%	38%
Ages 25-44	32%	34%	33%	31%	29%	28%	32%
Ages 45-64	19%	18%	19%	18%	17%	21%	20%
Ages 65+	4%	5%	5%	6%	5%	4%	6%

Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

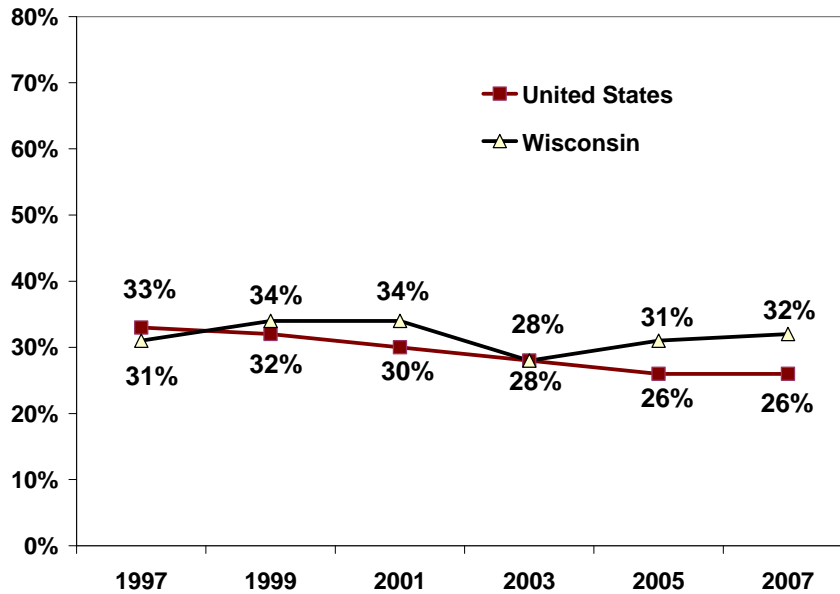
**Table 19. Binge drinking among adults (age 18+) by race/ethnicity, Wisconsin, 2000-2006**

	<i>2000-2002</i>	<i>2001-2003</i>	<i>2002-2004</i>	<i>2003-2005</i>	<i>2004-2006</i>
African American	16%	16%	15%	15%	14%
American Indian	37%	34%	35%	31%	32%
Asian	12%	11%	15%	16%	17%
Hispanic	28%	28%	28%	28%	28%
White	25%	25%	24%	23%	22%

Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

- In 2007, 32% of Wisconsin high school students reported binge use of alcohol. While the prevalence of binge drinking declined among high school students nationally from 1997 to 2007 (33% vs. 26%), there was no consistent decline in Wisconsin (Figure 30).
- Binge drinking prevalence was lowest among African American students and Asian/Pacific Islander students (Table 20).

Figure 30. Prevalence of binge drinking among high school students, Wisconsin and the United States, 2007



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

Table 20. Binge drinking among high school students by race/ethnicity, Wisconsin, 1999-2007

<i>Race/Ethnicity</i>	<i>1999-2001</i>	<i>2001-2003</i>	<i>2003-2005</i>	<i>2005-2007</i>
White—not Hispanic	36%	33%	31%	33%
African American—not Hispanic	17%	16%	15%	15%
Hispanic	39%	35%	28%	26%
Asian/Pacific Islander	22%	24%	24%	22%
American Indian	50%	49%	42%	41%
Multiracial	27%	25%	26%	36%

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

## Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008

Table 21. Prevalence of binge drinking among adults age 18 and older, Wisconsin by county, 2004-2006

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

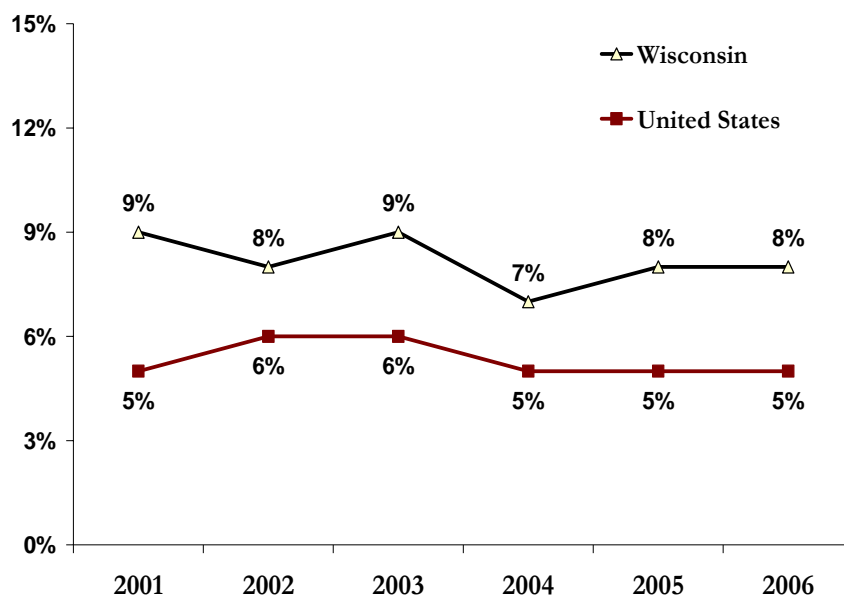
Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

\* Estimate not reliable

## Heavy Use of Alcohol

- The prevalence of heavy use of alcohol among Wisconsin adults (age 18 and older) has remained at or near 8% since 2001 (Figure 31). This was consistently higher than the national average (5% in 2006).
- Heavy use of alcohol is highest among the youngest adults, ages 18-24 (Table 22). In 2006, 12% of this age group in Wisconsin reported heavy drinking.
- In 2006, the prevalence of heavy drinking was the same among men and women (8%). This is a change from earlier years when men had higher rates of heavy drinking than women.
- In 2004-2006, heavy use of alcohol was reported most frequently by Hispanics (11%) and whites (8%) (Table 23).

Figure 31. Prevalence of heavy drinking among adults, Wisconsin and the United States, 2001-2006



Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services; U.S. Centers for Disease Control and Prevention.

Note: The BRFSS defines heavy drinking as more than two drinks per day for men and more than one drink per day for women. Prior to 2001, the definition was more than two drinks per day for both sexes.

## Wisconsin Epidemiological Profile on Alcohol and Other Drug Use, 2008

Table 22. Prevalence of heavy drinking among adults (age 18+) by age and sex, Wisconsin, 2000-2006

Year	U.S.	Wisconsin	18-24	25-44	45-64	65+	Males	Females	Females 18-44
2000	**	5%	8%	6%	6%	1%	9%	2%	3%
2001	5%	9%	18%	9%	8%	3%	11%	7%	9%
2002	6%	8%	12%	9%	7%	4%	10%	6%	7%
2003	6%	9%	15%	9%	8%	4%	9%	8%	9%
2004	5%	7%	14%	7%	7%	4%	9%	6%	8%
2005	5%	8%	11%	8%	8%	3%	9%	7%	8%
2006	5%	8%	12%	8%	8%	4%	8%	8%	10%

Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

Note: The BRFSS defines heavy drinking as more than two drinks per day for men and more than one drink per day for women. Prior to 2001, the definition was more than two drinks per day for both sexes.

Table 23. Prevalence of heavy drinking among adults (age 18+) by race/ethnicity, Wisconsin, 2000-2006

	2000-2002	2003-2005	2004-2006
African American	5%	5%	5%
American Indian	6%	9%	7%
Asian	1%	2%	3%
Hispanic	9%	12%	11%
White	7%	8%	8%

Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

Table 24. Prevalence of heavy drinking among adults (age 18+) by region, Wisconsin 2006

Region	2006
Milwaukee County	8%
Southern	8%
Southeastern	7%
Northeastern	9%
Western	8%
Northern	6%
Wisconsin	8%

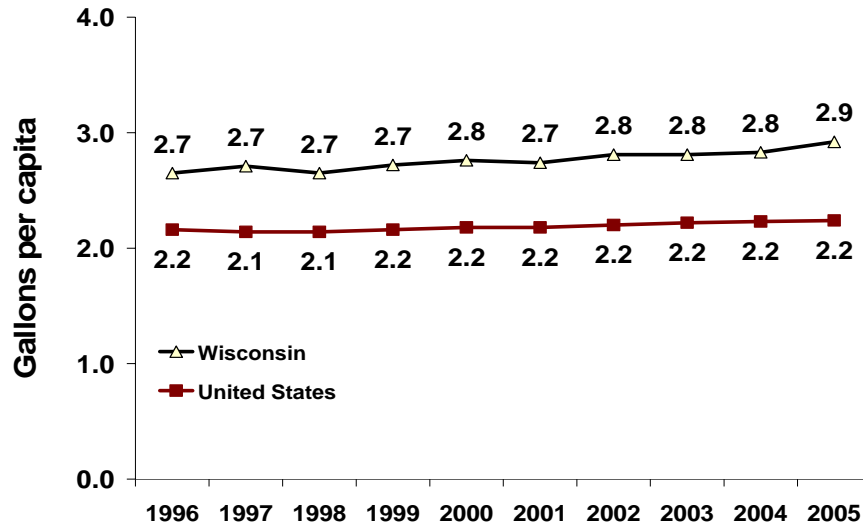
Source: Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services.

Note: These are National Survey on Drug Use and Health (NSDUH) regions, in which Milwaukee County is a separate region from the rest of southeastern Wisconsin. See Appendix 3 for a list of the counties included in each region.

## Per Capita Consumption

- Between 1996 and 2005, per capita consumption of alcohol in Wisconsin rose from 2.65 to 2.92 gallons per person. Wisconsin's per capita consumption was notably higher than the national average every year (Figure 32).

Figure 32. Per capita alcohol consumption, in gallons, Wisconsin and the United States, 1996-2005



Source: *Per capita ethanol consumption for states, Census regions, and the United States, 1970-2005*. National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, U.S. Department of Health and Human Services.

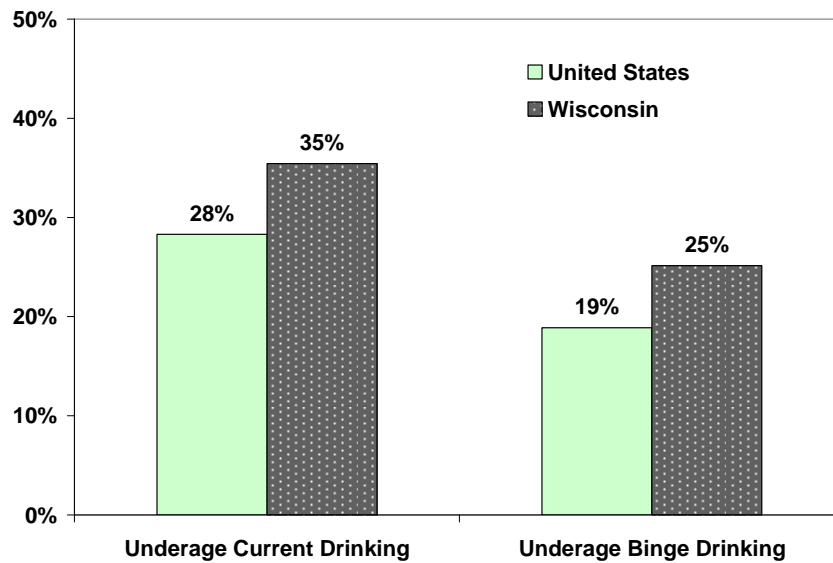
Note: Per capita consumption is gallons of ethanol consumed per person, based on population age 14 and older.

## Underage Drinking

Compared to the United States as a whole, Wisconsin has higher rates of “underage” drinking, defined by the National Survey on Drug Use and Health as drinking by youth ages 12 to 20. Wisconsin youth are more likely to report both current drinking (at least one drink in the past 30 days) and binge drinking (five or more drinks on one occasion in the past 30 days).

In 2005-2006, 25 percent of Wisconsin youth ages 12-20 reported binge drinking in the past 30 days (Figure 33). (Note: Behavioral Risk Factor Survey estimates of drinking and other health-related behaviors are for “adults,” which the BRFSS defines as ages 18 and older.)

Figure 33. Prevalence of underage drinking, Wisconsin and the United States, 2005-2006



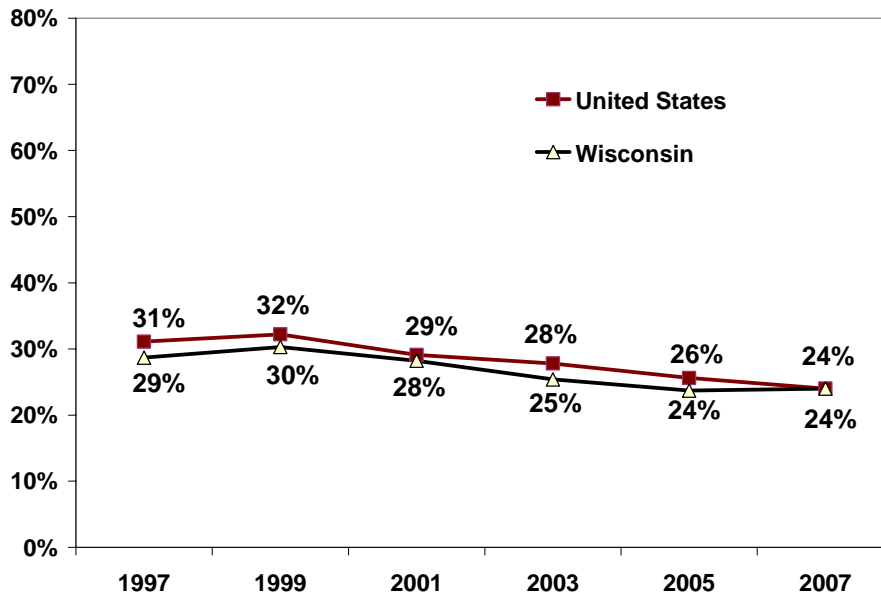
Source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services.

Note: NSDUH defines “underage” drinking as drinking among youth 12-20 years of age; current drinking as alcohol use in the past 30 days; and binge drinking as five or more drinks on at least one day in the past 30 days.

## Age of Initiation

- The percent of Wisconsin high school students who initiated alcohol use before age 13 declined between 1999 and 2007, from 30% to 24% (Figure 34). Prevalence of before-age-13 initiation among boys exceeded that among girls in each of those years (Table 25).
- During 2005-2007, multiracial students were most likely to report initiating alcohol use before age 13 (31%; Table 26), followed by Hispanic students (30%). White students were the only racial/ethnic group whose prevalence of initiation before age 13 decreased between 1999 and 2007.

Figure 34. Initiation of alcohol use before age 13, high school students in Wisconsin and the United States, 1997-2007



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

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

**Table 25. Initiation of alcohol use before age 13, high school students by sex, Wisconsin, 1997-2007**

	<i>1997</i>	<i>1999</i>	<i>2001</i>	<i>2003</i>	<i>2005</i>	<i>2007</i>
Female	23%	24%	27%	22%	19%	20%
Male	34%	37%	30%	29%	28%	27%

Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction.

**Table 26. Initiation of alcohol use before age 13, high school students by race/ethnicity, Wisconsin, 1999-2007**

<i>Race/Ethnicity</i>	<i>1999-2001</i>	<i>2001-2003</i>	<i>2003-2005</i>	<i>2005-2007</i>
White—not Hispanic	30%	26%	23%	23%
African American—not Hispanic	25%	31%	27%	26%
Hispanic	29%	27%	30%	30%
Asian/Pacific Islander	21%	30%	30%	22%
American Indian	**	**	**	**
Multiracial	30%	30%	34%	31%

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

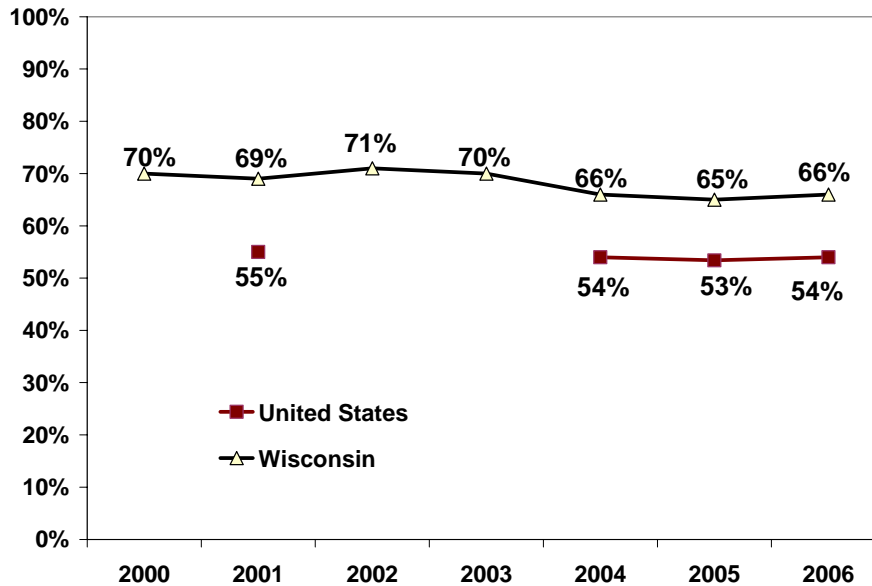
\*\* Too few cases in sample to produce a reliable estimate.

## Alcohol Use by Women of Childbearing Age

Alcohol use can impair decision-making and result in risk-taking behaviors, including sexual behaviors; an unplanned pregnancy may be one result. Studies also have shown that alcohol use during pregnancy can harm the developing fetus. The Centers for Disease Control and Prevention (CDC) has reported that Wisconsin is among the states that report the highest rates of drinking among pregnant women and high-risk drinking among women of childbearing age.<sup>2</sup>

- Wisconsin women of childbearing age are more likely to drink than women nationally (Figure 35). In 2006, 66% of Wisconsin women ages 18-44 said they had at least one alcoholic drink in the past 30 days; this compares with 54% of women in the United States.
- Binge drinking is also more prevalent among Wisconsin women of childbearing age, compared with their national counterparts. In 2006, among women ages 18-44, 24% in Wisconsin and 16% nationally said they had consumed four or more drinks on one occasion in the past 30 days (Figure 36).

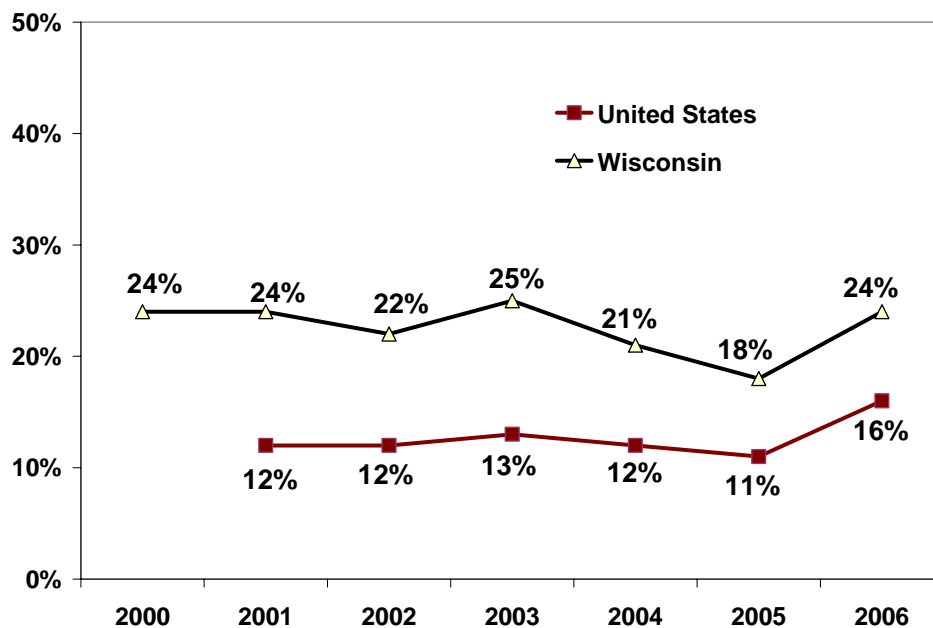
Figure 35. Prevalence of current alcohol use among women ages 18-44, Wisconsin and the United States, 2000-2006



Source: Wisconsin Behavioral Risk Factor Survey; Behavioral Risk Factor Surveillance System, U.S. Centers for Disease Control and Prevention.

<sup>2</sup> U.S. Centers for Disease Control and Prevention (2004). Alcohol consumption among women who are pregnant or who might become pregnant - United States, 2002. *Morbidity and Mortality Weekly Report*, 53(50), 1178-1181.

Figure 36. Binge drinking among women ages 18-44, Wisconsin and the United States, 2000-2006



Source: Wisconsin Behavioral Risk Factor Survey; Behavioral Risk Factor Surveillance System, U.S. Centers for Disease Control and Prevention.

## Other Drug Consumption

The use of illicit drugs other than alcohol remains a problem in Wisconsin. As a whole, consumption patterns of illicit drugs in Wisconsin mirrored national trends with few exceptions.

One notable trend was in the use of marijuana. In 1997, the Wisconsin prevalence of both lifetime and current use of marijuana was lower than the national average. Over the next four years, however, these measures rose until they were nearly identical to the national averages. Since 2001, lifetime and current use of marijuana in the United States and Wisconsin have both decreased at similar rates.

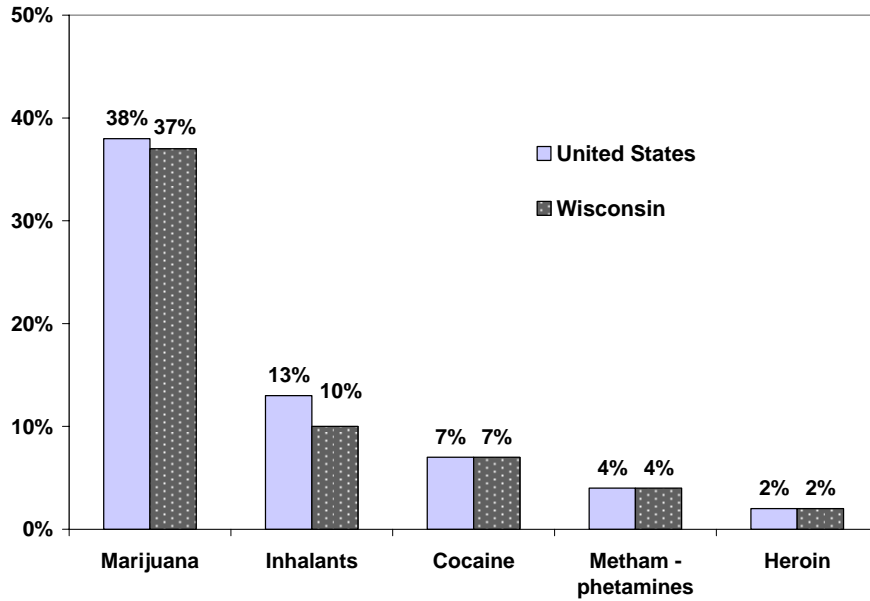
Non-medical use of prescription pain relievers is highest among young adults ages 18-25.

Table 27. The prevalence and state rank of illicit drug use among Wisconsin residents ages 12 and older, 2002-2004

	<i>Lifetime</i>		<i>Past Year</i>		<i>Past Month</i>	
	Prevalence	Rank	Prevalence	Rank	Prevalence	Rank
Any illicit drugs	49%	20	14%	25	8%	27
Marijuana and hashish	43%	21	10%	26	6%	30
Illicit drugs other than marijuana	29%	28	8%	30	4%	18
Non-medical use of psychotropics	18%	40	6%	37	2%	37
Non-medical use of pain relievers	12%	34	4%	33	2%	32
Cocaine	14%	29	3%	9	1%	8
Hallucinogens	14%	26	2%	21	1%	10
Tranquilizers	6%	44	2%	31	1%	38
OxyContin	2%	12	1%	2	1%	1
Stimulants	8%	31	1%	42	0%	47
Crack	3%	31	1%	11	0%	8
Ecstasy	3%	39	1%	29	0%	6
Inhalants	10%	27	1%	32	0%	25
LSD	10%	25	0%	21	0%	22
Methamphetamine	4%	34	0%	35	0%	40
Heroin	1%	47	0%	22		*
Sedatives	3%	45	0%	46	0%	42
PCP	2%	42	0%	40	0%	6

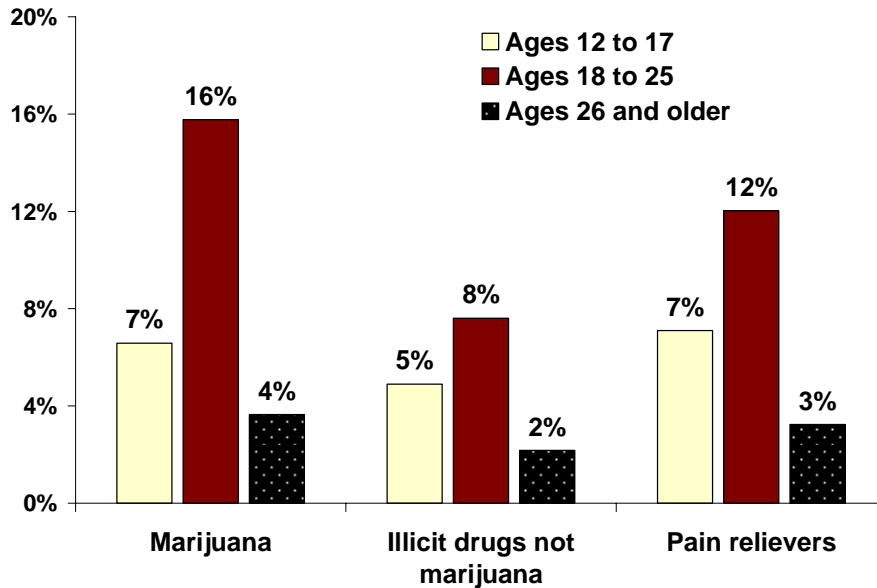
Data source: National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.

Figure 37. Lifetime use of illicit drugs among high school students, Wisconsin and the United States, 2007



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

Figure 38. Use of marijuana, illicit drugs other than marijuana, and pain relievers for non-medical purposes by age group, Wisconsin, 2005-2006



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

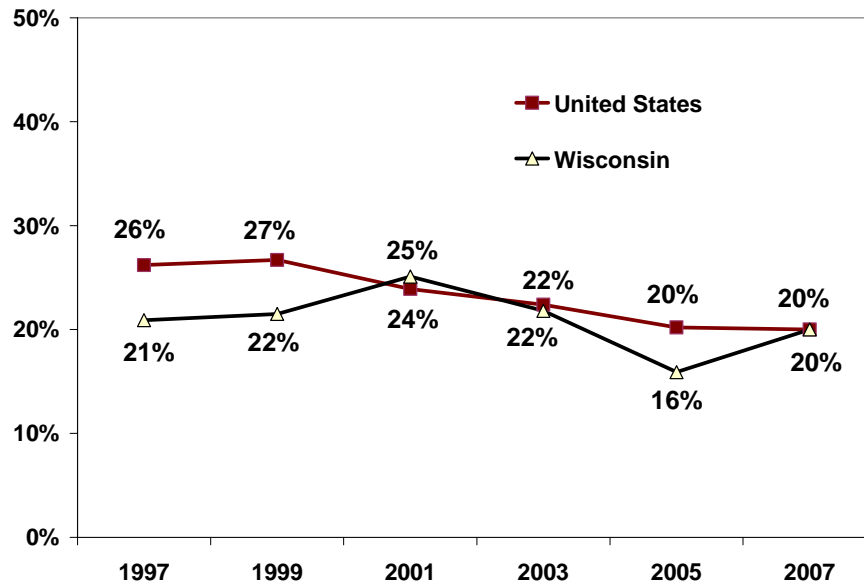
Note: Use of marijuana and use of illicit drugs other than marijuana are use in the past month; use of pain relievers is use in the past year.

## Marijuana

Marijuana arrests accounted for 66.5% of all drug arrests in Wisconsin in 2006. Marijuana use can lead to decreased lung function, and impaired memory among youth.

- Between 1997 and 2007 the prevalence of current marijuana use among Wisconsin high school students showed little persistent change: it was 21% in 1997 and 20% in 2007 (Figure 39).

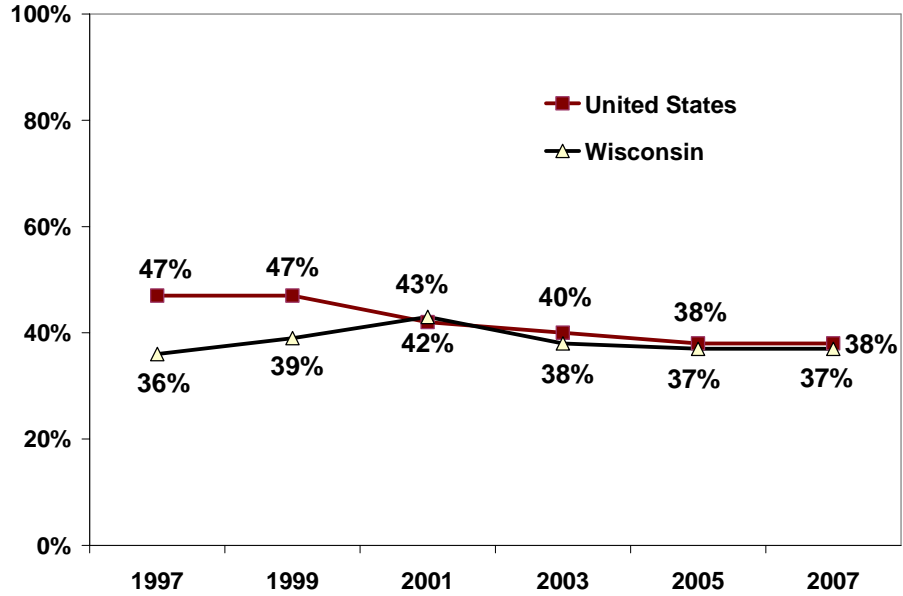
Figure 39. Current marijuana use among high school students, Wisconsin and the United States, 1997-2007



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

- Experimentation with marijuana among Wisconsin high school students rose between 1997 (36%) and 2001 (43%), but has decreased since then (Figure 40).
- In 2007, 37% of Wisconsin high school students had tried marijuana at least once.

Figure 40. Lifetime marijuana use among high school students, Wisconsin and the United States, 1997-2007



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

- Among Wisconsin high school students, reported marijuana use was highest for African American students (Table 28). During 2005-2007, 32% of African American high school students reported current marijuana use. In addition, a higher proportion of African American students reported having tried marijuana before age 13 (23%, Table 29) than the average for all Wisconsin high school students (8% in 2007, not shown).
- In Wisconsin, the prevalence of current marijuana use was lower among young adults ages 18 to 25 (16% in 2005-2006; Figure 38, page 65) than among high school students (20% in 2007; Figure 39, page 66). The prevalence for adults ages 26 and older was 4% during 2005-2006 (Figure 38).

**Table 28. Current marijuana use among high school students by race/ethnicity, Wisconsin, 1999-2007**

<i>Race/Ethnicity</i>	<i>2003-2005</i>	<i>2005-2007</i>
White—not Hispanic	18%	16%
Black—not Hispanic	31%	32%
Hispanic	22%	24%
Asian or Pacific Islander	16%	10%
American Indian	27%	26%
Multiracial	20%	24%

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

\*\* Too few cases in sample to provide a reliable estimate.

**Table 29. Initiation of marijuana use before age 13, high school students by race/ethnicity, Wisconsin, 1999-2007**

<i>Race/Ethnicity</i>	<i>2003-2005</i>	<i>2005-2007</i>
White—not Hispanic	6%	10%
Black—not Hispanic	20%	23%
Hispanic	13%	16%
Asian or Pacific Islander	10%	6%
American Indian	19%	**
Multiracial	13%	14%

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

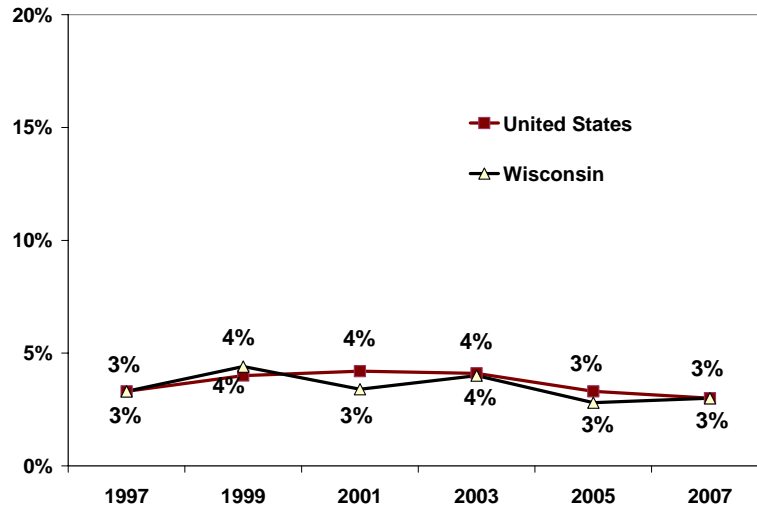
\*\* Too few cases in sample to provide a reliable estimate.

## Cocaine

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

- The prevalence of current cocaine use among Wisconsin adults and high school students has remained at approximately 3% since 1997 (Figure 41 and Table 27).
- Nevertheless, pockets of higher use are evident. Multiracial high school students reported a higher prevalence of current cocaine use than the Wisconsin average (Table 30). Young adults ages 18-24 have a higher rate than other age groups of using illicit drugs such as cocaine (Figure 38, page 65).

Figure 41. Current cocaine use among high school students, Wisconsin and the United States, 1997-2007



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

Table 30. Current cocaine use among high school students by race/ethnicity, Wisconsin, 1999-2007

Race/Ethnicity	1999-2001	2001-2003	2003-2005	2005-2007
White—not Hispanic	3%	3%	3%	3%
African American—not Hispanic	2%	5%	6%	3%
Hispanic	6%	7%	6%	3%
Asian/Pacific Islander	9%	7%	3%	4%
American Indian	**	**	**	**
Multiracial	7%	3%	7%	7%

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

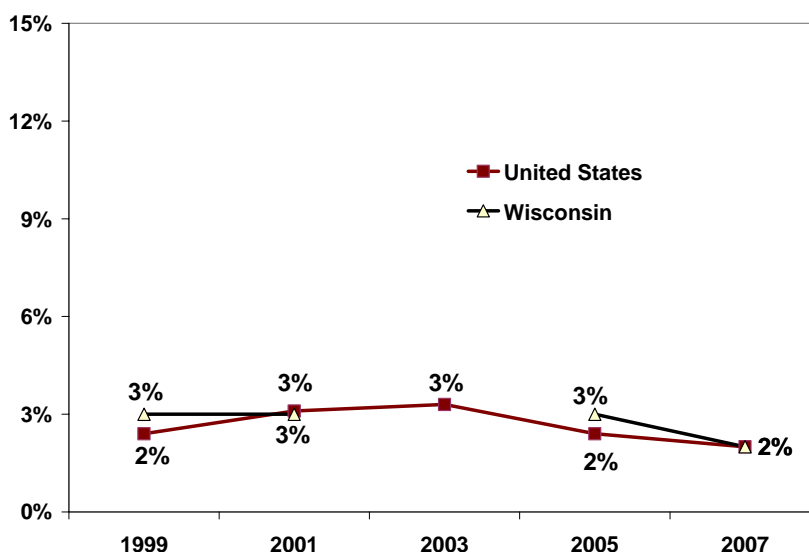
\*\* Too few cases in sample to produce a reliable estimate.

## Heroin

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

- The prevalence of lifetime heroin use among high school students in Wisconsin remained steady at 3% between 1999-2005, and was 2% in 2007 (Figure 42). During 2005-2007, the prevalence of lifetime heroin use was highest among multiracial students (9%), followed by Asian students (6%) (Table 31).
- The 2002-2004 National Survey on Drug Use and Health found that 1% of Wisconsin residents ages 12 and older had used heroin during their lifetime (Table 27, page 64).

Figure 42. Lifetime heroin use among high school students, Wisconsin and the United States, 1999-2007



Source: Youth Risk Behavior Survey, Wisconsin Department of Public Instruction; U.S. Centers for Disease Control and Prevention. (Note: Data not available for Wisconsin in 2003.)

Table 31. Lifetime heroin use among high school students by race/ethnicity, Wisconsin, 2001-2007

Race/Ethnicity	2001-2005	2005-2007
White—not Hispanic	2%	2%
Black—not Hispanic	4%	3%
Hispanic	5%	4%
Asian or Pacific Islander	10%	6%
American Indian	**	**
Multiracial	9%	9%

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

\*\* Too few cases to produce a reliable estimate.

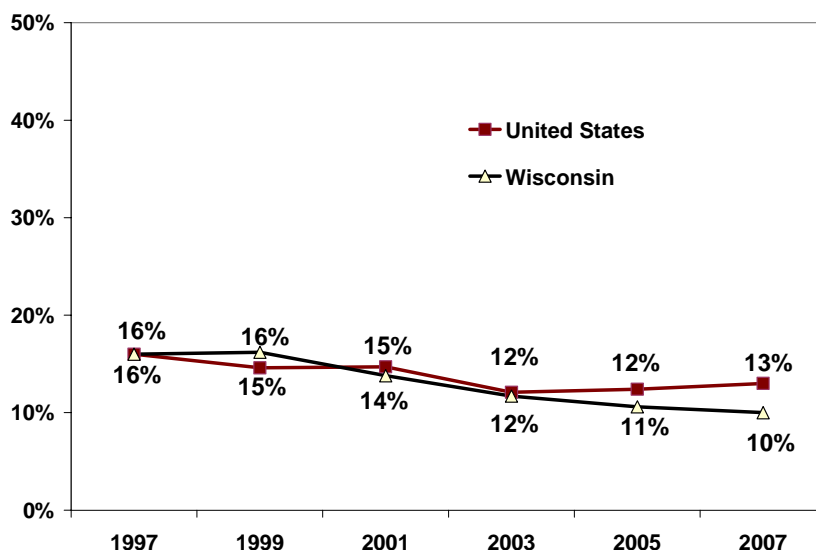
## Inhalants

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

In addition to the toxic dangers of inhalants, recent research has shown that toluene, a solvent in many inhalants, promotes euphoria in the brain in the same way that cocaine, amphetamine/methamphetamine, PCP, and nicotine promote euphoria. This finding emphasizes the addictive nature of inhalants.<sup>3</sup>

- The prevalence of lifetime inhalants use among high school students has been dropping since 1997. In 2007, 10% of Wisconsin high school students reported having used inhalants to get high at some point in their lifetime (Figure 43).
- During 2002-2004, 10% of Wisconsin residents ages 12 and older reported having used inhalants to get high at some point in their lifetime (Table 27, page 64).

Figure 43. Lifetime inhalants use among high school students, Wisconsin and the United States, 1997-2007



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

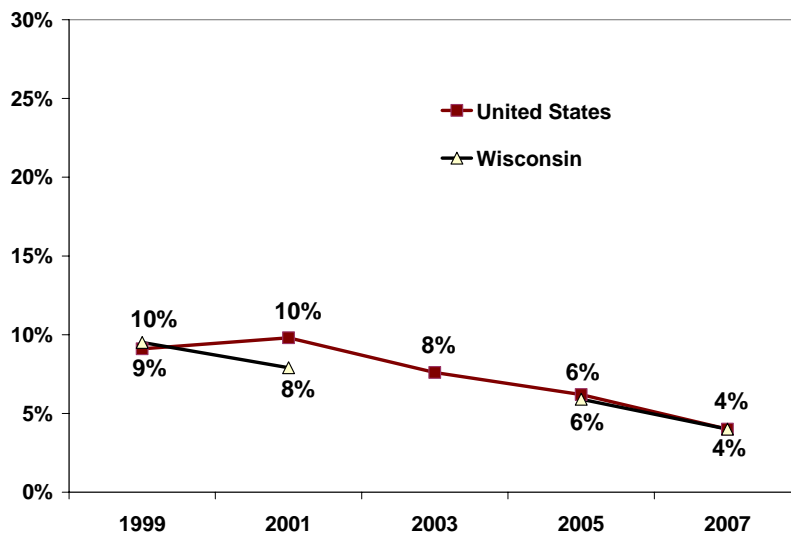
<sup>3</sup> U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), National Clearinghouse for Alcohol and Drug Information, 2005.

## Methamphetamines

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

- Lifetime methamphetamine use among Wisconsin high school students decreased between 1999 and 2007, following a national trend. The prevalence of lifetime methamphetamine use among Wisconsin high school students was 10% in 1999 and 4% in 2007 (Figure 44).
- Among high school students, African American students reported the lowest prevalence of lifetime methamphetamine use (3% in 2005-2007, Table 32), while Asian students reported the highest (10%).
- In the 2002-2004 National Survey on Drug Use and Health, 4% of Wisconsin residents age 12 and older reported lifetime methamphetamine use (Table 27, page 64).

Figure 44. Lifetime methamphetamine use among high school students, Wisconsin and the United States, 1999-2007



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

Table 32. Lifetime methamphetamine use among high school students by race/ethnicity, Wisconsin, 2001-2007

Race/Ethnicity	2001-2005	2005-2007
White—not Hispanic	6%	5%
Black—not Hispanic	3%	3%
Hispanic	7%	6%
Asian or Pacific Islander	13%	10%
American Indian	**	**
Multiracial	15%	8%

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

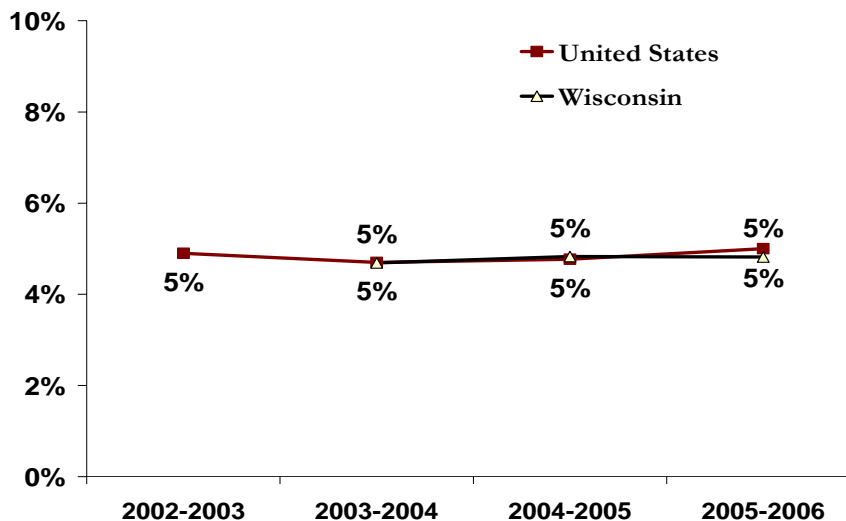
\*\* Too few cases to produce a reliable estimate.

## Non-Medical Use of Prescription Drugs

Findings from a recent survey report indicated that lifetime non-medical use of prescription stimulants among college students in the United States was approximately 7%, and past-year use was an estimated 4%. The study also found that non-medical prescription drug use was associated with use of alcohol, cigarettes, marijuana and other illicit drugs.<sup>4</sup>

- During 2005-2006, 5% of Wisconsin residents ages 12 and older reported using pain relievers for non-medicinal purposes (Figure 45). This percentage has not changed since 2003-2004, and is the same prevalence reported nationally. The prevalence of use was highest among young adults ages 18 to 25 (12%, Figure 38).
- Other than marijuana, pain relievers and psychotropics were the most commonly reported drugs consumed for non-medical reasons. During 2002-2004, 18% of Wisconsin residents age 12 and older reported non-medical use of psychotropics and 12% reported non-medical use of pain relievers at some point in their lifetime (Table 27, page 64). During the same time period, 6% reported using psychotropics and 4% reported using pain relievers for non-medical reasons in the past year (Table 27).
- In 2007, the Youth Risk Behavior Survey found that 23% of Wisconsin high school students had used prescription pain relievers for non-medical purposes at some point in their lives, and 16% had used other prescription drugs non-medically at some point (data not shown). No comparable data for earlier years or the United States were available.

Figure 45. Use of prescription pain relievers for non-medical purposes in the past year, age 12 and older, Wisconsin and the United States, 2002-2006



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

<sup>4</sup> McCabe SE, J Knight, C Teter and H Wechsler. 2005. Non-medical use of prescription stimulants among U.S. college students: prevalence and correlates from a national survey. *Addiction*, Vol. 100 (1), 96-106.

# Conclusion

The social, economic and health costs of substance abuse in Wisconsin are high. Wisconsin has one-and-a-half times the national rate of arrests for OWI (operating a motor vehicle while intoxicated) and more than three times the national rate of arrests for liquor law violations. The rate of deaths due to alcohol-related motor vehicle crashes is higher than the national average as well.

These high rates of alcohol-related consequences are not surprising given Wisconsin's high rate of alcohol consumption. The rate of per capita alcohol consumption in Wisconsin is among the highest in the nation. Data for 2006 show that Wisconsin has a higher prevalence of alcohol use and binge drinking among adults, especially young adults ages 18-25, compared to other states. Rates of underage drinking (by youth ages 12-20) and underage binge drinking are also higher compared to rates for the United States. Wisconsin has the highest rate of drinking and driving in the nation.

The rate of drug-related deaths increased steadily in Wisconsin from 1999 to 2006. The rate of drug law arrests also increased. However, rates of drug-related deaths and arrests remain lower than national averages.

An important aspect of prevention services is the ability to track the needs of communities through epidemiological factors. Resources can then be allocated to address the problem using evidence-based programming. As part of Wisconsin's data-driven approach to prevention funding, an earlier version of this Profile helped to identify key consequences of alcohol and other drug abuse in the state. These defined priorities, underlined and sharpened by the 2008 Profile, are being used to assist local organizations/governments to address those specific consequences.

The Strategic Prevention Framework State Incentive Grant (funded by the U.S. Substance Abuse and Mental Health Services Administration) is providing additional funding for local communities to do in-depth need assessments on the risks and protective factors associated with the documented consequences of alcohol and drug abuse. The *2008 Wisconsin Epidemiological Profile on Alcohol and Other Drug Use* focuses on key problem areas at both the statewide and local level to guide Wisconsin's funding decisions for the greatest potential impact.

## APPENDIX 1

### Indicator Definitions

#### Measures of Consequences

##### *Mortality*

- Number of deaths - Numbers of cause-specific deaths were derived from Wisconsin and United States death certificate data. See Appendix 3 ("Mortality data" section) for details about the data source and methods.
- Age-adjusted mortality rate - Age-adjusted rates per 100,000 population were calculated using the direct method based on the year 2000 U.S. standard population.

##### *Motor Vehicle Deaths and Injuries*

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

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

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

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

##### *Hospitalizations*

- Numbers of hospitalizations - The number of hospitalizations (hospital inpatient discharges) related to alcohol and the number related to use of other drugs. See Appendix 3, "Wisconsin inpatient hospitalization data" section, for details about the data source and methods.
- Hospitalization rate - The rate of alcohol-related hospitalizations per 100,000 population, and the rate of other drug-related hospitalizations per 100,000 population.
- Hospital charges - Total hospital charges for alcohol-related hospitalizations, and total hospital charges for drug-related hospitalizations. Hospital charges are the total

facility charges for the entire length of stay. Charges are not the same as the actual costs paid by any particular payer, which depend on negotiated discounts and other arrangements, and do not include physicians' and other professional fees. Hospital charges in this report have not been adjusted for inflation.

### *Crime and Arrests*

- Wisconsin and county - Crimes and arrests reported by Wisconsin law enforcement agencies using the Wisconsin Uniform Crime Reporting System to the Federal Bureau of Investigation (FBI) and the Wisconsin Office of Justice Assistance (OJA) Statistical Analysis Center. Crime rates per 100,000 population are defined and calculated as the number of crimes divided by population, multiplied by 100,000. Census population estimates were used in all rate calculations.
- United States - Crimes and arrests reported to the FBI by law enforcement agencies using the Uniform Crime Reporting System. Rates were calculated using Census population estimates.

### *Dependence or Abuse*

- Alcohol or Drug Abuse - DSM-IV definition of abuse is one or more of the following in the same 12-month period:
  - 1) Recurring use resulting in failure to fulfill important role obligations, 2) recurrent use in situations in which it is physically hazardous, 3) recurrent substance-related legal problems, and 4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance. In addition, has never met criteria for dependence.
- Alcohol or Drug Dependence - DSM-IV definition of dependence is three or more of the following in the same 12-month period:
  - 1) Tolerance, 2) withdrawal, 3) substance often taken in larger amounts or over a longer period than intended, 4) persistent desire or unsuccessful efforts to cut down or control substance use, 5) a great deal of time spent in activities necessary to obtain the substance, use it, or recover from its effects, 6) important social, occupational, or recreational activities given up or reduced because of substance use, 7) use continued despite knowledge of having a persistent physical or psychological problem that is likely to have been caused or exacerbated by the substance.

For information about the incorporation of DSM-IV definitions of substance abuse and dependence into National Survey on Drug Use and Health measures, go to:

<http://www.oas.samhsa.gov/Dependence/appendixc.htm>

### *Publicly Funded Treatment*

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

The reported total public funds expended were adjusted for inflation to 2006 dollars (the most recent year of data) using the U.S. Bureau of Labor Statistics Consumer Price Index Inflation Calculator (<http://www.bls.gov>). The CPI inflation calculator uses the average Consumer Price Index for a given calendar year. Data represent changes in prices of all goods and services purchased for consumption by urban households. For the current year, the latest monthly index value is used.

## Measures of Consumption: Alcohol

### *Age of Initiation*

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

### *Current Use of Alcohol*

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

### *Binge Use of Alcohol*

- Youth Risk Behavior Survey (YRBS): Five or more drinks of alcohol in a row on one or more of the past 30 days.
- Behavioral Risk Factor Survey (BRFS): Five or more drinks on one occasion, one or more times in the past 30 days (both sexes, through 2005). As of 2006, the threshold for women was changed to four drinks on one occasion in the past 30 days.
- National Survey on Drug Use and Health (NSDUH): Five or more drinks on the same occasion (i.e., at the same time or within a couple of hours) on at least one day in the past 30 days.

### *Heavy Use of Alcohol*

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

### *Per Capita Consumption of Alcohol*

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

## Measures of Consumption: Illicit Drugs

### *Age of Initiation (Marijuana)*

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

### *Current Use of Illicit Drugs*

- **Current use of marijuana**
  - National Survey on Drug Use and Health (NSDUH): Smoked marijuana in the last month.
  - Youth Risk Behavior Survey (YRBS): Used marijuana one or more times during the past 30 days.
- **Current use of cocaine**
  - National Survey on Drug Use and Health (NSDUH): Used cocaine in the last year.
  - Youth Risk Behavior Survey (YRBS): Used any form of cocaine one or more times during the past 30 days.
- **Current use of illicit drugs other than marijuana, Youth Risk Behavior Survey (YRBS):** Used any illicit drugs other than marijuana in the past 30 days.
- **Current use of pain relievers for non-medical purposes, Youth Risk Behavior Survey (YRBS):** Used pain relievers for non-medical purposes in the past 30 days.

### *Lifetime Use of Illicit Drugs*

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

## APPENDIX 2 Surveys and Other Data Sources

### Survey Data: Sample Sizes and Error

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

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

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

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

Survey	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BRFS— Main sample	2,231	2,245	2,205	2,177	2,721	3,605	4,356	4,054	4,503	4,900	4,831	
BRFS— County oversample*											3,701	
YRBS		1,326		1,336		2,120		2,121		2,389		2,094
NSDUH**							1,587	1,655	1,805	1,612	1,848	

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

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

## Methodological Information about the Surveys

### Behavioral Risk Factor Survey (BRFS)

[www.cdc.gov/brfss](http://www.cdc.gov/brfss) and [dhs.wisconsin.gov/stats/BRFS.htm](http://dhs.wisconsin.gov/stats/BRFS.htm)

The Wisconsin Behavioral Risk Factor Survey is a representative, statewide telephone survey of adults age 18 and older. The Wisconsin BRFS is part of the national Behavioral Risk Factor Surveillance System, a collaboration between the U.S. Centers for Disease Control and Prevention (CDC) and health departments in all states and U.S. territories. CDC weights BRFS data by state to account for non-response and sample design, and to adjust for the demographic characteristics of state populations. National BRFS estimates are medians of the distributions of state/territory estimates. County-specific BRFS estimates in this report were calculated using a three-year aggregated data file re-weighted to represent each county's population.

### Youth Risk Behavior Survey (YRBS)

[www.dpi.state.wi.us/sspw/yrbsindx.html](http://www.dpi.state.wi.us/sspw/yrbsindx.html)

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

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

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

### National Survey on Drug Use and Health (NSDUH)

[nsduhweb.rti.org/](http://nsduhweb.rti.org/)

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

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

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

## Other Data Sources for this Report

### Mortality Data

Data on deaths of Wisconsin residents from alcoholic liver cirrhosis, “other” alcohol-related causes (other than alcoholic liver cirrhosis and motor vehicle crashes), and drug-related causes were prepared in the Bureau of Health Information and Policy from Wisconsin resident death certificate files. Comparable data for the United States were supplied by Amanda Jovaag in the University of Wisconsin Population Health Institute using CDC Wonder (available at <http://wonder.cdc.gov/mortSQL.html>) from the U.S. Centers for Disease Control and Prevention.

Data on deaths from motor vehicle crashes are from the Fatality Analysis Reporting System (see below).

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

**Estimating other alcohol-related mortality:** The numbers of alcohol-related deaths from causes other than alcoholic liver cirrhosis and motor vehicle crashes were estimated from the Wisconsin mortality file using Alcohol-Related Disease Impact (ARDI) specifications from the National Center for Chronic Disease Prevention and Health Promotion. (See <http://apps.nccd.cdc.gov/ARDI/HomePage.aspx>). These specifications define 63 conditions or groups of conditions and associate each with a distinct fraction of cases attributable to alcohol. Staff from the Bureau of Health Information and Policy and the University of Wisconsin Population Health Institute used the ARDI specifications to identify deaths from these conditions with the ICD-10 codes specifying underlying causes of death. The alcohol-attributable deaths were then estimated by multiplying the number for each condition by the associated alcohol-attributable fraction and summing over conditions.

- A table showing the alcohol-related conditions, their ICD-10 codes, and the alcohol-attributable mortality fraction for each is available by request from the Bureau of Health Information and Policy.

### Fatality Analysis Reporting System (FARS)

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

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

- Emergency medical service reports

For additional information about FARS, see:

[http://www-nrd.nhtsa.dot.gov/departments/nrd-01/summaries/FARS\\_98.html](http://www-nrd.nhtsa.dot.gov/departments/nrd-01/summaries/FARS_98.html)

### Wisconsin Inpatient Hospitalization Data

Data on inpatient stays in Wisconsin hospitals were collected by the Bureau of Health Information and Policy, DHS, through 2003 and subsequently by the Wisconsin Hospital Association Information Center, Inc., under the authority and specifications of Wisconsin statute and rule.

*Estimating alcohol-related hospitalizations:* As was done for alcohol-related mortality, the numbers of alcohol-related hospitalizations were estimated from Wisconsin inpatient hospitalization data using Alcohol-Related Disease Impact (ARDI) specifications from the National Center for Chronic Disease Prevention and Health Promotion. (See <http://apps.nccd.cdc.gov/ARDI/HomePage.aspx>). These specifications define 63 conditions or groups of conditions and associate each with a distinct fraction of cases attributable to alcohol. Staff from the Bureau of Health Information and Policy and the University of Wisconsin Population Health Institute used the ARDI specifications to identify hospitalizations for these conditions with the ICD-9 codes specifying the principal diagnosis and the first eight other reported diagnoses. The alcohol-attributable hospitalizations were then estimated by multiplying the number for each condition by the associated alcohol-attributable fraction and summing over conditions.

- A table showing the alcohol-related conditions, their ICD-9 codes, and the alcohol-attributable fraction for each is available by request from the Bureau of Health Information and Policy.

*Drug-related hospitalizations:* Drug-related hospitalizations were defined based on ICD-9 codes supplied by Amanda Jovaag in the University of Wisconsin Population Health Institute, as listed in the following table.

#### Drug-related hospitalizations, ICD-9 codes and descriptions, Wisconsin 2006

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

In the Bureau of Health Information and Policy, hospital data system records for all Wisconsin residents hospitalized as inpatients in a Wisconsin hospital and discharged in the years 2002-2006 were examined for the presence of the defined drug-related conditions in the ICD-9-coded principal diagnosis or any of the first eight other diagnoses reported.

#### Crime and Arrests in Wisconsin

<http://oja.wi.gov/docview.asp?docid=5231&locid=97>

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

### *Crime in the United States (CIUS)*

<http://www.fbi.gov/ucr/ucr.htm>

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

### *Wisconsin Traffic Crash Facts*

<http://www.dot.wisconsin.gov/safety/motorist/crashfacts/>

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

## APPENDIX 3 Wisconsin Regions by County

### Appendix 3. Wisconsin regions for alcohol and other substance abuse services, National Survey on Drug Use and Health (NSDUH)

The NSDUH regions of Wisconsin defined here were provided by the Division of Mental Health and Substance Abuse Services, Wisconsin Department of Health Services, and are defined in terms of the state's 72 counties.

Milwaukee	Northeastern	Northern	Southeastern	Southern	Western
Milwaukee	Brown Calumet Door Fond du Lac Green Lake Kewaunee Manitowoc Marinette Marquette Menominee Oconto Outagamie Shawano Sheboygan Waupaca Waushara Winnebago	Ashland Bayfield Florence Forest Iron Langlade Lincoln Marathon Oneida Portage Price Sawyer Taylor Vilas Wood	Jefferson Kenosha Ozaukee Racine Walworth Washington Waukesha	Adams Columbia Crawford Dane Dodge Grant Green Iowa Juneau Lafayette Richland Rock Sauk	Barron Buffalo Burnett Chippewa Clark Douglas Dunn Eau Claire Jackson La Crosse Monroe Pepin Pierce Polk Rusk St. Croix Trempealeau Vernon Washburn

Note: These regions are quite similar to Wisconsin Department of Health Services regions. The only differences are that Milwaukee County constitutes a separate "region" (rather than being included in the Southeastern region), and Vernon County is part of the Western region (instead of the Southern region). In the future, Vernon County will be part of the Southern region in both NSDUH and DHS regional definitions for Wisconsin.