

Apportioning Costs of Excessive Alcohol Use in Minnesota to the County Level

DATA BRIEF

Excessive drinking has a large health and economic impact on society. Excessive drinking is one of the leading causes of preventable death in the U.S., contributing to more than 2,100 deaths each year in Minnesota. It is associated with acute causes of death such as alcohol poisoning and traffic crashes, as well as chronic causes such as liver disease and various types of cancer.

In 2019, the cost of excessive drinking in Minnesota was estimated at \$7.85 billion.¹ Costs due to excessive drinking are paid by many parts of Minnesota society, such as government, individuals who drink excessively and their families, and health insurance companies. The goal of assessing the costs of excessive drinking in Minnesota was to provide information on its wide-ranging costs to inform strategies to reduce excessive drinking and alcohol-related harms.

Methodology

A study published in 2022¹ assessed the costs due to excessive alcohol use in Minnesota in 2019. Costs were estimated at the state level for health care, lost productivity, and other societal costs such as crime and traffic crashes; the costs due to different types of excessive drinking (binge drinking, underage drinking, and drinking while pregnant); and who paid for the costs. In this brief report, each county's costs were estimated as a share of the state's cost estimate for the following cost categories:

Health care costs: We apportioned cost to counties in this category based on the number of fully alcohol attributable deaths (i.e., 100% alcohol-attributable) in each county as a share of all fully alcohol attributable deaths in Minnesota in 2015-2019. To calculate this, we used Minnesota death certificate data to calculate the average annual number of deaths in the state and by county during 2015-2019 where the underlying cause of death was one of 15 fully alcohol-attributable causes.¹

Lost productivity and other societal costs: since binge drinking accounted for a large portion of the costs in these two categories (lost productivity: 72.4%; other societal costs: 97.2%), we apportioned costs to counties in these two categories based on the number of binge drinkers in each county as a share of all binge drinkers in Minnesota in 2019. The number of binge drinkers was calculated by multiplying the county adult binge drinking prevalence by county adult population from the Census.²

¹ Fully alcohol-attributable deaths are those that could not occur in the absence of alcohol, and include alcohol poisoning, suicide by and exposure to alcohol, alcoholic psychosis, alcohol abuse, alcohol dependence syndrome, alcohol polyneuropathy, degeneration of nervous system due to alcohol, alcoholic myopathy, alcohol cardiomyopathy, alcoholic gastritis, alcoholic liver disease, alcohol-induced acute pancreatitis, alcohol-induced chronic pancreatitis, fetal alcohol syndrome, and fetus/newborn affected by maternal use of alcohol.

Results

The burden of excessive drinking is seen in all Minnesota counties. The median total cost of excessive drinking in Minnesota counties was \$27,899,000 (\$718,000 in Big Stone County - \$1.9 billion in Hennepin County), and the median cost per person was \$1,277 (\$144 in Big Stone County - \$1,681 in Red Lake County).

Table 1. Estimated costs due to excessive drinking in Minnesota, 2019, by county

Location	Binge drinking prevalence	Cost per person	Total cost	Productivity loss costs	Other societal costs	Health care costs
Minnesota	20.7%	\$1,383	\$7,851,447,000	\$5,592,691,000	\$1,343,583,000	\$915,173,000
Aitkin	21.7%	\$1,207	\$19,180,000	\$11,179,000	\$2,686,000	\$5,315,000
Anoka	21.3%	\$1,423	\$508,015,000	\$358,874,000	\$86,216,000	\$62,925,000
Becker	22.8%	\$1,329	\$45,755,000	\$32,264,000	\$7,751,000	\$5,740,000
Beltrami	21.6%	\$1,346	\$63,509,000	\$43,494,000	\$10,449,000	\$9,566,000
Benton	23.6%	\$1,407	\$57,521,000	\$40,894,000	\$9,824,000	\$6,803,000
Big Stone*	23.3%	\$144	\$718,000	\$236,000	\$57,000	\$425,000
Blue Earth	23.7%	\$1,436	\$97,153,000	\$71,478,000	\$17,172,000	\$8,503,000
Brown	25.0%	\$1,357	\$33,931,000	\$24,616,000	\$5,914,000	\$3,401,000
Carlton	24.5%	\$1,508	\$54,103,000	\$36,767,000	\$8,833,000	\$8,503,000
Carver	23.7%	\$1,460	\$153,482,000	\$113,982,000	\$27,383,000	\$12,117,000
Cass	22.2%	\$1,375	\$40,954,000	\$26,336,000	\$6,327,000	\$8,291,000
Chippewa	23.6%	\$913	\$10,779,000	\$8,006,000	\$1,923,000	\$850,000
Chisago	26.9%	\$1,628	\$92,104,000	\$67,578,000	\$16,235,000	\$8,291,000
Clay	23.4%	\$1,410	\$90,539,000	\$66,659,000	\$16,014,000	\$7,866,000

EXCESSIVE ALCOHOL USE IN MINNESOTA AT THE COUNTY LEVEL, 2019

Location	Binge drinking prevalence	Cost per person	Total cost	Productivity loss costs	Other societal costs	Health care costs
Clearwater	22.7%	\$671	\$5,914,000	\$4,254,000	\$1,022,000	\$638,000
Cook*	22.6%	\$365	\$1,994,000	\$579,000	\$139,000	\$1,276,000
Cottonwood	21.3%	\$788	\$8,828,000	\$6,089,000	\$1,463,000	\$1,276,000
Crow Wing	23.0%	\$1,445	\$93,977,000	\$66,346,000	\$15,939,000	\$11,692,000
Dakota	22.1%	\$1,439	\$617,529,000	\$448,889,000	\$107,841,000	\$60,799,000
Dodge	22.9%	\$1,166	\$24,418,000	\$17,631,000	\$4,236,000	\$2,551,000
Douglas	25.0%	\$1,552	\$59,178,000	\$40,345,000	\$9,692,000	\$9,141,000
Faribault	23.7%	\$1,048	\$14,309,000	\$10,166,000	\$2,442,000	\$1,701,000
Fillmore	23.6%	\$1,189	\$25,049,000	\$18,483,000	\$4,440,000	\$2,126,000
Freeborn	22.5%	\$1,294	\$39,180,000	\$27,305,000	\$6,560,000	\$5,315,000
Goodhue	24.0%	\$1,467	\$67,966,000	\$47,945,000	\$11,518,000	\$8,503,000
Grant*	24.0%	\$638	\$3,812,000	\$1,531,000	\$368,000	\$1,913,000
Hennepin	22.2%	\$1,500	\$1,898,624,000	\$1,340,936,000	\$322,145,000	\$235,543,000
Houston	25.0%	\$1,221	\$22,712,000	\$16,941,000	\$4,070,000	\$1,701,000
Hubbard	23.2%	\$1,189	\$25,558,000	\$18,550,000	\$4,457,000	\$2,551,000
Isanti	24.2%	\$1,432	\$58,132,000	\$41,729,000	\$10,025,000	\$6,378,000
Itasca	23.6%	\$1,623	\$73,247,000	\$45,689,000	\$10,976,000	\$16,582,000
Jackson	24.2%	\$917	\$9,028,000	\$6,079,000	\$1,461,000	\$1,488,000
Kanabec	23.2%	\$1,025	\$16,752,000	\$12,822,000	\$3,080,000	\$850,000
Kandiyohi	21.5%	\$1,277	\$55,158,000	\$39,160,000	\$9,408,000	\$6,590,000

EXCESSIVE ALCOHOL USE IN MINNESOTA AT THE COUNTY LEVEL, 2019

Location	Binge drinking prevalence	Cost per person	Total cost	Productivity loss costs	Other societal costs	Health care costs
Kittson*	23.7%	\$1,606	\$6,902,000	\$4,880,000	\$1,172,000	\$850,000
Koochiching	23.3%	\$948	\$11,589,000	\$8,315,000	\$1,998,000	\$1,276,000
Lac qui Parle*	23.2%	\$540	\$3,576,000	\$2,026,000	\$487,000	\$1,063,000
Lake	23.1%	\$950	\$10,113,000	\$6,440,000	\$1,547,000	\$2,126,000
Lake of the Woods*	23.5%	\$1,624	\$6,073,000	\$4,211,000	\$1,012,000	\$850,000
Le Sueur	23.2%	\$1,230	\$35,540,000	\$26,771,000	\$6,431,000	\$2,338,000
Lincoln*	23.3%	\$286	\$1,614,000	\$959,000	\$230,000	\$425,000
Lyon	21.4%	\$1,095	\$27,899,000	\$20,781,000	\$4,992,000	\$2,126,000
Mahnomen*	21.2%	\$332	\$1,833,000	\$278,000	\$67,000	\$1,488,000
Marshall	23.5%	\$733	\$6,843,000	\$5,175,000	\$1,243,000	\$425,000
Martin	22.0%	\$1,111	\$21,875,000	\$15,409,000	\$3,702,000	\$2,764,000
McLeod	22.4%	\$1,277	\$45,831,000	\$33,182,000	\$7,972,000	\$4,677,000
Meeker	24.2%	\$1,336	\$31,025,000	\$21,587,000	\$5,186,000	\$4,252,000
Mille Lacs	21.5%	\$1,293	\$33,965,000	\$21,730,000	\$5,220,000	\$7,015,000
Morrison	25.4%	\$1,426	\$47,595,000	\$35,290,000	\$8,478,000	\$3,827,000
Mower	21.6%	\$1,288	\$51,601,000	\$36,120,000	\$8,678,000	\$6,803,000
Murray	23.3%	\$629	\$5,152,000	\$3,811,000	\$916,000	\$425,000
Nicollet	23.3%	\$1,284	\$44,020,000	\$32,922,000	\$7,909,000	\$3,189,000
Nobles	19.9%	\$935	\$20,232,000	\$15,284,000	\$3,672,000	\$1,276,000
Norman*	23.5%	\$425	\$2,709,000	\$1,842,000	\$442,000	\$425,000

EXCESSIVE ALCOHOL USE IN MINNESOTA AT THE COUNTY LEVEL, 2019

Location	Binge drinking prevalence	Cost per person	Total cost	Productivity loss costs	Other societal costs	Health care costs
Olmsted	20.6%	\$1,325	\$209,664,000	\$150,882,000	\$36,248,000	\$22,534,000
Otter Tail	24.2%	\$1,477	\$86,781,000	\$62,772,000	\$15,080,000	\$8,929,000
Pennington	24.4%	\$1,147	\$16,190,000	\$11,169,000	\$2,683,000	\$2,338,000
Pine	23.5%	\$1,367	\$40,423,000	\$27,965,000	\$6,718,000	\$5,740,000
Pipestone	22.1%	\$635	\$5,791,000	\$4,327,000	\$1,039,000	\$425,000
Polk	24.5%	\$1,482	\$46,479,000	\$31,477,000	\$7,562,000	\$7,440,000
Pope	24.3%	\$988	\$11,112,000	\$7,760,000	\$1,864,000	\$1,488,000
Ramsey	18.8%	\$1,245	\$685,273,000	\$490,313,000	\$117,792,000	\$77,168,000
Red Lake*	23.0%	\$1,681	\$6,817,000	\$4,468,000	\$1,073,000	\$1,276,000
Redwood	23.3%	\$1,004	\$15,234,000	\$11,598,000	\$2,786,000	\$850,000
Renville	23.3%	\$1,105	\$16,073,000	\$10,903,000	\$2,619,000	\$2,551,000
Rice	22.8%	\$1,364	\$91,337,000	\$67,817,000	\$16,292,000	\$7,228,000
Rock	23.5%	\$823	\$7,665,000	\$5,151,000	\$1,238,000	\$1,276,000
Roseau	25.7%	\$1,301	\$19,729,000	\$13,336,000	\$3,204,000	\$3,189,000
Scott	23.0%	\$1,429	\$212,963,000	\$158,856,000	\$38,163,000	\$15,944,000
Sherburne	23.1%	\$1,451	\$141,086,000	\$102,273,000	\$24,570,000	\$14,243,000
Sibley	23.9%	\$1,147	\$17,043,000	\$11,685,000	\$2,807,000	\$2,551,000
St. Louis	22.1%	\$1,591	\$316,643,000	\$205,429,000	\$49,352,000	\$61,862,000
Stearns	25.6%	\$1,633	\$263,046,000	\$192,210,000	\$46,176,000	\$24,660,000
Steele	23.7%	\$1,425	\$52,219,000	\$36,276,000	\$8,715,000	\$7,228,000

EXCESSIVE ALCOHOL USE IN MINNESOTA AT THE COUNTY LEVEL, 2019

Location	Binge drinking prevalence	Cost per person	Total cost	Productivity loss costs	Other societal costs	Health care costs
Stevens	23.2%	\$747	\$7,323,000	\$5,562,000	\$1,336,000	\$425,000
Swift	23.6%	\$1,009	\$9,352,000	\$5,141,000	\$1,235,000	\$2,976,000
Todd	22.7%	\$1,253	\$30,900,000	\$21,486,000	\$5,162,000	\$4,252,000
Traverse*	22.8%	\$1,550	\$5,053,000	\$3,560,000	\$855,000	\$638,000
Wabasha	25.4%	\$1,410	\$30,485,000	\$20,981,000	\$5,040,000	\$4,464,000
Wadena	22.7%	\$1,020	\$13,962,000	\$9,543,000	\$2,293,000	\$2,126,000
Waseca	23.4%	\$1,138	\$21,173,000	\$15,529,000	\$3,731,000	\$1,913,000
Washington	24.6%	\$1,534	\$402,699,000	\$303,954,000	\$73,022,000	\$25,723,000
Watonwan	20.7%	\$740	\$8,061,000	\$5,471,000	\$1,314,000	\$1,276,000
Wilkin*	24.3%	\$515	\$3,194,000	\$1,890,000	\$454,000	\$850,000
Winona	24.0%	\$1,446	\$73,025,000	\$52,709,000	\$12,663,000	\$7,653,000
Wright	23.0%	\$1,437	\$198,854,000	\$147,137,000	\$35,348,000	\$16,369,000
Yellow Medicine	23.2%	\$850	\$8,254,000	\$5,455,000	\$1,311,000	\$1,488,000

* The estimates could be unstable because of the small county population size (7,500 or fewer in 2019).

What can be done to reduce alcohol-related harms?

Everyone can:

- Use this [Alcohol Screening Tool \(www.cdc.gov/alcohol/checkyourdrinking/index.html\)](http://www.cdc.gov/alcohol/checkyourdrinking/index.html) to learn more about your drinking. Plan not to drink or to drink less.
- Call 911 for anyone experiencing life-threatening signs of alcohol poisoning. Do not wait for more symptoms to develop. Symptoms of alcohol poisoning include:
 - Confusion, difficulty staying conscious or inability to wake up
 - Clammy skin, vomiting, seizure
 - Dulled responses (e.g., no gag reflex)
 - Slow (less than eight breaths per minute) or irregular (10 seconds or more between breaths) breathing
 - Low body temperature (indicated by shivers, and pale or bluish skin color)

Health care providers can:

- Screen all adult patients for binge drinking.
- Counsel and refer patients who drink heavily.

States and communities can:

- Track alcohol-related injuries and deaths.
- Support evidence-based programs and policies to reduce excessive drinking.

Visit the [Community Guide \(https://www.thecommunityguide.org/topic/excessive-alcohol-consumption\)](https://www.thecommunityguide.org/topic/excessive-alcohol-consumption) to learn more.

References

1. Gloppen KM, Roesler JS, Farley DM. Assessing the Costs of Excessive Alcohol Consumption in Minnesota. *American Journal of Preventive Medicine*. 2022;63(4):505-512.
2. U.S. Census Bureau. Annual Estimates of the Resident Population for Counties in Minnesota: April 1, 2010 to July 1, 2019 (2020).

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