

Addressing Alcohol Outlet Density in Madison, Wisconsin

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Limiting the harmful use of alcohol and associated impacts by reducing alcohol outlet density is the best way for communities to address the many public costs caused by alcohol use, although increasing the price of alcohol through taxes and fees, and limiting advertising should also be considered.

This paper will (1) provide an overview of the problem of excessive drinking in our city and state, (2) urge policymakers to limit alcohol outlet density in the City of Madison and (3) share resources to stakeholders to adopt effective strategies and interventions to limit alcohol outlet density.

The Impact of Alcohol Overuse on Health and Safety

Excessive and chronic drinking contributes to a national epidemic of alcohol abuse, including causing 88,000 alcohol related fatalities per year and high rates of alcohol dependence. Alcohol use is the 4th highest cause of preventable death.¹ Alcohol is involved in one quarter of suicides,² as well as deaths, illnesses and injuries from fires, drowning, sexual assaults and other violence, alcohol poisoning, fetal alcohol syndrome, miscarriage, risky sexual behaviors, high blood pressure, heart disease, stroke, liver disease, digestive problems, cancer (breast, mouth, throat, esophagus, liver, and colon), depression, anxiety, learning and memory problems, and dementia.³ A large study found in a 2018 report that there is no safe amount of alcohol use in terms of cancer risk.⁴ Another major study published in 2018 in the prestigious Lancet found there is no health advantage to consuming any amount of alcohol. Instead the study found that there are significant risks and costs.⁵ In 2019 a study also published in the Lancet debunked the argument that moderate drinking lowers the risk of stroke.⁶ Furthermore, there is no safe amount of alcohol consumption of a mother that is safe for a developing fetus.⁷ According to national statistics, Fetal Alcohol Spectrum Disorders are observed in between 2-5% of all children, which is a higher prevalence than Autism.⁸

The issue is getting worse. A recent article in the New York Times found that alcohol related ER visits have increased 50% since 2000, as well as finding that cirrhosis of the liver cases in the U.S. have increased after having decreased for decades.⁹ Falls and dementia rates, mostly affecting citizens over the age of 65, have been found to be twice as high among those diagnosed with alcohol use disorder.^{10 11}

¹ Health Impacts of Alcohol Use. (2017) National Institute on Alcohol Abuse and Alcoholism. Retrieved from the web on December 20, 2017 at <https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/alcohol-facts-and-statistics>

² Rabin, Roni Caryn (2009) Alcohol a Common Factor in Suicides. New York Times. Retrieved from the web on December 20, 2017 at <http://www.nytimes.com/2009/06/19/health/19suicide.html>

³ Fact Sheets - Alcohol Use and Your Health (2016) Centers for Disease Control. Retrieved on December 20, 2017 at <https://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>

⁴ World Cancer Research Fund and the American Institute for Cancer Research (2018) Recommendations and public health and policy recommendations. Retrieved from the web on May 26, 2018 at www.wcrf.org/sites/default/files/Cancer-Prevention-Recommendations-2018.pdf

⁵ Robyn Burton and Nick Sheron (2018). No Level of Alcohol Consumption Improved Health. The Lancet. Retrieved from the web on August 26, 2018. [https://doi.org/10.1016/S0140-6736\(18\)31571-X](https://doi.org/10.1016/S0140-6736(18)31571-X)

⁶ EurekAlert and the American Association for the Advancement of Science (2019) The Lancet: Moderate alcohol consumption does not protect against stroke, study shows. Retrieved from the web on April 6th, 2019 at https://www.eurekalert.org/pub_releases/2019-04/tl-tim040319.php

⁷ Alcohol and Pregnancy Questions and Answers (2018). Centers for Disease Control. Retrieved from the web on July 24, 2018 at <https://www.cdc.gov/ncbddd/fasd/faqs.html>

⁸ Fetal Alcohol Spectrum Disorders (FASDs) Data and Statistics (2018). Centers for Disease Control. Retrieved from the web on July 24, 2018 at <https://www.cdc.gov/ncbddd/fasd/data.html>

⁹ Glasser, Gabrielle. (2017) "America, Can we Talk About Your Drinking?" New York Times. Retrieved on December 31, 2017 at <https://www.nytimes.com/2017/12/29/opinion/sunday/alcohol-binge-drinking.html>

¹⁰ Schwarzingger, et al. (2018) Contribution of alcohol use disorders to the burden of dementia in France 2008–13: a nationwide retrospective cohort study. The Lancet. Retrieved from the web on Feb. 24, 2018 at <http://cdn.cnn.com/cnn/2018/images/02/20/dementiaalcohol.pdf>

Injuries from motor vehicle accidents and violence can be largely attributed to alcohol use, representing approximately one-third of all traffic fatalities involving automobiles, motorcycles and pedestrians.¹² Children and elderly pedestrians are especially at risk of injury or death due to intoxicated drivers. Half of all pedestrians killed by cars were killed when either the pedestrian or driver had been drinking. One in every five children under age 15 killed in traffic accidents are pedestrians. People 65 or older were 19% of all pedestrians killed in traffic accidents in 2015.¹³ Wisconsin has higher arrest rates than the nation overall for operating a motor vehicle while intoxicated and more than three times the national rate of arrests for other liquor law violations. Our citizens also have the highest rate of self-reported drinking and driving in the country.¹⁴ Nationally, “There are more alcohol-impaired driving deaths per year than deaths attributable to certain cancers, HIV/AIDS, and drownings.”¹⁵

With regard to injuries and deaths due to violence, one study showed, “Approximately 2 in 5 violent deaths and 1 in 4 emergency department visits for violence-related injuries are due to excessive alcohol use.”¹⁶ ¹⁷ Alcohol is also the most frequently used substance involved in sexual assault, and is found to be used by the survivor, the perpetrator or both in half of all reported cases of sexual assault.¹⁸

The Impact of Alcohol Overuse on the Economy

Studies have also found an economic burden on states, counties and cities as public safety, human services, legal and medical resources are impacted. A 2019 report issued by the Wisconsin Population Health Institute found that the cost of alcohol policies in Wisconsin cost taxpayers approximately \$3.9 billion.¹⁹ Nationally, a report released in 2016 by the US Surgeon General found that social costs of alcohol misuse to be \$249 billion.²⁰ As a comparison, the opioid epidemic causes \$78.5 billion in social costs per year to the country.²¹ These costs include the financial impact that communities, states and society in general bear including missed days at work, health and law enforcement costs and deaths. Homelessness is also exacerbated by alcohol and other drug use.²²

¹¹ Coutu, Peter (2017). Losing their footing: More Wisconsin seniors are drinking, falling and dying. Cap Times retrieved from the web on March 7, 2017 at http://host.madison.com/ct/news/local/health-med-fit/losing-their-footing-more-wisconsin-seniors-are-drinking-falling-and/article_35c6584e-8c2e-11e7-9f44-9f4244b5c44a.html

¹² Drunk driving crashes, fatalities and injuries (2015). State of Wisconsin, Department of Transportation. Retrieved from the web on December 20, 2017 at <http://wisconsindot.gov/Pages/safety/education/drunk-driv/ddcrash.aspx>

¹³ Pedestrian Safety. (2015) Centers for Disease Control. Retried from the CDC Website on March 4, 2018 at https://www.cdc.gov/motorvehiclesafety/pedestrian_safety/index.html

¹⁴ Wisconsin Epidemiological Profile on Alcohol and Other Drug Use (2014). State of Wisconsin Department of Health Services Division of Mental Health and Substance Abuse Services, Office of Health Informatics, Division of Public Health and the the University of Wisconsin Population Health Institute. Retrieved from the web on December 20, 2017 at <https://www.dhs.wisconsin.gov/publications/p4/p45718-14.pdf>

¹⁵ National Academy of Sciences, Engineering and Medicine (2018). Key Facts and Recommendations: Getting to Zero Alcohol-Impaired Driving Fatalities. Retrieved from the web on Jan. 30, 2018 at <https://www.nap.edu/resource/24951/011718AlcoholImpairedDrivingfacts.pdf>

¹⁶ Brewer, Robert (MD) (2015) Reducing Alcohol Outlet Density Can Reduce Violent Crime (2015). Centers for Disease Control and Prevention National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health, Excessive Alcohol Use Prevention Team. Retrieved from the web on December 20, 2017 at <http://blogs.cdc.gov/pcd/2015/05/28/reducing-alcohol-outlet-density-can-reduce-violent-crime/>

¹⁷ Zhang X, Hatcher B, Clarkson L, et al. (2015) Changes in density of on-premises alcohol outlets and impact on violent crime, Atlanta, Georgia, 1997-2007. Retrieved from the web on December 20, 2017 at <http://www.preventviolence.info/EvidenceBase?ID=1039>

¹⁸ University of Michigan Sexual Assault Prevention and Awareness Center. Retrieved from the web on December 31, 2017. <https://sapac.umich.edu/article/50>

¹⁹ Linnan, Sarah, et al. (2019) The Burden of Binge Drinking in Wisconsin. UW Population Health Institute Website. Retrieved on October 24, 2019 at <https://uwphi.pophealth.wisc.edu/wp-content/uploads/sites/316/2019/10/The-Burden-of-Binge-Drinking-in-Wisconsin-Full-Report-2.pdf>

²⁰ Surgeon General Issues Landmark Report on Alcohol, Drugs, and Health (2016). Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services. Retrieved from the web on December 20, 2017 at <https://newsletter.samhsa.gov/2016/11/29/surgeon-general-report-on-alcohol-drugs-health/>

²¹ Costs of US prescription opioid epidemic estimated at \$78. 5 billion (2016). Science Daily website. Retrieved from the web on December 20, 2017. <https://www.sciencedaily.com/releases/2016/09/160914105756.htm>

²² Substance Abuse and Mental Health Services Administration. Homelessness and Housing. Retrieved from the web on December 31, 2017. <https://www.samhsa.gov/homelessness-housing>

The economic health of cities and neighborhoods are adversely affected by higher alcohol outlet density because bars and restaurants crowd out other types of businesses. While bars and restaurants do employ many people in our economy, workers are often not paid as well as in other types of businesses.

²³ The city of Madison is currently studying the impact of alcohol outlets on surrounding businesses. ²⁴

Community development is also heavily impacted as nonprofits, grocery stores, affordable housing and other needed public enterprises are not able to compete with the rent paid for commercial real estate by restaurants and bars.

Wisconsin's complicated relationship with alcohol

Our City and State's approach to alcohol consumption is problematic and alarming. Wisconsin citizens have higher rates of excessive drinking as well as risk factors and outcomes affecting individuals, families and communities as compared to other states. A 2016 report found that Madison residents have the 4th highest percentage of residents who report drinking heavily or engaging in binge drinking.²⁵ Nationwide, Wisconsin is 1st place in residents who engage in chronic and heavy drinking.^{26 27} Among women between the ages of 18 and 44, Wisconsin has the highest rates of both any alcohol use in the previous month and of binge drinking.²⁸

Contrary to popular belief, binge drinking is a larger problem than chronic alcohol dependence and is associated with greater health, safety, economic and social impacts. Almost all people who drink excessively do not meet the definition of meeting the diagnostic criteria for having a severe alcohol use disorder.²⁹ Binge drinking is defined as having a Blood Alcohol Concentration (BAC) above 0.08% during one sitting, or about 4 drinks in a two hour period for women or 5 drinks for men.³⁰

According to the Wisconsin Alcohol Policy Project, the state's higher drinking rates and negative outcomes are not due to Wisconsin's culture, but rather, are affected by a strong business lobby that opposes limiting the availability of alcohol or by increasing its costs. Wisconsin's problem is caused by the, "4 A's:" of Availability, Attractiveness, Affordability, and Acceptance.³¹ Wisconsin Public Radio published a series on this subject on May 13, 2019, titled, "High Tolerance: Wisconsin's Complicated Relationship with Alcohol." ³²

²³ Thompson, Derek. (2017) Restaurants Are the New Factories. The Atlantic. Retrieved from the web on February 19, 2018 at <https://www.theatlantic.com/business/archive/2017/08/restaurant-jobs-boom/536244/>

²⁴ Shelver, Matthew. (2016). Eating, drinking establishments crowding out retail on State Street, mayor tells committee. Badger Herald. Retrieved from the web on February 19, 2018 at <https://badgerherald.com/news/2016/03/16/eating-drinking-establishments-crowding-out-retail-on-state-street-mayor-tells-committee/>

²⁵ Elbow, Stephen. (2016) "Wisconsin takes 12 spots in top 20 for drunkest cities; Madison comes in at No. 4." Wisconsin State Journal website, May 19, 2016. http://host.madison.com/ct/news/local/city-life/wisconsin-takes-spots-in-top-for-drunkest-cities-madison-comes/article_7452c79c-c500-5cd3-8b4f-1a8ffb019149.html

²⁶ America's 2018 Health Rankings. United Health Foundation website. Retrieved from the web on December 17, 2018 at <https://www.americashealthrankings.org/>

²⁷ Wisconsin Epidemiological Profile on Alcohol and Other Drug Use (2014). State of Wisconsin Department of Health Services Division of Mental Health and Substance Abuse Services, Office of Health Informatics, Division of (cont.) Public Health and the the University of Wisconsin Population Health Institute. Retrieved from the web on December 20, 2017 at <https://www.dhs.wisconsin.gov/publications/p4/p45718-14.pdf>

²⁸ State Level Estimates of Alcohol Use of Women (2016). Centers for Disease Control. Retrieved from the web on July 24, 2018 at <https://www.cdc.gov/ncbddd/fasd/data-maps-2016.html>

²⁹ Esser MB, Hedden SL, Kanny D, Brewer RD, Gfroerer JC, Naimi TS. (2014) Prevalence of alcohol dependence among US adult drinkers, 2009–2011. Prev Chronic Dis. 2014;11:140329. Retrieved from the web on March 7, 2018 at <http://dx.doi.org/10.5888/pcd11.140329>

³⁰ Alcohol and Public Health Frequently Asked Questions (2018) Centers for Disease Control. Retrieved from the web on July 30, 2018 at <https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking>

³¹ Druke, Galen.(2014) "Wisconsin's Drinking Problem Doesn't Stem From Cultural Heritage, Expert Says" Wisconsin Public Radio website. Retrieved on December 20, 2017 at <http://www.wpr.org/wisconsins-drinking-problem-doesnt-stem-cultural-heritage-expert-says>

³² Wisconsin Public Radio (2019) "High Tolerance: Wisconsin's Complicated Relationship with Alcohol." Retrieved from the web on May 19, 2019 at <https://www.wpr.org/hightolerance>

Conclusion and Recommendations

Alcohol availability can be measured by comparing Alcohol Outlet Density by population. Alcohol outlets include all, “gas stations, bars, liquor stores, tasting rooms and restaurants.”³³ Dane County has a rate of 1 alcohol outlet for every 440 residents. While this rate is lower than the state average of one outlet per 330 residents, it is higher than the national average of one outlet per 1,400 residents.³⁴ In Aldermanic District 6 I found there to be one outlet per approximately 150 residents per outlet (approximately 90 outlets for 13,500 residents).³⁵ A Google map of all alcohol outlets in Aldermanic District 6 is available on my personal website.³⁶

The impacts on the areas where there is a high concentration of alcohol outlets are well understood a meta-study published in 2008 found that, “Neighborhoods where bars, restaurants and liquor and other stores that sell alcohol are close together suffer more frequent incidences of violence and other alcohol-related problems.”³⁷ This is backed up by a 2019 study completed by the City of Madison.³⁸

The widespread availability of alcohol has a negative economic and public health impact on our city and state, and it is getting worse. The trend will continue without effective municipal and state policies to balance the availability of alcohol with the public interest. Limiting alcohol outlet density is an effective method to save taxpayer dollars, help the local economy and improve public health and to prevent violence, crime, injuries and death.

Madison imposed a moratorium on new taverns in the downtown area from 2007-2014, but failed to include restaurants in the ordinance.³⁹ A proposal in Madison that was recently considered would have restricted additional alcohol outlets in certain high density areas.⁴⁰ There is a current moratorium on new outlets in a small district near the UW-Madison Campus, called the Alcohol Overlay District, that was imposed in 2014 and scheduled to be discontinued at the end of 2019.⁴¹

The City of Madison should impose a moratorium on new alcohol outlet licenses in neighborhoods in excess of alcohol outlets at a rate of 1 per 400 residents in each aldermanic district. Furthermore, alcohol should be limited in locations adjacent to places where children are present including schools, parks, churches, community centers and other public places.

³³ Alcohol License Overview for Dane County (2012) State of Wisconsin Department of Health Services, Division of Mental Health and Substance Abuse Services, Bureau of Prevention Treatment and Recovery and the University of Wisconsin Law School, the Resource Center on Impaired Driving, and the Wisconsin Alcohol Policy Project. Retrieved on December 20, 2017 at <https://www.dhs.wisconsin.gov/publications/p0/p00778-dane.pdf>

³⁴ Alcohol, Culture and Environment Workgroup Recommendations (2010) Wisconsin State Council on Alcohol and Other Drug Abuse, Prevention Committee, Alcohol, Culture and Environment Workgroup. Retrieved on December 20, 2017 at https://media.law.wisc.edu/s/c_903/9n2zm/changing_wisconsins_alcohol_environment.pdf

³⁵ City of Madison list of Alcohol License recipients in District 6. Population data is an estimate based on 2010 census data. Information gathered by the author of this paper. Retrieved from the web on December 20, 2017 at <http://www.cityofmadison.com/>

³⁶ Map of alcohol outlets in Madison's 6th Aldermanic Ward. Data compiled from the City of Madison website at <http://www.cityofmadison.com/> Map created by the author of this paper. Retrieved from the web on Feb. 5, 2018 at <http://www.addictionmadison.com/blog/current-alcohol-outlet-licenses-in-madisons-6th-aldermanic-district>

³⁷ Stewart, Kathryn. (2008). How Alcohol Outlets Affect Neighborhood Violence. Pacific Institute for Research and Evaluation, Prevention Research Center, UC-Berkeley. Retrieved from the web on December 20, 2017 at <http://resources.prev.org/documents/AlcoholViolenceGruenewald.pdf>

³⁸ Impacts of Alcohol Outlet Density on the Provision of City Services (2019) City of Madison Finance Department, Public Health Madison & Dane County. Retrieved from the web on October 24, 2019 at <https://madison.legistar.com/View.ashx?M=F&ID=7813515&GUID=53CD62F3-B627-4872-BBB8-BF157B34E768>

³⁹ Kliese, Jennifer. (2014) Madison adopts new alcohol licensing policy. WKOW Television News website. Retrieved from the web on December 20, 2017 at <http://www.wkow.com/story/25203762/2014/04/Wednesday/madison-adopts-new-alcohol-licensing-policy>

⁴⁰ Rickert, Chris. (2017) Soglin to propose moratorium on new liquor licenses for Downtown restaurants. Madison.com. Retrieved from the web on February 19, 2018 at http://host.madison.com/ws/news/local/govt-and-politics/soglin-to-propose-moratorium-on-new-liquor-licenses-for-downtown/article_83488d0d-03b8-5ff1-b5db-5ead011fc5ae.html

⁴¹ City of Madison Municipal Code (2019) 28.127 - Alcohol Overlay District. Retrieved from the web on October 24, 2019 at https://library.municode.com/wi/madison/codes/code_of_ordinances?nodeId=COORMAWIVOIICH20--31_CH28ZOCOR SUBCHAPTER_28HOVDI_28.127ALOVDI

Furthermore the City of Madison should explore placing (a) limits on drink specials, (b) limits on alcohol advertising in public areas, (c) limits on outdoor seating at bars and restaurants that serve alcohol, (d) limiting alcohol sales at athletic and community events, and consider (e) increasing funding for the prevention of alcohol misuse through public safety, human services and public health agencies.

Author's Summary

I am a parent of two school-age children and have lived in the Tenney-Lapham, Williamson-Marquette and Schenk-Atwood-Starkweather-Yahara (SASY) Neighborhoods in Madison, Wisconsin, since 2004. I have a Master of Science degree in Social Work from the University of Wisconsin-Madison ('06), with a concentration in healthcare policy and administration. My occupational background is in disability policy, corrections, healthcare, higher education and mental health counseling with an emphasis on addictions and behavioral health. I have worked at the Dane County Jail, Oakhill Correctional Institution, University of Wisconsin-Madison and the State of Wisconsin Department of Health.

Additional Information

Please see the attached appendix with a list of organizations, universities and governmental groups that support the limiting of Alcohol Outlet Density and provide ways to analyze the issue and how to address it.

Appendix: Additional Information and Resources; List of groups that Support the limiting of Alcohol Outlet Density

Academic Research Centers

- Johns Hopkins Bloomberg School of Public Health, Center on Alcohol Marketing and Youth (CAMY) & Community Anti-Drug Coalitions of America (CADCA) “Regulating Alcohol Outlet Density: An Action Guide”
http://www.camy.org/_docs/research-to-practice/place/alcohol-outlet-density/outlet-density-strategizer-nov-2011.pdf
- Temple University Center for Public Health Law Research ⁴²
- University of Wisconsin Law School Wisconsin Alcohol Policy Project ⁴³
- University of Wisconsin School of Medicine and Public Health - Population Health Institute ⁴⁴ “What Works for Health: Policies and Programs to Improve Wisconsin’s Health”
<http://whatworksforhealth.wisc.edu/program.php?t1=21&t2=13&t3=38&id=74>

Professional Associations

- American College of Preventive Medicine ⁴⁵
- American Society of Clinical Oncology ⁴⁶
- Association for Prevention Teaching and Research ⁴⁷
- National Academies of Sciences, Engineering, and Medicine ⁴⁸
- National Academy of Sciences Institute of Medicine; Board on Population Health and Public Health Practice; Committee on Public Health Strategies to Improve Health ⁴⁹
- World Cancer Research Fund and the American Institute for Cancer Research ⁵⁰

Government and Intergovernmental Organizations

- Centers for Disease Control (CDC) Community Preventive Task Force Recommendations and Guide for Measuring Alcohol Outlet Density <http://www.thecommunityguide.org/alcohol/index.html> and <https://www.cdc.gov/alcohol/pdfs/CDC-Guide-for-Measuring-Alcohol-Outlet-Density.pdf>
- State of Wisconsin Department of Health Services, Division of Public Health (<https://www.dhs.wisconsin.gov/dph/index.htm>)
- State of Wisconsin Department of Health Services, Division of Mental Health and Substance Abuse Services, Bureau of Prevention Treatment and Recovery (<https://www.dhs.wisconsin.gov/aoda/sitemap.htm>) Wisconsin State Council on Alcohol and Other Drug Abuse, Prevention Committee: Alcohol, Culture and Environment Workgroup Recommendations
https://media.law.wisc.edu/s/c_903/9n2zm/changing_wisconsins_alcohol_environment.pdf
- World Health Organization ⁵¹

⁴² Temple University Center for Public Health Law Research (2012) “The Effect Of Laws Reducing Alcohol Outlet Density On Alcohol Related Harms” retrieved from the web on March 7, 2018 at <http://publichealthlawresearch.org/product/effect-laws-reducing-alcohol-outlet-density-alcohol-related-harms>

⁴³ Wisconsin Dept. of Health Services (2012) “Alcohol License Overview for Dane County” retrieved from the web on March 7, 2018 at <https://www.dhs.wisconsin.gov/publications/p0/p00778-dane.pdf>

⁴⁴ Wisconsin Dept. of Health Services (2014) “Wisconsin Epidemiological Profile on Alcohol and Other Drug Use” retrieved from the web on March 7, 2018 at <https://www.dhs.wisconsin.gov/publications/p4/p45718-14.pdf>

⁴⁵ Campbell, CA, et. al. The effectiveness of limiting alcohol outlet density as a means of reducing excessive alcohol consumption and alcohol-related harms (2009) Published by the American Journal of Preventive Medicine and retrieved from the web on March 7, 2018 at <https://www.ncbi.nlm.nih.gov/pubmed/19944925>

⁴⁶ LoConte, Noelle. (2018) Alcohol and Cancer: A Statement of the American Society of Clinical Oncology retrieved from the web on March 7, 2018 at <http://ascopubs.org/doi/full/10.1200/JCO.2017.76.1155>

⁴⁷ Romney, Martha. (2014) Public Health Learning Module 6 - Substance Use: Addressing Addiction and Emerging Issues. The Assoc. For Prevention Teaching and Research. Retrieved from the web on March 7, 2018 at http://www.aptrweb.org/?PHLM_06

⁴⁸ Getting to Zero Alcohol-Impaired Driving Fatalities: A Comprehensive Approach to a Persistent Problem <http://www.nationalacademies.org/hmd/reports/2018/getting-to-zero-alcohol-impaired-driving-fatalities.aspx>

⁴⁹ For the Public’s Health: Revitalizing Law and Policy to Meet New Challenges (2011)
<https://www.nap.edu/catalog/13093/for-the-publics-health-revitalizing-law-and-policy-to-meet>

⁵⁰ World Cancer Research Fund and the American Institute for Cancer Research (2018) Recommendations and public health and policy recommendations. Retrieved from the web on May 26, 2018. www.wcrf.org/sites/default/files/Cancer-Prevention-Recommendations-2018.pdf

⁵¹ Preventing violence by reducing the availability and harmful use of alcohol (2009) <http://apps.who.int/iris/handle/10665/44173>