2024 REPORT TO CONGRESS ON THE PREVENTION AND REDUCTION OF UNDERAGE DRINKING



The Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD)

REPORT TO CONGRESS ON THE PREVENTION AND REDUCTION OF UNDERAGE DRINKING 2024

This Report to Congress on the Prevention and Reduction of Underage Drinking (RTC) is required by the Sober Truth on Preventing Underage Drinking Act (STOP Act) (Pub. L. 109– 422), enacted by Congress in 2006, reauthorized in the Consolidated Appropriations Act, 2023 (Pub. L.117-328) and codified into law in 42 U.S.C. 290bb-25b: Programs to reduce underage drinking. The STOP Act requires an annual report to Congress (Chapters 1–4) that includes a description of federal programs to address underage drinking; the extent of progress in preventing and reducing underage drinking; surveillance data on underage drinking initiation, prevalence, consumption patterns, and underage access to alcohol; and related information. The STOP Act also requires an annual report to Congress on the national adult-oriented media public service campaign mandated by the STOP Act (Chapter 5), including the production, broadcasting, and evaluation of the effectiveness and reach of the campaign.

As directed by the STOP Act, the reports are prepared by the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD), which is chaired by the Assistant Secretary for Mental Health and Substance Use, U.S. Department of Health and Human Services. ICCPUD members are listed in Appendix A.

Time period covered by the 2024 RTC: The 2024 RTC includes data from calendar years 2022 and 2023. Epidemiological data in Chapters 1–4 are drawn primarily from the 2022 National Survey on Drug Use and Health, the 2022 Monitoring the Future survey, and the 2023 Youth Risk Behavior Survey. Chapter 5, the Report to Congress on the National Media Campaign to Prevent Underage Drinking, describes 2023 activities conducted by the campaign. Appendix B includes data on the underage drinking prevention activities of ICCPUD member agencies in calendar year 2023.

Suggested citation: U.S. Department of Health and Human Services (HHS), Substance Abuse and Mental Health Services Administration (SAMHSA). (2024). Report to Congress on the Prevention and Reduction of Underage Drinking.

U.S. Department of Health and Human Services 200 Independence Avenue, SW Washington, DC 20201

TABLE OF CONTENTS

Foreword	v
Executive Summary	2
Introduction	2
Current Characteristics of Underage Drinking in the United States	4
Prevention Efforts	. 11
Progress in Addressing Underage Drinking	. 14
Chapter 1: Public Health Consequences of Underage Drinking	. 18
Introduction	. 18
Direct Adverse Consequences	. 18
Social Costs and Associated Consequences	. 25
Chapter 2: The Nature and Extent of Underage Drinking in the United States	. 29
Introduction	. 29
Federal Surveys Used in This Report	. 29
Measuring Alcohol Consumption	. 32
Current Alcohol Consumption	. 35
Early Initiation of Drinking and Alcohol Use Disorder	. 44
Treatment of Adolescent Substance Use	. 45
Extent of Progress: Trends in Underage Alcohol Consumption	. 47
Extent of Progress: Driving After Drinking	. 52
Summary of Progress	. 54
Chapter 3: Factors Affecting Underage Alcohol Use	. 57
Introduction	. 57
Social Contexts for Underage Drinking	. 69
Emerging Issues in Underage Drinking	. 74
Chapter 4: A Coordinated Federal Approach to Preventing and Reducing Underage Drinking.	. 78
Introduction	. 78
The Coordinated Federal Approach	. 78
Chapter 5: Evaluation of the National Media Campaign "Talk. They Hear You."®	89
Introduction	. 89
Background	. 89
Campaign Audiences and Materials	. 90
Screen4Success	. 94
Campaign Refinement and Evaluation	. 95
Conclusion	. 97
Appendix A: ICCPUD Members	. 98
Appendix B: Federal Agencies Involved in Preventing and Reducing Underage Drinking	100
Inventory of Federal Programs for Underage Drinking by Agency	103

Appendix C: Surveys	137
National Survey on Drug Use and Health	137
Monitoring the Future Study	139
Youth Risk Behavior Survey	140
Additional Surveys	141
Association Versus Causation	142
Additional Methodological Caveats	142
Websites with Data on Underage Drinking	143
Appendix D: Abbreviations	144
Federal Departments and Agencies	144
Programs, Agencies, and Organizations	144
Other Abbreviations and Acronyms	146
Appendix E: References	147

FOREWORD

As the U.S. Department of Health and Human Services Assistant Secretary for Mental Health and Substance Use and Chair of the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD), I am pleased to present ICCPUD's 2024 Report to Congress on the Prevention of Underage Drinking (RTC). This is the 16th annual report examining the issues of underage drinking.

In the United States, alcohol is the most frequently used substance among people younger than 21, used more often than tobacco, cannabis, and other illicit drugs. During 2022, 15.1 percent of 12- to -20-year-olds reported having consumed alcohol in the previous month in the National Survey on Drug Use and Health (NSDUH; Center for Behavioral Health Statistics and Quality [CBHSQ], 2023a).

Underage alcohol consumption is a persistent and serious public health challenge, resulting in thousands of deaths and injuries each year through motor vehicle traffic crashes, violence, alcohol poisoning, and other causes. Underage drinking is also associated with impaired brain function (Gómez-A et al., 2021; Spear, 2018), suicide (White & Hingson, 2013), decreased academic performance (Bradley & Greene, 2013; White & Hingson, 2013), and an increased risk of developing an alcohol use disorder later in life (Moss et al., 2014). Binge drinking,¹ which is more prevalent in older adolescents, exacerbates the harmful consequences of underage drinking. According to the 2022 NSDUH, 17.9 percent of people ages 18–20 reported having engaged in binge drinking at least once in the previous month, as did 3.2 percent of those ages 12 to 17 (CBHSQ, 2023a).

The ICCPUD Comprehensive Plan for Preventing, and Reducing Underage Drinking draws upon information contained in this report to call upon diverse stakeholders to implement proven, effective strategies aimed at reducing underage drinking. Research indicates that evidence-based strategies are most effective when implemented as part of a multifaceted approach that includes parents and families; schools and universities; community organizations; law enforcement; healthcare providers; the private sector; local, state, and tribal governments; and the federal government. For example, parents, K–12 schools, and universities can provide clear, consistent education about the consequences of underage drinking. With community support, law enforcement can more effectively prevent youth from accessing alcohol. Healthcare providers can screen patients who are under age 21 for alcohol use and provide interventions, such as brief intervention and referral to services, as appropriate. Government at all levels can enact policies, programs, and practices and provide funding to address contributors to underage drinking (Harding et al., 2016). The Substance Abuse and Mental Health Services Administration and other ICCPUD agencies are committed to working together to provide national leadership in these critical efforts.

Miriam E. Delphin-Rittmon, Ph.D. Assistant Secretary for Mental Health and Substance Use U.S. Department of Health and Human Services

¹ Binge drinking is defined as four or more drinks on the same occasion for women and five or more drinks for men.

Executive Summary

EXECUTIVE SUMMARY

Introduction

Each year, there are approximately 4,000 alcohol-related deaths among people younger than age 21 (Centers for Disease Control and Prevention [CDC], 2024a). These losses, which are the result of underage drinking or excessive alcohol use by others, translate to an average of 54 years of potential life lost per death. Underage drinking contributes to a wide range of costly health and social problems, including motor vehicle crash injuries and other unintentional injuries (e.g., burns, falls, and drownings), suicide, interpersonal violence (e.g., homicides, sexual assaults, and other assaults), cognitive impairment, alcohol use disorder (AUD),² risky sexual behaviors, poor school performance, and alcohol and other drug overdoses (CDC, 2023a; Liang & Chikritzhs, 2015; Rasberry, 2017; Ritchwood et al., 2015; Tapert, 2022; Tori et al., 2020). Alcohol consumption by young adults is associated with cancer later in life, including prostate cancer in men (Michael et al., 2018) and breast cancer in women (Chen et al., 2011).

Underage alcohol use occurs in a context of substantial alcohol-related harms in the United States. More than 178,000 individuals (of all ages) in the United States died per year from excessive alcohol use during 2020 to 2021,³ making it a leading preventable cause of death in the United States (CDC, 2024a). Alcohol also plays a role in many drug overdoses; there was a 4.6-fold increase in combined alcohol and opioid poisoning deaths during the time period from 2000 to 2019 (Buckley et al., 2022).

Over the past 2 decades, alcohol use, binge drinking,⁴ and AUD have increased in segments of the adult population, especially among women, older adults, racial/ethnic minority groups, and those who are socioeconomically disadvantaged (Grucza et al., 2018; Han et al., 2017). In 2022, midlife adults ages 35 to 50 had the highest level of binge drinking ever reported in that age group on the Monitoring the Future (MTF) survey (Patrick, Miech, et al., 2023). Deaths from excessive alcohol use increased 29 percent from 2016-2017 to 2020-2021, from about 138,000 deaths per year to about 178,000 deaths per year (Esser, Sherk, Liu, & Naimi, 2024).

In addition to the health toll, excessive alcohol use is costly to society; the economic burden was estimated at \$249 billion in 2010, when it was most recently assessed (Sacks et al., 2015). Adjusting for inflation, the estimated economic burden would be \$353 billion in 2023 (CPI Inflation Calculator, n.d.).

This report—the 2024 Report to Congress on the Prevention and Reduction of Underage Drinking (2024 RTC)—focuses on underage alcohol use, as required by the Sober Truth on Preventing Underage Drinking Act (STOP Act). The STOP Act established the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD) and required a set of annual reports to Congress, two of which are included in this volume. The first report contains the most current data on underage alcohol use in the United States and a brief history and current

² The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association [APA], 2013) defines alcohol use disorder differently than the DSM, Fourth Edition (DSM-IV). Notably, the DSM-5 does not distinguish between substance abuse and substance dependence, unlike the DSM-IV.

The National Survey on Drug Use and Health (NSDUH) switched from use of DSM-IV criteria to DSM-5 to define substance use disorders in 2020.

³ "Excessive alcohol use," as defined by CDC, includes binge drinking, heavy drinking, and any drinking by pregnant women or people younger than 21.

⁴ Binge drinking definitions varied according to the survey data reviewed. See Exhibit E.1 for more detail regarding definitions of binge drinking and related terms.

information on federal prevention efforts (Chapters 1–4 and Appendix B). The second report details the production, broadcasting, and evaluation of "Talk. They Hear You."[®], the national adult-oriented media public service campaign required by the STOP Act (Chapter 5).

The STOP Act also requires annual reports on state prevention and enforcement activities. Accordingly, ICCPUD has prepared individual reports for each of the 50 states and the District of Columbia, including state-specific population and underage alcohol use data. The *State Reports* — *Underage Drinking Prevention and Enforcement*, available on https://www.stopalcoholabuse.gov, provide information on underage drinking prevalence; state prevention and treatment systems; and prevention policies, programs, and practices. The reports include data from states and the District of Columbia on underage drinking enforcement and prevention activities and associated expenditures on these programs. These data are collected through a STOP Act–mandated survey that has been administered to state governments annually since 2011. An accompanying report, the *State Performance & Best Practices for the Prevention and Reduction of Underage Drinking Report (SPBP Report)*, also available at https://www.stopalcoholabuse.gov, summarizes and compares the states' performance in implementing evidence-based policies, programs, and practices. The SPBP Report provides an overview of current state practices related to the prevention of underage drinking. These reports are reviewed and approved by each state's governor's appointee.

Data on current underage alcohol use in the United States in this report come primarily from three federal surveys:

- 1. NSDUH, conducted by the Center for Behavioral Health Statistics and Quality (CBHSQ) of the Substance Abuse and Mental Health Services Administration (SAMHSA);
- 2. MTF, conducted by a grantee of the National Institute on Drug Abuse (NIDA); and
- 3. The Youth Risk Behavior Survey (YRBS), administered by CDC.

Each of these surveys uses slightly different definitions for the different drinking patterns, such as binge drinking, reported on in this document. Although data across the surveys are not directly comparable, trends within each survey can be identified, and these trends can be compared across data sources.⁵

Time period covered by the 2024 RTC: The *2024 RTC* includes data from calendar years 2022 and 2023 (Exhibit E.1). Epidemiological data in Chapters 1–4 are drawn primarily from the 2022 NSDUH, the 2022 MTF survey, and the 2023 YRBS. Chapter 5, the *Report to Congress on the National Media Campaign to Prevent Underage Drinking*, describes 2023 activities conducted by the campaign. Appendix B includes data on the underage drinking prevention activities of ICCPUD member agencies in calendar year 2023.

⁵ The reporting of trend data was affected by the COVID-19 pandemic; the data collection methodology and/or time frame for all three surveys was impacted during 2020 and 2021 (see Appendix C for details; CBHSQ, 2023b; Johnston et al., 2022; Mpofu, 2023). Some subgroup estimates for the MTF and the NSDUH are not available for 2020 because of the smaller sample sizes obtained during that year. Changes in MTF administration methodology during 2019 and 2020 means that estimates obtained during these years should be viewed with some caution. For the NSDUH, reduced data collection and a change to a multimodal method of data collection during the pandemic means that comparisons of 2020 and 2021 data with each other and with data from previous years cannot be made.



Exhibit E.1: Time Period Covered by the 2024 RTC

Current Characteristics of Underage Drinking in the United States

Substance Use by Underage Youths in the United States

Alcohol is the most widely used substance among youth in the United States;⁶ the proportion of young people using alcohol is statistically significantly higher than the proportion of young people using marijuana, tobacco, and illicit drugs other than marijuana, including opioids. (CBHSQ, 2023a). According to the 2022 NSDUH, within the past 30 days among individuals ages 12–20:

- 15.1 percent reported alcohol use,
- 13.4 percent reported tobacco product use or nicotine vaping,
- 11.8 percent reported use of marijuana,
- 2.1 percent reported illicit drug use other than marijuana, and
- 0.5 percent reported opioid misuse (Exhibit E.2; CBHSQ, 2023a).

4 | 2024 Report to Congress on the Prevention and Reduction of Underage Drinking -

⁶ For the purposes of this report, the terms "youth," "young people," and "underage" refer to individuals ages 12–20 unless otherwise specified; these terms include adolescents and young adults assessed by the various surveys who are not legally permitted to drink.





Binge Drinking

Binge drinking substantially increases the risk of alcohol-related harms among underage youth and adults, such as motor vehicle crash injuries, other injuries, unsafe sexual practices, and experiencing sexual assault. Given these consequences, reducing binge drinking is a core objective in the U.S. Department of Health and Human Services' (HHS) Healthy People 2030 program (HHS, 2021). In 2022, approximately 3.2 million (8.2 percent) of 12- to -20-year-olds reported past-month binge alcohol use on the NSDUH (CBHSQ, 2023a).⁷

According to the 2022 NSDUH, approximately 1.7 percent of 12- to -20-year-olds (0.6 million) had engaged in heavy drinking, defined by SAMHSA as binge drinking on each of 5 or more days in the past 30 days (CBHSQ, 2023a). Although underage individuals who drink generally consume alcohol less frequently than adults who drink, they are more likely to binge drink when they do, increasing the risk for harm. A substantial proportion of underage people who drink consume considerably more than the four- or five-drink binge criterion. For example, based on combined data from the 2021-2022 NSDUH, 4.9 percent of underage individuals who drink had nine or more drinks during their last drinking occasion (CBHSQ, 2024).

⁷ Binge drinking is defined in the NSDUH as five or more drinks on a single occasion for males and four or more drinks on a single occasion for females. Note: Measures based on gender do not appropriately account for transgender and gender-nonconforming individuals.

A subset of binge drinking is high-intensity or extreme binge drinking, which is the consumption of 10 or more drinks in a row at least once in the previous 2 weeks or 15 or more drinks in a row in the previous 2-week period. (MTF measures both 10-plus and 15-plus drinks in a row in this category.) High-intensity or extreme binge drinking represents an even higher level of a consumption pattern (binge drinking) that is already known to be dangerous. According to an analysis of MTF data for 2022, 4.3 percent of 12th graders reported having consumed 10 or more drinks in a row, and 2.4 percent reported having consumed 15 or more drinks in a row within the previous 2 weeks (Miech et al., 2023).

Underage Binge Drinking

- Approximately 3.2 million (8.2 percent) of 12- to 20-year-olds reported past-month binge alcohol use in 2022 (CBHSQ, 2023a).
- Approximately 0.6 million underage youth engaged in heavy drinking (i.e., binge drinking on 5 or more days within a 30-day period; CBHSQ, 2023a).
- 4.3 percent of 12th graders engaged in high-intensity or extreme binge drinking in 2022 (Miech et al., 2023).

Alcohol use rates, including binge and heavy alcohol use,⁸ increase with age (Exhibit E.3). However, it is important to note that although very young adolescents (ages 12–15) are less likely to drink than older adolescents and young adults, they may reach high blood alcohol concentration (BAC) levels with fewer drinks (e.g., three to four drinks) than older adolescents (age 18 or older) because of their smaller physical size (Donovan, 2009). This suggests that binge and heavy alcohol use may be particularly dangerous for younger adolescents and may be even more of a problem than is reflected in survey data (i.e., younger adolescents could be experiencing a BAC level associated with binge drinking, although they may not report binge drinking).

Underage Drinking by Gender⁹ and Race/Ethnicity¹⁰

According to 2022 NSDUH data, females ages 12–20 were significantly more likely to report past-month alcohol use (16.5 percent) than males (13.8 percent) of the same age (CBHSQ, 2023a). Prevalence differs by age group and gender with females in the 14–15- and 16–17-year-old age groups significantly more likely to report past-month alcohol use than males in the same age group (CBHSQ, 2024).

⁸ Heavy alcohol use is assessed in the NSDUH as binge drinking on 5 or more days in the past 30 days.

⁹ NSDUH did not begin gathering data on sexual orientation and gender identity until the 2023 survey.

¹⁰ Racial and ethnic groups reported for NSDUH data are mutually exclusive. People who were of Hispanic or Latino ethnicity could be of any race but are not included in the estimates for any of the racial categories. Estimates for people who were not of Hispanic or Latino ethnicity are reported by race. People reporting two or more races and who were not of Hispanic or Latino ethnicity are noted as multiracial. People reporting their race as Black or African American are subsequently referred to as Black. People reporting their ethnicity as Hispanic or Latino are subsequently referred to as Hispanic.



Exhibit E.3: Any Alcohol Consumption, Binge, and Heavy Alcohol Use in the Past 30 Days Among People Ages 12–20 by Age: 2022 NSDUH Data (CBHSQ, 2023a)

White individuals ages 12–20 were significantly more likely to report past-30-day alcohol use than Black, Asian and Hispanic individuals of the same age, according to 2022 NSDUH data. (CBHSQ, 2024). Hispanic adolescents ages 12-20 were more likely to report 30-day alcohol use than Black individuals, and Multiracial adolescents ages 12-20 were more likely to report 30-day alcohol use than Asian adolescents.

The percentage of females reporting binge drinking in 2022 (8.9 percent) was significantly higher than the percentage of males (7.5 percent) for ages 12–20 combined (CBHSQ, 2024). NSDUH data for 2022 on binge alcohol use among males and females ages 12–20 by gender and race/ethnicity are shown in Exhibit E.4 (CBHSQ, 2024).





* Estimate was suppressed due to low precision

Age of Initiation of Alcohol Use

As discussed in more detail below, early initiation of alcohol use increases the risk for a variety of health and social problems during adolescence, as well as health problems later in life. For example, the early initiation of alcohol consumption is a risk factor for future substance use and alcohol dependence (Buchmann et al., 2009; Grant & Dawson, 1997; Hingson & Zha, 2009; Liang & Chikritzhs, 2015). Accordingly, delaying the onset of alcohol initiation may reduce the risk of developing alcohol problems in adulthood.

The peak years of initiation of alcohol use are in grades 7–11, and on the 2023 YRBS, 13.3 percent of high school students reported that they used alcohol before age 13 (CDC, 2024b).¹²

Approximately 1,696 people ages 12–14 initiated alcohol use each day in 2022, based on NSDUH data (CBHSQ, 2024).

Why Is Underage Drinking a Problem?

- Alcohol is used more widely than tobacco, marijuana, and other drugs in the United States by people under age 21 (CBHSQ, 2024).
- In 2022, of the 2,034 drivers ages 15–20 who were killed in motor vehicle traffic crashes, 604 (30 percent) had a BAC of 0.01 or higher (National Highway Traffic Safety Administration [NHTSA], 2024).
- Alcohol use contributes to long-term cognitive impairment, sexual assault, and suicide and is associated with academic problems (Abbey et al., 2004; Brown & Tapert, 2004; Bradley & Greene, 2013).
- Early initiation of drinking is associated with development of AUD later in life (Buchmann et al., 2009; Grant & Dawson, 1997; Hingson & Zha, 2009; Liang & Chikritzhs, 2015).

Prevalence of Alcohol Use Disorder Among Youth

Although most underage people who binge drink do not meet criteria for AUD based on DSM-5 criteria (APA, 2013), the prevalence among this group is nonetheless substantial, with 5.7

¹¹ All mentioned racial/ethnic groups are non-Hispanic, except for the Hispanic group.

¹² YRBS data are collected every 2 years; data for 2023 are included in the current *RTC*.

percent of 12- to -20-year-old individuals meeting past year AUD criteria in 2022 (CBHSQ, 2024). The past year prevalence rate for AUD in 18- to -20-year-olds (11.3 percent) is significantly lower than the prevalence rates for 21- to -24-year-olds (19.4 percent), 25-to -29-year-olds (18.1 percent), and 30- to -34-year-olds (15.7 percent; CBHSQ, 2024).

Underage Access to Alcohol

Selling or giving alcohol to youth under age 21 is illegal in all 50 states and the District of Columbia, although in some states it is legal to provide alcohol to underage youth under special circumstances, such as at religious ceremonies, in private residences, or in the presence of a parent or guardian. (For detailed data, see the companion report to this *RTC*, the *SPBP Report*, at https://www.stopalcoholabuse.gov.) Despite the broad restrictions of the age 21 minimum legal drinking age (MLDA), underage youth find it relatively easy to acquire alcohol, often from adults. This may indicate that evidence- and community-based strategies to reduce underage access should be more widely implemented. As seen in Exhibit E.5, younger underage people who drink (ages 15–17)¹³ are more likely to receive alcohol from another underage individual (18.2 percent), to take it from their own home (16.6 percent), or to receive it from their own parent or guardian (15.4 percent) than from other sources (CBHSQ, 2023a). Older underage people (ages 18–20) who drink are more likely to have received it from an unrelated adult who gave it to them (24.2 percent) or from someone (either adult or underage) who purchased it for them (16.8 percent).



Exhibit E.5: Sources of Alcohol: NSDUH 2022 Data (CBHSQ, 2023a)

¹³ Estimate for ages 12–14 was suppressed because of low statistical precision.

College Age Drinking

Approximately 40 percent of college students are under age 21. Underage drinking rates in the past month are significantly higher for college age (18- to 20-year-olds; 31.6 percent) than for high-school-aged youth (ages 12-17 years; 6.8 percent), according to NSDUH data (CBHSQ, 2024). Similarly, binge drinking rates reported on the NSDUH for 18- to 20-year-olds (17.9 percent) are significantly higher than binge drinking rates for 12- to 17-year-olds (3.2 percent). MTF data for 2022 also show that a higher but not significantly different percentage (62.5 percent) of college students (approximately ages 18-22) report past-month drinking, compared with 54.1 percent of those of the same age but not in college (Patrick, Miech, et al., 2023). Binge rates for college (27.7) and non-college (23.9) individuals were not significantly different. Problems associated with college drinking, in addition to traffic crashes and injury-related deaths, include drinking beyond personal limits, sexual assault, other violent crime on college campuses, and reduced academic performance (White & Hingson, 2013). A study of negative alcohol-related consequences in a sample of over 1,000 19- and 20-year-olds found that about half (50.3 percent) reported at least one negative consequence of alcohol use in the past 12 months, which includes emotional and physical, relational, and performance/financial consequences (Patrick et al., 2020).

Co-Use of Alcohol and Drugs

The increase in the number of states legalizing cannabis for medical and nonmedical use has raised a concern about the effects of alcohol and cannabis co-use, either concurrently (use of both substances, but not together) or simultaneously (using both substances together, such that their effects overlap) in adolescents.¹⁴ There is evidence that the rates of simultaneous use of alcohol and cannabis have increased historically among early (ages 18 to 25) and mid-young (ages 26 to 34) adults who use alcohol (Terry-McElrath & Patrick, 2018).

Cross-sectional and longitudinal studies across multiple ages have demonstrated that people with co-use (including young adults) have an increased risk for substance-related behaviors and harms, including driving under the influence, blacking out, and other negative consequences (e.g., being physically sick and engaging in violent behavior) when compared with those who only report use of a single substance (Gunn et al., 2018; Karoly et al., 2020; Linden-Carmichael et al., 2019). Tailored prevention efforts require an understanding of the patterns of co-use and age groups most at risk (Linden-Carmichael & Wardell, 2021). During the time period from January 2021 through September 2023, 31 percent of alcohol-related visits to an emergency department in individuals under 21 years involved multiple substance use, primarily cannabis (SAMHSA, 2024).

Alcohol consumption is also associated with prescription drug misuse. Although the rate of coingestion of alcohol and various prescription drugs is relatively low, emergency department visits, depression, and other substance use behaviors are significantly associated with coingestion. More than 75 percent of adolescents who co-ingest report at least one substance use disorder (SUD; Ford et al., 2023).

¹⁴ Cannabis refers to the genus of flowering plants within the Cannabaceae family; marijuana is a species of cannabis. The term cannabis is used to refer both to cannabis and marijuana in this report.

Prevention Efforts

Since the mid-1980s, underage drinking prevention efforts have been implemented at the federal, state, tribal, and local levels. Evidence-based prevention, intervention, treatment, enforcement, and recovery strategies are described and called for in Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs and Health (SAMHSA, 2016); the Community Preventive Services Task Force Guide to Community Preventive Services: Preventing Excessive Alcohol Consumption (Guide to Community Preventative Services, 2022); CollegeAIM: College Alcohol Intervention Matrix (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2015); the Surgeon General's *Call to Action to* Prevent and Reduce Underage Drinking (HHS, 2007); the National Research Council (NRC) and Institute of Medicine (IOM) report Reducing Underage Drinking: A Collective Responsibility (NRC & IOM, 2004); and the NIAAA Call to Action: Changing the Culture of Drinking at U.S. Colleges (NIAAA, 2002). Several of these important initiatives are noted in Chapter 4 of this report.

A Coordinated Federal Response to Underage Drinking: The STOP Act

In 2006, Congress enacted the STOP Act to address underage drinking in the United States. The STOP Act formalized ICCPUD and required annual reports to Congress on (1) underage drinking at the national level; (2) the national media campaign; (3) state performance and best practices; (4) and each state's underage drinking prevention and enforcement efforts.

Framework for Success in Reducing Underage Drinking

Epidemiological data demonstrate that the rate of underage drinking has decreased over the past decades in several segments of the 12- to -20-year-old population. It is not clear what has caused this decline in underage drinking, but it most likely is due to a combination of factors,

ICCPUD includes the following officials, as specified in the STOP Act:

- Secretary of HHS
- Secretary of Education
- Assistant Secretary of Health
- Attorney General
- Secretary of Transportation
- Secretary of the Treasury
- Secretary of Defense
- Assistant Secretary for Mental Health and Substance Use
- Assistant Secretary for Children and Families
- Surgeon General
- Director of CDC
- Director of NIAAA
- Director of NIDA
- Director of the Office of National Drug Control Policy
- Administrator of NHTSA
- Administrator of the Office of Juvenile Justice and Delinguency Prevention
- Chairman of the Federal Trade Commission
- Director of the Administration for Healthcare Research and Quality
- Associate Director of the Behavioral Research Program, NCI

including increased attention to the risks of underage drinking at all levels of society. However, the exact combination of factors that has driven the decrease is not known.

Since the early 1980s, federal initiatives have elevated the issue of underage drinking to a more prominent place on the national public health agenda (most notably through passage of the MLDA Act), contributed to a policy climate in which relevant legislation has been passed by states and localities, stimulated coordinated citizen action, and raised awareness of the importance of proactive and systematic enforcement of laws. Private and public efforts have also supported the development of drug-free communities that engage numerous sectors in efforts to

prevent and reduce underage alcohol and other drug use, such as schools, medical systems, law enforcement, social services, and more. The changes described above have provided a framework for a national commitment to reducing underage drinking. Sustained progress requires the identification and implementation of new evidence-based strategies and the continued support of successful strategies.

The federal agencies that participate in ICCPUD (see Appendix A and the sidebar in this section)¹⁵ contribute leadership and vision to this national effort commensurate with their missions and mandates. In 2018, ICCPUD updated its Comprehensive Plan with three broad goals and three targets for underage drinking reduction (described below under "Extent of Progress"). The most recent update of the Comprehensive Plan was approved by ICCPUD in 2022.

Every ICCPUD agency engages in programs and activities that are aimed, either directly or indirectly, at underage drinking prevention or reduction. Together, these programs and activities constitute a complementary and coordinated federal approach that has helped reduce underage drinking. For example:

- NIAAA supports research on prevalence and patterns of underage alcohol use, underage drinking prevention, and treatment for youth who misuse alcohol or who have AUD.
- NIDA advances the science on the causes and consequences of drug use, including alcohol.
- CDC prevents excessive alcohol use and its impact in states and communities through public health surveillance, partnerships, and applied research for translation into public health practice. CDC also works to prevent alcohol-related harms, including motor vehicle crash injuries, other injuries, violence, sexually transmitted infections, and fetal alcohol spectrum disorders.
- SAMHSA works to reduce underage demand for alcohol by advancing prevention, treatment, and recovery support services.
- NHTSA provides data on underage alcohol use and traffic crashes.
- SAMHSA, CDC, and the National Institutes of Health (NIH) all conduct surveys (either directly or through grants and cooperative agreements) that gather current data on underage alcohol use.

Effective Solutions

Comprehensive underage drinking prevention and reduction efforts include a balance of evidence-based prevention, intervention, treatment, and enforcement policies, programs, and practices that are implemented at multiple levels, including the federal, state, tribal, community, family, school, and individual levels. Policies, programs, and practices may be environmental (aimed at altering physical, economic, and social environments and focused on entire populations or a subpopulation) or individual (designed to impart knowledge, change attitudes and beliefs, or teach skills to youth and adults).

Policy Approaches

The 2016 Surgeon General's report titled *Facing Addiction in America* (SAMHSA, 2016) emphasizes the importance of environmental policies, noting that prevention interventions that

¹⁵ As specified in the STOP Act, ICCPUD is composed of 16 federal officials, some of whom have delegated participation to specific agencies and/or staff. In 2022, the Assistant Secretary for Mental Health and Substance Use added the Director of the Agency for Healthcare Research and Quality as a Principal. Although not enumerated in the (STOP) law, other agencies have chosen to participate.

affect everyone, rather than only those at highest risk, are likely to have the greatest impact on reducing alcohol misuse, including underage drinking. In addition, the Surgeon General's report notes that "research has shown that policies focused on reducing alcohol misuse for the general population can effectively reduce alcohol consumption among adults as well as youth." Environmental-level strategies aimed at primary prevention for the general population that were found by the Surgeon General's report to be evidence-based include (1) increasing alcohol taxes, (2) regulating alcohol outlet density, and (3) imposing commercial host (dram shop) liability.

Evidence-based environmental policies to specifically reduce underage drinking identified in the 2016 Surgeon General's report *Facing Addiction in America* (SAMHSA, 2016) include:

- Retaining the 21 MLDA
- Compliance checks of alcohol retailers to monitor whether they are selling to underage buyers
- Zero-tolerance laws that prohibit underage drivers from having any measurable BAC
- Use/lose laws that take away underage drivers' licenses for alcohol violations
- Laws that impose criminal and civil liability on adults for hosting underage drinking on their property
- Proposals for reductions in alcohol advertising

(Note: These and other state legal policies identified as best practices for underage drinking reduction are discussed at length in the companion to this report, the *SPBP Report*, available at <u>https://www.stopalcoholabuse.gov</u>. An additional source of evidence-based policies addressing prevention of adult and underage alcohol misuse is *Implementing Community-Level Policies to Prevent Alcohol Misuse*, from SAMHSA's National Mental Health and Substance Use Policy Laboratory [https://www.samhsa.gov/resource/ebp/implementing-community-level-policies-prevent-alcohol-misuse].)

Environmental-level interventions could be complemented by individual-, family-, and schoollevel approaches. When considering which strategies to implement, communities could prioritize environmental-level interventions, as they have been shown to have the greatest impact on alcohol misuse. However, when done in conjunction with environmental-level efforts, approaches that focus on individuals, families, or schools can work together to create a communitywide prevention system to prevent and reduce alcohol misuse among youth (SAMHSA, 2016).

Details of specific programs and policies supported by federal agencies are provided in Appendix B.

National Media Campaign

The STOP Act mandated the creation of a national media campaign to prevent underage drinking. The "Talk. They Hear You."[®] (TTHY) national media campaign was developed by SAMHSA's Center for Substance Abuse Prevention in response to this directive.

The original goal of TTHY was to provide parents and caregivers with the resources they need to address the risks of alcohol use with their children. Through strategic expansion, the campaign now supports SAMHSA's efforts to reduce both underage drinking and other substance use. Changes in laws in 2012 regarding legalizing recreational cannabis in Washington State (Initiative 502 [I-502]) and legalizing recreational cannabis sales to adults in Colorado (Amendment 64) raised concerns regarding the implications for adolescents. Several ICCPUD agencies raised concerns that changes in cannabis-related policy and public opinion may lead to

increased access to cannabis among young people in the United States and may affect alcohol policy and the goals of ICCPUD.

As a result of this concern, SAMHSA began looking at expanding the TTHY efforts to include other substances in addition to alcohol. After conducting a review of the literature related to policy and public opinion associated with increased access to cannabis among young people in the United States and finding that there were no studies that systematically examined trends, ICCPUD continued to track the issue. The TTHY campaign also received separate funding to expand its content to include information on alcohol and other substances in 2017 amid growing ICCPUD concerns regarding other substance use or co-use, the nation's opioid crisis, and changes in laws regarding cannabis in a growing number of states across the country. Recognizing the dynamic national context, SAMHSA expanded TTHY to prepare parents and caregivers to talk with their children about alcohol and other drugs, including prescription pain medications and cannabis.

The most visible TTHY campaign resources are its television, radio, and print public service announcements (PSAs). Since the campaign launched in 2013, TTHY television, radio, and print PSAs have collectively garnered more than 23.6 billion impressions, with 2.35 billion of those impressions occurring in 2023. The TTHY campaign continues to evolve and has developed a diverse suite of informational, educational, and promotional resources beyond PSAs—including a mobile application, discussion starter guides and videos, and resource guides/toolkit—to help communities promote and implement the campaign locally and empower parents and caregivers to start talking with their children about alcohol, drugs, and other dangerous substances. The annual report to Congress on the status of this campaign is presented in Chapter 5.

Progress in Addressing Underage Drinking

Significant progress in reducing underage drinking has been achieved over the past several decades. Data collected during 2020 and 2021, at the height of the COVID-19 pandemic, cannot be compared with historical data. However, historical data on past-month alcohol use among individuals ages 12–20 show a 35.5 percent decline from 2004 to 2019 (CBHSQ, 2021). Past-month alcohol use among individuals ages 12–20 was 15.1 percent in 2022 (CBHSQ, 2023a). Nevertheless, drinking rates for this group remain unacceptably high. Alcohol is still the most widely consumed substance among America's youth—used more often than cannabis and tobacco (CBHSQ, 2024). Alcohol use often begins at a young age, and underage youth who drink tend to binge drink and to consume more on a single drinking occasion than adults do, increasing the risk for harm. Approximately 54.0 percent of individuals ages 12–20 who reported drinking in the past month on the 2022 NSDUH survey also reported having engaged in binge drinking during the past month (CBHSQ, 2023a).

The benefits of reducing underage drinking are substantial, including saving lives and dollars and promoting the overall health of young people. Delaying the age at which young people begin drinking may reduce their chances of developing AUD and of experiencing other negative consequences in adulthood (Grant & Dawson, 1997). Proactively intervening on substance use behaviors at a young age has been shown to cut decades off the time required to reach a state of sustained recovery (Dennis, 2005). A recent study demonstrated that there are long-term consequences of adolescent SUD that are identifiable in adolescence (McCabe et al., 2022). This points to the need to screen adolescents for SUD and associated risk factors and highlights the need for upstream prevention as well as early intervention for adolescents, including interventions that are graded to SUD severity (Volkow & Wargo, 2022).

The implementation of effective prevention policy and environmental strategies aimed at reducing excessive alcohol use may have effects at multiple age levels. These prevention strategies may help further reduce underage drinking while also reducing excessive drinking among adults. Research has clearly shown a correlation between youth drinking behaviors and those of adults living in the same state, as well as a strong relationship between state alcohol policies affecting adult drinking and underage drinking rates (Bohm & Esser, 2023; Xuan et al., 2015). For example, in an older review assessing implementation and efficacy of various state policies over a 13-year period, Nelson et al. (2015) found that policies that were effective for addressing drinking by youth and alcohol-impaired driving were more commonly implemented than policies restricting adult consumption. Although previous studies have found a relationship between adult and youth drinking rates, it is unclear what the effect of more recent changes in policies, enforcement strategies, and other environmental factors will be on this relationship.

Continued Effort Is Needed

Sustained efforts to reduce underage drinking are needed at multiple levels, including prevention, intervention, treatment, recovery, enforcement, and research on policies, programs, and practices (Exhibit E.6). This multifaceted approach is needed to maintain the current successes and continue to lower the prevalence of underage drinking, along with the many problems associated with alcohol use. Wider adoption, implementation, and enforcement of evidence-based policies and programs will support this effort.

The shifting landscape of issues and trends related to underage drinking, as well as changes in youth drinking behavior, must be continually identified, monitored, and addressed. These issues may include:

- The systems of care (or lack thereof) for people who report underage drinking
- Continued assessment of the intersection of mental health issues in adolescents and related changes in drinking patterns because of stress, anxiety, and depression due to COVID-19
- Changes in state policies related to alcohol delivery and off-premises consumption instituted during the pandemic, particularly changes that have been made permanent
- The effects on both adult and adolescent drinking and alcohol-related harms caused by the increased availability of alcohol products related to recent changes in laws governing the sale of alcohol products on the internet
- Changes in cannabis policies and laws and possible resulting changes in consumption patterns and perception of risk of substance use
- Changes in youth drinking behavior, such as combining alcohol with other substances (e.g., prescription opioids)
- The continued development of new products that especially appeal to youth, such as alcohol-infused edibles and cannabis-infused alcohol

Ongoing engagement of policymakers, citizen coalitions, health professionals, educators, law enforcement, and others is essential to the implementation of effective prevention strategies for reducing underage drinking.



Exhibit E.6: Multifaceted Approach to the Reduction of Underage Drinking

Chapter 1: Public Health Consequences of Underage Drinking

CHAPTER 1 KEY POINTS

- Each year there are approximately 4,000 alcohol-related deaths among people younger than age 21 from underage drinking or excessive alcohol use by others, translating to an average of 54 years of potential life lost per death.
- In 2010, almost \$24.3 billion (about 10 percent) of the total \$249 billion economic cost of excessive alcohol consumption was related to underage drinking.
- Health and social impacts that directly affect the underage person who drinks include the risk of death due to motor vehicle traffic crash injuries, suicide, homicide, alcohol and drug overdoses, and other unintentional injuries.
- Additional risks related to underage drinking include altered brain development, engagement in risky sexual behavior, and involvement with the legal system.
- Social costs related to underage drinking include risks to other drivers and passengers and interpersonal violence.
- Youth alcohol consumption is associated with higher risk of cancer later in life, including highgrade prostate cancer for men and breast cancer for women.

CHAPTER 1: PUBLIC HEALTH CONSEQUENCES OF UNDERAGE DRINKING

Introduction

Underage drinking affects the health and wellbeing of not only the underage people who drink alcohol but also their families and their communities. This chapter includes a discussion of the specific adverse consequences of underage drinking, including both direct consequences to the underage individual who drinks and broader social costs.

Underage drinking not only imposes societal costs in the short-term but also increases societal costs over time because of the increased risk of the later development of chronic conditions among youth who start drinking at young ages, including alcohol use disorder (AUD; National Research Council [NRC] & Institute of Medicine [IOM], 2004). The economic costs are substantial. In 2010, the latest estimate available, almost \$24.3 billion (about 10 percent) of the total \$249 billion economic cost of excessive alcohol consumption was related to underage drinking. Approximately 56 percent of underage drinking costs can be attributed to lost productivity; most of that cost is due to premature mortality from alcohol-attributable conditions involving underage youth (Sacks et al., 2015).

Direct Adverse Consequences

Each year, there are approximately 4,000 alcohol-related deaths among people younger than age 21 (Centers for Disease Control and Prevention [CDC], 2024a). These losses, which are from underage drinking or excessive alcohol use by others, translate to an average of 54 years of potential life lost per death.¹⁶ Underage drinking contributes to a wide range of costly health and social problems, including:

- Motor vehicle traffic crash injuries and other unintentional injuries (e.g., burns, falls, and drownings)
- Suicides and interpersonal violence (e.g., homicides, sexual assaults, and other assaults)
- Alterations in brain development
- Risky sexual behavior, sexual violence victimization and sexual violence perpetration
- Decreased academic performance
- Increased risk of developing alcohol-related problems, including AUD¹⁷, later in life
- Increased cancer risk

Mortality and Injury From Traffic Crashes

Alcohol consumption contributes to motor vehicle crashes, particularly for young drivers. The association between blood alcohol concentration (BAC) and crash risk is higher in young drivers (under 21) than in older drivers, and this elevated risk is evident even at very low BAC levels (0.01 percent). The rate of increase in risk as BAC increases is also markedly higher for drivers under age 21 than for older drivers (Peck et al., 2008).

¹⁶ The Alcohol-Related Disease Impact Application reflects annual and state average annual alcohol-attributable deaths for 2020-2021.

¹⁷ The National Survey on Drug Use and Health (NSDUH) now assesses adolescent substance use disorders based on *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*, (DSM-5) criteria.

In 2022, of the 2,034 drivers ages 15–20 who were killed in motor vehicle traffic crashes:

- 604 (30 percent) had a BAC of 0.01 percent or higher¹⁸
- 506 (25 percent of the total 2,034; 83.8 percent of those young drivers with an elevated BAC) had a BAC of 0.08 percent or higher
- 98 (5 percent of the total 2,034) had a BAC of 0.01-0.07 percent¹⁹

Although traffic fatalities for all drivers had been generally decreasing over time, there was an increase in the number of traffic fatalities in 2020 compared with 2019, resulting in the highest number of traffic deaths recorded since 2007 (Stewart, 2022). However, motor traffic fatalities declined overall by 1.7 percent in 2022 compared to 2021. Fatal traffic crashes involving young drivers 15 to 20 years old decreased by 5.5 percent from 2021 to 2022 (NCSA, 2024).

Suicide, Homicide, and Other Causes of Injury-Related Death

In addition to contributing to motor vehicle crashes, underage drinking contributes to all major causes of fatal and nonfatal injuries experienced by people ages 12–20, including suicide, homicide, and unintentional injuries other than motor vehicle crash injuries (CDC, 2024c; see Exhibit 1.1).

In 2022, an estimated 14,497 youth ages 12–20 died from injuries, either unintentional, violencerelated, or undetermined intent (CDC, 2024c). Of the 7,144 unintentional injuries, 3,799 deaths involved motor vehicle traffic crashes and 2,171 involved poisoning, which includes alcohol and drug overdoses. The remaining unintentional injury deaths were caused by other events, such as drowning, falls, and fires/burns. An almost equal number of youths (7,111) died from violencerelated causes, including homicide and suicide.



Exhibit 1.1: Injury-Related Fatalities for Youth Ages 12–20: 2022 (CDC, 2024c)

¹⁸ National Highway Traffic Safety Administration (NHTSA) has found that alcohol impairs driving-related skills for a range of drivers at 0.02 percent BAC, the lowest tested level. The magnitude of impairment increased consistently at BACs through 0.10 percent, the highest level tested (Moskowitz et al., 2000).

¹⁹ Special data analysis provided by NCSA, NHTSA for this report (NHTSA, 2024).

As shown in Exhibit 1.1, suicide was the third leading cause of injury-related fatalities among adolescents 12–20 in 2022 (CDC, 2024c). It also ranks as the third leading cause among all deaths in this age range.

Alcohol use is often implicated in adult and adolescent suicide attempts and completions. A 2019 meta-analysis concluded that globally and across all age groups, the odds of suicidal behavior are about three times higher among individuals with AUD compared with those without AUD (Conner & Bagge, 2019; Baiden et al. 2019). Compared with adolescents who reported no alcohol use, adolescents who initiated alcohol before age 13 had 1.60 times higher odds of experiencing suicidal ideation; adolescents who initiated alcohol use by age 13 or over had 1.47 times higher odds of experiencing suicidal ideation.

An analysis of the 2014–2016 National Violent Death Reporting System data showed that among the 4,596 youth ages 10–20 who died violently and had a recorded BAC, 24.6 percent had a positive BAC and 8.4 percent had a BAC greater than or equal to 0.08 percent (Greene et al., 2021).

Homicide was the second leading cause of intentional injury-related death for individuals ages 12–20 in 2022. Data on alcohol involvement in homicides among adolescents are very limited; most of the research assesses adult populations and measures the alcohol status of the victim rather than the perpetrator, making it difficult to ascertain perpetrator alcohol consumption levels.

Alterations in Brain Development

Underage alcohol consumption can impair normal brain development in adolescence, which can have long-term consequences. During adolescence, dramatic changes to the brain's structure, neuron connectivity ("wiring"), and physiology occur (Restak & Grubin, 2001). These changes affect everything from emerging sexuality to emotionality and judgment. However, not all parts of the brain mature at the same time. Differences in maturational timing across the brain can result in impulsive decisions or actions, disregard for consequences, and emotional reactions that can lead to alcohol use or otherwise put teens at serious risk of harm.

Neurobiological research suggests that adolescence may be a period of unique vulnerability to the effects of alcohol. A 2018 review of research on adolescents who consume alcohol, particularly those who engage in binge drinking, shows that early and heavy alcohol use can have

The adolescent brain may be uniquely vulnerable to the negative effects of alcohol consumption.

negative effects on the neural and cognitive development of the brain. Physiological effects include suppression of maturational changes in the adolescent brain. Negative effects on cognition and personality include decreased ability in planning, executive functioning, memory, spatial operations, verbal learning, and attention, all of which play important roles in academic performance and future levels of functioning (Spear, 2018).

Research to date does not address to what extent the negative consequences of adolescent alcohol exposure on the brain can be reduced. The neurocognitive effects of combining alcohol with other drugs are also not clear. As Spear (2018) notes, the potentially permanent and long-lasting effects of alcohol exposure on the adolescent brain are not generally communicated to the public. Because adolescents are biologically predisposed to seek out novel and potentially risky experiences (which include the use of alcohol and other drugs), this suggests that the most

effective prevention strategies for this age group involve policies that restrict access to alcohol (Spear, 2018).

Very early exposure to alcohol that occurs during pregnancy can result in fetal alcohol spectrum disorders (FASD), including fetal alcohol syndrome. Prevalence rates for FASD in the United States are estimated to be between 2 percent and 5 percent; these prevalence rates are probably an underestimate because of several factors, including the complexity of diagnosis and overlap with alternative diagnoses (Wozniak et al., 2019).

Risky Sexual Behavior, Sexual Violence Victimization and Perpetration

Alcohol use and risky sexual behavior (which includes unintended and unprotected sexual activity and any behavior that increases one's likelihood of contracting a sexually transmitted

Alcohol and other substance use is associated with risky sexual behavior, sexual violence, and dating violence. infection) tend to be positively correlated across studies of adolescents, but the relationship is complex. Individual, contextual, and environmental factors significantly affect the co-occurrence of these risk behaviors. The association is more clearly seen in females, with additional differences by ethnicity. For example, a review of studies involving college

students concluded that the association between alcohol use and risky sexual behavior is moderated by the existing relationship with a partner and the level of drinking (Brown et al., 2016). The positive association between substance use and risky sexual behavior is also found with multiple drugs, not just alcohol (Ritchwood et al., 2015).

In teens, use of alcohol, misuse of prescription drugs, and using the two substances combined was determined to be a significant risk factor for subsequent sexual violence and dating violence among adolescents in high school (Espelage et al., 2018). Badour et al. (2020) assessed the correlation of drinking patterns with both experiencing assault and perpetration of sexual violence in male and female high school students.²⁰ Both sexual violence victimization and perpetration were associated with current binge drinking (consuming four or five or more drinks in a row) and problem alcohol use in males and females.²¹ However, regardless of alcohol use patterns, high school females were more likely to experience sexual violence victimization (21.2 percent, versus high school males at 13.3 percent), whereas males were more likely to report sexual violence perpetration (10.8 percent, versus 5.2 percent for females). For males and females who reported both experiencing victimization and engaging in sexual violence perpetration, the rates of binge drinking and having two or more alcohol problems were quite high. The research is not clear on the temporal nature of the association between sexual violence victimization and alcohol use-that is, whether the experience of sexual violence victimization increases the risk for problem drinking, binge and heavy drinking are risk factors for the experience of sexual violence victimization, or the relationship is bidirectional (Badour et al., 2020).

Interventions developed to date tend to focus on reducing binge and heavy drinking. As Gilmore et al. (2018) note, however, it is the perpetrator who is always at fault for the sexual assault;

²⁰ Includes sexual coercion, use of threat of or actual physical force, and alcohol-/drug-facilitated or incapacitated sex.

²¹ Includes experiencing blackouts, fighting, or doing poorly in school; doing things that are later regretted; or missing work or school due to alcohol consumption.

interventions that attempt to reduce risk for the victim, as is found primarily at the college level, can be controversial, as they may appear to focus blame on the victim.

Decreased Academic Performance

In general, studies of underage drinking and academic performance indicate that drinking is associated with poorer school performance. A 2013 literature review found a statistically significant inverse relationship between alcohol use and academic achievement (Bradley & Greene, 2013). In general, cross-sectional studies have found that students who do poorly in school drink more than students whose school performance is better (Bryant et al., 2003). Similarly, a more recent cross-sectional study utilizing Youth Risk Behavior Survey (YRBS) data found that students' use of substances (which included alcohol), sexual risk, violence-related behaviors, and suicide-related behaviors were associated with lower self-reported grades (mostly Ds and Fs; Rasberry, 2017).

Cross-sectional studies do not address the direction of the relationship between underage alcohol use and academic performance. The available longitudinal data are somewhat mixed, and in some cases, data suggest that academic failure leads to increased drinking rather than the reverse. For example, a 1-year longitudinal analysis of middle school and high school students using the National Longitudinal Study of Adolescent to Adult Health found that independent of consumption levels, students who drank experienced modest declines (one-tenth of a letter grade) in academic achievement (Crosnoe et al., 2004). Using a similar design, Crosnoe (2006) found that academic failure was a greater risk factor for later adolescent drinking than adolescent drinking was for later academic failure. Academic failure appeared to lead to increased drinking through weakened bonds that traditionally control problem behavior, especially bonding to teachers (Crosnoe, 2006). Conversely, Renna (2008) tracked educational attainment and alcohol use at ages 19 and 25 among two cohorts of 18-year-olds in 1982 and 1983, using data from the National Longitudinal Survey of Youth (NLSY; Rothstein et al., 2019). Binge drinking in the senior year of high school reduced the probability of receiving a high school diploma and increased the probability of graduating later in life with a General Educational Development diploma (and hence realizing lowered earning potential). The study also found that increases in the minimum legal drinking age increased the probability of people graduating by age 19 by 5.3 percentage points. In contrast with the above study findings, using data from the Youth Development Study, Mortimer (2003 and 2015), Owens et al. (2008), and Harris and Udry (2021) tracked a panel of youth from their freshman to senior years of high school and failed to find a significant link across the high school years between increased drinking and diminishing academic performance.

College-age drinking also has educational impacts. About 25.0 percent of college students report academic consequences because of their drinking, including missing class, falling behind, doing poorly on exams or papers, and receiving lower grades overall (White & Hingson, 2013). A 2017 longitudinal study found that individuals with moderate to high alcohol use who also engaged in low, or no marijuana use (approximately 40.0 percent of the sample) had lower grade-point averages (GPAs) compared with peers with no or low substance use at the onset of college. However, those who used both marijuana and alcohol moderately to heavily had even lower GPAs that declined over time (Meda et al., 2017).

Increased Risk of Developing Alcohol-Related Problems Later in Life

Early-onset alcohol use—alone and in combination with increased drinking in adolescence—has been noted as a risk factor for developing increased alcohol involvement in later life (Agrawal et

al., 2009; Dawson et al., 2008; Grant et al., 2005; Hingson et al., 2006; Hingson & Zha, 2009; Pitkänen et al., 2005; York et al., 2004). Although most people who drink excessively are not alcohol-dependent, excessive drinking is a risk factor for AUD. Grant and Dawson (1997) found that more than 40.0 percent of people who initiated drinking before age 13 met *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) diagnostic criteria for alcohol dependence at some time in their lives. For youth ages 12–17, approximately 5.6 percent developed AUD within 12 months of first alcohol use (Volkow et al., 2021).

The initiation of alcohol consumption in childhood or early adolescence is also associated with later use of alcohol and other drugs, substance use disorder (SUD), and drug-related motor vehicle crash involvement (Hermos et al., 2008; Hingson et al., 2008). Use of both alcohol and cannabis or alcohol, cannabis, and cigarettes before age 16 is associated with a spectrum of young adult substance use problems (e.g., binge drinking; use of illicit drugs such as cocaine and methamphetamine), as well as SUD diagnoses (Moss et al., 2014).

Adults who had started drinking at age 14 were three times more likely to report driving after having drunk too much ever in their lives than were those who had begun drinking after age 21. Motor vehicle crashes were four times more likely for those who had begun drinking at age 14 than for those who had begun drinking after age 21 (Hingson et al., 2002).

Increased Risk of Cancer

There are increasing data demonstrating a relationship between alcohol consumption and cancer. There were more than 20,000 alcohol-attributable cancer deaths in the United States per year during 2020 and 2021 (Esser, Sherk, Liu, Henley, et al., 2024) and more than 75,000 alcohol-attributable cancer cases during 2013 to 2016 (Goding et al., 2021). Globally, alcohol use is the second leading risk factor for cancer (Tran et al., 2022). In the United States in 2014, alcohol was the third leading modifiable risk factor for cancer (Islami et al., 2018). Youth alcohol consumption is associated with cancer later in life; men who drank weekly between ages 15 and 19 were three times more likely to be diagnosed with high-grade prostate cancer than men who did not drink during that age range (Michael et al., 2018). For women, alcohol consumption during early adulthood (18–40) is associated with increased risk of breast cancer; this holds true regardless of how much alcohol is consumed later in life (Chen et al., 2011).

Increased Risks From Concurrent and Simultaneous Substance Use

For people under age 21, cannabis is the second-most commonly used illicit substance after alcohol, and it is often used with alcohol.²² The increase in the number of states legalizing cannabis for medical and non-medical use has raised a concern about the effects of alcohol and cannabis co-use, either concurrently (use of both substances, but not together) or simultaneously (using both substances together, such that their effects overlap) in adolescents. There is evidence from the Monitoring The Future (MTF) that the rates of simultaneous alcohol and cannabis use have increased historically among early and mid-young adults who use alcohol (Terry-McElrath & Patrick, 2018). An analysis of NSDUH data during the years covering 2002–2018 for young adults (ages 18–22) found that although alcohol use overall declined during that time period, marijuana use increased, and co-use of alcohol and marijuana also increased annually (McCabe et al., 2021).

²² Marijuana is classified as an illicit drug at the federal level, although a number of states have legalized consumption for adults. Tobacco may not be purchased by youth under age 21.

NSDUH data from 2022 indicate that 23.3 percent of individuals ages 12–20 who reported past month alcohol use also reported having used marijuana simultaneously or within 2 hours of the most recent use of alcohol, compared with only 10.3 percent of those age 21 or older (Center for Behavioral Health Statistics and Quality [CBHSQ], 2023a). During the time period from January 2021 through September 2023, 31 percent of alcohol-related visits to an emergency department in individuals under 21 years involved multiple substance use, primarily cannabis (Substance Abuse and Mental Health Services Administration [SAMHSA], 2024).

Cross-sectional studies across multiple ages have demonstrated that people who co-use (including young adults) have an increased risk for substance-related harms—including driving under the influence, blacking out, and cognitive consequences—when compared with those who only report having used a single substance (e.g., Karoly et al., 2020; Linden-Carmichael et al., 2019). Use of multiple substances in youth has been linked to heavier consumption patterns in adulthood compared with single or dual substance use (Han, Compton, Blanco, & DuPont, 2017). An analysis of data collected by the MTF survey indicates that high school seniors who consume 10-plus drinks in a row and people who use cannabis who consume one or more marijuana joints per day are more likely to report use of both substances simultaneously (Patrick & Terry-McElrath, 2017). Underage drinkers who consumed alcohol with more than one person, in someone else's home, a car, or multiple locations as reported on the NSDUH were also more likely to simultaneously use cannabis (LoParco et al., 2023).

Co-use of alcohol and cannabis may signal the presence of an additional SUD. An analysis of NSDUH data from 2002 to 2018 by McCabe et al. (2021) indicated that over 80.0 percent of young adults with a prescription drug use disorder (82.9 percent) or illicit drug use disorder (85.1 percent) reported having co-used alcohol and cannabis or having AUD and/or cannabis use disorder (McCabe et al., 2021).

Alcohol consumption is also associated with prescription drug misuse. Esser et al. (2021), using combined NSDUH data from 2016 to 2018, found that individuals who reported having engaged in binge drinking were twice as likely to report concurrent prescription drug misuse while drinking than non-binge drinkers. More than 25 percent of 12th graders who reported having engaged in extreme binge drinking (15-plus drinks in a row) also reported non-medical use of prescription medication, such as opioids, sedatives (central nervous system depressants)/ anxiolytics (medication to treat anxiety), and stimulants (McCabe et al., 2017). A study analyzing multiple years of NSDUH data (2015–2019) assessed prescription drug misuse combined with alcohol ingestion (co-ingestion) among adolescents ages 12-17 (Ford et al., 2023). The authors found that previous-30-day prescription drug misuse with alcohol coingestion was reported by 18.6 percent of adolescents who had misused prescription drugs. Although a relatively low percentage, this translated to approximately 67,410 adolescents. Coingestion was more common among adolescents who had misused prescription opioids and tranquilizers. It is notable that emergency department visits, depression, and other substance use were also significantly associated with co-ingestion. Co-ingestion of alcohol with opioids and tranquilizers was associated with a higher likelihood of an SUD; 77.5 percent of adolescents who had co-ingested reported having at least one SUD (Ford et al., 2023).

The potential effect of alcohol in combination with opioids is also a concern. Respiratory depression caused by opioids—which can be fatal—is exacerbated by the effects of alcohol in young adults (Schrier et al., 2017). In 2017, alcohol was involved in 14.7 percent of opioid overdose deaths, a 5.5-fold increase from 1999 (Tori et al., 2020). Deaths from opioid overdose

involving alcohol as a contributing cause increased by 40.8 percent during the first year of the COVID-19 pandemic (White et al., 2022).

McCabe et al., 2021 suggest that the changing landscape of drug use warrants changes in approaches to screening, intervention, and treatment for drug use and use disorders, focusing on polysubstance use rather than single substances. Tailored prevention efforts require an understanding of the patterns of simultaneous alcohol and other substance use and age groups most at risk (Linden-Carmichael & Wardell, 2021).

The simultaneous use of substances while driving also has significant public safety implications; substances can amplify each other's impairing effects (*Drug-Impaired Driving* | NHTSA, n.d.). Analysis of NSDUH data related to driving under the influence noted that 4.7 percent of males and 3.2 percent of females ages 16–20 reported having driven under the simultaneous influence of alcohol and illicit drugs in 2014 (Lipari et al., 2016). Although impaired driving decreased from 2002 to 2014, it remains a concern.

Social Costs and Associated Consequences

Mortality and Injury

People other than the underage individuals who drink also experience the consequences of underage alcohol use through destruction of property, unintentional injury, violence, and even death. In 2022, 1,330 people were killed in motor vehicle traffic crashes involving a 15- to -20-year-old driver with a BAC of 0.01 percent or higher. The distribution of fatalities by person type in 2022 is shown in Exhibit 1.2. As shown, 55 percent of deaths in traffic crashes involving a 15- to -20-year-old driver with a BAC of 0.01 or higher were people other than the young driver who had been drinking (e.g., passengers and occupants of other vehicles; NHTSA, 2024).

Exhibit 1.2: Distribution of Fatalities in Motor Vehicle Traffic Crashes Involving a 15- to -20-Year-Old Driver With a BAC of 0.01 or Higher by Person Type in 2022: NHTSA, Fatality Analysis Reporting System (FARS) 2022 Annual Report File (NHTSA, 2024)



Arrest estimates developed by the National Center for Juvenile Justice based on data published in the Federal Bureau of Investigation's *Crime in the United States* reports suggest that individuals under age 21 commit about 18.0 percent of violent crime (Office of Juvenile Justice and Delinquency Prevention, 2020). The degree to which alcohol is a factor in violent crimes committed by people who are younger than 21 is unknown. However, adolescent alcohol use, particularly alcohol use before age 13, is associated with higher odds of carrying a weapon (Baiden et al., 2021). Compared with adolescents who had never had alcohol, adolescents who reported having drunk alcohol before age 13 had more than double the odds of carrying a weapon, and those who reported having drunk alcohol at age 13 or over had 1.25 times higher odds of carrying a weapon.

Social and Individual Costs on College Campuses

The problems associated with college student drinking include sexual assault and other violent crime on college campuses (White & Hingson, 2013). A study of roughly 5,500 college women on two campuses revealed that nearly 20.0 percent experienced some form of sexual assault while at college (Krebs et al., 2009). A 2005 national survey of college students found that 97,000 students may experience alcohol-related sexual assault in a given year (Hingson et al., 2005). However, the incidence of college sexual assaults is difficult to measure, and different studies report different rates (DeMatteo & Galloway, 2015).

A review by Abbey (2011) of three relevant studies of college students concluded that approximately half of reported and unreported sexual assaults involve alcohol consumption by the perpetrator, the person experiencing the crime, or both. Abbey and colleagues (2004) reported that if alcohol is involved, usually both the person experiencing the assault and the perpetrator have consumed alcohol. Estimates of perpetrators' intoxication during the incidents range from 30.0 percent to 75.0 percent.

An association of alcohol with sexual assaults has been demonstrated in younger age groups as well. A study of over 27,000 students in Maryland public high schools found that alcohol use was associated with increased odds of having experienced both physical and verbal teen dating violence compared with students who reported having not used alcohol (Parker et al. 2016).

Many other adverse social consequences are linked with college student alcohol consumption. Hingson et al. (2009) estimated that annually, more than 696,000 college students are assaulted or hit by another student who has been drinking. They estimated that another 599,000 are unintentionally injured while under the influence of alcohol. In addition, Hingson and colleagues (2009) estimated that roughly 474,000 students ages 18–24 have had unprotected sex while under the influence of alcohol. Further, each year, more than 100,000 students ages 18–24 report having had sexual intercourse while so intoxicated that they were unable to consent. About 11.0 percent of college students report having damaged property while under the influence of alcohol (Hingson et al., 2005).

Alcohol use contributes to problems encountered by all young adults, not just those in a college environment. A 2020 analysis of MTF data for young adults post-high school found that although 4-year college students more frequently reported negative consequences resulting from alcohol use than did non-attenders, individuals in 2-year technical/vocational school programs reported more unsafe driving after alcohol use. Overall, after total alcohol intake was controlled for, young adult women were more likely to report having engaged in behavior that caused them negative emotional and/or physical consequences from their alcohol use than men. The authors

note that the study's findings indicate that intervention and prevention efforts addressing the negative consequences of alcohol use are important for all young adults (Patrick et al., 2020).

It is evident that in addition to the negative consequences to individual youth who drink, there are substantial costs to society in young lives lost, lost productivity, and future increased healthcare costs.

Chapter 2: The Nature and Extent of Underage Drinking in the United States

CHAPTER 2 KEY POINTS

- Alcohol is the most widely used substance among youth ages 12 to 20 in the United States. Pastmonth alcohol use is reported by 13.8 percent of males and 16.5 percent of females.
- Binge drinking in the past month is reported by 8.2 percent of 12- to 20-year-olds. This represents 3.2 million underage youth.
- The percentage of females reporting binge drinking (8.9 percent) was significantly higher than the percentage for males (7.5 percent) for ages 12–20 combined.
- For every day in 2022, approximately 1,696 young people 12–14 years of age drank alcohol for the first time. Early initiation of alcohol use increases the risk for a variety of health and social problems during adolescence, as well as health problems later in life.
- For youth ages 12–20, approximately 5.7 percent reported having an alcohol use disorder (AUD) within the past 12 months prior to the survey. The prevalence of AUD for the oldest underage group (18- to -20-year-olds) was 11.3 percent.

CHAPTER 2: THE NATURE AND EXTENT OF UNDERAGE DRINKING IN THE UNITED STATES

Introduction

This chapter, in conjunction with Chapter 3, addresses these key mandates from the Sober Truth on Preventing Underage Drinking Act (STOP Act):

- Information on the onset and prevalence of underage drinking
- Patterns of underage consumption as described in research, including federal surveys
- Measures of the availability of alcohol and the means of underage access
- Measures of the exposure of underage populations to messages regarding alcohol in advertising and entertainment media as reported by the Federal Trade Commission (FTC)

Chapter 2 provides an overview of the current nature and extent of underage drinking, primarily utilizing data provided by three major national surveys funded by the federal government. The chapter then covers the extent of historical progress in reducing underage drinking in several key areas, including rates and prevalence of past-month alcohol use, binge drinking, age of initiation, and driving after drinking. Chapter 3 addresses availability and access, patterns of consumption, and advertising issues.

The COVID-19 pandemic necessitated changes in data collection methods and frequency for the National Survey on Drug Use and Health (NSDUH) and the Monitoring the Future (MTF) survey. The NSDUH data for 2020 and 2021 are therefore not suitable for comparison with historical data. Trend data from the NSDUH are reported with 2021 as the baseline. When data points for the MTF were insufficient in 2020 (which had a sample size that was approximately one-quarter of the usual sample, but was determined to be comparable), trend data are not fully available (Johnson et al., 2023b).

Federal Surveys Used in This Report

Current information on consumption and progress on reducing underage drinking is obtained through three major national surveys (Exhibit 2.1) funded by the federal government that collect data on, among other topics, underage drinking and its consequences:

- The annual NSDUH
- The annual MTF survey (conducted pursuant to federal grants)
- The biennial Youth Risk Behavior Survey (YRBS)

Key findings from these data sources and other research related to underage alcohol use in the United States are described in this chapter and in Chapter 3. In general, NSDUH data are used as the primary source; MTF and YRBS data are cited as the primary source when the NSDUH does not have comparable information.

Each survey makes a unique contribution to an understanding of the nature of alcohol use, and each survey was developed for a specific purpose. Direct comparison of findings across the three surveys (e.g., prevalence of underage drinking) is not generally appropriate because each survey has a unique design, a different data collection method (Chen et al., 2017; Fendrich & Johnson, 2001; Harrison, 2001), a different sampling frame and weighting approach (Cowan, 2001), and differences in measures (see Exhibits 2.1 and 2.2). The only overlap in the survey populations sampled is students in the 10th and 12th grades in traditional schools in 47 states (Exhibit 2.1).

Even so, reviewing trends over time for data collected within each survey is informative, as each survey provides a different perspective on the status of underage drinking.²³

Survey/ Sponsoring Agency	Purpose	Target Population	Administration Schedule	Data Collection Method
NSDUH — Substance Abuse and Mental Health Services Administration (SAMHSA) Center for Behavioral Health Statistics and Quality (CBHSQ)	Measurement of substance use, misuse, and use disorders for U.S. civilian, non- institutionalized population age 12 or older	Civilian, non- institutionalized population age 12 or older in the United States (residents of households and individuals in non- institutional group quarters)	Annually since 1990	In-person visits to homes and web-based data collection; computer- assisted audio self- interviews
MTF ²⁵ — National Institute on Drug Abuse (NIDA)	Measurement of alcohol use, tobacco use, and other drug use by secondary school students	Secondary school students in the coterminous United States in grades 8, 10, and 12; a randomly selected sample from each senior class has been followed up biennially after high school until age 30 and then every 5 years after that	Annually for 12th graders since 1975 and for 8th and 10th graders since 1991; biennially for college students and adults ages 19–30 and every 5 years thereafter, through age 60	School-based, self- administered questionnaire
YRBS — Centers for Disease Control and Prevention (CDC)	Assessment of a variety of behaviors that affect adolescent health, including alcohol consumption	Public and private school students in grades 9–12 in the United States and the District of Columbia	Biennially since 1991	School-based, self- administered questionnaire in the classroom

Exhibit 2.1: Summary of Major Federal Surveys Assessing Underage Drinking²⁴

²³ The European School Survey Project on Alcohol and Other Drugs (ESPAD), administered approximately every 5 years, collected the seventh wave of data, similar in content to the MTF survey, across 35 European countries in 2019. Selected comparisons of U.S. and European data are included in this report.

²⁴ See Chen, Yoon, & Faden (2017) for details on differences in the surveys.

²⁵ For comparability with 2022 NSDUH (the data available as this report was being prepared in 2023–24), the latest MTF data included in this report are also from 2022. The 2023 MTF data became available in December 2023 and will be included in the next report.
Measure ²⁶	Survey Source	Definition	
Current Alcohol Use	NSDUH	Any reported use of alcohol in the past 30 days (also referred to as "past-month use")	
	MTF	Any reported use of alcohol during the last 30 days	
	YRBS	Had at least one drink of alcohol on at least 1 day during the 30 days before the survey	
	NSDUH	Reported use of alcohol at least once in the respondent's lifetime	
Lifetime Alcohol Use	MTF	Used alcohol at least once during respondent's lifetime	
	YRBS	Had at least one drink of alcohol on at least 1 day during their life	
		[As of 2015]	
		Females: Reported drinking four or more drinks	
	NSDUH	Males: Reported drinking five or more drinks	
Binge Use of Alcohol		on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days	
	MTF	Reported five or more drinks in a row over the past 2 weeks	
		[As of 2017]	
		Females: Reported four or more drinks of alcohol in a row	
	YRBS	Males: Reported five or more drinks of alcohol in a row	
		within a couple of hours on at least 1 day during the 30 days before the survey	

Exhibit 2.2: Current Definitions of Alcohol Consumption by Survey

²⁶ Note: Measures based on gender do not appropriately account for transgender and gender-nonconforming individuals.

Measure ²⁶	Survey Source	Definition
Heavy Use of Alcohol	NSDUH	[As of 2015] Females: Reported drinking four or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on each of 5 or more days in the past 30 days Males: Reported drinking five or more drinks on the same occasion on each of 5 or more days in the past 30 days Heavy alcohol use is also, by definition, binge use of alcohol
Extreme Binge (Also Referred to as High-Intensity)	MTF	 10-plus: Reported drinking 10 or more drinks in a row over the past 2 weeks 15-plus: Reported drinking 15 or more drinks in a row over the past 2 weeks
Largest Number of Alcoholic Drinks in a Row Was 10 or More (Similar to Extreme Binge)	YRBS	10-plus: Reported 10 or more as the largest number of drinks in a row 30 days before the survey

Measuring Alcohol Consumption

Underage drinking is assessed both by examining self-reported drinking behavior directly and by assessing changes in behaviors and outcomes that are correlated with underage drinking. Historically, rates of past-month alcohol use among individuals ages 12–20 have shown a decline by over 35 percent, dropping from 28.7 percent in 2004 to 18.5 percent in 2019 (CBHSQ, 2021).

The 2022 NSDUH data are the basis for the current measures of self-reported alcohol consumption—past-month use, lifetime use, and binge and heavy alcohol use. NSDUH data from 2021 on are now the primary basis for measuring historical progress in reducing underage drinking over time for these same measures. Related measures from the MTF survey and the YRBS are provided when available. Additional details on differences by age and sex or gender are also included within each section.

Age

Reported ages and age subgroups vary by survey. For this report, special analyses of the NSDUH data are conducted by CBHSQ annually to assess the characteristics of underage youth (ages 12 to 20). Age subgroupings of 12-13, 14-15, 16-17 and 18-20 are also provided. The MTF data are grouped by grade—8th, 10th, and 12th graders, and four years post high-school—and divided into those attending college full-time versus those who are not (non-college). YRBS data are provided for high school age youth, grades 9 to 12.

In general, NSDUH data show that as age increases, alcohol consumption, including binge and heavy drinking, increases through early adulthood, and then tends to gradually decline (Exhibit 2.3).





Sex/Gender

Each of the major surveys gathers data and presents results by sex and/or gender slightly differently. Exhibit 2.4 provides the current language assessing sex/gender for each of the three major surveys used in this report.

Survey	Definition of Sex	Definition of Gender
National Survey on Drug Use and Health (NSDUH) ²⁷	Does not use sex as a variable	Defines gender as "male" or "female"
Monitoring the Future (MTF) ²⁸	What is your sex? "male," "female," "other or prefer not to answer"	Does not use gender as a variable

Exhibit 2.4: Definition of Sex/Gender by Survey

²⁷ Beginning with the 2023 NSDUH, the survey asks respondents their sex at birth and their gender identity,

including whether they identify as male, female, transgender, or another identity. These data will be reported in the 2025 RTC.

²⁸ <u>https://www.icpsr.umich.edu/web/ICPSR/studies/38503/variables</u>

Survey	Definition of Sex	Definition of Gender
Youth Risk Behavior Survey (YRBS) ²⁹	Defines sex as "male" or "female"	Asks youth whether they identify as transgender. Text includes, "Some people describe themselves as transgender when their sex at birth does not match the way they think or feel about their gender. Are you transgender?" Responses include, "No, I am not transgender," "Yes, I am transgender," "I am not sure if I am transgender," and "I do not know what this question is asking."

Any discussion of sex differences in underage drinking should include consideration of biological factors that may underlie or contribute to differences in drinking behavior and their consequences. Differences in body composition (e.g., increased body fat, decreased muscle mass, and subsequently less body water in females) may result in a greater blood alcohol concentration (BAC) in females compared with males consuming the same amount of alcohol. These physiological differences suggest that females may experience alcohol-related problems at lower doses of alcohol than males. On the other hand, males tend to have lower reactivity to alcohol (perceived effects of alcohol as a function of amount consumed), putting them at greater risk for binge and heavy drinking (Schulte et al., 2009).

For transgender individuals, current measures do not account for the impact of physiological changes in alcohol metabolism and associated health risks that may arise from medical changes associated with gender-affirming procedures (Gilbert et al., 2018). To improve the data in this area, Gilbert et al. recommend "being explicit as to whether and how sex and/or gender are operationalized and relevant for the research question, expanding the repertoire of alcohol measures to include those not contingent on sex or gender, testing the psychometric performance of established screening instruments with transgender populations, and shifting from descriptive to analytic study designs." In addition, the authors suggest use of sampling strategies in the future that ensure sufficient participation by transgender individuals.

Age and Gender

Alcohol consumption patterns differ by age and gender. For those ages 12 to 20, male rates of alcohol use and binge and heavy drinking rates used to exceed those of females. More recently, female rates tend to equal or exceed those of males of the same age. Although overall alcohol consumption, binge drinking, and high-intensity drinking are decreasing among adolescents, male rates are declining faster than female rates, creating a convergence and, more recently, a cross-over of rates in adolescents.

Similarly, adult males consume more alcohol, report higher levels of binge drinking, and are more likely to have an alcohol use disorder (AUD) than adult females. However, a review of data from 1976 through 2004 concluded that increases in adult consumption, binge drinking, and alcohol-related harms were driven largely by increases among women in their 30s and 40s (Exhibit 2.5; Keyes et al., 2019). This trend of greater increases in consumption for women compared with men appears to continue into older adult years, age 60 and older. More recently, preliminary evidence indicates that adult women were more likely to increase their levels of

²⁹ https://www.cdc.gov/healthyyouth/data/yrbs/pdf/2023/2023_YRBS_Standard_HS_Questionnaire.pdf

drinking during the early days of the COVID-19 pandemic (late May to mid-June 2020) and to report more alcohol-related negative consequences than males (Pollard et al., 2020).

	Developmental Period				
	Adolescence	Young Adulthood 18-25	Young Adulthood 26-29	Middle Adulthood	Older Adulthood Over 60
Male Pattern	Decreasing	Decreasing	Increasing	Static	Static
Female Pattern	Decreasing	Decreasing	Increasing	Increasing	Increasing
Gender	Males decreasing	Males	Females	Females rapidly	Females rapidly
Comparison	faster than	decreasing	increasing more	increasing	increasing
	females	faster than females	than males		

Exhibit 2.5: Alcohol Consumption Patterns by Developmental Period, Gender, and Age Cohort From 1976 to 2004 (Keyes, Jager, et al., 2019)

Current Alcohol Consumption

This section of the report provides data on the status of alcohol consumption by underage individuals, based on currently available data. Data are presented overall, and then by age and gender.

Past-Month Alcohol Use: National Survey on Drug Use and Health

NSDUH data from 2022 indicate that approximately 15.1 percent of 12- to -20-year-olds in the United States (or about 5.8 million young people) reported having used alcohol in the past month (CBHSQ, 2023a).³⁰

5.8 million young people ages 12–20 reported using alcohol in the past month (CBHSQ,

To put these numbers into context, alcohol continues to be the most widely used substance among U.S. youth. According to the results of the 2022 NSDUH survey, in the past month, 13.4 percent had used tobacco products and/or nicotine by vaping; 11.8 percent of 12- to -20-yearolds had used marijuana; 2.1 percent had used illicit drugs other than marijuana; and 0.5 percent had misused opioids (CBHSQ, 2023a; see Exhibit 2.6).

³⁰ Past-month alcohol use is defined for the NSDUH survey as having had any alcohol in the 30 days prior to the survey interview.





Past-Month Alcohol Use: Monitoring the Future and Youth Risk Behavior Survey

MTF data show similar patterns of overall substance use as demonstrated in the NSDUH data, except for nicotine use. In 2022, 6.0 percent of 8th grade students, 13.6 percent of 10th grade students, and 28.4 percent of 12th grade students reported having drunk alcohol in the 30 days prior to the MTF survey (Miech et al., 2023). The percentage of youth in grades 8, 10, and 12 who reported alcohol use was generally higher than those who used marijuana (5.0 percent of 8th graders; 12.1 percent of 10th graders; and 20.2 percent of 12th graders), and other illicit drugs (2.5 percent, 2.4 percent, and 3.6 percent for 8th, 10th and 12th graders, respectively). Any nicotine use (which includes vaping) was reported at 8.7 percent for 8th graders, 15.1 percent for 10th graders, and 24.8 percent for 12th graders. Exhibit 2.7 shows use of substances by each grade (Miech et al., 2023).

YRBS data for students in grades 9-12 from 2023, similar to the NSDUH data, also indicate greater use of alcohol in the past month (22.1 percent) than marijuana (17.0 percent), prescription opioid misuse (4.4 percent), tobacco products (6.5) and vaping (16.8 percent) by high school students (CDC, 2024b).



Exhibit 2.7: Past-Month Adolescent Substance Use By Grade: 2022 MTF Data (Miech et al., 2023)

Past-Month Alcohol Use: National Survey on Drug Use and Health by Age, Gender, and Age by Gender

Exhibit 2.8 provides a summary of past-month underage consumption overall and by selected age groups ages 12–20 for 2022. Consumption increases with age and there is a significant difference in past-month use of alcohol for 12-to-17-year-olds versus 18-to-20-year-olds (CBHSQ, 2024).

14-15

Alcohol Use in Past Month

16-17

0

12-13





Prevalence of current drinking differed by gender. According to 2022 NSDUH data, past-month alcohol use is reported by 13.8 percent of males and 16.5 percent of females ages 12–20. This difference is statistically significant (CBHSQ, 2024).

18-20

Age

Binge Alcohol Use in Past Month

12-17

12-20

Heavy Alcohol Use in Past Month

There were also differences in gender by age. Females in the 14-to-15-year-old and the 16-to-17-year-old age groups reported past-month alcohol use significantly more frequently than males in the same age group; differences between males and females ages 12-to-13 and 18-to-20 were not statistically significant (Exhibit 2.9; CBHSQ, 2024).





Binge Drinking: National Survey on Drug Use and Health

Among 12- to -20-year-olds, 8.2 percent had engaged in binge drinking on at least 1 day in the past 30 days, according to the 2022 NSDUH. This represents 3.2 million underage youth (CBHSQ, 2023a).³¹

Binge Drinking: National Survey on Drug Use and Health by Age and Gender

In 2022 binge drinking rates increased as age increased from 12 to 20, peaked at ages 21–25 (36.3 percent), and then decreased beyond young adulthood (Exhibit 2.3; CBHSQ, 2023a). The percentage of females reporting binge drinking in 2022 (8.9 percent) was significantly higher than the percentage of males (7.5 percent) for ages 12–20 combined (CBHSQ, 2024).

Binge Drinking Patterns, Underage vs Adults: National Survey on Drug Use and Health

According to NSDUH data, underage people who drink tend to drink less often than adults; however, when they do drink, they drink more intensely. As part of NSDUH, participants were asked about the number of drinks consumed on their last occasion of alcohol use in the past month. Underage people who drank had consumed, on average, 3.6 drinks per occasion 4.2 times a month; adults ages 21 to 25 had consumed an average of 3.1 drinks approximately 6.5 times per month, whereas adults age 26 or older who drank had averaged 2.5 drinks per occasion about 8.5 times a month (CBHSQ, 2024; Exhibit 2.10).

³¹ Binge drinking is defined in the NSDUH as four (for females) or five (for males) or more drinks on the same occasion either at the same time or within a few hours (CBHSQ, 2023b). This level of consumption is generally agreed to result in a blood alcohol level of 0.08 percent or above for most individuals (Krieger et al., 2018).





According to a theoretical analysis, youth ages 12–15 can reach the same BAC after consuming three to four drinks within 2 hours as people aged 18 or older who consume four to five drinks during this same time period (Donovan, 2009). This suggests that binge and heavy alcohol use may be even more of a problem than what is reflected in survey data and that it may be particularly dangerous for younger adolescents.

In 2021-2022, 48.7 percent of underage people who drank reported having consumed three or more drinks on a single occasion. More than 20 percent (22.2) of underage youth had consumed five or more drinks, and 4.9 percent had consumed nine or more drinks (Exhibit 2.11; CBHSQ, 2024).

Usual Number of Drinks/Occasion

Exhibit 2.11: Number of Drinks Consumed on a Single Occasion by Underage (Ages 12–20) Youth: 2021-2022 NSDUH Data (CBHSQ, 2024)



Combined 2021-2022 NSDUH data on the number of drinks consumed by males and females ages 12–20 by gender and age group are shown in Exhibit 2.12 (CBHSQ, 2024). Based on combined 2021-2022 NSDUH data, the total number of drinks consumed on the most recent occasion of alcohol use did not differ significantly by age group. Overall, females ages 12–20 were significantly more likely than males to report having consumed fewer drinks per occasion (one to four drinks); males ages 12–20 were more likely than females to have consumed five or more drinks (CBHSQ, 2024).

Exhibit 2.12: Number of Drinks Consumed on Last Occasion of Alcohol Use in the Past Month Among People With Past-Month Alcohol Use Ages 12–20 by Gender and Age Group: Combined 2021-2022 NSDUH Data (CBHSQ, 2024)



2024 Report to Congress on the Prevention and Reduction of Underage Drinking | 41

Binge Drinking: Monitoring the Future and Youth Risk Behavior Survey

According to the 2022 MTF survey, 2.2 percent of 8th graders, 5.9 percent of 10th graders, and 12.6 percent of 12th graders reported having consumed five or more drinks in a row at some point in the 2 weeks prior to the survey (Miech et al., 2023).

YRBS 2023 data indicate that 8.8 percent of students in grades 9–12 reported four (for females) or five (for males) or more drinks in a row in the 30 days prior to the survey. This represents a significant decrease in binge drinking from 2017 to 2023 (CDC, 2024b).

Binge Drinking: Monitoring the Future by Age and Gender

As reported in the MTF survey, binge drinking rates for females in high school in 2022 were 1.7 percent of 8th graders, 6.1 percent of 10th graders, and 11.2 percent of 12th graders. For males, rates were 2.1 percent for 8th graders, 5.4 percent for 10th graders, and 14.3 percent for 12th graders (Miech et al., 2023). Binge drinking for female college students was 27.5 percent; for male college students, the rate was 26.8 percent (Patrick, Miech, et al., 2023). For young adults of the same age (19–22) who were not in college, the female binge rate was 25.3 percent and the rate for males was 23.5 percent.

Heavy Alcohol Use: National Survey on Drug Use and Health

Approximately 1.7 percent of 12- to -20-year-old respondents (approximately 646,000) were classified as having engaged in heavy drinking in the 2022 NSDUH;³² 1.9 percent of males ages 12–20 reported heavy drinking compared with 1.4 percent of females (CBHSQ, 2023a).

Extreme Binge Drinking: Monitoring the Future and Youth Risk Behavior Survey

A subset of binge drinking is high-intensity (also referred to as extreme binge) drinking (HID), defined by the MTF using two measures: the consumption of 10 or more drinks or 15 or more drinks on one or more occasions during the previous 2-week period. Such drinking represents an even higher level of a consumption pattern (binge drinking) that is already known to be dangerous. In 2022, 4.3 percent of 12th graders reported having had 10 or more drinks in a row; 2.4 percent of 12th graders reported drinking 15 or more drinks in a row within the 2 weeks prior to the survey (Johnston, Miech, Patrick, O'Malley, Bachman, et al., 2023). Patrick, Evans-Polce, et al., (2023) note that the predictors of HID differ somewhat from those for binge drinking, which may have implications for early screening/intervention.

YRBS data from 2023 indicated that 2.2 percent of high school students (grades 9–12) reported having consumed 10 or more drinks within a couple of hours at least once in the previous month (CDC, 2024b).

Lifetime Alcohol Use: National Survey on Drug Use and Health

Lifetime alcohol use in the NSDUH represents respondents reporting ever having had alcohol (more than a sip) in their lifetimes. In 2022, 34.2 percent of underage (ages 12–20) youth reported lifetime alcohol use (CBHSQ, 2023a).

Lifetime Alcohol Use: Monitoring the Future

- As of 2022, alcohol has been consumed by 34.2 percent of people ages 12–20 at some point in their lives (CBHSQ, 2023a).
- In 2022, 3.2 million underage youth reported binge drinking in the past 30 days (CBHSQ, 2023a).

Per the 2022 MTF survey, 41.3 percent of 8th, 10th and 12th graders combined had alcohol at some point in their lives (Johnston, Miech, Patrick, O'Malley, Schulenberg, et al., 2023).

³² Heavy alcohol use is assessed in the NSDUH as binge drinking on five or more days in the past 30 days. By definition, all people who meet the criteria for heavy alcohol use also binge drink (CBHSQ, 2023b).

Alcohol Use and Sexual Identity: Youth Risk Behavior Survey

On the 2023 YRBS, students reporting having had same-sex partners were more likely than their peers to currently drink alcohol (47.8 percent) compared with those reporting having had opposite-sex only sexual contacts (40.4 percent; CDC, 2024b).

Alcohol Use by Race and Ethnicity: National Survey on Drug Use and Health³³

According to 2022 NSDUH data, White individuals ages 12–20 were significantly more likely to report past-30-day alcohol use than Black, Asian, and Hispanic individuals of the same age; The detailed prevalence of past-month alcohol use by gender and race/ethnicity was:

- White males (16.4 percent); White females (19.8 percent)
- Multiracial males (14.9 percent); Multiracial females (19.5 percent)
- Hispanic males (12.9 percent); Hispanic females (14.1 percent)
- Asian males (10.4 percent); Asian females (10.7 percent)
- Black males (7.6 percent); Black females (11.4 percent)
- American Indian or Alaskan Native males (7.4 percent); American Indian or Alaskan Native females (data suppressed; CBHSQ 2024).

Data for all Native Hawaiian/other Pacific Islander individuals ages 12–20 were suppressed for 2022 due to low statistical precision.

NSDUH data for 2022 on binge alcohol use among males and females ages 12–20 by gender and race/ethnicity are shown in Exhibit 2.13 (CBHSQ, 2024). Estimates of underage binge drinking by gender and race/ethnicity include:

- White males (9.7 percent); White females (10.6 percent)
- Hispanic males (6.6 percent); Hispanic females (7.9 percent)
- Multiracial males (5.8 percent); Multiracial females (12.9 percent)
- American Indian/Alaska Native males (5.8 percent); American Indian or Alaskan Native females (data suppressed)
- Black males (3.9 percent); Black females (5.3 percent)
- Asian males (2.7 percent); Asian females (3.9 percent; CBHSQ 2024).

Data for all Native Hawaiian/other Pacific Islander individuals ages 12–20 were suppressed for 2022 due to low statistical precision.

³³ Racial and ethnic groups reported for NSDUH data are mutually exclusive. People who were of Hispanic or Latino ethnicity could be of any race but are not included in the estimates for any of the racial categories. Estimates for people who were not of Hispanic or Latino ethnicity are reported by race. People reporting two or more races and who were not of Hispanic or Latino ethnicity are noted as Multiracial. People reporting their race as Black or African American are subsequently referred to as Black. People reporting their ethnicity as Hispanic or Latino are subsequently referred to as Hispanic.





Early Initiation of Drinking and Alcohol Use Disorder

Youth who report drinking before age 15 are more likely to experience problems, including intentional and unintentional injury to themselves and others after drinking (Hingson et al., 2000; Hingson & Zha, 2009); violent behavior, including predatory and dating violence (Blitstein et al., 2005; Ellickson et al., 2003; Ramisetty-Mikler et al., 2004; Ramisetty-Mikler et al., 2006); criminal behavior (Eaton et al., 2007); prescription medication misuse (Hermos et al., 2008); unplanned and unprotected sex (Hingson et al., 2003); motor vehicle crashes (Hingson et al., 2002); and physical fights (Hingson et al., 2001).

Age of First Use of Alcohol: National Survey on Drug Use and Health

Drinking often begins at a young age. The average age of first use in 2022 for people who had initiated drinking before age 21 in the past year was 16.4 years old. However, among those who had initiated alcohol use in the past year, 619,000 reported being between 12 and 14 when they initiated. This means that for every day in 2022, on average, approximately 1,696 people ages 12–14 drank alcohol for the first time (CBHSQ, 2024).

The 2022 NSDUH survey (CBHSQ, 2024) indicates that the average age of initiation of alcohol use among ages 12-20 was:

- 14.9 years among people with lifetime alcohol use
- 15.2 years among people with past-year use
- 15.1 years among people with past-month use
- 14.8 years among people with past-month binge drinking

Age of First Use: Monitoring the Future and Youth Risk Behavior Survey

Alcohol use by the end of 6th grade was reported by 3.9 percent of 12th grade respondents (Miech et al., 2023). The 2023 YRBS data show that 13.3 percent of high school students had begun drinking before age 13 (CDC, 2024b).

Prevalence of Alcohol Use Disorder Among Youth: National Survey on Drug Use and Health

Problematic alcohol use, as defined by the NSDUH, is determined by the presence of a DSM-5 (American Psychiatric Association, 2013) AUD diagnosis.³⁴ According to 2022 NSDUH data, 5.7 percent of 12- to -20-year-olds met criteria for DSM-5 AUD (CBHSQ, 2023a). Criteria for AUD was met by 5.7 percent of underage youth in 2022 (CBHSQ, 2023a).

Prevalence of Alcohol Use Disorder: National Survey on Drug Use and Health by Age and Gender

Females aged 12–20 were significantly more likely to have an AUD diagnosis (6.3 percent) than males in the same age group (5.2 percent; CBHSQ, 2024).

As shown in Exhibit 2.14, according to 2022 NSDUH data, the prevalence of DSM-5 AUD for 18- to -20-year-olds (11.3 percent) was significantly lower than the prevalence for 21- to -24-year-olds (19.4 percent), 25- to -29-year-olds (18.1 percent), and 30- to -34-year-olds (15.7 percent). At the other end of the spectrum, 18- to -20-year-olds were significantly more likely to have AUD than 12- to -14-year-olds (1.2 percent) and 15- to -17-year-olds (4.7 percent) (CBHSQ, 2024).

Exhibit 2.14: Prevalence of Past-Year DSM-5 Alcohol Use Disorder by Age: 2022 NSDUH Data (CBHSQ, 2024)



Treatment of Adolescent Substance Use

The need for adolescent substance use treatment is urgent and ongoing. Proactively intervening on substance use risk factors at a young age has been shown to cut decades off the time it takes to reach a state of sustained recovery (Dennis et al., 2005).

³⁴ DSM-5 diagnostic criteria were used for the first time in the NSDUH in 2020.

Receipt of Treatment: National Survey on Drug Use and Health

Current substance use intervention and treatment programs are not addressing the needs of most adolescents. According to NSDUH data, 2.4 million people (1.3 females; 1.1 million males) aged 12 to 20 were classified as needing alcohol use treatment in the past year. Among those classified as needing treatment, most (86.2 percent, or 2.1 million people) did not receive treatment³⁵; 13.8 percent (333,000 people) received treatment in the past year (Exhibit 2.15; CBHSQ, 2024).





Females ages 12–20 were significantly more likely overall to have received treatment (204,000 females, 61.3 percent) than males (129,000 males, 38.7 percent). However, the difference in treatment received by those who needed treatment did not differ statistically by gender; 15.5 percent of females classified as needing alcohol use treatment received treatment, compared to 11.7 percent of males (CBHSQ, 2024).

³⁵ Questions regarding treatment for alcohol use are asked of NSDUH respondents who reported use of alcohol or drugs in their lifetime. Alcohol use treatment includes treatment for alcohol use through a variety of modalities, including inpatient treatment/counseling; outpatient treatment/counseling; medication-assisted treatment; telehealth treatment; or treatment received in a prison, jail, or juvenile detention center.

The possible reasons for non-treatment are varied. Adolescents are less cognitively aware and may simply not be conscious of their need for intervention (Conrad et al., 2007; NIDA, 2014). Generally, they will have experienced fewer adverse consequences at this point from alcohol and drug use than adults because of their shorter duration of use. They may also have had direct protection from consequences because of parental intervention. Parents may ignore some substance use, considering it a "rite of passage" or something that will disappear with maturation. On screening assessments, adolescents are less likely than adults to report withdrawal symptoms, being unable to stop using a drug, or continued use of a drug despite physical or mental health problems. Symptoms that adolescents are more likely to report than adults include hiding their substance use, getting complaints from others about their substance use, and continuing to use despite fights or legal trouble. Unlike adults, who enter treatment primarily through self-referral, adolescents are more likely to enter treatment because of a referral by the justice system, a parent, a mental health clinician, or a school staff member (Winters et al., 2018).

Systemic factors are also involved in adequately addressing the challenges of adolescent treatment. In addition to service delivery that is oriented toward adolescents, there is a need for service providers who understand adolescent development and funding to ensure program availability. Pertinent research needs to be translated into practice. Programs need to be evaluated for effectiveness in practice. As in many healthcare systems, the coordination of care is often lacking (Kraft et al., 2006).

In addition, adolescents entering treatment are likely to have multiple comorbid conditions, such as mental disorders, homelessness, and engagement in criminal activity or violence, as well as varying risk and protective factors. In adolescents, transitional-age youth, and adults, these factors have been shown to affect the course of treatment at all levels—initiation, engagement, and subsequent adherence (Baumer et al., 2018; Han, Compton, Blanco, & Colpe, 2017).

Extent of Progress: Trends in Underage Alcohol Consumption

An examination of trend data for the measures of underage alcohol consumption across the three federally sponsored surveys suggests that meaningful progress was made in reducing the extent of underage drinking in the 2 decades before the onset of the COVID-19 pandemic. Although NSDUH data collected during 2020 and 2021 cannot be compared with historical data, historical rates of past-month alcohol use among individuals ages 12–20 from NSDUH show a decline in use, with rates dropping from 28.7 percent in 2004 to 18.5 percent in 2019, a 35.5 percent decline (CBHSQ, 2021a).

Detailed descriptions of specific trends for the different measures of alcohol use overall and by demographic subgroups are provided below. As noted, NSDUH data for 2020 and 2021 cannot be compared with data from previous years; therefore, only trends from 2021 forward are provided in this section. MTF and YRBS findings through 2023 are given for these same measures.

Past-Month Alcohol Use: National Survey on Drug Use and Health Trends

An assessment of NSDUH-based past-month use trends from 2021 to 2022 showed no statistically significant changes in underage past-month alcohol consumption among 12- to -20- year-olds over this one-year period (Exhibit 2.16; CBHSQ 2024).

Exhibit 2.16: Trends in Past-Month Alcohol Use for 12- to -20-Year-Olds: 2021³⁶-2022 NSDUH Data (CBHSQ, 2024)

Age	2021	2022	% Change 2021–2022
12–13	2.0	1.6	-20.0%
14–15	5.9	4.7	-20.3%
16–17	14.0	14.5	3.6%
18–20	32.3	31.6	-2.2%
12–17	7.2	6.8	-5.6%
12–20	15.6	15.1	-3.2%

Binge Drinking: National Survey on Drug Use and Health Trends

Trends in binge drinking among those ages 12–20 by age group are shown in Exhibit 2.17. There was a statistically significant relative decline for youth ages 14–15 for binge drinking in 2022 compared with 2021 (CBHSQ, 2024).

Exhibit 2.17: Trends in Past-Month Binge Alcohol Use for 12- to -20-Year-Olds by Age: 2021–2022 NSDUH Data (CBHSQ, 2024)

Age	2021	2022	% Change 2021–2022
12–13	0.6	0.7	16.7%
14–15	3.3	2.1*	-36.4%
16–17	8.2	7.1	-13.4%
18–20	17.9	17.9	0.0%
12–17	4.0	3.2	-20.0%
12–20	8.6	8.2	-4.7%

*Difference between the 2021 and 2022 estimate is statistically significant at the 0.05 level.

Heavy Alcohol Use: National Survey on Drug Use and Health Trends

Trends in heavy alcohol use based on NSDUH survey results indicate that heavy consumption among 12- to 20-year-olds did not change significantly from 2021 (1.6 percent) to 2022 (1.7 percent; CBHSQ, 2023a).

Age of First Use: National Survey on Drug Use and Health Trends

Delaying the age of first alcohol use can mitigate some of the negative consequences of underage alcohol consumption, which means that trends in age of initiation of alcohol use are important to follow.

As shown in Exhibit 2.18, among past-year initiates of alcohol use who began drinking before age 21, the overall trend in the mean age at first alcohol use did not differ significantly in 2022 from 2021 (CBHSQ, 2024).

³⁶ Estimates for 2021 may differ from previously provided estimates because the 2021 analysis weights were updated by CBHSQ to facilitate between-year comparisons.

Exhibit 2.18: Trend of Average Age of First Use Among Past-Year Initiates of Alcohol Use Who Initiated Before Age 21: 2021–2022 NSDUH Data (CBHSQ, 2024)

	2021	2022
Average age at first use	16.3	16.4

Prevalence of Alcohol Use Disorder Among Youth: National Survey on Drug Use and Health Trends

Trends in DSM-5 AUD among people ages 12–20 from 2021 to 2022 are provided in Exhibit 2.19. There was a significant decline in AUD for 12- to -17-year-olds; prevalence from 2021 to 2022 for 12- to -20-year-olds was not significantly different. There was a statistically significant increase in AUD for males ages 12 to 20.

Exhibit 2.19: Past-Year DSM-5 Alcohol Use Disorder for 12- to -20-Year-Olds by Age and Gender: 2021–2022 NSDUH Data (CBHSQ, 2024)

Past Year DSM-5 AUD				
	2021	2022	% change	
Ages 12-17	3.7	2.9*	-21.6%	
Ages 18-20	9.7	11.3	16.5%	
Ages 12-20	5.7	5.7	0.0%	
Males Ages 12-20	4.1	5.2*	26.8%	
Females Ages 12-20	7.4	6.3	-14.9%	

*Difference between the 2021 and 2022 estimate is statistically significant at the 0.05 level.

Past-Month Alcohol Use: Monitoring the Future and Youth Risk Behavior Survey Trends Data from the MTF survey reflected ongoing declines in past-month alcohol use for 8th, 10th, and 12th graders combined through 2021, which marked the lowest levels for alcohol use ever recorded by the study. For the three grades, combined in 2022, 30-day prevalence was 15.6 percent, representing a non-significant increase between 2021 and 2022 (Johnston, Miech, Patrick, O'Malley, Schulenberg, et al., 2023).³⁷

³⁷ 2021 was the first time MTF administered surveys to 8th, 10th, and 12th graders using a web-based questionnaire. In 2020, all students answered the questionnaire using internet-connected electronic tablets, which MTF brought to the schools. A main difference in 2021 was that students used their own electronic devices. In addition, students who were schooling remotely took the survey in their homes rather than in their school buildings.

The 2023 YRBS showed that current alcohol use for both males and females had declined since 2013 (CDC, 2024b).

Binge Drinking: Monitoring the Future and Youth Risk Behavior Survey Trends

MTF trend data among students in grades 8, 10, and 12 indicated that binge drinking increased slightly in the 1990s, leveled off in the early 2000s, and then began a gradual decline in 2002. The declines in binge drinking from 1991 to 2016 were significant, with the binge drinking rate for 8th graders declining by 70 percent, the rate for 10th graders declining by 50 percent, and the rate for 12th graders declining by 30 percent (Johnston et al., 2018). Although there was some indication of a leveling off in the rates in 2017, rates declined again in 2018 (Miech et al., 2020). In 2019, 10th grade prevalence was at an historic low; the binge drinking rates for 8th and 12th graders were near historic lows. Due to changes in survey administration and small samples sizes, rates for 2020 are not available. Binge drinking again declined significantly in all grades in 2021. In 2022, only the 12th grade rates showed a slight (and nonsignificant) rebound, increasing to 12.6 percent. Rates for 8th graders declined slightly (non-significantly) to 2.2 percent and 10th grade rates remained the same at 5.9 percent (Johnston, Miech, Patrick, O'Malley, Schulenberg, et al., 2023).

An assessment of binge drinking trends based on YRBS data indicates that binge drinking increased significantly from 1991 to 1999 and then declined significantly from 1999 to 2015. Using only people who were currently drinking in the denominator, it was determined that the majority of high school students who drank also binge drank (57.8 percent), and of those who binge drank, 43.8 percent had consumed eight or more drinks in a row (Esser et al., 2017). The prevalence of binge drinking, though it increased slightly in 2019, was not significantly different (at 13.7 percent) from the 2017 rate (13.5 percent; (CDC, 2020).³⁸ Binge drinking rates showed a decline from 2017 to 2021 (Hoots et al., 2023).

Binge Drinking: Monitoring the Future Trends by Age and Gender

MTF trend data demonstrate that since 1991, rates of binge drinking have generally been decreasing across all grade groups and among college-age respondents (ages 19–22), with rates for males decreasing faster than rates for females (Exhibit 2.20). As a result, binge drinking rates among males and females have been converging since 1991. For example, in 1991, among 12th graders, there was a 16.6 percentage point difference in the prevalence of binge drinking between males and females; in contrast, in 2022, the difference was only 3.1 percentage points. There were no significant differences in binge drinking rates by college status or by sex in 2022 (Miech et al., 2023).

³⁸ YRBS questionnaire changes for 2017 included a revision of the definition of binge drinking for females from five to four drinks; therefore, data for males and females combined for 2017 cannot be compared with those from years prior to 2017.

Exhibit 2.20: Rates of Binge Drinking in the Previous 2 Weeks Among Male and Female 8th, 10th, and 12th Graders and College-Age Students: 1991–2022 MTF Data (Johnston, Miech, Patrick, O'Malley, Bachman et al., 2023; Miech et al. 2023)^{39,40}



Extreme Binge Drinking: Monitoring the Future Trends

Trends in extreme binge or high-intensity drinking have been tracked for 12th graders by the MTF survey since 2005. Between 2005 and 2021, there was a decline of 6.3 percentage points in the rate of 12th graders who had had 10 or more drinks in a row (from 10.6 in 2005 to 4.3 percent in 2022) and there was a decline of 3.3 percentage points in the rate of 12th graders who had had 15 or more drinks in a row (from 5.7 percent in 2005 to 2.4 percent in 2022) compared with a decline of 14.5 percentage points for binge drinking. Rates of high-intensity drinking for

³⁹ The MTF survey defines college students as follow-up respondents (i.e., high school graduates) 1–4 years past high school who report that they were taking courses as full-time students in a 2- or 4-year undergraduate college at the beginning of March in the year in question. Non-college students are those 1–4 years past high school not enrolled in college. Note that some of these respondents may be 21 or older.

⁴⁰ Data by gender are not available for 2020 due to small sample sizes.

12th graders in 2021 were at the lowest recorded levels; in 2022 there were nonsignificant increases in all three measures (5, 10 and 15 or more drinks) for 12th graders (Johnston, Miech, Patrick, O'Malley, Bachman, et al., 2023; Miech et al., 2023).

Extent of Progress: Driving After Drinking

Approximately 50 percent of unintentional deaths of 12- to -20-year-olds in 2022 were from motor vehicle crashes (CDC, 2024c).

The 2022 NSDUH survey indicated that 2.7 percent of youth ages 16–20 reported having driven under the influence of alcohol at least once in the past year. This represents a troubling number of drivers (approximately 572,000 in 2022) likely to cause property damage, injuries, and deaths related to traffic crashes (CBHSQ, 2023a).

Driving After Drinking: Fatality Analysis Reporting System, Monitoring the Future, and Youth Risk Behavior Survey Trends

One important sign of progress in addressing underage drinking is that the number of alcoholrelated traffic deaths among young drivers ages 15–20 has declined 76 percent since 1982, shortly before passage of the National Minimum Drinking Age Act in 1984 (National Highway Traffic Safety Administration [NHTSA], 2024). Data since 1997 from NHTSA's Fatality Analysis Reporting System (FARS) are provided in Exhibit 2.21. In 2022, of the 2,034 drivers ages 15–20 who were killed in motor vehicle traffic crashes, 604 (30 percent) had a BAC of 0.01 or higher (NHTSA, 2024).

Using MTF data, O'Malley and Johnston (2013) reported—and the MTF team has subsequently updated through annual special analyses—longitudinal data for high school seniors who had reported any of the following behaviors in the 2 weeks before the survey: driving after drinking any alcohol (5.3 percent); driving after having five or more drinks (3.0 percent); being a passenger when the driver had had any alcohol (7.7 percent); or being a passenger with a driver who had had five or more drinks (3.8 percent). As demonstrated in Exhibit 2.22, these four behaviors have generally declined in the past two decades.⁴¹ Rates remain unacceptably high, however, especially given the risks associated with driving after drinking even a small amount of alcohol.

YRBS trend data from 2013 to 2023 indicate that there was a significant linear decrease (from 10.0 percent in 2013 to 5.1 percent in 2023) in the prevalence of driving after drinking alcohol among high school students who had driven a car or another type of vehicle during the 30 days before the survey (CDC, 2024b).

⁴¹ Special analysis provided by Dr. Richard Miech, January 2024.

Exhibit 2.21: Trends in Fatalities for 15- to -20-Year-Old Drivers: NHTSA, FARS 1997–2021 Final File and 2022 Annual Report File (NHTSA, 2024)



Driving After Drinking: Monitoring the Future by Age and Gender

Males in the 12th grade were more than twice as likely as 12th grade females to report driving after five or more drinks (Miech, 2022). O'Malley and Johnston (2013) reported that 43.2 percent of high school seniors who had driven after drinking five or more drinks had received a ticket or warning and that 30.2 percent had been involved in a crash.





High school seniors who drive more frequently are more likely to drive after drinking. Driving after drinking in college students is associated with living off campus (Quinn & Fromme, 2012), spending more evenings out (O'Malley & Johnston, 2013), having a higher socioeconomic status, and driving someone else's car without permission (Delcher et al., 2013).

Summary of Progress

The above data demonstrate that meaningful progress has been made in reducing underage drinking prevalence and related problems, such as traffic fatalities. Nevertheless, drinking rates for this group remain unacceptably high. Alcohol is still the most widely consumed substance among America's youth—used more often than marijuana, tobacco, and illicit drugs. Alcohol use often begins at a young age, and underage youth who drink tend to binge drink and to consume more on a single drinking occasion than adults do. Approximately 54.0 percent of the 5.8 million individuals ages 12–20 who reported having drunk in the past month on the 2022 NSDUH also reported having engaged in binge drinking during the past month (CBHSQ, 2023a).

Factors that have contributed to this progress are varied and complex; however, one factor has most likely been increased attention to the risks of underage drinking over the past several decades. During this time, federal initiatives—particularly adoption of 21 as the minimum legal drinking age—have lifted underage drinking to a more prominent place on the national public health agenda, supported the creation of a policy climate in which relevant legislation has been passed by states and localities, stimulated coordinated citizen action, and raised awareness of the importance of aggressive enforcement. Although room for improvement remains within national, state, and local policy environments, these changes have provided a framework for a national commitment to reducing underage drinking.

The benefits of reducing underage drinking are substantial, including saving lives and money and promoting the overall health of young people. Delaying the age at which young people begin drinking may reduce their chances of developing AUD and of experiencing other negative consequences in adulthood (Grant & Dawson, 1997). Proactively intervening on substance use behaviors at a young age has been shown to cut decades off the time required to reach a state of sustained recovery (Dennis, 2005). A recent study demonstrated that there are long-term consequences of adolescent SUD that are identifiable in adolescence (McCabe et al., 2022). This points to the need to screen adolescents for SUD and highlights the need for prevention and early intervention for adolescents, including interventions that are graded to SUD severity (Volkow & Wargo, 2022).

The implementation of effective policy and environmental strategies for reducing excessive alcohol use may help further reduce underage drinking. This same approach may also reduce excessive drinking among adults, which has been increasing. Research has clearly shown a correlation between youth drinking behaviors and those of adults living in the same state, as well as a strong relationship between state alcohol policies affecting adult drinking and underage drinking rates (Bohm & Esser, 2023; Xuan et al., 2015). For example, in an older review assessing implementation and efficacy of various state policies over a 13-year period, Nelson et al. (2015) found that policies that were effective for addressing drinking by youth and alcohol-impaired driving were more commonly implemented than policies restricting adult consumption. Although previous studies have found a relationship between adult and youth drinking rates, it is unclear what the effect of more recent changes in policies, enforcement strategies, and other environmental factors will be on this relationship.

Ongoing attention is needed to all factors, including the long-term effects of the COVID-19 pandemic, the recent increase in mental health issues in adolescents, and the loosening of alcohol-related policies, to ensure rates continue to stay low or decline further. Therefore,

ICCPUD remains committed to an ongoing, comprehensive approach to preventing and reducing underage drinking.

Chapter 3: Factors Affecting Underage Alcohol Use

CHAPTER 3 Key Points

- Stronger state alcohol policies that affect the general population (e.g., alcohol taxes and regulations on alcohol outlet density) are associated with less youth drinking.
- The most effective alcohol policy related specifically to underage drinking is the age 21 minimum legal drinking age.
- Alcohol is perceived as readily available by a majority of adolescents.
- Over one-third (33.6 percent) of older underage people who drink (ages 18 to 20), paid for their own alcohol, either purchasing it themselves (16.6 percent) or giving the money to someone else to purchase it for them (16.8 percent).
- Most underage people who drink reported last using alcohol in their own home (47.1 percent) or in someone else's home (42.3 percent).
- Underage youth were exposed to alcohol advertising 23.9 billion times on cable TV during 2018– 2019.
- Disapproval of any alcohol use by those over 18 years of age is reported by only 26.7 percent of 12th graders.
- Rates of college student's past month consumption of alcohol exceed those of same-age peers who do not attend college; rates of binge and heavy drinking were not significantly different across the two groups.
- The COVID-19 pandemic resulted in significant changes in state alcohol policies, including increased online sales and direct-to-consumer home delivery and shipping.

CHAPTER 3: FACTORS AFFECTING UNDERAGE ALCOHOL USE Introduction

Adolescent alcohol consumption is a complex behavior influenced by multiple factors, including societal factors as well as individual characteristics. The social determinants of underage alcohol consumption include factors that influence the availability and appeal of alcohol (e.g., alcohol policies and their enforcement, marketing practices, and media exposure), and the broader physical, social, and cultural contexts in which adolescents live (e.g., family, peers, and school; (Viner et al., 2012). The individual factors include genetic, neurobiological, and psychological factors specific to each adolescent.

The social determinants related to alcohol consumption and its corresponding disproportionate harmful effects can be broadly grouped into availability, acceptability, and affordability (World Health Organization [WHO], 2021). Increases in these three factors are consistently associated with disproportionately harmful impacts of alcohol consumption on those with fewer resources,

e.g., those with lower socioeconomic status (SES). Availability is affected by local, state, tribal, and federal policies regarding alcohol and the enforcement of those policies, including laws limiting youth access to alcohol, and policies related to outlet density and online sales. Acceptability is affected by advertising and marketing, both nationally and locally, as discussed below. Messages about the acceptability of underage alcohol consumption are also conveyed by schools and other youth institutions, as well as by perceived acceptance of alcohol use in the general population as exhibited by

SAMHSA defines the social determinants of health (SDOH) as 'non-biological factors that influence one's health status' (SAMHSA, 2023). SDOH contribute to health disparities seen between communities based on race, class, geography, education, healthcare access, and more.

adult drinking patterns, and by parental alcohol use. Affordability is driven in part by fiscal measures (e.g., price setting, excise taxes, and subsidies). Major policies affecting underage drinking are noted below; extensive details nationally and by state are provided in the companion documents to this report, the *State Performance & Best Practices for the Prevention and Reduction of Underage Drinking Report* ([*SPBP Report*], available at https://www.stopalcoholabuse.gov) and the individual *State Reports*.

Effects of the Policy Environment

There is a large body of scientific literature on the effectiveness of evidence-based alcohol policies—such as alcohol taxes, regulating alcohol outlet density, and commercial host (dram shop) liability—on reducing excessive drinking, including underage drinking.⁴² Stronger state alcohol policies that focus on the general population (e.g., alcohol taxes and regulations on alcohol outlet density) are independently associated with less youth drinking, and the effect of these policies on youth drinking is mediated, in part, through their effects on adults (Xuan et al., 2015). Stronger alcohol policy environments are associated with lower mortality rates from alcohol-related motor vehicle crashes for drivers and passengers under the age of 21 (Hadland et al., 2017). For example, numerous studies have confirmed that there is an inverse relationship

⁴² For a detailed review of these and other alcohol-related policies, including data on their adoption by the 50 states and the District of Columbia, see the *State Performance & Best Practices Report*, produced concurrently with this report and available at <u>https://www.stopalcoholabuse.gov</u>.

between alcohol prices and the demand for alcohol consumption (Xu & Chaloupka, 2011). A 2021 WHO report noted that areas with higher alcohol outlet density 'tend to have more road crashes, hospital admissions, suicide, alcohol use disorders, child abuse and neglect, violence, underage drinking and sexually transmitted infections.'(WHO, 2021). The most effective alcohol policy related specifically to underage drinking is the age 21 minimum legal drinking age (MLDA; Carpenter & Dobkin, 2011). As detailed in Chapter 4, enactment and enforcement of that law has reduced underage fatalities and injuries, in large part through reductions in traffic crashes among drivers under 21.

The higher MLDA in the United States in relation to other countries may be partially responsible for the lower binge drinking rates among U.S. teens. Data from 2019 indicate that in many European countries, young people ages 15–16 report heavy episodic drinking (binge drinking) at rates much higher than in the United States (Exhibit 3.1; European School Survey Project on Alcohol and Other Drugs [ESPAD] Group, 2020). In all other countries listed in Exhibit 3.1, the MLDA is lower than in the United States. These data call into question the common misconception that having a lower MLDA might result in less problem drinking by adolescents.

During the COVID-19 pandemic, many states designated restaurants and bars as "essential businesses", which precipitated significant changes in state policies regarding alcohol availability, such as allowing curbside pickup and/or carryout of alcohol, online sales, and direct-to-consumer home delivery and shipping (https://alcoholpolicy.niaaa.nih.gov/). In 2020, per capita consumption of ethanol from all alcoholic beverages combined demonstrated the largest single-year increase (at 2.9 percent from 2019) since 1968 (Slater & Alpert, 2022). In 2021, per capita consumption of ethanol from all alcoholic beverages combined again showed a 2.9 percent increase from 2020, resulting in a 5.5 percent increase from 2019. This was the largest two-year increase since 1969 (Slater & Alpert, 2023). Recent census data indicate that off-premises retail sales from beer, wine, and liquor stores continued at a higher level (compared to 2019) through the beginning of 2022 (Exhibit 3.2; U.S. Census Bureau, 2024).

Over 30 states authorized "to-go" cocktails during the pandemic; several of the states quickly moved to make these changes permanent (Associated Press & Durbin, 2020). According to data from the Alcohol Policy Information System (APIS), as of January 1, 2023, 36 states had codified delivery of one or more alcoholic beverage types, including to-go cocktails, by on-premises retailers to consumers' homes (NIAAA, 2024). Home delivery has the potential to change the epidemiology of alcohol-related harms, as these harms may be more likely to occur in a private environment rather than in public. Not only the types of harm but the ability to track and assess their impact may be affected, as private occurrences of harm are more likely to be underreported. Online sales and home delivery present several challenges to enforcement of the minimum drinking age laws (Matthay & Schmidt, 2020). For example, the California Department of Alcoholic Beverage Control found that youth were consistently able to purchase alcohol to be delivered from restaurants. This was true even when the alcohol was delivered by restaurant employees, but it was much more common when delivered through third -party applications (CA Alcoholic Beverage Control, 2020).

Exhibit 3.1: Percentage of European Students Ages 15–16 Who Reported Drinking in the Past 30 Days and Heavy Episodic Drinking in the Past 30 Days Compared With U.S. 10th Graders: Data from 2019 ESPAD (ESPAD Group, 2020)



Notes: The survey question asks, "Think back again over the LAST 30 DAYS. How many times (if any) have you had five or more drinks on one occasion? (A 'drink' is [INSERT NATIONALLY RELEVANT EXAMPLES])." Information on ESPAD data collection is available at <u>www.espad.org</u>.

^a U.S. data are from the Monitoring the Future (MTF) survey.

^b Number of days, not occasion





Perception of Alcohol Availability by the Underage Population

The relationship among alcohol availability, levels of consumption, and occurrence of alcoholrelated problems is well documented in the *Surgeon General's Call to Action* (Department of Health and Human Services, 2007). As shown in Exhibit 3.3, most teens currently see alcohol as being readily available; according to data collected from the 2022 MTF survey, the following percentage of students reported that alcohol would be "fairly easy" or "very easy" to get (Miech et al., 2023):⁴³

- 41.9 percent of 8th graders
- 58.7 percent of 10th graders
- 78.4 percent of 12th graders

Past trends show that perceived availability has generally declined since the 1990s (although there was a slight uptick for 2017 and 2018). These reductions in perceived availability may be attributable in part to the policies and enforcement practices described in the *SPBP Report*. Continued attention to these policies and practices may lead to further reductions in perceived availability.

⁴³ Given substantial decreases in sample size because of survey question experiments in the MTF in 2021, data on availability for 2021 are not comparable with data for previous years.





Sources of Alcohol

In 2022, according to the National Survey on Drug Use and Health (NSDUH), the most common sources of alcohol varied by age,⁴⁴ as shown in Exhibit 3.4 (Center for Behavioral Health Statistics and Quality [CBHSQ], 2023a).

For youth ages 12–14, the most common sources for which there was sufficient data to ascertain the source include:

- Receiving it free from an unrelated person aged 21 or older (6.6 percent)
- Got it some other way (4.3 percent).

For youth ages 15–17, the most common sources were:

- Receiving it free from someone under age 21 (18.2 percent)
- Taking it from their own home (16.6 percent)
- Getting it from a parent or guardian (15.4 percent)
- Receiving it free from an unrelated person aged 21 or older (13.6 percent)
- Paying someone else to purchase it for them (11.2)
- Getting it from another family member aged 21 or older (11.1 percent)

For youth ages 18–20 the most common sources were:

- Receiving it free from an unrelated person aged 21 or older (24.2 percent)
- Giving someone else money to purchase the alcohol (16.8 percent)
- Purchasing it himself/herself (16.6)
- Getting it from another family member aged 21 or older (12.7 percent)
- Getting it from a parent or guardian (11.5 percent)

⁴⁴ Data for 12- to -14-year-olds for 2022 are not fully available due to suppression.





The NSDUH divides sources of last alcohol use in past month into two categories: The underage person who drank (1) paid (i.e., the underage person purchased it or gave someone else money to do so) or (2) did not pay (i.e., the underage person received it free from someone or took it from their own home or someone else's home). Data from 2022 show that among all underage people who reported current drinking (i.e., past-month drinking), 27.8 percent had paid for alcohol the last time they drank, either purchasing the alcohol themselves (12.8 percent) or giving money to someone else to do so (14.8 percent; CBHSQ, 2023a).

Older underage people (ages 18–20) were more likely to have paid for alcohol themselves (either purchasing it themselves or paying someone else to purchase it) on their last drinking occasion; 33.6 percent of 18- to -20-year-olds had done so, compared with 15.4 percent of 15- to -17-year-olds and 2.3 percent of 12- to -14-year-olds. Underage males who reported drinking were more likely to have paid for alcohol themselves on their last drinking occasion in the past month (31.4 percent) than their female counterparts (24.6 percent; CBHSQ, 2023a).

Youth Risk Behavior Survey (YRBS) data showed that high school students who reported drinking usually had obtained alcohol from others, but those who had engaged in binge drinking were three times more likely than those who consumed alcohol in the past month but had not engaged in binge drinking to have given others money to purchase alcohol for them and to have purchased alcohol themselves (Esser et al., 2017).

Enforcement of furnishing laws (i.e., laws that prohibit providing alcohol to minors) is one key strategy for reducing youth access to alcohol. A number of studies have demonstrated that compliance checks can reduce the likelihood of alcohol sales to minors (Centers for Disease Control and Prevention [CDC], 2004; Preusser et al., 1994; Wagenaar et al., 2005). A 2013 multicommunity study found significant associations between the level of underage drinking law enforcement in the intervention communities and reductions in both 30-day use of alcohol and binge drinking. Similarly, a South Carolina program that increased retailer compliance checks showed a decline of drinking and driving–related crashes with drivers under age 21 (George et al., 2021).

Exposure of Underage Populations to Messages Regarding Alcohol in Advertising and Entertainment Media

As previously noted, many factors influence youth drinking decisions. There is a substantial body of evidence showing that youth exposure to alcohol advertising is associated with initiation of alcohol consumption by youth and with increased alcohol consumption by youth who drink. A review of 12 different longitudinal studies published since 2008 found significant associations between youth exposure to alcohol advertising and alcohol consumption in all 12 studies (Jernigan et al., 2017). A review by Weitzman and Lee (2020) explored the similarities between the current literature on alcohol and literature used to infer causality between tobacco advertising and tobacco use. Citing these reviews, as well as integrating the findings from several previous reviews (Jernigan et al., 2017; Sargent & Babor, 2020), Weitzman and Lee (2020) concluded that "when marketing research is assembled and evaluated according to the Bradford Hill criteria, there is persuasive evidence that exposure to alcohol marketing is one cause of drinking onset during adolescence and also one cause of binge drinking."

The Sober Truth on Preventing Underage Drinking Act (STOP Act) requires the *Report to Congress on the Prevention and Reduction of Underage Drinking* to include measures of the exposure of underage populations to messages regarding alcohol in advertising and the entertainment media as reported by the Federal Trade Commission (FTC). To date, FTC has conducted four formal studies of the exposure of those under 21 to alcohol advertising. In each case, FTC issued compulsory process orders to major alcohol marketers and required them to provide demographic data about the audience for each ad disseminated during the study period. These studies have resulted in significant improvements in industry self-regulation over time.

FTC's 2014 Self-Regulation in the Alcohol Industry: Report of the Federal Trade Commission, the most recent available, evaluated industry compliance with the standard that 70 percent of the audience for each ad must consist of people who are 21 or older. Data for the study period (the first half of 2011) showed that 93.1 percent of the companies' placements in measured media (i.e., television, radio, magazines, newspapers, and internet websites whose audience characteristics, including age, are measured by demographic services) had met the 70 percent standard (FTC, 2014).

Using the data from 2011, the report showed that when data were aggregated across companies and media, they showed that 85.4 percent of alcohol advertising impressions (individual ad exposures) were seen by adults (age 21 and older) and 14.6 percent were seen by underage people. Overall, ads on major social networks (e.g., Facebook, Twitter, and YouTube) exceeded the 70 percent standard; Facebook further limited alcohol ad viewing to people who had previously registered as 21and older, and Twitter and YouTube offered age-gating technologies. The report also announced that in mid-2011, pursuant to an earlier FTC recommendation, the

industry had adopted a 71.6 percent adult audience composition standard for future ad placements (reflecting 2010 U.S. census data on the percentage of the age 21 and older population).

A series of reports analyzing youth exposure to alcohol advertising found that underage youth had been exposed a total of 23.9 billion times to alcohol advertising on cable TV during 2018–2019. About 454 million (1.9 percent) of these exposures were because of alcohol advertising that did not comply with the alcohol industry voluntary guidelines (i.e., were noncompliant). Further analyses found most exposures exceeding voluntary alcohol industry guidelines had been from a small number of brands, programs, and network dayparts⁴⁵ (Alger et al., 2021).

Despite improvements, underage youth were still collectively exposed to billions of alcohol advertisements annually on cable television alone during 2018-2019 (Alger et al., 2021). Therefore, given the strong association between youth exposure to alcohol advertising and underage drinking, some proponents of public health have proposed additional limits on alcohol marketing. However, current public health efforts to reduce youth exposure to alcohol advertising remain focused on encouraging alcohol advertisers to avoid placing alcohol ads where there is high non-compliance with restrictions on alcohol advertising exposures. At the same time, public health efforts have also encouraged more research to assess the impact of reducing youth exposure to various forms of alcohol advertising, including on the internet and social media, on underage drinking.

Alcohol Use by Beverage Type

Advertising directed at youths affects alcoholic beverage choices. Different alcoholic beverage types are likely associated with different patterns of underage consumption and differential adverse impacts. In a study of a nationally representative sample of youth ages 13–20 who had consumed at least one alcoholic drink in the past 30 days, distilled spirits accounted for 43.8 percent of binge drinking prevalence, the highest percentage of any beverage type (Naimi et al., 2015).

Advertising may also play a role in underage brand preference. A study analyzing the population-level exposure of youth ages 12–20 to brand-specific advertising found that underage youth were five times more likely to consume brands that had advertised on national television and 36 percent more likely to consume brands that had advertised in national magazines (Siegel et al., 2016).

Several studies (Albers et al., 2015; Fortunato et al., 2014; Naimi et al., 2015; Siegel, DeJong, Naimi, et al., 2013) have focused on brand preferences of underage people who drink, consistently finding that underage people who drink prefer a limited number of brands. Naimi and colleagues (2015), using a nationally representative internet panel, found that the 25 brands consumed most frequently during binge drinking account for 46.2 percent of binge drinking reports. Siegel and colleagues (2013) found that the top 25 brands account for about half of underage alcohol consumption by volume.

Between 1988 and 2022, data from the MTF survey indicate that beverage choices have shifted markedly for both male and female 12th graders (Exhibit 3.5;⁴⁶ Johnston, Miech, Patrick,

⁴⁵ Media advertising strategies directed at a specific part of the day.

 $^{^{46}}$ Data for the past 20 years only is provided in the *RTC*; data from previous years is available in the MTF documentation.

O'Malley, Bachman, et al., 2023). In 1988, beer was the alcoholic beverage of choice for both sexes by a large margin. However, by 2011, beer consumption had declined and distilled spirits consumption had increased for males, such that the two were equally reported that year. In subsequent years, the choice of beer has slightly exceeded the choice of spirits for males; in 2022, the choice of beer (20.1 percent), distilled spirits (19.3 percent), or flavored alcoholic beverages (18.3 percent) were nearly equivalent. In 2022, females chose flavored alcoholic beverages (24.4 percent) and distilled spirits (22.5 percent) more frequently than beer, wine coolers, and wine. As noted in the Emerging Issues section below, the creation and marketing of novel products that appeal to adolescents continues.

Exhibit 3.5: Trends in the Percentage of Male and Female 12th Graders Using Specific Types of Alcoholic Beverages in the Past 30 Days: 2002–2022 MTF Data (Johnston, Miech, Patrick, O'Malley, Bachman, et al., 2023)



High-Potency Grain Alcohol

Although high-potency grain alcohol products have a reported market share among youth of 0.7 percent, their retail availability is of considerable concern (Siegel et al., 2013). These products are cheap and given that they are twice as strong (151–190 -proof) as standard spirits (80–101 - proof), underage consumers may find it very difficult to gauge their alcohol consumption, increasing the likelihood of injury.

Epidemiological data on the use of high-potency grain alcohol are currently limited. Siegel and colleagues (2013), utilizing an internet panel of youth ages 13–20, found that 5.8 percent reported having consumed high-alcohol-content grain alcoholic beverages in the past 30 days. Naimi and colleagues (2015) reported that when underage people who drink consume grain alcohol, they are significantly more likely to binge drink. Given the dangers of high-potency grain alcohol, some states have banned its sale.⁴⁷ Improved data on these products, including underage use and related injury, would help policymakers evaluate appropriate responses.

Affordability

Affordability, as defined by the retail price of alcoholic beverages, has an effect on excessive drinking, which includes underage drinking (Naimi et al., 2018). Increasing the price of an alcoholic beverage through increased alcohol taxes is effective in reducing underage consumption and is recommended by the Community Preventive Services Task Force (additional details are in the *SPBP Report*). However, the average inflation-adjusted state alcohol excise taxes, which are the predominant form of alcohol taxation in the United States, declined approximately 30 percent for beer, distilled spirits, and wine from 1991 to 2015 (Naimi et al., 2018). The average state alcohol excise taxes in 2015 were \$0.05 or less per standard drink for beer, distilled spirits, and wine across the United States.

Parental and Community Adult Influences

Underage alcohol use occurs in a context of significantly problematic adult use nationwide. More than 178,000 individuals (of all ages) in the United States die from excessive alcohol use each year (CDC, 2024a), making excessive alcohol use a leading preventable cause of death in the United States.⁴⁸ Rates for chronic liver disease and cirrhosis increased from 0.6 deaths/100,000 to 1.7 deaths/100,000 between 1999 and 2017 (Woolf & Schoomaker, 2019). A 2020 analysis of death certificate data found that alcohol-related mortality increased from 1999 to 2017 for all age groups except those ages 16–20 and those age 75 or older (White et al., 2020).⁴⁹ Males ages 45–74 had the highest alcohol-related mortality. Although chronic alcohol use accounted for the majority of deaths overall, 9 in 10 alcohol-related deaths among youth ages 16–20 involved acute alcohol consumption,⁵⁰ likely because of the number of years it takes for chronic conditions to develop. Deaths associated with injuries and overdoses increased significantly from 1999 to 2017 for females ages 16–20 but did not change for males (White et al., 2020). This narrowing gap between males and females in alcohol-related deaths is consistent with a

⁴⁷ Maryland (MD Code, AB§ 6-316), California (West's Ann.Cal.Bus. & Prof.Code § 23403), and Florida (West's F.S.A. § 565.07) have all enacted such laws.

⁴⁸ Excessive alcohol use, as defined by CDC, includes binge drinking, heavy drinking, and any drinking by pregnant women or people younger than 21.

⁴⁹ Data for the White 2020 study was based on assessment of contributing causes of death. Alcohol-related disease impact calculations are based on underlying causes of death.

⁵⁰ Acute alcohol consumption generally refers to consumption within 6 hours of admission to an emergency department.
contracting gap between the sexes in alcohol use among young people (White, 2020). Another analysis of mortality data from 1999 extending through 2020 also noted an increase in alcohol-related deaths for both male and female individuals in recent years, with higher rates of increase among female individuals relative to male individuals (Karaye et al., 2023). A 2024 analysis indicates that the average annual number of deaths from excessive alcohol use increased among males by 25,000 deaths, a 26.8 percent increase from 2016–2017 to 2020–2021(Esser, Sherk, Liu, & Naimi, 2024). In contrast, the average annual number of deaths from excessive alcohol use for females increased by 15,000 deaths, a 34.7 percent increase during the same time frame. In summary, males continued to experience a greater number of deaths than females from excessive alcohol use, but the percentage increase in the number of deaths during this time was larger for females.

One in eight total deaths are from excessive alcohol use among adults aged 20 to 64. The proportion is even higher among the younger age groups, including one in five deaths among people aged 20 to 49 (Esser et al., 2022). The economic burden of excessive alcohol use was \$249 billion in 2010, when it was most recently assessed (Sacks et al. 2015). Adjusting for inflation, the estimated economic burden would have been \$323 billion in 2022. Another study estimated that hospital costs alone related to alcohol use disorder (AUD) are \$7.6 billion annually (Peterson et al., 2021).

Generational transmission has been widely hypothesized as one factor shaping the alcohol consumption patterns of young people. Whether through genetics, social learning, cultural values, community norms, or the overall influence of policy and environmental factors on the drinking behaviors of adults and youth, researchers have repeatedly found a correlation between youth drinking behaviors and those of their adult relatives, other adults living in their households or communities, or some combination of these.

Over the past 2 decades, alcohol use, binge drinking,⁵¹ and AUD have increased in segments of the adult population, especially among women, older adults, racial/ethnic minority groups, and the socioeconomically disadvantaged (Grucza et al., 2018; Han et al., 2017). Related to the increases in alcohol consumption, recent data show a significant decrease in life expectancy during 2014–2017 in the United States, reversing the trend of increasing life expectancy since 1959. A significant contributor to declining life expectancy was increases in midlife and young adult (ages 25–34) mortality rates for alcohol-related liver diseases. Life expectancy subsequently increased by 1.1 years from 2021 to 2022 (Kochanak et al., 2024).

Paschall et al. (2014) examined relationships between characteristics of the local alcohol environment and adolescent alcohol use and beliefs in 50 California cities. A greater increase in past-year alcohol use and heavy drinking (which they defined as five or more drinks on a single occasion) over a 3-year period was observed among adolescents living in cities with higher levels of adult drinking (measured at baseline) compared with adolescents not living in such cities. Other factors influencing underage consumption were the alcohol control policies that were in place, enforcement, and bar density.

Adolescents (ages 12 to 17) were four times more likely to drink if their parents reported either frequent drinking or binge drinking (Bohm & Esser, 2023). Nelson et al. (2009) demonstrated this relationship at the population level, using YRBS state-based estimates for youth and data

⁵¹ Binge drinking definitions varied according to the survey data reviewed. See Exhibit E.1 for more detail regarding definitions of binge drinking and related terms.

from the Behavioral Risk Factor Surveillance System for adults. When pooled across years, state estimates of youth and adult current drinking and binge drinking from 1993 to 2005 were significantly correlated. Analyzing YRBS data from 1999 to 2009, Xuan and colleagues (2013) found a positive correlation between state-level adult binge drinking and youth binge drinking and showed how these behaviors were affected by state alcohol policies. Based on their findings, a 5 percent increase in binge drinking prevalence among adults was associated with a 12 percent relative increase in the odds of alcohol use among youth. These findings underscore both the influence of parental modeling and the benefits if parents avoid drinking excessively (e.g., binge drinking), as well as the need to implement effective alcohol policies that reduce the risk of excessive drinking among youth and adults, such as those recommended by The Community Guide (https://www.thecommunityguide.org/topic/excessive-alcohol-consumption).

Parental monitoring and parental attitudes and perceptions about drinking (e.g., seeing underage drinking as a rite of passage) have been shown to be very important influences on underage drinking. Studies have found that some parenting practices, including monitoring, communication, and emotional support, have proved to be beneficial in reducing adolescent alcohol use (Beck et al., 2003; Ennett et al., 2001; Resnick et al., 1997; Watkins et al., 2006). At least one study suggests that parental disapproval of any alcohol use during high school is

Youth drinking is correlated with adult drinking behaviors (Nelson et al., 2009; Xuan et al., 2015). correlated with reduced alcohol use in college (Abar et al., 2009). Parental monitoring appears to be effective in deterring substance use even if not accompanied by increases in punishment for the substance use (Pelham et al., 2024).

Some parents believe that providing alcohol to their children at home under supervision will lead to more moderate drinking practices. However, a meta-analysis of 22 studies found that parental provision of alcohol was associated with increased adolescent alcohol use, heavy episodic drinking, and higher rates of alcohol problems (Kaynak et al., 2014). The authors concluded that allowing children to drink underage, even when supervised by a parent, is always associated with a greater likelihood of drinking during adolescence over time.

A parent or caregiver's substance use disorder (SUD) is an adverse childhood experience (ACE) that can contribute to a continued cycle of multigenerational substance use. Children with specific ACEs, including having one or more parents with an SUD, may initiate drinking earlier than their peers and may be more likely to drink to cope with problems. (Rothman et al., 2008). Parental SUD was one of the three strongest predictors of developing any SUD as an adult (Bryant et al., 2003). More than one in four students live in a household that has been affected by substance use (Swedo et al., 2024).

Children whose families include individuals who misuse alcohol are at increased risk for AUD throughout their lives. Genes account for more than half the risk for AUD; environmental factors and gene–environment interactions account for the rest. However, no single gene accounts for the majority of risk. Development of a complex behavioral disorder, such as AUD, most likely depends on specific genetic factors interacting with one another, multiple environmental factors, and the interaction between genetic and environmental factors (Meyers & Dick, 2010).

Perceived Acceptance by Peers

A majority (61.7 percent) of 12th graders estimate that some percentage of their friends have consumed alcohol (Miech et al., 2023). Disapproval of any alcohol use by those over 18 years of

age is reported by only 26.7 percent of 12th graders; however, 71.0 percent disapprove of regular drinking (having one or two drinks nearly every day) while 66.9 percent disapprove of weekend binge drinking.

Adolescents whose parents engaged in binge drinking were more likely to adopt the negative drinking patterns of their peers (Olson & Crosnoe, 2018). Peer selection may also play a significant role in facilitating drinking behavior similarity in adolescents' friendship networks; a study demonstrated that adolescents preferred to form friendships with those who displayed similar levels of alcohol use (Wang et al., 2015). A 2013 review by Chassin and colleagues noted that there appears to be an interaction between neurobiological factors and peers. The presence of peers seems to activate the same reward centers that lead to risky behavior in adolescents; the presence of peers may therefore accentuate reward-seeking and make alcohol use particularly rewarding for adolescents (Chassin et al., 2013).

Social Contexts for Underage Drinking

Underage alcohol use is strongly affected by the context in which drinking occurs. According to 2022 NSDUH data, most (70.3 percent) people ages 12–20 who had consumed alcohol in the past month had been with two or more people the last time they drank alcohol, 18.9 percent had been with one other person, and 10.8 percent had been alone (CBHSQ, 2023a).

Most underage males and females who drank had been with two or more other people on their last drinking occasion (68.5 percent of males who drank and 71.9 percent of females who drank). The percentage of females who reported drinking with one other person was 19.3 percent, compared with 18.4 percent of males. The percentage of males who reported drinking alone was 13.1 percent, compared with 8.8 percent of females (CBHSQ, 2023a).

Social context also influences the number of drinks consumed. Based on an analysis of 2022 NSDUH data, underage people who drank with two or more other people on the last occasion in the past month had had significantly more drinks on the last occasion on average (3.7 drinks) than those who drank with one other person (2.6 drinks) or who drank alone (2.6 drinks; CBHSQ, 2024).

Males reported having consumed significantly more drinks (4.2 drinks) than females (3.3 drinks) when the last drinking occasion had been with two or more other people (CBHSQ, 2024). The number of drinks consumed by social context also varied by age group, as shown in Exhibit 3.6.



Exhibit 3.6: Average Number of Drinks Consumed on Last Occasion of Alcohol Use in the Past Month Among People With Past-Month Alcohol Use Ages 12–20, by Social Context and Age Group: 2022 NSDUH Data (CBHSQ, 2024)

Location of Alcohol Use

Most underage people who drank reported on the 2022 NSDUH they last used alcohol in their own homes (47.1 percent) or in someone else's home (42.3 percent; CBHSQ, 2023a). The next-most popular drinking locations were at a restaurant, bar, or club (9.9 percent); at a park, beach, or parking lot (6.1 percent); and at some other place (4.3 percent).

People ages 18–20 who drank were significantly more likely than those in younger age groups to have been in a restaurant, bar, or club on their last drinking occasion (12.9 percent for ages 18–20 versus 2.6 percent for ages 15–17; Exhibit 3.7; CBHSQ 2024). The number of drinks consumed was also affected by location and age group (Exhibit 3.8).





Exhibit 3.8: Mean Number of Drinks per Location by Age Group: 2022 NSDUH Data (CBHSQ, 2024)

Ages	At a Concert or Sports Game	At School	In a Car or Other Vehicle	At a Park, on a Beach, or in a Parking Lot	At Some Other Place	At a Restaurant Bar, or Club	At Home	At Someone Else's Home
12-20	4.6	4.2	4.8	4.1	4.5	3.9	3.1	3.8
18-20	4.3	3.2	4.1	4.1	4.2	3.9	3.3	3.9
15-17	6.5	6.2	4.8	4.0	4.5	3.6	2.7	3.8
12-14	*	*	*	*	*	*	2.1	2.8

*Estimate was suppressed due to low precision.

Underage Drinking Parties

Data cited above suggest that underage drinking occurs primarily in a social context (with three or more people drinking). Thus, most young people drink in contexts that appear to promote heavy consumption and where people other than the person drinking may be harmed by the behavior of the person who is drinking. High-intensity drinking is more likely to occur in social settings involving large groups, strangers, "pregaming," drinking games, and drinking at multiple locations (Terry-McElrath et al., 2023). The odds of both high-intensity and binge drinking were greater on days respondents drank with friends, large groups, and strangers, and if the drinking location was at a party; and on days with pregaming, drinking games, or discounted price drinks.

As the size of the party and the number of males attending the party increase, the risk for highintensity alcohol consumption also increases (Cox et al., 2019).

Because drinking parties involve large numbers of youth who are drinking outside their own homes, it may significantly increase the risk of driving under the influence of alcohol (Gonzales, 2015). One study found that high school students who binge drink are more likely to drink in someone else's home than students who do not binge drink (Gonzales, 2015); drinking outside the home may increase the risk of driving under the influence (Naimi, 2009). Some locations—such as unsupervised homes of individuals other than the person drinking, or retail locations such as bars, and nightclubs—are more likely to be associated with an increased risk of alcohol-related violence (Mair et al., 2015).

One policy approach aimed specifically at underage drinking parties is social host laws, which impose criminal or civil liability on adults who host such events or allow them to take place on their property. Paschall and colleagues (2014) rated such policies for comprehensiveness and stringency. They found a small but significant negative relationship between the strength of the policies and less frequent underage drinking at parties among people who had engaged in past-year drinking. (For more information on state social host laws and on party-related enforcement practices, see the *SPBP Report* at https://www.stopalcoholabuse.gov.)

The College Environment

In its landmark 2002 report, *A Call to Action: Changing the Culture of Drinking at U.S. Colleges* (NIAAA, 2002), the Task Force of the National Advisory Council on Alcohol Abuse and Alcoholism said the following:

The tradition of drinking has developed into a kind of culture—beliefs and customs entrenched in every level of college students' environments. Customs handed down through generations of college drinkers reinforce students' expectation that alcohol is a necessary ingredient for social success. These beliefs and the expectations they engender exert a powerful influence over students' behavior toward alcohol.⁵²

Colleges and universities vary widely in their student drinking and binge drinking rates; however historically, overall rates of college student drinking and binge drinking tend to exceed those of same-age peers who do not attend college. MTF data in 2022 do not completely follow that pattern. In 2022, full-time college students were significantly more likely to report having had an alcoholic drink in the 30 days prior to the survey more often than their non-college -attending peers. Of full-time college students, 62.6 percent were current drinkers, compared with 54.1 percent of their non-college-attending peers. However, the percent of individuals in college who reported binge drinking (27.2 percent) was not significantly different than individuals of the same age who were not attending college (23.9 percent; Exhibit 3.9; Patrick, Miech, et al., 2023).⁵³ Although college-bound 12th graders were historically less likely than non-college-bound counterparts to report binge drinking through 2019, in 2022 the percentages are similar (13.6 percent of those with college plans versus 12.2 percent of those without college plans).

⁵² For many students, alcohol use is not a tradition. Students who drink the least attend 2-year institutions, religious schools, commuter schools, and historically Black colleges and universities (Meilman et al., 1994; 1995; 1999). ⁵³ College students are defined as those follow-up MTF respondents 1–4 years past high school who report that they were taking courses as full-time students in a 2- or 4-year undergraduate college at the beginning of March of the year in question. Non-college same-age peers are follow-up MTF respondents 1–4 years past high school who do not report taking courses. Both groups include a percentage of individuals who have reached the legal drinking age.

According to 2022 MTF data, there are no statistically significant differences between noncollege students and college students in high-intensity drinking; 5.2 percent of college students (8.0 percent of males, 3.4 percent of females) reported having consumed 10 or more drinks in a row in the 2 weeks before the survey. In comparison, 7.8 percent (9.9 percent of males and 5.7 percent of females) of their non-college peers reported having consumed 10 or more drinks in the previous 2 weeks (Patrick et al., 2023a).

Exhibit 3.9: Prevalence of Binge Drinking in the Past 2 Weeks by 12th Graders With and Without College Plans, College Students, and Others 1–4 Years Past High School: 1991–2022 MTF Data (Miech et al., 2023; Patrick, Miech, et al., 2023)



The college environment may increase the likelihood that people with genetic predispositions to AUD will have those predispositions expressed (Timberlake et al., 2007). This suggests that policies and practices adopted in and around college campuses can reduce the risk of excessive alcohol consumption and help protect all students, including those who may be most vulnerable to drinking excessively because of genetic factors or prior exposure to excessive drinking in their homes.

It is also important to recognize that there is a strong correlation between binge drinking by college students and by adults living in the same state and that binge drinking by both college students and adults is strongly influenced by the alcohol policy environment at the state and local levels (Nelson et al., 2005). These findings emphasize the need to implement effective population-based strategies to reduce excessive drinking among youth and adults, such as those included in The Community Guide (<u>https://www.thecommunityguide.org/topic/excessive-alcohol-consumption</u>). However, an analysis in 2015 found that implementation of state alcohol policies that are more politically palatable, such as those targeting youth and alcohol-impaired driving, is more likely to occur, whereas policies directed at the adult population, which might

have the greatest effect on overall public health, are underused because of their less palatable political impact (Nelson et al., 2015).

College environments influence drinking behaviors (Hingson et al., 2009; Kuo et al., 2003; LaBrie et al., 2011). However, as Carter and colleagues noted, college attendance is only one factor potentially influencing alcohol consumption during this period of emerging adulthood (Carter et al., 2010).

Emerging Issues in Underage Drinking

There is a need for ongoing monitoring of trends in the marketplace and emerging public health issues at the national level. Not only are new products continually introduced but also youth behavior and experimentation with different ways to consume alcohol change over time.

Effects of the COVID-19 Pandemic

The emergence in 2019 of SARS-CoV-2, the coronavirus that causes COVID-19, initiated rapid changes in multiple areas that have had an impact on alcohol use and potential misuse. Concurrent with the changes in social factors resulting from COVID-19, significant changes in state alcohol policies occurred, including increased online sales and direct-to-consumer home delivery and shipping. In addition, there have been policy changes in some states allowing restaurants and bars to sell alcohol for carryout and/or curbside pickup (National Institute on Alcohol Abuse and Alcoholism, n.d.).

The impact of these changes overall-and specifically on underage drinking rates and other alcohol-related harms, such as impaired driving, among underage youth—is not yet fully known. There is evidence that adolescents are experiencing pandemic-related mental health challenges, with increases in depression and anxiety (Jones et al., 2021; Chavira et al., 2022). The combined effects of remote or no schooling, increased stress, social isolation, boredom, anxiety, and depression are known risk factors for alcohol and substance use disorders. A survey of adolescents in 2020 indicated that although perceived availability of alcohol had declined during the early stages of the pandemic to the lowest level ever recorded in 46 years, prevalence of adolescent binge drinking had not significantly changed (Miech et al., 2021). Data from the Adolescent Behaviors and Experiences Survey indicate that for adolescents who had already reported consuming alcohol, about one-third reported drinking more alcohol during the COVID-19 pandemic (Brener, 2022). Both the YRBS data and the MTF survey data showed declines in past-30-day alcohol consumption in 2021 (Chaffee et al., 2021; Johnston et al., 2022). Analysis of pandemic-related trends in YRBS data indicated that from 2019 to 2021, the prevalence of current alcohol use decreased (from 29.2 percent to 22.7 percent), as did binge drinking (from 13.7 percent to 10.5 percent; Hoots, 2023).

Young adults in college showed a decrease in alcohol consumption in 2020, with a rebound in 2021; this pattern was not demonstrated in noncollege young adults (Patrick, Miech, et al., 2023). Decreases in the availability of alcohol, school closures and diminished social interaction during the pandemic were hypothesized to be contributing to the initial decreases.

Data from beverage sales indicate there was a significant increase in alcohol consumption from 2019 to 2021 for those age 14 and older (Slater & Alpert, 2023). Several surveys also suggest there were substantial increases in adult alcohol consumption between 2019 and 2021. For example, Pollard et al. (2020) found that three-quarters of adults had increased their alcohol consumption by 1 day more per month, on average, during the initial months of the pandemic

when compared to the same time period the previous year. A large cross-sectional study of adults in 2020 indicated that a greater proportion of women were exceeding drinking limits compared with men, and a greater proportion of non-Hispanic Black respondents were exceeding drinking limits compared with non-Hispanic White respondents (Barbosa et al., 2020). An analysis of data from a survey of young adults (ages 18–25) indicated that alcohol consumption, particularly among those who had already consumed alcohol, increased after the arrival of the pandemic (Sharma et al., 2020). Results from the 2022 MTF indicate that midlife adults ages 35 to 50 reported the highest level of binge drinking seen in that age group (Patrick, Miech, et al., 2023). The overall net effect of these changes in consumption patterns is not yet known.

As noted previously, adult drinking is known to affect youth drinking, as increased parental use means more exposure of adult drinking behavior to teens, including drinking as a coping response to stress. It also potentially means increased accessibility to alcohol in the home. Research from 2020 found an increase in the number of parents who allowed their adolescent children to consume alcohol in the home after the start of the pandemic. Parents who were light or heavy drinkers and adolescents who reported having already consumed alcohol were more likely to receive new permission to consume in the home compared with parents who did not drink at all (Maggs et al., 2021). In addition, alcohol-related emergency department visits involving acute alcohol use were higher in 2020 than in the two years prior (Esser et al., 2022).

Products That Appeal to Adolescents

Public health experts have raised concerns about alcoholic products with characteristics that appeal to youth, such as sweetness (Albers, 2015). Examples of such products include canned cocktails; alcohol-infused edibles, including gummy candies, cakes, whipped cream, popcorn, and ice cream; alcoholic Jell-O shots; high-alcohol-content grain alcohol; and cannabis-infused alcohol (Wachsman, 2019). The market of confections with liquor—which include alcohol-infused chocolates, candies, and gums—is projected to grow in the United States and globally through 2025, according to an industry analysis (Grand View Research, 2022). In particular, alcohol market analysts identified spirit-based gummies (e.g., vodka, tequila, and gin) as a possible growth area—noting that consumption of these candies is favored both by party attendees and hosts (Allied Market Research, 2023; Glimpse, 2023). The appeal to adolescents, in part, is due to the fact that the gummies 'come in a variety of flavors and are meant to be consumed as part of a party game or as a way to become intoxicated.'

There is a recent crossover of branding from food products known to appeal to youth to alcohol. Examples include the introduction of Arby's curly fry– and crinkle fry–flavored vodkas, incorporating flavors similar to their fries; potato vodka from Lay's, and Sonic Hard Slush (Lindenberger, 2021).

Hard seltzers have recently surged in popularity; sales of all hard seltzers increased by 368 percent from 2019 to mid-2020 (Bakker, 2019; Prokop, 2020). A 2022 analysis indicates that spirit-based ready-to-drink (RTD) beverages—including cocktails such as bloody Marys, gin and tonics, and tequila sunrises—are a dynamic and growing product type, with vodka and tequila projected to drive the market (Aswani, 2022). With packaging in cans that is similar to energy and soft drinks, these products may appeal to youth. In 2022, nearly half (47 percents) of people who purchased alcohol opted for (RTD) beverages (PennState Extension, 2023). Newer products include hard kombucha and hard lemonade (Micallef, 2021). Although these drinks are marketed as a healthier alternative to other alcoholic beverages and have a lower alcohol content, they tend to be consumed in greater quantities (U.S. News & World Report, 2019).

Products marketed as having no or low alcohol content (NoLos), although still a minor share of the alcohol market, are increasing and surpassed \$11 billion globally in 2022 (World Health Organization, 2023). Beverages with less than 0.5 percent ABV can be legally purchased and consumed by underage individuals, as these products are not covered under the NMDA Act, according to federal law. However, regulations on the consumption and sale of these products to underage people vary by state and locality; many states restrict consumption of these products to people over age 18 and some limit their purchase to people aged 21 and older.

Given the increase in young adults' interest in and consumption of NoLos as a "better-for-you" beverage option (with estimated U.S. sales at \$395 to \$414 million) and a wide range of newer products (e.g., craft alcohol-free beer, premium wines and spirits, RTD options, flavors, and botanicals), the availability of NoLos is increasing, and elevated youth exposure is likely (BevAlcInsights, n.d.; NielsenIQ, 2022). However, the relatively high price of LoNos may limit the number of people who consume these products, including youth (Wiener-Bronner, 2022). Currently non-alcoholic beers cost approximately the same as beer containing alcohol; bottles of non-alcoholic spirits range from \$20 to \$30. International researchers have pointed out the lack of evidence on the effects of NoLo consumption among underage drinkers (Miller, Pettigrew, & Wright, 2022); there is a concern that these products, which may contain some alcohol, may be misleading in their statement of actual alcohol content, could appeal to minors, and may serve to normalize a culture of alcohol consumption. There is also concern about potential 'cross-marketing'; NoLo branded products may be displayed close to the brand's main alcoholic beverage (WHO, 2023).

Chapter 4: A Coordinated Federal Approach to Preventing and Reducing Underage Drinking

CHAPTER 4 Key Points

- The STOP Act established the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD).
- ICCPUD's vision is to provide national leadership in federal policy and programming to support state and community activities that prevent and reduce underage drinking.
- The federal government can influence public opinion and increase public knowledge about underage drinking; enact and enforce relevant laws; fund programs and research that increase understanding of the causes and consequences of underage alcohol use; monitor trends in underage drinking and the effectiveness of strategies designed to reduce demand, availability, and consumption; and lead the national effort.
- There are a number of major national-level initiatives that provide an evidence-base for underage drinking prevention policies, programs, and practices.

CHAPTER 4: A COORDINATED FEDERAL APPROACH TO PREVENTING AND REDUCING UNDERAGE DRINKING

Introduction

Chapter 4 provides a brief history of underage drinking prevention efforts at the national level. It describes the coordinated approach of the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD) to addressing underage drinking, including the federal agencies involved and how the agencies and programs work together. ICCPUD's commitment to evidence-based policies, programs, and practices is described. Appendix B provides a brief description of each of the federal ICCPUD agencies, along with a detailed inventory of their relevant activities. This chapter concludes with a discussion of the ongoing coordinated federal efforts to address emerging issues at a national level.

The Coordinated Federal Approach

The congressional mandate to develop a coordinated approach to preventing and reducing underage drinking and its adverse consequences recognizes that alcohol consumption by those under age 21 is a serious, complex, and persistent societal problem with significant health, financial, social, and personal costs. Congress also recognizes that a long-term solution will require a broad, deep, and sustained national commitment to reducing the demand for and access to alcohol among young people. Solutions must address not only youth themselves but also the larger society in which images of alcohol use are pervasive and drinking is seen as normative, providing the context for such drinking.

The responsibility for preventing and reducing underage drinking involves government at every level, institutions and organizations in the private sector, colleges and universities, public health and consumer groups, the alcohol and entertainment industries, schools, businesses, parents and other caregivers, other adults, and adolescents themselves. The federal government has a unique role in this effort. Through leadership and financial support, the federal government can influence public opinion and increase public knowledge about underage drinking; enact and enforce relevant laws; fund programs and research that increase understanding of the causes and consequences of underage alcohol use; monitor trends in underage drinking and the effectiveness of strategies designed to reduce demand, availability, and consumption; and lead the national effort. The federal government enacts policies, conducts research and surveillance, and develops or supports programs aimed at underage alcohol prevention, intervention, treatment, and recovery. The government has also increased and supported the involvement of communities through grants and other mechanisms and collaborated with private organizations.

Although the federal government has a long history of working on the prevention of underage drinking, the approach has been more coordinated since 2004. A comprehensive national effort to address underage drinking was initiated and subsequently intensified as the multidimensional consequences associated with underage drinking have become more apparent.

A Brief History of Policies Addressing Underage Drinking

Highlights of legislation relevant to the minimum legal drinking age (MLDA) and subsequent national efforts aimed at the reduction of alcohol-related deaths and disability are summarized in

Exhibit 4.1. There is significant evidence that reducing access to alcohol, such as through the MLDA, has a significant effect on mortality rates, particularly for young adults (Carpenter & Dobkin, 2011), and that it reduces the rates of nonfatal injuries (e.g., alcohol overdoses, unintentional injuries, and injuries deliberately inflicted by others) in youth younger than 21 as well (Carpenter & Dobkin, 2016). There is also consistent evidence that the enactment of the MLDA in the United States contributed to a reduction in youth suicide (Xuan et al., 2016). Additional details on policies, programs, and practices for individual states are provided in the *State Reports* — *Underage Drinking Prevention and Enforcement* (*State Reports*), available at https://www.stopalcoholabuse.gov.

National Prevention Efforts

Since the mid-1980s, underage drinking prevention efforts have been implemented at the federal, state, tribal, and local levels. Evidence-based prevention, intervention, treatment, enforcement, and recovery strategies are called for in the National Research Council (NRC) and Institute of Medicine (IOM) report Reducing Underage Drinking: A Collective Responsibility (NRC & IOM, 2004); the NIAAA Call to Action: Changing the Culture of Drinking at U.S. Colleges (NIAAA, 2002); the Surgeon General's Call to Action to Prevent and Reduce Underage Drinking (HHS, 2007); College Alcohol Intervention Matrix (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2015); Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs and Health (SAMHSA, 2016); and the Community Preventive Services Task Force Guide to Community Preventive Services: Preventing Excessive Alcohol Consumption (Guide to Community Preventative Services, 2022). For example, the specific evidence-based environmental policies to reduce underage drinking identified in the 2016 Surgeon General's report Facing Addiction in America (SAMHSA, 2016) include:

- Retaining the 21 MLDA
- Compliance checks of alcohol retailers to monitor whether they are selling to underage buyers
- Zero-tolerance laws that prohibit underage drivers from having any measurable BAC
- Use/lose laws that take away underage drivers' licenses for alcohol violations
- Laws that impose criminal and civil liability on adults for hosting underage drinking on their property
- Proposals for reductions in alcohol advertising

ICCPUD includes the following officials, as specified in the STOP Act:

- Secretary of Health and Human Services (HHS)
- Secretary of Education
- Assistant Secretary of Health
- Attorney General
- Secretary of Transportation
- Secretary of the Treasury
- Secretary of Defense
- Assistant Secretary for Mental Health and Substance Use
- Assistant Secretary for Children and Families
- Surgeon General
- Director of the Centers for Disease Control and Prevention (CDC)
- Director of NIAAA
- Director of the National Institute on Drug Abuse (NIDA)
- Director of the Office of National Drug Control Policy
- Administrator of NHTSA
- Administrator of the Office of Juvenile Justice and Delinquency Prevention
- Chairman of the Federal Trade Commission
- Director of the Agency for Healthcare Research and Quality
- Associate Director of the Behavioral Research Program, National Cancer Institute (NCI)

Key Substance Abuse and Mental Health Services Administration (SAMHSA) prevention activities developed in conjunction with ICCPUD are provided below.

The STOP Act, the Interagency Coordinating Committee on the Prevention of Underage Drinking, and the Comprehensive Plan

Contained within the 2004 NRC/IOM report was a review of federal funding activities and a recommendation for the formation of an interagency body to provide an overall vision and national leadership for prevention of underage drinking. The conference report accompanying the Consolidated Appropriations Act of 2004 directed the HHS Secretary to establish ICCPUD (see the member list in the sidebar) and to issue an annual report summarizing all federal agency activities related to the prevention of underage drinking. The HHS Secretary directed the Administrator of SAMHSA, now known as the Assistant Secretary for Mental Health and Substance Use, to convene ICCPUD in 2004.

In December 2006, Congress passed the STOP Act (Pub. L. 109–422). The act states:

A multi-faceted effort is needed to more successfully address the problem of underage drinking in the United States. A coordinated approach to prevention, intervention, treatment, enforcement, and research is key to making progress. This Act recognizes the need for a focused national effort, and addresses particulars of the federal portion of that effort, as well as federal support for state activities.

The STOP Act requires the HHS Secretary, in collaboration with other federal officials enumerated in the act, to "continue to support and enhance the efforts of the [ICCPUD, which] began operating in 2004, focusing on underage drinking."



Exhibit 4.1: History of Federal Involvement in Reducing Underage Drinking

ICCPUD's role was thus formalized in the 2006 STOP Act, which was reauthorized in subsequent legislation. SAMHSA was directed by the HHS Secretary to convene ICCPUD and serve as the lead agency. In keeping with the STOP Act's requirement that ICCPUD "shall actively seek the input of and consult with all appropriate and interested parties," quarterly virtual meetings are held to engage with community members, practitioners, government agency representatives, and others on topics related to the STOP Act, such as how data presented in the reports to Congress might be used to serve the work of underage drinking prevention. In addition, an annual stakeholders meeting is hosted by ICCPUD, which includes interested parties such as representatives from government agencies at all levels, the alcoholic beverage industry, and public health and consumer groups.

The ICCPUD principals meet annually to discuss the federally coordinated approach to preventing underage drinking, changes to the Comprehensive Plan, and updates on the reports to Congress. Those meetings are convened by the designated ICCPUD Chair, the HHS Assistant Secretary for Mental Health and Substance Use. Staff representatives from each agency participate in monthly meetings convened by the ICCPUD Chair to discuss current issues and trends and to develop and review materials, including annual reports to Congress and learning products.

ICCPUD provides guidance on the development of the reports to Congress through its Data Committee, composed of staff from member agencies that conduct research on underage alcohol use, its adverse consequences, and the effectiveness of programs designed to prevent and reduce use. The Data Committee provides specialized, expert guidance on facts and statistics on underage drinking, in particular the data cited in the reports to Congress and other documents.

ICCPUD's vision is to provide national leadership in federal policy and programming to support state and community activities that prevent and reduce underage drinking.

The mission of ICCPUD is twofold:

- 1. To facilitate collaboration among the federal ICCPUD member agencies; state, tribal, and local governments; private and public national organizations; and agencies with responsibility for the health, safety, and wellbeing of America's children and youth.
- 2. To provide resources and information on underage drinking prevention, intervention, treatment, enforcement, and research.

Members of ICCPUD and other federal partners commit to the following principles:

- Speak with a common voice on the prevalence, risks, and consequences of underage drinking.
- Increase public awareness about underage drinking and its consequences.
- Reinforce effective evidence-based practices (EBPs) as part of a federally coordinated approach to preventing and reducing underage drinking.

ICCPUD developed *A Comprehensive Plan for Preventing and Reducing Underage Drinking* (the *Comprehensive Plan*), which Congress called for in 2004 (SAMHSA, 2006). ICCPUD received input from experts and organizations representing a wide range of stakeholders, including public health advocacy groups, the alcohol industry, ICCPUD member agencies, and Congress. The latest research at the time was analyzed and incorporated into the plan, which HHS reported to Congress in January 2006. It included three general goals, a series of federal

action steps, and three measurable performance targets for evaluating national progress in preventing and reducing underage drinking. The three goals were to:

- 1. Strengthen a national commitment to addressing underage drinking
- 2. Reduce demand for, availability of, and access to alcohol by people younger than 21
- 3. Use research, evaluation, and scientific surveillance to improve the effectiveness of policies and programs designed to prevent and reduce underage drinking

In 2018, the ICCPUD principals (the statutorily designated members or their appointed representatives) met to discuss an update to the 2006 Comprehensive Plan. The group approved a new plan with updated targets (described more fully below) for reduction of underage pastmonth alcohol use and binge drinking and for increasing the average age of initiation of alcohol use based upon the latest available federal survey data. The 2018 Comprehensive Plan also set out the vision, mission, and principles of ICCPUD. The most recent update of the Comprehensive Plan was approved by ICCPUD in 2022.

Interagency Coordinating Committee on the Prevention of Underage Drinking Guidance and Coordination of Federal Efforts to Prevent Underage Drinking

ICCPUD aims to increase coordination and collaboration in program development and dissemination among member agencies, so the resulting programs and interventions are complementary and synergistic.

A graphic representation of this intended coordinated and collaborative approach is provided in Exhibit 4.2. The graphic reflects the language from the STOP Act regarding prevention, intervention, treatment, enforcement, and research activities and displays the varied environmental influences and involved entities.⁵⁴



Exhibit 4.2: Multifaceted Effort to Reduce Underage Drinking

⁵⁴ "Recovery" is not in the original language of the STOP Act. It has been added to update the language to be more inclusive of the continuum of care.

Underage Drinking-Related Goals

ICCPUD set three broad underage drinking-related goals and three data-based targets in its 2018 *Comprehensive Plan.* In addition, the HHS Healthy People 2030 program provides science-based national 10-year objectives for improving health.

Several of the programs listed in the Appendix B "Inventory of Federal Programs for Underage Drinking by Agency" will advance the following Healthy People 2030 objectives related to underage drinking:

- Reduce the proportion of adolescents reporting use of alcohol during the past 30 days
- Reduce the proportion of persons under 21 years of age engaging in binge drinking of alcoholic beverages during the past 30 days
- Increase the proportion of adolescents who perceive great risk associated with substance abuse

For more information on Healthy People 2030, please visit <u>https://health.gov/healthypeople/objectives-and-data/browse-objectives/adolescents</u>.

A Commitment to Evidence-Based Policies, Programs, and Practices

All federal agencies are required to use data to assess the efficiency and effectiveness of activities in their departments, agencies, and bureaus.⁵⁵ In line with these requirements, the STOP Act requires ICCPUD to include in the *Report to Congress (RTC)* Evidence-Based Policies, Programs and Practices to prevent and reduce underage drinking and evidence-based treatment services for youth who need them.

ICCPUD, through its members and the convening of an advisory committee, continues to identify evidence-based policies, programs, and practices in prevention, intervention, treatment, recovery, and enforcement. In 2018, SAMHSA launched the EBP Resource Center, which aims to provide communities, clinicians, policymakers, and others in the field with the information and tools they need to incorporate EBPs into their communities or clinical settings. The EBP Resource Center contains a collection of scientifically based resources for a broad range of audiences, including Treatment Improvement Protocols, toolkits, resource guides, clinical practice guidelines, and other science-based resources. Several resources specific to underage drinking prevention and treatment, including a guide on alcohol policy, are currently on the EBP Resource Center's website: https://www.samhsa.gov/ebp-resource-center.

Dietary Guidelines for Americans

The *Dietary Guidelines for Americans* are published jointly by HHS and the U.S. Department of Agriculture (USDA) approximately every five years. The 2020–2025 guidelines specifically recommend that alcohol should be consumed only by those of legal drinking age and do not recommend that people not currently drinking start drinking for any reason. The guidelines also state that drinking less is better for health than drinking more. Adults of legal drinking age can choose not to drink or to drink in moderation by limiting intake to 2 drinks or less in a day for men and 1 drink or less in a day for women, when alcohol is consumed. An additional caveat included in the latest guidelines is an acknowledgment that emerging evidence suggests that even drinking within the recommended limits might increase the overall risk of death from various causes, such as cancer and cardiovascular disease. Additional recommendations include avoiding

⁵⁵ Requirements are detailed in the Government Performance and Results Act of 1993 and its subsequent amendment, the Government Performance and Results Modernization Act of 2010.

excessive drinking, and the guidelines also note that calories from alcoholic beverages can easily contribute to excess calorie intake (USDA & HHS, 2020).

ICCPUD State Performance & Best Practices for the Prevention and Reduction of Underage Drinking Report

ICCPUD has developed a report that reviews evidence-based and promising policies, programs, and practices to prevent and reduce underage drinking. The *State Performance & Best Practices for the Prevention and Reduction of Underage Drinking Report (SPBP Report)* summarizes and compares the states' performance in implementing evidence-based policies, programs, and practices. The *SPBP Report* includes a description and analysis of legal policies addressing underage drinking and related problems for which there is mixed, promising, or strong evidence of effectiveness. As required by the STOP Act, states' adoption of these policies is tracked in the *SPBP Report* and the individual *State Reports*.

Reducing Underage Drinking: Looking Forward

As noted above, multiple federal agencies are involved in preventing and reducing underage drinking. A graphical representation of the agencies, with brief descriptions of their roles in underage drinking prevention, is provided in Exhibit 4.3. The federal officials who make up ICCPUD (see Appendix A) either lead or have designated responsibility in the agencies listed below. Details for each agency and a list of programs are provided in Appendix B.

ICCPUD agencies are committed to using a comprehensive and coordinated approach to preventing and reducing underage drinking and the associated costs and consequences that burden both individuals and society. Working as an interagency group, ICCPUD can support effective programs and strategies, eliminate duplication, and address programming gaps.

Exhibit 4.3: Federal Agencies in the ICCPUD



Topics for specific attention by ICCPUD over the next few years include:

- The systems of care (or lack thereof) for people underage who drink.
- The effects of the COVID-19 pandemic on adolescent alcohol use. This includes:
 - Continued assessment of the intersection of mental health issues in adolescents and related changes in drinking patterns because of stress, anxiety, and depression.
 - Changes in state policies related to alcohol delivery and off-premises consumption instituted during the pandemic, particularly changes that have been made permanent.
- The effects on both adult and adolescent drinking and alcohol-related harms caused by the increased availability of alcohol products related to recent changes in laws governing the sale of alcohol products on the internet.
- Changes in cannabis policies and laws and possible resulting changes in consumption patterns and perception of risk of substance use.
- Changes in youth drinking behavior, such as combining alcohol with other substances (e.g., prescription opioids).
- The continued development of new products that especially appeal to youth.

Chapter 5: Evaluation of the National Media Campaign "Talk. They Hear You."[®]

CHAPTER 5 KEY POINTS

- The "Talk. They Hear You."[®] (TTHY) campaign works to prevent and reduce both underage drinking and other substance use by helping parents and caregivers, educators, and community members get informed, be prepared, and take action.
- The TTHY campaign includes public service announcements; brochures; fact sheets; a mobile application; a website; a podcast; "Parents' Night Out" educational sessions; and a screening tool (Screen4Success).
- In 2023, the TTHY campaign developed and began testing on Screen4Success for Professionals, an addition to Screen4Success for Individuals (self-screening tool) that offers a referral and data management service for school administrators, community-based organization staff, and other professionals who are concerned about substance use, mental health, or other determinants of health and wellness for youth and adults.
- The TTHY earned media campaign has yielded a little more than a \$18 return for every \$1 invested.

CHAPTER 5: EVALUATION OF THE NATIONAL MEDIA CAMPAIGN "TALK. THEY HEAR YOU."[®]

Introduction

Chapter 5 provides the 2024 Report to Congress on the Prevention and Reduction of Underage Drinking (2024 RTC) with information on the national media campaign "Talk. They Hear You."[®] (TTHY), as required by the Sober Truth on Preventing Underage Drinking Act (STOP Act). Chapter 5 details the annual production, broadcasting, and evaluation of TTHY and details the effectiveness of the campaign in preventing and reducing underage drinking. The chapter begins by providing an overview of TTHY and then describes the campaign's evaluation and components. The chapter also presents a detailed description of the campaign's evaluation and subsequent refinement.

Background

Guided by the Interagency Coordinating Committee for the Prevention of Underage Drinking (ICCPUD), the Substance Abuse and Mental Health Services Administration (SAMHSA) manages and executes the national youth substance use prevention campaign TTHY. In 2023, the campaign celebrated its 10th year of helping parents and caregivers, educators, and community members get informed, be prepared, and take action on health, wellness, and well-being related to the prevention and reduction of underage drinking and co-use of other substances. The original goal of TTHY was to provide parents and caregivers with the resources they need to address the risks of alcohol use with their children. Through strategic expansion, the campaign now supports SAMHSA's efforts to reduce both underage drinking and other substance use. ICCPUD agencies expressed concern that cannabis policy could increase access among young people in the United States. Additional funding was received in 2017 to address concerns regarding co-use of substances.

TTHY addresses all three of the core goals laid out in ICCPUD's *2023 Comprehensive Plan*, as well as several topics for ICCPUD consideration and recommendations for new activities:

- Goal 1: Strengthen a national commitment to address the problem of underage drinking;
- Goal 2: Reduce demand for, the availability of, and access to alcohol by persons under the age of 21; and
- Goal 3: Use research, evaluation, and scientific surveillance to improve the effectiveness of policies and programs designed to prevent and reduce underage drinking.

The TTHY campaign objectives include the following:

- 1. Increase awareness of and receptivity to campaign messages (knowledge);
- 2. Increase awareness of the prevalence of underage drinking and other substance use (knowledge);
- 3. Increase disapproval of underage drinking and other substance use (attitudes);
- 4. Increase knowledge, skills, and confidence in how to talk with kids about—and prevent— underage drinking and other substance use (attitudes); and
- 5. Increase actions to prevent underage drinking and other substance use by talking with kids about alcohol and other substances (behaviors).

Campaign Audiences and Materials

Parents and Caregivers

Mobile App

The campaign continued to enhance the content and functionality of the TTHY mobile app. This app shows parents and caregivers how to turn everyday situations into opportunities to talk with

their children about alcohol and other drugs and equips them with the necessary skills, confidence, and knowledge to start and continue these conversations as their kids get older (see Exhibit 5.1). The app also helps prepare communities to implement and promote the TTHY campaign locally and helps educators engage student assistance professionals, school leaders, and families in supporting the needs of students who may be struggling with substance use, mental health, or school-related issues.

Exhibit 5.1: TTHY Mobile App Pages



"What Parents Are Saying" Podcast

The campaign continued to release episodes of its "What Parents Are Saying—Prevention Wisdom, Authenticity, and Empowerment" podcast (see Exhibit 5.2). This podcast provides a platform for parents and caregivers to get informed, be prepared, and take action by having open and honest conversations with their kids about substance use and mental health. Hosted by Debbie Berndt, Director of Parent Movement 2.0 and a longtime campaign collaborator, the podcast features discussions with parents, caregivers, and nationally recognized experts lending their unique perspectives and experiences on how to navigate conversations around these

important topics. The following eight podcast episodes were produced and released in 2023:

- Episode #9: Grandfamilies
- Episode #10: Teens Talk: Protecting Their Game
- Episode #11: Parents' Night Out
- Episode #12: Communities in Action
- Episode #13: Talking with the Kennedys
- Episode #14: Expert Chat: A New Way to Communicate with Your Kids
- Episode #15: Back-To-School: Connecting with your "Screenagers"
- Episode #16: Celebrating Safely During the Holidays

The podcast is available to stream free on SAMHSA's YouTube channel and most of the prominent podcast platforms, including Spotify, Apple Podcasts, Google Podcasts, and Amazon Music/Audible. In 2023, the podcast was downloaded 2,854 times, with listeners in 1,352 cities in 53 countries.





Website

The campaign continued to use the TTHY website (see Exhibit 5.3) to provide a centralized resource for all campaign information and products. Materials and information are organized by key campaign audience: parents and caregivers, educators, or community members. Educational and informational campaign products provide facts and statistics on the problems and consequences of underage drinking and other substance use, risk factors, and warning signs. They also suggest actions that parents and caregivers, educators, and community members can take to help inform and protect children and strengthen their decision-making skills. A Spanish version of the TTHY website can be accessed at https://www.samhsa.gov/hable-ellos-escuchan.

Parents and caregivers can download a sample family agreement form that enables families to pledge their commitment to avoiding underage drinking and other drug use. Other tools provide answers to children's frequently asked questions about alcohol and other drugs and present five primary conversational goals for parents and caregivers, emphasizing the importance of:

- Indicating disapproval of underage drinking and other drug use;
- Demonstrating concern for their child's happiness and wellbeing;
- 3. Establishing themselves as a trustworthy source of information;
- 4. Showing their child that they are paying attention and will notice alcohol and other drug use; and
- 5. Building their child's skills and strategies for avoiding underage drinking and other drug use.

Exhibit 5.3: TTHY Campaign Website Homepage



Future Products

The campaign will be developing an intervention tool to support parents and caregivers called *Strengthening Parent Awareness, Rapport, and Communications (SPARC)*. Parents and caregivers will be able to utilize the techniques provided in SPARC as a guide to enhance their rapport and communication with their child(ren). In 2025–2026, the campaign will develop SPARC, followed by pilot testing and then the finalization, distribution, and promotion of these materials.

Schools and Educators

Website

The TTHY website contains a section with resources specific to Schools and Educators. Included is a five-part Student Assistance Program (SAP) Webinar series, conversation guide for educators, and access to campaign promotional materials. Informational materials are available via PowerPoint, recordings, and guide documents. Promotional materials are available in PDFs to be printed, along with links to the video PSAs in two formats. All materials are free for schools and educators to download, use, and distribute.

Future Products

The campaign will be developing an intervention tool to support school administrators and educators called *Screening, Brief Intervention, and Referral to Services* (SBIRS). SBIRS will provide a four-step process with three lines of intervention included. The process includes:

Screening & Early Identification: The school student assistance professional will administer the Screen4Success screener to students who show signs of concern in areas of health, wellness, and well-being. If screener results present as cause for more support, the student assistance professional will move through the first-line intervention.

First-Line Intervention: Motivational Interviewing sessions and Motivational Enhancement Therapy protocol. If additional intervention is needed, the student assistance professional will move through the second-line intervention.

Second-Line Intervention: Brief Cognitive Behavioral Therapy intervention that follows from the Motivational Enhancement Therapy protocol. If additional intervention is needed, the student assistance professional will move through the third-line intervention.

Third-Line Intervention: Engaging parents, caregivers, and families in the referral to services process.

In 2025, the campaign will continue to develop SBIRS, followed by pilot testing and then the finalization, distribution, and promotion of these materials.

Communities

PSAs

TTHY PSAs show parents using everyday opportunities to talk with their children about alcohol and other drugs and reinforce the importance of starting these conversations at an early age and continuing the conversations through adulthood (see Exhibit 5.4). The PSAs direct viewers and listeners to the campaign website

(https://www.talktheyhearyou.samhsa.gov) for additional information and tools, as well as downloadable versions of the television, radio, and print PSAs. In 2023, the campaign utilized PSAs developed in 2021-2022. This included one TV PSA (15-, 30-, and 60-second versions), one radio PSA (15-, 30-, and 60-second versions), and 10 print PSAs. These PSAs are "community first" focused and let viewers know that whatever "community" means to them—their home, neighborhood, workplace, faith community, social groups, arts organizations, athletic teams, school, or somewhere Exhibit 5.4: TTHY Typical Parent/Child Opportunity for Conversation



else they choose to belong, or a combination of all of these—the people in that community are valuable resources and supports who can help them prevent underage drinking and other youth substance use. The PSAs reinforce that engaging and strengthening all of the different elements of their community builds resilience and creates hope. The campaign also began producing a

new community-focused soundtrack, titled "This Life for Us," to enhance and create a common theme throughout the new PSAs and other multimedia products.

Since the campaign launched in 2013, TTHY television, radio, and print PSAs have collectively garnered more than 23.6 billion impressions, with 2.35 billion of those impressions occurring in 2023. Distribution of these PSAs has generated an estimated \$278 million in free airtime and ad space.

Website

Community-based organizations have free access to campaign promotion and planning guides, and branding information. Organizations may download TTHY logos and materials to share them as-is within their community, or co-brand them with their own logo. Similar to schools and educators, community-based organizations are also able to download TV and radio PSAs, and informational materials to disseminate within their community.

Parents' Night Out

The campaign also launched its "Parents' Night Out" (PNO) educational sessions in February 2022 (see Exhibit 5.5). PNO was created with feedback from the TTHY campaign's community partners and refined through feedback from pilot presentations that occurred in early 2021. These sessions are intended to inform parents and caregivers about the realities of underage drinking



and other drug use, prepare them to talk with their children about these issues, and motivate them to take action by having these necessary conversations. The PNO materials are intended to be used for community implementation of interactive, facilitator-led sessions that can be held either virtually or in person. Comprehensive toolkits are available for download and include all materials needed to implement either a single 1-hour PNO session or a series of three 1-hour program sessions. The PNO toolkits contain everything a school or community prevention coalition needs to plan, prepare, and host a session in its community.

In late 2023, a TTHY community partner, the Capital Region Educational Service District (ESD) 113 in Washington state, began conducting monthly 1-hour virtual events. They plan to continue offering these online events into 2024. As of December 31, 2023, 1,165 campaign partners had submitted their contact information to the PNO landing page to access the digital toolkits in preparation to host sessions in their communities.

Campaign Partners

To date, TTHY brand licenses have been assigned to 1,569 campaign partners that include large organizations like state health departments and regional hospitals all the way down to small non-profits that are run by individuals or volunteers. The campaign works with these local, state, and national partners to support TTHY implementation and materials outreach and dissemination efforts across the United States. Partners include national stakeholder organizations, local

community coalitions, and government agencies, as well as prevention, retail, healthcare, community, and school-based organizations.

TTHY campaign products, along with other sample campaign messaging and promotional materials, are created and provided to partners for display and distribution to parents and caregivers, educators and schools, and community members and organizations to ensure consistent outreach to these audiences. The TTHY campaign sent 45 targeted emails with customizable social media content, newsletter blurbs, and blog posts to more than 2,500 contacts interested in receiving campaign updates in 2023. These emails focused on topics such as monthly observances organizations could build prevention campaigns around, updates to Parents Night Out and other TTHY programs, registration and topics for Community Engagement Meetings, and TTHY participation in National Prevention Week. The emails consistently exceeded the average email open for government campaigns, with a 39.8 percent average open rate (compared with the 28.8 percent average for government campaigns) and a 6.9 percent average click rate (compared with 4 percent; Email Marketing Statistics and Benchmarks by Industry, n.d.).

In 2023, the TTHY campaign hosted five virtual community engagement meetings to meet the communications, planning, and training needs expressed by community partners in the previous year. This included meetings on how partners use the TTHY campaign, how to maximize social media, and how to evaluate prevention campaigns, and a feedback meeting where partners shared their thoughts on the campaign website, the mobile app, available products, future products, and audience needs. The average attendance of these meetings was 102 participants.

Screen4Success

Screen4Success Personal

Screen4Success (S4S), a critical tool to help parents and caregivers better understand their kids' health, wellness, and wellbeing. S4S provides a quick and easy way to identify areas in which youth might benefit from more support and then access helpful resources to address those needs

Exhibit 5.6: Screen4Success Logo



(see Exhibit 5.6). Through a series of screening questions on substance use, mental and physical health, general wellbeing, and family life, S4S helps concerned parents and caregivers identify whether their child has an elevated risk of potential problems in these areas. S4S is a free tool that exists as a standalone site and is promoted through a linked page in the TTHY mobile app, website, and other materials. S4S can be accessed at <u>https://screen4success.org.</u>

Once the tool launched in 2023, promotion efforts began immediately including social media posts for SAMHSA platforms and TTHY Campaign partner dissemination; email newsletters to local and national partners; and TTHY website and mobile app content updates. In 2024, the campaign will continue developing a more robust promotions strategy that includes enhanced social media and e-mail marketing efforts, in addition to increased mobile app content, paid advertisements, podcast integration, and partner outreach.

Screen4Success for Professionals (S4S-Professional)

In 2023, the campaign developed an expansion of S4S called S4S-Professional, where public health agencies can deploy S4S with the communities they serve. School administrators,

community behavioral health organization leaders, and other group users will be able to manage multiple participants and view a data dashboard of their results. Professional accounts allow administrators to track referrals for their participants and curate resource lists specific to their community. To ensure the site is working as intended, the S4S team began a phase of Beta Usability Testing in partnership with nine sites who intend to use S4S-Professional in the future. These sites provided feedback on the functionality and usability of the site in two different testing sessions and will participate in two additional testing sessions in 2024. Their feedback will be used to make site improvements to enhance the user experience.

Following the Beta Usability Testing Phase, the S4S team will develop an Implementation Phase Plan. The goal of the Implementation Phase is to have participating sites implement S4S-Professional within their agency and provide feedback for user guides, support, and other materials development.

Campaign Refinement and Evaluation

OMB Package Submission for Parents' Night Out Evaluation

To expand campaign evaluation efforts, the TTHY evaluation team began the OMB package submission process for PNO. This submission will occur in conjunction with the STOP Act State Survey and Policy Academy Evaluation. The goal is to measure how the PNO educational sessions impact parent and caregiver knowledge, awareness, attitudes and/or behavior regarding talking to their children about underage drinking and other substances. The evaluation will employ a multiple-baseline component-oriented pre/post-test study design to assess the impact of this targeted campaign exposure.

The PNO series currently exists in multiple formats, including both an in-person and virtual delivery model as well as a shortened (1-hr duration) and extended (3-hr duration) versions. The 3-hour version includes exposure to a variety of TTHY campaign tools, including introduction to, and use of, the TTHY mobile application as well as opportunities to practice applying the motivational interviewing-based conversation tools. Use of the component-approach (e.g., adding, removing, or updating TTHY product/campaign materials based on feedback and evolution of the campaign in response to a changing landscape) allows for continuous improvement in response to ongoing feedback, enabling the campaign to utilize a community-engaged approach as well as remain current in an ever-evolving substance use landscape. The evaluation team will assess whether greater exposure to the materials results in increased knowledge, awareness, behavior change. Embedding evaluation into the larger campaign approach is also consistent with best practices in monitoring and evaluation research and SAMHSA's larger strategic plan.

Mobile App Satisfaction Survey

The campaign continued to monitor the satisfaction survey at the bottom of the mobile app pages (see Exhibit 5.7). All app users have the option to rate how much they like the app by selecting from one to five stars. After they make their selection, a new screen appears with the remaining survey questions. Next, users are asked to score on a scale from one to four, their experience using the app, wherein one is poor and four is excellent. Metrics include ease of use, navigation, look and feel, number of features, usefulness of information, and how likely they are to recommend the app to a friend. After the scale questions, users are asked about what feature of the app they find most useful and how often they use that feature. There is then an open response box for users to put any features they think are missing from the app. The last question is a

response box for users to put any general feedback they have. In 2023, among those responding to the survey, the average rating was 4.32 out of 5. One user wrote, "I love the new resources and having everything together in one place. It is easy to navigate." in the general feedback section.

Community Engagement Meeting Feedback Surveys

In 2023, the campaign evaluation team developed a satisfaction survey to be sent to community engagement meeting participants after each meeting. This form allows participants to provide feedback on the meeting, including what went well and any recommendations they have. Additionally, participants can share their own ideas for future topics and content. The campaign team reviews the responses and uses this information to plan topics and format of future meetings.



Exhibit 5.7: TTHY Mobile App Satisfaction Survey

The December 2023 meeting, which focused on social media, was the first one evaluated via this form. Of the 132 participants in the meeting, 42 responded to the satisfaction form. Participants felt that the meeting was engaging and informative, and that presenters were responsive to questions. Information regarding social media planning, analysis, and metrics were cited as most beneficial. Participants requested more information on social media best practices and platform-specific advice. The campaign team plans to explore these topics in 2024. Additionally, the evaluation team will continue using this form into 2024 to collect feedback.

Outcomes

The campaign team strives to align campaign efforts and targeted outcomes with that of Center for Substance Abuse Prevention (CSAP), within SAMSHA. Specifically, increasing the number of individuals reached through population-based prevention efforts. This includes the impressions (the number of times people viewed earned media content) and interactions with campaign materials in 2023 (see Exhibit 5.8).

PSA Impressions	4,052,000,000
Earned Media Value	37,250,000
Social Media Engagements	17,706
Website Visits	255,884
Website Pageviews	448,132
Soundtrack Plays	35,975
Mobile App Downloads	5,409
Podcast Listens	179,254
Radio PSA Impressions	355,664,300
Radio Earned Media Value	4,267,960

Exhibit 5.8: TTHY	Campaign	Metrics
-------------------	----------	---------

Beginning in late 2024, the campaign can begin to track efforts towards a second CSAP goal, focused on the number of individuals reached through direct prevention efforts. In Fall of 2024, the campaign will launch S4S-Professional, and if consented by the participant, the S4S team will gain access to deidentified data including the number of people who complete a screener or had a follow-up with a student assistance professional.

Conclusion

Supporting the development and justification of the TTHY campaign involves a complex interplay of formative, process, and outcomes evaluation efforts. Evaluation findings to date suggest that the campaign has met many markers for early success, including having materials that strongly resonate with intended TTHY audiences. The growing body of evidence presented in this report supports that campaign messages serve as cues to action that increase both the intentions and the rates of conversations between parents/caregivers and their children about underage drinking and other substance use. In meeting the requirements of the STOP Act, SAMHSA, under the leadership of ICCPUD, will continue to assess program efficacy over the next year. SAMHSA will persist in its work to estimate overall campaign impact, as well as ensuring that the TTHY campaign evolves in ways that resonate with its primary target audiences and meets the needs of the U.S. population at large.

APPENDIX A: ICCPUD MEMBERS⁵⁶

Lloyd J. Austin, III

Secretary U.S. Department of Defense

Xavier Becerra, JD

Secretary U.S. Department of Health and Human Services

Pete Buttigieg Secretary U.S. Department of Transportation

Miguel Cardona

Secretary U.S. Department of Education

Mandy Cohen

Director Centers for Disease Control and Prevention U.S. Department of Health and Human Services

Miriam Delphin-Rittmon, PhD (Chair)

Assistant Secretary for Mental Health and Substance Use Substance Abuse and Mental Health Services Administration U.S. Department of Health and Human Services

Merrick Garland

Attorney General U.S. Department of Justice

Rahul Gupta, MD Director Office of National Drug Control Policy

Rebecca Haffajee

Acting Assistant Secretary Office of the Assistant Secretary for Planning and Evaluation U.S. Department of Health and Human Services

Jeff Hild

Acting Assistant Secretary Administration for Children and Families U.S. Department of Health and Human Services

Lina Khan

Chair Federal Trade Commission

William M. Klein, PhD

Associate Director, Behavioral Research Program National Cancer Institute

Rachel L. Levine, MD

Assistant Secretary for Health U.S. Department of Health and Human Services

George Koob

Director National Institute on Alcohol Abuse and Alcoholism National Institutes of Health U.S. Department of Health and Human Services

Alejandro Mayorkas Secretary Department of Homeland Security

98 | 2024 Report to Congress on the Prevention and Reduction of Underage Drinking-

⁵⁶ As specified in the STOP Act, ICCPUD is composed of 16 federal officials, some of whom have delegated participation to specific agencies and/or staff. In 2022, the Assistant Secretary added the Director of the Agency for Healthcare Research and Quality as a Principal; in 2024, the Associate Director of the Behavioral Research Program, NCI, was added.

Vivek Murthy

Surgeon General U.S. Department of Health and Human Services

Lynn Rosenthal, M.P.A.

Deputy Assistant Secretary Office of Population Affairs U.S. Department of Health and Human Services

Sophie Shulman

Deputy Administrator National Highway Traffic Safety Administration

Amy L. Solomon, M.P.P.

Principal Deputy Assistant Attorney General Office of the Assistant Attorney General Office of Juvenile Justice and Delinquency Prevention U.S. Department of Justice

Roselyn Tso

Director Indian Health Service U.S. Department of Health and Human Services

Robert Valdez, PhD

Director Administration for Healthcare Research and Quality U.S. Department of Health and Human Services

Nora D. Volkow, M.D.

Director National Institute on Drug Abuse National Institutes of Health U.S. Department of Health and Human Services

Janet Yellen

Secretary U.S. Department of the Treasury

APPENDIX B: FEDERAL AGENCIES INVOLVED IN PREVENTING AND REDUCING UNDERAGE DRINKING

Multiple federal agencies are involved in preventing and reducing underage drinking. The 16 federal officials who make up the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD; see Appendix A) either lead or have designated responsibility in the agencies listed below.⁵⁷ Details for each agency and a list of relevant programs are provided in this appendix.

• U.S. Department of Health and Human Services (HHS)

- Administration for Children and Families (ACF): ACF is responsible for federal programs that promote the economic and social well-being of families, children, individuals, and communities. ACF's mission is to foster health and well-being by providing federal leadership, partnership, and resources for the compassionate and effective delivery of human services. Many of these programs strengthen protective factors and reduce risk factors associated with underage drinking. Website: https://www.acf.hhs.gov.
- **Centers for Disease Control and Prevention (CDC)**: CDC's mission is to work 24/7 to protect America from health, safety, and security threats, both foreign and in the United States. Consistent with that mission, CDC works to prevent excessive alcohol use and its impact in states and communities through public health surveillance, partnerships, and applied research for translation into public health practice. CDC also works to prevent alcohol-related harms, including motor vehicle crash injuries, various other injuries and violence, chronic diseases (e.g., cancer), sexually transmitted infections, and fetal alcohol spectrum disorders. Website: https://www.cdc.gov/alcohol.
- Indian Health Service (IHS): IHS is responsible for providing federal health 0 services to American Indians and Alaska Natives. IHS is the principal federal healthcare provider and health advocate for American Indians and Alaska Natives, and its goal is to raise their health status to the highest possible level. IHS provides a comprehensive health service delivery system for approximately 2.6 million American Indians and Alaska Natives who belong to 574 federally recognized tribes through a network of over 600 hospitals, clinics, and health stations on or near Indian reservations. The IHS Division of Behavioral Health is responsible for the Alcohol and Substance Abuse Branch (ASA) Branch. The goals of the ASA Branch are to reduce the incidence and prevalence of alcohol and substance abuse among American Indians and Alaska Natives to a level at or below the general U.S. population. The ASA Branch strives to meet this goal through the implementation of alcohol and substance abuse programs within Tribal communities, including emergency treatment, inpatient and outpatient treatment, and rehabilitation services, in rural and urban settings. Website: https://www.ihs.gov/asap.

⁵⁷ As specified in the Sober Truth on Preventing Underage Drinking Act (STOP Act), ICCPUD is composed of 16 federal officials, some of whom have delegated participation to specific agencies and/or staff. While not enumerated in the (STOP) legislation, other agencies have chosen to participate.

• National Institutes of Health (NIH)

- National Institute on Alcohol Abuse and Alcoholism (NIAAA): NIAAA's mission "is to generate and disseminate fundamental knowledge about the adverse effects of alcohol on health and well-being and apply that knowledge to improve diagnosis, prevention, and treatment of alcoholrelated problems, including alcohol use disorder, across the lifespan." NIAAA is the largest funder of alcohol research in the world. Website:
- <u>https://www.niaaa.nih.gov</u>.
 National Institute on Drug Abuse (NIDA): NIDA's mission is to "advance science on the causes and consequences of drug use and addiction and to apply that knowledge to improve individual and public health" (https://nida.nih.gov/about-nida). NIDA supports most of the world's research on the health aspects of drug use and addiction and carries out programs that ensure rapid dissemination of research to inform policy and improve practice. Website: <u>https://www.drugabuse.gov/</u>.
- Office of the Assistant Secretary for Health (OASH)
 - Office of Population Affairs (OPA): OPA promotes health across the reproductive lifespan through innovative, evidence-based adolescent health and family planning programs, services, strategic partnerships, evaluation, and research. OPA administers the <u>Title X Family Planning</u> program, the <u>Teen Pregnancy Prevention</u> program, and the <u>Embryo Adoption Awareness</u> and <u>Services</u> program. OPA advises the Secretary and the Assistant Secretary for Health on a wide range of topics, including adolescent health, family planning, sterilization, and other population issues. Website: <u>https://opa.hhs.gov</u>.
 - Office of the Surgeon General (OSG): The Surgeon General, the nation's chief health educator, provides Americans with the best available scientific information on how to improve their health and reduce the risk of illness and injury. OSG oversees the more than 6,100-member Commissioned Corps of the U.S. Public Health Service and assists the Surgeon General with other duties. Website: https://www.hhs.gov/surgeongeneral/index.html.
- Office of the Assistant Secretary for Planning and Evaluation (ASPE): ASPE is 0 the principal advisor to the HHS Secretary on policy development and is responsible for major activities in policy coordination, legislation development, strategic planning, and policy research, evaluation, and economic analysis. The Division of Behavioral Health and Intellectual Disabilities Policy focuses on financing, access/delivery, organization, and quality of services and supports for individuals with severe and persistent mental illnesses or severe addictions and individuals with intellectual disabilities. Topics of interest include coverage and payment issues in Medicaid, Medicare, and private insurance; quality and consumer protection issues; programs and policies of the Centers for Medicare & Medicaid Services (CMS), Substance Abuse and Mental Health Services Administration (SAMHSA), and the Health Resources and Services Administration (HRSA), as they affect individuals with mental disorders and substance use disorders (SUDs); and prevention of mental health conditions and substance misuse, including prevention of underage drinking. In addition, the Division Director of ASPE's

Children and Youth Policy Office is the HHS Secretary's designee to chair the Interagency Working Group on Youth Programs, which was established via Executive Order in 2008 to promote enhanced federal collaboration to improve outcomes for youth. Website: <u>https://aspe.hhs.gov</u>.

- SAMHSA: SAMHSA's mission is to lead public health and service delivery efforts that promote mental health, prevent substance use, and provide treatments and supports to foster recovery while ensuring equitable access and better outcomes. SAMHSA leads the nation in providing prevention, treatment, and recovery support services to communities and works toward underage drinking prevention by supporting state and community efforts, promoting the use of evidence-based practices (EBPs), educating the public, and collaborating with other agencies and interested parties. Website: https://www.samhsa.gov.
- Health Resources and Services Administration (HRSA): HRSA provides equitable health care to the nation's highest-need communities. The agency's programs support people with low incomes, people with HIV, pregnant women, children, parents, rural communities, transplant patients, and the health workforce. Many of HRSA's programs develop behavioral health capacity in communities which aids in increasing access to prevention, treatment, and recovery services. Website: <u>https://www.hrsa.gov/</u>
- **Department of Defense (DoD)**: DoD coordinates and oversees government activities relating directly to national security and military affairs. Its alcohol-specific role involves preventing and reducing alcohol consumption by underage military personnel and improving the health of service members' families by strengthening protective factors and reducing risk factors in underage alcohol consumption. Website: https://www.defense.gov.
- Department of Education (ED)/Office of Safe and Healthy Students (OSHS): OSHS administers, coordinates, and recommends policy to improve the effectiveness of programs providing financial assistance for drug and violence prevention activities and for activities that promote student health and well-being in elementary and secondary schools and institutions of higher education. Activities may be carried out by state and local educational agencies or other public or private non-profit organizations. OSHS supports programs that prevent violence in and around schools; prevent illegal use of alcohol, tobacco, and drugs; engage parents and communities; and coordinate with related federal, state, school, and community efforts to foster safe learning environments that support student academic achievement. Website: https://www2.ed.gov/about/offices/list/oese/oshs/index.html.
- **Department of Homeland Security/U.S. Coast Guard (USCG)**: USCG's global mission is to protect the public, the environment, and U.S. economic interests—in the nation's ports and waterways, along the coast, in international waters, or in any maritime region as required—supporting national security. The USCG's workforce includes young people ages 17–20. Website: <u>https://www.uscg.mil</u>.
- Department of Justice/Office of Juvenile Justice and Delinquency Prevention (OJJDP): OJJDP provides national leadership, coordination, and resources to prevent and respond to juvenile delinquency and victimization. OJJDP supports states and communities in their efforts to develop and implement effective, coordinated prevention and intervention programs and to improve the juvenile justice system's ability to protect
public safety, hold offenders accountable, and provide treatment and rehabilitation services tailored to the needs of juveniles and their families. OJJDP's central underage drinking prevention initiative, Enforcing Underage Drinking Laws (EUDL), was a nationwide state- and community-based multidisciplinary effort that sought to prevent access to and consumption of alcohol by those under age 21, with a special emphasis on enforcement of underage drinking laws and implementation programs that use best and most promising practices. The breadth of focus changed significantly in fiscal year (FY) 2014 because of a reduction in funding for the EUDL initiative. In FY 2014, EUDL funding supported underage drinking prevention activity led by Healing to Wellness Courts in five selected tribes. By FY 2015, all funding to support EUDL efforts was discontinued. Website: https://www.ojjdp.gov.

- Department of Transportation/National Highway Traffic Safety Administration (NHTSA): NHTSA's mission is to save lives, prevent injuries, and reduce traffic-related health care and other economic costs. NHTSA develops, promotes, and implements effective educational, engineering, and enforcement programs to reduce traffic crashes and resulting injuries and fatalities and reduce economic costs associated with traffic crashes, including underage drinking, and driving crashes. Website: https://www.nhtsa.gov.
- **Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau (TTB)**: TTB's mission is to collect the taxes on alcohol, tobacco, firearms, and ammunition; protect the consumer by ensuring the integrity of alcohol products; and prevent unfair and unlawful market activity for alcohol and tobacco products. Website: <u>https://www.ttb.gov</u>.
- Federal Trade Commission (FTC): FTC has a dual mission to protect consumers and promote competition, with responsibilities under more than 75 laws. As the enforcer of federal truth-in-advertising laws, it monitors alcohol advertising for deceptive practices, brings law enforcement actions in appropriate cases, and promotes alcohol industry compliance with self-regulatory commitments. It also has an alcohol consumer education program. Websites: https://bontServeTeens.gov.
- Office of National Drug Control Policy (ONDCP): A component of the Executive Office of the President, ONDCP works to reduce drug use and its consequences by leading and coordinating the development, implementation, and assessment of U.S. drug policy. The ONDCP Director is the principal advisor to the President on drug control issues. ONDCP coordinates the drug control activities and related funding of 16 federal departments and agencies. ONDCP also produces the *National Drug Control Strategy*, which outlines administration efforts for the nation to reduce illicit drug use, manufacturing, and trafficking; drug-related crime and violence; and drug-related health consequences. Website: <u>https://www.whitehouse.gov/ondcp</u>.

Agency-specific initiatives and activities are described in the following paragraphs.

Inventory of Federal Programs for Underage Drinking by Agency

As required by the STOP Act, this section of the 2024 Report to Congress on the Prevention and Reduction of Underage Drinking (RTC) summarizes major initiatives underway throughout the federal government to prevent and reduce underage alcohol use and related harms in the United States.

ICCPUD

As detailed in Chapter 2 of the *RTC*, ICCPUD was created in 2004 when Congress directed the Secretary of HHS to establish ICCPUD to coordinate all federal agency activities related to the problem of underage drinking. ICCPUD's role was formalized in the 2006 STOP Act, which was reauthorized in 2022 as part of the Consolidated Appropriations Act, 2023. SAMHSA was directed by the HHS Secretary to convene ICCPUD and serve as the lead agency. As specified in the STOP Act, ICCPUD was initially composed of 16 federal officials, some of whom have delegated participation to specific agencies and/or staff. The Director of the Agency for Healthcare Research and Quality was added as a principal in 2022 at the direction of the Assistant Secretary.

ICCPUD's vision is to provide national leadership in federal policy and programming to support state and community activities that prevent and reduce underage drinking.

The mission of ICCPUD is twofold:

To facilitate collaboration among the federal ICCPUD member agencies, state and local governments, private and public national organizations, and agencies with responsibility for the health, safety, and well-being of America's children and youth.

To provide resources and information on underage drinking prevention, intervention, treatment, enforcement, and research.

Members of ICCPUD and other federal partners commit to the following principles:

- Speak with a common voice on the prevalence, risks, and consequences of underage drinking.
- Increase public awareness about underage drinking and its consequences.
- Reinforce effective EBPs as part of a federally coordinated approach to prevent and reduce underage drinking.

Each ICCPUD agency contributes their leadership and vision to developing a national commitment to prevent and reduce underage alcohol use. Every participating agency also has a specific role to play in keeping with its mission and mandate.

ICCPUD consults and collaborates with all appropriate and interested parties, including state and local governments, public health research and interest groups, foundations, community-based organizations and coalitions, and alcohol beverage industry trade associations and companies.

Recent Activities

- ICCPUD agency staff representatives held monthly conference calls to coordinate efforts.
- The ICCPUD Data Committee met to review federal data and related text in Chapters 1, 2, 3, and 4 of the *2023 RTC*.
- The STOP Act Governors' Survey on prevention activities, enforcement, and expenditures was administered to all 50 states and the District of Columbia with a 100 percent response rate.
- ICCPUD continued community engagement efforts, including postcards, posters, presentations, and an enhanced presence on the ICCPUD portal, <u>https://www.stopalcoholabuse.gov.</u>
- As part of its regular activity, ICCPUD is supporting a Scientific Review Panel (SRP) on Alcohol Intake and Health, comprised of external scientific experts, that will analyze the

current scientific evidence on youth and adult alcohol intake and health risks and provide outcomes and findings to the Subcommittee. The SRP will conduct a series of studies on alcohol intake and health, providing the best available science to the Subcommittee on the implications of alcohol intake and health, including on the relationship between chronic alcohol use and health conditions, the relationship between alcohol use and injury risk, lifetime risks of alcohol-attributable mortality and morbidity, and U.S. burden of disease related to alcohol intake and health. The SRP will provide all study findings related to alcohol use and health to the Subcommittee.

- The ICCPUD *Policy Academy for Implementing Community-Level Policies to Prevent Alcohol Misuse* (Policy Academy) began in 2023 and offered 14 community coalitions from around the country opportunities to collaborate with leading experts on alcohol policy, learn policy strategies and best practices from experienced prevention experts, and engage with coalitions from across the United States. The Policy Academy's goals are to:
 - Reduce demand for, the availability of, and access to alcohol by persons under the age of 21;
 - Build the capacity of community coalitions, states, tribes, territories, and jurisdictions interested in and committed to using evidence-based tools to establish a multifaceted approach to preventing and reducing underage drinking; and
 - Work towards implementation of evidence-based local and state alcohol policies.

HHS/ACF/Family and Youth Services Bureau

Activities Related to Underage Drinking

The Family and Youth Services Bureau (FYSB) supports organizations that work to promote youth well-being, prevent and end youth homelessness and support a holistic adolescent approach by fostering collaborative partnerships across communities; leading in partnership with youth and young adults; promoting diversity, equity, inclusion and accessibility; and supporting data-driven practices. FYSB is comprised of three divisions, which includes two individual program divisions; the Division of Runaway and Homeless Youth, which administers programs and services authorized under the Runaway and Homeless Youth Act, and the Division of Positive Youth Development, which implements the Adolescent Pregnancy Prevention Programs, and one program support division; the Division of Data, Performance, and Policy.

Runaway and Homeless Youth Program: FYSB provides funding to local community-based organizations to support young people and their families, particularly youth who have runaway, are experiencing homelessness or housing stability. These grants support organizations in providing short and long-term shelter and comprehensive support services, street outreach, transitional living programs, and other services to youth in three areas. Website: https://www.acf.hhs.gov/fysb/programs/runaway-homeless-youth.

• *Basic Center Program (BCP)* grants help community-based organizations meet the immediate needs of youth under age 18 who are experiencing homelessness. BCPs provide temporary shelter for up to 21 days, counseling, family reunification/connection, crisis intervention, and aftercare services. BCPs provide youth with an opportunity to receive individual and family counseling, education, employment assistance, and mental and physical health services.

- *Street Outreach Program (SOP)* funding supports provide street-based services to youth 21 years and younger in an effort to decrease the risk of sexual abuse, sexual exploitation, and other forms of victimization, with the goal being to help young people get off the streets and into safe settings.
- *The Transitional Living (TLP)* and Maternity Group Home (MGH) Programs support community-based, adult-supervised group homes, host homes, supervised apartments, and supportive services to older youth and young adults ages 16 to under 22 experiencing homelessness or housing instability who cannot safely live with their families. For the MGH program, the funding provides shelter and services to meet the needs of pregnant and parenting youth to promote long-term economic independence to ensure the well-being of the youth and their young families.

Characteristics of pre-college sexual violence victimization and associations with sexual violence revictimization during college: A cluster-randomized trial of a college health centerbased alcohol and sexual violence intervention (GIFTSS). The Health Resource Center on Domestic Violence partnered with a university on a campus health center study to test an intervention to identify and prevent the intersection of alcohol use and domestic and sexual violence on college campuses through a campus health center intervention. Website: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6761049/.

- Data were collected at 28 college campuses from surveys from nearly 2,300 students. The study contains over 95 in depth qualitative interviews (with some focus on students with disability and sexual/gender minority students), 750 medical chart reviews, and environmental scans spanning several service areas (such as alcohol, disability, and lesbian/gay/bisexual/transgender/queer/intersex).
- Published manuscripts include a protocol paper, experiences of re-victimization among college health students, study intervention outcomes, and experiences of drinking and sexual violence among students with disability.
- An online learning collaborative for staff supporting students with disabilities identified best practices in reaching and supporting survivors with disabilities as well as specific harm reduction and secondary prevention strategies.

Main focus: Prevention (P) and research (R).

Adolescent Pregnancy Prevention Program (APP): The APP program administers two main funding programs, Personal Responsibility Education Program (PREP) and Sexual Risk Avoidance Education (SRAE), which are designed to help youth reduce and avoid the risks associated with adolescent sex and other risky behaviors. Website: https://www.acf.hhs.gov/fysb/help.

• PREP programs are designed to prevent pregnancy and the spread of sexually transmitted diseases and HIV/AIDS among adolescents. PREP supports state, tribal, and community efforts to teach evidence-based, medically-accurate, and complete, age and culturally appropriate abstinence and contraceptive education to youth ages 10-19 and among youth populations that are the most high-risk or vulnerable for pregnancies or otherwise have special circumstances, including youth in foster care, homeless youth, youth with HIV/AIDS, pregnant youth who are under 21 years of age, mothers who are under 21 years of age, and youth residing in areas with high birth rates for youth. All PREP programs are required to address at least three of the six adulthood preparation subjects:

- Healthy relationships,
- o Healthy life skills,
- o Adolescent development,
- o Parent-child communication,
- o Financial literacy, and
- Educational and career success.

The PREP program includes the Personal Responsibility Education Innovative Strategies (PREIS) program, which funds rigorous evaluation of innovative youth pregnancy prevention strategies and target services to high-risk, vulnerable, and culturally under-represented youth populations. It also includes Tribal PREP that awards grants to Indian tribes and tribal organizations in consultation with Indian tribes and tribal organizations.

- SRAE programs provide education to youth ages 10–19 on sexual risk avoidance that teaches youth to voluntarily refrain from sexual activity. that normalizes avoiding non-marital sexual activity. SRAE programs also teach the benefits associated with self-regulation, success sequencing for poverty prevention, healthy relationships, goal setting, and resisting sexual coercion, dating violence, and other youth risk behaviors like underage drinking or illicit drug use without normalizing sexual activity among youth.
- Both PREP and SRAE provide research and evaluation resources to support program evaluation efforts of APP grantees.

HHS/CDC

Activities Specific to Underage Drinking

Drug-Free Communities (DFC): The DFC Program, created by the Drug-Free Communities Act of 1997, is a program of ONDCP administered by CDC under an interagency agreement. (See ONDCP section for additional information.) The program:

- Provides grants to community coalitions to strengthen the infrastructure among local partners to create and sustain a reduction in local youth substance use.
- Has two goals: (1) To establish and strengthen collaboration among communities, public, and private non-profit agencies, as well as federal, state, local, and tribal governments; and (2) to reduce substance misuse among youth by addressing the risk and protective factors at the community level.
- Promotes a comprehensive approach to alcohol prevention, including individual, interpersonal, organizational, and community-wide strategies to prevent underage drinking.
- Funds recipients that meet the statutory eligibility requirements as outlined in the DFC Act, including partnering with 12 sectors (see ONDCP section for required sectors).
- Provides grants of \$125,000 for up to 5 years. Recipients can apply for another 5 years of funding, for a total of 10 years of funding at the community level.

Getting Candid: Framing the Conversation Around Youth Substance Use: This CDC-funded prevention message guide and toolkit equips youth-serving providers and organizations with the tools and resources necessary to support meaningful prevention messaging. The toolkit includes messaging on youth substance use prevention, including prevention of underage drinking, tip sheets, social media graphics and shareables, videos, webinars, interactive worksheets, and an educational course. Website: <u>https://www.thenationalcouncil.org/resources/getting-candid-framing-the-conversation-around-youth-substance-use-prevention/</u>.

The Community Preventive Services Task Force (CPSTF) published a systematic review of <u>family-based interventions to prevent substance use among youth</u>. Evidence from the review of 60 studies shows interventions reduce initiation and use of cannabis, alcohol, tobacco, illicit substances, and misuse of prescription drugs among youth. Studies also report reductions in sexual risk behaviors and improvements in mental health symptoms and school-related outcomes.

• Main focus: Prevention (P)

Activities Related to Underage Drinking

Alcohol-Related Disease Impact (ARDI): ARDI is an online application that provides national and state estimates of average annual deaths and years of potential life lost (YPLL) due to excessive alcohol use. Website: <u>www.cdc.gov/ardi</u>.

- ARDI estimates the proportion of deaths due to any of 58 acute and chronic conditions that are alcohol attributable.
- ARDI users can create custom data sets to generate local estimates of deaths and YPLL due to excessive alcohol use.
- Users can also estimate alcohol-attributable deaths and YPLL for youth under age 21.
- Main focus: Prevention (P)

Promoting Population Health through Increased Capacity in Alcohol Epidemiology & the Prevention of Excessive Alcohol Use: The 5-year funding cycle (September 2021–September 2026) builds state capacity in alcohol epidemiology and provides the tools and information needed to perform core public health functions related to excessive alcohol use (including underage drinking) prevention in states. This increased epidemiologic capacity will help build the public health infrastructure that is needed to reduce excessive alcohol use—a leading preventable cause of death in the United States. The Notice of Funding Opportunity includes an additional component for the delivery of expert technical assistance and training on population-level evidence-based strategies for preventing excessive alcohol use (including underage drinking) and related harms in states and communities, such as those recommended by the Community Preventive Services Task Force.

• Main focus: Prevention (P)

Behavioral Risk Factor Surveillance System (BRFSS): BRFSS is a state-based, random-digitdial landline and cellular telephone survey of non-institutionalized, civilian U.S. adults age 18 years and older that is conducted monthly in all states, the District of Columbia, and three U.S. territories. BRFSS collects data on leading health conditions and risk behaviors, including binge drinking and alcohol-impaired driving. Website: <u>https://www.cdc.gov/brfss</u>.

- BRFSS includes questions on current drinking, number of drinking days, average number of drinks per drinking days, frequency of binge drinking (≥ four drinks per occasion for women; ≥ five per occasion for men), the largest number of drinks consumed on a drinking occasion, and the number of alcohol-impaired driving episodes during the past 30 days.
- States can also include an optional module to assess alcohol screening and brief intervention (SBI) in clinical settings.

- In a 2023 Morbidity and Mortality Weekly Report (MMWR), CDC researchers found that 80 percent of people who were pregnant were asked about alcohol use; however, only 16 percent of those who self-reported drinking within the past 30 days were advised to quit or reduce their use. These findings highlight missed opportunities to integrate alcohol SBI in practice, utilize strategies to address recognized barriers (e.g., improving reimbursement for alcohol SBI), and to help reduce alcohol use during pregnancy.
- Main focus: Prevention (P)

Youth Risk Behavior Surveillance System (YRBSS): YRBSS monitors priority health risk behaviors through a biennial, national school-based survey of 9th- through 12th-grade students conducted by CDC and state and local surveys of 9th- through 12th-grade students conducted by education and health agencies. Some states and school districts also conduct surveys among students in grades 6–8, although not all of the same behaviors are assessed among these middle school students. Website: <u>https://www.cdc.gov/healthyyouth/data/yrbs/index.htm</u>.

- YRBSS includes standard questions about current drinking, frequency of binge drinking (≥ four drinks per occasion for female students; ≥ five per occasion for male students), the largest number of drinks consumed on a drinking occasion, age of first drink of alcohol, and usual source of alcohol.
- The survey allows state and local agencies to include additional alcohol questions on their questionnaires, such as type of beverage usually consumed and usual location of alcohol consumption.
- YRBSS assesses driving after drinking alcohol, riding with a driver who had been drinking, and other health risk behaviors (including sexual activity and interpersonal violence) that can be examined in relation to alcohol consumption.
- A 2023 publication using 2021 YRBSS data (<u>https://www.cdc.gov/mmwr/volumes/72/su/su7201a10.htm</u>) found that approximately one-third of students reported alcohol or marijuana use or prescription opioid misuse in the past month; among those reporting current substance use, more than one-third used two or more substances.
- Main focus: Prevention (P)

Adolescent Behaviors and Experiences Survey (ABES): The ABES is a one-time online survey conducted between January and June of 2021 to assess behaviors and experiences among a nationally representative sample of high school students during the Coronavirus disease 2019 (COVID-19) pandemic. Website: <u>https://www.cdc.gov/healthyyouth/data/abes.htm</u>.

- The ABES questionnaire included the same standard questions about alcohol use that were asked on the 2021 national YRBS (see above), as well as a question assessing whether students drank more alcohol during the COVID-19 pandemic than before it started.
- A 2022 publication reporting ABES results (https://www.cdc.gov/mmwr/volumes/71/su/su7103a2.htm?s_cid=su7103a2_w) found that approximately one in three students who ever used alcohol reported using it more during the pandemic.
- Main focus: Prevention (P)

Pregnancy Risk Assessment Monitoring System (PRAMS): Developed in 1987, the PRAMS surveillance system is a standardized data collection system consisting of a jurisdiction-specific and population-based mail, telephone, and web survey of women who recently delivered a liveborn infant. Website: <u>https://www.cdc.gov/prams</u>.

- PRAMS collects jurisdiction-specific data on maternal behaviors, attitudes, and experiences before, during, and shortly after pregnancy. The births in the 50 jurisdictions that participate in PRAMS surveillance are 81 percent of all live births in the United States.
- The survey includes questions on alcohol consumption, including binge drinking (>8 drinks a week) during the preconception period and during pregnancy, along with other factors related to maternal and child health.
- A <u>new survey</u> was implemented in 2023 that includes questions on alcohol use during pregnancy (e.g., >4 alcoholic drinks in the two-hour time span during each trimester of pregnancy) and whether during any of the prenatal care visits if a healthcare provider asked about drinking alcohol.
- PRAMS data, including <u>PRAMS</u> maternal and child indicators on alcohol use, are used by researchers to investigate emerging issues in the field of reproductive health and by state, territory, and local governments to plan and review programs and policies aimed at improving the health of mothers and infants by reducing adverse outcomes.
 - In a 2023 Morbidity and Mortality Weekly Report (MMWR), CDC researchers found that 80 percent of people who were pregnant were asked about alcohol use; however, only 16 percent of those who self-reported drinking within the past 30 days were advised to quit or reduce their use. These findings highlight missed opportunities to integrate alcohol SBI in practice, utilize strategies to address recognized barriers (e.g., improving reimbursement for alcohol SBI), and to help reduce alcohol use during pregnancy.
 - A 2023 publication using 2019 PRAMS data from six states examined the prevalence of postpartum alcohol use and binge drinking. Approximately 25 percent of respondents who drank alcohol postpartum were advised about risky alcohol levels by a healthcare provider. Small proportions of individuals who drank alcohol postpartum and were pregnant or trying to get pregnant at the time of the survey were advised to reduce or stop drinking alcohol (10.6 percent and 2.3 percent, respectively). These findings suggest missed opportunities to promote health and prevent adverse alcohol-related health outcomes during the postpartum period through evidence-based tools such as alcohol SBI. DOI: 10.1097/ADM.00000000000668
- Main focus: Prevention (P)

National Violent Death Reporting System (NVDRS): NVDRS collects detailed information in all 50 states, the District of Columbia, and Puerto Rico. The case definition consists of suicides, homicides, deaths due to legal intervention, unintentional firearm deaths, and deaths of undetermined intent that might have been due to violence. This information can be used to develop, inform, and tailor violence prevention efforts. Website: https://www.cdc.gov/nvdrs/about/?CDC_AAref_Val. The system uses information from death certificates, coroner/medical examiner reports (including toxicology), and law enforcement reports.

- NVDRS includes information on: Alcohol dependence or problem drinking (i.e., whether the victim was perceived by self or others to have a problem with alcohol or to have an alcohol use disorder); alcohol use suspected (whether alcohol use by the victim in the hours preceding the incident was suspected, based on witness or investigator reports or circumstantial evidence, such as empty alcohol containers around the victim); alcohol crisis (whether the victim had a crisis related to their alcohol problem within 2 weeks of the incident or an impending crisis within 2 weeks of the incident); tested for alcohol (i.e., whether the victim's blood was tested for the presence of alcohol); alcohol test results (recorded as present, not present, not applicable [i.e., not tested], or unknown); and BAC (measured in mg/dL).
- The system has the support of various organizations, including the American Public Health Association, the International Association of Chiefs of Police, the National Sheriff's Association, the National Association of Public Health Statistics and Information Systems, and the National Association of Medical Examiners.

Select NVDRS data are available free of charge via CDC's Web-based Injury Statistics Query and Reporting System or WISQARS. Website: <u>https://www.cdc.gov/injury/wisqars/index.html.</u>

- An NVDRS Restricted Access Database (RAD) is also available through CDC's National Center for Injury Prevention and Control to researchers who meet specific criteria. At this time, there is no cost for accessing the NVDRS RAD. Website: https://www.cdc.gov/nvdrs/about/nvdrs-data-access.html?CDC AAref Val.
- Main focus: Prevention (P)

Core State Injury Prevention Program (Core SIPP; CDC Funded): The 5-year funding cycle of Core SIPP (October 2021–September 2026) supports health department infrastructure, data, and partnerships to identify and respond to existing and emerging injury threats with data-driven public health actions. Transportation safety is one of three required priority topics for this program, and many state health departments specifically conduct work on improving data and preventing deaths and injuries related to impaired driving and disproportionately affected populations. Funded states work with partners to develop tools to educate and improve transportation safety for highly affected audiences. The prior 5-year cycle of the program (titled <u>Core State Violence and Injury Program</u>, running from October 2016–September 2021) also emphasized transportation safety and included work related to the prevention of impaired driving. Website: .

• Main focus: Prevention (P)

Tribal Alcohol-Impaired Driving Prevention Program (Supplement to CDC-RFA-TO-23-0001: Strengthening Public Health Systems and Services in Indian Country; NHTSA funded):

CDC and the National Highway Traffic Safety Administration have established an Interagency Agreement to reduce injury and death due to alcohol-impaired driving in the American Indian/Alaska Native (AI/AN) population. Through collaboration and direct funding, AI/AN tribal nations and regional AI/AN tribally designated organizations implement interventions using evidence-based strategies and indigenous evaluation approaches most relevant to their communities. In addition, CDC and NHTSA are working closely with the Indian Health Service to support and offer technical assistance to funded Tribes to implement interventions using evidence-based strategies and indigenous evaluation approaches.

• Main focus: Prevention (P)

Etiologic and Effectiveness Research to Address Polysubstance Impaired Driving (RFA-CE-19-004; CDC Funded): Research was solicited, and 3 years of funding supports research on either: 1) identifying risk and protective factors associated with polysubstance-impaired driving (and associated deaths and injuries); or 2) identifying effective interventions to prevent polysubstance-impaired driving (and associated deaths and injuries). Polysubstance-impaired driving driving includes driving while impaired by alcohol plus at least one other drug, such as marijuana or opioids.

- The funded project (CE003129) is titled "Predicting Polysubstance Impaired Driving in Young Adults: Longitudinal and Event-level Assessment of the Role of Norms and Motives." The ongoing study seeks to examine statewide norms in Washington State young adults (ages 18–25 years) and assess predictors of driving while impaired by simultaneous alcohol and marijuana use and riding with a driver who is impaired by simultaneous alcohol and marijuana use.
- Data collection has been completed and analyses are underway.
- The project team has published <u>a paper</u> describing the protocols of the study, including their novel method of assessing impaired driving behaviors.
- The project team has published a second <u>paper</u> entitled "Injunctive Norms and Driving Under the Influence and Riding with an Impaired Driver Among Young Adults in Washington State."
- Main focus: Research (R)

Activities to Prevent Driving After Drinking Alcohol Among U.S. Adolescents: CDC conducts research, prevention, and communication activities to support teen driver and teen passenger safety, including preventing underage drinking and driving and preventing riding with a driver who has been drinking alcohol. Examples:

- **CDC's Teen Driving Website**: CDC provides information, research, recommendations, and resources about the prevention of teen drinking and driving and many other teen transportation risk behaviors. Resources include <u>Parent-Teen Driving Agreements</u>, information on the "<u>Eight Danger Zones</u>" for teen drivers, and a <u>Graduated Driver</u> <u>Licensing System Planning Guide</u>. Website: <u>https://www.cdc.gov/teen-drivers/about/</u>
- **CDC's Impaired Driving Website**: CDC provides information, research, recommendations, and resources about the prevention of impaired driving. Website: <u>https://www.cdc.gov/impaired-driving/about/</u>
- Main focus: Prevention (P)

ASBI Activities:

• CDC launched <u>a new electronic screening and brief intervention tool</u> for adults to anonymously check their drinking, identify barriers and motivators for drinking less, and print or save a personalized change plan. Website: <u>https://www.cdc.gov/alcohol/CheckYourDrinking/index.html</u>; Spanish website: <u>https://www.cdc.gov/alcohol/evalua-su-consumo-de-alcohol/index.html</u>.

- CDC developed materials for both healthcare professionals and patients to encourage conversations about alcohol use during pregnancy and the use of alcohol screening and brief intervention (SBI). These materials were informed by research that characterized healthcare professional and patient attitudes toward alcohol use during pregnancy and examined messaging and dissemination approaches to encourage alcohol SBI and clinical conversations about alcohol use during pregnancy. Findings were used to create a communication guide for partners and a suite of materials for both healthcare professionals and patients. Final materials are available at https://www.cdc.gov/alcohol-pregnancy/hcp/toolkit/?CDC_AAref_Val.
- CDC supports nine projects to build a collaborative framework of national partner organizations that contribute to reducing prenatal alcohol and other substance use, improving support services and access to care, and improving identification and health of children and families living with fetal alcohol spectrum disorders (FASD). This National Partner Network will work together to develop collaborative resources and opportunities related to FASD prevention and intervention.
- CDC supports an effort to enhance screening and brief intervention to reduce disparities in prenatal alcohol and other substance exposure. The two main goals of this project are to conduct formative research to increase understanding of screening and brief intervention gaps and challenges among underserved populations of focus and develop communication tools to support SBI delivery. Data collection is underway and will result in a final report and recommendations for communication materials.
- CDC developed clinical decision support (CDS) tools on ASBI that can be integrated into electronic health records. These tools can help healthcare providers deliver ASBI to all of their patients, including women of reproductive age. More information about the tools and findings from a project to pilot select CDS tools are located at https://www.cdc.gov/alcohol-pregnancy/hcp/alcoholsbi/?CDC AAref Val

For more information, visit https://www.cdc.gov/fasd/index.html.

• Main focus: Prevention (P)

HHS/HRSA

Activities Related to Underage Drinking

Adolescent and Young Adult Health Research Network (AYAH-RN): This Research Network developed and maintains a transdisciplinary, multi-site infrastructure that conducts innovative interdisciplinary research and translates that research into practice. It centers on a unique collaboration among the seven HRSA MCHB-funded Leadership Education in Adolescent Health projects that are based in academic medical centers. It uses a multi-disciplinary training approach that integrates medicine, nursing, nutrition, psychology, public health, and social work to strengthen trainees' skills in providing clinical services. Relevant key focus areas are integration of care (primarily behavioral and physical health), substance use (e.g., alcohol, e-cigarettes, opioid abuse), and mental health and wellbeing. Website: https://nahic.ucsf.edu/research-network/.

Behavioral Health Workforce Education and Training (BHWET) Program for Professionals and Paraprofessionals: The BHWET Program develops and expands experiential training opportunities, such as field placements and internships, to improve the distribution and supply of the behavioral health workforce. A special focus is placed on the knowledge and understanding of children, adolescents, and transitional-aged youth at risk for behavioral health disorders.

Graduate Psychology Education (GPE) Program: The GPE Program trains doctoral health service psychology students, interns, and post-doctoral residents in integrated, interdisciplinary behavioral health for placement into community-based primary care settings in high need and high demand areas. Additionally, the program aims to increase the number of psychologists trained in the provision of opioid use disorders and other substance use disorders prevention, treatment, and recovery services.

HHS/IHS

Activities Related to Underage Drinking

Alcohol and Substance Abuse Branch (ASA) Branch: The objective of ASA Branch: The objective of ASA Branch is to reduce the incidence and prevalence of alcohol and substance use among the American Indian and Alaska Native population to a level that is at or below the general U.S. population. More than 90 percent of the alcohol and substance use programs are tribally operated. Website: <u>https://www.ihs.gov/asap</u>.

- Implements alcohol and substance misuse programs within tribal communities, including emergency treatment, inpatient and outpatient treatment, and rehabilitation services in rural and urban settings.
- Nurtures holistic approaches promoting prevention activities, positive youth development, healthy lifestyles, families, and communities.
- Improves access to behavioral health services through telebehavioral health methods and by providing a comprehensive array of preventive, educational, and treatment services.
- Is part of the IHS Generation Indigenous Initiative, designed to build resiliency and promote positive development among indigenous youth.

Screening, Brief Intervention, and Referral to Treatment (SBIRT): IHS administers SBIRT in ambulatory care and emergency departments throughout the IHS system. Due to the high prevalence of alcohol-related morbidity and mortality among American Indians and Alaska Natives, SBIRT is administered to patients screened for risky or harmful alcohol use starting at the age of 9. IHS collects performance measures on Universal Alcohol and SBIRT which are reported as a Government Performance and Results Act (GPRA) Modernization Act of 2010 measures. For FY 2022, 33.2 percent of patients ages 9–75 years were screened for alcohol use. In addition, 14.3 percent of patients who screened positive for risky/ or harmful alcohol use received a Brief Negotiated Interview or Brief Intervention in ambulatory care within 7 days of a positive screen.

Youth Regional Treatment Centers (YRTCs): YRTCs are part of the IHS Generation Indigenous Initiative designed to build resiliency and promote positive development among indigenous youth. IHS operates or provides recurring funding to 13 YRTCs to address the ongoing issues of substance use and co-occurring disorders among American Indian and Alaska Native youth. Website: <u>https://www.ihs.gov/yrtc</u>.

• YRTCs provide a range of clinical services rooted in a culturally relevant, holistic model of care.

• YRTC services include clinical evaluation; substance misuse education; group, individual, and family psychotherapy; art therapy; adventure-based counseling; life skills; medication management or monitoring; evidence-based/practice-based treatment; culturally appropriate care; cultural practices involving healing; aftercare relapse prevention; and post-treatment follow-up services.

Substance Abuse and Suicide Prevention (SASP) Program: The SASP program, formerly known as the Methamphetamine and Suicide Prevention Initiative, is a nationally coordinated program focused on providing much-needed substance use and suicide prevention and intervention resources for American Indian and Alaska Native communities. IHS currently funds 72 SASP-related grants and federal program awards. Website: <u>https://www.ihs.gov/sasp</u>.

- The SASP program goal is to reduce the prevalence of suicide related behavior and substance use and decrease the overall use of addictive and illicit substances among American Indian and Alaska Native populations.
- The SASP Program improves care coordination and expands behavioral health care services through the use of culturally appropriate evidence-based and practice-based models to address these issues; and
- The SASP Program develops or expands on activities for the Generation Indigenous (Gen-I) Initiative by implementing early intervention strategies for American Indian and Alaska Native youth at risk for substance use behavior.
- Increases tribal, Urban Indian Organization, and federal capacity to operate successful substance use prevention, treatment, and aftercare as well as suicide prevention, intervention, and postvention services through implementing community and organizational needs assessments, data sharing systems, and strategic plans.

Indian Children's Program: The IHS Division of Behavioral Health Indian Children's Program provides education, training, and consultation on issues affecting American Indian and Alaska Native youth via its Telebehavioral Health Center of Excellence, including training and consultations on FASD. Website: <u>https://www.ihs.gov/icp</u>.

HHS/NIH/NIAAA

Activities Specific to Underage Drinking

NIAAA supports a broad and diverse program of biomedical research to advance the understanding of the factors that contribute to underage drinking and to improve the prevention and treatment of alcohol-related problems among youth. Research spans the areas of the epidemiology of underage drinking; the etiology of underage drinking; the effects of alcohol use on the developing body and brain; the development and testing of interventions to prevent and reduce underage drinking; the implementation and evaluation of ASBI in primary care and other settings; the development and testing of AUD treatments for adolescents; and the translation and dissemination of evidence-based interventions for underage drinking. Examples of specific NIAAA efforts in this domain include:

Studying the Impact of Adolescent Drinking on the Developing Brain: NIAAA supports multiple research consortia and projects examining the effects of alcohol exposure during adolescent brain development. The research findings are expected to inform future strategies to prevent the initiation and escalation of underage drinking and to treat alcohol-related problems among youth. Examples include:

- *Neurobiology of Adolescent Drinking in Adulthood (NADIA) Consortium*: For over a decade, NIAAA has supported the NADIA Consortium, which aims to define the neurobiological mechanisms underlying the effects of adolescent alcohol exposure on adult brain function and behavior using rodent models. During the first phase of the Consortium, NADIA researchers demonstrated that adolescent alcohol exposure may lead to long-lasting brain and behavioral changes in adulthood. In its second phase, the Consortium built upon these findings to further investigate the mechanisms through which adolescent alcohol exposure impacts brain maturation and adult brain function. In FY 2020, NIAAA renewed the consortium for a third period of funding through FY 2025. Website: https://www.med.unc.edu/alcohol/nadiaconsortium.
- *National Consortium on Alcohol and Neurodevelopment in Adolescence (NCANDA)*: Launched in FY 2012, NIAAA's NCANDA is a multisite longitudinal study to elucidate the effects of alcohol exposure on the developing adolescent human brain and to identify brain characteristics that may predict AUD and related problems. The five NCANDA sites have enrolled more than 800 individuals, starting at ages 12–21, that are demographically representative of diverse racial and ethnic backgrounds. NCANDA researchers recently demonstrated that adolescents who initiated heavy alcohol use during the course of the study experienced faster declines in brain gray matter volume and slower expansion of brain white matter relative to those who engaged in no or low alcohol consumption during the same time. NCANDA researchers are also examining potential changes in alcohol use, well-being, and other behaviors of adolescents during the COVID-19 pandemic. In FY 2022, NIAAA renewed support of the NCANDA sites for a third period of funding through FY 2027. Website: http://ncanda.org.
- Main focus: Research (R)

Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide: Concerns about the effects of alcohol on the developing brain combined with data from national surveys showing the popularity of binge drinking among adolescents prompted NIAAA to produce a guide for screening children and adolescents for their risk for alcohol use and AUD, the Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide. Website: https://www.niaaa.nih.gov/publications/clinical-guides-and-manuals/alcohol-screening-and-

brief-intervention-youth.

- The guide was empirically developed by NIAAA in collaboration with a working group of experts in 2011. It was also produced in collaboration with and endorsed by the American Academy of Pediatrics (AAP), which recommends screening all adolescents regarding alcohol use.
- It includes an age-specific (9–18 years), two-question screener for current and future alcohol use with an innovative youth alcohol risk estimator and screening guide.
- The guide also includes general information on underage drinking and detailed supporting material on brief interventions, referral to treatment, and patient confidentiality. The screening process enables pediatric and adolescent health practitioners to provide information to patients and their parents about the effects of alcohol on the developing body and brain in addition to identifying individuals who need any level of intervention.

- Studies have evaluated the guide in primary care, emergency department, and school settings and among youth with chronic health conditions and demonstrated its utility in identifying alcohol use and risk for AUD.
- Main focus: Intervention (I)

College Drinking Prevention Initiative: A long-standing priority for NIAAA, this initiative began more than 2 decades ago and continues to support and stimulate studies of college-student drinking and related problems. Its ultimate goal is to design and test interventions that prevent or reduce alcohol-related problems among college students.

- NIAAA supports research projects designed to target heavy alcohol use and associated behaviors among college-age youth, including studies that are developing mobile health interventions for students at 4-year and community colleges as well as for young adults in other settings.
- *College Alcohol Intervention Matrix* (CollegeAIM): As part of its college drinking prevention initiative, NIAAA developed a resource that summarizes several decades of college drinking intervention research in a simple matrix to help college administrators and staff choose wisely among the many interventions available for addressing alcohol misuse on college campuses.
 - CollegeAIM provides information on more than 60 individual- and environmentallevel strategies to prevent and reduce harmful and underage drinking among college students. For each strategy, information is provided in an interactive, easy-to-use format that shows the amount and quality of available research; estimated effectiveness; estimated cost and barriers related to implementation; and time to implement. These factors may be relevant to campus and community leaders as they evaluate their current approaches and as they consider and select additional strategies to address college-student drinking using a more comprehensive approach.
 - NIAAA's overarching goal with CollegeAIM is the provision of evidence-based information in an accessible and practical way to facilitate its use as a foundation for college drinking prevention and intervention activities. CollegeAIM was first issued in 2015 and updated in 2019 to reflect more recent research. Website: <u>https://www.collegedrinkingprevention.gov/CollegeAIM.</u>
- Main focus: Prevention (P) and Intervention (I)

Intervening at Individual and Environmental Levels: NIAAA supports the development, evaluation, and implementation of individual-, family-, school-, community-, and policy-level interventions to prevent and reduce underage drinking. NIAAA-supported research projects are examining:

- *Behavioral interventions (brief and extended in duration)*: NIAAA continues to support and encourage research on screening and brief interventions to prevent and/or reduce alcohol use and alcohol-related harms among underage and young adult populations.
- *Minority health and health disparities*: NIAAA continues to support and encourage research to develop and evaluate interventions that are culturally adapted and effective for minority youth.
- *Underage drinking treatment*: NIAAA-supported treatment research includes studies that test the efficacy of integrated behavioral treatments for youth with AUD and that

examine the neurobiological processes that link specific components of alcohol treatment interventions with improved treatment outcomes.

- *The impact of policies on alcohol-related behaviors and outcomes*: NIAAA supports and continues to encourage research that examines the public policy effects on alcohol-, marijuana-, and other substance-related behaviors and outcomes across the lifespan.
- Main focus: Research (R)

Key NIAAA Resources on Underage Drinking: NIAAA disseminates information about prevention of underage drinking for a range of audiences through a variety of publications. Website: <u>https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/underage-drinking</u>.

- Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide (described above).
- *Health Topics: Underage Drinking* is a hub of online underage drinking resources provided in English and Spanish.
- Examples of resources include:
 - NIAAA for Middle School contains interactive activities to help parents, caregivers, and teachers introduce and reinforce key messages about peer pressure, resistance skills, and other topics related to underage drinking. Website: <u>https://www.niaaa.nih.gov/alcohols-effects-health/niaaa-middle-school</u>
 - NIAAA for Teens highlights how alcohol affects health, warning signs and symptoms, and where to get help for alcohol-related problems. Website: <u>https://niaaaforteens.niaaa.nih.gov/</u>
 - NIAAA's topical factsheet, Get the Facts About Underage Drinking (https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/underagedrinking), provides an array of other fact sheets on college drinking, parental roles in preventing childhood alcohol use, as well as seasonal factsheets focusing on underage drinking issues surrounding high school graduation and the first weeks of college.
- *College Drinking Prevention Website*: This website provided by NIAAA is a one-stop resource for comprehensive research-based information on underage and excessive drinking among college students. The website features statistics, NIAAA college materials, and supporting research. It also contains links to alcohol policies of colleges and universities across the country, and information on where to get help for alcohol problems. The website also links to NIAAA's CollegeAIM (described above). Website: https://www.collegedrinkingprevention.gov.
- Alcohol and Your Brain: Launched in 2023, this virtual reality (VR) interactive experience for youth ages 13 and older shares age-appropriate information regarding alcohol's effects on five different areas of the brain. There is also a video version for viewing the experience without a VR headset. Website: https://www.niaaa.nih.gov/alcohol-and-your-brain-virtual-reality-experience-0.
- Main focus: Prevention (P) and Intervention (I)

Activities Related to Underage Drinking

Alcohol Policy Information System (APIS): APIS provides authoritative, detailed information on alcohol-related policies in the United States at both state and federal levels. Designed primarily for researchers, APIS encourages and facilitates research on the impact and effectiveness of alcohol-related policies. Website: <u>https://alcoholpolicy.niaaa.nih.gov</u>.

- APIS includes a section on underage drinking policies (e.g., retail alcohol outlet policies for preventing alcohol sales and service to those under age 21).
- Recognizing the changing legal environment, NIAAA expanded APIS to include policies related to the recreational use of cannabis.
- In response to the COVID-19 pandemic, APIS was expanded to include data on state-level policies affecting alcohol availability during the pandemic. Data are available for all 50 states and Washington, D.C.
- Main focus: Research (R)

HHS/NIH/NIDA

Activities Related to Underage Drinking

Research on Brain Development and Child Health: NIDA, NIAAA, and other NIH institutes are supporting the Adolescent Brain Cognitive Development Study SM (ABCD Study®), which is the largest long-term study of brain and cognitive development in children in the United States. Children will be interviewed and studied with brain imaging from the age of 9 to at least age 19. The study will increase understanding of the environmental, social, genetic, and other biological factors that affect brain and cognitive development and can enhance or disrupt a young person's life trajectory. In addition, the study will determine how exposure to substances (e.g., alcohol, marijuana, nicotine, caffeine) and new ways of taking them (e.g., vaping, dabbing) affect development at 11,875. The goal is to retain 10,000 into early adulthood. Website:

https://www.drugabuse.gov/related-topics/adolescent-brain/longitudinal-study-adolescent-braincognitive-development-abcd-study.

Select Research Findings and Publications:

- Is Alcohol and Other Substance Use Reduced When College Students Attend Alcohol-Free Programs? Evidence from a Measurement Burst Design Before and After Legal Drinking Age: Building on prior research by Patrick et al. (2010), Layland, Calhoun, Russell, and Maggs (2018) assessed effects of a campus-led alcohol-free program, LateNight Penn State (LNPS). Layland and colleagues (2019) found that over 7 semesters, college students who participated in the LNPS alcohol-free activities provided on weeknights and weekends used alcohol and illegal substances less in general and less on days they participated. Levels of use were lowest for students under age 21.
- An Online Drug Abuse Prevention Program for Adolescent Girls: Post-test and 1-Year Outcomes: Schwinn et al. (2019) tested the RealTeen, a nine-session web-based prevention intervention aimed to reduce girls' drug use and associated risk factors. At 1-year follow-up, compared with girls in the control condition, girls who received the intervention reported less binge drinking and cigarette smoking. In addition, girls assigned to the intervention condition had higher alcohol, cigarette, and marijuana refusal skills, coping skills, and media literacy and lower rates of peer drug use.

Community-Level Studies: Community-level studies address questions related to the dissemination and implementation of evidence-based substance use prevention programs. Examples include the following:

• *Communities That Care (CTC)*: An operating system for quality implementation of evidence-based preventive interventions targeted to specific risk and protective factors within the community, CTC provides a framework for assessing and monitoring

community-level risk and protective factors, training, technical assistance, and planning and action tools for implementing science-based prevention interventions through community service settings and systems. The Community Youth Development Study tests CTC in seven states, with 12 matched pairs of communities randomized to receive the CTC system or serve as controls. A panel of 4,407 5th graders was recruited and followed to assess impact of the CTC system on substance use and related outcomes.

- *PROmoting School/Community-University Partnerships to Enhance Resilience* (*PROSPER*): An innovative partnership model for the diffusion of evidence-based preventive interventions that reduce youth substance use and other problem behaviors, the PROSPER partnership model links land-grant university researchers, the cooperative extension system, the public school system, and community stakeholders. A trial of PROSPER was conducted in 28 school districts in rural and semi-urban communities in Iowa and Pennsylvania randomly assigned to the PROSPER partnership model or to a usual programming control condition. Approximately 10,000 6th graders recruited across two cohorts were enrolled in the study along with approximately 1,200 students and their parents. In the PROSPER condition, communities received training and support to implement evidence-based prevention through the partnership and selected interventions from a menu of efficacious and effective universal prevention programs.
- Monitoring the Future (MTF): MTF is an ongoing survey of substance misuse (including alcohol) behaviors and related attitudes of 8th, 10th, and 12th grade high school students, college students, and young adults. Students in grades 8, 10, and 12 participate in annual surveys (8th and 10th graders since 1991 and 12th graders since 1975). MTF also includes topical questions about riding with a drinking driver and driving after drinking alcohol (12th grade only) on a subset of questionnaires. Within the past 5 years, 45,000–47,000 students have participated in the survey each year. Follow-up questionnaires are mailed to a sub-sample of each graduating class every 2 years until age 35 and then every 5 years thereafter. Results from the survey are released each winter. Website: https://www.drugabuse.gov/related-topics/trends-statistics/monitoring-future.
- Preventing Drug Use among Children and Adolescents—A Research-Based Guide for Parents, Educators, and Community Leaders, 2nd Edition: This booklet is based on a literature review of all NIDA prevention research from 1997–2002. Before publication, it was reviewed for accuracy of content and interpretation by a scientific advisory committee and reviewed for readability and applicability by a Community Anti-Drug Coalitions of America (CADCA) focus group. The publication presents the principles of prevention; information on identifying and using risk and protective factors in prevention planning; applying principles in family, school, and community settings; and summaries of effective prevention programs.

Website: https://www.drugabuse.gov/sites/default/files/redbook_0.pdf.

• *Family Checkup (FCU)—Positive Parenting Prevents Drug Abuse*: NIDA developed a web-based tool demonstrating parenting skills that have been found to help prevent initiation and progression of drug use among youth. The tool presents five questions regarding specific parenting skills (e.g., communication with pre-adolescents) and provides a video clip for each that shows positive and negative examples of the skill. Additional videos and resources are provided for parents to practice positive parenting skills. This tool is based on research on the FCU conducted by Dr. Thomas Dishion and

colleagues at Oregon State University and the Oregon Social Learning Center. Website: <u>https://www.drugabuse.gov/family-checkup.</u>

- National Drug and Alcohol Facts Week (NDAFW): NDAFW is a health observance week for teens that aims to provide accurate information about alcohol, tobacco, and drug misuse. During this week, NIDA and NIAAA hold a Drug and Alcohol Facts Chat Day, where scientific staff from NIDA, NIAAA, and the National Institute of Mental Health respond to questions and concerns from students on substance use and mental health topics. A companion NIDA publication, titled Drug Facts: Shatter the Myths, is also a resource for NDAFW. This publication answers teens' most frequently asked questions about alcohol, tobacco, and drug use. The 2019 NDAFW was held in January 2019. Website: <u>https://teens.drugabuse.gov/national-drug-alcohol-facts-week.</u>
- 2019 National Drug & Alcohol IQ Challenge: As part of the 2019 NDAFW, NIDA supported a challenge that allowed participants to test their knowledge by taking an interactive drug and alcohol IQ challenge quiz. The quiz included questions on drugs and alcohol and their effects and consequences. It also provided answers, facts, and resources for each question. Website: <u>https://teens.drugabuse.gov/quiz/national-drug-alcohol-facts-week/take-iq-challenge/2019</u>.

HHS/OASH/Office of Population Affairs

Activities Related to Underage Drinking

Office of Population Affairs (OPA) Website: The OPA website provides resources for parents and adolescents. Website: <u>https://opa.hhs.gov/adolescent-health</u>

HHS/OASH/Office of the Surgeon General

Activities Related to Underage Drinking

Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health: The Office of the Surgeon General (OSG) published this report in 2016 (SAMHSA, 2016). It includes information on underage drinking prevention as well as alcohol and other substance use in other populations, treatment, and recovery. This report was followed in 2018 by *Facing Addiction in America: The Surgeon General's Spotlight on Opioids* (HHS, 2018), produced jointly with SAMHSA, which focuses primarily on opioid use but also includes information on AUD and its treatment.

HHS/SAMHSA

Activities Specific to Underage Drinking

TTHY National Media Campaign: SAMHSA's Center for Substance Abuse Prevention (CSAP) supports TTHY, a national media campaign to prevent underage drinking among youth under age 21 by providing parents and caregivers with information and resources they need to start addressing the issue of alcohol with their children early. TTHY is discussed in more detail in Chapter 5. Website: https://www.samhsa.gov/underage-drinking.

- Attributes of this campaign include:
 - Features a series of television and print public service announcements (PSAs) in English and Spanish that show parents "seizing the moment" to talk with their children about alcohol.
 - Has distributed PSAs in all 50 states and more than 300 cities, including in major airports, public transportation, billboards, broadcast and cable television networks, radio stations, newspapers, and select magazines that reach parents.

- Has more than 1,500 local, state, and national partners, including CADCA and the National Parent Teacher Association.
- Has developed a TTHY mobile app, which was analyzed in a peer-reviewed journal (Stellefson et al., 2019).

Underage Drinking Prevention Education Initiatives: This SAMHSA/CSAP effort provides ongoing support for the ICCPUD web portal and the nationwide Communities Talk: Town Hall Meetings to Prevent Underage Drinking initiative and provides other resources, message development, public outreach and education, and partnership development for preventing underage alcohol use among youth up to age 21. Website: <u>https://www.stopalcoholabuse.gov</u>.

- The ICCPUD web portal includes comprehensive research and resources developed by the federal agencies of ICCPUD, including the annual *RTC*, *State Performance & Best Practices for the Prevention and Reduction of Underage Drinking Report*, and the *State Reports–Underage Drinking Prevention and Enforcement*.
- Town Hall Meetings are held approximately every 2 years (including in 2023), hosted by community or state organizations, and supported by SAMHSA to educate youth, families, and communities about the potentially harmful consequences of underage and problem drinking among individuals 12–25 years old.

Strategic Prevention Framework Partnerships for Success (SPF PFS) Program: This program focuses on preventing the initiation and progression of substance use and its related consequences, while strengthening prevention capacity and infrastructure at the state, tribal, and community levels. The vast majority of SPF-PFS grantees focus on alcohol in addition to other substances.

STOP Act Grant Program: SAMHSA's CSAP provides up to \$60,000 per year for 4 years to current or previously funded Drug-Free Communities Program (DFC) program grant recipients to enhance implementation of EBPs that are effective in preventing underage drinking. This grant program:

- Currently funds 98 community coalitions in 31 states and the District of Columbia.
- Strengthens collaboration among community sectors, the federal government, and state, local, and tribal governments that demonstrate a long-term commitment to reducing alcohol use among youth.
- Uses SAMHSA's SPF process, which includes a community needs assessment, an implementation plan, a method to collect data, and the evaluation, monitoring, and improvement of strategies being implemented to create measurable outcomes.

Activities Related to Underage Drinking

Substance Use Prevention, Treatment, and Recovery Services Block Grant (SUPTRS):

Mandated by Congress, the SUPTRS Block Grant is a major funding source for substance use prevention and treatment in the United States, including prevention and treatment of AUD among adolescents.

- SUPTRS grantees are required to use at least 20 percent of their grant allotment on primary prevention services (universal, selective, and indicated) targeted to individuals not in need of SUD treatment.
- Eighty-four percent of SUPTRS grantees have identified underage drinking as a prevention priority.

National Helpline (1-800-662-HELP): Individuals with alcohol or illicit drug problems or their family members can call the SAMHSA National Helpline for referral to local treatment facilities, support groups, and community-based organizations. Website: <u>https://www.samhsa.gov/find-help/national-helpline</u>.

- The helpline is a confidential, free, 24-hour-a-day, 365-day-a-year information service available in English and Spanish.
- In addition to calling the toll-free number, help is also available by visiting the online treatment locator at <u>https://www.samhsa.gov/find-help/treatment_or https://findtreatment.gov</u>.

Evidence-Based Practice Resource Center: The Resource Center contains a collection of scientifically based resources for a broad range of audiences, including Treatment Improvement Protocols, toolkits, resource guides, clinical practice guidelines, and other science-based resources. Website: <u>https://www.samhsa.gov/resource-search/ebp</u>.

Enhancement and Expansion of Treatment and Recovery Services for Adolescents, Transitional Aged Youth, and their Families Grant Program (Youth and Family TREE): Administered by CSAT, this program seeks to enhance and expand comprehensive treatment, early intervention, and recovery support services for adolescents (ages 12–18), transitional aged youth (ages 16–25), and their families/primary caregivers with SUDs and/or co-occurring substance use and mental disorders.

- Eligible entities are states, tribes, universities, nonprofit healthcare systems, and community and faith-based organizations.
- Recipients are expected to provide a coordinated, multisystem, family-centered approach that will enhance and expand comprehensive evidence-based treatment, including early intervention and recovery support services.

Screening, Brief Intervention, Referral, and Treatment (SBIRT) Grants: SBIRT involves implementation of a system in community and specialist settings that screens for and identifies individuals with substance use-related problems and either provides for a brief intervention in a generalist setting or motivates and refers individuals with high-level problems and probable SUD diagnoses to a specialist setting for assessment, diagnosis, and brief or long-term treatment. Website: https://www.samhsa.gov/sbirt.

- SBIRT grants are administered by SAMHSA's Center for Substance Abuse Treatment (CSAT).
- Several SBIRT grantees have developed programs that are available to individuals under age 21, and new grants will also encourage the provision of services to adolescents and emerging youth.

Offender Reentry Program: The purpose of this CSAT program is to expand SUD treatment and related recovery and reentry services to sentenced offenders/ex-offenders who have an SUD and/or co-occurring substance use and mental disorders and who are returning to their families and community from incarceration in state and local facilities, including prisons, jails, or detention centers.

- Supports services for people age 18 and above.
- Provides services grants to stakeholder partnerships.

• Seeks to actively support offender reentry stakeholder partnerships so that clinical needs are met, and clients are treated using EBPs.

Grants to Expand Substance Misuse Treatment Capacity in Family and Adult Treatment Drug Courts: These programs support courts that use the treatment drug court model to provide SUD treatment (including recovery support services, screening, assessment, case management, and program coordination) to defendants/offenders or parents who are at risk of having dependency petitions filed against them.

• Grants to family courts address the needs of the family as a whole and include direct service provision to children and youth age 18 and under.

Addiction Technology Transfer Center (ATTC) Network: ATTCs support regional activities focused on preparing tools needed by practitioners to improve the quality of service delivery and providing technical assistance to provider organizations to improve their processes and practices in the delivery of effective SUD treatment and recovery services. Website: https://www.attcnetwork.org/.

- A regional ATTC is located in each of the 10 HHS designated regions.
- The 10 regional ATTCs are coordinated by the ATTC National Coordinating Office.

Prevention Technology Transfer Centers (PTTC): The purpose of the PTTC network is to improve implementation and delivery of effective substance use prevention interventions and provide training and technical assistance services to the substance use prevention field. It does this by developing and disseminating tools and strategies needed to improve the quality of substance use prevention efforts; providing intensive technical assistance and learning resources to prevention professionals to improve their understanding of prevention science, epidemiological data, and implementation of evidence-based and promising practices; and developing tools and resources to engage the next generation of prevention professionals. Website: https://pttenetwork.org/.

- Similar to ATTCs, a regional PTTC is located in each of the 10 HHS designated regions.
- During FY 2023, the PTTC Network completed 978 training and technical events, serving 43,408 prevention participants.

Tribal Training and Technical Assistance Center (TTAC): The Tribal TTAC provides TTA on mental disorders and SUDs, suicide prevention, and promotion of mental health to federally recognized tribes, other American Indian and Alaska Native communities, SAMHSA tribal grantees, and organizations serving Indian Country. Website: <u>https://www.samhsa.gov/tribal-ttac</u>.

- Is culturally relevant, evidence-based, and holistic, using the Strategic Culture Framework.
- Includes targeted site visits, virtual learning communities, Gatherings of Native Americans, and Tribal Action Plan training.

Office of Indian Alcohol and Substance Abuse (OIASA): OIASA is responsible for aligning, leveraging, and coordinating with federal agencies and departments in carrying out the responsibilities delineated in the Tribal Law and Order Act. Website: <u>https://www.samhsa.gov/tloa/about</u>.

- The office provides staffing for the Indian Alcohol and Substance Abuse (IASA) Interagency Coordinating Committee, which coordinates 60 federal agencies responsible for addressing alcohol and substance use issues.
- The IASA Interagency Coordinating Committee includes the Department of Interior's Bureau of Indian Affairs and Bureau of Indian Education, DoJ's Office of Justice Programs and Office of Tribal Justice, and HHS's IHS and other agencies in charge of assisting Indian Country.

National Survey on Drug Use and Health (NSDUH): Conducted annually by SAMHSA's Center for Behavioral Health Statistics and Quality (CBHSQ), NSDUH is a survey of the civilian, non-institutionalized population of the United States age 12 or older. Website: https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health.

- Is the primary national source of both national and state information on use of illicit drugs, alcohol, and tobacco.
- Also provides estimates of SUDs, SUD treatment, mental health measures, mental health service use, co-occurring SUDs, and driving under the influence of alcohol and other substances.
- Is conducted each year through confidential interviews during in-person residential visits or via the web.

Behavioral Health Services Information System (BHSIS): BHSIS, conducted by SAMHSA's CBHSQ, is the primary source of national data on SUD treatment services and offers information on treatment facilities with special programs for adolescents as well as demographic and substance use characteristics of adolescent treatment admissions. It has five interrelated components:

- *Inventory of Treatment Facilities (I-TF)*: a list of all known substance use and mental health treatment facilities in the United States and its territories.
- The National Substance Use and Mental Health Services Survey (N-SUMHSS) provides federal, state, and local governments, as well as the behavioral health research community, with information about the number and characteristics of public and private substance use and mental health treatment facilities nationwide. This annual survey is crucial as the data gathered is the information on SAMHSA's FindTreatment.gov, our nation's most comprehensive national source of data on substance use and mental health treatment facilities. The N-SUMHSS replaced the National Survey of Substance Abuse Treatment Services (N-SSATS) and the National Mental Health Services Survey (N-MHSS) in 2021 by combining questions for substance use and mental health facilities. The N-SSATS and N-MHSS were combined to reduce burden on the facilities, optimize government resources to collect data, and enhance the quality of data collected. For more information on the N-SUMHSS, please visit https://info.nsumhss.samhsa.gov.
- *Treatment Episode Data Set (TEDS)*: a compilation of data on the demographic and substance use characteristics of admissions to and discharges from SUD treatment, primarily at publicly funded facilities.
- *Mental Health-Treatment Episode Data Set and Mental Health Client-Level Data (MH-TEDS and MH-CLD)*: collections of mental health client-level data from state-funded mental health treatment service facilities.

• *FindTreatment.gov*: It is the most comprehensive resource for persons seeking treatment for all mental and substance use disorders in the United States and its territories. FindTreatment.gov provides the ability to search for substance use and mental health facilities, health care centers, buprenorphine practitioners, and opioid treatment providers.

Drug Abuse Warning Network (DAWN): DAWN captures data on emergency department (ED) visits related to recent substance use and misuse directly from the electronic health records of participating hospitals. SAMHSA established DAWN, a nationwide public health surveillance system that improves emergency department monitoring of all drugs, including alcohol. Website: <u>https://www.samhsa.gov/data/data-we-collect/dawn-drug-abuse-warning-network.</u>

- Functions as a drug-related public health surveillance system, or drug-related "early warning" system, with a capacity to produce national estimates.
- DAWN now includes data available at more frequent intervals and data for a wider range of geographic area types, including urban, suburban, and rural areas.
- Based on the DAWN short report published in 2024, there were an estimated 8,566,725 ED visits related to alcohol. Alcohol was the most prevalent substance involved in substance-related ED visits, with twice the number of visits compared to opioids or cannabis. Website:

https://www.samhsa.gov/data/sites/default/files/reports/rpt44498/DAWN-TargetReport-Alcohol-508.pdf.

DoD/Office of the Assistant Secretary of Defense

Activities Specific to Underage Drinking

Youth Program: DoD Youth Programs continue to build upon healthy life skills by increasing young people's capacity to engage in positive behaviors. They provide social, cognitive, educational, physical, and recreational activities and services appropriate to needs, interests, and abilities by providing physically and emotionally safe environments for youth to spend their out-of-school time. Through affiliation, programs such as the Boys & Girls Clubs of America and SMART Moves (Skills Mastery and Resistance Training) help young people resist alcohol, tobacco, drugs, and premature sexual activity. This year-round program, provided in Military Youth Programs worldwide, encourages collaboration among staff, youth, parents, and representatives from community organizations.

DoD Education Activity (DoDEA):

Health Education Curriculum: DoDEA implements a structured health education program to provide students with learning experiences designed to increase the acquisition of basic health concepts and functional health knowledge to make quality decisions. The program includes curriculum and instruction that address a variety of concepts to include information about the risks associated with alcohol consumption, developing refusal skills, long-term risks, and the lasting impact on the individual, their friends, family, and community.

Red Ribbon Week: DoDEA observes Red Ribbon Week by providing specialized programming to educate students of the dangers of drug and alcohol misuse and the benefits of living a healthy and drug-free lifestyle.

Law Enforcement: DoD ensures enforcement of underage drinking laws on all federal installations.

Activities Related to Underage Drinking

DoD has a series of SUD prevention efforts, including universal, selective, and indicated prevention strategies. The placement of behavioral health (BH) personnel in primary care medical settings is intended to combat stigma associated with receiving BH care and provides an opportunity to improve early screening, identification, and intervention of many BH conditions.

Addictive Substances Misuse Advisory Committee (ASMAC): Established by the Under Secretary of Defense for Personnel and Readiness under the provisions of DoD Instruction 5105.18, ASMAC serves as a central point for information analysis and integration, program coordination, identification of policy needs, and problem-solving challenges with regard to legal and illegal addictive substance use and SUDs in those served by the military health system (MHS). ASMAC provides expert advice on issues related to the supply of illegal substances and prescription medications, responsible use and demand reduction of addictive substances, promotion of healthy behaviors—including alcohol use, and the identification, prevention, and treatment of other SUDs. ASMAC also provides subject matter expert (SME) advice to other interagency or advisory functions.

Defense Health Agency's BH Clinical Community: The BH Clinical Community recently established the Substance Misuse and Addictive Behaviors Working Group (SMAB WG), which supports the coordination, integration, and oversight of SUD and other addictive behavior-related clinical care across the MHS. SMAB WG facilitates MHS-level SUD and addictive behavior-related clinical care activities to standardize, optimize, and harmonize MHS use of associated data and policies.

Health Related Behaviors Survey (HRBS) of Active and Reserve Components: DoD conducts the HRBS every 2–4 years to measure over 30 health and substance use–related behaviors for Active Duty and Reserve Component Service members. Examples of data collected are the age of first substance use, binge drinking, and the prevalence and frequency of substance use.

Own Your Limits Counter-Marketing Campaign: The DoD's Own Your Limits campaign was launched in September 2019, replacing the former "That Guy" campaign. Own Your Limits is an education campaign that utilizes behavior change tactics to encourage and help Active Duty Service members learn how to drink responsibly if they choose to drink alcohol. The primary target audience of the campaign is 18-to-24-year-old enlisted Service members, but many materials can be applied across the Active and Reserve Components. The campaign is not Service specific; it is designed to resonate with members of all Service branches. The goals of the campaign are to:

- Give Service members the information and motivation they need to make responsible choices when drinking alcohol, which includes sticking to safe drinking limits;
- Support DoD's efforts to build and sustain a ready and resilient force by providing resources and information to Service members so they can serve honorably and drink responsibly;
- Support professionals in their mission to educate Service members on the importance of drinking alcohol responsibly; and
- Provide friends and family of Service members with the information and resources they need to talk to their Service member about alcohol use concerns.

The campaign is web based and built on a responsive platform, meaning Service members can access the site on any device 24/7. Campaign content, messaging, imagery, and how messages

are delivered to Service members are based on focus group sessions conducted across all Service branches. Website: <u>OwnYourLimits.org</u>.

The campaign includes:

- A responsive website with resources and information for Service members, their friends and family, and professionals to encourage and support responsible drinking for those who choose to drink. Digital tools available on the site include several calculators (e.g., calorie counter, drink size, BAC) and an evidence-based online anonymous quiz for Service members to check their drinking habits, identify risky behavior, and get resources.
- Social media channels (Facebook–Own Your Limits and Instagram–@ownyourlimits) featuring engaging graphics and information to encourage responsible drinking. The campaign engages with more than 71,000 fans on social media platforms.
- A quarterly e-newsletter called *The Buzz on Responsible Drinking* highlighting campaign updates and other resources for professionals to use in their work with Service members. Website visitors can sign up by visiting OwnYourLimits.org and clicking "Contact Us" in the top right-hand corner to send a message with "SUBSCRIBE" in the message section.
- Downloadable materials, such as fact sheets and posters that can be linked to or printed directly from the campaign website for use.
- Bulk ordering of printed and promotional materials (e.g., factsheets, posters, and educational drink coasters) for professionals to order to support their efforts addressing alcohol use among Service members.

Service-Level Prevention Programs

Marine Corps Substance Abuse Program (SAP): The U.S. Marine Corps (USMC) SAP provides plans, policies, and resources to prevent substance misuse and related consequences. Specific program efforts are based on the Health and Medicine Division of the National Academy of Sciences prevention continuum and focus on the common risk and protective factors framework. USMC SAP's efforts continue to include:

- *Establishment of a Coordinated Continuum of Care*: The Navy Bureau of Medicine and Surgery, the USMC Marine and Family Programs, and the USMC Health Services have a Memorandum of Understanding (MOU) that defines the continuum of psychological health and problematic substance use services offered on Marine Corps installations and establishes communication among all entities to ensure a coordinated comprehensive system of care.
- Universal Training: Unit Marine Awareness and Prevention Integrated Training (UMAPIT) educates all Marines about BH risk factors and warning signs, including alcohol use and misuse. UMAPIT incorporates protective factors and skill-building techniques to ensure that Marines understand their responsibility to intervene when a fellow Marine shows signs/symptoms of alcohol misuse and other BH concerns.
- Selected Training: PRIME for Life® (PFL) 4.5 is utilized as a USMC educational program for substance misuse education, designed to teach Marines to self-assess high-risk behaviors and influence changes in their attitudes, beliefs, and behaviors around alcohol consumption. PFL 4.5 is also designed to target populations at high-risk for substance misuse (e.g., 17-to-25-year-old Marines).

- *Indicated Training*: PFL 16 hours (PFL 16.0) is an evidence-based, indicated prevention intervention course designed to teach Marines who have been involved in an alcohol-related incident about the dangers and risks involved with alcohol misuse. PFL is facilitated by Substance Abuse Counseling Center (SACC) certified prevention specialists who provide Marines with increased substance use awareness and with new skills for making lower-risk decisions.
- *Deterrence*: The Alcohol Screening Program (ASP) supports the 21st Century Marine and Sailor Initiative and seeks to identify alcohol misuse and direct appropriate intervention before a career- or life-altering incident occurs. The ASP uses monthly random breathalyzer testing of Marines and Sailors to screen for underage drinking and alcohol use while in a duty status.
- *Case Identification and Treatment*: The USMC model supports an integrated approach while maintaining adherence to the scope of practice delineated in the aforementioned MOU. This model includes standardized screening instruments, employs warm hand-offs for referrals, and emphasizes ease of access.
- *SACCs*: USMC SACCs are required to undergo Marine Corps Family Programs Certification accreditation/certification not less than once every 4 years using national and service standards developed by a national accrediting body and to ensure multiple levels of evidence-based services, including education, care coordination, group therapy, and individual and family support, are provided.
- *Collaboration with Sexual Assault Prevention and Response (SAPR)*: SAP collaborates with SAPR to create effective and consistent prevention messaging in response to the correlation between alcohol and sexual assault. SAP and SAPR work together using social media messaging and awareness campaigns to increase knowledge about the risks associated with alcohol misuse and sexual assault.
- *Collaboration with Suicide Prevention*: SAP collaborates with Suicide Prevention to create effective prevention messaging in response to the correlation between alcohol and suicide. SAP and Suicide Prevention join efforts leveraging social media messaging and awareness campaigns to educate Marines and their family members on the risks associated with alcohol misuse, suicide, and suicide prevention.
- *Installation-Specific Prevention Planning*: SAP collects an installation Prevention Plan by January 1 of every calendar year in support of SAP efforts throughout USMC. To facilitate professional development and increase prevention efforts, SAP provides training throughout the year to SACC staff via an online webinar approved by the United States Navy Certification Board with a continuing education hour in alcohol, tobacco, and other drugs. SAP utilizes the SPF developed by SAMHSA to support the development of annual installation integrated prevention plans and training.
- *Protect What You've Earned (PWYE) Initiative*: PWYE was developed and implemented to start the "health, safety, and well-being" conversation among Marines in choosing low-risk life decisions in keeping with Marine Corps standards. Although PWYE initially focused on alcohol misuse, it was expanded to emphasize good decision making in all aspects of a Marine's life. PWYE reinforces a Marine's inherent desire to safeguard their most valued and hard-earned achievements by promoting individual accountability.
- *Marine Expeditionary Force (MEF) Prevention Capability*: The Embedded BH Prevention Capability staff support the MEF Prevention Capability. Civilian BH personnel are placed in Active Duty Operating Forces to assist the Commander in

executing BH prevention program requirements. The goal of the MEF Prevention Capability is to execute and evaluate MEF-based strategic prevention plans and coordinate efforts with installation BH personnel.

- *Review and Revise Alcohol Policies*: SAP staff provides SME reviews to ensure policies and plans improve safety and reduce the risks associated with alcohol.
- *Research/Development and Data Collection in Measuring Program Effectiveness*: SAP staff reviews installation-provided data in collaboration with Research/Development and Data Surveillance to measure program effectiveness.

Navy Alcohol Abuse Prevention Program (NAAPP): The Navy's comprehensive alcohol misuse prevention program supports Fleet readiness with plans, policies, and resources to prevent consequences of substance misuse. NAAAPP program includes education and training, early intervention, substance misuse rehabilitation, and accountability. NAAPP efforts comprise:

- *Review and Revise Alcohol Policies*: NAAP establishes and reviews existing and new policies and plans to improve safety and reduce risks associated with alcohol use and misuse.
- Research/Development and Data Collection in Measuring Program Effectiveness: Review data in collaboration with Research/Development and Data Surveillance to measure program effectiveness.
- Alcohol and Drug Abuse Managers/Supervisors (Adamson & Sellman) for Leaders: Commanding Officers, Officers in Charge, Executive Officers, Command Master Chiefs, Chiefs of the Boat, and as applicable, other senior command personnel complete ADAMS for Leaders.
- Alcohol Server Training for Morale, Welfare, and Recreation Personnel: Personnel employed in Navy recreation facilities who are responsible for selling or serving alcoholic beverages complete appropriate training to ensure compliance with Navy and local regulations and statutes, enforcement of policies related to underage drinking, knowledge of alternatives, and a full understanding of designated driver programs.
- *Resilient Workforce (RW) Summits*: RW Summits are conducted throughout the year in fleet-concentrated areas. An RW Summit may also offer some or all of the following topics: SAPR, domestic violence prevention, equal opportunity, substance misuse prevention, nutrition and physical readiness, suicide prevention, and BH.

Navy Substance Abuse Rehabilitation Program (SARP): The Navy Medicine SARP provides early intervention and prevention resources to Sailors and Marines at its 39 ashore and 11 shipboard locations, affording resources to prevent the consequences of ongoing alcohol misuse, including underage drinking.

SARP alcohol and substance misuse early intervention and education includes:

• *PFL*: Partnering with the Office of the Chief of Naval Operations (OPNAV N17), SARP rolled out an evidence-based early intervention and prevention alcohol misuse curriculum titled PRIME for Life[®] in December 2019, aligning with DoD, DHS, and other federal agencies utilizing the PFL curriculum. The program challenges Sailors and Marines to self-assess high-risk drinking behaviors in making positive changes to attitudes and beliefs around alcohol misuse. It is highly effective at targeting younger Sailors and Marines ages 17–25, reducing stigma in seeking education and treatment for alcohol misuse.

- *Navy My Ongoing Recovery Experience (MORE)*: Since 2010, SARP has maintained a strong partnership with the Hazelden-Betty Ford Foundation to execute the Navy MORE Program. Navy MORE is an evidence-based online, smartphone application, and telephonic recovery support program for Sailors and Marines with alcohol misuse, featuring worldwide access 24 hours a day and 7 days a week, including regular telephonic and email contact with a dedicated recovery coach. The Navy MORE Program has helped return over 1,200 Sailors and Marines back to duty following a relapse, avoiding administrative separation or other disciplinary action as a result of continued problematic alcohol misuse.
- *Establishment of a Coordinated Continuum of Care*: The Navy Bureau of Medicine and Surgery, USMC Marine and Family Programs, and the USMC Health Services have an MOU defining the continuum of psychological health and problematic alcohol and substance misuse services offered on Marine Corps installations. This coordination establishes communication among all stakeholders to ensure a coordinated comprehensive system of care, guided by a philosophy of "no wrong door" for Marines and attached Sailors obtaining alcohol misuse early intervention and treatment.

Army Substance Abuse Programs: The Army Substance Abuse Program establishes, administers, and evaluates substance misuse prevention training and professional training programs for all Army personnel worldwide within the Active Component, National Guard, and Army Reserve. The goal of the Army Substance Abuse Program is to provide soldiers, command, Department of Army civilians, contractors, and family members with the education and training necessary to make informed decisions about alcohol and drugs. The following programs are currently provided by the Army Substance Abuse Program to meet the needs of soldiers seen by the Army:

- Alcohol and Drug Abuse Prevention Training (ADAPT): ADAPT is an educational/motivational intervention that focuses on the adverse effects and consequences of alcohol and other drug misuse. Its curriculum consists of a minimum of 12 hours of course material. For the ADAPT curriculum, the Army utilizes PFL, a motivational intervention used in group settings to provide early intervention and prevent alcohol and drug problems. PFL is an evidence-based program that provides measurable outcomes and effectiveness as recognized by its inclusion within the SAMHSA National Registry of Evidence-Based Programs and Practices. It provides soldiers with the ability to self-assess their own high-risk behaviors and influence change in attitude, belief, and behavior.
- Adolescent Support and Counseling Services (ASACS): ASACS is a school-based program that provides alcohol/drug misuse counseling services and alcohol/drug misuse and deployment support prevention services to eligible adolescent family members at 17 locations outside the contiguous United States. The current staffing for ASACS personnel is 23 counselors located in Hawaii, Korea, Japan, Germany, Belgium, and Italy. These counselors are located in the middle and high schools. The ASACS-Army provided an estimated 21,400 counseling hours and more than 15,550 prevention hours in FY 2019 for military families outside of the continental United States with 23 counselors on hand, reducing the early return of families from overseas for these issues.

• *BH System of Care*: BH System of Care is a standardized system of care to prevent, identify, treat, and track BH issues affecting service members and other beneficiaries. BH System of Care includes 11 integrated BH enterprise programs that operates as a single BH system that supports the readiness of the force by promoting health, identifying BH issues early in the course of the illness, delivering evidence-based treatment, fully leveraging other members of the Army community, and monitoring efficiency and effectiveness through transparent metrics.

Substance Use Disorder Clinical Care (SUDCC): SUDCC provides SUD clinical care, including assessment, treatment, and aftercare for service members and other beneficiaries within an integrated medical and BH model to enhance health and readiness. SUDCC provides SUD treatment as part of a comprehensive plan to address total BH needs. The goal of SUDCC is to provide integrated and co-located BH care for service members and other beneficiaries. Integrated care will maximize the opportunity for a rapid and successful recovery. Soldiers may now proactively seek care for an alcohol problem before an incident occurs and, unless there are safety issues, that care has the same privacy protections as any other medical care. This voluntary care policy seeks to identify problems via alcohol screening in medical settings, self-referral, spouse or buddy referral, or early supervisor-assisted referrals before health, incidents, families, job, or career are impacted by more serious problems.

Child and Family Behavioral Health System (CAFBHS): CAFBHS is the Army's comprehensive BH model designed to support the needs of Army children and families through the alignment and collaboration with the Army's patient-centered medical homes. The prevention and early intervention of SUDs is interwoven into all aspects of the CAFBHS model. Specifically, CAFBHS incorporates a well validated clinical assessment tool (CAR, RELAX, ALONE, FORGET, FRIENDS, TROUBLE [CRAFFT]) designed to screen for substance-related risks and problems in adolescents, in evaluations and on-going follow-up of all adolescents 12 years old and older as part of the adolescent version of the BH Data Portal, the Army's online screening and assessment process. In addition, CAFBHS primary care manager (PCM) training curriculum educates PCMs on how to use the CRAFFT in primary care as a routine assessment of substance misuse. CAFBHS' School BH providers embedded in schools; overseas and in Hawaii counselors collaborate closely with drug and alcohol counselors from the Army's ASACS program. In addition to efforts targeting substance use prevention and early intervention, all CAFBHS specialty providers (e.g., psychiatry, psychology, social work, marriage, and family therapists) integrate substance misuse issues into their assessment and treatment of children and adolescents and when appropriate refer to another level of care or agencies as needed. By providing a spectrum of BH services from consultation to treatment for Army children and families across multiple settings (e.g., primary care, schools, BH clinics in military treatment facilities), the CAFBHS program supports overall family well-being in all aspects of functioning.

Army Campaigns: The Army Resilience Directorate recognizes and endorses campaigns that go beyond alcohol or other drug misuse problems. Installations are required to conduct two campaigns a year. Headquarters, Installation Management Command collects after-action reports and shares best practices regarding the campaigns across the enterprise.

• *Red Ribbon Campaign*: Red Ribbon Week is the oldest and largest drug prevention campaign in the country. The Red Ribbon Campaign includes the DoD Fulcrum Shield Award. This award recognizes the best youth-based drug demand program that is affiliated with all services. Participants in this program must be of school age and have

contributed towards articulating an anti-drug message to their peers and communities. The mission of the Red Ribbon Campaign is to present a unified and visible commitment to the creation of a drug-free America.

- Summer Safety Impaired Driving Prevention Campaign: The 101 Critical Days of Summer (Memorial Day through Labor Day) safety campaign is intended to remind the Army that it cannot afford to lose focus on safety either on or off duty. A high priority is also placed on alcohol and summer events, like water sports.
- *National Drunk and Drugged Driving (3D) Prevention Month/Campaign*: December is annually designated as 3D Prevention Month to recognize the risks and reduce the prevalence of driving under the influence of alcohol and other drugs.
- *Drive Sober or Get Pulled Over*: This is a nationwide impaired-driving prevention campaign.

United States Air Force (USAF) SUD Prevention Program: The USAF Alcohol and Drug Abuse Prevention and Treatment Program (ADAPT) encourages healthy and safe alcohol use (and non-use for underage people) as the normative lifestyle choice for young USAF personnel. Prevention efforts include:

- Collaborating with other prevention and resiliency programs and coordinating with violence prevention integrators (VPIs) to reduce underage drinking, alcohol misuse, alcohol-related misconduct, and illicit drug use;
- Utilizing a comprehensive, four-level community-based approach, including strong leadership support, individual-level interventions, base-level interventions, and community-level interventions;
- Delivering individualized Alcohol Brief Counseling—an evidence-based, brief targeted prevention intervention—using motivational interviewing strategies, client and provider manuals, critical thinking exercises, harm reduction skill building, and client-driven change planning; and
- Promoting an evidence-based, web-delivered alcohol prevention intervention with young airmen arriving at their first Permanent Duty Station (during the First Term Airmen Course) to airmen in the formative years of their career (while attending Airman Leadership School). Pilot to occur at three Air Force bases in 2021. Website: https://checkupandchoices.com/.

ED/OSHS

Activities Related to Underage Drinking

ED's School Climate Transformation Grant–Local Educational Agency Grants Program: This program provides competitive grants to state educational agencies to develop, enhance, or expand systems of support for, and technical assistance to, local educational agencies and schools implementing an evidence-based, multitiered behavioral framework for improving behavioral outcomes and learning conditions for all students. Website: <u>https://oese.ed.gov/offices/office-of-formula-grants/safe-supportive-schools/school-climate-transformation-grant-local-educational-agency-grants-program/</u>

• ED has developed a variety of measures to assess the performance of the School Climate Transformation Grants, including measures related to the decrease in suspensions and expulsions of students for possession or use of drugs or alcohol.

ED's Safe and Supportive Schools News Bulletin: The *Safe and Supportive Schools News Bulletin* is used by the ED OSHS to provide weekly email updates to grantees and other stakeholders in the education community on work related to OSHS and on topics related to school safety, school climate, substance misuse, violence prevention in education, and promotion of student health and well-being. Website:

https://www2.ed.gov/about/offices/list/oese/oshs/news.html#PreventED_Listserv_Enrollment.

- The bulletin also highlights other federal funding opportunities related to these topics (including underage drinking prevention).
- It also provides a timely information outlet for the OSHS.
- The listserv content may include information about the OSHS program units (e.g., Well-Rounded Educational Opportunities, Safe and Healthy Students, Education Technology, Homeless, Neglected and Delinquent Youth, and Emergency Management and School Preparedness), legislation, and federal grant opportunities.

Growing Up Drug-Free: A Parent's Guide to Prevention: An update of this publication, last revised in 2012, was released in April 2017. Website:

https://www.dea.gov/documents/2017/04/27/growing-drug-free-parents-guide-prevention-2017.

- This 40-page booklet offers information to help parents and other caregivers raise drug-free children.
- The guide includes an overview of substance use among youth; descriptions of substances young people may use; a look at risk factors that may make children more vulnerable to trying and using drugs and protective factors to offset those risks; suggestions for how to talk to children about drugs, regardless of their age; and tips on what to do if you suspect your child is using alcohol, tobacco, or other drugs.
- ED partnered with the Drug Enforcement Administration to update this publication.

DHS/USCG

Activities Related to Underage Drinking

USCG has restructured its policies to reflect the establishment in 2014 of age 21 as the minimum drinking age, regardless of the Service member's duty location. Prevention- and treatment-seeking behaviors are being strengthened and encouraged.

- The USCG's COMDTINST M6320.5, Coast Guard Substance Abuse Prevention and Treatment Manual policy, was officially promulgated on September 6, 2018.
- USCG implemented an Addiction Orientation for Healthcare Providers course, a 1-week course that trains all Medical Officers on how to conduct, screen, and refer patients with SUDs to the appropriate level of treatment.
- Substance misuse assessment and screening training compliance for Medical Officers has approached and is stable at 90 percent (with rotations, retirements, and relocations, this standard should be considered met).
- As with other active duty services, USCG uses PFL and myPRIME as its principal intervention to educate members on high-risk and binge drinking consequences.
- USCG was the first active duty force to raise its drinking age to 21.

DOT/NHTSA

Activities Specific to Underage Drinking

Programs Encouraging States to Enact Minimum Drinking Age and Zero Tolerance Laws:

NHTSA monitors state compliance with congressionally mandated programs to encourage states to enact minimum drinking age and zero tolerance laws, both of which have been enacted by all 50 states and the District of Columbia. Website: <u>https://www.nhtsa.gov/laws-regulations/impaired-driving</u>.

Activities Related to Underage Drinking

NHTSA supports the work of national organizations to address underage drinking and driving prevention. Several examples follow:

- *Students Against Destructive Decisions (SADD)*: NHTSA partners with SADD in its efforts to promote safe driving practices among youth, including the prevention of impaired driving. Website: <u>https://www.sadd.org/about</u>.
- *State Highway Safety Funding*: NHTSA provides federal funding to states and local communities, which may be used for activities related to underage drinking and driving prevention through SHSOs. Website: <u>https://www.nhtsa.gov/highway-safety-grants-program/state-highway-safety-plans-and-annual-reports</u>.
- *Youth Traffic Safety Media*: NHTSA provides resources to support teen driver safety, including the prevention of drinking and driving.
 - *Teen Driving*: Provides overviews, recommendations, and facts about teen driver safety for parents. Website: <u>https://www.nhtsa.gov/road-safety/teen-driving</u>.
 - *Teen Safety*: Provides campaign materials and marketing techniques for parents, caregivers, teachers, and safety advocates to support safe teen driving. Website: <u>https://www.trafficsafetymarketing.gov/get-materials/teen-safety</u>.
 - *"Underage Drinking and Driving: The Ultimate Party Foul"*: NHTSA joined with the Ad Council to launch this media campaign to prevent underage drinking and driving.
- The Ohio State University's Higher Education Center for Alcohol and Other Drug Misuse Prevention and Recovery: NHTSA provided federal funding to develop an impaired driving learning collaborative to review existing underage drinking prevention efforts on college and university campuses and determine how to connect those programs with impaired driving prevention.

FTC

Activities Specific to Underage Drinking

Consumer Education: In 2023, the FTC continued its alcohol consumer education program, "We Don't Serve Teens." This FTC consumer education program, aimed at adults, promotes compliance with the legal drinking age of 21. Recently updated with plain language information, data, and graphics, the campaign provides information about underage drinking and includes free downloadable graphics to share on social media. Website: <u>https://DontServeTeens.gov</u>.

• Main focus: Prevention (P)

ONDCP

DFC Support Program: DFC is administered by ONDCP and managed through a partnership between ONDCP and CDC. The DFC Support Program, created by the Drug-Free Communities Act of 1997, is the nation's leading effort to mobilize communities to prevent youth substance

use. The DFC Support Program provides grants to community coalitions to strengthen the infrastructure among local partners to create and sustain a reduction in local youth substance use.

Recognizing that local problems need local solutions, DFC-funded coalitions engage multiple sectors of the community and employ a variety of environmental strategies to address local substance use problems. DFCs involve local communities in finding solutions and also help youth at risk for substance use recognize the majority of our nation's youth choose not to use substances. Website: <u>https://www.cdc.gov/overdose-prevention/php/drug-free-communities/?CDC_AAref_Val</u>

DFC Coalitions are made up of community leaders representing 12 sectors that organize to meet the local prevention needs of the youth and families in their communities. These 12 sectors are:

- 1. Youth (18 or younger)
- 2. Parents
- 3. Businesses
- 4. Media
- 5. Schools
- 6. Youth-serving organizations
- 7. Law enforcement
- 8. Religious/fraternal organizations
- 9. Civic/volunteer groups
- 10. Healthcare professionals
- 11. State, local, or tribal government agencies with expertise in the field of substance misuse
- 12. Other organizations involved in reducing substance misuse.

The DFC Program is effective; within communities with a DFC coalition, most middle school and high school youth reported not using each of the four core measure substances (i.e., alcohol, tobacco, marijuana, [non-misuse] prescription drugs), and over time, prevalence of past 30-day use decreased significantly for all substances.

APPENDIX C: SURVEYS

Information about underage alcohol use, abuse, and consequences primarily comes from three federally funded surveys: the National Survey on Drug Use and Health (NSDUH), Monitoring the Future (MTF; conducted pursuant to federal grants), and the national Youth Risk Behavior Survey (YRBS). Each of these surveys makes a unique contribution to our understanding of the nature of youth alcohol use.

- NSDUH assesses illicit drug, alcohol, and tobacco use among non-institutionalized individuals ages 12 or older and serves as the major federal source of nationally representative data on substance use in the general population of the United States.
- MTF examines attitudes and behaviors of 8th, 10th, and 12th graders regarding alcohol, drug, and tobacco use and provides important data on substance use and the attitudes and beliefs that may contribute to such behaviors.
- YRBS examines risk behaviors among high school students and provides vital information on specific behaviors that cause the most significant health problems among American youth.

It is important to note that each of these surveys uses different methodologies, including use of different measures, and for that reason sometimes generate different prevalence estimates of youth substance use.

To improve federal policymakers' understanding of the influence of methodological differences on those estimates, the Office of the Assistant Secretary for Planning and Evaluation within the Department of Health and Human Services (HHS) commissioned a group of recognized experts in survey design, sampling techniques, and statistical analysis to examine and compare the survey methodologies. The resulting papers and accompanying federal commentaries appeared in a special issue of the *Journal of Drug Issues* (Volume 31, Number 3, Spring 2001).

Experts agreed that the overall methodology for each survey is strong and that observed differences are not the result of flaws or serious weaknesses in survey design. In fact, some differences are to be expected—such as those resulting from home- versus school-based settings. From a policy perspective, serious and complex issues such as youth alcohol use and related behavior often require examination and analysis from multiple perspectives. Because no one survey is absolute or perfectly precise, input from multiple sources is not only valuable but necessary.

National Survey on Drug Use and Health

As noted, the National Survey on Drug Use and Health (NSDUH) is the primary source of information on the use of illicit drugs, alcohol, and tobacco in the civilian, non-institutionalized population of the United States age 12 or older. The survey also collects information on mental health and mental health service utilization among youth ages 12–17 and adults ages 18 or older. The Substance Abuse and Mental Health Services Administration (SAMHSA) sponsors the survey, and it is planned and managed by SAMHSA's Center for Behavioral Health Statistics and Quality. NSDUH collects information from residents of households and non-institutional group quarters (e.g., shelters, rooming houses, dormitories) and civilians living on military bases.

Initiated in 1971 and conducted annually since 1990, questionnaires were administered to individuals who constitute a representative sample of the population through face-to-face, home-

based interviews through 2020. During 2020, data collection was completely paused on March 16th because of Coronavirus disease 2019. Web-based data collection, in conjunction with inperson data collection, was approved by SAMHSA in October of 2020. In-person data collection resumed October 1, 2020, and web-based data collection began on October 30, 2020. Mode of administration was determined by infection rates in survey administration.

The 2021 and 2022 survey continued the use of multimode data collection procedures (i.e., via the web or in person in eligible locations) that were first implemented in October 2020 for the 2020 NSDUH. Multimode data collection was used for the entire 2021 NSDUH sample. Several analyses were conducted to investigate the impacts of these and related methodological issues on estimates for 2021. Using the outcomes of the comparability analyses, the following decisions were made regarding the 2021 NSDUH data.

- Estimates from 2021 cannot be compared or combined with those in 2019 or prior years because estimates from a multimode year are not comparable with estimates from a single-mode year. Estimates of change from 2019 or earlier to 2021 would probably be too greatly influenced by the mode effect. The 2021 estimates constitute a new baseline, and data from 2022 forward can be compared with 2021 data.
- Because of effects on estimates when some quarters of data are excluded or missing, 2020 estimates (based on two quarters of data) cannot be compared or combined with those of any other year, including 2021. Using only 2 quarters of data may yield a different trend than use of 4 quarters of data.

Since 1999, NSDUH has been conducted via computer-assisted interviews. Most questions are administered via audio computer-assisted self-interviewing, which provides respondents with a highly private and confidential means of responding to questions. This method increases the level of honest reporting of illicit drug use and other sensitive behaviors. Less sensitive items are administered using computer-assisted personal interviews.

NSDUH provides estimates for each of the 50 states and the District of Columbia as well as national estimates. Compared with the 1999–2013 design, the 2014–2022 sample design allocates more interviews to the largest 12 states, enabling greater precision for national NSDUH estimates. On average, when present in the sampled households or group quarters, adolescents aged 12 to 17 in 2022 were sampled for the interview at a rate of 81.7 percent and young adults aged 18 to 25 were sampled at a rate of 70.1 percent.

Response rates (weighted) for 2022 were 41.6 percent for ages 12 to 17 and 44.7 percent for ages 18 to 25.

Two modifications were made to the NSDUH questionnaire in 2017:

- Respondents who reported using alcohol in the past 30 days and also reported using alcohol on 0 days in that period were no longer defined as having past-month alcohol use. Due to programmed logic, such respondents in 2017 were not asked subsequent questions in the consumption of alcohol section that applied to people with past-month alcohol use and were not asked about the misuse of prescription drugs with alcohol in the past 30 days.
- The logic for determining respondents' eligibility to be asked questions about alcohol use disorder (AUD) was updated. Only respondents who estimated the number of days that they drank alcohol in the past 30 days to be on more than 5 days in the past 30 days (instead of on more than 2 days in that period) were considered eligible.
Modifications made for the 2018 questionnaire related to alcohol consumption were only directed at adult respondents.

In 2020, the assessment questions for AUD were modified to reflect criteria from *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*. Two questions were added to the drug treatment section to measure the use of telehealth services for alcohol or drug use issues in the past 12 months.

The following changes were made to the 2021 NSDUH instruments relative to 2020:

- Questions measuring SUD based on criteria from the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV), were removed, leaving only DSM-5 SUD criteria questions. The skip logic for alcohol and marijuana SUD questions was revised so that these questions were only administered to alcohol and marijuana users who used on six or more instances in the past year. In 2020, all respondents who reported use of alcohol or marijuana in the past 12 months were asked the SUD questions corresponding to the used substance. In addition, the skip logic for prescription psychotherapeutics (i.e., pain relievers, tranquilizers, stimulants, and sedatives) SUD questions were revised so that all respondents who reported any use of a prescription psychotherapeutic in the past 12 months were asked the respective SUD questions pertaining to that psychotherapeutic category. In 2020, SUD questions were asked only for respondents who reported misuse of psychotherapeutics in the past 12 months.
- In the drug treatment questionnaire section, the skip logic was changed for multiple questions to capture data from respondents who originally reported no past year drug treatment but then reported receiving drug treatment within the past 12 months in a subsequent question. In addition, a series of questions regarding receipt of treatment for specific substances were revised to measure treatment at any time in the past 12 months rather than the last or current past year drug treatment.
- New questions were added to the emerging issues questionnaire section to capture information about the vaping of marijuana and flavoring.
- Revisions were made to skip logic for questions regarding medication-assisted treatment (MAT) for alcohol and opioid use in the emerging issues section.
- The series of yes/no questions in the back-end demographics section measuring disability were replaced by similar questions with four levels of difficulty as response options.'

Modifications made for the 2022 questionnaire related to alcohol use involved asking questions of all NSDUH respondents who reported use of alcohol or drugs in their lifetime about treatment. Alcohol use treatment was defined as including treatment for alcohol use through a variety of modalities, including inpatient treatment/counseling; outpatient treatment/counseling; medication-assisted treatment; telehealth treatment; or treatment received in a prison, jail, or juvenile detention center.

More details are available in the National Survey on Drug Use and Health (NSDUH): Methodological Summary and Definitions (Center for Behavioral Health Statistics and Quality, 2023 methodology).

Monitoring the Future Study

Monitoring the Future (MTF) measures alcohol, tobacco, and illicit drug use as well as perceived risk, personal disapproval, and perceived availability associated with each substance among

nationally representative samples of students in public and private secondary schools throughout the conterminous United States.

The National Institute on Drug Abuse (NIDA) supports MTF through a series of investigatorinitiated grants to the University of Michigan's Institute for Social Research. Every year since 1975, a national sample of 12th graders has been surveyed. In 1991, the survey was expanded to include comparable numbers of 8th and 10th graders each year. Follow-up surveys are also administered by mail to a representative sample of adults ages 18–55 from previous high school graduating classes.

In 2022, 31,438 students in 308 public and private secondary schools participated in the study. Completed questionnaires were obtained from 86 percent of all sampled students in 8th grade (n=9,889), 84 percent in 10th grade (n=11,950), and 75 percent in 12th grade (n=9,599; Miech et al., 2023).

University of Michigan staff members administer the questionnaires to students, usually in their classrooms during a regular class period. In 8th and 10th grades, the questionnaires are completely anonymous. In the 12th grade, they are confidential (to permit longitudinal follow-up of a random subsample of participants). Extensive procedures are followed to protect the confidentiality of subjects and their data.

The formal transition of the MTF in-school surveys from paper surveys to surveys on electronic tablets was initiated with the spring 2019 data collection. MTF staff administered the survey using electronic tablets for a randomly selected half of all schools in 2019; the traditional paperand-pencil questionnaires were used for the other half. This design allowed an assessment of the extent and nature of any mode effects. Responses from traditional paper-and-pencil responses and responses from tablets were pooled into one analysis for the 2019 results. MTF staff opted to do this because differences in substance use prevalence across the two modes were found to be negligible. However, there were some differences found by mode in the results for disapproval, perceived risk, and availability. Therefore, only the responses of the half sample using the traditional paper-and-pencil mode were reported for the estimates related to disapproval, perceived risk, and availability. Starting in 2020, all questionnaires were completed using electronic tablets. Starting in 2021, the survey was administered during class or to students remotely attending school at home with students using their own electronic devices, using a webbased guestionnaire (Miech et al., 2023). In March of 2020, in-school data collection was halted due to COVID-19. The resulting 2020 sample size was approximately one-quarter the size of a typical data collection. MTF staff subsequently determined the reduced MTF 2020 sample did not differ significantly from the nationally representative results; therefore, comparisons against previous and future data continue to be made.

Youth Risk Behavior Survey

In the late 1980s, only a limited number of health-related school-based surveys such as MTF existed in the United States. To remedy this, the Centers for Disease Control and Prevention (CDC) developed the Youth Risk Behavior Surveillance System (YRBSS) to monitor six categories of priority health-risk behaviors that contribute substantially to the leading causes of death, disability, and social problems among youth and young adults.

YRBSS includes biennial national, state, and local school-based surveys of representative samples of students in grades 9–12 as well as other national and special-population surveys.

CDC conducts the national survey—Youth Risk Behavior Survey (YRBS)—with a target population composed of all regular public and private high school students in the 50 states and the District of Columbia. Education and health agencies conduct state and local surveys.⁵⁸ The survey is normally conducted during the spring. However, the 2021 national YRBS administration was postponed until fall (September–December) 2021 because of the COVID-19 pandemic and the shift to virtual and hybrid school instructional models and ongoing school closures during spring 2021. Question modifications included changes to the sexual identity question. The national YRBS questionnaire was offered for the first time in English and Spanish during 2021.

In 2023, 20,103 students provided usable questionnaires for the national YRBS for an overall student response rate of 71.0 percent.

Additional Surveys

Four additional federally supported surveys have collected alcohol consumption and related information from a segment of the underage population—18- to -20-year-olds.

The National Epidemiologic Survey on Alcohol and Related Conditions

The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) was a large nationwide household survey sponsored by the National Institute on Alcohol Abuse and Alcoholism. NESARC assesses the prevalence and patterns of alcohol use, other drug use, and related disorders; related risk factors; and associated mental and physical disabilities based on a nationally representative sample of the civilian non-institutionalized population of the United States ages 18 years and older. The first NESARC survey was conducted in 2001–2002. The second survey was conducted in 2004–2005 among individuals who participated in the first NESARC survey. Both surveys were fielded by the U.S. Census Bureau. A third NESARC survey, NESARC-III, was cross-sectional and conducted in 2012–2013. Fieldwork was performed through a contract under the data collection authorization of Title 42 USC 285n.

Behavioral Risk Factor Surveillance System

Behavioral Risk Factor Surveillance System (BRFSS) was initiated by CDC in 1984. It is a statebased cross-sectional telephone survey of non-institutionalized, civilian U.S. adults age 18 years and older that state health departments conduct monthly over landline telephones and cellular telephones with a standardized questionnaire and technical and methodologic assistance from CDC. BRFSS is used to collect prevalence data among adult U.S. residents regarding their risk behaviors and preventive health practices that can affect their health status. Respondent data are forwarded to CDC to be aggregated for each state, returned with standard tabulations, and published at year's end by each state.

Data from the BRFSS on self-reported alcohol consumption are also used in the calculation of alcohol-attributable deaths. The CDC online Alcohol Related Death Index (ARDI) application provides population estimates of the total proportion of deaths for various causes that are attributable to alcohol use (alcohol attributable fractions, or AAFs). AAFs are calculated directly or indirectly using BRFSS or using current scientific literature. For 2015–2019, the prevalence of low, medium, and high average daily alcohol consumption from BRFSS was adjusted using per

⁵⁸ The sampling frame for the national YRBS excludes other types of public schools, including alternative schools, special education schools, Department of Defense operated schools, Bureau of Indian Education schools, and vocational schools that only serve students who receive general instruction at another school.

capita alcohol sales data to account for the underreporting of self-reported alcohol consumption (*ARDI Methods* | *Alcohol and Public Health* | CDC, 2022).

Survey of Health-Related Behaviors

Begun in the early 1980s and fielded every 2–4 years, the Department of Defense (DoD) Survey of Health-Related Behaviors measures prevalence of substance use and health behaviors among active-duty military personnel on U.S. military bases worldwide. In 2005, DoD expanded the scope of the survey to include the National Guard and Reserves as well as other special studies. The 2024 Health-Related Behaviors Survey is in process.

National Health Interview Survey

The National Health Interview Survey (NHIS) is an annual, multistage probability sample survey of households conducted since 1957 by U.S. Census Bureau interviewers for the CDC National Center for Health Statistics (Pleis & Lethbridge-Cejku, 2007).

Association Versus Causation

In reviewing data related to risky behaviors and different categories of alcohol use, readers should keep in mind that association does not prove causation. Just because alcohol use is associated with other risky behaviors does not mean that it **causes** these other risky behaviors. Often, additional research is needed to establish alcohol as a causative factor.

Additional Methodological Caveats

When reviewing studies of the age of initiation of alcohol use, it is important to recognize that different researchers use different methods to describe initiation of drinking and to estimate the average age at first use of alcohol. In some cases, this has resulted in large differences in estimates, primarily due to differences in how age groups and time periods are specified in the calculations. The following examples will help readers understand these methodological differences and the resulting statistical differences.

A popular method for computing average age involves restricting the age group of estimation to persons who are 12–17 years old or 12–20 years old with no restriction on the time period. This method provides an estimate of the average age of first use among those in the age group who have used alcohol at some point in their lifetime, which typically results in a younger estimated average age of first use than other methods. This is because initiation occurring in older age groups is excluded from the calculation and also because the calculation gives too much weight to very early initiation. For example, 15-year-olds who will first use at age 17 are excluded because they have not yet used alcohol at the time of data collection.

The method has limited utility for assessing trends because estimates do not reflect a welldefined recent period. A 20-year-old may have first used alcohol at age 10; thus, an average age of first use among 12- to -20-year-olds would span a period covering as many as 10 years. In addition to not reflecting the most current patterns, year-to-year change in this average is typically negligible due to the substantial overlap in the covered periods.

Trends in average age of initiation are best measured by estimating the average age among those who initiated alcohol use during a specific period (such as a calendar year or within the 12 months prior to interview) in a repeated cross-sectional survey. These estimates can be made with or without age restrictions.

Estimates of average age of first use among recent initiates based on the NSDUH sample of people 12 years old or older are biased upward because it does not capture initiation before age 12.

Although this approach can provide interesting historical data, it does not give timely information about emerging patterns of alcohol initiation. Further, there are serious bias concerns with historical estimates of the number of initiates and their average age at first use constructed from retrospectively reported age at first use. Older respondents are more likely not to remember accurately when an event occurred. An event may be remembered as having occurred more recently than it actually did—a "forward telescoping" of the recalled timing of events. Evidence of telescoping suggests that trend estimates based on reported age at first use may be misleading.

Websites with Data on Underage Drinking

These federal websites can be useful to persons seeking data related to underage drinking:

- Information from SAMHSA on underage drinking:
 - o <u>https://www.samhsa.gov/blog/category/underage-drinking</u>
 - <u>https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health</u>
- Information from CDC on underage drinking:
 - o https://www.cdc.gov/alcohol/underage-drinking/index.html
 - o https://www.cdc.gov/alcohol/underage-drinking/community-strategies.html
 - o https://www.cdc.gov/impaired-driving/facts/index.html
 - o https://www.cdc.gov/teen-drivers/about/
- Information from the YRBS: <u>https://www.cdc.gov/HealthyYouth/data/yrbs/</u>
- Information from the National Highway Traffic Safety Administration on underage drinking and on drinking and driving: <u>https://www.nhtsa.gov/risky-driving</u>
- Information from the National Institute on Alcohol Abuse and Alcoholism on underage drinking:
 - <u>https://www.niaaa.nih.gov/alcohol-health/special-populations-co-occurring-disorders/underage-drinking</u>
 - <u>https://www.niaaa.nih.gov/alcohol-health/special-populations-co-occurring-disorders/college-drinking</u>
- Information from the National Institute on Drug Abuse on underage drinking: <u>http://www.monitoringthefuture.org</u>.

APPENDIX D: ABBREVIATIONS

Federal Departments and Agencies

Department of Defense	DoD
Education Activity	DoDEA
U.S. Air Force	USAF
U.S. Coast Guard	USCG
U.S. Marine Corps	USMC
Department of Education	ED
Office of Safe and Healthy Students	OSHS
Department of Health and Human Services	HHS
Administration for Children and Families	ACF
Family and Youth Services Bureau	FYSB
Agency for Healthcare Research and Quality	AHRQ
Centers for Disease Control and Prevention	CDC
Centers for Medicare & Medicaid Services	CMS
Indian Health Service	IHS
National Cancer Institute	NCI
National Institute on Alcohol Abuse and Alcoholism	NIAAA
National Institute on Drug Abuse	NIDA
National Institutes of Health	NIH
Office of the Assistant Secretary for Health	OASH
Office of the Assistant Secretary for Planning and Evaluation	ASPE
Office of the Surgeon General	OSG
Substance Abuse and Mental Health Services Administration	SAMHSA
Center for Substance Abuse Prevention	CSAP
Center for Substance Abuse Treatment	CSAT
Center for Behavioral Health Statistics and Quality	CBHSQ
Department of Justice	DoJ
Office of Juvenile Justice and Delinquency Prevention	OJJDP
Federal Trade Commission	FTC
Office of National Drug Control Policy	ONDCP
Department of Transportation	DOT
National Highway Traffic Safety Administration	NHTSA
Department of the Treasury	
Alcohol and Tobacco Tax and Trade Bureau	TTB
Programs, Agencies, and Organizations	
Addiction Technology Transfer Center	ATTC
Adolescent Brain Cognitive Development Study	ABCD

Addiction reemology fransier Center	AIIC
Adolescent Brain Cognitive Development Study	ABCD
Adolescent Support and Counseling Services	ASACS
Alcohol and Drug Abuse Prevention Training	ADAPT
Alcohol Detection Devices	ADD
Alcohol Policy Information System	APIS
Alcohol-Related Disease Impact	ARDI
Alcohol Screening Program	ASP

American Psychiatric Association	APA	
Army Substance Abuse Programs	ASAP	
Basic Center Program	BCP	
Behavioral Risk Factor Surveillance System	BRFSS	
Behavioral Health Services Information System	BHSIS	
Center for Behavioral Health Statistics and Quality	CBHSQ	
College Alcohol Intervention Matrix	CollegeAIM	
Community Anti-Drug Coalitions of America	CADCA	
Communities that Care	CTC	
Drug Abuse Warning Network	DAWN	
Drug-Free Communities Program	DFC	
Enforcing the Underage Drinking Laws	EUDL	
European School Survey Project on Alcohol and Drugs	ESPAD	
Family and Youth Services Bureau	FYSB	
Family Check-Up	FCU	
Fatality Analysis Reporting System	FARS	
Indian Children's Program	ICP	
Institute of Medicine (now National Academy of Medicine)	IOM	
Interagency Coordinating Committee on the Prevention of		
Underage Drinking	ICCPUD	
Monitoring the Future Survey	MTF	
National Consortium on Alcohol and Neurodevelopment		
in Adolescence	NCANDA	
National Drug and Alcohol Facts Week	NDAFW	
National Epidemiologic Survey on Alcohol and Related Conditions	NESARC	
National Health Interview Survey	NHIS	
National Household Survey on Drug Abuse	NHSDA	
National Research Council	NRC	
National Survey on Drug Use and Health	NSDUH	
National Violent Death Reporting System	NVDRS	
Office of Indian Alcohol and Substance Abuse	OIASA	
Office of the Assistant Secretary for Planning and Evaluation	ASPE	
Pacific Institute for Research and Evaluation	PIRE	
Partnerships for Success	PFS	
Pregnancy Risk Assessment Monitoring System	PRAMS	
PRIME for Life	PFL	
PROmoting School/Community-University Partnerships		
to Enhance Resilience	PROSPER	
Screening, Brief Intervention, Referral, and Treatment	SBIRT	
Sexual Assault Prevention and Response	SAPR	
Skills, Mastery, and Resistance Training	SMART	
Sober Truth on Preventing Underage Drinking Act	STOP Act	
State Highway Safety Offices	SHSOs	
Strategic Prevention Framework	SPF	
Substance Use Prevention, Treatment, and Recovery Services Block Grant SUBG		
"Talk. They Hear You."®	TTHY	

Unit Marine Awareness and Prevention Integrated Training Web-based Injury Statistics Query and Reporting System	UMAPIT WISQARSTM
Youth Regional Treatment Centers	YRTCs
Youth Risk Behavior Surveillance System	YRBSS
Youth Risk Behavior Survey	YRBS
Other Abbreviations and Acronyms	
Alcohol and drug abuse managers/supervisors	ADAMS
Alcohol screening and brief intervention	ASBI
Alcohol use disorder	AUD
Behavioral health	BH
Blood alcohol concentration	BAC
Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition	DSM-IV-TR
Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition	DSM-5
Evidence-based practices	EBPs
Family Violence Prevention and Services Act	FVPSA
Fetal alcohol spectrum disorders	FASDs
Memorandum of understanding	MOU
Minimum legal drinking age	MLDA
Public service announcement	PSA
Substance abuse counseling center	SACC
Substance abuse program	SAP
Training and technical assistance	TTA
Years of potential life lost	YPLL

APPENDIX E: REFERENCES

- Abar, C., Abar, B., & Turrisi, R. (2009). *Addictive Behaviors, 34*(6-7), 542–547. https://doi.org/10.1016/j.addbeh.2009.03.019
- Abbey, A. (2011). Alcohol's role in sexual violence perpetration: Theoretical explanations, existing evidence, and future directions. *Drug and Alcohol Review*, *30*(5), 481–489. <u>https://doi.org/10.1111/j.1465-3362.2011.00296.x</u>
- Abbey, A., Zawacki, T., Buck, P. O., Clinton, A. M., & McAuslan, P. (2004). Sexual assault and alcohol consumption: what do we know about their relationship and what types of research are still needed? *Aggression and Violent Behavior*, *9*(3), 271–303. https://doi.org/10.1016/S1359-1789(03)00011-9
- Agrawal, A., Sartor, C. E., Lynskey, M. T., Grant, J. D., Pergadia, M. L., Grucza, R., Bucholz, K. K., Nelson, E. C., Madden, P. A. F., Martin, N. G., & Heath, A. C. (2009). Evidence for an interaction between age at first drink and genetic influences on DSM-IV alcohol dependence symptoms. *Alcoholism, Clinical and Experimental Research*, 33(12), 2047–2056. https://doi.org/10.1111/j.1530-0277.2009.01044.x
- Albers, A. B., Siegel, M., Ramirez, R. L., Ross, C., DeJong, W., & Jernigan, D. H. (2015). Flavored alcoholic beverage use, risky drinking behaviors, and adverse outcomes among underage drinkers: Results from the ABRAND study. *American Journal of Public Health*, 105(4), 810-815. <u>https://doi.org/10.2105/AJPH.2014.302349</u>
- Alger, C., Berklein, F., Sparks, A., Kupersmithe, C., & Ross, C. (2021). Alcohol Advertising Compliance on Cable Television: July-December (Q3-Q4), 2019 - Alcohol Advertising Compliance on Cable TV_Q3-4_09-23-20 sxf (002).pdf. <u>https://www.youthalcoholadexposure.com/downloads/Alcohol%20Advertising%20Complia</u> <u>nce%20on%20Cable%20TV_Q3-4_09-23-20%20sxf%20%28002%29.pdf</u>
- Allen, B., El Shahawy, O., Rogers, E. S., Hochman, S., Khan, M. R., & Krawczyk, N. (2021). Association of substance use disorders and drug overdose with adverse COVID-19 outcomes in New York City: January-October 2020. *Journal of Public Health (Oxford, England)*, 43(3), 462–465. <u>https://doi.org/10.1093/pubmed/fdaa241</u>
- Allied Market Research. (n.d.). *Alcohol Gummies Market Size, Share* | *Report Forecast* 2031. Allied Market Research. Retrieved July 22, 2024, from https://www.alliedmarketresearch.com/alcohol-gummies-market-A31830
- Alpert, H. R., Slater, M. E., Yoon, Y.-H., Chen, C. M., Winstanley, N., & Esser, M. B. (2022). Alcohol consumption and 15 causes of fatal injuries: A systematic review and meta-analysis. *American Journal of Preventive Medicine*, 63(2), 286–300. https://doi.org/10.1016/j.amepre.2022.03.025
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.), text revision. American Psychiatric Press. http://dsm.psychiatryonline.org/doi/abs/10.1176/appi.books.9780890420249.dsm-iv-tr
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Press. https://doi.org/10.1176/appi.books.9780890425596
- ARDI Methods | Alcohol and Public Health | CDC. (2022, April 18). https://www.cdc.gov/alcohol/ardi/methods.html

- Associated Press, & Durbin, D. A. (2020, August 24, 2020). Number of states allowing to-go cocktails has surged from 2 to 33 during coronavirus. *Fortune*. <u>https://fortune.com/2020/08/24/states-allowing-to-go-cocktails-surges-liquor-laws-coronavirus/</u>
- Aswani, S. (2022, October 6). Led by spirit-based RTDs, value growth of ready-to-drink category outpaces volume growth. IWSR. <u>https://www.theiwsr.com/led-by-spirit-based-rtds-value-growth-of-ready-to-drink-category-outpaces-volume-growth/</u>
- Babor, T., Caswell, S., Graham, K., Huckle, T., Livingston, M., Rehm, J., Room, R., Rossow, I., & Sornpaisarn, B. (2022). Alcohol: No Ordinary Commodity—a summary of the third edition. *Addiction*, 117(12), 3024–3026.
- Badour, C. L., Bell, S. C., Clear, E. R., Bush, H. M., & Coker, A. L. (2020). Sex Differences in Problem Alcohol Use in High School as a Function of Recent Sexual Violence Victimization or Perpetration. Journal of Family Violence, 35(6), 633–646. <u>https://doi.org/10.1007/s10896-019-00116-5</u>
- Baiden, P., Jahan, N., Onyeaka, H. K., Thrasher, S., Tadeo, S., & Findley, E. (2021). Age at first alcohol use and weapon carrying among adolescents: Findings from the 2019 Youth Risk Behavior Survey. SSM - Population Health, 15, 100820. https://doi.org/10.1016/j.ssmph.2021.100820
- Bailey, J. A., Epstein, M., Roscoe, J. N., Oesterle, S., Kosterman, R., & Hill, K. G. (2020).
 Marijuana legalization and youth marijuana, alcohol, and cigarette use and norms. *American Journal of Preventive Medicine*, 59(3), 309–316.
 https://doi.org/https://doi.org/10.1016/j.amepre.2020.04.008
- Baillargeon, J., Polychronopoulou, E., Kuo, Y.-F., & Raji, M. A. (2021). The impact of substance use disorder on COVID-19 outcomes. *Psychiatric Services*, 72(5), 578–581. <u>https://doi.org/10.1176/appi.ps.202000534</u>
- Bakker, R. (2019). The draw of the claw. <u>https://theminaretonline.org/2019/10/17/the-draw-of-the-claw</u>
- Barbosa, C., Cowell, A. J., & Dowd, W. N. (2020). Alcohol consumption in response to the COVID-19 pandemic in the United States. *Journal of Addiction Medicine, Publish Ahead of Print*. <u>https://doi.org/10.1097/ADM.00000000000767</u>
- Baumer, P. C., Dennis, M. L., & Estrada, B. (2018). Needs, Services Received, and Outcomes of Adolescents and Young Adults in Substance Use Disorder (SUD) Treatment. In C. G. Leukefeld & T. P. Gullotta (Eds.), Adolescent Substance Abuse: Evidence-Based Approaches to Prevention and Treatment (pp. 67–139). Springer International Publishing.
- Beck, K. H., Boyle, J. R., & Boekeloo, B. O. (2003). Parental monitoring and adolescent alcohol risk in a clinic population. *American Journal of Health Behavior*, 27(2), 108–115. <u>https://doi.org/10.5993/AJHB.27.2.2</u>
- Belur, V., Dennis, M. L., Ives, M. L., Vincent, R., & Muck, R. (2014). Feasibility and impact of implementing motivational enhancement therapy–cognitive behavioral therapy as a substance use treatment intervention in school-based settings [research-article]. https://doi.org/10.1080/1754730X.2014.888223.
- BevAlc Insights. (2022, October 17). *Non-Alcoholic Wine, Beer, and Spirits*. BevAlc Insights. <u>https://bevalcinsights.com/category-on-the-rise-non-alcoholic-wine-beer-and-spirits/</u>
- Blitstein, J. L., Murray, D. M., Lytle, L. A., Birnbaum, A. S., & Perry, C. L. (2005). Predictors of violent behavior in an early adolescent cohort: similarities and differences across genders.

Health Education & Behavior: The Official Publication of the Society for Public Health Education, 32(2), 175–194. https://doi.org/10.1177/1090198104269516

- Bohm, M. K., & Esser, M. B. (2023). Associations Between Parental Drinking and Alcohol Use Among Their Adolescent Children: Findings From a National Survey of United States Parent-Child Dyads. Journal of Adolescent Health, 73(5), 961–964. <u>https://doi.org/10.1016/j.jadohealth.2023.05.028</u>
- Bradley, B. J., & Greene, A. C. (2013). Do health and education agencies in the United States share responsibility for academic achievement and health? A review of 25 years of evidence about the relationship of adolescents' academic achievement and health behaviors. *Journal of Adolescent Health*, *52*(5), 523-532. <u>https://doi.org/10.1016/j.jadohealth.2013.01.008</u>
- Brener, N. D., Bohm, M., Jones, C., Puvanesarajah, S., Robin, L., Suarez, N. A., Deng, X., Harding, L., & Moyse, D. (2022). Use of tobacco products, alcohol, and other substances among high school students during the COVID-19 pandemic—adolescent behaviors and experiences survey, United States, January–June 2021. *The Morbidity and Mortality Weekly Report Supplements*, 71. <u>https://doi.org/10.15585/mmwr.su7103a2</u>
- Brown, J. L., Gause, N. K., & Northern, N. (2016). The association between alcohol and sexual risk behaviors among college students: A review. *Current Addiction Reports*, *3*(4), 349–355. <u>https://doi.org/10.1007/s40429-016-0125-8</u>
- Brown, S. A., & Tapert, S. F. (2004). Adolescence and the trajectory of alcohol use: basic to clinical studies. *Annals of the New York Academy of Sciences, 1021*, 234–244. https://doi.org/10.1196/annals.1308.028
- Bryant, A. L., Schulenberg, J. E., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (2003). How academic achievement, attitudes, and behaviors relate to the course of substance use during adolescence: A 6-year, multiwave national longitudinal study. *Journal of Research* on Adolescence, 13(3), 361–397. <u>https://doi.org/10.1111/1532-7795.1303005</u>
- Buchmann, A. F., Schmid, B., Blomeyer, D., Becker, K., Treutlein, J., Zimmermann, U. S., Jennen-Steinmetz, C., Schmidt, M. H., Esser, G., Banaschewski, T., Rietschel, M., Schumann, G., & Laucht, M. (2009). Impact of age at first drink on vulnerability to alcohol-related problems: testing the marker hypothesis in a prospective study of young adults. *Journal of Psychiatric Research*, 43(15), 1205–1212. https://doi.org/10.1016/j.jpsychires.2009.02.006
- California Alcoholic Beverage Control (2020, April 30). Delivery of alcoholic beverages. https://www.abc.ca.gov/delivery-of-alcoholic-beverages/
- California Department of Education. (2021, March 26). Student assistance programs alcohol, tobacco & other drug prevention. <u>https://www.cde.ca.gov/ls/he/at/sap.asp</u>
- Campbell-Schmitt. (2023, July). Kristen Bell says her kids like nonalcoholic beer—Is that even legal? *Food & Wine*. <u>https://www.foodandwine.com/can-minors-drink-nonalcoholic-beer-7566560</u>
- Carpenter, C., & Dobkin, C. (2011). The minimum legal drinking age and public health. *The Journal of Economic Perspectives : A Journal of the American Economic Association,* 25(2), 133–156. <u>http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3182479/</u>
- Carpenter, C., & Dobkin, C. (2016). The minimum legal drinking age and morbidity in the United States. *The Review of Economics and Statistics*, 99(1), 95–104. https://doi.org/10.1162/REST a 00615
- Carter, A. C., Brandon, K. O., & Goldman, M. S. (2010). The college and noncollege experience: A review of the factors that influence drinking behavior in young adulthood.

Journal of Studies on Alcohol and Drugs, 71(5), 742–750. http://www.ncbi.nlm.nih.gov/pubmed/20731981

- Center for Behavioral Health Statistics and Quality. (2021). 2014-2019 National Survey on Drug Use and Health: [Special Data Analyses]. Substance Abuse and Mental Health Services Administration.
- Center for Behavioral Health Statistics and Quality. (2023a). 2022 National Survey on Drug Use and Health: Detailed Tables. Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data/
- Center for Behavioral Health Statistics and Quality. (2023b). 2022 National Survey on Drug Use and Health: Methodological summary and definitions. Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data/
- Center for Behavioral Health Statistics and Quality. (2024). 2022 National Survey on Drug Use and Health: [Special Data Analyses]. Substance Abuse and Mental Health Services Administration.
- Centers for Disease Control and Prevention. (2004). Enhanced enforcement of laws to prevent alcohol sales to underage persons—New Hampshire, 1999–2004. *Morbidity and Mortality Weekly Report, 53*(21). <u>http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5321a2.htm</u>
- Centers for Disease Control and Prevention. (2020, August). Youth Online: High School YRBS 2019 Results | DASH | CDC. <u>https://nccd.cdc.gov/youthonline/App/Results.aspx</u>
- Centers for Disease Control. (2024a, March). Alcohol-Related Disease Impact. <u>https://nccd.cdc.gov/DPH_ARDI/default/default.aspx</u>
- Centers for Disease Control and Prevention. (2024b, September 25). *YRBS Explorer (2023)* | *CDC*. <u>https://yrbs-explorer.services.cdc.gov/#/</u>
- Centers for Disease Control and Prevention. (2024c, May 18). Fatal Injury and Violence Data | WISQARS | Injury Center | CDC. <u>https://www.cdc.gov/injury/wisqars/fatal/index.html</u>
- Centers for Disease Control. (2024d, May 23). Preventing Underage Drinking with Community Strategies. Alcohol Use. <u>https://www.cdc.gov/alcohol/underage-drinking/community-strategies.html</u>
- Centers for Disease Control and Prevention. (2023, May). The Community Guide: Excessive Alcohol Consumption. <u>https://www.thecommunityguide.org/topic/excessive-alcohol-</u> <u>consumption</u>
- Chaffee, B. W., Cheng, J., Couch, E. T., Hoeft, K. S., & Halpern-Felsher, B. (2021). Adolescents' substance use and physical activity before and during the COVID-19 pandemic. *JAMA Pediatrics*, 175(7), 715–722. https://doi.org/10.1001/jamapediatrics.2021.0541
- Chassin, L., Sher, K. J., Hussong, A., & Curran, P. (2013). The developmental psychopathology of alcohol use and alcohol disorders: Research achievements and future directions. *Development and Psychopathology*, 25(402), 1567–1584. <u>https://doi.org/10.1017/S0954579413000771</u>
- Chavira, D. A., Ponting, C., & Ramos, G. (2022). The impact of COVID-19 on child and adolescent mental health and treatment considerations. *Behaviour Research and Therapy*, 157, 104169. https://doi.org/10.1016/j.brat.2022.104169

Chen, C. M., Yoon, Y.-H., & Faden, V. B. (2017). Trends in Underage Drinking in the United States, 1991-2015 (Surveillance Report No. 107). Retrieved from National Institute on Alcohol Abuse and Alcoholism website: <u>https://pubs.niaaa.nih.gov/publications/surveillance107/Underage15.htm</u>

- Chen, W. Y., Rosner, B., Hankinson, S. E., Colditz, G. A., & Willett, W. C. (2011). Moderate alcohol consumption during adult life, drinking patterns, and breast cancer risk. *JAMA*, *306*(17), 1884–1890. <u>https://doi.org/10.1001/jama.2011.1590</u>
- Committee on Substance Use and Prevention. (2016). Substance use screening, brief intervention, and referral to treatment. *Pediatrics*, *138*. <u>https://doi.org/https://doi.org/10.1542/peds.2016-1210</u>
- Conner, K., & Bagge, C. (2019). Suicidal behavior: Links between alcohol use disorder and acute use of alcohol. *Alcohol Research: Current Reviews*, 40(1), arcr.v40.41.02. https://doi.org/10.35946/arcr.v40.1.02
- Conrad, K. J., Dennis, M. L., Bezruczko, N., Funk, R. R., & Riley, B. B. (2007). Substance use disorder symptoms: Evidence of differential item functioning by age. *Journal of Applied Measurement*, 8(4), 373–387.
- Cowan, C. D. (2001). Coverage, sample design, and weighting in three federal surveys. *Journal* of Drug Issues, 31(3), 599–613.
- Creamer, M. R. (2020). Tobacco product use among high school students Youth Risk Behavior Survey, United States, 2019. *MMWR Supplements, 69*. <u>https://doi.org/10.15585/mmwr.su6901a7</u>
- Cox, M. J., Egan, K. L., Suerken, C. K., Reboussin, B. A., Song, E. Y., Wagoner, K. G., & Wolfson, M. (2019). Social and situational party characteristics associated with highintensity alcohol use among youth and young adults. *Alcoholism: Clinical and Experimental Research*, 43(9), 1957–1966. <u>https://doi.org/10.1111/acer.14143</u>
- CPI Inflation Calculator. (n.d.). Retrieved November 21, 2023, from https://www.bls.gov/data/inflation_calculator.htm
- Crosby, A., Espiitia-Hardeman, V., Ortega, L., & Clavel-Arcas, C. (2009). Alcohol and suicide among racial/ethnic populations - 17 states, 2005–2006. *Morbidity and Mortality Weekly Report*, 58(23), 637–641. <u>http://www.ncbi.nlm.nih.gov/pubmed/19543198</u>
- Crosnoe, R. (2006). The connection between academic failure and adolescent drinking in secondary school. *Sociology of Education*, 79(1), 44–60. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2834180/
- Crosnoe, R., Muller, C., & Frank, K. (2004). Peer context and the consequences of adolescent drinking. *Social Problems*, *51*(2), 288–304. <u>https://doi.org/10.1525/sp.2004.51.2.288</u>
- Cucchiaro, S., Ferreira, J., Jr., & Sicherman, A. (1974). The Effect of the 18-Year Old Drinking Age on Auto Accidents [Working Paper]. <u>http://dspace.mit.edu/handle/1721.1/5242</u>
- Curry, S. J., Krist, A. H., Owens, D. K., Barry, M. J., Caughey, A. B., Davidson, K. W., Doubeni, C. A., Epling, J. W., Kemper, A. R., Kubik, M., Landefeld, C. S., Mangione, C. M., Silverstein, M., Simon, M. A., Tseng, C.-W., & Wong, J. B. (2018). Screening and behavioral counseling interventions to reduce unhealthy alcohol use in adolescents and adults: US Preventive Services Task Force recommendation statement. *JAMA*, 320(18), 1899–1909. https://doi.org/10.1001/jama.2018.16789
- Dawson, D. A., Goldstein, R. B., Chou, S. P., Ruan, W. J., & Grant, B. F. (2008). Age at first drink and the first incidence of adult-onset DSM-IV alcohol use disorders. *Alcoholism, Clinical and Experimental Research*, *32*(12), 2149–2160. <u>https://doi.org/10.1111/j.1530-0277.2008.00806.x</u>
- DeJong, W., & Blanchette, J. (2014). Case closed: research evidence on the positive public health impact of the age 21 minimum legal drinking age in the United States. *Journal of*

Studies on Alcohol and Drugs, 75(Suppl 17), 108–115. http://www.ncbi.nlm.nih.gov/pubmed/24565317

- Delcher, C., Johnson, R., & Maldonado-Molina, M. M. (2013). Driving after drinking among young adults of different race/ethnicities in the United States: unique risk factors in early adolescence? *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 52(5), 584–591. <u>https://doi.org/10.1016/j.jadohealth.2012.10.274</u>
- DeMatteo, D., & Galloway, M. (2015). Sexual assault on college campuses: A 50-state survey of criminal sexual assault statutes and their relevance to campus sexual assault. *Psychology*, *Public Policy, and Law, 21*(3), 227–238. <u>https://doi.org/10.1037/law0000055</u>
- Dennis, M., Clark, W. H., & Huang, L. N. (2014). The need and opportunity to expand substance use disorder treatment in school-based settings. https://www.tandfonline.com/doi/abs/10.1080/1754730X.2014.888221
- Dennis, M. L., Scott, C. K., Funk, R., & Foss, M. A. (2005). The duration and correlates of addiction and treatment careers. *Journal of Substance Abuse Treatment*, 28(Suppl 1), S51– 62. <u>https://doi.org/10.1016/j.jsat.2004.10.013</u>
- Dennis, M. L., Wormer, J. V., & Jessis, L. (2023, March). Background for Planning OJJDP/SAMHSA Joint Listening Sessions on Improving Access to Adolescent Substance Use Treatment [PowerPoint].
- Donovan, J. E. (2009). Estimated blood alcohol concentrations for child and adolescent drinking and their implications for screening instruments. *Pediatrics*, *123*(6), e975–981. https://doi.org/10.1542/peds.2008-0027
- Douglass, R. L., Filkins, L., & Clark, F. (1974). The effect of lower legal drinking age on youth crash involvement. Final report. <u>http://deepblue.lib.umich.edu/handle/2027.42/230</u>
- Drug-Impaired Driving | NHTSA. (n.d.). [Text]. Retrieved July 12, 2024, from https://www.nhtsa.gov/risky-driving/drug-impaired-driving
- Eaton, D. K., Davis, K. S., Barrios, L., Brener, N. D., & Noonan, R. K. (2007). Associations of dating violence victimization with lifetime participation, co-occurrence, and early initiation of risk behaviors among U.S. high school students. *Journal of Interpersonal Violence, 22*(5), 585–602. <u>https://doi.org/10.1177/0886260506298831</u>
- Ellickson, P. L., Tucker, J. S., & Klein, D. J. (2003). Ten-year prospective study of public health problems associated with early drinking. *Pediatrics*, 111(5 Pt 1), 949–955. <u>http://www.ncbi.nlm.nih.gov/pubmed/12728070</u>
- Email Marketing Statistics and Benchmarks by Industry. (n.d.). Intuit Mailchimp. <u>https://mailchimp.com/resources/email-marketing-benchmarks/</u>
- Ennett, S. T., Bauman, K. E., Foshee, V. A., Pemberton, M., & Hicks, K. A. (2001). Parent-Child communication about adolescent tobacco and alcohol use: What do parents say and does it affect youth behavior? *Journal of Marriage and Family, 63*(1), 48–62. https://doi.org/10.1111/j.1741-3737.2001.00048.x
- ESPAD Group. (2020). ESPAD Report 2019: Results from the European School Survey Project on Alcohol and Other Drugs.
- Espelage, D. L., Davis, J. P., Basile, K. C., Rostad, W. L., & Leemis, R. W. (2018). Alcohol, prescription drug misuse, sexual violence, and dating violence among high school youth. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 63*(5), 601–607. <u>https://doi.org/10.1016/j.jadohealth.2018.05.024</u>

- Esser, M. B., Clayton, H. B., Demissie, Z., Kanny, D., & Brewer, R. D. (2017). Current and binge drinking among high school students—United States, 1991–2015. *Morbidity and Mortality Weekly Report, 66.* <u>https://doi.org/10.15585/mmwr.mm6618a4</u>
- Esser, M. B., Guy, G. P., Zhang, K., & Brewer, R. D. (2019). Binge drinking and prescription opioid misuse in the U.S., 2012–2014. *American Journal of Preventive Medicine*, 57(2), 197–208. <u>https://doi.org/10.1016/j.amepre.2019.02.025</u>
- Esser, M. B., Idaikkadar, N., Kite-Powell, A., Thomas, C., & Greenlund, K. J. (2022). Trends in emergency department visits related to acute alcohol consumption before and during the COVID-19 pandemic in the United States, 2018–2020. *Drug and Alcohol Dependence Reports*, *3*, 100049. https://doi.org/10.1016/j.dadr.2022.100049
- Esser MB, Leung G, Sherk A, et al. Estimated Deaths Attributable to Excessive Alcohol Use Among US Adults Aged 20 to 64 Years, 2015 to 2019. *JAMA Network Open*. 2022;5(11):e2239485. doi:10.1001/jamanetworkopen.2022.39485
- Esser, M. B., Pickens, C. M., Guy, G. P., & Evans, M. E. (2021). Binge drinking, other substance use, and concurrent use in the U.S., 2016–2018. *American Journal of Preventive Medicine*, 60(2), 169–178. https://doi.org/10.1016/j.amepre.2020.08.025
- Esser, M. B., Sherk, A., Liu, Y., Henley, S. J., & Naimi, T. (2024). Reducing alcohol use to prevent cancer deaths: Estimated effects among U.S. adults. *American Journal of Preventive Medicine*, 66(4), 725–729. <u>https://doi.org/10.1016/j.amepre.2023.12.003</u>
- Esser, M. B., Sherk, A., Liu, Y., & Naimi, T. (2024). Deaths from excessive alcohol use—United States, 2016–2021. *Morbidity and Mortality Weekly Report, 73*. https://doi.org/10.15585/mmwr.mm7308a1
- Federal Trade Commission. (2014). Self-Regulation in the Alcohol Industry: Report of the Federal Trade Commission [Report to Congress](4). <u>https://www.ftc.gov/reports/self-regulation-alcohol-industry-report-federal-trade-commission-0</u>
- Fendrich, M., & Johnson, T. P. (2001). Examining prevalence differences in three national surveys of youth: Impact of consent procedures, mode, and editing rules. *Journal of Drug Issues*, 31(3), 615–642.
- Flewelling, R. L., Grube, J. W., Paschall, M. J., Biglan, A., Kraft, A., Black, C., Hanley, S. M., Ringwalt, C., Wiesen, C., & Ruscoe, J. (2013). Reducing youth access to alcohol: Findings from a community-based randomized trial. *American Journal of Community Psychology*, 51(1–2), 264–277. <u>https://doi.org/10.1007/s10464-012-9529-3</u>
- Ford, J. A., McCabe, S. E., & Schepis, T. S. (2023). Prescription drug misuse with alcohol coingestion among U.S. adolescents: Youth experiences, health-related factors, and other substance use behaviors. *Journal of Addiction Medicine*. https://doi.org/10.1097/ADM.00000000001131
- Fortunato, E. K., Siegel, M., Ramirez, R. L., Ross, C., DeJong, W., Albers, A. B., & Jernigan, D. H. (2014). Brand-specific consumption of flavored alcoholic beverages among underage youth in the United States. *The American Journal of Drug and Alcohol Abuse*, 40(1), 51–57. https://doi.org/10.3109/00952990.2013.841712
- George, M. D., Holder, R., Shamblen, S., Nienhius, M. M., & Holder, H. D. (2021). Alcohol compliance checks and underage alcohol-involved crashes: Evaluation of a statewide enforcement program in South Carolina from 2006 to 2016. *Alcohol: Clinical and Experimental Research*, 45(1), 242–250. <u>https://doi.org/10.1111/acer.14507</u>
- Gilbert, P. A., Pass, L. E., Keuroghlian, A. S., Greenfield, T. K., & Reisner, S. L. (2018). Alcohol research with transgender populations: A systematic review and recommendations

to strengthen future studies. *Drug and Alcohol Dependence, 186*, 138–146. <u>https://doi.org/10.1016/j.drugalcdep.2018.01.016</u>

- Gilmore, A. K., Maples-Keller, J. L., Pinsky, H. T., Shepard, M. E., Lewis, M. A., & George, W. H. (2018). Is the use of protective behavioral strategies associated with college sexual assault victimization? A prospective examination. *Journal of Interpersonal Violence*, 33(17), 2664–2681. <u>https://doi.org/10.1177/0886260516628808</u>
- Glimpse. (n.d.). *Top Trends of 2024*. Glimpse. Retrieved July 22, 2024, from https://meetglimpse.com/alcohol-trends/
- Goding Sauer, A., Fedewa, S. A., Bandi, P., Minihan, A. K., Stoklosa, M., Drope, J., Gapstur, S. M., Jemal, A., & Islami, F. (2021). Proportion of cancer cases and deaths attributable to alcohol consumption by US state, 2013–2016. *Cancer Epidemiology*, 71(Pt A), 101893. <u>https://doi.org/10.1016/j.canep.2021.101893</u>
- Gómez-A, A., Dannenhoffer, C. A., Elton, A., Lee, S.-H., Ban, W., Shih, Y.-Y. I., Boettiger, C. A., & Robinson, D. L. (2021). Altered cortico-subcortical network after adolescent alcohol exposure mediates behavioral deficits in flexible decision-making. *Frontiers in Pharmacology*, 12, 778884. <u>https://doi.org/10.3389/fphar.2021.778884</u>
- Gonzales, K. R. (2015). Consumption of alcoholic beverages and liquor consumption by Michigan high school students, 2011. *Preventing Chronic Disease*, 12. https://doi.org/10.5888/pcd12.150290
- Government Accounting Office. (2001). Underage drinking: Information on federal funds targeted at prevention (GAO-01-503).
- Grand View Research. (2022). Alcoholic drinks market worth \$2,877.2 billion by 2028. https://www.grandviewresearch.com/press-release/global-alcoholic-drinks-market
- Grant, B. F., & Dawson, D. A. (1997). Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: results from the National Longitudinal Alcohol Epidemiologic Survey. *Journal of Substance Abuse*, 9, 103–110. http://www.ncbi.nlm.nih.gov/pubmed/9494942
- Grant, B. F., & Dawson, D. A. (1998). Age of onset of drug use and its association with DSM-IV drug abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. *Journal of Substance Abuse*, 10(2), 163–173.
- Grant, B. F., Hasin, D. S., Stinson, F. S., Dawson, D. A., June Ruan, W., Goldstein, R. B., Smith, S. M., Saha, T. D., & Huang, B. (2005). Prevalence, correlates, co-morbidity, and comparative disability of DSM-IV generalized anxiety disorder in the USA: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychological Medicine*, 35(12), 1747. https://doi.org/10.1017/S0033291705006069
- Greene, N., Tomedi, L. E., Cox, M. E., Mello, E., & Esser, M. B. (2021). Alcohol testing and alcohol involvement among violent deaths by state, 2014–2016. *Preventive Medicine*, 148, 106527. <u>https://doi.org/10.1016/j.ypmed.2021.106527</u>
- Grucza, R. A., Sher, K. J., Kerr, W. C., Krauss, M. J., Lui, C. K., McDowell, Y. E., Hartz, S., Virdi, G., & Bierut, L. J. (2018). Trends in adult alcohol use and binge drinking in the early 21st-century United States: A meta-analysis of 6 national survey series. *Alcoholism: Clinical* and Experimental Research, 42(10), 1939–1950. <u>https://doi.org/10.1111/acer.13859</u>
- Gunn, R. L., Norris, A. L., Sokolovsky, A., Micalizzi, L., Merrill, J. E., & Barnett, N. P. (2018). Marijuana use is associated with alcohol use and consequences across the first 2 years of college. *Psychology of Addictive Behaviors: Journal of the Society of Psychologists in Addictive Behaviors, 32*(8), 885–894. <u>https://doi.org/10.1037/adb0000416</u>

- Hadland, S. E., Xuan, Z., Sarda, V., Blanchette, J., Swahn, M. H., Heeren, T. C., Voas, R. B., & Naimi, T. S. (2017). Alcohol policies and alcohol-related motor vehicle crash fatalities among young people in the US. *Pediatrics*, 139(3). <u>https://doi.org/10.1542/peds.2016-3037</u>
- Han, B., Compton, W. M., Blanco, C., & Colpe, L. J. (2017). Prevalence, treatment, and unmet treatment needs of US adults with mental health and substance use disorders. *Health Affairs* (*Project Hope*), 36(10), 1739–1747. <u>https://doi.org/10.1377/hlthaff.2017.0584</u>
- Han, B., Compton, W. M., Blanco, C., & DuPont, R. L. (2017). National trends in substance use and use disorders among youth. *Journal of the American Academy of Child & Adolescent Psychiatry*, 56(9), 747–754.e743. <u>https://doi.org/10.1016/j.jaac.2017.06.011</u>
- Harding, F. M., Hingson, R. W., Klitzner, M., Mosher, J. F., Brown, J., Vincent, R. M., Dahl, E., & Cannon, C. L. (2016). Underage Drinking: A Review of Trends and Prevention Strategies. *American Journal of Preventive Medicine*, 51(4), S148–S157. <u>https://doi.org/10.1016/j.amepre.2016.05.020</u>
- Harlacher, J., Sakelaris, T., & Kattelman, N. (2014). *Multi-tiered system of support* | *SpringerLink*. In. SpringerLink. <u>https://doi.org/10.1007/978-1-4614-9360-0_3</u>
- Harris, K. M., & Udry, J. R. (2021). National longitudinal study of adolescent to adult health (Add Health), 1994-2008 [Public Use] Carolina Population Center, University of North Carolina-Chapel Hill [distributor], Inter-university Consortium for Political and Social Research [distributor]. <u>https://doi.org/10.3886/ICPSR21600.v22</u>
- Harrison, L. D. (2001). Understanding the differences in youth drug prevalence rates produced by the MTF, NHSDA, and YRBS studies. *Journal of Drug Issues*, *31*(3), 665–694. <u>https://doi.org/10.1177/002204260103100305</u>
- Hawkins, J. D., Graham, J. W., Maguin, E., Abbott, R., Hill, K. G., & Catalana, R. (1997). Exploring the effects of age of alcohol use initiation and psychosocial risk factors on subsequent alcohol misuse. *Journal of Studies on Alcohol*, 58(3), 280–290. http://www.ncbi.nlm.nih.gov/pubmed/9130220
- Hawkins, J. D., Graham, J. W., Maguin, E., Abbott, R., Hill, K. G., & Catalana, R. (1997). Exploring the effects of age of alcohol use initiation and psychosocial risk factors on subsequent alcohol misuse. *Journal of Studies on Alcohol*, 58(3), 280–290.
- Henehan, E. R., Joannes, A. E., Greaney, L., Knoll, S., Wong, Q. W., & Ross, C. S. (2020). Youth cognitive responses to alcohol promotional messaging: A systematic review. *Journal* of Studies on Alcohol and Drugs, Supplement(s19), 26–41. https://doi.org/10.15288/jsads.2020.s19.26
- Hermos, J. A., Winter, M. R., Heeren, T. C., & Hingson, R. W. (2008). Early age-of-onset drinking predicts prescription drug misuse among teenagers and young adults: Results from a national survey. *Journal of Addiction Medicine*, 2(1), 22–30. https://doi.org/10.1097/ADM.0b013e3181565e14
- Hingson, R., Heeren, T., Jamanka, A., & Howland, J. (2000). Age of drinking onset and unintentional injury involvement after drinking. *JAMA*, 284(12), 1527–1533. http://www.ncbi.nlm.nih.gov/pubmed/11000646
- Hingson, R., Heeren, T., Levenson, S., Jamanka, A., & Voas, R. (2002). Age of drinking onset, driving after drinking, and involvement in alcohol related motor-vehicle crashes. *Accident; Analysis and Prevention, 34*(1), 85–92. <u>http://www.ncbi.nlm.nih.gov/pubmed/11789578</u>
- Hingson, R., Heeren, T., & Winter, M. (2006). Age of alcohol-dependence onset: associations with severity of dependence and seeking treatment. *Pediatrics*, 118(3), e755–763. <u>https://doi.org/10.1542/peds.2006-0223</u>

- Hingson, R., Heeren, T., Winter, M., & Wechsler, H. (2003). Early age of first drunkenness as a factor in college students' unplanned and unprotected sex attributable to drinking. *Pediatrics*, 111(1), 34–41. <u>http://www.ncbi.nlm.nih.gov/pubmed/12509551</u>
- Hingson, R., Heeren, T., Winter, M., & Wechsler, H. (2005). Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18–24: Changes from 1998 to 2001. Annual Review of Public Health, 26(1), 259–279. https://doi.org/10.1146/annurev.publhealth.26.021304.144652
- Hingson, R., Heeren, T., & Zakocs, R. (2001). Age of drinking onset and involvement in physical fights after drinking. *Pediatrics*, 108(4), 872–877. http://www.ncbi.nlm.nih.gov/pubmed/11581438
- Hingson, R., & Zha, W. (2009). Age of drinking onset, alcohol use disorders, frequent heavy drinking, and unintentionally injuring oneself and others after drinking. *Pediatrics*, 123(6), 1477–1484. <u>https://doi.org/10.1542/peds.2008-2176</u>
- Hingson, R., Zha, W., & Weitzman, E. R. (2009). Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18–24, 1998–2005. *Journal of Studies on Alcohol and Drugs. Supplement*(16), 12–20. <u>http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2701090/</u>
- Hingson, R. W., Heeren, T., & Edwards, E. M. (2008). Age at drinking onset, alcohol dependence, and their relation to drug use and dependence, driving under the influence of drugs, and motor-vehicle crash involvement because of drugs. *Journal of Studies on Alcohol* and Drugs, 69(2), 192–201. <u>https://doi.org/10.15288/jsad.2008.69.192</u>
- Hingson, R. W., Heeren, T., Zakocs, R. C., Kopstein, A., & Wechsler, H. (2002). Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18–24. *Journal of Studies on Alcohol, 63*(2), 136–144. <u>http://www.ncbi.nlm.nih.gov/pubmed/12033690</u>
- Hofmeister, M., Stone, E. C., Okasako-Schmucker, D. L., Henry, M. C., Kumasaka, J., Fellow, O., & Robinson, T. M. (2021). Brief summary of findings on the association between underlying liver diseases and severe COVID-19 outcomes.
- Hoots, B. E., Li, J., Feldman, M., Rico, A., Zavala, E., & Jones, C. (2023). Alcohol and other substance use before and during the COVID-19 pandemic among high school students— Youth Risk Behavior Survey, United States, 2021. *MMWR Supplements, 72*.
- Islami, F., Goding Sauer, A., Miller, K. D., Siegel, R. L., Fedewa, S. A., Jacobs, E. J.,
 McCullough, M. L., Patel, A. V., Ma, J., Soerjomataram, I., Flanders, W. D., Brawley, O.
 W., Gapstur, S. M., & Jemal, A. (2018). Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States. *CA: A Cancer Journal for Clinicians*, 68(1), 31–54. <u>https://doi.org/10.3322/caac.21440</u>
- Jernigan, D., Noel, J., Landon, J., Thornton, N., & Lobstein, T. (2017). Alcohol marketing and youth alcohol consumption: a systematic review of longitudinal studies published since 2008. Addiction (Abingdon, England), 112 (Suppl 1), 7–20. <u>https://doi.org/10.1111/add.13591</u>
- Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2018). Monitoring the Future. National Survey Results on Drug Use. 1975–2017 Overview: Key findings on adolescent drug use. Ann Arbor, Michigan: Institute for Social Research, The University of Michigan.
- Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2022). *Monitoring the Future National Survey Results on Drug Use, 1975-2021:*

2021 Overview, Key Findings on Adolescent Drug Use (Monitoring the Future). Institute for Social Research, The University of Michigan.

- Johnston, L. D., Miech, R. A., Patrick, M. E., O'Malley, P. M., Schulenberg, J. E., & Bachman, J. G. (2023). Monitoring the Future National Survey Results on Drug Use, 1975-2022: 2022 Overview, Key Findings on Adolescent Drug Use (Monitoring the Future). Institute for Social Research, The University of Michigan.
- Johnston, L. D., Miech, R. A., Patrick, M., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2023). Demographic subgroup trends among adolescents in the use of various licit and illicit drugs, 1975–2022 (99; Monitoring the Future Occasional Paper Series). Institute for Social Research, The University of Michigan.
- Jones, E., Mitra, A., & Bhuiyan, A. (2021). Impact of COVID-19 on mental health in adolescents: A systematic review. *International Journal of Environmental Research and Public Health*, 18(5). <u>https://doi.org/10.3390/ijerph18052470</u>
- Karaye, I. M., Maleki, N., Hassan, N., & Yunusa, I. (2023). Trends in alcohol-related deaths by sex in the US, 1999–2020. JAMA Network Open, 6(7), e2326346. <u>https://doi.org/10.1001/jamanetworkopen.2023.26346</u>
- Karoly, H. C., Ross, J. M., Ellingson, J. M., & Feldstein Ewing, S. W. (2020). Exploring cannabis and alcohol co-use in adolescents: A narrative review of the evidence. *Journal of Dual Diagnosis*, 16(1), 58–74. <u>https://doi.org/10.1080/15504263.2019.1660020</u>
- Kaynak, Ö., Winters, K. C., Cacciola, J., Kirby, K. C., & Arria, A. M. (2014). Providing alcohol for underage youth: What messages should we be sending parents? *Journal of Studies on Alcohol and Drugs*, 75(4), 590–605. <u>https://doi.org/10.15288/jsad.2014.75.590</u>
- Keyes, K. M., Jager, J., Mal-Sarkar, T., Patrick, M. E., Rutherford, C., & Hasin, D. (2019). Is there a recent epidemic of women's drinking? A critical review of national studies. *Alcoholism, Clinical and Experimental Research*, 43(7), 1344–1359. <u>https://doi.org/10.1111/acer.14082</u>
- Keyes, K. M., Rutherford, C., & Miech, R. (2019). Historical trends in the grade of onset and sequence of cigarette, alcohol, and marijuana use among adolescents from 1976–2016: Implications for "gateway" patterns in adolescence. *Drug and Alcohol Dependence, 194*, 51–58. <u>https://doi.org/10.1016/j.drugalcdep.2018.09.015</u>
- Kochanak, K., Murphy, S., Xu, J., & Arias, E. (2024, March 21). Products—Data Briefs— Number 492—March 2024. https://doi.org/10.15620/cdc/148043
- Komro, K. A., Livingston, M. D., Wagenaar, A. C., Kominsky, T. K., Pettigrew, D. W., & Garrett, B. A. (2017). Multilevel prevention trial of alcohol use among American Indian and White high school students in the Cherokee Nation. *American Journal of Public Health*, 107(3), 453–459. <u>https://doi.org/10.2105/AJPH.2016.303603</u>
- Kraft, M. K., Schubert, K., Pond, A., & Aguirre-Molina, M. (2006). *Adolescent treatment services: the context of care.* In Adolescent Substance Abuse: Research and Clinical Advances. Cambridge University Press.
- Krebs, C. P., Lindquist, C. H., Warner, T. D., Fisher, B. S., & Martin, S. L. (2009). College women's experiences with physically forced, alcohol- or other drug-enabled, and drugfacilitated sexual assault before and since entering college. *Journal of American College Health*, 57(6), 639–647. <u>https://doi.org/10.3200/JACH.57.6.639-649</u>
- Krieger, H., Young, C. M., Anthenien, A. M., & Neighbors, C. (2018). The epidemiology of binge drinking among college-age individuals in the United States. *Alcohol Research: Current Reviews*, 39(1), 23–30. <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6104967/</u>

- Kuo, M., Wechsler, H., Greenberg, P., & Lee, H. (2003). The marketing of alcohol to college students: The role of low prices and special promotions. *American Journal of Preventive Medicine*, 25(3), 204–211. <u>http://www.ncbi.nlm.nih.gov/pubmed/14507526</u>
- LaBrie, J. W., Grant, S., & Hummer, J. F. (2011). "This would be better drunk": Alcohol expectancies become more positive while drinking in the college social environment. *Addictive Behaviors*, *36*(8), 890–893. https://doi.org/10.1016/j.addbeh.2011.03.015
- Liang, W., & Chikritzhs, T. (2015). Age at first use of alcohol predicts the risk of heavy alcohol use in early adulthood: A longitudinal study in the United States. *The International Journal on Drug Policy*, *26*(2), 131–134. <u>https://doi.org/10.1016/j.drugpo.2014.07.001</u>
- Lindenberger, H. (n.d.). Lay's potato vodka highlights: The crossover appeal of leading consumer brands and alcohol. *Forbes*. Retrieved December 20, 2021, from https://www.forbes.com/sites/hudsonlindenberger/2021/12/16/lays-potato-vodka-highlights-the-crossover-appeal-of-leading-consumer-brands-and-alcohol/
- Linden-Carmichael, A. N., & Wardell, J. D. (2021). Combined use of alcohol and cannabis: Introduction to the special issue. *Psychology of Addictive Behaviors: Journal of the Society* of Psychologists in Addictive Behaviors, 35(6), 621–627. https://doi.org/10.1037/adb0000772
- Linden-Carmichael, A. N., Stamates, A. L., & Lau-Barraco, C. (2019). Simultaneous use of alcohol and marijuana: Patterns and individual differences. *Substance Use & Misuse*, 54(13), 2156–2166. <u>https://doi.org/10.1080/10826084.2019.1638407</u>
- Lipari, R. N., Hughes, A., & Bose, J. (2016). Driving Under the Influence of Alcohol and Illicit Drugs. In The CBHSQ Report. Substance Abuse and Mental Health Services Administration (US). <u>http://www.ncbi.nlm.nih.gov/books/NBK424784/</u>
- Lundahl, L. H., & Cannoy, C. (2021). COVID-19 and substance use in adolescents. *Pediatric Clinics of North America*, 68(5), 977–990. <u>https://doi.org/10.1016/j.pcl.2021.05.005</u>
- LoParco, C. R., Webb, N., Subbaraman, M. S., Lin, H.-C., Trangenstein, P. J., Yockey, R. A., & Rossheim, M. E. (2023). Characteristics of drinking episodes associated with simultaneous alcohol and cannabis use among underage drinkers in the United States. *Addictive Behaviors*, 136, 107501. <u>https://doi.org/10.1016/j.addbeh.2022.107501</u>
- Mair, C., Lipperman-Kreda, S., Gruenewald, P. J., Bersamin, M., & Grube, J. W. (2015). Adolescent drinking risks associated with specific drinking contexts. *Alcoholism, Clinical and Experimental Research*, 39(9), 1705–1711. <u>https://doi.org/10.1111/acer.12806</u>
- Maggs, J. L., Cassinat, J. R., Kelly, B. C., Mustillo, S. A., & Whiteman, S. D. (2021). Parents who first allowed adolescents to drink alcohol in a family context during Spring 2020 COVID-19 emergency shutdowns. *The Journal of Adolescent Health: Official Publication* of the Society for Adolescent Medicine, 68(4), 816–818. https://doi.org/10.1016/j.jadohealth.2021.01.010
- Marano, G., Traversi, G., Gaetani, E., Pola, R., Claro, A. E., & Mazza, M. (2022). Alcohol use disorder and liver injury related to the COVID-19 pandemic. *World Journal of Hepatology*, 14(10), 1875–1883. <u>https://doi.org/10.4254/wjh.v14.i10.1875</u>
- Matthay, E. C., & Schmidt, L. A. (2020). Home delivery of legal intoxicants in the age of COVID-19. *Addiction (Abingdon, England)*. <u>https://doi.org/10.1111/add.15289</u>
- McCabe, S. E., Arterberry, B. J., Dickinson, K., Evans-Polce, R. J., Ford, J. A., Ryan, J. E., & Schepis, T. S. (2021). Assessment of changes in alcohol and marijuana abstinence, co-use, and use disorders among US young adults from 2002 to 2018. *JAMA Pediatrics*, 175(1), 64– 72. <u>https://doi.org/10.1001/jamapediatrics.2020.3352</u>

- McCabe, S. E., Schulenberg, J. E., Schepis, T. S., McCabe, V. V., & Veliz, P. T. (2022). Longitudinal analysis of substance use disorder symptom severity at age 18 years and substance use disorder in adulthood. *JAMA Network Open*, 5(4), e225324. <u>https://doi.org/10.1001/jamanetworkopen.2022.5324</u>
- McCabe, S. E., Veliz, P., & Patrick, M. E. (2017). High-intensity drinking and nonmedical use of prescription drugs: Results from a national survey of 12th grade students. *Drug and Alcohol Dependence*, 178, 372–379. <u>https://doi.org/10.1016/j.drugalcdep.2017.05.038</u>
- McCartt, A. T., Hellinga, L. A., & Kirley, B. B. (2010). The effects of minimum legal drinking age 21 laws on alcohol-related driving in the United States. *Journal of Safety Research*, *41*(2), 173–181. <u>https://doi.org/10.1016/j.jsr.2010.01.002</u>
- Meda, S. A., Gueorguieva, R. V., Pittman, B., Rosen, R. R., Aslanzadeh, F., Tennen, H., Leen, S., Hawkins, K., Raskin, S., Wood, R. M., Austad, C. S., Dager, A., Fallahi, C., & Pearlson, G. D. (2017). Longitudinal influence of alcohol and marijuana use on academic performance in college students. *PLOS ONE*, *12*(3), e0172213. https://doi.org/10.1371/journal.pone.0172213
- Meda, S. A., Hawkins, K. A., Dager, A. D., Tennen, H., Khadka, S., Austad, C. S., Wood, R. M., Raskin, S., Fallahi, C. R., & Pearlson, G. D. (2018). Longitudinal effects of alcohol consumption on the hippocampus and parahippocampus in college students. Biological psychiatry. *Cognitive Neuroscience and Neuroimaging*, 3(7), 610–617. <u>https://doi.org/10.1016/j.bpsc.2018.02.006</u>
- Meyers, J. L., & Dick, D. M. (2010). Genetic and environmental risk factors for adolescent-onset substance use disorders. *Child and Adolescent Psychiatric Clinics of North America*, 19(3), 465–477. <u>https://doi.org/10.1016/j.chc.2010.03.013</u>
- Micallef, J. V. (2021). The top ten trends shaping the adult beverage market in 2021. *Forbes*. <u>https://www.forbes.com/sites/joemicallef/2021/01/13/after-covid-the-top-ten-trends-shaping-the-adult-beverage-market-in-2021/</u>
- Michael, J., Howard, L. E., Markt, S. C., De Hoedt, A., Bailey, C., Mucci, L. A., Freedland, S. J., & Allott, E. H. (2018). Early-life alcohol intake and high-grade prostate cancer: results from an equal-access, racially diverse biopsy cohort. *Cancer Prevention Research*, 11(10), 621–628
- Miech, R., Patrick, M. E., Keyes, K., O'Malley, P. M., & Johnston, L. (2021). Adolescent drug use before and during U.S. national COVID-19 social distancing policies. *Drug and Alcohol Dependence*, 226. <u>https://doi.org/10.1016/j.drugalcdep.2021.108822</u>
- Miech, R. A., Johnston, L. D., Patrick, M. E., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2023). Monitoring the Future National Survey Results on Drug Use, 1975–2022: Secondary school students. (Monitoring the Future). Institute for Social Research, The University of Michigan.
- Miller, T. R., Levy, D. T., Spicer, R. S., & Taylor, D. M. (2006). Societal costs of underage drinking. *Journal of Studies on Alcohol*, 67(4), 519–528. http://www.ncbi.nlm.nih.gov/pubmed/16736071
- Mortimer, J. T. (2003). Working and growing up in America. Harvard University Press.
- Mortimer, J. T. (2015). Youth Development Study, 1988–2011 [St. Paul, Minnesota]: Version 3. http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/24881/version/3
- Moskowitz, H., Burns, M., Smiley, A., & Zador, P. (2000). *Driver characteristics and impairment at various BACs* (Technical Report DOT HS 809 08). National Highway Traffic

Safety Administration.

https://icsw.nhtsa.gov/people/injury/research/pub/impaired_driving/BAC/index.html

- Moss, H. B., Chen, C. M., & Yi, H. (2014). Early adolescent patterns of alcohol, cigarettes, and marijuana polysubstance use and young adult substance use outcomes in a nationally representative sample. *Drug and Alcohol Dependence*, *136*, 51–62. <u>https://doi.org/10.1016/j.drugalcdep.2013.12.011</u>
- Mpofu, J. J., Underwood, M., Thornton, J., Brener, N. D., Rico, A., Kilmer, G., & Harris, W. (2023). Overview and methods for the Youth Risk Behavior Surveillance System—United States, 2021. *MMWR Supplements*, 72. https://doi.org/10.15585/mmwr.su7201a1
- Naimi, T. S., Nelson, D. E., & Brewer, R. D. (2009). Driving After Binge Drinking. American Journal of Preventive Medicine, 37(4), 314–320. https://doi.org/10.1016/j.amepre.2009.06.013
- Naimi, T. S., Siegel, M., DeJong, W., O'Doherty, C., & Jernigan, D. (2015). Beverage- and brand-specific binge alcohol consumption among underage youth in the U.S. *Journal of Substance Use*, 20(5), 333–339. <u>https://doi.org/10.3109/14659891.2014.920054</u>
- Naimi, T. S., Blanchette, J. G., Xuan, Z., & Chaloupka, F. J. (2018). Erosion of state alcohol excise taxes in the United States. *Journal of Studies on Alcohol and Drugs*, 79(1), 43–48. <u>https://doi.org/10.15288/jsad.2018.79.43</u>
- National Center for Statistics and Analysis. (2024). Overview of motor vehicle traffic crashes in 2022 (DOT HS 813 560; Traffic Safety Facts Research Note). National Highway Traffic Safety Administration.
- National Highway Traffic Safety Administration. (n.d.). *Drug-impaired driving* | *NHTSA [Text]*. Drug-Impaired Driving. Retrieved June 7, 2023, from <u>https://www.nhtsa.gov/risky-driving/drug-impaired-driving</u>
- National Highway Traffic Safety Administration. (2024). *Fatality Analysis Reporting System:* 15-20 year old in motor vehicle crashes [Special Analyses: FARS 2022 Annual Report File]. National Highway Traffic Safety Administration.
- National Institute on Alcohol Abuse and Alcoholism. (n.d.). *Director's Blog: Alcohol poses different challenges during the COVID-19 pandemic*. Retrieved February 9, 2022, from <u>https://www.niaaa.nih.gov/directors-blog-alcohol-poses-different-challenges-during-covid-19-pandemic</u>
- National Institute on Alcohol Abuse and Alcoholism. (n.d.). COVID-19 | APIS Alcohol Policy Information System. Alcohol Policy Information System. Retrieved June 29, 2023, from https://alcoholpolicy.niaaa.nih.gov/resource/covid-19/98
- National Institute on Alcohol, Abuse & Alcoholism. (2002). A Call to Action: Changing the Culture of Drinking at U.S. Colleges.
- National Institute on Alcohol Abuse and Alcoholism. (2011). *Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide*. NIH Publication No. 11-7805. https://www.niaaa.nih.gov/sites/default/files/publications/YouthGuide.pdf
- National Institute on Alcohol Abuse and Alcoholism. (2015). *CollegeAIM NIAAA's Alcohol Intervention Matrix*. <u>https://www.collegedrinkingprevention.gov/collegeaim/</u>
- National Institute on Alcohol Abuse and Alcoholism. (2019). *College drinking*. https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/college-drinking
- National Institute on Alcohol Abuse and Alcoholism (US). (2022). State alcohol-related laws during the COVID-19 emergency for on-premises and off-premises establishments as of January 1, 2022. Alcohol Policy Information System.

- National Institute on Drug Abuse. (2014). Principles of adolescent substance use disorder treatment: A research-based guide (14-7953).
- National Research Council and Institute of Medicine Committee on Developing a Strategy to Reduce and Prevent Underage Drinking. (2004). *Reducing underage drinking: A collective responsibility* (R. J. Bonnie & M. E. O'Connell, Eds.). National Academies Press (US). <u>http://www.ncbi.nlm.nih.gov/books/NBK37589/</u>
- Nelson, D. E., Naimi, T. S., Brewer, R. D., & Nelson, H. A. (2009). State alcohol-use estimates among youth and adults, 1993-2005. *American Journal of Preventive Medicine*, 36(3), 218– 224. <u>https://doi.org/10.1016/j.amepre.2008.10.018</u>
- Nelson, T. F., Naimi, T. S., Brewer, R. D., & Wechsler, H. (2005). The state sets the rate: The relationship among state-specific college binge drinking, state binge drinking rates, and selected state alcohol control policies. *American Journal of Public Health*, 95(3), 441–446. <u>https://doi.org/10.2105/AJPH.2004.043810</u>
- Nelson, T. F., Xuan, Z., Blanchette, J. G., Heeren, T. C., & Naimi, T. S. (2015). Patterns of change in implementation of state alcohol control policies in the United States, 1999–2011. *Addiction (Abingdon, England)*, 110(1), 59–68. <u>https://doi.org/10.1111/add.12706</u>
- Nielsen IQ. (2022, October). Non-alcoholic beverage trends in the US NIQ. https://nielseniq.com/global/en/insights/education/2022/non-alcoholic-beverage-trends-inthe-us/
- OJJDP Statistical Briefing Book. (2020, November 16). Arrests by offense, age, and gender. https://www.ojjdp.gov/ojstatbb/crime/ucr.asp
- O'Malley, P. M., & Johnston, L. D. (2013). Driving after drug or alcohol use by US high school seniors, 2001–2011. American Journal of Public Health, 103(11), 2027–2034. <u>https://doi.org/10.2105/AJPH.2013.301246</u>
- Olson, J. S., & Crosnoe, R. (2018). The interplay of peer, parent, and adolescent drinking. *Social Science Quarterly*, 99(4), 1349–1362. <u>https://doi.org/10.1111/ssqu.12497</u>
- Owens, T. J., Shippee, N. D., & Hensel, D. J. (2008). Emotional distress, drinking, and academic achievement across the adolescent life course. *Journal of Youth and Adolescence*, 37(10), 1242–1256. <u>https://doi.org/10.1007/s10964-008-9319-2</u>
- Paschall, M. J., Lipperman-Kreda, S., Grube, J. W., & Thomas, S. (2014). Relationships between social host laws and underage drinking: Findings from a study of 50 California cities. *Journal of Studies on Alcohol and Drugs*, 75(6), 901–907.
- Patrick, M. E., & Maggs, J. L. (2014). Energy drinks and alcohol: links to alcohol behaviors and consequences across 56 days. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 54(4), 454–459. https://doi.org/10.1016/j.jadohealth.2013.09.013
- Patrick, M. E., & Terry-McElrath, Y. M. (2017). High-intensity drinking by underage young adults in the United States. *Addiction (Abingdon, England)*, *112*(1), 82–93. <u>https://doi.org/10.1111/add.13556</u>
- Patrick, M. E., Terry-McElrath, Y. M., Evans-Polce, R. J., & Schulenberg, J. E. (2020). Negative alcohol-related consequences experienced by young adults in the past 12 months: Differences by college attendance, living situation, binge drinking, and sex. *Addictive Behaviors*, 105, 106320. <u>https://doi.org/10.1016/j.addbeh.2020.106320</u>
- Patrick, M. E., Evans-Polce, R. J., Arterberry, B. J., & Terry-McElrath, Y. (2023). Initiation of and escalation to high-intensity drinking in young adults. *JAMA Pediatrics*, 177(3), 286– 293. <u>https://doi.org/10.1001/jamapediatrics.2022.5642</u>

- Patrick, M. E., Miech, R. A., Johnston, L. D., & O'Malley, P. M. (2023). Monitoring the Future Panel Study annual report: National data on substance use among adults ages 19 to 60, 1976-2022. [Monograph]. Institute for Social Research, The University of Michigan. <u>https://monitoringthefuture.org/wp-content/uploads/2023/07/mtfpanel2023.pdf</u>
- Peck, R. C., Gebers, M. A., Voas, R. B., & Romano, E. (2008). The relationship between blood alcohol concentration (BAC), age, and crash risk. *Journal of Safety Research*, 39(3), 311– 319. <u>https://doi.org/10.1016/j.jsr.2008.02.030</u>
- Pelham, W. E., Tapert, S. F., Gonzalez, M. R., Ahiarakwe, U., Patel, H., Davis, I. S., Meruelo, A. D., Van Rinsveld, A. M., Marshall, A. T., Dick, A. S., Guillaume, M., Dowling, G. J., Baskin-Sommers, A., & Brown, S. A. (2024). How does parental monitoring reduce adolescent substance use? Preliminary tests of two potential mechanisms. *Journal of Studies* on Alcohol and Drugs, 85(3), 389–394. <u>https://doi.org/10.15288/jsad.23-00297</u>
- Penn State Extension. (n.d.). *Alcoholic beverage consumption and purchasing trends 2024*. Retrieved June 25, 2024, from <u>https://extension.psu.edu/alcoholic-beverage-consumption-and-purchasing-trends-2024</u>
- Peterson, C., Li, M., Xu, L., Mikosz, C. A., & Luo, F. (2021). Assessment of annual cost of substance use disorder in US hospitals. *JAMA Network Open*, 4(3), e210242. <u>https://doi.org/10.1001/jamanetworkopen.2021.0242</u>
- Pfefferbaum, A., Kwon, D., Brumback, T., Thompson, W. K., Cummins, K., Tapert, S. F., Brown, S. A., Colrain, I. M., Baker, F. C., Prouty, D., De Bellis, M. D., Clark, D. B., Nagel, B. J., Chu, W., Park, S. H., Pohl, K. M., & Sullivan, E. V. (2017). Altered brain developmental trajectories in adolescents after initiating drinking. *American Journal of Psychiatry*, 175(4), 370–380. https://doi.org/10.1176/appi.ajp.2017.17040469
- Pitkänen, T., Lyyra, A.-L., & Pulkkinen, L. (2005). Age of onset of drinking and the use of alcohol in adulthood: a follow-up study from age 8-42 for females and males. *Addiction (Abingdon, England)*, *100*(5), 652–661. https://doi.org/10.1111/j.1360-0443.2005.01053.x
- Pleis, J. R., & Lethbridge-Cejku, M. (2007). Summary health statistics for U.S. adults: National Health Interview Survey, 2006. Vital and health statistics. Series 10, Data from the National Health Survey, (235), 1–153.
- Pollard, M. S., Tucker, J. S., & Green, H. D., Jr. (2020). Changes in adult alcohol use and consequences during the COVID-19 pandemic in the US. *JAMA Network Open*, 3(9), e2022942. <u>https://doi.org/10.1001/jamanetworkopen.2020.22942</u>
- Preusser, D. F., Williams, A. F., & Weinstein, H. B. (1994). Policing underage alcohol sales. Journal of Safety Research, 25(3), 127–133. <u>https://doi.org/10.1016/0022-4375(94)90069-8</u>
- Prokop, H. (2020). Rethinking beer as seltzers see triple-digit growth. <u>https://cspdailynews.com/beverages/rethinking-beer-seltzers-see-triple-digit-growth</u>
- Quinn, P. D., & Fromme, K. (2012). Event-level associations between objective and subjective alcohol intoxication and driving after drinking across the college years. *Psychology of Addictive Behaviors: Journal of the Society of Psychologists in Addictive Behaviors, 26*(3), 384–392. <u>https://doi.org/10.1037/a0024275</u>
- Ramisetty-Mikler, S., Caetano, R., Goebert, D., & Nishimura, S. (2004). Ethnic variation in drinking, drug use, and sexual behavior among adolescents in Hawaii. *The Journal of School Health*, 74(1), 16–22. <u>http://www.ncbi.nlm.nih.gov/pubmed/15022371</u>
- Ramisetty-Mikler, S., Goebert, D., Nishimura, S., & Caetano, R. (2006). Dating violence victimization: associated drinking and sexual risk behaviors of Asian, Native Hawaiian, and

Caucasian high school students in Hawaii. *The Journal of School Health*, 76(8), 423–429. https://doi.org/10.1111/j.1746-1561.2006.00136.x

- Rasberry, C. N. (2017). Health-related behaviors and academic achievement among high school students — United States, 2015. *Morbidity and Mortality Weekly Report*, 66. <u>https://doi.org/10.15585/mmwr.mm6635a1</u>
- Renna, F. (2008). Teens' alcohol consumption and schooling. *Economics of Education Review*, 27(1), 69–78. <u>https://doi.org/10.1016/j.econedurev.2006.05.002</u>
- Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., Tabor, J., Beuhring, T., Sieving, R. E., Shew, M., Ireland, M., Bearinger, L. H., & Udry, J. R. (1997). Protecting adolescents from harm. Findings from the National Longitudinal Study on Adolescent Health. *JAMA*, 278(10), 823–832. http://www.ncbi.nlm.nih.gov/pubmed/9293990
- Restak, R., & Grubin, D. (2001). *The secret life of the brain* (1st edition ed.). Joseph Henry Press. <u>https://www.amazon.com/Secret-Life-Brain-Richard-Restak/dp/0309074355</u>
- Rhee, S. H., Hewitt, J. K., Young, S. E., Corley, R. P., Crowley, T. J., & Stallings, M. C. (2003). Genetic and environmental influences on substance initiation, use, and problem use in adolescents. *Archives of General Psychiatry*, 60(12), 1256–1264. <u>https://doi.org/10.1001/archpsyc.60.12.1256</u>
- Ritchwood, T. D., Ford, H., DeCoster, J., Sutton, M., & Lochman, J. E. (2015). Risky sexual behavior and substance use among adolescents: A meta-analysis. *Children and Youth Services Review*, *52*, 74–88. https://doi.org/10.1016/j.childyouth.2015.03.005
- Robins, L., & Przybeck, T. (1985). Age of onset of drug use as factor in drug and other disorders. In C. L. Jones & R. J. Battjes (Eds.), NIDA Research Monograph 56: Etiology of drug abuse (pp. 178–192). DHHS Pub. No. (ADM) 85-1335. Rockville, MD: National Institute on Drug Abuse.
- Rossow, I., Keating, P., Felix, L., & McCambridge, J. (2016). Does parental drinking influence children's drinking? A systematic review of prospective cohort studies. *Addiction*, 111(2), 204–217. <u>https://doi.org/10.1111/add.13097</u>
- Rothman, E. F., Edwards, E. M., Heeren, T., & Hingson, R. W. (2008). Adverse childhood experiences predict earlier age of drinking onset: Results from a representative US sample of current or former drinkers. *Pediatrics*, 122(2), e298–e304. https://doi.org/10.1542/peds.2007-3412
- Rothstein, D. S., Carr, D., & Cooksey, E. (2019). Cohort profile: The National Longitudinal Survey of Youth 1979 (NLSY79). *International Journal of Epidemiology*, 48(1), 22–22e. <u>https://doi.org/10.1093/ije/dyy133</u>
- Sacks, J. J., Gonzales, K. R., Bouchery, E. E., Tomedi, L. E., & Brewer, R. D. (2015). 2010 National and state costs of excessive alcohol consumption. *American Journal of Preventive Medicine*, 49(5), e73–e79. <u>https://doi.org/10.1016/j.amepre.2015.05.031</u>
- Substance Abuse and Mental Health Services Administration (US); Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health [Internet]. Washington (DC): US Department of Health and Human Services; 2016 Nov. PMID: 28252892.
- SAMHSA. (2024). Drug Abuse Warning Network (DAWN) Short Report | Alcohol-related ED visits.

- Sargent, J. D., & Babor, T. F. (2020). The relationship between exposure to alcohol marketing and underage drinking is causal. *Journal of Studies on Alcohol and Drugs, Supplement*(19), 113–124. <u>https://doi.org/10.15288/jsads.2020.s19.113</u>
- Schrier, R. v. d., Roozekrans, M., Olofsen, E., Aarts, L., Velzen, M. v., Jong, M. d., Dahan, A., & Niesters, M. (2017). Influence of ethanol on oxycodone-induced respiratory depression: A dose-escalating study in young and elderly individuals. *Anesthesiology*, 126(3), 534–542. <u>https://doi.org/10.1097/ALN.00000000001505</u>
- Schulte, M. T., Ramo, D., & Brown, S. A. (2009). Gender differences in factors influencing alcohol use and drinking progression among adolescents. *Clinical Psychology Review*, 29(6), 535–547. <u>https://doi.org/10.1016/j.cpr.2009.06.003</u>
- Scott-Sheldon, L. A. J., Carey, K. B., Elliott, J. C., Garey, L., & Carey, M. P. (2014). Efficacy of alcohol interventions for first-year college students: A meta-analytic review of randomized controlled trials. *Journal of Consulting and Clinical Psychology*, 82(2), 177–188. <u>https://doi.org/10.1037/a0035192</u>
- Sharma, P., Ebbert, J. O., Rosedahl, J. K., & Philpot, L. M. (2020). Changes in substance use among young adults during a respiratory disease pandemic. SAGE Open Medicine, 8. <u>https://doi.org/10.1177/2050312120965321</u>
- Sher, L., & Zalsman, G. (2005). Alcohol and adolescent suicide. International Journal of Adolescent Medicine and Health, 17(3), 197–203. https://doi.org/10.1515/ijamh.2005.17.3.197
- Siegel, M., DeJong, W., Albers, A. B., Naimi, T. S., & Jernigan, D. H. (2013). Differences in liquor prices between control state-operated and license-state retail outlets in the United States. *Addiction (Abingdon, England)*, 108(2), 339–347. <u>https://doi.org/10.1111/j.1360-0443.2012.04069.x</u>
- Siegel, M., DeJong, W., Naimi, T. S., Fortunato, E. K., Albers, A. B., Heeren, T., Rosenbloom, D. L., Ross, C., Ostroff, J., Rodkin, S., King, C., Borzekowski, D. L. G., Rimal, R. N., Padon, A. A., Eck, R. H., & Jernigan, D. H. (2013). Brand-specific consumption of alcohol among underage youth in the United States. *Alcoholism, Clinical and Experimental Research*, 37(7), 1195–1203. <u>https://doi.org/10.1111/acer.12084</u>
- Siegel, M., Naimi, T. S., Cremeens, J. L., & Nelson, D. E. (2011). Alcoholic beverage preferences and associated drinking patterns and risk behaviors among high school youth. *American Journal of Preventive Medicine*, 40(4), 419–426. https://doi.org/10.1016/j.amepre.2010.12.011
- Siegel, M., Ross, C. S., Albers, A. B., DeJong, W., King, C., Naimi, T. S., & Jernigan, D. H. (2016). The relationship between exposure to brand-specific alcohol advertising and brandspecific consumption among underage drinkers—United States, 2011–2012. *The American Journal of Drug and Alcohol Abuse*, 42(1), 4–14.
- Slater, M., & Alpert, H. (2022). Apparent Per Capita Alcohol Consumption: National State, and Regional Trends, 1977–2020 (Surveillance Report 119). National Institute on Alcohol Abuse and Alcoholism.
- Slater, M., & Alpert, H. (2023). Apparent Per Capita Alcohol Consumption: National State, and Regional Trends, 1977–2021 (Surveillance Report 120). National Institute on Alcohol Abuse and Alcoholism.

https://pubs.niaaa.nih.gov/publications/surveillance120/CONS21.htm

- Smith, G. S., Branas, C. C., & Miller, T. R. (1999). Fatal nontraffic injuries involving alcohol: A metaanalysis. *Annals of Emergency Medicine*, 33(6), 659–668. http://www.ncbi.nlm.nih.gov/pubmed/10339681
- Spear, L. P. (2018). Effects of adolescent alcohol consumption on the brain and behaviour. *Nature Reviews Neuroscience*, 19(4), 197–214. <u>https://doi.org/10.1038/nrn.2018.10</u>
- Stellefson, M., Barry, A. E., Stewart, M., Paige, S. R., Apperson, A., Garris, E., & Russell, A. (2019). Resources to reduce underage drinking risks and associated harms: Social ecological perspectives. *Health Promotion Practice*, 20(2), 160–166. <u>https://doi.org/10.1177/1524839918814736</u>
- Sterling, S., Kline-Simon, A. H., Jones, A., Hartman, L., Saba, K., Weisner, C., & Parthasarathy, S. (2019). Healthcare use over 3 years after adolescent SBIRT. *Pediatrics*, 143(5), e20182803. <u>https://doi.org/10.1542/peds.2018-2803</u>
- Stewart, T. (2022, March). Overview of motor vehicle crashes in 2020 (Report No. DOT HS 813 266). National Highway Traffic Safety Administration.
- Stone, D. M. (2023). Notes from the field: Recent changes in suicide rates, by race and ethnicity and age group — United States, 2021. *Morbidity and Mortality Weekly Report, 72*. <u>https://doi.org/10.15585/mmwr.mm7206a4</u>
- Substance Abuse and Mental Health Services Administration (2006). A Comprehensive Plan for Preventing and Reducing Underage Drinking.
- Substance Abuse and Mental Health Services Administration (US) & Office of the Surgeon General (US). (2016). *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health*. US Department of Health and Human Services. http://www.ncbi.nlm.nih.gov/books/NBK424857/
- Substance Abuse and Mental Health Services Administration. (2024). Drug Abuse Warning Network (DAWN) Short Report | Alcohol-related ED visits.
- Swedo, E. A., Pampati, S., Anderson, K., Thorne, E., McKinnon, I., Brener, N. D., Stinson, J., Mpofu, J. J., & Niolon, P. H. (2024). Adverse Childhood Experiences and Health Conditions and Risk Behaviors Among High School Students—Youth Risk Behavior Survey, United States, 2023. MMWR Supplements, 73. https://doi.org/10.15585/mmwr.su7304a5
- Tanner-Smith, E. E., & Lipsey, M. W. (2015). Brief alcohol interventions for adolescents and young adults: A systematic review and meta-analysis. *Journal of Substance Abuse Treatment*, 51, 1–18. <u>https://doi.org/10.1016/j.jsat.2014.09.001</u>
- Terry-McElrath, Y. M., & Patrick, M. E. (2018). Simultaneous alcohol and marijuana use among young adult drinkers: Age-specific changes in prevalence from 1977–2016. *Alcoholism, Clinical and Experimental Research*, 42(11), 2224–2233. https://doi.org/10.1111/acer.13879
- Terry-McElrath, Y. M., Arterberry, B. J., & Patrick, M. E. (2023). Alcohol use contexts (social settings, drinking games/specials, and locations) as predictors of high-intensity drinking on a given day among U.S. young adults. *Alcohol, Clinical and Experimental Research*, 47(2), 273–284. <u>https://doi.org/10.1111/acer.14985</u>
- Timberlake, D. S., Hopfer, C. J., Rhee, S. H., Friedman, N. P., Haberstick, B. C., Lessem, J. M., & Hewitt, J. K. (2007). College attendance and its effect on drinking behaviors in a longitudinal study of adolescents. *Alcoholism, Clinical and Experimental Research*, 31(6), 1020–1030. <u>https://doi.org/10.1111/j.1530-0277.2007.00383.x</u>
- Tori, M. E., Larochelle, M. R., & Naimi, T. S. (2020). Alcohol or benzodiazepine coinvolvement with opioid overdose deaths in the United States, 1999–2017. JAMA Network Open, 3(4), e202361–e202361. <u>https://doi.org/10.1001/jamanetworkopen.2020.2361</u>

- Tran, K. B., Lang, J. J., Compton, K., Xu, R., Acheson, A. R., Henrikson, H. J., Kocarnik, J. M., Penberthy, L., Aali, A., Abbas, Q., Abbasi, B., Abbasi-Kangevari, M., Abbasi-Kangevari, Z., Abbastabar, H., Abdelmasseh, M., Abd-Elsalam, S., Abdelwahab, A. A., Abdoli, G., Abdulkadir, H. A., ... Murray, C. J. L. (2022). The global burden of cancer attributable to risk factors, 2010–2019: A systematic analysis for the Global Burden of Disease Study 2019. *The Lancet*, 400(10352), 563–591. https://doi.org/10.1016/S0140-6736(22)01438-6
- U.S. Census Bureau. (2024). *Retail sales: Beer, wine, and liquor stores*. FRED, Federal Reserve Bank of St. Louis; FRED, Federal Reserve Bank of St. Louis. https://fred.stlouisfed.org/series/MRTSSM4453USN
- U.S. Department of Agriculture, & U.S. Department of Health and Human Services. (2020). *Dietary Guidelines for Americans*, 2020-2025. <u>https://www.dietaryguidelines.gov/</u>
- U.S. Department of Health and Human Services. (2007). *The Surgeon General's Call to Action To Prevent and Reduce Underage Drinking*. Office of the Surgeon General. https://www.hhs.gov/surgeongeneral/reports-and-publications/index.html
- U.S. Department of Health and Human Services. (2007). *The Surgeon General's Call to Action To Prevent and Reduce Underage Drinking: What it Means to You, A Guide to Action for Communities*. <u>https://www.hhs.gov/sites/default/files/underage-drinking-community-</u> <u>guide.pdf</u>
- U.S. Department of Health and Human Services. (2021). Healthy People 2030: Objectives and Data. Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health. <u>https://health.gov/healthypeople/objectives-and-data</u>
- U.S. News & World Report. (2019). Spiked seltzer vs. beer: Which is healthier? US News & World Report. <u>https://health.usnews.com/health-news/blogs/eat-run/articles/spiked-seltzer-vs-beer-which-is-healthier</u>
- Viner, R. M., Ozer, E. M., Denny, S., Marmot, M., Resnick, M., Fatusi, A., & Currie, C. (2012). Adolescence and the social determinants of health. *The Lancet*, 379(9826), 1641–1652. <u>https://doi.org/10.1016/S0140-6736(12)60149-4</u>
- Volkow, N. D., Han, B., Einstein, E. B., & Compton, W. M. (2021). Prevalence of substance use disorders by time since first substance use among young people in the US. *JAMA Pediatrics*, 175(6). <u>https://doi.org/10.1001/jamapediatrics.2020.6981</u>
- Volkow, N. D., & Wargo, E. M. (2022). Association of Severity of Adolescent Substance Use Disorders and Long-term Outcomes. JAMA Network Open, 5(4), e225656. https://doi.org/10.1001/jamanetworkopen.2022.5656
- Wachsman, J. (2019). The best ways to eat your booze. *34th Street*. <u>https://www.34st.com/article/2019/03/alcohol-infused-food-foods-candy-liquor-vodka-bourbon-margarita-mimosa-beer-sugarfina-tipsy-scoop</u>
- Wagenaar, A. C. (1981). Effects of an increase in the legal minimum drinking age. Journal of Public Health Policy, 2(3), 206–225. <u>https://doi.org/10.2307/3342367</u>
- Wagenaar, A. C. (1983). Alcohol, young drivers, and traffic accidents: Effects of minimum-age laws. LexingtonBooks. <u>https://books.google.com/books?id=nwtHAAAAMAAJ</u>
- Wagenaar, A. C., Harwood, E. M., Silianoff, C., & Toomey, T. L. (2005). Measuring public policy: The case of beer keg registration laws. *Evaluation and Program Planning*, 28(4), 359–367. https://doi.org/10.1016/j.evalprogplan.2005.07.001
- Wagenaar, A. C., & Toomey, T. L. (2002). Effects of minimum drinking age laws: Review and analyses of the literature from 1960 to 2000. *Journal of Studies on Alcohol, Supplement*(14), 206–225.

- Wagner, E. F., & Macgowan, M. J. (2006). School-based group treatment for adolescent substance abuse. In Adolescent substance abuse: Research and clinical advances (pp. 333-356). Cambridge University Press.
- Walker, H. M., Horner, R. H., Sugai, G., Bullis, M., Sprague, J. R., Bricker, D., & Kaufman, M. J. (1996). Integrated approaches to preventing antisocial behavior patterns among school-age children and youth. *Journal of Emotional and Behavioral Disorders*, 4(4), 194–209. <u>https://doi.org/10.1177/106342669600400401</u>
- Wang, C., Hipp, J. R., Butts, C. T., Jose, R., & Lakon, C. M. (2015). Alcohol use among adolescent youth: The role of friendship networks and family factors in multiple school studies. *PLOS ONE*, 10(3), e0119965. <u>https://doi.org/10.1371/journal.pone.0119965</u>
- Watkins, J. A., Howard-Barr, E. M., Moore, M. J., & Werch, C. C. (2006). The mediating role of adolescent self-efficacy in the relationship between parental practices and adolescent alcohol use. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 38(4), 448–450. <u>https://doi.org/10.1016/j.jadohealth.2005.04.002</u>
- Weitzman, M., & Lee, L. (2020). Similarities between alcohol and tobacco advertising exposure and adolescent use of each of these substances. *Journal of Studies on Alcohol and Drugs*, *Supplement*(19), 97–105. <u>https://doi.org/10.15288/jsads.2020.s19.97</u>
- White, A. (2020). Gender differences in the epidemiology of alcohol use and related harms in the United States. *Alcohol Research: Current Reviews*. <u>https://www.ncbi.nlm.nih.gov/pubmed/</u>
- White, A., Castle, I.-J. P., Powell, P. A., Hingson, R. W., & Koob, G. F. (2022). Alcohol-related deaths during the COVID-19 pandemic. *JAMA*. <u>https://doi.org/10.1001/jama.2022.4308</u>
- White, A., & Hingson, R. (2013). The burden of alcohol use: Excessive alcohol consumption and related consequences among college students. *Alcohol Research: Current Reviews*, 35(2), 201–218. <u>http://www.ncbi.nlm.nih.gov/pubmed/24881329</u>
- White, A. M., Castle, I.-J. P., Hingson, R. W., & Powell, P. A. (2020). Using death certificates to explore changes in alcohol-related mortality in the United States, 1999 to 2017. *Alcoholism, Clinical and Experimental Research*, 44(1), 178–187. https://doi.org/10.1111/acer.14239
- White, A. M., Castle, I.-J. P., Powell, P. A., Hingson, R. W., & Koob, G. F. (2022). Alcoholrelated deaths during the COVID-19 pandemic. *JAMA*, 327(17), 1704–1706. <u>https://doi.org/10.1001/jama.2022.4308</u>

Whitehead, P. C. (1977). Alcohol and young drivers: Impact and implications of lowering the drinking age.

http://www.torontopubliclibrary.ca/detail.jsp?Entt=RDM1769286&R=1769286

- Whitehead, P. C., Craig, J., Langford, N., MacArthur, C., Stanton, B., & Ferrence, R. G. (1975). Collision behavior of young drivers. Impact of the change in the age of majority. *Journal of Studies on Alcohol*, 36(9), 1208–1223. <u>http://www.ncbi.nlm.nih.gov/pubmed/240974</u>
- Wiener-Bronner, D. (2022, June 5). The buzzy new drinking trend: Alcohol-free booze. *CNN Business*. CNN. <u>https://www.cnn.com/2022/06/05/business/non-alcoholic-trend/index.html</u>
- Williams, A. F., Rich, R. F., Zador, P. L., & Robertson, L. S. (1975). The legal minimum drinking age and fatal motor vehicle crashes. *The Journal of Legal Studies*, 4(1), 219–239. <u>http://www.jstor.org/stable/724106</u>
- Winters, K. C., Botzet, A. M., Stinchfield, R., Gonzales-Castaneda, R., Finch, A. J., Piehler, T. F., Ausherbauer, K., Chalmers, K., & Hemze, A. (2018). Adolescent substance abuse treatment: A review of evidence-based research. In C. G. Leukefeld & T. P. Gullotta (Eds.), Adolescent Substance Abuse (pp. 141-171). Springer International Publishing.

- Woolf, S. H., & Schoomaker, H. (2019). Life expectancy and mortality rates in the United States, 1959-2017. *JAMA*, 322(20), 1996–2016. <u>https://doi.org/10.1001/jama.2019.16932</u>
- World Health Organization (WHO). (2021). Addressing alcohol consumption and socioeconomic inequalities: How a health promotion approach can help (Snapshot Series on Alcohol Control Policies and Practice) [Brief]. World Health Organization. <u>https://www.who.int/publications-detail-redirect/9789240043312</u>
- World Health Organization. (2023). A public health perspective on zero- and low-alcohol beverages (Brief 10; Snapshot Series on Alcohol Control Policies and Practice). World Health Organization. <u>https://www.who.int/publications-detail-redirect/9789240072152</u>
- Wozniak, J. R., Riley, E. P., & Charness, M. E. (2019). Diagnosis, epidemiology, assessment, pathophysiology, and management of fetal alcohol spectrum disorders. *The Lancet: Neurology*, 18(8), 760–770. <u>https://doi.org/10.1016/S1474-4422(19)30150-4.</u>
- Xu, X., & Chaloupka, F. J. (2011). The effects of prices on alcohol use and its consequences. *Alcohol Research & Health*, 34(2), 236–245.
- Xuan, Z., Blanchette, J. G., Nelson, T. F., Nguyen, T. H., Hadland, S. E., Oussayef, N. L., Heeren, T. C., & Naimi, T. S. (2015). Youth drinking in the United States: Relationships with alcohol policies and adult drinking. *Pediatrics*, 136(1), 18–27. <u>https://doi.org/10.1542/peds.2015-0537</u>
- Xuan, Z., Naimi, T. S., Kaplan, M. S., Bagge, C. L., Few, L. R., Maisto, S., Saitz, R., & Freeman, R. (2016). Alcohol policies and suicide: A review of the literature. *Alcoholism, Clinical and Experimental Research*, 40(10), 2043–2055. <u>https://doi.org/10.1111/acer.13203</u>
- Xuan, Z., Nelson, T. F., Heeren, T., Blanchette, J., Nelson, D. E., Gruenewald, P., & Naimi, T. S. (2013). Tax policy, adult binge drinking, and youth alcohol consumption in the United States. *Alcoholism, Clinical and Experimental Research*, 37(10), 1713–1719. <u>https://doi.org/10.1111/acer.12152</u>
- York, J. L., Welte, J., Hirsch, J., Hoffman, J. H., & Barnes, G. (2004). Association of age at first drink with current alcohol drinking variables in a national general population sample. *Alcoholism, Clinical and Experimental Research, 28*(9), 1379–1387. <u>http://www.ncbi.nlm.nih.gov/pubmed/15365309</u>

