

CHAPTER 1

Underage Drinking: Public Health Consequences and Prevention Efforts

Overview

Approximately 88,000 Americans die from alcohol-attributed causes each year, making alcohol the third leading preventable cause of death in the U.S. (Stahre, Roeber, Kanny, Brewer, & Zhang, 2014). The economic burden of excessive alcohol use in the U.S. is estimated at \$249 billion annually, and three-quarters of those costs are from binge drinking (defined as four or more drinks on a single occasion for women and five or more drinks for men; Sacks, Gonzales, Bouchery, Tomedi, & Brewer, 2015). Over the past two decades, alcohol use, binge and high-intensity binge drinking, and alcohol use disorders have all increased, especially among women, older adults, racial/ethnic minorities, and the socioeconomically disadvantaged (Grant, Chou, Saha, Pickering, Kerridge, Ruan, et al., 2017). Alcohol also plays a role in many drug overdoses; between 2002-2003 and 2014-2015, alcohol involvement in opioid deaths increased by 8.5 percent, second only to benzodiazepines and heroin-involved deaths (Kandel, et al., 2017).

Despite these concerning trends in overall alcohol use, significant progress in reducing underage drinking has been achieved. For example, past-month underage alcohol use has dropped by one-third since 2004 (CBHSQ, 2017a). Nevertheless, underage drinking rates remain unacceptably high. Alcohol is still the most widely consumed substance among America's youth—used more often than tobacco or marijuana. Alcohol use often begins at a young age and underage youths who drink tend to consume more on a single drinking occasion than adults do and without regard for consequences.

The benefits of reducing underage drinking are substantial, including saving lives and dollars and promoting the health of young people. In addition, delaying the age at which young people begin drinking will reduce their chances of developing an alcohol use disorder and of experiencing other negative consequences.

Increased attention to underage drinking may help prevent underage drinking rates from following the patterns of increased excessive alcohol use currently seen among adults. Research shows a correlation between youth drinking behaviors and those of adult relatives and other adults in the community (Nelson, Naimi, Brewer, & Nelson, 2009; Xuan et al., 2013).

Similarly, it is important to monitor the effects of marijuana legalization on underage alcohol use. Currently, eight states and the District of Columbia have legalized adult recreational use since 2012 (Alcohol Policy Information System, n.d.). If this trend continues, it may lead to greater youth access to marijuana. As with underage alcohol use, marijuana use by youths is associated with the use of other substances, including alcohol, tobacco, and other drugs (Dupont, Han, Shea & Madras, 2018).

The substantial cost of underage drinking can be reduced by increased implementation of effective prevention policies and programs around the country. The federal government, together with state and local governments, has sought to develop effective approaches to reduce underage drinking and its associated costs and consequences.

This volume includes two reports that are required by the Sober Truth on Preventing (STOP) Underage Drinking Act (Pub. L. 109-422), which was enacted by Congress in 2006 and reauthorized in December 2016 as part of the 21st Century Cures Act (Pub. L. 114-255). First,

the STOP Act requires the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD) to submit an annual report to Congress (Chapters 1 through 3) that includes:

- A description of all federal agency programs and policies designed to prevent and reduce underage drinking
- The extent of progress in preventing and reducing underage drinking nationally
- Information related to patterns and consequences of underage drinking, as well as evidence-based best practices to prevent and reduce underage drinking and provide treatment services
- 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)
- Surveillance data, including information about the initiation and prevalence of underage drinking, consumption patterns, and the means of underage access
- Other information about underage drinking that the Secretary of Health and Human Services (HHS) determines appropriate

Second, the STOP Act requires ICCPUD to submit an annual report to Congress on the national media campaign mandated by the STOP Act (Chapter 4), including the production, broadcasting, and evaluation of the effectiveness and reach of the campaign. (The STOP Act also requires annual state reports on underage drinking prevention and enforcement efforts, which are published separately. See stopalcoholabuse.gov.)

This chapter describes the harmful public health consequences of underage drinking and provides background on the ongoing national effort to prevent and reduce underage drinking.

Adverse Consequences of Underage Drinking

Underage drinking affects the health and well-being of not only the underage people who drink alcohol, but also their families, their communities, and society overall.

Individual health and social impacts of underage drinking include, foremost, the risk of death due to motor vehicle crashes, other unintentional injuries (such as fires/burns, falls, and drowning), alcohol and drug poisoning, and suicide (e.g., Centers for Disease Control & Prevention [CDC], 2016).

Other risks include brain impairment, interpersonal violence, engagement in risky sexual activity, and involvement with the legal system. The family of the adolescent who drinks alcohol may experience a disruption of normal relationships and a family crisis. Social costs include risks to other drivers and passengers, risk of violence, and enormous economic costs (National Research Council [NRC] & Institute of Medicine [IOM], 2004).

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. Approximately 56 percent of underage drinking costs can be attributed to lost productivity; most of that is due to premature mortality from alcohol-attributable conditions involving underage youth (Sacks, Gonzales, Bouchery, Tomedi, & Brewer, 2015). Underage drinking not only imposes societal costs in its own right, but also, given the increased risk that those who drink at young ages will develop alcohol use disorders later in life, contributes indirectly to the costs of excessive adult alcohol use.

Individual Consequences

Mortality and Injury from Traffic Crashes

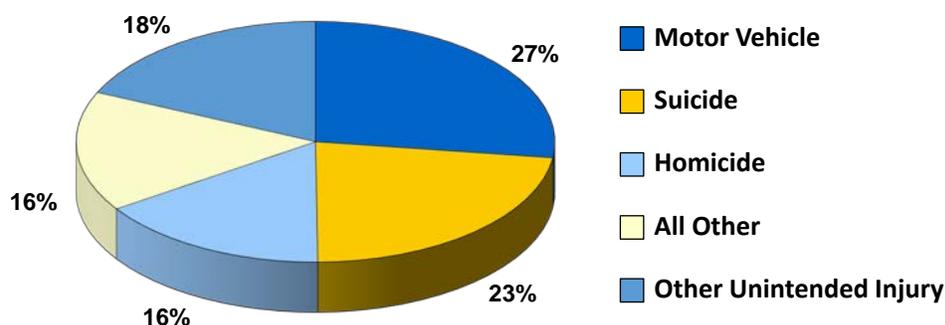
The greatest mortality risk for underage drinkers continues to be from motor vehicle crashes. In 2016, of the 1,908 drivers ages 15 to 20 who were killed in motor vehicle traffic crashes:

- 451 (24 percent) had a blood alcohol concentration (BAC) of 0.01 or higher.
- 83 (4 percent) had a BAC of 0.01 to 0.07 g/dL.
- 368 (19 percent) had a BAC of 0.08 g/dL or higher (NCSA, 2017).⁷

Other Leading Causes of Death in Youth

In addition to contributing to motor vehicle crashes, underage drinking contributes to all major causes of fatal and nonfatal injuries experienced by young people. Suicide, other unintentional injuries, and homicide, along with motor vehicle traffic crashes, are the four leading causes of death among youths ages 12 to 20 (Exhibit 1.1; CDC, 2016).

Exhibit 1.1: Leading Causes of Death for Youth Ages 12–20: 2016 (CDC, 2016)



In 2016 (the latest date for which these data are available), 2,505 youths ages 12 to 20 died from unintentional injuries caused by events other than motor vehicle crashes, such as poisoning, drowning, falls, and fires/burns (CDC, 2016). Recent estimates of the extent to which unintentional injuries in youth were alcohol-related is not available. However, a 1999 meta-analysis of the involvement of alcohol in unintentional injuries for all ages reported an aggregate percentage of 31.0 percent, although estimates varied widely across studies and injury type (Smith, Branas, & Miller, 1999).

Smith and colleagues (1999) also estimated that, for the population as a whole, alcohol (the presence of a BAC of 0.10 g/dL or greater) was a major contributing factor in nearly one-third (31.5 percent) of homicides and almost a quarter (22.7 percent) of suicides. Data from 17 states show that among people who died by suicide who were ages 10 to 19 and were tested, 12 percent had BACs >0.08 g/dL (Crosby, Espitia-Hardeman, Ortega, & Clavel-Arcas, 2009). Another study focusing on youth suicide estimated that 9.1 percent of hospital-admitted suicide acts by

⁷Special data analysis provided by the National Highway Traffic Safety Administration (NHTSA) for this report (A. Toth, personal communication, November 2017).

those under age 21 involved alcohol, and of those cases, 72 percent were attributable to or caused by alcohol use (Miller, Levy, Spicer, & Taylor, 2006).

Brain Impairment

Adverse effects on normal brain development are a potential long-term risk of underage alcohol consumption. 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 teenagers at serious risk.

Neurobiological research suggests that adolescence may be a period of unique vulnerability to the effects of alcohol. For example, research on adolescents with alcohol use disorders shows that early and heavy (defined in the study as five or more drinks in a row) alcohol use may have negative effects on the actual physical development of the brain structure (Brown & Tapert, 2004) as well as on brain functioning. Negative effects indicated by neuropsychological studies include decreased ability in planning, executive functioning, memory, spatial operations, and attention, all of which play important roles in academic performance and future levels of functioning (Brown, Tapert, Granholm, & Delis, 2000; Giancola & Mezzich, 2000; Tapert & Brown, 1999; Tapert et al., 2001; Winward, Hanson, Bekman, Tapert, & Brown, 2014).

Adverse consequences include death, injury, and brain impairment.

As Brown and colleagues (2000) noted, these deficits may put alcohol-dependent adolescents at risk for falling behind in school, putting them at an even greater disadvantage relative to nonusers. Some of these cross-sectional findings are supported by longitudinal analyses (Squeglia, Jacobus, & Tapert, 2009). A 10-year prospective study (Hanson, Medina, Padula, Tapert, & Brown, 2011) found that having a history of heavy (defined as five or more drinks in a row) alcohol or other substance use during adolescence appears to be more important in determining cognitive deficits than whether individuals continued to have substance-related problems into their mid-twenties.

The Adolescent Brain Cognitive Development (ABCD) study, (Volkow et al., 2017), launched in 2015, is expected to provide information on factors that contribute to adolescent alcohol and other substance use and their long-term effects on brain development and associated life outcomes. The Collaborative Research on Addiction (CRAN), an initiative of the National Institutes of Health (NIH), is leading the ABCD study in partnership with other NIH Institutes, including the National Institute on Drug Abuse (NIDA), the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and the National Cancer Institute (NCI).

The ABCD study is the “largest long-term study of brain development and child health in the United States,” according to the study website (<http://abcdstudy.org>). The study, conducted at 19 research institutions across the United States, will enroll about 10,000 children ages 9 and 10 and follow them for 10 years, into early adulthood. Researchers will use noninvasive neuroimaging and cognitive, academic, social, emotional, and biological assessments to determine how

childhood experiences interact with children's changing biology to affect brain development and other outcomes.

Risky Sexual Activity

Underage drinking plays a significant role in risky sexual behavior, including unintended and unprotected sexual activity. Such behavior increases the risk for unplanned pregnancy and contracting sexually transmitted diseases, including infection with HIV, the virus that causes AIDS (Cooper & Orcutt, 1997). Additional risks associated with alcohol consumption during pregnancy include fetal alcohol spectrum disorders, including fetal alcohol syndrome, which remains a leading cause of intellectual disabilities (Jones, Smith, Ulleland, & Streissguth, 1973; Stratton, Howe, & Battaglia, 1996; Warren & Bast, 1988).

Impaired Academic Performance

In general, cross-sectional studies have found that students who do poorly in school drink more than students whose school performance is better (Bryant, Schulenberg, O'Malley, Bachman, & Johnston, 2003). For example, students who report binge drinking are three times more likely to report earning mostly Ds and Fs on their report cards than non-binge drinkers (Miller, Naimi, Brewer, & Jones, 2007).

However, evidence from longitudinal studies is less clear cut, and in some cases, data suggest that academic failure leads to increased drinking rather than the reverse. Using data from the Youth Development Study (Mortimer, 2003), Owens, Shippee, and Hensel (2008) tracked a panel of youth from their freshman to senior years in high school. The authors failed to find a significant link across the high school years between increased drinking and diminishing academic performance.

A one-year longitudinal analysis of middle school and high school students using the National Longitudinal Study of Adolescent Health found that, independent of consumption levels, students who drank experienced modest declines (one-tenth of a letter grade) in academic achievement (Crosnoe, Muller, & Frank, 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).

Renna (2008) tracked educational attainment and alcohol use at ages 19 and 25 among two cohorts of 18-years-olds in 1982 and 1983, using data from the National Longitudinal Survey of Youth. 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 education development diploma (and hence realizing lowered earning potential). Also of interest, the study found that increases in the minimum legal drinking age (MLDA) increased the probability of people graduating by age 19 by 5.3 percentage points.

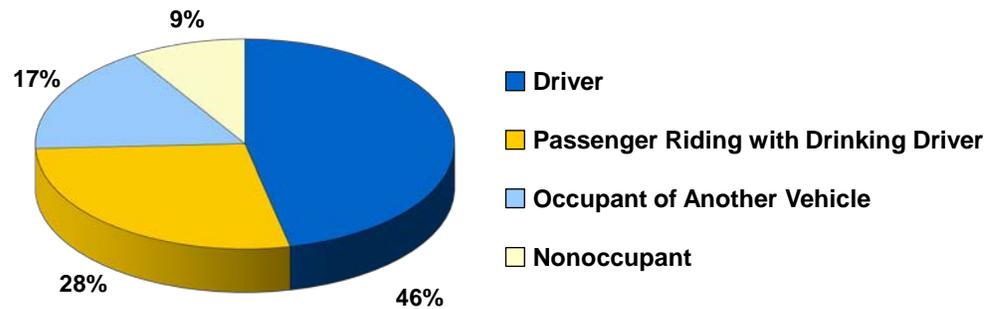
College-age drinking also has educational impacts. About 25 percent of college students report academic consequences as a result of their drinking, including missing class, falling behind, doing poorly on exams or papers, and receiving lower grades overall (White & Hingson, 2013).

Social Costs

Mortality and Injury

Individuals other than the young person who drinks alcohol experience the consequences of underage alcohol use through destruction of property, unintentional injury, violence, and even death. In 2016, 967 people were killed in motor vehicle traffic crashes involving a 15- to 20-year-old driver with a BAC of .01 or higher. The distribution of fatalities by person type in 2016 is shown in Exhibit 1.2.

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 2016
(NCSA, 2017)



As demonstrated in Exhibit 1.2, 54 percent of all 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 driver (e.g., passengers, occupants of other vehicles; NCSA, 2016).

Police and child protective services records suggest that individuals under age 21 commit 30 percent of murders, 31 percent of rapes, 46 percent of robberies, and 27 percent of other assaults (Miller et al., 2006). As the authors note, relying on victim reports rather than agency records would yield higher estimates. The degree to which alcohol is a factor in violent crimes committed by persons under 21 is unknown. Review articles by Abbey and Nolen-Hoeksema cited a number of studies suggesting that underage drinking by both victim and assailant increases the risk of physical and sexual assault (Abbey, 2011; Nolen-Hoeksema, 2004).

Social Costs on College Campuses

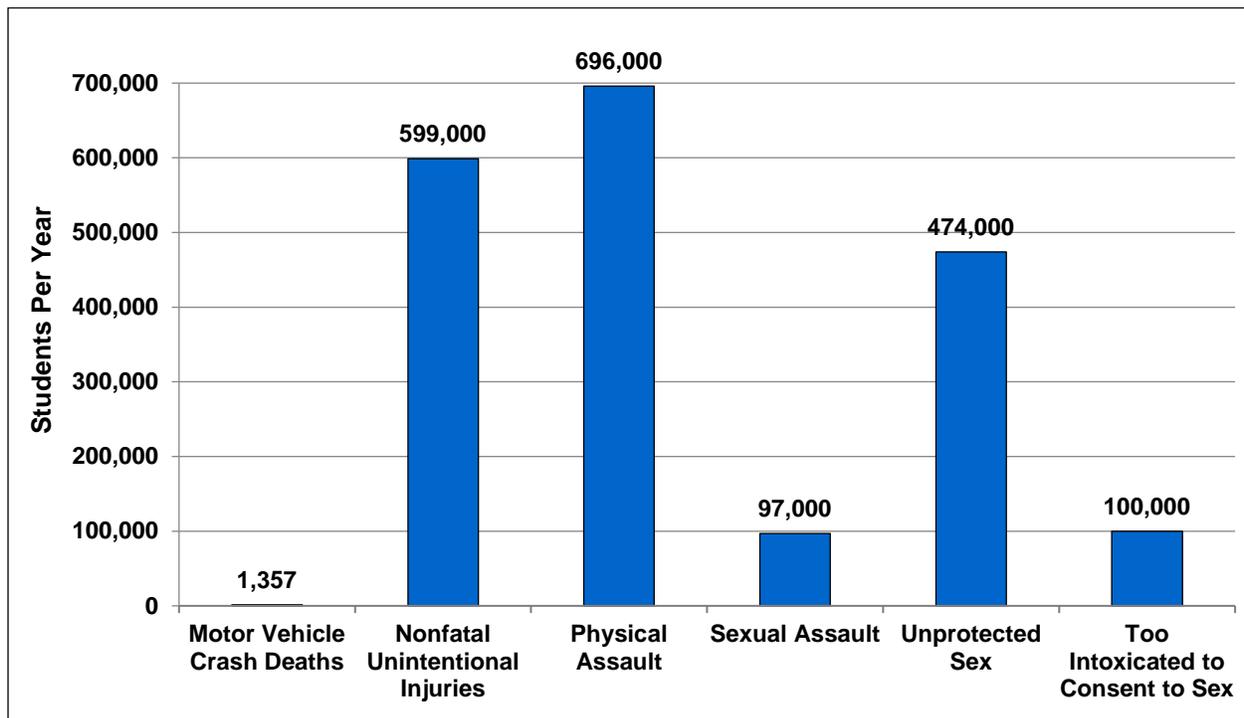
The problems associated with college student drinking include sexual assault (including date rape) and other violent crime on college campuses (White & Hingson, 2013). A study of roughly 5,500 college women on two campuses revealed that nearly 20 percent experienced some form of sexual assault while at college (Krebs, Lindquist, Warner, Fisher, & Martin, 2009). One estimate based on a national survey of college students is that 97,000 students may be victims of alcohol-related sexual assault in a given year (Hingson, Heeren, Winter, & Wechsler, 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 concluded that approximately half of all reported and unreported sexual assaults involve alcohol consumption by the perpetrator, victim,

or both (Abbey, Zawacki, Buck, Clinton-Sherrod, & McAuslan, 2004; Seto & Barbaree, 1995; Testa, 2002). Abbey and colleagues further reported that if alcohol was involved, usually both the victim and the perpetrator had consumed alcohol. Estimates of perpetrators’ intoxication during the incident ranged from 30 to 75 percent.

Many other adverse social consequences are linked with college student alcohol consumption. Hingson, Zha, & Weitzman (2009) estimated that annually, more than 696,000 college students were assaulted or hit by another student who had been drinking. Another 599,000 were unintentionally injured while under the influence of alcohol. In addition, Hingson and colleagues (2009) estimated that roughly 474,000 students ages 18 to 24 have had unprotected sex while under the influence of alcohol. Furthermore, each year more than 100,000 students ages 18 to 24 report having had sexual intercourse when so intoxicated they were unable to consent (Hingson, 2002; Hingson et al., 2005; Exhibit 1.3). About 11 percent of college students report having damaged property while under the influence of alcohol (Hingson et al., 2005).

Exhibit 1.3: Prevalence of Alcohol-Related Adverse Consequences Among College Students Ages 18–24 (Hingson et al., 2005; 2009)



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; Grant et al., 2006; Dawson, Goldstein, Chou, Ruan, & Grant, 2008; Hingson, Heeren, & Winter, 2006; Hingson & Zha, 2009; Pitkänen, Lyra, & Pulkkinen, 2005; York, Welte, Hirsch, Hoffman, & Barnes, 2004). Grant and Dawson (1997) found that more than 40 percent

of people who initiated drinking before age 13 met DSM-IV diagnostic criteria for alcohol dependence at some time in their lives.⁸

The onset of alcohol consumption in childhood or early adolescence is also associated with later use of drugs, drug dependence, and drug-related crash involvement (Hermos, Winter, Heeren, & Hingson, 2008; Hingson, Heeren, & Edwards, 2008). Use of both alcohol and marijuana or alcohol, marijuana, and cigarettes before age 16 is associated with a spectrum of young adult substance use problems, as well as substance use disorder diagnoses (Moss, Chen, & Yi, 2014).

Adults who started drinking at age 14 were three times more likely to report driving after drinking too much ever in their lives than were those who began drinking after age 21. Crashes were four times more likely for those who began drinking at age 14 than for those who began drinking after age 21 (Hingson, Heeren, & Zakocs, 2001).

The National Effort to Reduce Underage Drinking

Over the past 30 years, a comprehensive national effort to address underage drinking has been initiated and subsequently intensified as the multidimensional consequences associated with underage drinking have become more apparent. Substantial progress has been made through strengthening federal policy, implementing national media campaigns, increasing and supporting the involvement of communities through grants and other mechanisms, and collaborating with private agencies, such as the Robert Wood Johnson Foundation.

Development and evaluation of different approaches to prevention have been ongoing at the national level for the past three decades, with NIAAA playing a key role. Prevention efforts have focused on both the individual level (aimed at changing individual behavior), and the environmental level (aimed at limiting the availability of alcohol while increasing the safety of drinking contexts). This combined approach incorporates changes in policy and social environments along with continued education and skills training for individuals, family members, and the community (Harding et al., 2016).

Federal efforts are coordinated through the ICCPUD, which includes representatives from HHS' Office of the Surgeon General (OSG), CDC, Administration for Children and Families, Office of the Assistant Secretary for Planning and Evaluation, and NIH (including NIAAA and NIDA); U.S. Department of Justice (DOJ), Office of Juvenile Justice and Delinquency Prevention (OJJDP); U.S. Department of Education (ED), Office of Safe and Healthy Students; Department of Transportation, National Highway Traffic Safety Administration (NHTSA); White House Office of National Drug Control Policy (ONDCP); Department of the Treasury; U.S. Department of Defense; and FTC.

Federally sponsored research has been synthesized into several publications summarizing evidence-based prevention research strategies. The most recent is the 2016 *Facing Addiction in America, The Surgeon General's Report on Alcohol, Drugs and Health* (HHS, 2016). Other key documents include the Surgeon General's 2007 *Call to Action* (OSG, 2007; discussed in more detail below); the Community Preventive Services Task Force (2016; *Guide to Community Preventive Services: Preventing Excessive Alcohol Consumption*, based on systematic reviews

⁸Note that the criteria for alcohol-related disorders in the DSM-V (American Psychiatric Association, 2013) do not specifically address adolescents.

conducted between 2006 and 2012); the 2003 NRC & IOM report (2004) entitled *Reducing Underage Drinking: A Collective Responsibility*; the 2002 NIAAA report, *A Call to Action; Changing the Culture of Drinking at U.S. Colleges* (NIAAA, 2002); and the NIAAA CollegeAIM (the College Alcohol Intervention Matrix; (NIAAA, n.d.), also detailed below.

National efforts aimed at the reduction of alcohol-related deaths and disability and associated healthcare costs are outlined below. Individual states have also adopted comprehensive policies and practices (detailed in the STOP Act State Reports) that can alter individual and environmental factors that contribute to underage drinking and its consequences.

Adoption of the Minimum Legal Drinking Age

After Prohibition ended in 1933, states assumed authority for alcohol control, including enactment of laws restricting youth access to alcohol. Most states then designated 21 as the minimum legal drinking age (MLDA) for “purchase or public possession” of alcohol. Significantly, on December 31, 1970, Congress established NIAAA to “develop and conduct comprehensive health, education, training, research, and planning programs for the prevention and treatment of alcohol abuse and alcoholism” (NIH, 2017).

Between 1970 and 1976, 29 states lowered their MLDA from 21 to 18, 19, or 20 years of age, in part because the voting age had been lowered (Wagenaar, 1981). However, studies conducted in the 1970s found that motor vehicle crashes increased significantly among teens, resulting in more traffic injuries and fatalities (Cucchiari, Ferreira, & Sicherman, 1974; Douglass, Filkins, & Clark, 1974; Wagenaar, 1983, 1993; Whitehead, 1977; Whitehead et al., 1975; Williams, Rich, Zador, & Robertson, 1975). As a result, 24 of the 29 states raised their MLDA between 1976 and 1984, although to different minimum ages. Some placed restrictions on the types of alcohol that could be consumed by people younger than 21. Only 22 states set an MLDA of 21.

Differences across states led to youths driving across borders to buy and drink alcohol in neighboring states, with increased mortality (NHTSA, 2001). In response, Congress enacted the National Minimum Drinking Age Act of 1984, which mandated reduced federal highway funds to states that did not raise their MLDA to 21. By 1987, all remaining states had raised their MLDA to 21 in response to the federal legislation (although exceptions based on parental permission, location, and other factors exist in many states).

While enforcement varies across states, the age-21 MLDA has led to significant reductions in traffic crashes among youths (NHTSA, 2014; Wagenaar & Toomey, 2002). Subsequent research has supported the finding that reducing access to alcohol has a significant effect on mortality rates, particularly for young adults (Carpenter & Dobkin, 2011), and that it reduces the rate of non-fatal injuries (alcohol overdoses, accidental injuries, and injuries inflicted by others) in youths under 21 as well (Carpenter & Dobkin, 2016).

Congressional Actions Between 1992 and 2004

In 1992, Congress created the Substance Abuse and Mental Health Services Administration (SAMHSA) to “focus attention, programs, and funding on improving the lives of people with or at risk for mental and substance abuse disorders.” In 1998, Congress mandated that DOJ, through OJJDP, establish and implement the Enforcing the Underage Drinking Laws (EUDL) program, a state- and community-based initiative.

As national concern about underage drinking grew—in part because of advances in science that increasingly revealed adverse consequences—Congress appropriated funds for a study by the National Academies to examine the relevant literature to “review existing federal, state, and nongovernmental programs, including media-based programs, designed to change the attitudes and health behaviors of youth.” NRC and IOM issued the report, *Reducing Underage Drinking: A Collective Responsibility*, in 2004 (NRC & IOM, 2004).

Interagency Coordinating Committee on the Prevention of Underage Drinking

The conference report accompanying H.R. 2673, the “Consolidated Appropriations Act of 2004,” directed the HHS Secretary to establish the ICCPUD (see member list, sidebar) and to issue an annual report summarizing all federal agency activities related to the prevention of underage drinking. The HHS Secretary directed the SAMHSA Administrator to convene ICCPUD in 2004.

ICCPUD coordinates federal efforts to reduce underage drinking and served as a resource for the development of *A Comprehensive Plan for Preventing and Reducing Underage Drinking*, for which Congress called in 2004 (SAMHSA, 2017). ICCPUD received input from experts and organizations representing a wide range of parties, including public health advocacy groups, the alcohol industry, ICCPUD member agencies, and the U.S. Congress. The latest research available 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:

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

The Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD) includes the following officials, as specified in the STOP Act:

- Secretary of Health and Human Services
- Secretary of Education
- 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
- Director of the National Institute on Alcohol Abuse and Alcoholism
- Director of the National Institute on Drug Abuse
- Director of the Office of National Drug Control Policy
- Administrator of the National Highway Traffic Safety Administration
- Administrator of the Office of Juvenile Justice and Delinquency Prevention
- Chairman of the Federal Trade Commission

The STOP Act

In December 2006, Congress passed the Sober Truth on Preventing (STOP) Underage Drinking Act, Public Law 109-422, popularly known as the STOP Act. The Act states that:

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 “formally establish and enhance the efforts of the interagency coordinating committee (ICCPUD) that began operating in 2004.” The STOP Act was reauthorized in 2016 as part of the 21st Century Cures Act (Pub. L. 114-255).

The Surgeon General’s 2007 Call to Action

In fall 2005, ICCPUD sponsored a national meeting of the states to prevent and reduce underage alcohol use. At the meeting, the Surgeon General announced his intent to issue a *Call to Action* on the prevention and reduction of underage drinking. Subsequently, OSG worked closely with SAMHSA and NIAAA to develop the report. Based on their work on the Comprehensive Plan, the ICCPUD agencies collaborated to provide information and data for the *Surgeon General’s Call to Action to Prevent and Reduce Underage Drinking* (HHS, 2007), issued in 2007.

By issuing the *Call to Action*, the Surgeon General sought to raise public awareness and foster changes in American society—goals similar to those described to Congress in the Comprehensive Plan. The *Call to Action* built on the Comprehensive Plan by outlining a wide-ranging national effort to prevent and reduce underage alcohol consumption based on the latest and most authoritative research, particularly on underage drinking as a developmental issue. The goals listed in the *Call to Action* are:

1. Foster changes in American society that facilitate healthy adolescent development and help prevent and reduce underage drinking.
2. Engage parents and other caregivers, schools, communities, all levels of government, all social systems that interface with youth, and youth themselves in a coordinated national effort to prevent and reduce underage drinking and its consequences.
3. Promote an understanding of underage alcohol consumption in the context of human development and maturation that takes into account individual adolescent characteristics as well as ethnic, cultural, and gender differences.
4. Conduct additional research on adolescent alcohol use and its relationship to development.
5. Work to improve public health surveillance on underage drinking and on population-based risk factors for this behavior.
6. Work to ensure that laws and policies at all levels are consistent with the national goal of preventing and reducing underage alcohol consumption.

Strategies for implementing these goals for parents and other caregivers, communities, schools, colleges and universities, businesses, the healthcare system, juvenile justice and law

enforcement, and the alcohol and entertainment industries are included in the full *Call to Action*, available at <http://www.surgeongeneral.gov/topics/underagedrinking/calltoaction.pdf>.

ICCPUD agencies implemented a variety of federal programs to support the goals of the *Call to Action*. For example, SAMHSA and NIAAA worked with OSG to support rollouts of the *Call to Action* in 13 states; SAMHSA collaborated with ICCPUD to support more than 7,000 town hall meetings, using the *Call to Action's Guide to Action for Communities* (OSG et al., 2007) as a primary resource; and SAMHSA asked community coalitions funded under the STOP Act to implement strategies contained in the *Call to Action*. These and other programs are described in more detail in Chapter 3.

The Surgeon General's 2016 Report

In 2016, the OSG released *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health*, addressing the use and misuse of substances, including alcohol (HHS, 2016). The report is broad, and covers substance use by all age groups, along with public health consequences, prevention, and treatment. It describes the extent of the substance use problem in the United States; the neurobiology of substance use, misuse, and addiction; prevention programs and policies; early intervention, treatment, and management of substance use disorders; the many services and systems that support the recovery process; the integration of healthcare systems and substance use services; and a vision for the future (including a public health approach and concrete recommendations for reducing substance misuse and related harms).

In addition, the report lists risk and protective factors for substance initiation and misuse by adolescents and young adults at the individual, family, school, and community levels. It also describes evidence-based prevention programs and policies in three different categories:

- Universal (aimed at all members of a given population, such as all children of a certain age).
- Selective (aimed at a subgroup determined to be at higher risk, such as youth involved with the justice system).
- Indicated (aimed at individuals who are already using substances but have not developed a substance use disorder).

Prevention programs and policies that have proven effective with various groups of underage people, including the 0–10 age group, 10–18 age group, young adults, and college students, are highlighted in the report. Programs aimed at individuals and families include:

- Nurse–Family Partnership
- Raising Healthy Children/Seattle Social Development Project (SSDP)
- Good Behavior Game
- LifeSkills Training
- Keepin' it REAL
- Strengthening Families Program 10-14
- Guiding Good Choices
- Positive Family Support/Family Check-Up
- BASICS

Environmental policies that have proven effective in preventing or reducing underage drinking and related problems include:

- MLDA of 21
- Compliance checks of retailers to enforce the MLDA
- Zero tolerance laws that prohibit people under age 21 from driving with any detectable BAC
- Use/lose laws that take away the driver's licenses of people under age 21 caught driving after drinking
- Laws that hold social hosts criminally liable for hosting underage drinking parties
- Laws that allow social hosts to be sued for hosting underage drinking parties
- Proposals to reduce underage people's exposure to alcohol advertising, although the evidence on effectiveness is mixed.

NIAAA's CollegeAIM

As described in more detail in Chapter 2, the problem of college drinking has been particularly persistent. However, knowledge about best practices with this population continues to grow, as NIAAA has invested substantial research and resources in supporting studies on individual and environmental interventions to address college drinking.

In 2015, NIAAA launched a major new resource, CollegeAIM (College Alcohol Intervention Matrix; NIAAA, n.d.) to help college officials address harmful and underage student drinking. The centerpiece of CollegeAIM is a comprehensive, easy-to-use, matrix-based tool that informs college staff about potential alcohol interventions and guides them to evidence-based interventions. Although college officials have numerous options for alcohol interventions, these are not all equally effective. CollegeAIM is designed to help schools make informed choices among available strategies, thereby increasing the schools' chances for success and helping to improve student health and safety.

CollegeAIM compares and rates nearly 60 types of interventions on effectiveness, anticipated costs and barriers to implementation, public health reach, and research amount and quality. Matrix interventions are classified as either environmental- or individual-level strategies (Exhibits 1.4 and 1.5). Environmental-level strategies target the campus community and student population as a whole. Individual-level strategies focus on individual students, including those in higher risk groups such as first-year students, student-athletes, and members of Greek organizations. (See <https://www.collegedrinkingprevention.gov/collegeaim/> for more details about these strategies.)

Exhibit 1.4: NIAAA College Alcohol Intervention Matrix, Individual-Level Strategies (NIAAA, n.d.)

INDIVIDUAL-LEVEL STRATEGIES:

Estimated Relative Effectiveness, Costs, and Barriers; Public Health Reach; Research Amount; and Primary Modality¹



COSTS: Combined program and staff costs for adoption/implementation and maintenance				
Lower costs \$		Mid-range costs \$\$	Higher costs \$\$\$	
EFFECTIVENESS: Success in achieving targeted outcomes	Higher effectiveness ★★★	IND-3 Normative re-education: Electronic/mailed personalized normative feedback (PNF)—Generic/other ² [#], B, ●●●, online/offsite IND-10 Skills training, alcohol focus: Self-monitoring/self-assessment <i>alone</i> ³ [#], F, ●●, online/offsite IND-21 Personalized feedback intervention (PFI): eCHECKUP TO GO (formerly, e-CHUG) ² [#], B, ●●●, online	IND-9 Skills training, alcohol focus: Goal/intention-setting <i>alone</i> ² [#], F, ●●, IPI IND-12 Skills training, alcohol plus general life skills: Alcohol Skills Training Program (ASTP) ² [#], F, ●●●, IPG IND-16 Brief motivational intervention (BMI): In-person—Individual (e.g., BASICS) [#], F, ●●●●, IPI IND-22 Personalized feedback intervention (PFI): Generic/other ² [#], B, ●●●●, online	IND-17 Multi-component education-focused program (MCEFF): AlcohoEdu [®] for College ¹ [#], B, ●●, online Interventions Delivered by Health Care Professionals Strategies in which health care professionals identify and help students whose drinking patterns put them at risk for harm, or who are already experiencing alcohol-related problems: IND-23 Screening and behavioral treatments IND-24 Medications for alcohol use disorder These approaches can reduce harmful drinking, according to studies conducted mainly in general adult populations (ages 18–65). <i>The differences in research populations, along with wide variations in costs and barriers across campuses, precluded ratings relative to other strategies. See page 18 for more information.</i>
	Moderate effectiveness ★★		IND-8 Skills training, alcohol focus: Expectancy challenge interventions (ECI)—Experiential [#], F, ●●●, IPG IND-13 Skills training, alcohol plus general life skills—Parent-based alcohol communication training [#], F, ●●, offsite IND-14 Skills training, alcohol plus general life skills or general life skills only: Generic/other ² [#], F, ●●●●, IPG IND-15 Brief motivational intervention (BMI): In-person—Group [#], F, ●●, IPG	Legend Effectiveness rating, based on percentage of studies reporting any positive effect: ●●● = 75% or more ●● = 50% to 74% ● = 25% to 49% X = Less than 25% Public health reach: B = Broad F = Focused Research amount: ●●●● = 11+ studies ●●● = 7 to 10 studies ●● = 4 to 6 studies ● = 3 or fewer studies Barriers: ### = Higher ## = Moderate # = Lower Primary modality: IPI = In-person individual IPG = In-person group Online Offsite
	Lower effectiveness ★	IND-2 Normative re-education: Electronic/mailed personalized normative feedback (PNF) Event-specific prevention (21st birthday cards) [#], B, ●●, online/offsite	IND-4 Normative re-education: In-person norms clarification <i>alone</i> ¹ [#], F, ●●, IPG	
	Not effective X	IND-7 Skills training, alcohol focus: Expectancy challenge intervention (ECI)—By proxy/didactic/discussion <i>alone</i> ¹ [#], F, ●●, IPG	IND-1 Information/knowledge/education <i>alone</i> ³ [#], B, ●●●●, IPG IND-5 Values clarification <i>alone</i> ¹ [#], F, ●●, IPG	
	Too few studies to rate effectiveness ?	IND-11 Skills training, alcohol plus general life skills: Alcohol 101 Plus™ ² [#], B, ●, online IND-19 Personalized feedback intervention (PFI): CheckYourDrinking (beta 1.0 version) ² [#], B, ●, online IND-20 Personalized feedback intervention (PFI): College Drinker's Check-up ² [#], B, ●, online	IND-6 Skills training, alcohol focus: Blood alcohol concentration feedback <i>alone</i> ³ [#], F, ●, IPI IND-18 Multi-component education-focused programs (MCEFF): Miscellaneous ² [#], B, ●, online	

See brief descriptions and additional ratings for each individual-level strategy on the summary table beginning on page 13.

¹ **Effectiveness** ratings are based on the percentage of studies reporting any positive outcomes (see legend). Strategies with three or fewer studies were not rated for effectiveness due to the limited data on which to base a conclusion. **Cost** ratings are based on the relative program and staff costs for adoption, implementation, and maintenance of a strategy. Actual costs will vary by institution, depending on size, existing programs, and other campus and community factors. **Barriers** to implementing a strategy include cost and opposition, among other factors. **Public health reach** refers to the number of students that a strategy affects. Strategies with a broad reach affect all students or a large group of students (e.g., all underage students); strategies with a focused reach affect individuals or small groups of students (e.g., sanctioned students). **Research amount** refers to the number of randomized controlled trials (RCT) of a strategy (see legend).

² Strategies are listed by **brand name** (e.g., CheckYourDrinking) if they were evaluated by at least two RCTs; strategies labeled **generic/other** have similar components and were not identified by name in the research or were evaluated by only one RCT; strategies labeled **miscellaneous** have the same approach but very different components.

³ Although this approach is a component of larger, effective programs such as BASICS and ASTP, it is evaluated here as a stand-alone intervention.

Exhibit 1.5: NIAAA College Alcohol Intervention Matrix, Environmental-Level Strategies (NIAAA, n.d.)

ENVIRONMENTAL-LEVEL STRATEGIES:

Estimated Relative Effectiveness, Costs, and Barriers; Public Health Reach; and Research Amount/Quality¹



COSTS: Combined program and staff costs for adoption/implementation and maintenance				
		Lower costs \$	Mid-range costs \$\$	Higher costs \$\$\$
EFFECTIVENESS: Success in achieving targeted outcomes	Higher effectiveness ★★★	ENV-16 Restrict happy hours/price promotions [##, B, ●●●] ENV-21 Retain ban on Sunday sales (where applicable) [##, B, ●●●●] ENV-22 Retain age-21 drinking age [##, B, ●●●●]	ENV-11 Enforce age-21 drinking age (e.g., compliance checks) [##, B, ●●●●] ENV-23 Increase alcohol tax [##, B, ●●●●]	
	Moderate effectiveness ★★	ENV-17 Retain or enact restrictions on hours of alcohol sales [##, B, ●●●●] ENV-34 Enact social host provision laws [##, B, ●●●]	ENV-3 Prohibit alcohol use/sales at campus sporting events [##, F, ●●●●] ENV-25 Enact dram shop liability laws: Sales to intoxicated [##, B, ●●●●] ENV-26 Enact dram shop liability laws: Sales to underage [##, B, ●●●] ENV-30 Limit number/density of alcohol establishments [###, B, ●●●●] ENV-35 Retain state-run alcohol retail stores (where applicable) [##, B, ●●●●]	ENV-31 Enact responsible beverage service training laws [##, B, ●●●]
	Lower effectiveness ★		ENV-1 Establish an alcohol-free campus [##, B, ●●●] ENV-7 Conduct campus-wide social norms campaign ² [#, B, ●●●●]	ENV-12 Restrict alcohol sponsorship and advertising [##, B, ●●●] ENV-14 Implement beverage service training programs: Sales to intoxicated [C = #, S/L = ##, B, ●●●] ENV-15 Implement beverage service training programs: Sales to underage [C = #, S/L = ##, B, ●●●●] ENV-28 Enact keg registration laws [##, B, ●●●]
	Too few robust studies to rate effectiveness—or mixed results ?	ENV-4 Prohibit alcohol use/service at campus social events [##, B, 0] ENV-5 Establish amnesty policies ² [#, F, ●●●] ENV-8 Require Friday morning classes ² [#, B, ●●] ENV-9 Establish standards for alcohol service at campus social events [#, B, ●●●] ENV-10 Establish substance-free residence halls ² [#, F, ●●] ENV-13 Prohibit beer kegs [C = #, S/L = ##, B, ●●●] ENV-18 Establish minimum age requirements to serve/sell alcohol [##, B, ●●●●] ENV-19 Implement party patrols [##, B, ●●●] ENV-24 Increase cost of alcohol license [##, B, 0] ENV-27 Prohibit home delivery of alcohol [##, B, ●●] ENV-29 Enact noisy assembly laws [##, B, 0]	ENV-6 Implement bystander interventions ² [#, F, 0]	ENV-2 Require alcohol-free programming ² [#, F, ●●] ENV-20 Implement safe-rides program ² [##, F, ●●] ENV-32 Conduct shoulder tap campaigns [##, B, ●●] ENV-33 Enact social host property laws [##, B, 0] ENV-36 Require unique design for state ID cards for age < 21 [##, B, 0]

Legend

Barriers:
 ### = Higher
 ## = Moderate
 # = Lower
 C = Barriers at college level
 S/L = Barriers at the state/local level

Research amount/quality:
 ●●●● = 5 or more longitudinal studies
 ●●● = 5 or more cross-sectional studies or 1 to 4 longitudinal studies
 ●● = 2 to 4 studies but no longitudinal studies
 ● = 1 study that is not longitudinal

Public health reach:
 0 = No studies
 B = Broad
 F = Focused

See brief descriptions and additional ratings for each environmental-level strategy on the summary table beginning on page 19.
¹ Effectiveness ratings are based on estimated success in achieving targeted outcomes. Cost ratings are based on a consensus among research team members of the relative program and staff costs for adoption, implementation, and maintenance of a strategy. Actual costs will vary by institution, depending on size, existing programs, and other campus and community factors. Barriers to implementing a strategy include cost and opposition, among other factors. Public health reach refers to the number of students that a strategy affects. Strategies with a broad reach affect all students or a large group of students (e.g., all underage students); strategies with a focused reach affect individuals or small groups of students (e.g., sanctioned students). Research amount/quality refers to the number and design of studies (see legend).
² Strategy does not seek to reduce alcohol availability, one of the most effective ways to decrease alcohol use and its consequences.

Identification of Evidence-Based Best Practices

The STOP Act requires the ICCPUD to include in the Report to Congress evidence-based practices to prevent and reduce underage drinking and to provide treatment services to youth who need them. Accordingly, the ICCPUD has identified 26 legal policies that are evidence-based (see Exhibit 1.6) and has tracked state adoption of these policies in “State Performance and Best Practices” and the individual State Reports, also required by the STOP Act. Seventeen of these policies were specified in the original STOP Act legislation or in Congressional appropriations language. The remaining nine policies were added after ICCPUD review. Additionally, the majority of these policies were identified as best practices by one or more of the following five sources:

- Community Preventive Services Task Force (*Guide to Community Preventive Services. Preventing Excessive Alcohol Consumption*; Community Preventive Services Task Force, 2016).
- The Surgeon General (*The Surgeon General’s Call to Action to Prevent and Reduce Underage Drinking*; Office of the Surgeon General, 2007).
- Institute of Medicine (*Reducing Underage Drinking: A Collective Responsibility*; NRC and IOM, 2004).

- National Institute on Alcohol Abuse and Alcoholism (*CollegeAIM: Alcohol Intervention Matrix*, NIAAA).
- The Surgeon General (*Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health*; Office of the Surgeon General, 2016).

Exhibit 1.6 lists the 26 policies and indicates which policies are identified as best practices by one or more of the five sources listed above as well as by ICCPUD. The evidence base for each of these policies, as well as adoption of the policy by the states, is described in detail in “State Performance and Best Practices” which is available at stopalcoholabuse.gov. The federal government’s approach to evidence-based practices is described in more detail in Chapter 3.

Exhibit 1.6: Underage Drinking Prevention Policies – Best Practices

Source Identifying Policy as a Best Practice						
Underage Drinking Prevention Policies	ICCPUD determination based on input from stakeholders and literature review	Community Preventive Services Task Force	Surgeon General's Call to Action	IOM Report, <i>Reducing Underage Drinking: A Collective Responsibility</i>	CollegeAIM (Alcohol Intervention Matrix; NIAAA)	<i>Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs and Health</i>
Policies addressing minors in possession of alcohol						
Possession by minor	X		X	X	X	
Consumption by minor	X		X	X	X	
Internal possession by minor	X					
Purchase or attempt to purchase alcohol by minor	X		X	X	X	
False identification/Incentives for retailers to use ID scanners or other technology	X		X	X	X	
Policies targeting underage drinking and driving						
Youth BAC limits (zero tolerance)	X		X	X		X
Loss of driving privileges for alcohol violations by minors (use/lose law)	X					X
Graduated driver's licenses	X		X	X		
Policies targeting alcohol suppliers						
Furnishing or sale to a minor	X		X	X	X	
Compliance checks	X	X	X	X	X	X
Penalty guidelines for violations of furnishing laws by retailers	X					
Mandatory/voluntary server-seller training (responsible beverage service programs)	X		X	X	X	
Minimum age for off-sale server	X					
Minimum age for on-sale server	X					
Outlet siting near schools	X					
Dram-shop liability	X	X		X	X	X

Source Identifying Policy as a Best Practice						
Underage Drinking Prevention Policies	ICCPUD determination based on input from stakeholders and literature review	Community Preventive Services Task Force	Surgeon General's Call to Action	IOM Report, Reducing Underage Drinking: A Collective Responsibility	CollegeAIM (Alcohol Intervention Matrix; NIAAA)	Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs and Health
Social-host liability	X			X	X	X
Hosting underage drinking parties	X		X	X	X	X
Retailer interstate shipment	X					
Direct sales/shipment from producer	X					
Keg registration	X		X	X	X	
Home delivery	X			X		
High-proof grain alcoholic beverages	X					
Policies affecting alcohol pricing						
Increasing alcohol tax rates	X	X		X	X	X
Restrictions on drink specials	X		X	X	X	
Wholesaler pricing provisions	X					

Emerging Issues in Underage Drinking and the Government Response

Although prevention efforts have had an effect on underage drinking rates, there is a need for ongoing monitoring of trends in the marketplace and emerging public health issues. Not only are new products continuously introduced, but youth behavior and experimentation with different ways to consume alcohol changes over time. Two products that have generated governmental response at the federal and/or state levels are caffeinated alcoholic beverages and powdered alcohol.

Federal and State Actions to Address Caffeinated Alcoholic Beverages

The combination of alcohol with caffeine may pose a public health issue for young people. Research suggests that mixing alcohol and caffeine (particularly with highly caffeinated energy drinks) poses public health and safety risks, because caffeine can mask the depressant effects of alcohol without changing the alcohol's intoxicating properties (CDC, 2017). This could lead some individuals to believe they are more capable of operating a vehicle, and presents other risks such as encouraging binge drinking, particularly among young drinkers.

Due to federal and state actions, premixed caffeinated alcoholic beverages (CABs) are no longer on the market. In 2007, health and safety risks prompted members of the National Association of Attorneys General Youth Access to Alcohol Committee to initiate investigations and negotiations with the Anheuser-Busch and MillerCoors Brewing Companies regarding their CAB products. In 2008, those companies agreed to remove caffeine and other stimulants from their products. In 2009, the U.S. Food and Drug Administration (FDA) initiated an investigation into the marketing and distribution of other CABs.

In November 2010, three federal agencies—FDA, FTC, and the Alcohol and Tobacco Tax and Trade Bureau (TTB)—took coordinated action to address these concerns, issuing warning letters to four manufacturers of caffeinated beverages:

- FDA letters advised that, as used in the products at issue, caffeine was an “unsafe food additive,” rendering the products adulterated under the FDA Act; it warned that further action was possible.
- FTC letters advised that marketing and sale of caffeinated alcohol could constitute an unfair or deceptive act in violation of the FTC Act; it urged the companies to take “swift and appropriate steps to protect consumers.”
- TTB letters warned that adulterated caffeinated malt beverages were mislabeled under the Federal Alcohol Administration Act. Letters stated that further action, including seizure and injunction, was possible.⁹

In response, the four companies stopped using added caffeine in their products; by summer 2011, with few exceptions, malt-based CABs were no longer available in the United States. In parallel with the federal actions against CABs, numerous states enacted statutory or administrative bans on these beverages.

For more references and details on health and safety risks associated with caffeinated alcoholic beverages and successful efforts to remove them from the marketplace, see the *2012 Report to Congress on the Prevention and Reduction of Underage Drinking* (SAMHSA, 2012).

Young people continue to mix alcohol and energy drinks on their own, despite the federal government’s removal of CABs from the marketplace. An NIAAA research study assessed the extent of this practice and its public health and safety effects on college students (Patrick & Maggs, 2014). A sample of 508 students reported alcohol and energy drink use on 4,203 days over four consecutive semesters, starting in their freshman year. Of the sample, 30.5 percent reported combined use at least once, and respondents consumed energy drinks on 9.6 percent of the days when they reported drinking alcohol. Heavier drinking, longer times drinking, and increased negative effects occurred when alcohol was combined with energy drinks, compared with drinking occasions without energy drinks. Research suggests that continued attention to this issue is needed among policymakers and educators.

Federal and State Actions Regarding Powdered Alcohol

On March 10, 2015, the TTB, which approves alcohol labeling, issued label approvals for Palcohol, a powdered alcoholic product. A container of Palcohol contains one ounce of powder, which, when mixed as directed with 200 milliliters of water, results in a beverage with 10 percent alcohol by volume. The company—Lipsmark, LLC—was approved to market five versions: vodka, rum, cosmopolitan, lemon drop, and powderita (margarita flavor).

Public health professionals and state government officials raised concerns that because powdered alcohol is easy to conceal and transport, it would appeal to underage drinkers (Naimi & Mosher, 2015). They also argued that the product raised safety issues—drinks made from powdered

⁹ See <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm233987.htm#2>. The FDA investigation and warning letters involved companies that produced malt-based alcoholic beverages and did not include wine- and spirits-based products. The investigation did not address products that contain naturally brewed caffeine (e.g., coffee-based drinks).

alcohol could intentionally or unintentionally be made much stronger than standard drinks and could be consumed in other ways that may prove harmful (Firger, n.d). Two recent studies suggest that underage drinkers would consume powdered alcohol if they had access to it (Stogner, Baldwin, Brown, & Chick, 2015; Vail-Smith, Chaney, Martin, & Chaney, 2016). Given this evidence, the American Medical Association (AMA) adopted a policy on June 14, 2016, calling for a ban on powdered alcohol in the United States (AMA, 2016).

States have authority to determine which alcohol products may be sold within their borders. The sale of powdered alcohol has been illegal in Alaska since 1995. As of February 2018, 34 other jurisdictions have enacted a permanent or temporary ban on the sale of powdered alcohol. Alabama, California, Connecticut, the District of Columbia, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, and West Virginia statutorily prohibit the sale of powdered alcohol.

Maryland enacted a temporary 2-year statutory ban on powdered alcohol that expired on June 30, 2018. Four states—Colorado, Delaware, New Hampshire, and New Mexico—have expanded the statutory definition of alcohol so that powdered alcohol can be regulated under their existing alcohol statutes. (For complete legal citations, go to <https://www.stopalcoholabuse.gov>.) Prior to legislatively banning powdered alcohol, two control states—Massachusetts and Pennsylvania—stated they would not sell powdered alcohol in their state stores.

As of February 2018, the Palcohol website states that Lipsmark, LLC will be auctioning off its “secret manufacturing process” to representatives in other countries rather than manufacture and distribute the powdered alcohol product itself. Currently, Palcohol is not available for purchase in the United States.