

Executive Summary

This document is excerpted from:

The June 2015 Report to Congress on the Prevention and Reduction of Underage Drinking

Introduction

Underage drinking and associated problems have profound negative consequences for underage drinkers, their families, their communities, and society as a whole. Underage drinking contributes to a wide range of costly health and social problems, including motor vehicle crashes (the greatest single mortality risk for underage drinkers); suicide; interpersonal violence (e.g., homicides, assaults, rapes); unintentional injuries such as burns, falls, and drowning; brain impairment; alcohol dependence; risky sexual activity; academic problems; and alcohol and drug poisoning. On average, alcohol is a factor in the deaths of approximately 4,300 youths in the United States per year, shortening their lives by an average of 60 years (Centers for Disease Control and Prevention [CDC], 2013a).

National data show meaningful reductions in underage drinking, particularly among younger age groups. From 2004 to 2012, young people ages 12 to 20 showed statistically significant declines in both past-month alcohol use and binge alcohol use.¹ These encouraging results were most significant in the 12- to 17-year-old age group, where past-month alcohol use declined by 26.7 percent and past-month binge drinking declined by 35.1 percent.

But there is still cause for concern. For example, in 2012, 35.3 percent of 20-year-olds reported binge drinking in the past 30 days; about 13 (12.6) percent of 20-year-olds had, in those 30 days, binged five or more times. Furthermore, although drinking levels are lower at younger ages, patterns of consumption across the age spectrum pose significant threats to health and well-being. Particularly troubling is the erosion of the traditional gap between underage males and females in binge drinking. This gap is disappearing as females' drinking practices converge with those of males.

Still, there is reason for optimism and hope for continued progress. As discussed in Chapters 3 and 4 of this report, states are increasingly adopting comprehensive policies and practices to alter the individual and environmental factors that contribute to underage drinking and its consequences; these can be expected to reduce alcohol-related death and disability and associated health care costs. These efforts can potentially reduce underage drinking and its consequences and change norms that support underage drinking in American communities.

¹ Binge drinking is the consumption of a large amount of alcohol over a relatively short period of time. No common terminology has been established to describe different drinking patterns. Based on NSDUH data, SAMHSA reports binge drinking as five or more drinks on one occasion on at least 1 day in the past 30 days, and heavy drinking as five or more drinks on at least 5 different days in the past 30 days. However, NSDUH can provide binge-drinking estimates based on the NIAAA gender-specific definition based on combining responses from different sections of the questionnaire. Beginning in 2015, gender-specific binge drinking questions will be located together in the alcohol module. Some studies, including Wechsler's (2002) survey of college students, define binge drinking as five or more drinks in a row for men and four or more for women. Other sources use "frequent heavy drinking" to refer to five or more drinks on at least five occasions in the last 30 days. Appendix A discusses these differences in more detail. See Courtney and Polich (2009) for further discussion of the definition issues.

Characteristics of Underage Drinking in America

Alcohol Is the Most Widely Used Substance of Abuse among American Youth

Alcohol continues to be the most widely used substance of abuse among America's youth, and a higher proportion use alcohol than use tobacco or other drugs. For example, according to the 2012 Monitoring the Future (MTF) study, 27.6 percent of 10th graders reported using alcohol in the past 30 days, 17.0 percent reported marijuana use, and 10.8 percent reported cigarette use in the same period (Johnston, O'Malley, Bachman, & Schulenberg, 2013a).²

Youth Start Drinking at an Early Age

As discussed below, early initiation to alcohol use increases the risk for a variety of developmental problems during adolescence and problems later in life. Early initiation is often an important indicator of future substance use (Robins & Przybeck, 1985; Hawkins et al., 1997; Grant & Dawson, 1998). Accordingly, delaying the onset of alcohol initiation may significantly improve later health. Although the peak years of initiation to alcohol are 7th to 11th grades, 10 percent of 9- to 10-year-olds have already started drinking (Donovan et al., 2004), and about one fifth of underage drinkers begin before they are 13 years old (CDC, 2012). Slightly fewer than 1 million (944,000) persons who initiated alcohol use in the past year reported they were ages 12 to 14 when they initiated. This translates to approximately 2,579 youths ages 12 to 14 who initiated alcohol use per day in 2012 (SAMHSA, 2013c).

Binge Drinking

Binge drinking is the most common underage consumption pattern. High blood alcohol concentrations (BACs) and impairment levels associated with binge drinking place binge drinkers and those around them at substantially elevated risk for negative consequences such as motor vehicle crashes, injuries, unsafe sexual practices, and sexual victimization. Accordingly, reducing binge drinking has become a primary public health priority.

Binge rates increase rapidly with age (Exhibit E.1). In 2012, approximately 5.9 million youths 12 to 20 years old (15.3 percent) reported binge drinking in the past month (SAMHSA, 2012a). Although youth generally consume alcohol less frequently than adults and consume less alcohol overall than adults, when they do drink they are much more likely to binge drink (Exhibit E.2). Accordingly, most youth alcohol consumption occurs in binge-drinking episodes. For example, 92 percent of the alcohol consumed by 12- to 14-year-olds is through binge drinking (Pacific Institute for Research and Evaluation [PIRE], 2002). A significant proportion of underage drinkers consume substantially more than the five-drink binge criterion. For example, averaged 2011 and 2012 data show that 10.4 percent of underage drinkers had nine or more drinks during their last drinking occasion (SAMHSA, 2013c). Note that very young adolescents, because of their smaller size, reach binge-drinking BACs with fewer drinks (three to four drinks for persons ages 12 to 15) than do older adolescents (e.g., age 18 or older) (Donovan, 2009).

² For comparability with data from the 2012 National Survey on Drug Use and Health (NSDUH) and 2011 Youth Risk Behavior Surveillance System (YRBSS), the latest MTF data included in this report are also from 2012. The 2013 MTF data, available in December 2013, will be included in the next report.

Exhibit E.1: Current and Binge Alcohol Use among Persons Ages 12–20 by Age: 2012 (SAMHSA, 2013b)

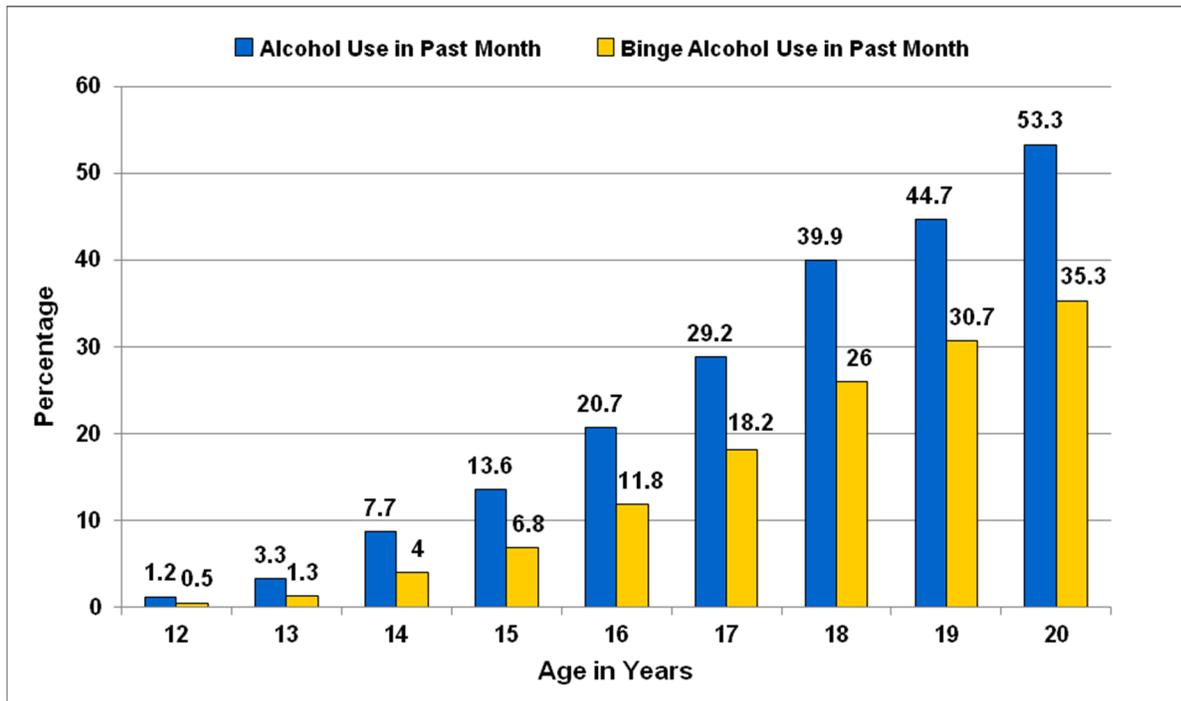
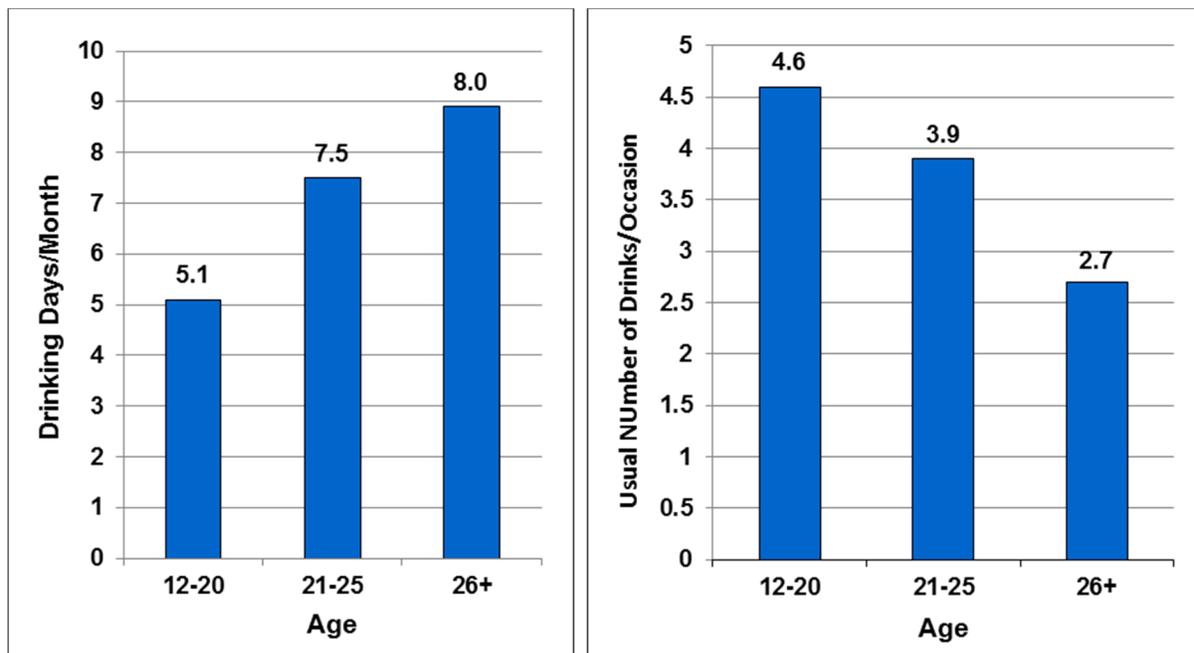


Exhibit E.2: Number of Drinking Days per Month and Usual Number of Drinks per Occasion for Youth (12–20), Young Adults (21–25), and Adults (≥26): 2012 (SAMHSA, 2013c)



There Is a High Prevalence of Alcohol Use Disorders among Youth

The prevalence of alcohol abuse or dependence among underage drinkers is quite high. Because the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, text revision* (DSM-IV-TR) (APA, 2000) criteria for abuse and dependence were originally developed for use with adults, using them to assess abuse and dependence in adolescents may lead to inconsistencies. As shown in Exhibit E.3, according to the combined 2011–2012 NSDUH data, prevalence of alcohol dependence or abuse as defined by DSM-IV³ is highest among those ages 18 to 29.

About one in seven (13.6 percent) 18- to 20-year-olds met criteria for alcohol dependence or abuse, a prevalence rate second only to that for 21- to 24-year-olds (16.4 percent) and slightly higher than that for 25- to 29-year-olds (12.2 percent). In addition, 1.3 percent of 12- to 14-year-olds and 6.9 percent of 15- to 17-year-olds met criteria for alcohol dependence or abuse.

Female Youth Drinking Rates Are Converging With Male Youth Rates

Although underage males and females tend to start drinking at about the same age and have approximately the same prevalence of any past-month alcohol use, males are more likely to drink with greater frequency and to engage in binge and heavy drinking. Since 1991, rates of binge drinking have been *decreasing* for college, 12th-, 10th-, and 8th-grade males and females, and the gap between male and female binge rates has been steadily declining (Johnston et al., 2009c, 2012a) (Exhibit E.4). Across all grade groups, male binge-drinking rates have been decreasing *faster* than female rates. This is most easily seen in the trend data (dotted lines) in Exhibit E.4. In 1975, there was a 23 percentage point spread between the rates; in 2012, it was 7.5 points (Johnston et al., 2013a).

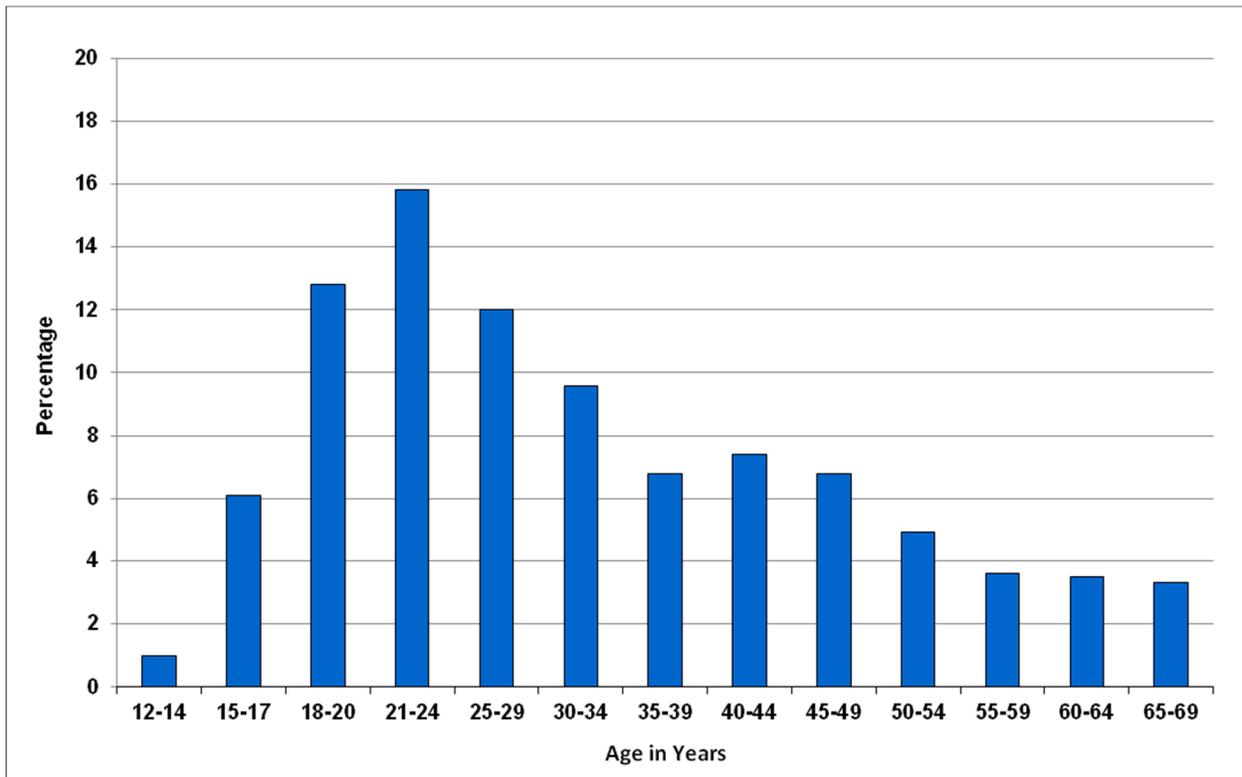
A number of biological factors may underlie or contribute to gender differences in drinking behavior and its consequences. Schulte, Ramo, and Brown (2009) note that differences in body composition (body fat vs. muscle mass) lead in females to a greater BAC from the same dose of alcohol proportionate to body weight, and in males to a lower alcohol reactivity (perceived effects of alcohol as a function of amount consumed). Thus, females may experience alcohol-related problems at lower doses of alcohol.

Drinking Rates Vary by Race and Ethnicity

White youths who are 12 to 20 years old are more likely to report current alcohol use and binge drinking than any other racial or ethnic group. Asian and Black youths had the lowest rates (Exhibit E.5) (SAMHSA, 2013c); however, data indicate that the prevalence of drinking before age 13 is higher among Black and Hispanic youths than among White youths (CDC, 2012). These ethnic and racial differences must be viewed with caution. As Caetano, Clark, and Tam (1998) note, there are important differences in alcohol use and related problems among ethnic and racial subgroups of Whites, Blacks, Hispanics, Asians, and Native Americans/Alaska Natives.

³ Because the DSM-IV-TR (APA, 2000) criteria for abuse and dependence used in this study were originally developed for use with adults, using them to assess abuse and dependence in adolescents may lead to inconsistencies. Several researchers are actively investigating this important issue (Harford, Yi, Faden, & Chen, 2009; Mewton, Teesson, Slade, & Grove, 2010). The newly released DSM-V provides new criteria for Alcohol-related Disorders, but does not specifically address adolescents.

Exhibit E.3: Prevalence of Past-Year DSM-IV Alcohol Dependence or Abuse by Age: 2011–2012 (SAMHSA, 2013c)



Moreover, the authors stress that the patterns of consumption for any group or subgroup represent a complex interaction of psychological, historical, cultural, and social factors that are not adequately captured by a limited set of labels. With these cautions in mind, however, the data in Exhibit E.5 highlight the importance of considering race and ethnicity in planning underage drinking countermeasures in specific communities.

Social Context of Alcohol Use

Underage alcohol use is strongly affected by the context in which drinking occurs, including the number of people present and the location where drinking takes place. Of particular concern is underage drinking at large parties.

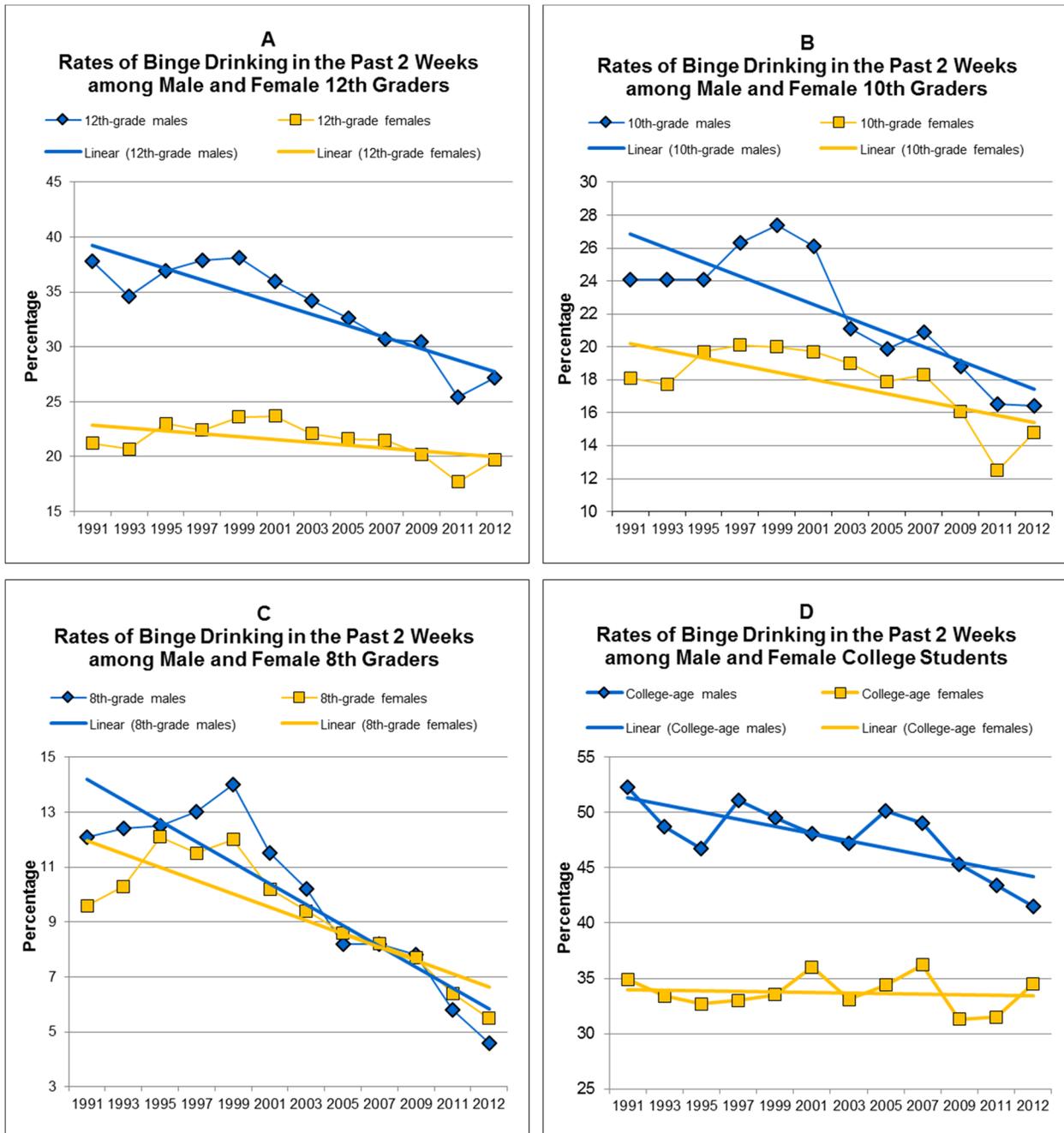
Number of People Present at Drinking Event

Most persons ages 12 to 20 (81.0 percent) who consumed alcohol in the past month were with two or more people the last time they drank, 14.0 percent were with one other person, and 5.1 percent were alone.⁴ Underage persons who drank with two or more other people on the last occasion in the past month had more drinks on average (4.5 drinks) than those who drank with

⁴ The discussion in this section combines data for 2011 and 2012.

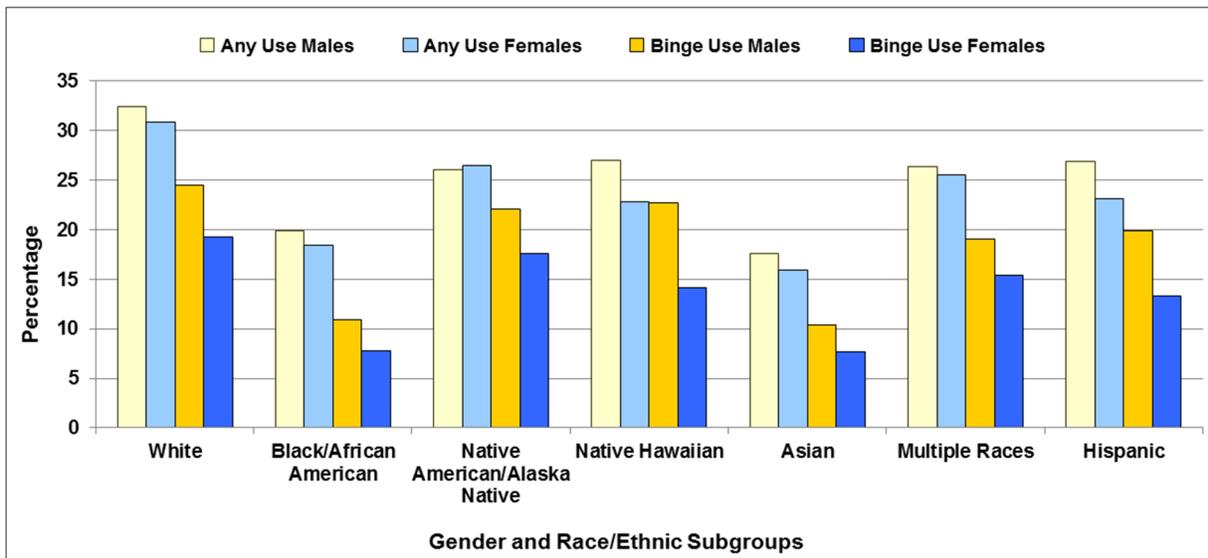
one other person (3.0 drinks) or drank alone (2.7 drinks) (SAMHSA, 2013c; Pemberton, Colliver, Robbins, & Gfroerer, 2008).

Exhibit E.4: Rates of Binge Drinking in the Past 2 Weeks among Male and Female 8th, 10th, and 12th Graders, 1991–2012 (Johnston et al., 2013a)⁵



⁵ Note that the percentage rate scale (y-axis) differs among the four exhibits (A-D) so that the distinctions between males and females within each age group can be easily read. The percentages reflected in each exhibit are the actual percentages.

Exhibit E.5: Alcohol Use and Binge Drinking in the Past Month among Persons Ages 12–20 by Race/Ethnicity and Gender, Annual Averages Based on 2002–2012 Data (SAMHSA, 2013c)



Location of Alcohol Use

Most underage drinkers reported last using alcohol in someone else’s home (55.7 percent, averaging 4.7 drinks) or their own home (29.7 percent, averaging 3.7 drinks).⁶ The next most popular drinking locations were at a restaurant, bar, or club (7.9 percent, averaging 4.8 drinks); at a park, on a beach, or in a parking lot (4.5 percent, averaging 4.8 drinks); or in a car or other vehicle (4.1 percent, averaging 5.4 drinks). Thus, most young people drink in social contexts that appear to promote heavy consumption and where people other than the drinker may be harmed by the drinker’s behavior.

Underage Drinking Parties

Of particular concern are parties at which large numbers of youth are present. Drinking parties attract those 21 and over as well as significant numbers of underage drinkers (Wells, Graham, Speechley, & Koval, 2005). For this reason, parties are a common environment in which young drinkers are introduced to heavy drinking by older and more experienced drinkers (Wagoner et al., 2012).

Parties are settings for binge drinking and other consumption patterns leading to high BACs (Wagoner et al., 2012; Clapp, Reed, Holmes, Lange, & Voas, 2006; Clapp, Min, Shillington, Reed, & Croff, 2008; Paschall & Saltz., 2007; Usdan, Moore, Schumacher, & Talbott, 2005; Demers et al., 2002; Meyer et al., 1998). Factors that increase the risk of high BACs include the size of the party and the number of people drinking (Wagoner et al., 2012), drinking games (Clapp et al., 2006, 2008), “BYOB” (Clapp et al., 2006), parties sponsored by fraternities (Paschall & Saltz, 2007), and parties where illicit drugs are available (Clapp et al., 2006).

⁶ For the analyses in this section, 2011 and 2012 NSDUH data are combined to provide sufficient sample sizes.

Demers and colleagues (2002) suggest that large parties have a greater facilitative effect on men's drinking compared with women's.

Several studies suggest that drinking parties are settings for aggression, including serious arguments, pushing, fights, and sexual assault (Wagoner et al., 2012). Because large numbers of youth are drinking outside their own homes, drinking parties may significantly increase the risk of driving after drinking (PIRE, 2000).

Drinking parties pose serious problems for law enforcement officers. For information on party-related enforcement practices states are implementing, see Chapter 4. For information on relevant state legal policies, see "Hosting Underage Drinking Parties" and "Keg Registration" in Chapter 4.

Adolescents' Beverage Preferences Are Shifting From Beer to Distilled Spirits

Different alcohol beverage types may be associated with different patterns of underage consumption. Ease of concealment, palatability, alcohol content, marketing strategies, media portrayals, parent modeling, and economic and physical availability may all contribute to the quantity of and settings for consumption. Similarly, beverage types may affect the policies and enforcement strategies that are most effective in reducing underage drinking (CDC, 2007). Tracking beverage preferences among young people is, therefore, an important aspect of prevention policy.

Since 1988, there have been marked shifts in beverage preferences among both male and female 12th graders (Exhibit E.6). Wine is currently preferred by 13 percent or fewer of underage drinkers and is not discussed here.

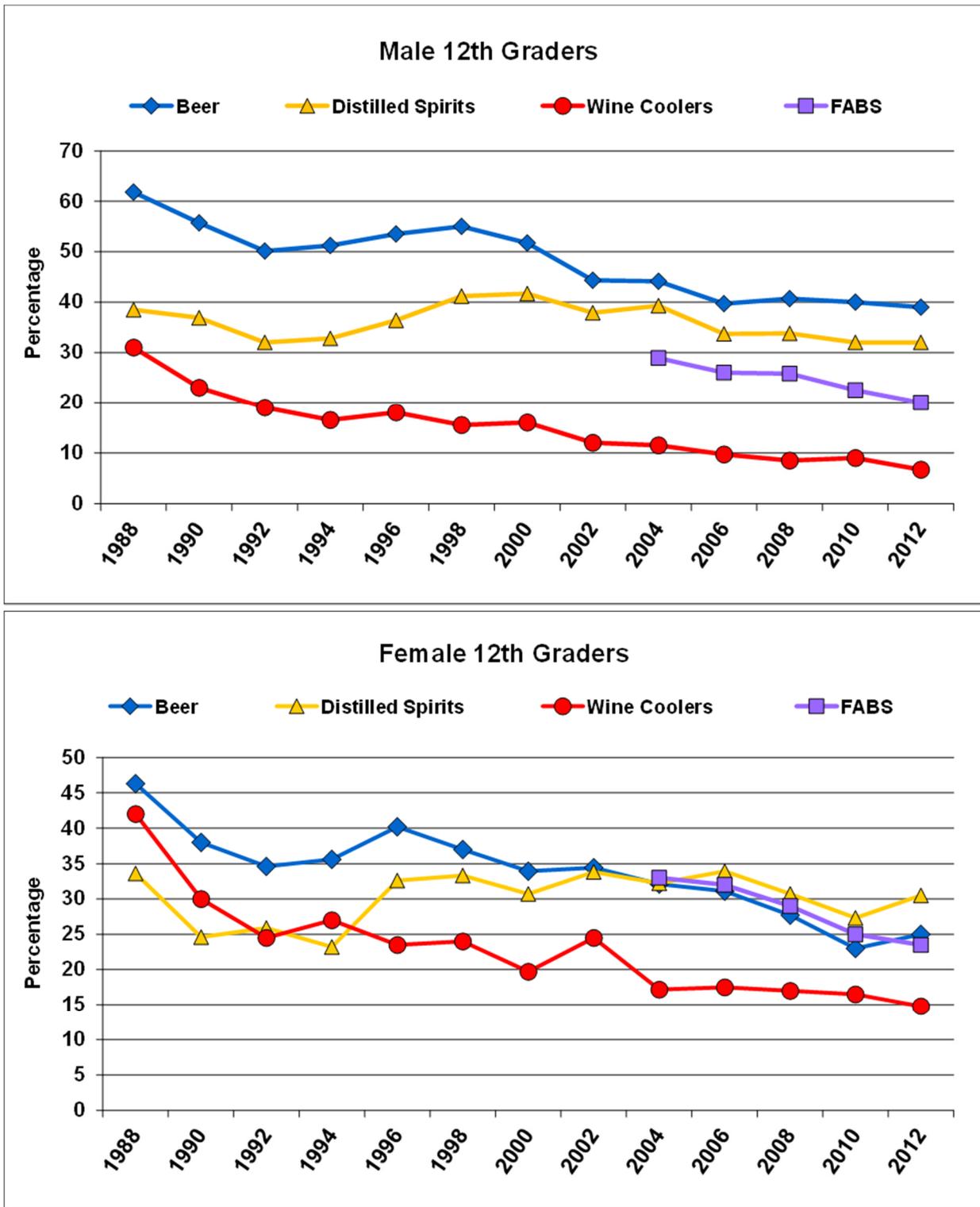
In 1988, beer was the preferred beverage for both sexes by a large margin. However, preference for beer has declined and preference for distilled spirits has increased. Preference for spirits is now equal to preference for beer among males; females now prefer spirits to beer by a slight margin. About as many males used flavored alcoholic beverages and wine coolers as used beer and spirits in 2004, but females preferred these beverages over either beer or spirits.

By 2012, males preferred beer and spirits equally, while females still preferred flavored alcoholic beverages and wine coolers. Data from eight states indicate that, among students in 9th through 12th grades who reported binge drinking, liquor is the most prevalent beverage type (Siegel, Naimi, Cremeens, & Nelson, 2011).

Drinking Continues To Be Prevalent in Campus Culture at Many Universities

A total of 81.0 percent of college students drink; 37.4 percent report drinking five or more drinks on an occasion in the past 2 weeks (Johnston et al., 2013c). Some college students' drinking far exceeds the minimum binge criterion of five drinks per occasion (Wechsler, Molnar, Davenport, & Baer, 1999). Although colleges and universities vary widely in their student binge-drinking rates, overall rates of college student drinking and binge drinking exceed those of age peers who do not attend college (Johnston et al., 2013c). Of college students, 81.0 percent drink and 37.4 percent report drinking five or more drinks on an occasion in the past 2 weeks. These differences are not easily attributable to differences between college attendees and nonattendees.

Exhibit E.6: Trends in the Percentage of Male and Female 12th Graders Using Alcoholic Beverages by Beverage Type, 1988–2012 (Johnston et al., 2013b)



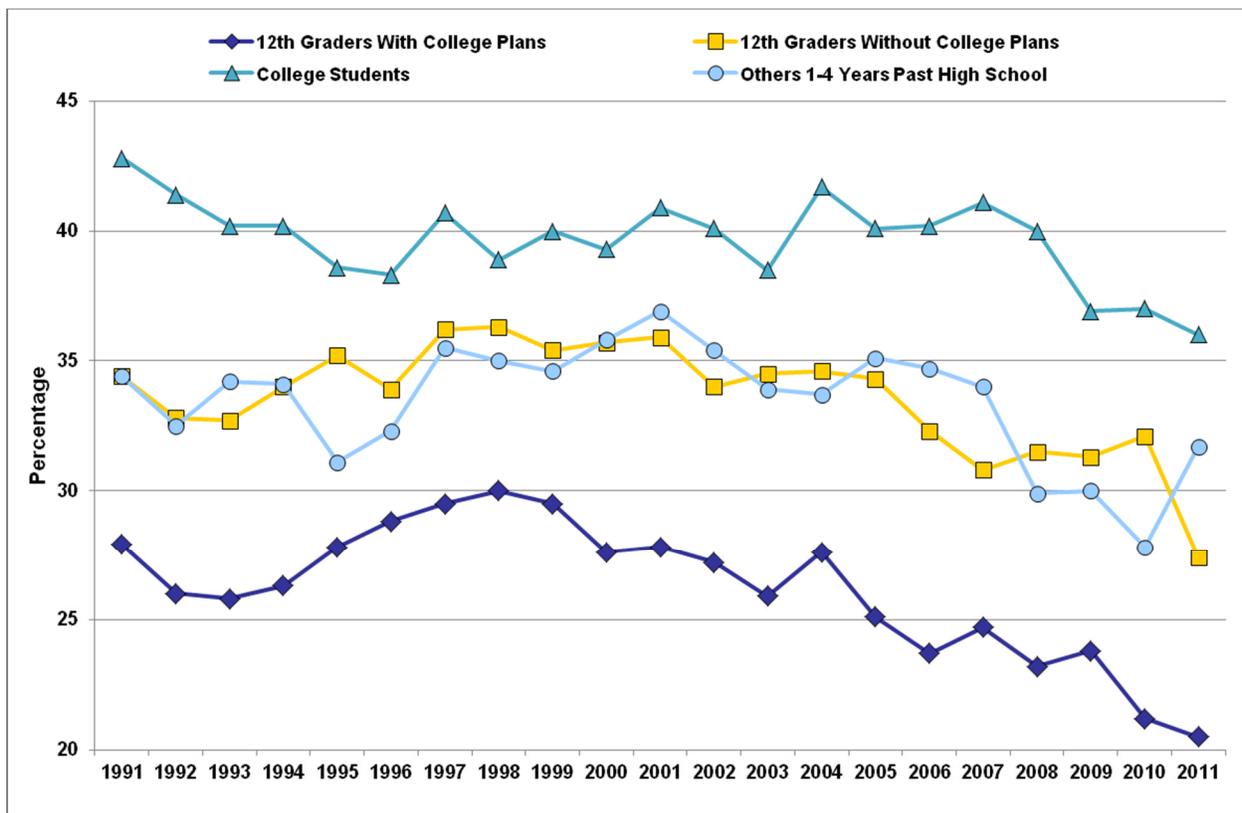
Note: Although there is no longer a meaningful difference between wine cooler and flavored alcoholic beverages in either their manufacturing process or their taste profile, since the MTF survey asks respondents about the two categories separately, they are presented that way.

Although college-bound 12th graders are consistently less likely than non-college-bound counterparts to report heavy drinking, college students report higher rates of binge drinking than college-age youth who are not attending college (Exhibit E.7) (Johnston et al., 2013c). This finding suggests that college environments influence drinking practices (Hingson, Heeren, Levenson, Jamanka, & Voas, 2002; Kuo, Wechsler, Greenberg, & Lee, 2003). Considering binge drinking trends for only “12th Graders with College Plans” and “College Students,” the slopes of the two trend lines (dotted lines) are diverging noticeably. In other words, college students drink more relative to 12th graders with college plans now than they did in past years. This finding suggests that the impact of the college transition may be increasing over time.

Young People Perceive Alcohol To Be Readily Available

Since 1993, youth have reported declines in alcohol availability. However, the number of young people who report that alcohol is fairly easy or very easy to obtain remains high. For example, in 2012, 90.6 percent of 12th graders reported that it was easy or very easy to obtain (Johnston et al., 2013a). Very young drinkers are most likely to obtain alcohol at home from parents or siblings, or drink alcoholic beverages stored in the home. In addition, new data suggest that retailer interstate shipping of alcohol has opened up a potentially important avenue of alcohol access for underage persons (see below). Please note that some of the methods young people use to obtain alcohol do not violate underage drinking laws in some states (see Chapter 4).

Exhibit E.7: Prevalence of Binge Drinking in the Past 2 Weeks by 12th Graders with and without College Plans, College Students, and Others 1 to 4 Years Past High School
Past High School: 1991–2012 (Johnston et al., 2013a,c)



Youth Drinking Is Correlated with Adult Drinking Practices

Generational transmission has been widely hypothesized as one factor shaping the alcohol consumption patterns of young people. For example, children of parents who binge are twice as likely to binge themselves and to meet alcohol-dependence criteria. Whether through genetics, social learning, or cultural values and community norms, researchers have repeatedly found a correlation between youth drinking and the drinking practices of parents (Pemberton, Colliver, Robbins, & Gfroerer, 2008). Nelson, Naimi, Brewer, and Nelson (2009) demonstrated this relationship at the population (state) level. State estimates of youth and adult current and binge drinking from 1993 through 2005 were significantly correlated when pooled across years. The results suggest that some policies primarily affecting adult drinkers (e.g., pricing and taxation, hours of sale, on-premises drink promotions) may also affect underage drinking.

Consequences and Risks of Underage Drinking

Driving After Drinking

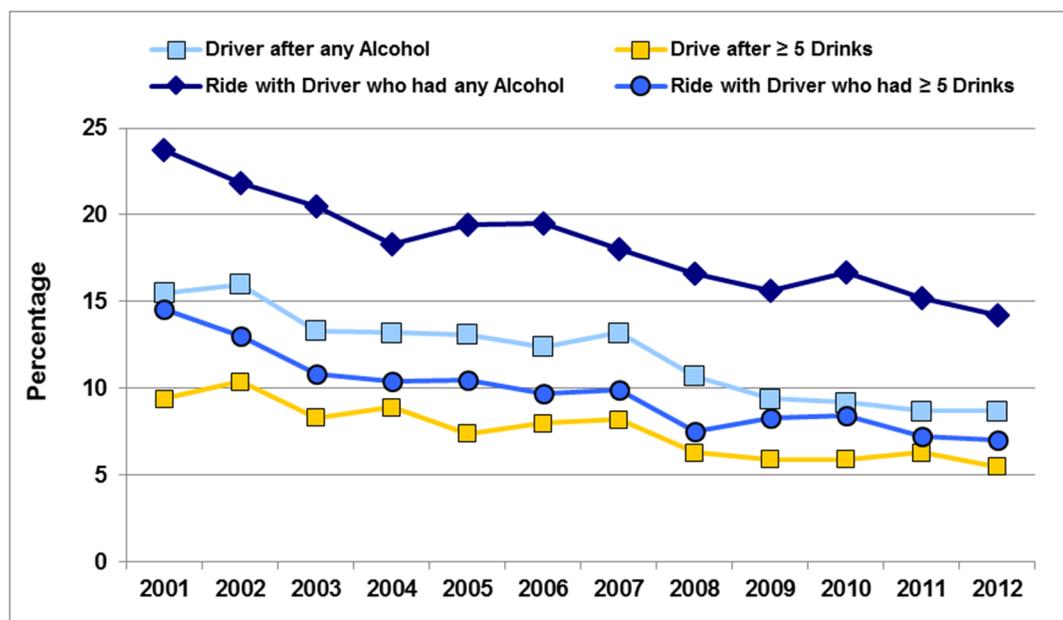
The greatest mortality risk for underage drinkers is motor vehicle crashes. In 2012, of the 1,875 drivers ages 15 to 20 who were killed in motor vehicle traffic crashes, 534 (28 percent) had a BAC of 0.01 or higher.

Relative to adults, young people who drive after drinking have an increased risk of alcohol-related crashes because of their increased impairment from a given amount of alcohol and perhaps because of their relative inexperience behind the wheel. In a classic paper, Zador (1991) reported that among 16- to 20-year-olds, a BAC of 0.08 g/dL rendered male drivers 52 times more likely and female drivers 94 times more likely than sober gender-matched drivers the same age to die in a single-vehicle fatal crash. However, the risk of a fatal crash increases as alcohol intake increases, starting at 0.01 g/dL.

O'Malley and Johnston (2013) report longitudinal data for high school seniors (previous 2 weeks) on driving after drinking any alcohol and after five or more drinks, and being a passenger when the driver has had any alcohol and has had five or more drinks (Exhibit E.8). As can be seen in the exhibit, all four of these behaviors have declined in the last decade, but remain unacceptably high, especially given the risks associated with driving after even small amounts of alcohol (see above). Males were about twice as likely to report driving after drinking than were females, a finding replicated in other recent studies (CDC, 2012; Quinn & Fromme, 2012). Very high percentages of high school seniors who drove after drinking five or more drinks experienced consequences. O'Malley and Johnston (2013) report that 43.2 percent received a ticket or warning and 30.2 percent were involved in a crash.

Not surprisingly, drinking practices are strongly correlated with driving after drinking. Based on YRBS data, CDC (2012) reports that 84.6 percent of students who reported drinking and driving also reported binge drinking, compared with 26.4 percent of all students. Two studies (LaBrie, Kenney, Mirza, & Lac, 2011; LaBrie, Napper, & Ghaidarov, 2012) found that normative beliefs affect driving after drinking, with higher rates of driving after drinking reported by students who perceived more favorable norms concerning driving after drinking for close friends and typical students.

Exhibit E.8: Trends in Percentage of 12th Graders Reporting Driving after Alcohol Use or Riding after Alcohol Use by the Driver (Johnston et al., 2013a)



It is an obvious but underappreciated fact that access to cars is a prerequisite for this behavior (see, e.g., Klitzner et al., 1988). O'Malley and Johnston's data address this effect directly: high school seniors who drove more frequently were more likely to engage in driving after drinking. Graduated driver's license policies (see Chapter 4) serve to limit the extent to which young people drive and the conditions under which they drive. Use/lose policies revoke driving privileges among young people who are convicted of an alcohol offense. Cavazos-Regh and colleagues (2012) found that students in states with strong GDL laws and the most restrictive use/lose laws were significantly less likely to report driving after drinking.

Other Unintentional Injuries such as Burns, Falls, and Drowning

In addition to motor vehicle crashes, underage drinking contributes to all major causes of fatal and nonfatal trauma experienced by young people. In 2010, 2,590 youths ages 12 to 20 died from unintentional injuries other than motor vehicle crashes, such as poisoning, drowning, falls, and burns (CDC, 2013b). Research suggests that about 40 percent of these deaths were attributable to alcohol (Smith, Branas, & Miller, 1999).

Suicide, Homicide, and Violence

Data from 17 states show that among suicide decedents tested who were ages 10 to 19 (all of whom were under the legal drinking age in the United States), 12 percent had BACs >0.08 g/dL (Crosby, Espitia-Hardman, Hill, & Ortega, 2009). One study (Smith, Branas, & Miller, 1999) estimated that, for the population as a whole, nearly a third (31.5 percent) of homicides and almost a quarter (22.7 percent) of suicides were attributable to alcohol (i.e., involved a decedent with a BAC of 0.10 g/dL or greater). Another study focused on youth suicide estimated that 9.1 percent of hospital-admitted suicide acts by those under 21 years old involved alcohol and that 72 percent of these cases were attributable to alcohol (Miller, Levy, Spicer, & Taylor, 2006).

Years of Potential Life Lost Due to Alcohol

Persons under age 21 who die as a result of alcohol use lose an average of 60 years of potential life (CDC, 2013b). By comparison, each person who dies from cancer loses an average of 15 years of life, and each person who dies from heart disease loses an average of 11 years of life (Ries et al., 2003) because these are primarily diseases of older adults.

Risky Sexual Activity

According to the Surgeon General's *Call to Action*, underage drinking plays a significant role in risky sexual behavior, including unwanted, unintended, and unprotected sexual activity, as well as sex with multiple partners. Such behavior increases the risk for unplanned pregnancy and for contracting sexually transmitted diseases (STDs), including infection with HIV, the virus that causes AIDS (Cooper & Orcutt, 1997). When pregnancies occur, underage drinking may result in fetal alcohol spectrum disorders (FASDs), including fetal alcohol syndrome, which remains a leading cause of intellectual disabilities (Warren & Bast, 1988; Stratton, Howe, & Battaglia, 1996; Jones, Smith, Ulleland, & Streissguth, 1973). A review article by Nolen-Hoeksema cites a number of studies suggesting that underage drinking by both victim and assailant increases the risk of physical and sexual assault (Nolen-Hoeksema, 2004; Abbey, 2011).

Early Initiation of Alcohol Use Increases the Risk of Alcohol Dependence and Other Negative Consequences Later in Life

Early initiation of alcohol use is increasingly associated with a variety of developmental problems in later life. Grant and Dawson (1997) found that more than 40 percent of people who initiated drinking before age 13 were classified with alcohol dependence at some time in their lives. By contrast, rates of alcohol dependence among those who started drinking at age 17 or 18 were 24.5 percent and 16.6 percent, respectively (Exhibit E.9). Only 10 to 11 percent who started at age 21 or older met the criteria. Early initiation is also associated with intentional and unintentional injury to self and others after drinking (Hingson & Zha, 2009; Hingson, Heeren, Jamanka, & Howland, 2000); violent behavior, including predatory violence and dating violence (Blitstein, Murray, Lytle, Birnbaum, & Perry, 2005; Ellickson, Tucker, & Klein, 2003; Swahn, Bossarte & Sullivent, 2008); criminal behavior (Eaton, Davis, Barrios, Brener, & Noonan, 2007); prescription drug misuse (Hermos et al., 2008); unplanned and unprotected sex (Hingson, Heeren, Winter, & Wechsler, 2003); motor vehicle crashes (Hingson, Heeren, Levenson, Jamanka, & Voas, 2002); and physical fights (Hingson, Heeren, & Zakocs, 2001).

Underage Drinking Is Associated with Reduced Academic Performance

Underage drinking, including binge drinking, is associated with reduced academic performance. Students who reported binge drinking were three times more likely than non-binge drinkers to report earning mostly Ds and Fs on their report cards (Miller, Naimi, Brewer, & Jones, 2007).

Adverse Consequences of College Drinking

Approximately 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. Exhibit E.10 presents the prevalence of other social consequences associated with college alcohol consumption.

Exhibit E.9: Ages of Initiation and Levels of DSM Diagnoses for Abuse and Dependence (Grant & Dawson, 1997)

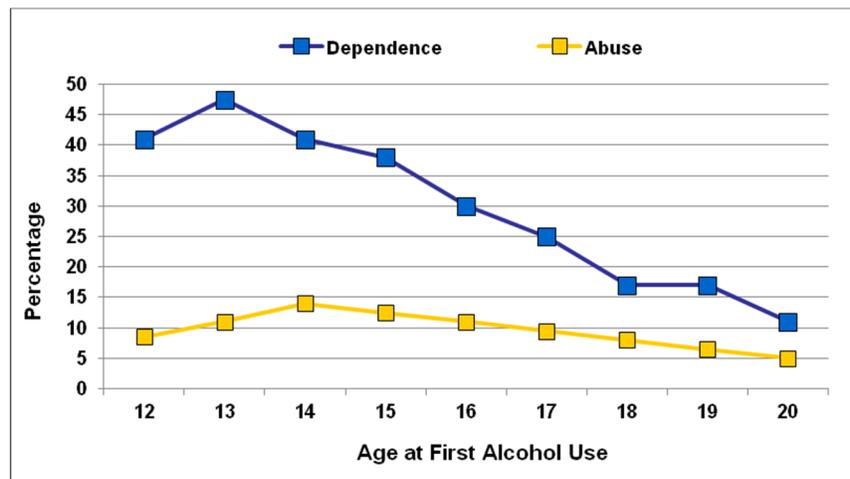
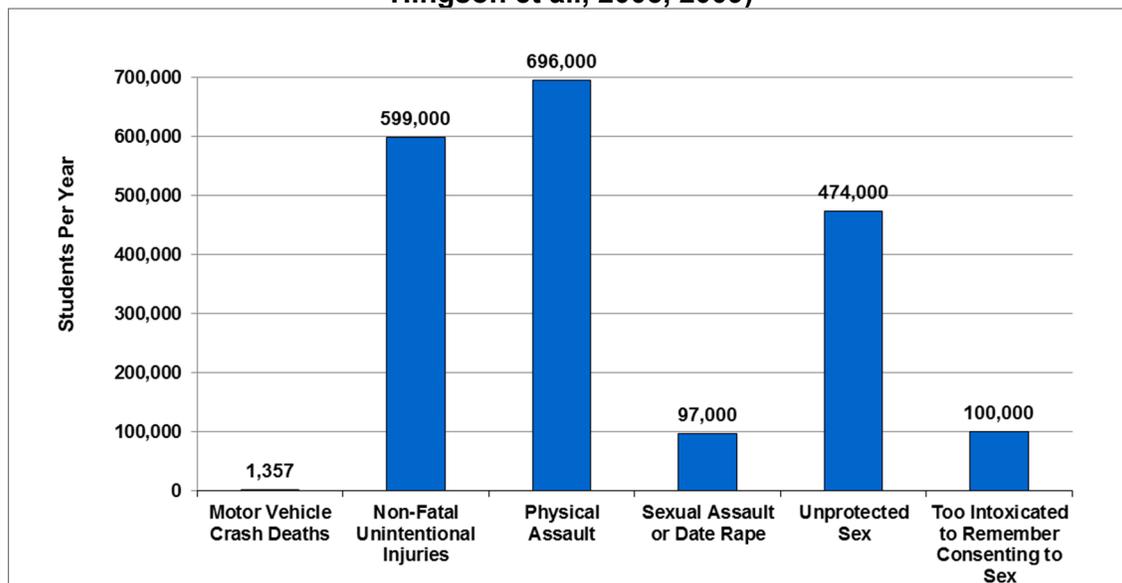


Exhibit E.10: Prevalence of Alcohol-Related Morbidity and Mortality among College Students Ages 18–24 (calculated using methods presented in Hingson et al., 2005, 2009)



One NIAAA-funded study (Abbey, Ross, McDuffie, & McAuslan, 1996) reported that over half of college women respondents had experienced some form of sexual assault. Slightly fewer than one third of these assaults were characterized by respondents as attempted or completed rapes. However, the incidence of college sexual assaults is difficult to measure, and different studies report different rates. A review by Abbey (2011) of three relevant studies (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2004; Seto & Barbaree, 1995; Testa, 2002) concludes that approximately half of all reported and unreported sexual assaults involve alcohol consumption by the perpetrator, victim, or both. Abbey further reports that, typically, if the victim consumes

alcohol, the perpetrator does as well. Estimates of perpetrators' intoxication during the incident ranged from 30 percent to 75 percent.

Potential Brain Impairment

Adverse effects on normal brain development are a potential long-term risk of underage alcohol consumption. Neurobiological research suggests that adolescence may be a period of unique vulnerability to the effects of alcohol. For example, early heavy alcohol use may have negative effects on the actual physical development of the brain structure of adolescents (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 (Giancola & Mezzich, 2000; Brown, Tapert, Granholm, & Dellis, 2000; Tapert & Brown, 1999; Tapert et al., 2001). As Brown and colleagues (2000) note, these deficits may put alcohol-dependent adolescents at risk for falling farther 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).

The National Effort To Reduce Underage Drinking

Underage drinking has been recognized as a public health problem for many years. Recently, however, the national effort to prevent alcohol use by America's young people has intensified as the multifaceted consequences associated with underage drinking have become more apparent. A brief summary of key federal milestones over the last two decades follows:

1. 1992—Congress created SAMHSA to “focus attention, programs, and funding on improving the lives of people with or at risk for mental and substance abuse disorders.”
2. 1998—Congress mandated that the Department of Justice, through the Office of Justice Programs' Office of Juvenile Justice and Delinquency Prevention (OJJDP), establish and implement the Enforcing the Underage Drinking Laws (EUDL) program, a state- and community-based initiative.
3. 2004—Congress directed the Secretary of the HHS to establish the Interagency Coordinating Committee on the Prevention of Underage Drinking (ICCPUD) and to issue an annual report summarizing all federal agency activities related to the problem.
4. 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, “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 also calls for two annual reports: (1) a Report to Congress from the HHS Secretary (the “Annual Report to Congress”) and (2) a report on state underage drinking prevention and enforcement activities (the “State Report”). Chapters 1 through 3 of this document constitute the Annual Report to Congress; Chapter 4 constitutes the State Report. Together, they fulfill the STOP Act mandate and are designed to build on the efforts that precede it.

5. 2007—The Surgeon General’s *Call to Action To Prevent and Reduce Underage Drinking* (U.S. Department of Health and Human Services, 2007) (henceforth termed *SG’s Call to Action*), the first on that subject, was issued. Based on the latest and most authoritative research, particularly on underage drinking as a developmental issue, the *SG’s Call to Action* outlines a comprehensive national effort to prevent and reduce underage alcohol consumption. The strategies for implementing the goals of the *Call to Action* are presented in the full *Call to Action*, available at <http://www.ncbi.nlm.nih.gov/books/NBK44360>.

The STOP Act requires the HHS Secretary to report to Congress on “the extent of progress in preventing and reducing underage drinking nationally.” Data presented in Chapter 1 of this report demonstrate that meaningful progress has been made in reducing underage drinking prevalence. The factors that have contributed to this progress are varied and complex. However, one clear factor has been the increased attention to this issue at all levels of society. Federal initiatives have raised underage drinking to a prominent place on the national public health agenda, created a policy climate in which significant legislation has been passed by states and localities, raised awareness of the importance of aggressive enforcement, and stimulated coordinated citizen action. These changes are mutually reinforcing and have provided a framework for a sustained national commitment to reducing underage drinking.

Nevertheless, the rates of underage drinking are still unacceptably high, resulting in preventable and tragic health and safety consequences for the nation’s youth, families, communities, and society as a whole. Therefore, ICCPUD remains committed to an ongoing, comprehensive approach to preventing and reducing underage drinking. This document, with its yearly updates to the State Report and survey responses, is part of that sustained effort to reduce underage drinking in America.

Below we highlight national efforts to address underage college drinking (further described in Chapter 1). The rates of alcohol consumption on college campuses constitute a significant public health problem.

Best Practices for Prevention of Underage College Drinking

To change the college drinking culture, the NIAAA-supported Task Force on College Drinking, composed of researchers, administrators, and students (NIAAA, 2002a), recommended that schools intervene with best practices at three levels: the individual student, including at-risk or alcohol-dependent drinkers; the entire student body; and the college and surrounding community. The Task Force also developed a “3-in-1” framework of college drinking prevention best practices. This framework is described in Chapter 1. In 2007, after an updated review of the college intervention literature, NIAAA issued “What Colleges Need to Know Now: An Update on College Drinking Research.”

In 2011, the National College Health Improvement Project (NCHIP) launched the Learning Collaborative on High-Risk Drinking, to develop strategies for reducing alcohol problems on college campuses. For a description of the Learning Collaborative, see Chapter 1.

Research on college drinking prevention is ongoing, as is innovation on campuses across the country. Evidence for college-specific best practices is growing, and practices known to be effective with the general youth population are being tested in college settings. The Learning

Collaborative on High-Risk Drinking may represent an important step forward in the commitment of colleges and universities to address underage drinking on campus. It also suggests a new effort to develop effective collaborations among college campuses, federal agencies, and researchers.

Report on State Programs and Policies Addressing Underage Drinking

Recognizing the importance of state programs and policies in preventing underage drinking, the STOP Act directs HHS and ICCPUD to provide an annual report on state underage drinking prevention activities. It defines specific categories of prevention programs, policies, enforcement activities related to those policies, and state expenditures to guide the report's development.

The annual State Report (Chapter 4) provides the following information for the 50 states and the District of Columbia (henceforth referred to as "states"):

1. Information on 25 underage drinking prevention policies focused on reducing youth access to alcohol and youth involvement in drinking and driving
2. Data from a survey addressing underage drinking enforcement programs; programs targeted to youth, parents, and caregivers; collaborations, planning, and reports; and state expenditures on the prevention of underage drinking

The 25 policies included in Chapter 4 can be grouped under four general headings:

- Laws Addressing Minors in Possession of Alcohol
- Laws Targeting Underage Drinking and Driving
- Laws Targeting Alcohol Suppliers
- Alcohol Pricing Policies

Laws Addressing Minors in Possession of Alcohol

1. Underage possession
2. Underage consumption
3. Internal possession by minors
4. Underage purchase and attempted purchase
5. False identification

Laws and the penalties associated with them are designed to raise the costs to underage people of obtaining and/or consuming alcohol. Such laws provide a primary deterrent (preventing underage drinking among nondrinkers) and a secondary deterrent (reducing the probability that adjudicated youth will drink again before reaching age 21). In addition, laws addressing internal possession facilitate enforcement and laws regarding false identification for obtaining alcohol make obtaining alcohol more difficult.

Laws Targeting Underage Drinking and Driving

6. Youth blood alcohol concentration limits (underage operators of noncommercial motor vehicles)
7. Loss of driving privileges for alcohol violations by minors (“use/lose” laws)
8. Graduated driver’s licenses

Like laws addressing minors in possession of alcohol, these laws seek to deter underage driving after drinking by raising the cost of this behavior. In addition, graduated driver’s licenses restrict driving privileges to reduce the incidence of a variety of risky driving behaviors, including driving while intoxicated.

Laws Targeting Alcohol Suppliers

9. Furnishing alcohol to minors
10. Compliance check protocols
11. Penalty guidelines for sales to minors
12. Responsible beverage service
13. Minimum ages for off-premises sellers
14. Minimum ages for on-premises servers and bartenders
15. Outlet siting near schools
16. Dram shop liability
17. Social host liability
18. Hosting underage drinking parties
19. Retailer interstate shipments of alcohol
20. Direct sales/shipments
21. Keg registration
22. Home delivery

These laws serve to reduce alcohol availability to minors, and hence reduce underage drinking. Some of the laws increase the costs to adults and thus deter furnishing alcohol to minors (e.g., compliance checks and social host and dram shop liability). Other laws directly impede furnishing (e.g., responsible beverage service, minimum age for servers and sellers, direct shipment, and home delivery).

Alcohol Pricing Policies

23. Alcohol taxes
24. Drink specials
25. Wholesaler pricing

These policies serve to decrease the “economic availability” of alcoholic beverages through increases in retail price and thus decrease underage drinking and a wide variety of related consequences. The effects of these policies may be direct (e.g., increased taxes, minimum wholesale prices, banning reduced-price drink specials) or indirect (e.g., limiting serving size).

Chapter 4 includes a description of each policy’s key components, the status of the policy across states, and trends over time. Summaries are followed by a state-by-state analysis of each policy. For more information on these state policies, see the individual state reports and policy summaries in Chapter 4.

State Survey

This section of Chapter 4 provides both the complete responses of the states to the 2013 State Survey (state summaries), and the Cross-State Report. This is the third wave of data collection for the State Survey (which was initiated in 2011). Comparisons for selected enforcement activities are presented among data collected between 2011 and 2013.

The survey content was derived directly from the STOP Act, covering topics and using terminology from the act. The survey questions were structured to allow states maximum flexibility in deciding which initiatives to describe and how to describe them. Open-ended questions were used whenever possible to allow states to “speak with their own voices.” As noted earlier, the survey addressed four main areas:

1. Enforcement programs to promote compliance with underage drinking laws and regulations
2. Programs targeted to youth, parents, and caregivers to deter underage drinking
3. State interagency collaboration to implement prevention programs, state best-practice standards, and collaborations with tribal governments
4. The amount that each state invests on the prevention of underage drinking

The Cross-State Report presents data about variables amenable to quantitative analysis. Overall, the 2013 data reveal a wide range of activity in the areas studied, although these vary in scope and intensity from state to state. A key conclusion to be drawn from the STOP Act State Survey is that the states have demonstrated a commitment to the reduction of underage drinking and its consequences. This commitment is evident in the fact that all states and the District of Columbia completed the 90-question survey, reported numerous program activities, and in many cases provided substantial detail about those activities. Some of the variability found in the data may be due as much to data unavailability as to whether the activities were actually conducted. For example, only a limited number of states collect data on local enforcement efforts. Given that much of the enforcement of laws pertaining to furnishing minors and minors in possession occurs at the local level, it is likely that the enforcement statistics reported here actually underestimate the total amount of underage drinking enforcement occurring in the states. Regular and complete collection of both state and local data is critical to building an accurate picture of the national effort to prevent underage drinking.

In the 3 years in which the STOP Act State Survey has been implemented, the states have varied greatly in their completion of datasets for all years. Fewer than half of the states provided information in all 3 years for six of the enforcement data categories selected for comparison. Fifty-three percent of the states that reported data for all 3 years, reported a larger number of

MIP arrests in 2013 compared with 2011, and 59 percent of the states reporting an increased number of compliance checks between 2011 and 2013. In all penalty categories (except license revocations), more states reported reduced use of these penalties between 2011 and 2013 than reported increased use. Caution must be exercised in interpreting the 2011–2013 changes: (1) a 3-year time span is insufficient to describe any kind of trend, and (2) data collection varies from year to year among the states, so it is not possible to compare all states between these 3 years.

Conclusion

Data in this report demonstrate that meaningful progress has been made in reducing underage drinking prevalence. The factors contributing to this progress are varied and complex. One clear factor has been increased attention to this issue at all levels of society. Federal initiatives, together with efforts by the national media, state and local governments, and interested private organizations, have raised underage drinking to a prominent place on the national public health agenda, created a policy climate in which significant legislation has been passed by states and localities, raised awareness of the importance of aggressive enforcement, and stimulated coordinated citizen action. These changes are mutually reinforcing and have provided a framework for a sustained national commitment to reducing underage drinking.

Nevertheless, the rates of underage drinking are still unacceptably high, resulting in preventable and tragic health and safety consequences for the nation's youth, families, communities, and society as a whole. Therefore, ICCPUD remains committed to an ongoing, comprehensive approach to preventing and reducing underage drinking.