10

Youth-Oriented Interventions

I n 1994 the Institute of Medicine proposed a framework for prevention of mental health illnesses that included three broad classes of prevention strategies—universal measures, selective measures, and indicated preventive measures: that framework is instructive in considering the approaches outlined in this chapter. Although developed in the context of mental health, the framework is applicable to most public health problems not caused primarily by biological agents.

Consistent with the population health orientation of the overall strategy, the approaches discussed in this chapter are predominately universal measures—those that are appropriate and cost-effective for a broad population (e.g., all adolescents who might use alcohol). Media messages that encourage young people to avoid alcohol use is an example of a universal measure: if the media message had been demonstrated to have the desired effect of dissuading young people from using alcohol, it would be cost-effective and appropriate to deliver to all adolescents in the U.S. population.

Selective preventive measures are desirable for the population subgroup whose risk of developing a certain health problem is greater than that for the general population. In the context of alcohol problems, a selective preventive measure would target a population known to be at greater risk for experiencing alcohol-related problems. An example would be a subset of college students who are white, male, fraternity members under the age of 24 who have a tendency to socialize, characteristics that research has shown to be associated with heavy drinking. The third intervention ap-

proach, indicated preventive measures, applies to "individuals who are found to manifest a risk factor, condition, or abnormality that identifies them, individually, as being at high-risk for the future development of a disease" (Institute of Medicine, 1994b:21). For example, a young person who during an interview with a physician (or through some other screening method) indicates having used alcohol at a very young age (e.g., at 11 or 12) may not yet have a problem with alcohol (i.e., is not yet in need of treatment) but because of the risks associated with early onset of use would be a candidate for an intervention that deters further alcohol use. Thus, selective measures focus on a subgroup of the population that has an increased risk of mental health problems and indicated measures focus on individuals who clearly demonstrate a specific risk factor.

The approaches outlined in this chapter, consistent with the committee's overall task of developing a strategy to reduce underage drinking across a wide range of youth populations, are by and large universal measures. We discuss the possible value of a youth-oriented media campaign aimed at changing youth drinking behaviors; school-based approaches; approaches at residential colleges and universities; and potential opportunities in other settings, including health care and faith-based institutions, the workplace, and the military. We do not discuss the literature regarding family-based interventions, although we recognize the importance of family involvement in the interventions mentioned above and in responses developed by communities to address community-specific problems.

We also do not discuss other selective and targeted interventions with specific subsets of youth who may be at increased risk of developing alcohol problems, with two exceptions: interventions on residential campuses and treatment for adolescents. The underage drinking problem on residential campuses has been well documented and a cause of public concern for years. Given the unique concentration of underage youth and the major problems of underage drinking, residential campuses are a necessary target for intervention. Our discussion of treatment recognizes that some youths have developed or will develop alcohol abuse and dependence problems. While we believe the emphasis should be on prevention, some attention must be paid to those youths.

A YOUTH-FOCUSED MEDIA CAMPAIGN

A key element of the committee's charge was to assess the potential effectiveness of a youth-focused media campaign built on the models of the youth components of the anti-drug campaign of the Office of National Drug Control Policy or of the American Legacy Foundation's Truth ™ Campaign. For that reason, we consider in some detail what such a youth-

focused campaign would involve and the available evidence about the potential effectiveness of such a campaign.

Supporting Evidence

We begin with evidence favoring such a campaign. There is good evidence that youth who disapprove of heavy alcohol use and who see great harm in alcohol use are less likely to drink. For example, among twelfth-grade students in the Monitoring the Future (MTF) Survey in 1998, about half said that there is "great risk" of physical or other harms in having five or more drinks once or twice each weekend. Of those who said there was great risk, about 16 percent said they had had five or more drinks at least once in the previous 2 weeks. Of those who said there was only a moderate, slight, or no risk, 48 percent said they had had five or more drinks in this time frame. This finding leads to the hypothesis that a campaign to convince more youth that there is great risk in heavy drinking would result in a reduction in the amount of heavy drinking. This argument is less relevant regarding any use of alcohol: few youth of any age believe that "any use" of alcohol carries great risk (12 percent of eighth and tenth graders and 8 percent of twelve graders). Thus, on its face, it would seem quite difficult to convince most youth that such drinking carries great risk.

Support for a youth-focused approach also comes from the latest results from the MTF Survey in 2002, which shows a decline in drinking between 2000 and 2002 for eighth and tenth graders (see Chapter 2). For example, for tenth graders, heavy drinking in the past 30 days declined from 24 percent to 18 percent. Until the past 2 years there had been stability in both any drinking and heavy drinking at all age levels. The recent decline raises the possibility that youth are reconsidering drinking behavior and might be open to further persuasion. This hypothesis might be supported by the idea that it is easier to ride with the current (reinforcing a trend already under way) than to row against it (trying to suppress an emerging or established behavioral trend).

A third support for directly addressing youth and persuading them not to drink comes from the positive evidence from antismoking efforts by individual states and by the American Legacy Foundation. There has been a substantial decline in the prevalence of youth smoking, with 30-day prevalence among twelve graders declining from a high of 37 percent in 1997 to the 2002 level of 27 percent. There is credible although not definitive evidence that the mass media campaigns have been a substantial force in this decline (Siegel and Biener, 2000; Sly et al., 2001; Siegel, 2002). If it worked for tobacco, why wouldn't it work for alcohol? (We return to this issue below.)

Contrary Evidence

Although there is a substantial logic favoring a youth campaign approach, there are also some contrary arguments. First, the hypothesis that increasing the proportion of youths who perceive great risk in heavy drinking will reduce heavy drinking among youths by an equivalent amount may be unfounded. The hypothesis rests on the assumption that the oft-demonstrated relationship between risk perception for heavy drinking and actual heavy drinking is a causal one. However, since most of the available data are cross-sectional, one cannot be confident of that causal relationship. Not being a drinker and not perceiving increased risk are correlates, but neither may "cause" the other; to some extent, at least, they are both manifestations of an underlying set of causal influences that tend to produce both decisions about drinking and positive or negative attitudes toward alcohol use. Thus, to the extent that a youth-focused campaign would aim mainly to increase perception of drinking-related risks, it might not rest on a strong foundation.

A second, and related, concern is that the recent survey data may not be as persuasive as they seem in supporting a risk-oriented campaign. Although the recent decline in drinking is worth attention, the decline may be merely an anomaly (see Chapter 5). And even if the decline is real, it may not reflect the influence of changes in perceived harmfulness. Indeed, the data about harmfulness of heavy drinking do not show a consistent parallel improvement (Johnston et al., 2003). Thus, any decline in behavior may reflect the influence of changes in the environment around drinking, rather than a change in underlying beliefs about drinking.

Strikingly, the long-term stability in heavy drinking rates contrasts with the sharp reduction in one form of harm associated with such behavior—fatal alcohol-related crashes among teenage drivers. The Centers for Disease Control and Prevention (CDC) reports that such crashes have declined by nearly 60 percent for 16- to 17- year-olds and 55 percent for 18- to 20-year-olds between 1982 and 2001. However, the decline ended in 1997. Since that time the levels are stable or perhaps rising slightly (Elder and Shults, 2002). These data suggest that preventing alcohol-related harms may have more potential to be effective than those aiming to discourage drinking (or even heavy drinking) per se. This finding parallels the evidence for adult drinking and adult drinking and driving.

The lack of any longer-term downward trend in drinking or heavy drinking, despite the presence of a wide variety of public efforts to address these issues, is then one concern about initiating a major campaign against youth alcohol use, though not by itself sufficient to reject such an effort. If there have been negative alcohol messages directed towards youth, they likely pale before the pro-alcohol onslaught that surrounds youth (see Chap-

ter 7). Perhaps the lack of a longer-term downward trend reflects the competition between positive and negative alcohol messages, which has turned into a standoff. Perhaps a focused and substantially larger effort would better counterbalance the positive alcohol-related messages.

A third concern about launching a youth-directed campaign arises from the few specific efforts that have been evaluated. There is some evidence for effects of designated driver campaigns directed to youth (DeJong and Hingson, 1998). However, there are very few studies of youth-focused media campaigns that deal with alcohol consumption as the main outcome variable for evaluating results, particularly for youths not yet in college. The evaluation of the Australian National Alcohol Campaign measured consumption before and after its focused launch and booster campaigns; it did not find consistent evidence of reduced consumption (Ball et al., 2002). The teen-focused part of the Winners Campaign had a quite weak evaluation component (with only 100 respondents per city); it, too, did not detect behavioral effects (Wallack, 1979; Wallack and Barrows, 1983). Some successful programs, like Project Northland (Perry et al., 2002) and the Midwestern Prevention Project (Pentz et al., 1989) made use of community media as part of a multifaceted campaign, but one cannot separate the effects of media from other components of the strategy. There are two additional field trials now approaching completion, each of which has incorporated a discrete mass media component, but those results have not yet been published (Robert Hornik; personal communications with Michael Slater and Brian Flynn, 2003). As of this writing, the committee does not have evidence of success in reducing youth alcohol use from any evaluated campaign (excluding limited evidence on specific college campuses). There is no alcohol-focused program that can be used as a prototype for a youth-focused national mass media campaign effort.

Comparisons with the Anti-Tobacco and Anti-Drug Campaigns

Our fourth concern relates to whether the apparently successful anti-tobacco effort can be used as a prototype. In contrast to that success, there are, thus far, problematic results from the National Youth Anti-drug Media Campaign. Since 1999, the White House Office of National Drug Control Policy (ONDCP) has sponsored this campaign to reduce youths' use of illegal drugs, particularly marijuana. The program has spent close to $1 billion on mass media advertising and other outreach programs, both to youth and their parents. Results through mid-2002 do not show positive effects on youth. Indeed, some evidence suggests that the campaign might be having an unfavorable effect, with the youth most exposed to the campaign messages more likely than others to form attitudes and intentions favoring marijuana use (Hornik et al., 2002). This effect is sometimes called

a boomerang effect. At the end of 2002, the message focus of the anti-drug campaign was redefined with additional attention to the negative consequences of marijuana use. The effectiveness of that new campaign focus is not yet known. There are published results, based on a much earlier period of the anti-drug campaign sponsored by the Partnership for a Drug-Free America, which show positive effects (Block et al., 2002), and there is also evidence of success for a field experimental anti-drug campaign in Kentucky (Palmgreen et al., 2001). Thus, the appropriate conclusion is that the national ONDCP-sponsored campaign has not been successful, through mid-2002, not that the general approach is always unsuccessful.

If the anti-tobacco efforts are a positive model and the anti-drug efforts are not encouraging, wouldn't it be possible to model a campaign against youth alcohol use on the first and avoid the mistakes of the second? This question requires a careful consideration of how the tobacco and drug campaigns were different from one another and how the behaviors they addressed are different from alcohol use.

The expenditures for advertising expenditures for the youth parts of both national campaigns were in the range of $60-100 million per year. But there are a number of important differences in the two campaigns. First, the styles of the two campaigns have been quite different. The anti-tobacco campaigns have focused on a variety of messages, but a particularly striking set focused on anti-industry arguments—the tobacco industry kills people and is trying to manipulate you. The anti-drug messages focused (through the end of 2002) on positive alternatives to drug use—"What's your anti drug?"—and on the negative consequences of drug use.

Second, the American Legacy Foundation's anti-tobacco advertising has adopted an edgy style, with youth apparently in control. The anti-drug advertising has had a more conventional style, with clear sponsorship by ONDCP and the Partnership for a Drug-Free America.

Third, the tobacco messages were launched in the context of broad media coverage of tobacco issues as Congress and the states' attorneys general struggled with the tobacco industry towards legislation and the eventual master settlement of 1997. In contrast, anti-drug general media coverage was likely declining during the period of the national anti-drug campaign directed toward youth.

Fourth, there were important changes in the environment surrounding youth tobacco use that were complementary to campaign efforts, including price changes related to tax increases, increasing public concern with second-hand smoke, and increased restrictions on where smoking was permitted. There also was substantial change in public norms about the acceptability of smoking. While these other changes do not completely account for the reduction in tobacco use among youth, they had some direct effects

and likely reinforced the media messages about smoking. In contrast, there is little parallel environmental change around the use of drugs (or alcohol).

It is tempting to point to the anti-tobacco campaign and call it a good model for an anti-underage drinking campaign. However, the differences between an anti-tobacco campaign and a campaign against youth alcohol use are too substantial too ignore. Even if some of the lessons about edgy, youth-controlled message development could be borrowed from the anti-tobacco campaigns, other lessons could not: no campaign against youth alcohol use, much less a federally sponsored one, could successfully replicate the anti-industry tactics that have been the hallmark of the California, Florida, and Legacy Foundation campaigns, not only because moderate alcohol use is widely accepted among adults, but also because the claims about industry duplicity and misrepresentation are rooted in the tobacco industry's unique history.

There are other important differences as well. The context of broad media coverage in which the anti-tobacco campaigns have been mounted would not be likely matched by a campaign against youth alcohol use. Similarly, the complementary changes in the normative, legal, and regulatory environments around tobacco do not apply to an effort aimed at youthful alcohol consumption. In addition, the sharp contrast in the nature of the behaviors would remain. The ban on underage drinking struggles with its nearly universal trial use among youth, the majority view that moderate daily use is not high-risk, and acceptability for use among adults. Tobacco use contrasts with alcohol use on each of these points.

Next Steps

These observations do not show that a youth-focused media campaign would surely fail, only that it would be premature to mount one given what is known today. It would certainly not be sensible to mount a large campaign, at significant cost, based on wishful thinking. It is tempting to suggest going ahead with a modest campaign on the grounds that it cannot hurt but the example of the anti-drug campaign and its possible boomerang effects raises doubts about this idea. The most sensible course, at this time, is to begin to test a serious prototype for a youth-focused campaign. One possible model for this exploratory effort would be to fund one or more campaigns in geographically well-defined areas, put substantial resources both into message development and transmission, sustain them for 2-4 years, and evaluate them carefully.

The appropriate message focus for such prototype campaigns would need to be researched, developed, and carefully tested before launch. At a minimum, a campaign would have to focus on the specific messages that

can convince youths of the high-risk of heavy drinking. This research would balance epidemiological evidence about the risks with evidence from research with vulnerable youth as to what risks are of concern. There are a variety of other possible focuses, including beliefs about the outcomes of drinking, social norms about drinking, and skills to avoid drinking. The potential for each of these approaches would likely vary with age and other characteristics of the target populations. The most promising strategy, as well as the best ways to implement it, would have to be developed through intensive formative research with the target populations. Care must be taken to avoid a boomerang effect of any campaign that is mounted. A particular concern would be if heavy exposure to messages about the risks of alcohol use carried with them the implied idea that many youths are using alcohol. It is possible that a resulting increase in the "descriptive norm" could lead youths to feel it was okay to use alcohol since large numbers of young people do so (Cialdini et al., 1990; see Chapter 4).

In considering the development of a campaign against youth alcohol use, whether as part of the larger societywide campaign the committee recommends or as a stand-alone program, careful research and development should be at the core of these efforts. These efforts should be conceived as similar in logic to the efforts to develop in-school or community interventions that have been effective. Multiple efforts have been funded with the recognition that only some of them were likely to be effective. A similar approach would need to be taken with the development of underage drinking communication interventions. Some interventions should focus on reducing heavy drinking and some on discouraging all underage drinking; some interventions should focus on perceived risk and negative consequences, while others should focus on changing perceived norms or increasing skills at resisting peer pressure to drink. Some interventions will incorporate more than one of these elements. The National Institute on Alcohol Abuse and Alcoholism and National Institute on Drug Abuse have funded some of these types of test programs but there need to be enough of them and with sufficient resources to really learn how to construct youth-focused campaigns that will address underage alcohol use successfully. Once the evidence is in, assuming that one or more successful approaches have been identified, it might be possible to launch a large-scale national campaign with a good expectation for success.

> **Recommendation 10-1:** Intensive research and development for a youth-focused national media campaign relating to underage drinking should be initiated. If this work yields promising results, the inclusion of a youth-focused campaign in the strategy should be reconsidered.

SCHOOL-BASED APPROACHES

School-based approaches designed to prevent substance use among students are common in the United States (see Hansen and Dusenbury, in press, for descriptions of specific programs). Delivery of such programming through schools offers the benefits of reaching a wide (and captive) audience, as most young people (especially elementary and middle-school-aged children) are enrolled in school. In addition, schools offer the potential to ensure that intervention programs are institutionalized and run by trained staff members and that boosters to initial exposure to programs are delivered at specific developmental intervals. School-based intervention programs represent an important opportunity to prevent and reduce alcohol use among youth.

Overall Results

Meta-analyses of school-based interventions (e.g., Gottfredson and Wilson, 2003) have shown that they vary widely in their ability to effect alcohol-related outcomes. Positive effects are small to modest. Research has shown, however, that some school-based approaches are more effective than others at reducing youth alcohol use. The goal of delaying the onset of alcohol use is most effective with students who have not yet begun drinking, and given that American adolescents tend to have their first drink between ages 12 and 14, education with this age group and those slightly younger is sensible (Paglia and Room, 1999). Programs (and evaluations of these programs) that seek to affect students who are already drinking are somewhat less common. In addition, the objectives for this population are less clear—should one try to encourage them to abstain (which may be difficult to achieve), get them to engage in less risky drinking behaviors (e.g., fewer episodes of heavy drinking), or minimize the harm from alcohol use (e.g., no driving after drinking)? Further research on school-based interventions with students already using alcohol is needed.

Programs relying on provision of information alone, fear tactics, or messages about not drinking until one is "old enough" have consistently been found to be ineffective in reducing alcohol use and, in some cases, produce boomerang effects (Botvin, 1995; Swisher and Hoffman, 1975; D'Emidio-Caston and Brown, 1998; Gottfredson and Wilson, 2003; Tobler, 1992). Many early drug education curricula that relied on factual information about alcohol and other drugs, including information on the negative consequences of use, or fear arousal were based on the theory that adolescents who used alcohol and drug use had insufficient knowledge about the consequences of use and that increased information would make them more likely to decide not to use drugs. While these types of interventions

may increase knowledge, they do not affect behavior. There are several possible explanations: information-only approaches focusing on risks and dangers may arouse curiosity; fear tactics that overemphasize the potential negative consequences of drinking may be viewed as alarmist and lacking in credibility; moral lecturing can backfire with rebellion-oriented youths who are seeking to establish independence; and messages that tell youth to wait until they are "old enough" may serve to make alcohol a symbol of maturity and independence (Paglia and Room, 1999).

Strategies focused on increasing self-esteem also have not proven to be effective, perhaps because of the low correlation between self-esteem and alcohol use or the lack of a specific focus on substance use (Donaldson et al., 1995; Gottfredson and Wilson, 2003; Hawthorne et al., 1995; Paglia and Room, 1999; Tobler, 1992). Also, programs that focus on strategies to resist peer pressure have also not been demonstrated to be effective (Donaldson et al., 1994). Although among some peer groups alcohol use may represent a social norm, it is less common for peers to directly pressure each other to use alcohol; peer influence is more likely to be subtle. As a result, strategies to resist direct pressure may not be very helpful (Paglia and Room, 1999). Many of these strategies have been long used in prevention programming; since research has shown them to be ineffective, they should not be continued.

It has been a common practice to identify youths who have problems with alcohol use and other high-risk behaviors and put them together in groups. Results of studies of such programs, usually done for the purposes of simplifying interventions, have met with mixed results (Eggert et al., 1994). Some research has indicated that high-risk behaviors have actually increased among such groups (Dishion and Andrews, 1995). It is possible that in such circumstances, deviant norms become established and youth inadvertently adopt those norms rather than learn about and adopt positive norms.

School-based interventions that use normative education to undermine youth beliefs that alcohol use is prevalent among their peers and that their peers universally approve of this behavior appear to have promise. Efforts to establish nonuse norms—implemented in conjunction with a critical look at both alcohol advertising and media and other cultural messages that make alcohol use symbolic of qualities youth want to attain (e.g., maturity, independence, popularity)—may also be promising. Gottfredson and Wilson (2003), Tobler (1992), Tobler and Stratton, 1997, and Botvin et al. (1995) have found that programs using such approaches, especially when they are delivered in an interactive manner, may produce reductions in alcohol use for several years after the initial program delivery. In addition, there is some evidence that these approaches may be effective with a broad range of youths, including ethnic minorities (Perry and Kelder, 1992). A

limited number of studies (Austin and Johnson, 1997a, 1997b) have shown some positive effects of media literacy programs aimed at affecting perceptions of alcohol advertising and alcohol norms, but there is insufficient evidence to make conclusions about the application of this approach in the context of underage alcohol use.

Approaches that have been demonstrated to reduce youth alcohol use have many program elements in common. However, similar to other approaches recommended in this report, the committee believes that education-oriented interventions should be implemented in the context of a comprehensive approach.

Attributes of Effective Interventions

A considerable amount of research (Gottfredson and Wilson, 2003; Hansen and Dusenbury, in press; Tobler and Strattan, 1997), primarily in primary and secondary schools, has identified several critical elements of successful school-based educational interventions. In addition, research on communitywide alcohol prevention programming (see Chapter 11), such as Project Northland and family-based approaches like the Michigan State University Multiple Risk Outreach Program, offer additional critical elements that can make education interventions more effective (Williams et al., 1999; Nye et al., 1995). Research on such interventions offers a number of lessons about what educational strategies are important for preventing alcohol use and alcohol problems among minors. These lessons, or critical elements, offer a starting place for innovative education interventions and for developing priorities about what kinds of education interventions should be funded. The interventions need to be multicomponent and integrated; sufficient in "dose" and follow-up; establish norms that support nonuse; stress parental monitoring and supervision; be interactive; be implemented with fidelity; include limitations in access; be institutionalized; avoid an exclusive focus on information and avoid congregating high-risk youth; and promote social and emotional skill development among elementary school students.

Multicomponent and Integrated Schools provide a captive population for the delivery of prevention programs and effects can last for 3-4 years. Similarly, family and community-based interventions have also produced reductions in the prevalence and intensity of alcohol use. However, prevention effects are maximized when all of these venues are used in concert in a coordinated and mutually supporting manner. For example, meta-analyses (Gottfredson and Wilson, 2003; Tobler et al., 2000) revealed that systemwide change interventions were most effective. Project Northland (see Chapter 11), which included school-based education programs, com-

munity activities and outreach, and environmental strategies that reduced the availability of alcohol to youth, is regarded as a highly effective program (Perry et al, 1996; Williams and Perry, 1998). These interventions use a community component involving family and other community leaders (e.g., teachers, counselors) or may strive to change the school or community environment. Communities should adopt prevention interventions that include school, family, and community components.

Sufficient in Dose and Follow-Up Significant developmental changes occur during adolescence. For educational interventions to be effective, they must be delivered throughout this period. Educational and family programs usually focus most heavily on the first part of adolescence. The increased use of boosters and multiyear programs should be encouraged. Community interventions also tend to focus on discrete portions of the adolescent years. However, a combined and consistently implemented approach to prevention has been shown to yield stronger results.

Norms that Support Nonuse Extensive research demonstrates that establishing norms that support nonuse is a key component of approaches to prevent alcohol use and misuse. During adolescence, it is common for youth who engage in inappropriate drinking behaviors to grossly overestimate the prevalence and acceptability of alcohol use among peers. As a result, these young people choose to use alcohol in a manner that matches these misperceived norms. Establishing beliefs in conventional norms among students—or, in other words, making young people's estimates about their peers' alcohol use more realistic—has significant potential to reduce alcohol use among young people. For example, the normative education element in interventions like the Adolescent Alcohol Prevention Trials significantly deterred use of alcohol, tobacco, and marijuana among middle and high school students (Hansen and Graham, 1991).

Parental Monitoring and Supervision Parents are a powerful source of influence on their children, and, using the right practices, parents can significantly decrease the likelihood that their children will drink. Research on prevention with families consistently demonstrates that parental monitoring of children—including monitoring their free time and time with friends and actively supervising them by being present during youth activities—is highly effective as a strategy for preventing the onset of alcohol use and misuse (Dusenbury, 2000; Vicary et al., 2000). Monitoring can make gaining access to alcohol more difficult and can help to reinforce family rules and policies prohibiting the use of alcohol. Programs can provide parents with skills and motivation for actively monitoring and supervising their children.

Interactive Educational programs demonstrated to reduce alcohol use and abuse have all been highly interactive. That is, they did not rely on didactically presented messages, but used teaching techniques that encouraged participants to be actively engaged in the process of forming social norms. Meta-analyses (Gottfredson and Wilson, 2003; Tobler et al., 2000) revealed that interactive programs that delivered more hours of programming were more effective than interactive programs that delivered fewer hours. This trend was not evident among noninteractive programs.

Implemented with Fidelity There is strong evidence that the quality of program delivery is highly related to successful outcome (Dusenbury et al., 2003). Training for providers is crucial. It is also essential for providers to have sufficient time to become fluent in delivering the program. On their initial attempt, program providers typically focus on understanding the mechanics of a program. It is only after they have mastered the mechanics of program delivery that they are able to focus on underlying psychological and sociological constructs that define quality implementation.

Access Limitations Family and community interventions that have been shown to be effective included a focus on limiting youth access to alcohol (see also Chapter 9). Such approaches need to include not only the adoption of laws and ordinances, but also their enforcement and the development of a strong social norm that supports the intent of such legislation. For example, Project Northland (Komro et al., 1994), Day One Community Partnership (Rohrbach et al., 1997), Communities Mobilizing for Change (CSAP model program), and Community Trials Intervention to Reduce High-Risk Drinking (a model program of the Substance Abuse and Mental Health Services Administration [SAMHSA]) all included efforts to reduce underage access to alcohol, and in each case these efforts were found to have significant effects on reducing drinking (see also Chapter 11).

Institutionalized Institutionalization is crucial for prevention to realize its full potential. It can ensure that new social norms in a community are perpetuated by exposing new community members (e.g., every fifth grade class in a school) to the norms, that well-trained professionals facilitate the intervention, and that programs are regularly evaluated and adjusted to meet the changing needs of the community. This kind of consistency and rigor has the potential to ensure that programs shown to reduce underage drinking can have long lasting effects. However, schools and communities are often funded to implement these programs through temporary mechanisms and often at a level that does not allows sustained implementation.

Avoiding a Focus on Information and on Congregating High-Risk Youth As discussed above, programs with an exclusive focus on information are ineffective at changing behavior and programs that congregate high-risk youth have had mixed and, in some case, negative effects.

Social and Emotional Skill Development There has been limited research on alcohol prevention among preschool and elementary school children. Norm-setting approaches, discussed above, are promising for older elementary school students (Donaldson et al., 1995). In addition, there is evidence that good academic achievement and such characteristics as good school climate, cooperative learning, and strong bonds between children and school have the potential to help prevent subsequent alcohol use (Battistich et al., 1996; Hawkins et al., 1999). Research has clearly shown that the causes of early alcohol use are related to the failure to develop social and personal competencies. These competencies include the ability to make good decisions and solve problems, set and achieve goals, effectively manage emotions and stress, communicate effectively, and build relationships that support a positive peer group.

In sum, although more research on education interventions is needed, these programmatic elements can be adopted with confidence. In addition, there are some programmatic elements that have not shown desired effects (e.g., didactic information sessions and scare tactics) and in some cases produce boomerang effects. Programs that rely heavily on these elements should not be funding priorities.

> **Recommendation 10-2:** The U.S. Department of Health and Human Services and the U.S. Department of Education should fund only evidence-based education interventions, with priority given both to those that incorporate elements known to be effective and those that are part of comprehensive community programs.

These funding priorities should promote the key elements of prevention described in the principles of effectiveness defined by the Department of Education. Namely, funding decisions should be based on (1) demonstrated need, (2) defined behavior change goals, (3) clear objectives for how behavior change will be accomplished, and (4) the adoption of approaches with demonstrated effectiveness. As part of this approach, the Department of Education and SAMHSA list of evidence-based programs should be reviewed and revised annually. Funding should give priority to programs that have been independently demonstrated to be effective at deterring the onset of alcohol use and misuse or having an effect on other meaningful outcomes.

Regional conferences should be held for program developers, evaluators, schools currently using programs, and potential grantees to bridge the

gap between research and practice. In addition, funds should be provided to support independent local and national evaluations that should include both the assessment of self-reports of alcohol consumption and assessments of changes in key outcomes of successful alcohol prevention, such as truancy, motor vehicle accidents, and academic performance. A specific, uniform percent of grant funding should be earmarked for local evaluation. Additional funding, equal perhaps to 10 percent of all local awards, should be provided for a national evaluation. A consortium of evaluators should be established to inform the Departments about the impact of programs on alcohol prevalence and consumption.

Identifying and selecting model programs are only part of the process in launching a successful education strategy. Experience over the past two decades reveals that most schools do not implement research-based programs as intended or do not continue to use them over time. Failure to institutionalize interventions is likely to prevent them from realizing their full potential. Federal and state policies are needed to encourage and support the institutionalization of research-based programs. Most research and funding has been conducted in secondary/middle schools; additional focus should be directed at primary and high schools. In addition, funding is needed to support program champions at the school and district level who provide the organizational memory as well as the necessary training resources to sustain prevention intervention. Finally, additional research is needed to determine how schools, families, and communities can be supported as they implement promising strategies and how effective strategies in these areas can be institutionalized.

RESIDENTIAL COLLEGES AND UNIVERSITIES

Educational interventions with underage drinkers at colleges and universities present a unique set of challenges. By the time they reach college, the majority of students have tried alcohol, and the majority of students who report current use also drink heavily (Flewelling et al., in press). Furthermore, 31 percent of college students meet diagnostic criteria for alcohol abuse and 6 percent meet criteria for alcohol dependence; these data suggest that individual-based strategies for screening and intervention or referral may need to be a component of a comprehensive college based approach (Knight et al., 2002).

All residential college and university students should be exposed to alcohol education interventions—indeed, the transition to college offers an important opportunity in which expectations about alcohol use and nonuse on campus can be established and in which young people may be more receptive to messages about nonuse and harm reduction (Pandina, 2003). Recent studies suggest that working with parents and students, rather than

with students alone, regarding transition difficulties at college is an effective approach (Wintre and Sugar, 2000). However, in addition to universal prevention approaches, interventions that selectively target heavy drinkers have the potential to reduce harm to the individual, the college community, and the neighborhood in which the college resides (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2002). According to NIAAA's recent report on college drinking, programs that target heavy drinkers through unified education interventions that include cognitive behavioral skills, norm clarification, and motivational enhancement interventions in conjunction with environmental and policy changes is the approach most likely to be effective at addressing college student drinking (National Institute on Alcohol Abuse and Alcoholism, 2002).

Interventions focused on students who drink heavily may have significant positive effects on the health and well-being of students and the quality of the college environment (Knight et al., 2002; Park, 1967; Perkins et al., 1980). Nationally, only one in five students report frequent heavy drinking, yet this group accounts for two-thirds of all the alcohol consumed by college students, more than half of all the alcohol-related problems other students experience, and more than 60 percent of all the reported injuries, vandalism, and problems with the police (Wechsler et al., 1998).

Despite public concern and media attention describing the problems associated with college student alcohol consumption, there is a relative lack of well-developed and evaluated intervention programs designed to assist college service providers. The Center for the Advancement of Public Health (CAPH) at George Mason University, based on data from their annual College Alcohol Survey, has created a sourcebook of strategies used by colleges across the United States, as well as recommendations for future college endeavors. Although CAPH notes that a number of campuses have developed innovative approaches for addressing college drinking, few strategies are applied on campuses with fidelity or consistency, and rarely are these approaches evaluated (Center for the Advancement of Public Health, 2001).

Although a majority of colleges and universities have established campus alcohol prevention programs (Wechsler et al., 1999), survey data from the past decade show that the rates of heavy drinking on college campuses have not declined in the past 10 years. Part of this may be the lack of evaluations of college-based interventions and lack of dissemination about programs that are effective. Other deficiencies related to university alcohol policy and intervention may also contribute to the ineffectiveness of current programs (Wechsler, 1996; Cohen and Rogers, 1997; Ziemelis, 1998; Black and Coster, 1996; Smith, 1989), including:

- lack of data intended to identify specific campus problems for the "rational planning" of services;
- inconsistent enforcement of university policies and codes for student conduct;
- continued institutional reliance on informational approaches as a primary prevention strategy;
- limited student exposure to prevention activities;
- lack of use of counseling and treatment resources by students who may need those services the most; and
- failure to screen and provide services for students through regular physician visits at college health clinics, emergency room visits, and for students who violate alcohol policies.

Research does provide guidance to colleges' approaches to alcohol use on their campuses.

Education-Based Intervention Strategies

As with school-based programs, research on college-based programs demonstrates that programs primarily using information-only and scare tactic strategies concerning alcohol consequences and local laws and policies are ineffective or are insufficient on their own (Larimer and Cronce, 2002; Wechsler et al., 2002; Perry et al., 1996; Moskowitz, 1989, National Institute on Alcohol Abuse and Alcoholism, 2002). The NIAAA report on college drinking also found that values clarification about alcohol, when used alone and providing blood alcohol content feedback to students, were ineffective.

Interventions with High-Risk Heavy Drinkers

Three education approaches—cognitive-behavioral skills, norm clarifications, and motivational enhancement interventions—have been found to be effective with heavy alcohol users on campus (National Institute on Alcohol Abuse and Alcoholism, 2002). The skills training approach uses a cognitive behavioral model to address problem or heavy alcohol use by altering beliefs associated with alcohol use. This approach may also involve general life-skills development, including assertiveness training and stress management training. The goal of this approach is to change an individual's expectations about alcohol's effects, monitor alcohol use over time, and develop effective coping techniques. Alcohol expectancies have been found to predict drinking behavior among college students (Christiansen et al., 1989; Stacy et al., 1990), and research suggests that interventions that challenge the behaviors students expect to result from drinking can de-

crease alcohol consumption (Darkes and Goldman, 1998), at least for some students.

Normative feedback or norm challenging is a strategy designed to address an individual's misperceptions regarding the rates of alcohol use on campus, as well as perceptions regarding the role of alcohol on campus (Schroeder and Prentice, 1998; Baer et al., 1991). In such interventions, a student's alcohol use patterns are assessed, and the student is provided feedback regarding the rates of alcohol use by his or her peers. Often, the student is also provided information regarding the prevalence of his or her alcohol use pattern. Prevention strategies have used different modalities to provide this feedback, including one-on-one interviews, small groups, and such media as on-line web-based programs (Marlatt et al., 1995; Borsari and Carey, 2000). The variety of modalities through which this approach can be delivered may make it a viable option for wide use on campuses, rather than only with identified heavy drinkers. Additional research in this area, especially concerning the comparative effectiveness of different modes of delivery, is needed.

Motivational interviewing techniques associated with alcohol use are designed to provide an assessment of student use and provide nonjudgmental feedback regarding a person's alcohol consumption and the negative consequences associated with use. Such techniques also often include normative feedback on peer alcohol use rates. Such interventions are designed to initiate an individual's desire to change behavior (Miller et al., 1992). Brief motivational enhancement interventions have been found to affect problems associated with alcohol consumption, including driving after drinking, riding with an intoxicated driver, and injuries (Marlatt et al., 1998; Monti et al., 1999). Opportunities for motivational interviews are available when heavy drinkers are identified through the campus judicial system or through screening at campus health care facilities. Few campuses have programs that link heavy drinkers—even when they are identified through campus systems—to such interventions.

The integration of skills training, normative feedback, and motivational interviewing techniques has been applied to one-on-one and small group interventions in order to reduce drinking rates. These education strategies may be applied in a universal fashion with a general student population, such as first-year students who may be forming ideas (and misperceptions) about how alcohol fits into college life. In addition, these education approaches could be incorporated into programs that specifically target groups at risk for heavy drinking and individuals who, through the college judicial system or screening provided through university health care systems (see below), are identified as heavy drinkers. Research has demonstrated that this general integrated approach also reduces the negative con-

sequences of alcohol use (Baer et al., 2001; Larimer and Cronce, 2002; Marlatt et al., 1998).

Broad Interventions

One educational approach that has received considerable attention and that is directed at a general college population (rather than just heavy drinkers) is the social norms approach. A fundamental premise of this approach is that a majority of college students do not accurately perceive the rates of alcohol use on campus and may drink to the level of this misperception in order to fit in. Perceptions regarding the amount and frequency of substance use on campus are often greater than actual use (Perkins and Berkowitz, 1986; Perkins, 2002). Several institutions have reported reduction in high-risk drinking over a relatively short time using such approaches (Berkowitz, 1997; DeJong and Linkenbach, 1999; Haines and Spear, 1996; Johannessen et al., 1999, 2002), with some reporting a 10 to 25 percent drop in high-risk drinking after campaigns that have used this approach (DeJong, 1999).

Research on social norms campaigns has indicated some promise, although research has generally been limited to case studies of individual campuses, generally without appropriate comparison or control groups, and they often do not control for other interventions aimed at reducing drinking problems. Given the limitations of social norms evaluations, such interventions should be further evaluated. If implemented, social norms approaches should be one component of a comprehensive effort and should not be used as a single strategy.

Environmental Factors On and Off Campuses

A growing body of evidence points to the importance of addressing the multiple environmental contributors to alcohol use and abuse, both on and off campus. Research has demonstrated that changes in the normative environment within which students reside can influence drinking behavior. Specific environmental elements on campus—including fraternity or sorority participation, living on campus, and the ready availability of alcoholic beverages—have been identified as the most important determinants of drinking and heavy drinking among college students (Chaloupka and Wechsler, 1996). Research has demonstrated the importance of several environmental factors: access (Wechsler et al., 2002; Weitzman et al., 2003; Bormann and Stone, 2001); cost (Williams et al., 2002; Clapp, 2001); exposure to high-use residential climates (Sher et al., 2001); contextual factors that are predictive and protective of heavy drinking (Clapp and Shillington, 2001); and alcohol policies and enforcement procedures (Eigen,

1991; Palmer et al., 2001). Examples of protective measures include new campus alcohol policies (e.g., no kegs at on-campus parties), legal regulations, alcohol server training programs, and the restriction of low-cost alcohol promotions or "happy hours." Some studies have shown that college policies affecting access to alcohol on campus—for instance, whether a residence hall is wet or dry and whether a college has an alcohol ban on the campus—generally decrease the frequency of student alcohol use, heavy drinking, and frequent heavy drinking (Wechsler et al., 2001a, 2001c; Weitzman et al., 2003).

Consistent Policy Enforcement and Application of Sanctions

Research investigating student sentiment toward alcohol policies and laws consistently documents support for policies that control underage drinking (Wechsler et al., 2002). Within the college environment there are multiple agents for enforcement, including campus police and safety officers, residence housing personnel, residence-based student paraprofessionals, athletic team coaches, academic advisers, sponsors of student organizations, and fraternity and sorority advisers. Despite these multiple opportunities for intervention, enforcement is often left to one or two of these groups (e.g., campus police, residential life professional staff), or enforcement occurs only among some staff within a group. Often these individuals are hesitant to hold college students accountable for their behavior, as they may view the university sanctioning process as punitive or inconsistent with their roles as mentors and advisers for students. Such a circumstance creates inconsistent enforcement of policies and sends mixed messages to students.

Colleges should pursue strategies to strengthen linkages between policy and enforcement. The judicial process on many college campuses offers an important—and underutilized—opportunity to send consistent messages to students and ensure that intervention programs reach students whose drinking has become a problem for the campus. Interventions based upon motivational enhancement, skill development, and normative clarification can promote values that are consistent with the values already found within the university culture.

Parental Notification

The Higher Education Amendments of 1998 provide assistance to colleges and universities in their efforts to address student alcohol and other drug use. Section 952 clarified that institutions of higher education are allowed (but not required) to notify parents if a student under the age of 21 at the time of notification commits a disciplinary violation involving alco-

hol or a controlled substance. The U.S. Department of Education's final regulations issued in 2000 further clarified the intent of the 1998 amendment, stating that campus officials may notify parents whenever they determine that a disciplinary violation has occurred and that those determinations can be made without conducting a formal disciplinary proceeding or hearing.

Research has begun to document the extent of parental notification practices used by colleges. One survey (Palmer et al., 2001) involving 189 colleges and universities found that 58 percent of the colleges indicated having parental notification policies (77 percent of private institutions and 43 percent of public institutions). An additional 24 percent were considering integrating parental notification as part of their sanctioning process. Of the campuses reporting they use parental notification as a sanction, 59 percent use mail correspondence as the vehicle to notify parents. This survey also reported that campus officials rated the response of parents who received notification of their child's alcohol or drug violation as very supportive (72 percent) and supportive (6 percent).

Although no well-controlled research has been conducted, the campuses that use parental notification procedures report reductions of more than one-half in the number of alcohol violations following implementation of the parental notification policies. Several colleges, such as the University of Delaware, have adopted parental notification within a comprehensive approach to prevention. The integration of parental notification as part of a system to increase the monitoring, enforcement, and publicity associated with the institution's alcohol and other drug polices, has resulted in fewer suspensions, a decrease in disciplinary cases, less vandalism, and reductions in high-risk drinking behavior.

If the notification of parents is integrated into the institution's sanctioning process, the notification response should be one of several approaches serving to deter student misbehavior. A comprehensive approach needs to involve education, screening, and intervention. Ongoing publicity of a parental notification policy may be necessary in order for this sanction to be applied as an effective deterrent. Information regarding the goals of the parental notification response and how and when it is to be used should be clearly articulated before implementation. The institution should also develop means to consider issues that may warrant exceptions for the use of parental notification (for example, students who may experience undue hardship, history of abuse in the family, or students who do not have dependent status). Students should also be provided the opportunity to discuss the incident with their parent prior to the institution's contact.

Availability of Alcohol-Free Social Activities

Several universities offer alcohol-free social and recreational activities, often on Friday and Saturday nights, when students often consume alcohol. These activities cover a broad range, including late-night intramural tournaments, concerts, theatrical performances, movie showings, dances, ice skating, trivia bowls, and laser tag. These activities are developed and offered by student activities departments and by student organizations. Although such approaches have not been evaluated, alcohol-free, late-night activities are an alcohol prevention strategy with theoretical promise.

Screening for High-Risk and Heavy Drinkers

Research on college student subcultures has identified specific student groups that accept and promote heavy substance use among their members (Astin, 1993; Dean, 1982). If a campus can identify these groups, selective prevention programming could be targeted to these subcultures as a way to reduce underage drinking.

College health service agencies and the judicial discipline system are two primary contact points for substance abuse screening and intervention on college campuses. These systems are positioned to link students who are heavy drinkers or show signs of early alcohol dependence to intervention programming and, in some cases, needed treatment.

The university's judicial response to violations in alcohol policy is also part of the educational lesson the institution can provide to students (Smith, 1989). By providing a network through which university alcohol policies are clearly communicated and consistently applied to student misconduct by all parts of the university community, then addressed through a screening and brief intervention, a university can provide students an effective and efficient response to high-risk drinking and associated behaviors. This system simultaneously allows students to evaluate their alcohol use and its role in their lives while holding them accountable for their behavior. Brief motivational interventions may be the best response for policy infractions. It has been proven to effectively reduce high-risk behaviors associated with alcohol consumption, is sensitive to the developmental and psychological characteristics found among traditionally aged college students (18 to 22 years of age), provides a supportive, personally reflective, and educational opportunity for students, and has values that are consistent with the values found within institutions of higher education (National Institute on Alcohol Abuse and Alcoholism, 2002).

The challenge for the judicial process is in balancing responsibilities in several different areas—enforcing the university's policy, encouraging health-promoting behavior, and protecting the rights of students who drink

moderately or choose not to drink at all. Research has noted that effective early intervention strategies rely on consistent enforcement of policies on the campus, which is essential to the quality of the educational environment (Wechsler and Davenport, 1999).

The active involvement of college student health care professionals in alcohol prevention is supported by the *Guidelines for Adolescent Preventive Services* (Elster and Kuznets, 1994), which recommend that health care providers ask all adolescent patients annually about their alcohol and other drug use as part of routine care. Given the prevalence of drinking among 18- to 20-year-olds, it is reasonable to also expect college health care professionals to conduct similar screening with their patients. Like the campus judicial process, health care services offer an important and underutilized opportunity to link services for heavy alcohol users to students who could benefit from such interventions.

While an overwhelming majority of colleges and universities indicate they have an alcohol and other drug prevention program (Wechsler et al., 1999), very little data exist on the organizational characteristics of these programs, the scope of their prevention efforts, their financial support, and the financial resources needed to effectively implement the empirically validated and multiple prevention strategies recommended in this document and by NIAAA (2002). There also is inadequate evaluation of approaches, such as social norms marketing, parental notification, interventions in health care settings, and other innovative approaches. Future research should also consider institutional characteristics associated with alcohol outcomes, including the effects of size of student enrollment, type of institution (2- or 4-year college, residential or commuter), location in either an urban or rural setting, and organizational properties of colleges, including affiliations such as historically black or women's institutions.

> Recommendation 10-3: Residential colleges and universities should adopt comprehensive prevention approaches, including evidence-based screening, brief intervention strategies, consistent policy enforcement, and environmental changes that limit underage exposure and access to alcohol. They should use universal education interventions, as well as selective and indicated approaches with relevant populations.

> Recommendation 10-4: The National Institute on Alcohol Abuse and Alcoholism and the Substance Abuse and Mental Health Services Administration should continue to fund evaluations of college-based interventions, with a particular emphasis on targeting of interventions to specific college characteristics, and should maintain a list of evidence-based programs.

OTHER INTERVENTION OPPORTUNITIES

Research on educational approaches has focused on primary and secondary schools and college settings. Faith-based organizations and health care settings have frequent contact with young people and may offer important intervention opportunities. Similarly, many young people either join the military or enter the labor maker rather than attending college or finishing school. However, interventions with youth in these settings, and evaluation of the few interventions that do exist, are scarce.

Available research does not allow recommendation of particular approaches in these settings. However, future strategies would benefit from the development and evaluation of interventions in these areas (see Chapter 12). Research on educational approaches in schools, colleges and communities may offer some lessons that may reasonably be applied to these settings.

Faith-Based Interventions

Research on the effectiveness of faith-based initiatives for preventing alcohol use and alcohol problems is very limited. However, family involvement in faith-based institutions, religiosity, and spirituality all have been shown in research to reduce the risk for adolescent substance use. According to Miller (1998), there is a consistent effect of commitment to religion and reduced alcohol use. Young people whose families are active in religious activities are less likely to drink beer and distilled alcohol (Hardesty and Kirby, 1995).

Interventions delivered through faith-based organizations represent a new area of exploration for prevention research. Such research might include examining what faith-based groups currently do that addresses alcohol, with the goal of understanding how involvement in faith-based institutions moderates alcohol use and developing and evaluating innovative strategies for alcohol prevention in faith-based settings. However studies of faith-based interventions must be carefully designed to account for the possibility that selection bias, rather than program effects, accounts for any positive outcomes. (Miller, 1998; Hardesty and Kirby, 1995).

The Department of Health and Human Services should apply the same standards for providing care and determining the effectiveness of faith-based interventions as has been established for school- and community-based interventions. Innovative approaches should be independently evaluated using standard approaches for documenting effectiveness.

Health System Interventions

Doctors are viewed as authorities for all health issues by adolescents and parents (Mullen and Katayama, 1985) and therefore should be actively involved in assisting with prevention. There are national guidelines for physicians' provision of comprehensive preventive services to adolescent patients. In general, these clinical guidelines recommend that all adolescents have an annual, confidential, preventive services visit during which they are screened, educated, and counseled on a number of biomedical, emotional, and sociobehavioral topics, including alcohol use (e.g., Werner, 1995). There is a growing interest in drawing health care providers into alcohol and substance abuse prevention with youth, and health care systems and providers represent an as yet untapped resource in prevention programming. Cavanaugh and Henneberger (1996) reported that more than nine out of ten parents in their study thought that pediatricians should discuss alcohol with their children during routine visits. Research also suggests that adolescents are more willing to disclose information about alcohol use to physicians who assure them of complete confidentiality (Ford et al., 1997).

In spite of the existing guidelines, physicians do not screen or educate the majority of their adolescent patients regarding alcohol. Only 25 percent of physicians educate their patients on the basis of the standards established by the American Medical Association for screening (Millstein and Marcell, 2003). Even when physicians do counsel adolescents regarding alcohol use, they predominantly use ineffective interventions (Millstein and Marcell, 2002). Although, on average, physicians report screening 70 percent of their adolescents about alcohol use, only 47 percent of patients are asked about drinking and driving (Halpern-Felsher et al., 2000). Furthermore, only about half of patients are educated about the risks of alcohol use.

Emerging research suggests that physicians' rates of screening adolescents for alcohol use can be improved (from an average of 59 percent to 76 percent) by training physicians on the knowledge, attitudes, and skills that are necessary to create behavior change (Lustig et al., 2001). Ozer et al. (2001) also showed that physicians' alcohol-related screening and counseling rates could increase significantly following training, the implementation of charting forms, and if an on-site health educator is available. Preliminary data are beginning to suggest that implementing preventive services does reduce adolescents' risk behavior (Ozer et al., 2003).

Health care facilities have significant and promising, but as yet unproven, potential to influence alcohol use and alcohol problems among adolescents. Interventions using a variety of media might be developed for patients to be implemented during time spent in the waiting room and during follow-up visits. Future research should promote the development and evaluation of innovative interventions that target adolescents in health

care settings. Additional research and evaluation are needed to determine whether interventions implemented by physicians or other health care professionals are effective with adolescents and whether and how training can enhance effectiveness.

Workplaces

Young people who work full or part time while attending school are more likely than their peers to use alcohol and drink heavily (McMorris and Uggen, 2000; Mortimer and Johnson, 1998), and most heavy drinkers of any age are in the workforce (Cook and Schlenger, 2002). A full- or part-time job provides discretionary money that young people may choose to spend on alcohol. Workplace social norms may facilitate drinking behavior and additional exposure to adults who are of the legal drinking age may provide a mode of access for underage drinkers to procure alcohol.

There are compelling reasons to expand workplace prevention programming. Workplaces may offer a key site in efforts to reduce underage drinking because of the potential to interrupt the relationship between employment and youth alcohol use. Such interventions may also serve to reach a population of young people who are not exposed to school-based interventions.

Workplace alcohol prevention programs have existed for the past 50 years, no doubt because alcohol use and abuse can result in accidents, lost productivity, and worker turnover. Workplace drug testing and prevention programs have become more prevalent in the past 10 years, as has research evaluating the effectiveness of primary prevention strategies. There is some evidence to suggest that workplace drug testing has helped to reduce drug use but additional research on effectiveness is needed. In addition, it is not clear if a deterrent effect extends beyond the drugs tested for to a substance like alcohol.

Although little research has been conducted on workplace prevention programs with underage youth, at least two program characteristics appear to have the potential to have positive effects (Cook and Schlenger, 2002; National Research Council and Institute of Medicine, 1994). First, programs that seek to change workplace culture and social norms around alcohol use may be particularly effective in work settings that support or have a permissive culture around drinking. A second characteristic is that intervention programs must avoid the stigma of alcohol abuse in order to encourage worker participation. For example, a workshop on alcohol abuse is not likely to be well attended, but a stress management program that addresses alcohol use as a part of its curriculum may be appealing to employees. There are likely other characteristics that will contribute to the design and implementation of effective workplace interventions.

Unfortunately, the available research about prevention programs does not include any program that specifically targets or seeks to address the needs and concerns of underage workers. In fact, the committee is unaware of any workplace programs that address the specific needs of underage employees.

Workplace prevention programming has the potential to disrupt the relationship between youth employment and drinking and may reach young people who would not otherwise be reached. More evaluations of existing general workplace programs are needed, including whether underage employees participate in such programs, the factors that influence their participation, and whether the programs meet the needs and concerns of young workers. Other creative new programs specifically targeting underage populations also should be developed and evaluated. Employers with large concentrations of workers under age 21 are one possible venue for testing intervention approaches.

The Military

Alcohol use in the military has historically been widespread and commonly accepted, provided that it did not result in irresponsible behavior or harm. A study by Ames et al. (2002) suggests that the military environment does not serve as a protective factor for heavy drinking. Over the past several decades, the military has increased efforts to test for drug and alcohol use, developed interventions aimed at decreasing risky health behaviors, including alcohol use, and increased efforts to provide treatment for those with identified drug and alcohol problems. For example, the Navy began drug testing in 1981. At that time, 50 percent of enlisted personnel tested positive; by 1984, only 5 percent tested positive. Yet many employers who instituted drug testing also initiated other prevention programs at a similar time—this was certainly true of the Navy's approach to substance abuse prevention—and research has not been conducted to separate the relative influence of the effects of drug testing and other programming (Cook and Schlenger, 2002).

Most military-based interventions have focused on the military audience at large and have not had a specific focus on the underage, primarily enlisted, audience. Though approaches aimed at changing the military culture around drinking have value, more attention should be paid to approaches that specifically target underage personnel. Such approaches will admittedly face unique challenges in terms of the inconsistency between policies that allow young men and women to be put in harm's way but do not allow them to drink, as well as their living in countries that may have minimum legal drinking age policies that differ from those in the United

States. Nonetheless, the military setting provides an important opportunity for exploring prevention interventions with underage personnel.

Prevention programs at colleges offer resources from which the military can develop innovative interventions with underage personnel but these programs would need to be adapted to the specific context and culture of the military. One program—PREVENT (Personal Responsibility and Values: Education and Training)—developed for and implemented in the Navy, has a number of components that parallel college programs and that make use of some of the known critical elements (see Chapter 11). PREVENT is a multifaceted education curriculum that seeks to link knowledge of health behaviors and risks to behavioral changes. It addresses a number of issues (drug and alcohol use, decision-making, and financial management) and builds knowledge and skills.

An interesting element to this program is that it uses values traditionally associated and promoted by the military (e.g., personal responsibility, integrity, minimizing risk to other sailors, mission readiness) as a way to encourage sailors to reduce alcohol use and alcohol-related consequences. This element capitalizes on military culture for health promotion and alcohol prevention—something that might be uniquely possible in the military. Based on reports issued by the U.S. Navy, PREVENT appears to be a promising program. For example, graduates reported a 45 percent reduction in heavy drinking days per month and an 82 percent decrease in driving after drinking. Costs associated with alcohol-related incidents and lack of readiness were also decreased (U.S. Navy, 2003). Additional evaluations of military-based programs, including the extent to which they reach underage populations, are warranted.

TREATMENT PROGRAMS

Despite efforts to prevent underage drinking, some youth will drink at a level that requires clinical treatment. Findings from the National Household Survey on Drug Abuse indicate that about 10 percent of 12- to 17-year-olds (about 2.3 million) are heavy users of alcohol. The proportion of users who are clinically dependent is not known, but it is believed to be unacceptably high. Treatment for underage alcohol dependency is scarce. The juvenile justice system is the major route through which most adolescents get into treatment. Although estimates of the cost-effectiveness of early treatment are speculative, research suggests that early treatment has the potential to be cost-effective, especially in comparison with incarceration or treatment for a long-term alcohol abuse problem. For instance, cost-benefit research on drug and alcohol treatment generally (Office of National Drug Control Policy, 2001) suggests that the range of savings is between $2.50 and $9.60 for every dollar spent on treatment. Although

these savings were calculated on the basis of adult treatment, and included drugs as well as alcohol, it is reasonable to assume that savings for effective youth alcohol treatment would be at least this high. Unfortunately, only one person in seven who would qualify for treatment was admitted to treatment in 1999 (National Institute on Drug Abuse Community Epidemiology Work Group, 1999). The proportion of youth who are admitted to treatment is undocumented but believed to be even smaller.

Research on treating underage alcohol abusers reveals that nine elements are crucial to success: matching treatment to needs; comprehensive and integrated treatment; family involvement; developmental appropriateness; recognition of gender and cultural differences; continuing care; and assessment.

Matching Treatment to Needs Assessment is important to determine the type of treatment approach to which an adolescent may respond (Pickens and Fletcher, 1991; Bergmann et al., 1995; Jainchill et al., 1995; Werner, 1995). Because the severity of adolescents' alcohol use varies considerably, matching the severity of their problem to intensity of treatment is important (Jenson et al., 1995). Treatment formats range in intensity and include:

- brief intervention, typically delivered by physicians, counselors, or others who do not specialize in drug and alcohol abuse treatment per se;
- outpatient treatment, which includes programs that can range from 2 to 20 hours per week;
- day treatment or partial hospitalization, including professionally directed treatment after school, in the evenings, or on weekends, often combining individual, group, and family therapy;
- inpatient treatment; and
- detoxification, a 3- to 5-day period of intensive medical monitoring and management that is often part of a 28-day intensive inpatient treatment program.

Comprehensive and Integrated Treatment is more effective if it is fully integrated into all aspects of an adolescent's life—school, home, family, peer group, and workplace. For example, treatment programs should actively help students keep up with their schoolwork and feel integrated in the school environment.

Involvement of Families Family development research clearly supports the need for understanding an adolescent's relationship with his or her family and including families in therapy wherever possible. Families can be either a source of strength or a risk for continued alcohol abuse. For instance, family involvement can be particularly important in retaining teen-

agers in treatment, while alcohol problems among other family members can influence youths to continue engaging in heavy drinking. Family involvement usually includes education about treatment and how families can support the treatment process. Families sometimes need intervention in order to change the environment or structure they provide to the underage drinker in treatment (Spoth et al., 2001). In addition, family interventions need to be prepared to address familial alcoholism, which represents a significant risk factor for youth alcohol use and future dependence.

Developmental Appropriateness Program models specifically designed for adolescents are more effective than programs based on adult regimens. Adolescent treatment needs to emphasize maturational issues, psychological issues, and emotional and sexual issues. Treatment programs should be tailored to the different cognitive abilities of older and younger adolescents and deal differently with concrete versus abstract styles of thinking.

Retention Underage drinkers are often less motivated than adults to participate in treatment. They are often referred through delinquent acts at school or through the criminal justice system; they rarely self-refer. Programs need to develop strategies that engage and retain teenagers in treatment. Retaining underage abusers in treatment often requires the application of age-appropriate sanctions and rewards.

Gender and Cultural Issues It is important to recognize issues that are particular to some groups. For instance, there is a correlation between childhood trauma and substance abuse for girls and women. Often, female substance abusers have been sexually abused. For these reasons, it is contraindicated to put girls in a coed setting for treatment. Other differences along race and ethnicity must also be considered and attended to as a part of treatment. Alcohol use is often defined as part of a cultural context and certain cultural attitudes may affect use patterns as well as how an adolescent understands his or her alcohol use. Treatment programs that can attend to these differences may have greater potential to produce successful outcomes compared to those that do not.

Continuing Care Continuing care is crucial to achieving positive long-term outcomes (McKay et al., 2002). Underage drinkers who require intense treatment will also require intense continuing care. Currently, continuing care for adolescent drug and alcohol problems is rarely available. There is little research on continuing care to provide guidance regarding what kinds of continuing care are the most effective for these adolescents. Additional research in this area would be useful.

Assessment of Outcomes Most adolescent treatment programs have not been rigorously evaluated, though many keep track of outcome data and are able to provide statistics that suggest the effectiveness of the treatment and recovery strategies (Center for Substance Abuse Treatment, 2000; Pickens and Fletcher 1991; Bergmann et al., 1995; Jainchill et al., 1995; Werner, 1995). One of the challenges for treatment providers is that evaluation of treatment programs is costly and difficult (Kaminer and Bukstein, 1989; Milby, 1981). However, evaluation not only validates effective approaches, it also provides information that is essential for improving treatment strategies (Kaminer and Bukstein, 1989).

It is crucial to the success of adolescent treatment that referral to service is coordinated within communities. Strategies that increase coordination among institutions in the community including schools, workplaces that employ teenagers, law enforcement, courts, faith-based institutions, and public and private treatment providers that may refer teens to treatment should be developed, disseminated, and evaluated. Training should be provided for key individuals all of these institutions about indicators of risk and procedures for referral.

> **Recommendation 10-5:** The U.S. Department of Health and Human Services and states should expand the availability of effective clinical services for treating alcohol abuse among underage populations and for following up on treatment. The U.S. Department of Education, the U.S. Department of Health and Human Services, and the U.S. Department of Justice should establish policies that facilitate diagnosing and referring underage alcohol abusers and those who are alcohol dependent for clinical treatment.

Adolescents often enter alcohol treatment through the criminal justice system. The Department of Justice should facilitate the development of a coordinated approach that encourages the use of effective approaches for dealing with adjudicated youth. In addition, these approaches should also be designed in a manner that will allow them to address alcohol use when it occurs in conjunction with other drug use. The criminal justice system should establish policies that ensure that referral to alcohol treatment is appropriate and accomplished systematically.

Schools do not yet systematically identify and refer students in need of diagnosis and treatment for alcohol problems. State agencies should encourage schools, health care providers, and other professionals to access state-of-the-art resources to help them identify youth who may need help and make referrals to appropriate agencies for diagnosis and treatment. In addition, policies and programs should support screening and referral that matches the needs of adolescent alcohol abusers with appropriate treatment options.