

Alcohol Beverage Control Policies: Their Role in Preventing Alcohol-Impaired Driving¹

Alexander C. Wagenaar, Ph.D.
The University of Michigan

Susan Farrell
National Institute on Alcohol Abuse and Alcoholism

The phrase "alcohol control policies" refers to the entire constellation of laws and regulations at the Federal, State, county, and city levels that affect how alcoholic beverages are manufactured, packaged, distributed, sold, and consumed. Control policies are central in any comprehensive discussion of the prevention of impaired driving because the availability of alcoholic beverages is a necessary condition for impaired driving. Furthermore, alcohol control policies, interacting with private market mechanisms, directly determine the degree to which beverage alcohol is available to consumers.

Concern with alcohol control policies has grown over the past two decades. Scientists and professionals in the alcohol studies field increasingly recognize that alcohol is a risk factor for a number of health problems, including traffic crashes, at both the individual and societal levels. That is, the more alcohol a given individual drinks, the higher the risk for health problems associated with that drinking, including automobile crash involvement (NHTSA 1985).²

Perhaps more important for public policy, the relationship also holds true at the aggregate level. As a society consumes more alcohol, rates of alcohol-related problems are likely to increase (Moore and Gerstein 1981). Clearly, the relationship is not one-to-one, since hundreds of factors contribute to each health problem, including motor vehicle injuries. For example, an increase in injury risk associated with higher alcohol consumption could be offset by a decrease in risk resulting from other actions, such as increased safety belt use. The important point is that alcohol consumption and associated problems such as traffic crashes are viewed as public health problems, with a large population at risk of involvement in alcohol-related crashes. To be most effective, prevention strategies should reduce risks across the population, rather than focus on the relatively small segment of society that at any given time exhibits extensive problems with alcohol (i.e., addicted drinkers). Since customs and patterns of alcohol consumption

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2 Obviously, the relationship between alcohol consumption and alcohol problems is not deterministic, but probabilistic. Increased consumption of alcohol increases the probability of associated problems, such as traffic crashes. Many individual differences and situation-specific factors affect the outcome in any given case.

apparently spread through the population by social diffusion (Skog 1980, 1985), alcohol control measures are likely to affect all consumers of alcohol, including both those with low-risk drinking patterns and those with high-risk drinking patterns.

Another consequence of the public health view is recognition that very small changes in behavior by large populations can result in substantial net benefits to society in terms of reduced alcohol-related problems. For example, a small reduction in an individual's alcohol consumption is not likely to have an immediately observable effect on that person's health.³

However, the same proportionate decrease in alcohol consumption across the entire society is much more likely to have demonstrable benefits in terms of reduced rates of alcohol-related problems. Therefore, the relevant consideration is not whether a specific alcohol control policy has an observable effect on given individuals, but whether changes in behavior (perhaps undetectable at the individual level) cause demonstrable changes in rates of health problems in the aggregate.

Alcohol control policies might affect impaired driving by two mechanisms. First, such policies encourage or restrain the total *amount* of alcohol consumed, and amount is a risk factor for impaired driving and the injuries that result. Second, specific control policies alter the *pattern* of alcohol consumption (i.e., how a given quantity of alcohol is consumed across time and across situations). For example, it is sometimes suggested that policies that encourage drinking in one's own home rather than in a bar or tavern be adopted to reduce the likelihood of impaired driving. Obviously, such policies might reduce traffic crashes but exacerbate other problems associated with alcohol, such as household injuries or spouse or child abuse.

This chapter has three objectives. First, we describe the types of laws and regulations included under the broad rubric of Alcohol Beverage Control (ABC) policy. We briefly discuss many dimensions of ABC policy to encourage a broader consideration of the mechanisms already available that may be useful in efforts to reduce alcohol-impaired driving and its damaging consequences. We do not include a lengthy discussion and analysis of the research evidence for the efficacy of each of these many policy dimensions in reducing alcohol consumption and alcohol-related problems. For most dimensions of ABC policy, evaluation research is scarce, and many of the studies that are available have major research design or implementation problems that limit confidence in the results. Therefore, the second objective is more modest. We identify ABC policies that have a significant body of research available, specifically those for which there is a scientific basis for assessing their utility in reducing impaired driving. The third objective is to present recommendations for changes in ABC policy and its application, acknowledging that both scientific and political considerations necessarily influence both the development and implementation of public policy.

Alcohol Control Policies

To structure the discussion of the wide variety of alcohol control policies, we have grouped them into eight categories:

- Economic control policies
- Marketing control policies

³ This is not to minimize the benefits of relatively small changes in consumption in certain situations. For example, reducing a driver's blood alcohol concentration from 0.08 g/100 ml to 0.04 g/100 ml by consumption of two rather than four drinks in an hour reduces the risk of involvement in a traffic crash by more than 50 percent (Jones and Joscelyn 1978).

- Structure of the distribution system
- Regulation of individual outlets
- Selling/serving control policies
- Controls on product contents and packaging
- Legal availability control policies
- Social availability control policies

Some regulations span these categories; we have placed them in the category with which they are most closely identified. The major function of the categorization is heuristic—to show the breadth of policies that fall under the term “alcohol control policy” and to show how specific policies are conceptually related.

Economic Control Policies

The most significant influence of ABC policy on the price of alcohol is the level of excise and sales taxes on those beverages. Some jurisdictions have special tax rates for specific products (e.g., alcoholic beverages containing local citrus products are treated favorably in Florida). Federal excise tax rates on alcohol vary across beverage types (e.g., beer, wine, distilled spirits). They are levied on the quantity sold (e.g., bottle, barrel, gallon) rather than on price, and are not adjusted for inflation. Except for a small increase in the tax on distilled spirits, Federal excise taxes have remained constant since 1951. As a result of this and other factors, the real price of alcoholic beverages has fallen substantially over the last several decades. State excise taxes on alcohol have been increased periodically, but also tend to fall behind inflation. In addition, the effective price of alcohol to consumers is influenced by levels of disposable income available, with alcohol becoming less expensive when macroeconomic conditions are favorable and incomes rise, unless retail alcohol prices rise accordingly.

A number of other economic control policies affect the (nominal) price of alcohol to consumers. In some States, for some beverage classes, public policy determines the exact level of retail price charged to consumers, and prices are uniform throughout the jurisdiction. In some cases, price levels and variability are controlled, short of specification of exact retail prices of alcohol. Minimum/maximum prices can be established directly, or minimum/maximum markups over wholesale prices can be authorized. Rebates of purchase price after the sale are prohibited in some areas, as are special price promotions such as “happy hour” discounts. Other inducements to purchase alcohol—such as coupons, gifts, and prizes—may be regulated or prohibited. Provisions under which credit can be extended to retailers and consumers for the purchase of alcohol also influence the cost and accessibility of alcohol.

Finally, the price of alcohol to some consumers is significantly affected by whether alcohol purchases are tax deductible (Mosher 1983). For those in higher income categories (i.e., with higher marginal tax rates), tax deductions for alcohol consumed in the course of business activity effectively reduce the price by one-third.

Marketing Control Policies

Most discussion of ABC policies concerning marketing focuses on restrictions on the advertising of alcoholic beverages. Advertising may be prohibited outright for some beverages in some media. More commonly, the content of advertising is regulated. Content issues include whether prices may be listed, whether the alcohol content of the advertised beverage may be stated, whether actual consumption of alcohol may be depicted, and minimum age for models that may be used. Current policies frequently include limits on more subjective characteristics, such as content that appeals to “prurient interests”; is “offensive, gaudy, or blatant”; “illustrates women sensuously”;

uses "religious signs or symbols"; or uses words like "booze" or "saloon." Current Federal regulations include language regarding limits on misleading or deceptive advertisements, although these limits have not been consistently enforced (Mosher and Wallack 1981). Prohibitions on lifestyle advertising have been suggested. Lifestyle advertising closely ties alcohol consumption to personal, financial, athletic, and sexual satisfaction and success, in contrast to advertising that focuses on specific characteristics or descriptions of the beverage.

Which media are appropriate for alcoholic beverage advertising is an issue in ABC policy. Should such advertising be permitted on billboards and in the broadcast media, where a substantial part of the audience is under the legal drinking age? A similar question holds for magazines having most of their readers under the legal age. The role of advertising revenues in influencing media coverage of health and social consequences of alcohol use is also relevant. The extent of such influence regarding alcohol is currently unknown. However, research has shown a clear relationship between amount of revenues received from tobacco advertisers and editorial content on the hazards of smoking. Publications with large numbers of cigarette advertisements rarely mention the hazards of smoking in their articles on health (Warner 1985, 1986).

In addition to advertising, many other dimensions of the promotion of alcoholic beverages are susceptible to regulation. Displays and posters promote alcoholic beverages at the point of sale. T-shirts, jackets, and other clothing reinforce messages of advertising campaigns. Other products with beverage alcohol names and images are frequently marketed (e.g., Bud Light Spuds MacKenzie dolls are sold in toy and novelty stores). Sponsorship of sporting matches, music concerts oriented toward teenagers (rock concerts), and other events also promotes alcoholic beverages. Alcoholic beverages are distributed free of charge at special promotions. Fees are paid to movie producers in exchange for depicting on-screen, integrated into the plot, the use of a specific brand of alcoholic beverages. This practice constitutes advertising even though viewers may not perceive it as such.

In addition to controls on alcoholic beverage advertising, requirements for counter-advertising have been proposed. Requiring advertisements on the hazards of alcohol ("equal-time" policies) and specifying that alcoholic beverage containers have warning labels regarding those hazards are frequently mentioned as means to partially balance advertising claims that encourage alcohol use with information on the risks of such use. (Rarely do proposals for counter-advertisements literally specify "equal time." Typically, a lower ratio of advertisements to counter-advertisements is proposed, for example, one counter-advertisement for every four or five advertisements.) Other proposals include compulsory warning messages in all alcohol advertising (similar to the warnings in cigarette advertisements) and required warning posters where alcohol is sold or consumed.

Finally, allowing or limiting the tax deductibility of advertising and other promotional efforts is another dimension of ABC policy that affects the marketing of alcoholic beverages.

Structure of the Distribution System

The most commonly noted characteristic of the alcoholic beverage distribution system in the United States is whether a given State has a monopoly or license system. States are frequently dichotomized as to whether they have a monopoly on alcohol sales or whether they license private enterprises to distribute alcoholic beverages. In reality, the monopoly-license dimension is a continuum, with States distributed at varying points according to the degree to which they control alcohol sales. Monopolies are frequently limited to a single class of beverage; for example, distilled spirits may be monopolized, while beer and wine are not. Monopolies may be limited to the wholesale level, or may

cover both wholesale and retail sales. Conceptual and empirical development of scales to measure where each State is on the control continuum is in the very early stages (Holder and Janes 1987). Such development should be encouraged to help move the research and policy discussions away from the simplistic tendency to dichotomize distribution systems.

Related to the degree to which the distribution system is a public monopoly is the structure and power of the agencies responsible for alcoholic beverage control. The number and characteristics of the people on the governing board, the nature of the appointing authority, and the grounds for removal of board members and the agency director affect how responsive the control agency is to local community concerns about alcohol outlets.

Government regulation affects many other dimensions of the distribution system structure, and these dimensions warrant attention regarding their effects on alcohol consumption and associated problems such as alcohol-impaired driving. Regulation of franchise alcohol outlets, amount of competition permitted, degree to which private monopolies or oligopolies are permitted, provisions allowing localized prohibition of alcohol sales, and extent of local government or community review of alcohol outlets are only a few of the dimensions of ABC policy that directly affect the structure of the alcoholic beverage distribution system (Roth et al. 1987).

Regulation of Individual Alcohol Outlets

Many analysts use the term "physical availability" to refer to the distance in space and time between individuals and a source of alcohol. A number of ABC policies affect when and where people can acquire alcoholic beverages. Typically, the number and density of retail outlets is limited by population or geographic area, with varying limits for different types of outlets (e.g., off-premise or on-premise consumption outlets; beer, wine, or distilled spirits outlets). Locations for alcohol outlets are controlled by prohibitions on alcohol outlets that are too close to schools, churches, or another alcohol outlet. When licensing new outlets in urban areas, proximity to public transportation should be considered to decrease the necessity of automobile use by impaired bar and tavern patrons (Ross 1982).

All States limit the days or hours that alcoholic beverages may be sold. Allowable opening and closing hours vary from State to State, and sales on Sundays and holidays may be prohibited or restricted to a few hours or to specific types of beverages.

Whether it is easy to open a new alcohol outlet or maintain a current outlet is influenced by license fees, limits on who may own a license, requirements for reporting and recordkeeping, financial means requirements, and availability and rates of mandatory liability insurance.

ABC policies also influence the nature and design of retail alcoholic beverage establishments. The types of retail establishments that may sell alcoholic beverages are also often restricted. The following types of outlets may be permitted to sell or restricted from selling alcoholic beverages: drug stores, convenience stores, grocery stores, hotels, resorts, sports stadiums, concert halls, private clubs, restaurants, and fast food restaurants. The architecture, lighting, visibility, number and placement of windows and doors, seating arrangements, and other physical characteristics of specific outlets — particularly those for on-premise consumption — are typically circumscribed to some degree. A number of ABC statutes and regulations specify other products that an alcohol outlet may, may not, or must, sell. For example, all on-premise alcohol outlets may be required to sell food or nonalcoholic beverages. The minimum portion of total revenues allowable from food sales may be specified. Whether gasoline stations and convenience stores that sell gasoline should be allowed to sell beverage alcohol is currently under debate in several States. Other activities in alcohol establishments may be restricted; for

example, nude dancing may be prohibited in places where alcohol is served. Many such regulations on specific alcohol outlets affect whether a new outlet opens, the characteristics of that outlet, the specific segment of the market it appeals to, the pattern of drinking encouraged by the establishment, and, as a result, the risk of alcohol-impaired driving.

Selling/Serving Control Policies

In addition to policies affecting alcohol outlets, many statutes and regulations, as well as a large body of case law, affect specific practices concerning how alcoholic beverages are sold or served. Some types of sales/serving practices are simply prohibited. On-premise consumption of alcoholic beverages has been limited to beer and wine in some jurisdictions, prohibiting sale of liquor by the drink. Self-service is not always allowed. Purchase of drinks "by rounds," where one person purchases drinks for a large group, may be prohibited. Size of serving containers may be controlled, prohibiting sales by the pitcher, for example. Serving alcohol to certain categories of consumers is typically prohibited. Such categories may include underage patrons, intoxicated drinkers, "habitual drunkards," or "known alcoholics." Finally, training may be required for those who sell or serve alcoholic beverages.

At least half of alcohol-related traffic crashes involve drinking at an on-premise establishment, even though only about a quarter of all alcohol sold is distributed by on-premise outlets (O'Donnell 1985). As a result, regulation of on-premise outlets may be particularly important for the prevention of impaired driving.

The best known dimension of ABC policy related to selling and serving practices is "dram shop" liability, that is, liability of sellers or servers for damage caused by alcohol-impaired persons. The typical case involves a bar patron who leaves an establishment after consuming large amounts of alcohol, and, while driving home, causes a traffic crash that maims or kills another motorist. The exact nature of the server's liability varies considerably across jurisdictions and is the consequence of complex interactions among statutory specifications, case law, and common law. Furthermore, administrative, civil, and criminal sanctions may be involved. Liability has typically been limited to commercial sellers/servers of alcoholic beverages. However, there have been cases in which social hosts have been held liable for damage caused by intoxicated guests, particularly if the guests are under the legal age.

Controls on Product Contents and Packaging

The amount of alcohol in alcoholic beverages is the most relevant product-content issue in terms of preventing impaired driving. Federal law currently prohibits labeling beer to show alcohol content unless State law requires such labeling. Beverages with very low alcohol content are frequently not considered alcoholic beverages. If such products (e.g., "near beer" with 0.5 percent alcohol) are marketed to underage drinkers, and if these drinkers use them as a gateway beverage before moving on to "real" beer, regulation might be considered appropriate. On the other hand, if consumption of very-low-alcohol beverages displaces consumption of beverages with higher alcohol content, tangible benefits in terms of reduced alcohol-impaired driving may result. Low-alcohol beer (2-3 percent alcohol) is another product that may affect alcohol-impaired driving, depending on whether the beverage substitutes for the same quantity of higher alcohol beverages or leads to adding new drinking occasions to existing consumption patterns.

A major component of the marketing strategies of alcoholic beverage industries is the development of new brands that are positioned to appeal to specific segments of the market. For example, some brands of beer are marketed to working-class males, others to upper middle-class males; some are targeted to blacks, others to women. Because

such market segmentation is central in efforts to increase alcohol consumption, some researchers have suggested that commoditization of the beverage alcohol market be considered (McGuinness 1988). Commoditization involves limiting the market to a small number of products and differentiating them based on product content, rather than on the image of the product and the market segment for which it is positioned. For example, the beer market might be restricted to light, medium, and heavy beer, based on alcohol content. With the exception of specifying the type, all packaging and labeling would be identical across all brands. The implications of such a move toward generic alcoholic beverages are complex and would represent a dramatic change from the current market structure.

Increased understanding of the nature of beverage alcohol markets and the potential role of ABC policy in structuring those markets to minimize risks associated with alcohol may help identify less dramatic (and more feasible) regulatory changes that nevertheless might minimize adverse effects on public health. For example, wine coolers are new products that have been successfully marketed in recent years. They are designed to appeal to a different population from traditional wine drinkers. Even more recently, wine coolers have been packaged in single-serving boxes that are indistinguishable from boxes containing fruit juice or punch (Trauma Foundation 1988). Effects of such new alcoholic products on drinking patterns and risks have not been studied, but they may warrant additional attention.

Finally, many detailed regulations deal with how various alcoholic beverages may be packaged. Container size (e.g., miniature versus larger bottles of distilled spirits), number of containers per case, position of any required tax stamps, ingredient labeling, and warning labels are a few examples. As noted already, warning labels may be one component of a larger effort to inform the public about the hazards of alcohol, particularly when related to driving.

Legal Availability Control Policies

The principal limit on legal availability of alcohol is the minimum drinking age. In all States, alcohol may not be sold to those under the age of 21, and those under 21 are prohibited from purchasing, possessing, or consuming alcohol. Specific legislative language varies from State to State. Some States prohibit all consumption of alcohol by underage individuals; others prohibit purchase or possession for personal consumption. Many States permit exceptions for religious ceremonies. Such legal proscriptions clearly do not prevent underage youth from acquiring alcohol; youth get alcohol from older friends and associates as well as from establishments that sell to youth despite the law (Hingson et al. 1983). Nevertheless, minimum-age statutes clearly make it more difficult for youth to obtain and consume alcoholic beverages.

Other legal availability control policies limit the locations and times when alcoholic beverages may be consumed. Open container laws in many States prohibit possession of an open container of alcoholic beverage in a motor vehicle that is being driven on a public road or highway. Consumption of alcohol in public is frequently prohibited, particularly on publicly owned property such as parks, plazas, and school grounds. Consumption of alcohol is prohibited or restricted where risks associated with consumption are perceived to be high, or where many nondrinkers are present, such as in sports stadiums and performance halls. Separate sections for nondrinkers may be required. Alcohol consumption is frequently prohibited on the job, especially by those whose positions directly affect public safety, such as commercial pilots, large-truck drivers, and railroad engineers. Policies mandating random or periodic testing of workers for alcohol (and other drugs) are currently under debate. Which occupations involve public safety to such a degree as to warrant such testing remains an open question.

Social Availability Control Policies

“Social availability” denotes the extent to which social norms regarding appropriate or inappropriate consumption of alcoholic beverages encourage behavior patterns that increase the risk of adverse effects of alcohol. The term is imprecise, and its definition is neither broadly accepted nor consistent. Nevertheless, it does point out possible public policies that may affect social norms regarding drinking, but that do not specifically regulate the distribution and sale of alcohol. For example, the depiction of alcohol use in movies and on television helps define social norms regarding drinking. The number of drinking occasions shown on prime-time television is disproportionate. Wallack and others (1987) found an average of 11 drinking occasions per hour during prime time in the fall of 1984. Depictions of alcohol consumption might be delayed until late in the evening to reduce the extent to which children and adolescents are exposed to them. Films might be rated with regard to their depiction of alcohol and other drugs, and these ratings provided to potential viewers.

Research Evidence: ABC Policies and Alcohol-Impaired Driving

Many dimensions of ABC policy are potentially relevant to reducing alcohol consumption, and thereby to reducing the death, disease, disability, and damage associated with use of alcoholic beverages, including motor vehicle crashes. Based on our broad knowledge about how economic, physical, and social environments influence people, the possible role of these policies must be considered in efforts to prevent alcohol-related problems, including traffic crashes.

However, stating clearly the known effects of each of the many dimensions of ABC policy is much more difficult. First, each specific policy dimension alone may have an effect so small as to be unidentifiable given available data and research technology. Nevertheless, their effect as a whole may be substantial. Second, no scientific literature exists on most of these dimensions of ABC policy, and limited research results are available for others. Excellent comprehensive reviews of the literature on many facets of ABC policy have already been published (Holder 1987; Ashley and Rankin 1988) and therefore will not be repeated here.

Of all the dimensions of ABC policy, two have been studied in detail, particularly with regard to their effects on traffic crashes. For these, sufficient scientifically credible evidence is available to make unambiguous policy recommendations.

Minimum Drinking Age

The minimum legal drinking age is perhaps the most thoroughly studied dimension of ABC policy. Furthermore, most of the studies explicitly focused on the effects of the minimum age on motor vehicle crashes. In the early 1970s, 29 States lowered the minimum age at which young people could legally purchase, possess, and/or consume alcoholic beverages (or at which alcoholic beverages could legally be sold to them). Soon afterward, there was a “dramatic increase” in the rate of alcohol-related crashes involving 18-, 19-, and 20-year-olds, according to a review by the General Accounting Office (GAO 1987).

Many studies of the lowered legal age laws were made, and a number of reviews have been published (Wagenaar 1983; Whitehead 1980). Reviewers concurred that, in the better designed studies (Cook and Tauchen 1984; Douglass et al. 1974; Whitehead et al. 1975; Williams et al. 1975), a decrease in the minimum drinking age was associated with

an increase in the rate of alcohol-related crashes among young drivers directly affected by the change in the law.

Persuaded in part by this evidence, States began to raise their minimum drinking ages in 1976—and a new generation of studies followed. In 1985, Congress asked GAO to review these studies critically and evaluate the degree to which they provided empirical support for Federal and State efforts to raise the legal drinking age (GAO 1987).

The GAO's search of the literature identified 32 studies of the impact of increasing the minimum drinking age on traffic crashes involving young people in the age group directly affected by the law. However, many of these studies were judged to be of insufficient scientific quality to inform policy decisions. Of the 14 studies that did meet GAO's methodological criteria, 4 addressed fatal crashes across several States and 5 addressed fatal crashes in individual states (Arnold 1985; DuMouchel et al. 1985; Emery 1983; FDCA 1983; Hingson et al. 1983; Hoskin et al. 1986; Klein 1981; Lillis et al. 1984; Maxwell 1981; Schroeder and Meyer 1983; Wagenaar et al. 1981; Wagenaar 1987; Williams et al. 1983).⁴ The remainder addressed crashes with other outcomes, such as injury and property damage. With one exception, these studies explored the effect of changes in the law on the number of young drivers involved in fatal or injury-producing crashes, whether or not the driver was killed or injured.

The GAO concluded that significant reductions in motor vehicle crashes among young people occurred in almost every State examined (GAO 1987). Further, despite differences in study design, analytic methods, outcome measures, and State characteristics, the reported reductions were often of similar magnitude. The findings provided by the four multi-State studies of fatal crashes lend themselves most easily to generalization. These studies reported reductions ranging from 5 to 28 percent. Studies of individual States obtained similar results. The GAO noted that results from multiple studies using multiple methods are rarely so consistent. States that did not show significant reductions in traffic crashes generally had small populations and few crashes, making it difficult to distinguish chance outcome from the effects of the law. Most of the studies reviewed by GAO addressed the immediate effect of raising the minimum drinking age. Two, however, explored the effects over the long term and found them to be sustained (Wagenaar 1987; DuMouchel et al. 1985).

Two studies meeting GAO's criteria for scientific adequacy (Lillis et al. 1984; Perkins and Berkowitz 1985) found that an increase in minimum drinking age was followed by a decrease in self-reported incidence of driving after drinking among young persons directly affected by the change in the law. However, both studies focused on New York, so the extent to which these results can be generalized to other jurisdictions is unknown.

Alcohol Price and Excise Taxes

With the exception of a 1985 increase in the distilled spirits tax (from \$10.50 to \$12.50 per proof gallon), Federal excise taxes on alcoholic beverages have remained constant for nearly four decades. If the Federal excise taxes on alcoholic beverages had increased by the same percentage as consumer prices between 1951 and 1985 (314 percent), they would have risen from \$10.50 to \$43.48 per proof gallon for distilled spirits, from \$0.29 to \$1.20 per gallon for beer, and from \$0.17 to \$0.70 per gallon for wine containing not more than 14 percent alcohol. Since most studies indicate that the price of alcoholic beverages influences consumption of alcohol (Ornstein and Levy 1983; Levy and Shefflin

⁴ A number of the studies that GAO identified in the form in which they originally appeared—conference papers and government reports—have since been published in the scientific literature. In their original version, most of these (Wagenaar 1986; DuMouchel et al. 1987; Hoskin et al. 1986; Saffer and Grossman 1987a) met GAO's criteria for scientific quality; others did not (Males 1986).

1983), the concern about the effect of current tax policy on alcohol-related problems is growing.

Three studies have specifically addressed the effect of changes in the real price of alcoholic beverages on motor vehicle crashes. Cook (1981) studied the impact of 38 changes in State taxes on distilled spirits that occurred in the 30 States with license (rather than monopoly) systems between 1960 and 1975. Although these tax increases were relatively small, nearly two-thirds of them were followed by a greater reduction (or smaller increase) in the auto fatality rate than occurred in the median State in the same year. Cook concluded that an increase in taxes on distilled spirits tends to reduce the rate of traffic fatalities.

Saffer and Grossman (1987a) explored the extent to which variations in State excise tax rates on beer contribute to fatal motor vehicle crashes among young people. They found that States with higher real beer taxes have lower motor vehicle fatality rates for three separate age groups (15-17, 18-20, and 21-24). Based on these results, they estimated that if the Federal excise tax on beer had been indexed to inflation since 1951, the number of 18- to 20-year-olds killed in motor vehicle crashes in 1975-81 would have been reduced by 15 percent. If alcohol in beer had been taxed at the same rate as alcohol in distilled spirits, the number of 18- to 20-year-olds killed would have been 21 percent lower. And a combination of these two tax policies would have reduced the number killed by 54 percent. Saffer and Grossman (1987a) also suggested that tax policy may be a more potent instrument than a uniform minimum drinking age of 21 for reducing traffic deaths among young people – in part because evasion is not possible. In another study, using different methods, Saffer and Grossman (1987b) estimated that a 100-percent increase in the tax on beer (approximately \$1.50 per 24-unit case) would reduce highway deaths 27 percent among 18- to 20-year-olds, 18 percent among 15- to 17-year-olds, and 19 percent among 21- to 24-year-olds.

Discussion and Policy Recommendations

To initiate the discussion, we offer three recommendations. First, no policy changes should be considered that may result in an increase in the degree to which alcoholic beverages are available without careful analysis, study, and public debate on the potential deleterious effects of such a policy change on alcohol consumption and associated health and social problems. Permitting retail sales of distilled spirits for on-premise consumption where that particular form of sales had been prohibited is an example of a modest policy change that may not be expected to have a demonstrable effect on alcohol use and problems. However, careful analyses of such a policy change in North Carolina found that a significant increase in alcohol consumption and traffic crashes followed the policy change (Blöse and Holder 1987; Holder and Blöse 1987). A broader recognition is needed of the many dimensions of ABC policies and of their potential role in the prevention of alcohol-related problems. Making informed decisions regarding ABC policies will require a substantially increased commitment to research and evaluation of specific ABC policy dimensions.

Second, the minimum legal drinking age of 21 should be retained, and enforcement of the age-21 policy should be strengthened. The weight of the evidence clearly shows substantial benefits of the age-21 policy in terms of reduced traffic deaths and injuries. The burden of proof now rests with those suggesting a lower age to demonstrate the net benefits of such a change.

Finally, Federal excise taxes on alcoholic beverages should be adjusted for fairness and equity in three dimensions. First, Federal excise taxes should be equalized according to ethanol (pure alcohol) content across all types of beverages by an increase in the rates

for beer and wine to those of distilled spirits. Second, the resulting equal tax rate should be adjusted for past inflation by an increase that reflects changes in the Consumer Price Index for the previous year. The extant research evidence shows that an increase in the excise tax could have the largest long-term effect of all policy and program options available to reduce alcohol-impaired driving. Therefore, States should also change their excise taxes to equalize rates across beverages, adjust for past inflation, and index for future inflation. The proposed changes in alcohol taxes do not represent a radical change in policy. They simply increase fairness by taxing all alcohol at equivalent rates and correct for the unfortunate effects of inflation over the past two decades.

While we acknowledge the size and political power of the alcoholic beverage industries, the time appears to be right for such a change in excise tax policy. A "window of opportunity" (Kingdon 1984) for correcting the continuing erosion of alcohol excise taxes may appear in the next year or so. A broad concern with healthier lifestyles (e.g., diet, exercise, stress reduction), concern about medical care cost containment, and increased disapproval of drug use are providing a climate in which increased excise taxes on alcohol are supported. The huge Federal budget deficit will create continuing pressures to raise revenues and minimize program costs. Increases in alcohol excise taxes meet these needs well. They raise revenues and decrease levels of major health problems and their associated costs, and they do not require resources for new program development and implementation.

Public support for increased alcohol taxes is high. A recent Statewide probability survey in Michigan found 86 percent of the population in favor of increasing the alcohol excise tax to pay for programs to combat alcohol-impaired driving (Wagenaar et al. 1988). In an October 1986 Gallup poll, 66 percent of respondents approved of doubling the Federal excise tax on alcoholic beverages (Gallup 1987).

Finally, increased excise taxes can be recommended based on equity and justice arguments. Consumption of alcoholic beverages costs society billions of dollars in medical care, social damage, and lost productivity (NIAAA 1987). Those costs are shared by all through general sales and income taxes, insurance premiums, and prices of the goods and services consumed. An increased excise tax would result in a higher proportion of those costs being paid by those who consume alcohol (Mosher and Beauchamp 1983). Some may even want to term the excise tax a "user fee" rather than a tax, since only those who consume this particular hazardous product have to pay it, and its function is to ensure that consumers pay a higher proportion of the true costs of the product.

Arguments can also be made against increasing the excise tax on alcoholic beverages. The first is that such a policy may affect "social" drinkers but not the heavy drinkers who are causing social and health problems. Alcoholics, because of their addiction, will obtain alcohol no matter what the price, this argument contends. On the contrary, research has shown that addicted users of alcohol respond to price changes along with nonaddicted users (Cook 1981; Cook and Tauchen 1982). Even if addicted drinkers were less responsive to price, about half of alcohol-related traffic fatalities are caused by non-addicted or "social" drinkers (Vingilis 1983). A substantial decline in this portion of the traffic crash problem resulting from an excise tax increase would be a major success in itself.

The second argument against an excise tax increase is that excise taxes are regressive and fall disproportionately upon lower income families. It is true that lower income consumers pay a higher proportion of their disposable income for a particular product; however, alcoholic beverages are not necessities but, rather, discretionary goods. In addition, alcohol consumption is positively related to income—those at higher income levels consume larger quantities of alcohol and would therefore pay more of the tax. Furthermore, regardless of income level, significant benefits will accrue to families in which heavy alcohol users reduce their consumption because of the tax.

A third argument against an increase in the excise tax rate is that government revenues will fall, if in fact the policy is successful in reducing alcohol use. However, the best overall estimates of the price elasticity of alcohol are typically more than 0.4 but less than 1.0 (Levy and Sheflin 1983). As a result, an increase in excise tax rates from current levels will result in both increased government revenues and reduced consumption of alcohol.

Conclusion

Our objectives in this chapter were to:

- increase awareness of the complex multidimensional nature of alcohol beverage control policy in the United States,
- review research on effects of selected ABC policy dimensions on alcohol-related traffic crashes, and
- stimulate discussion regarding the most promising dimensions of ABC policy for the reduction of alcohol-impaired driving.

While it is unlikely that there will be universal agreement with every specific point in our analysis, most scientists studying alcohol policy issues appear to support the recommendations offered here. Nevertheless, this chapter has only outlined the approximate boundaries of the dialog. Continued research, policy analysis, and discussion among scholars, policymakers, and others will help further delineate the many issues involved. Finally, health education efforts are needed to increase awareness among the general public of the effects of ABC policy and to build public support for policy changes necessary to effectively reduce alcohol-impaired driving and its life-disrupting consequences.

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