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The Role of the Alcohol Industry in Policy Interventions for Alcohol-Impaired Driving¹

*Thomas F. Babor, Ph.D., M.P.H., Katherine Robaina, M.P.H., and
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EXECUTIVE SUMMARY

Introduction

Through its corporate social responsibility (CSR) efforts, the alcoholic beverage industry has become increasingly active in the support, analysis, and promotion of drinking and driving countermeasures and policies, especially in relation to road traffic safety. The involvement of the alcohol industry in these initiatives has been questioned by some organizations and individuals in the public health community, as well as others involved in road traffic safety. In light of these concerns, the objectives of this paper are to (1) describe the structure and concentration of the alcohol industry in the United States and internationally; (2) review commercial and political activities of the alcohol industry that may influence alcohol-related harms, particularly in the area of drinking and driving; and (3) evaluate drinking and driving initiatives advanced by the alcohol industry from a public health perspective. In the final section, we consider the implications of the findings for public health professionals, road traffic safety advocates, the alcohol industry, nongovernmental organizations (NGOs), researchers, and other interested individuals.

¹ This is an abridged version of the paper. A full version including all tables and figures can be found in the public access file for the Committee on Accelerating Progress to Reduce Alcohol-Impaired Driving Fatalities. Available by request from the National Academies of Sciences, Engineering, and Medicine's Public Access Records Office (PARO@nas.edu).

Methods

The information presented in this paper was compiled using two methods: (1) a narrative review of the relevant literature and (2) a content analysis of industry activities related to drinking and driving. The source materials for the narrative review consisted of industry documents, organizational websites, annual reports, industry trade journals, and an extensive search of the world scientific literature including articles, reviews, editorials, commentaries, newspaper articles, books, book chapters, and unpublished documents. The analysis of industry activities was based on a systematic evaluation of 97 “industry actions” that were conducted by alcohol producers and related organizations in support of the World Health Organization’s (WHO’s) 2010 Global Strategy to Reduce the Harmful Use of Alcohol.

Findings

Global Concentration

- The global concentration of the alcohol industry into a small number of transnational alcohol corporations has increased the industry’s capacity to act individually and in concert in order to influence alcohol policy at the national, regional, and local levels.
- Market expansion by transnational producers of alcoholic beverages is likely to result in increased alcohol availability, which in turn can impact alcohol consumption and the prevalence of alcohol-related health consequences, including traffic injuries and fatalities.

Commercial Activities

- Evidence suggests that some of the alcohol industry’s commercial activities have the potential to not only increase the frequency and amount of alcohol consumption, but also the likelihood of alcohol-impaired driving.
- The alcohol industry’s marketing and product design activities contribute to the ongoing recruitment of young people, women, and other vulnerable populations, and may increase alcohol consumption through the promotion of more frequent drinking occasions. Evidence suggests that the relationship between the alcohol industry and the energy drink industry is mutually beneficial, despite the significant risks associated with alcohol mixed with energy drinks, such as increased alcohol consumption and related harms.

- Through industry trade associations and self-regulatory alcohol marketing codes, U.S. alcohol producers have pledged not to promote alcohol-impaired driving and to avoid associating driving with alcoholic beverages in their marketing activities. Associating alcoholic beverages with race car driving is likely in violation of these pledges as well as the industry's own self-regulatory advertising codes because the brand is being identified with a sport that displays vehicles driving in a manner that would be deemed unsafe and illegal if it occurred on a public road.

Corporate Political Activities

Corporate political activities are conducted in many parts of the alcohol industry to create a favorable regulatory environment. The main political strategies are

- Using information and other means to gain access to political decision makers;
- Indirect targeting of political decision makers through constituent support;
- Promoting alternative policies or voluntary measures (policy substitution);
- Providing financial incentives to influence government policy makers; and
- Employing legal preemption, litigation, or circumvention.

Each strategy includes a variety of tactics, and many of these tactics are carried out under the umbrella of corporate social responsibility.

In most cases, it is difficult to establish a direct link to alcohol policies that either reduce or increase alcohol-impaired driving and alcohol-related traffic injuries, but there is considerable circumstantial evidence that some of these activities are detrimental to public health and traffic safety, and that many others serve to dilute the public health response.

In many instances, the industry has built partnerships or is involved in collaborations with government agencies and civil society organizations with the aim of developing alcohol-impaired driving countermeasures. There is little evidence that they achieve their intended aims, and in some cases they have been criticized because of industry domination of the committee process and failure to consider effective policies.

Content Analysis of Industry Actions

A content analysis of 97 industry actions conducted in support of the WHO's Global Strategy to Reduce the Harmful Use of Alcohol provides

strong evidence that the alcohol industry does not fund or support public health policies that have been shown to prevent alcohol-impaired driving and reduce alcohol-related harm. Nearly all (97.9 percent)² of the alcohol industry's U.S. drinking and driving initiatives were rated as either ineffective or of unknown effectiveness.

Conclusions

Three general conclusions are derived from the evidence presented in this paper. First, some of the industry's promotional activities, combined with product innovations, have the potential to increase not only the frequency and amount of alcohol consumption but also the likelihood of impaired driving. Second, some of the alcohol industry's corporate political activities are used to oppose effective alcohol policies whereas others are used to improve the public image of the producers as good corporate citizens. Third, based on current scientific research, neither of these activities is likely to reduce the incidence of alcohol-impaired driving because most of the policies and programs favored by the alcohol industry are ineffective. The findings reinforce recent concerns expressed by NGOs, the scientific community, and international health agencies in relation to the alcohol industry's road traffic safety initiatives.

Recommendations

We close with a set of recommendations regarding the role of the alcohol industry in the development of policy aimed at reducing alcohol-impaired driving and its negative consequences.

- The alcohol industry has the capacity and the responsibility to minimize the harm caused by its products at all stages of the production chain, especially in terms of product design and marketing.
- In setting and implementing their public health policies with respect to alcohol control, federal and state agencies as well as civil society organizations need to protect the integrity of these policies from commercial and other vested interests.
- In the absence of clear evidence that the industry is fulfilling its responsibilities, civil society organizations and professional groups should not enter into partnerships with the commercial alcohol industry, its community outreach public relations organizations,

² This information was updated after the prepublication release.

and other groups substantially funded by the commercial alcohol industry.

- Research on drinking and driving should be funded only by sources that are independent of commercial and other vested interests.

INTRODUCTION

A United Nations General Assembly resolution (#64/2551) proclaimed 2011–2020 the Decade of Action for Road Safety. According to WHO, nearly 1.2 million people die in road crashes annually throughout the world. Because alcohol-impaired driving is one of the main factors contributing to crashes, the alcohol industry has expressed concern about the abuse of its products and has focused on the need to prevent drinking and driving as a reflection of their corporate social responsibility (Hawkins et al., 2012). For example, at a press conference in October 2012, representatives of 11 of the world’s largest alcohol producers and two trade associations issued a list of “Commitments,” one of which was to prevent driving under the influence of alcohol (Producers’ Commitments, 2015). At the same time, a website listing more than 3,500 “Industry Actions”³ was released to demonstrate the alcohol industry’s ability to address harmful drinking in support of WHO’s Global Strategy to Reduce the Harmful Use of Alcohol (WHO, 2010). Among these activities, nearly 100 (n = 97) were classified as drinking and driving initiatives in the United States, and many others (n = 169) were promoted by U.S.-based producers in other countries (Esser et al., 2016).

The involvement of the alcohol industry in the promotion of these initiatives has been questioned by some in the public health community, as well as others involved in road traffic safety. More than 500 individuals and 27 organizations from 14 countries endorsed a “Statement of Concern” that was addressed to the director general of WHO (Babor et al., 2013). The statement questioned the alcohol industry’s unilateral assumption of public health responsibilities in the implementation of the WHO Global Strategy, arguing that the producers’ proposed actions were unlikely to reduce harmful alcohol use.

Objectives

In light of growing concerns about the inherent conflict of interest and lack of expertise in the promotion of public health measures by the

³ The website that hosted the database was shut down in April 2016. A snapshot of the website can be seen at <https://web.archive.org/web/20121015022208/http://initiatives.global-actions.org> (accessed November 22, 2017).

alcohol industry, the objective of this paper is to document and critically evaluate the strategies used by the alcohol industry to influence public health policy related to road traffic safety, and to consider the implications of the findings for public health professionals, road traffic safety advocates, the alcohol industry, NGOs, researchers, and other individuals and organizations.

This paper is divided into five sections. The introduction provides an overview of the alcoholic beverage industry and explains the rationale for addressing alcohol consumption, promotion, and policy in relation to road traffic safety. The second section describes alcohol industry marketing practices and commercial strategies, including CSR activities designed to improve brand image. The third part reviews corporate political activities undertaken by the alcohol industry in relation to drinking and driving. The fourth section presents the results of a content analysis of industry activities conducted during the past decade in relation to drinking and driving. The final part draws conclusions and makes recommendations that may have implications for various stakeholders and constituencies involved in public health and traffic safety.

Methods

This paper was compiled using two methods: a narrative review of the relevant literature and a mixed method analysis of industry activities related to drinking and driving. The results of the literature review are summarized in the second and third sections of this paper. The source materials consisted of industry documents, organizational websites, annual reports, industry trade journals, publicly available presentations, and business meeting reports and transcripts. Additional information was obtained from an extensive search of the world scientific literature including articles, reviews, editorials, commentaries, newspaper articles, books, book chapters, and unpublished documents. Google and other search engines were used to obtain grey literature (e.g., unpublished documents and reports relevant to health issues) as well as industry documents. As described in a later section, the second method consisted of a quantitative and qualitative analysis of recent industry activities in the United States focused on drinking and driving.

The Alcohol Industry

The term *alcohol industry* refers to the producers of beer, wine, and distilled spirits and their networks of distributors and retailers. Trade associations and social aspects/public relations organizations, which are funded to promote industry interests, are also included in this definition.

TABLE C-1 Largest U.S. Beer, Wine, and Distilled Spirits Companies in 2015

Company	Market Share by Volume (%)
<i>Beer</i>	
Anheuser-Busch InBev NV	44.3
SABMiller	28.1
Constellation Brands Inc.	7.0
Heineken NV	4.8
Boston Beer Company	2.2
<i>Wine</i>	
E&J Gallo Winery	24.6
Constellation Brands Inc.	15.9
The Wine Group	15.5
Trincherro Family Estates	5.1
St. Michelle Wine Estates	2.9
<i>Distilled Spirits</i>	
Diageo PLC	16.7
Beam Suntory Inc.	10.1
Bacardi & Company Limited	9.0
Sazerac Company, Inc.	8.7
Pernod Ricard SA	6.9

SOURCES: Mintel Group, 2016a,b,c.

In the past decade, transnational corporations have concentrated the market in the malt beverage sector by purchasing local companies and regional breweries (see Table C-1). For example, Anheuser-Busch (AB) InBev, the world's largest brewer, recently acquired SABMiller to create the largest overall alcohol producer in the world. The distilled spirits industry has also become more concentrated with Constellation Brands and Diageo emerging as two of the largest transnational owners of distilled beverage brands, although the U.S. market share for Constellation Brands remains relatively small (less than 5 percent). Consolidation has occurred in the wine industry as well, with three wine producers controlling more than 50 percent of the market share. However, the wine industry remains relatively decentralized in the United States, and large corporations, such as Mondavi, Gallo, and Kendall-Jackson, have focused on international, rather than U.S., investments.

In a broader sense, the alcohol industry also includes proprietors of local hospitality outlets and entertainment industries such as restaurants, clubs, hotels, tourism, and sports. Another group, although not under the direct control of alcohol producers and trade associations, consists of advertising, marketing, research, and other organizations that are substantially dependent on alcohol industry funding for their activities.

TABLE C-2 Major Segments of the U.S. Alcoholic Beverage Industry: Large Producers, Trade Associations, and Social Aspects/ Public Relations Organizations

	Beer	Distilled Spirits	Wine
Largest producers (parent company)	Anheuser-Busch InBev	Diageo	E&J Gallo Winery
	Molson Coors	Pernod Ricard	Kendall-Jackson
	Heineken	Bacardi	
	Blue Ribbon	Brown-Forman	
	Boston Beer Company Constellation Brands, Inc. Yuengling		
Trade associations	Beer Institute	Distilled Spirits Council (DISCUS)	Wine Institute
	Brewers Association		California Association of Winegrape Growers
Social aspects/ public relations organizations	Foundation for Advancing Alcohol Responsibility (FAAR) (formerly Century Council)		
	International Association for Responsible Drinking (IARD) (formerly ICAP)		

Table C-2 describes the structure of the U.S. alcoholic beverage industry in terms of major producers, trade associations, and social aspects/public relations organizations.

Other segments of the alcohol industry include local producers and on- and off-premises vendors. There are several types of local producers: craft brewers and those making premium alcoholic drinks including wine, whiskey, and rum. This paper primarily focuses on large national and transnational alcohol producers because they are more involved in lobbying, policy initiatives, marketing, and product development that may affect alcohol consumption and alcohol control policy related to road traffic safety. The results of this analysis may not apply to other segments of the industry, as noted in the Conclusion.

On-premises vendors refers to establishments that sell alcoholic beverages for consumption at the establishment (e.g., bars, nightclubs, restaurants). Off-premises vendors refers to establishments that sell alcoholic beverages that are consumed elsewhere (e.g., package stores, grocery stores).

U.S. states differ in the number and density of on- and off-premises alcohol retailers, and in many states, small retailers account for the majority of alcohol sales. But this is changing rapidly with the growth of large

retail outlets and supermarkets, which has increased the number of off-premises locations where alcohol is sold. As suggested below, policies that affect the number and density of retail outlets are likely to affect the prevalence of drinking and driving.

Impact Assessment and Implications for Public Health

The global concentration of the alcohol industry into a small number of large transnational alcohol corporations has increased the industry's capacity to act individually and in concert in order to influence alcohol policy at the national, regional, and local levels (Jernigan, 2009; Jernigan and Babor, 2015). The alcohol industry plays an important role in the development of new products (e.g., caffeinated alcohol “energy drinks” and alcopops) and the promotion of these products through sophisticated marketing techniques. These promotional activities, combined with market expansion by the transnational producers, result in increased alcohol availability and sales, which in turn can affect alcohol consumption levels and the prevalence of alcohol-related problems. Although there is some evidence (Babor, 2014; Babor et al., 2015; Ferreira-Borges et al., 2016) that these activities are leading to increased alcohol consumption in low- to middle-income countries, consumption in high-income countries such as the United States is stable or declining. The following section describes how the alcohol industry uses marketing practices and other commercial tactics in ways that could contribute to the harmful use of alcohol.

MARKETING PRACTICES AND COMMERCIAL STRATEGIES

A significant amount of alcohol industry revenue is spent on the marketing and promotion of alcoholic beverages. According to *Advertising Age* (AdAge, 2016), the top 100 global advertisers in 2016 include 7 alcohol companies operating in the United States. The alcohol industry's marketing activities play an important role in defining the environment in which harmful drinking patterns are learned and practiced (Babor et al., 2015; Robaina and Babor, 2017).

From the perspective of road traffic safety, at least three strategies are noteworthy: (1) the targeting of young adults; (2) product innovations that facilitate heavy drinking; and (3) sponsorship of sporting and auto racing events.

Promotion of Alcohol to Selected Target Groups

Young adults, women, and racial and ethnic minorities (e.g., Hispanics) are mentioned in numerous industry documents as a key growth

sector and a demographic category of strategic importance (e.g., AB InBev, 2016a; SABMiller, 2016). Representing over half the population and 85 percent of purchasing power (Omazic, 2014; Silverstein et al., 2009), women are seen by many of the major alcohol producers as a consumer group where sales are likely to increase (O'Reilly, 2014). For example, multiple instances were found of alcoholic beverages being advertised in concert with breast cancer awareness messages (Mart and Giesbrecht, 2015). Additionally, marketing programs like "Make it a Margarita Moment" for AB InBev's Lime-a-Rita products have been specifically designed for women (Anheuser-Busch, 2017). Making beer more appealing to women is mentioned in SABMiller's (2016) annual report as one of the key elements of their growth strategy. The company's marketing chief, Nick Fell (Joseph, 2014), was quoted as saying: "It's time to change the image of beer as just a drink for guys watching sport."

Young populations have become the focus of efforts to build brand recognition, strengthen brand loyalty, and initiate regular alcohol consumption. One mechanism is through digital marketing, which has become increasingly common in part because it is relatively inexpensive and online campaigns can be closely tailored to specific target audiences. There are neither voluntary nor statutory regulations restricting when or where alcohol advertising should be published, and procedures that are designed to prevent minors from entering company websites can be easily circumvented. For this reason, nearly all producers and brands in the United States have some type of online presence, with many using multiple social media channels (e.g., Facebook, Twitter, YouTube, Instagram, Foursquare) (Lobstein et al., 2017). Websites and social media platforms are often designed to encourage personal interactions with a brand in various ways, including interactive games, the sharing of messages, images, and videos, and links to other websites.

Product Innovations

Alcoholic beverage sales can be increased in key demographic groups through product innovation and product design. For example, high-strength premixes and spirit-based, ready-to-drink (RTD) products are aimed at price-conscious younger consumers, specifically students, as are alcoholic energy drinks. Sweet RTD alcohol products appeal to women and young people, particularly underage drinkers, who are not always aware of the beverage's alcohol content (CHOICE, 2008; Copeland et al., 2007; Euromonitor International, 2017).

One area where product innovations have been implicated in drinking and driving in a more direct way is alcoholic energy drinks. Premixed alcoholic energy drinks entered the U.S. market in the early 2000s after

the successful introduction of the nonalcoholic energy drink Red Bull in 1997. Among these early entrants were Sparks (Miller Brewing) in 2002, Tilt (AB) in 2005, and FourLoko (Phusion Projects) in 2005. In 2008, the Center for Science in the Public Interest (CSPI) sued AB InBev and Miller Brewing, alleging that caffeine and other stimulant additives were not officially approved for use in alcoholic beverages (Cronin and Stone, 2008). The CSPI suit, as well as pressure from more than a dozen U.S. attorneys general, led to several products being either removed from the market or reformulated to reduce or eliminate the product's stimulants prior to the suit reaching trial. In 2010, premixed alcoholic energy drinks were functionally banned after the Food and Drug Administration (FDA) labeled caffeine as an "unsafe food additive" for alcoholic malt beverages (FDA, 2010), although other premixed drinks (e.g., p.i.n.k. vodka) are still on the market.

Despite the ban on premixed alcoholic energy drinks, official relationships between some alcohol producers and some segments of the energy drink industry have continued. For example, in 2007, AB InBev signed a distribution deal with Monster Energy, the second most popular energy drink in the United States, to manage and coordinate the distribution of Monster Energy products to on-premises alcohol retailers, such as bars, nightclubs, and restaurants.⁴ The distribution deal still appears to be active following AB's merger with SABMiller.⁵ In 2017, AB InBev agreed to purchase the energy drink maker Hiball for an undisclosed amount (Snider, 2017).

Sponsorships

Strategies designed to integrate alcohol consumption into particular lifestyles, as well as cultural and ethnic experiences, have been documented in promotions that associate alcohol products with sports, cultural events, and music. While some countries (e.g., Costa Rica, France, and Guatemala) have banned sponsorship in sports and youth events, this is not the case in the United States. Sports and popular music events that appeal to young people are widely sponsored by alcohol brands.

⁴ Canadean. 2016. *History, Monster Beverage Company*. Progressive Media Group. Available by request from the National Academies of Sciences, Engineering, and Medicine's Public Access Records Office (PARO@nas.edu).

⁵ Hoover's, Inc. 2017. *Hoover's Company Records—In-depth records*. Anheuser-Busch Companies, LLC. Available by request from the National Academies of Sciences, Engineering, and Medicine's Public Access Records Office (PARO@nas.edu).

Reuters Knowledge Direct. 2017. *Anheuser-Busch Companies, LLC*. Thomson Financial. Available by request from the National Academies of Sciences, Engineering, and Medicine's Public Access Records Office (PARO@nas.edu).

TABLE C-3 Alcohol Brand Sponsorships in U.S. Motorsports in 2017

Motorsport Series	ARCA	Formula Drift	IndyCar	IHRA
Does an alcohol brand sponsor the series?	N	N	Y	N
If yes, what brands?			Coors Light	
Does an alcohol brand sponsor one or more races in the series?	N	N	N	N
If yes, what brands?				
Does an alcohol brand sponsor one or more drivers/teams in the series?	Y	N	Y	N
If yes, what brands?	Captain Ron Craft Beer		Fuzzy's Ultra Premium Vodka; Domaine Tour Saint- Michel; Jim Beam	
Number of drivers/teams	66		94	
% driver/team brand sponsorship	1.5%		3.2%	

NOTES: ARCA = Automobile Racing Club of America; IHRA = International Hot Rod Association; IMSA = International Motor Sports Association; NASA = National Auto Sport Association; NASCAR = National Association for Stock Car Racing; NHRA = National Hot Rod Association; SCCA = Sports Car Club of America; USAC = United States Auto Club; USHRA = United States Hot Rod Association.

* ? = Information unknown.

Sponsorships provide a direct way for the alcohol industry to promote their products and to create a positive, emotional relationship between the brand and consumers.

All major U.S. professional sports leagues, including auto racing, are sponsored by at least one alcohol brand and sporting events attract substantial audiences, particularly young adults and middle-aged men, who are the heaviest consumers of alcoholic beverages. By sponsoring leagues, events, and/or teams, the alcohol industry is able to incorporate the brand

IMSA	NASA	NASCAR	NHRA	Rally America	SCCA	USAC	USHRA
Y	N	Y	N	N	N	N	N
Tequila Patrón		Coors Light					
N	?*	N	N	Y	N	?*	N
				Budweiser; Coors Light			
Y	?*	Y	Y	N	?*	?*	Y
Tequila Patrón (two teams); Adobe Road Winery		Twisted Tea (two teams); Wagner Family of Wine; Caymus Vineyards; Busch Beer; Miller Lite; Dale's Pale Ale	Tequila Patrón				Norman Vineyards (two teams)
101		111	87				79
3.0%		5.4%	1.1%				2.5%

SOURCES: Information retrieved from ARCA, 2017; Formula Drift, 2017; IHRA, 2017; IMSA, 2017; IndyCar, 2017; Monster Jam, 2016; NASA, 2017; NASCAR, 2017; NHRA, 2017; Rally America, 2017; SCCA, 2017; USCA, 2015.

into the name of the event through verbal pronouncements in sports commentaries, as well as signage on clothing, sporting arenas, and products sold to fans (Amis and Cornwell, 2005). Table C-3 describes the range of corporate sponsorships in auto racing leagues in the United States.

According to a report on the extent of alcohol advertising during the 2014 Formula One (F1) Monaco Grand Prix, alcohol sponsorship of F1 provides a platform for an extremely high exposure of alcohol advertising to audiences (Eurocare, 2015). During the broadcast of the 2014 Monaco

F1 race, the worldwide audience of 500 million people was exposed to an alcohol brand every 5 seconds on average.

In the United States, professional motorsports were the fourth most popular sport in 2014, surpassed by only the National Football League, Major League Baseball, and college football (Schwartz and McGarry, 2014). Motorsports were more popular than both the National Hockey League and the National Basketball League. This level of popularity allows motorsport sponsors to capture significant brand exposure. For example, there is approximately \$100 million worth of advertising exposure during races held on the Sunday of Memorial Day weekend (Katzmark, 2015), and any alcohol brand sponsorships of motorsports would be able to capitalize on such exposure.

Through industry trade associations and self-regulatory alcohol marketing codes, U.S. alcohol producers have pledged not to promote alcohol-impaired driving and to avoid having driving associated with alcoholic beverages. Associating alcoholic beverages with race car driving is likely in violation of these pledges as well as the industry's own self-regulatory advertising codes because the brand is being associated with a sport that displays vehicles driving in a manner that would be deemed unsafe and illegal if it occurred on a public road. For examples of alcohol brand sponsorships in U.S. motorsports, see (1) the 2017 NASCAR race car sponsored by Twisted Tea (see Figure C-1); (2) the 2005 IndyCar race car⁶ sponsored by Jim Beam; (3) the 2015 IMSA race car⁷ sponsored by Tequila Patrón; and (4) the 2017 NASCAR race car⁸ sponsored by Miller Lite. This suggests a need for better enforcement of the codes by the industry and other regulatory bodies.

In an effort to evaluate compliance with these guidelines by U.S. alcohol brands, we estimated the prevalence of alcohol sponsorships among professional U.S. motorsports series in 2017 as a proxy for associating alcoholic beverages with potentially unsafe driving. Unlike other U.S. professional sports, there are multiple types of sponsorships in motorsports. A brand can sponsor the entire professional series, a race, or an individual racing team and driver. To estimate the prevalence of alcohol brand sponsors at the series, race, and team/driver level, U.S. motorsports series were identified through a series of Google searches. Initial keywords included "(U.S. OR United States) AND motorsports." A

⁶ For the associated image, see <https://www.motorsport.com/indycar/photo/main-gallery/michael-andretti-s-distinctive-helmet-with-the-new-jim-beam-vonage-colors-on-his-dallara-2> (accessed December 12, 2017).

⁷ For the associated image, see <http://autoweek.com/gallery/sports-cars/photo-galler-tequila-patron-tests-ligier-j2-p2-prototype-race-cars-france> (accessed December 12, 2017).

⁸ For the associated image, see <http://nascar.nbcsports.com/2017/11/03/discount-tire-miller-lite-to-sponsor-brad-keselowskis-cup-car-in-2018> (accessed December 12, 2017).



FIGURE C-1 Example of alcohol brand sponsorships in U.S. motorsports—NASCAR race car sponsored by Twisted Tea.

NOTE: Photograph by Joseph Tregembo, licensed under CC BY-SA 4.0.

SOURCE: Wikimedia Commons, 2017.

snowball approach was then used to identify additional keywords to expand the search. Additionally, general sport and motorsport news sites that appeared in the search results were reviewed to identify additional motorsport series that did not appear in the Google search results. All searches were conducted in May and June 2017. A U.S. motorsport series was defined as a professional racing league whose headquarters were in the United States and that held the majority of its races in the United States. Once a motorsport series was identified, official series, race, and team/driver sponsors were identified based on the information available through the primary series website, race websites, and/or team/driver websites.

As shown in Table C-3, 12 U.S. professional motorsport series were identified. Three (25 percent) were sponsored by alcohol brands (Coors Light [IndyCar and NASCAR] and Tequila Patrón [IMSA]). Based on the information available, races from only one series (Rally America) were sponsored by alcohol brands (Budweiser and Coors Light). However, at least one team or driver from six series (50 percent) was sponsored by an alcohol brand. Although the prevalence of alcohol brand sponsorship at the team/driver level is very low in any particular series, the effect of such sponsorships may be large because an entire race car is decorated in the name, colors, and logos of that brand, and such branding can be made available to the audience throughout a race (see Figure C-1).

Impact Assessment

The strategies reviewed here suggest that the alcohol industry's marketing and product design activities contribute to the ongoing recruitment of young people, women, and other vulnerable populations, and such activities may increase consumption through the promotion of more frequent drinking. The industry's online presence is likely to reach a large number of young people (Winpenney et al., 2014) and encourage drinking (Litt and Stock, 2011; McCreanor et al., 2012; Moewaka Barnes et al., 2016). The use of alcohol-related social media is associated with alcohol consumption, engagement in risky behaviors, and intention to consume alcohol (Litt and Stock, 2011; McCreanor et al., 2012; Moewaka Barnes et al., 2016; Winpenney et al., 2014), although heavy drinking and engagement with alcohol marketing on social media may both be affected by a common confounder, such as positive alcohol expectancies or sensation-seeking tendencies.

Despite industry claims that marketing is only used for capturing market share (see, e.g., Lambright, 1985), research demonstrates that exposure to alcohol marketing is associated with earlier initiation of drinking among young people, increased alcohol consumption among current young drinkers, and increased alcohol-related problems (Anderson et al., 2009; Austin et al., 2006; Jernigan et al., 2017; Smith and Foxcroft, 2009). Moreover, there is ample evidence that young drivers are disproportionately involved in alcohol-impaired motor vehicle crashes. Of all drivers involved in fatal crashes who had blood alcohol concentration (BAC) levels of 0.08 g/dL or higher in 2014, 47 percent were 16–24 years of age (NHTSA, 2015). To the extent that alcohol companies may be targeting young drinkers (Bond et al., 2009, 2010; Hastings, 2009), alcohol industry marketing activities may increase the prevalence of heavy drinking and alcohol-related negative consequences, including traffic crashes. This hypothesis is supported by an econometric analysis conducted by Saffer (1994), which found that alcohol broadcast advertising has a significant and positive effect on motor vehicle fatalities in the United States.

Policies that limit exposure to advertising and other marketing can affect sales, consumption levels, and profits (AB InBev, 2016b). According to the econometric analysis conducted by Saffer (1997), a ban on alcohol broadcast advertising could reduce the number of traffic fatalities by 2,000 to 3,000 per year. A more recent analysis concluded that a complete ban on alcohol advertising would prevent 7,610 alcohol-related deaths and save 156,413 years of potential life lost (Hollingworth et al., 2006).

Regarding alcohol and energy drinks, evidence suggests that alcohol mixed with energy drinks may facilitate drinking and related harms via their effects on intoxication. Systematic reviews have concluded that adolescents and young adults who consume alcohol mixed with energy

drinks are more likely to consume more alcohol, drive after binge drinking, ride in a car with an intoxicated driver, and be arrested for driving under the influence (McKetin et al., 2015; Striley and Khan, 2014). A separate review of randomized controlled studies found that while energy drinks may counteract some minor cognitive effects of alcohol consumption, such effects disappear when drinkers engage in complex tasks such as driving (Lalanne et al., 2017).

These previously accepted scientific findings into the harmful effects of alcohol mixed with energy drinks have in some cases been contradicted by industry-sponsored research. Red Bull GmbH funded a survey of 6,002 Dutch university students that concluded that alcohol mixed with energy drink consumption was associated with significantly decreased alcohol consumption, binge drinking, and instances of driving while impaired (de Haan et al., 2012). These findings are indicative of a larger pattern. Without exception, all industry-funded studies included in a systematic review of studies on alcohol mixed with energy drinks determined that drinking alcohol mixed with energy drinks either decreased or did not significantly increase the risk of alcohol-related harms (McKetin et al., 2015). The authors who reviewed these studies concluded that there is difficulty in comparing studies according to funding source because industry-funded studies used substantially different methods and outcomes.

The findings suggest that the relationship between the alcohol industry and the energy drink industry may be mutually beneficial, despite the significant harms caused by alcohol mixed with energy drinks, and distribution deals may allow such products to be more easily and more closely associated with each other. Moreover, the funding of research on alcoholic products by the energy drink industry may equip these producers with evidence designed to create doubt about the emerging scientific consensus. In their review, McKetin et al. (2015) concluded that the influence of industry involvement in this area of research needs to be monitored because of conflicts of interest.

Industry sponsorship of festivals and other public events may contribute to the social acceptance of alcohol and influence the frequency and volume of drinking by increasing public acceptance of a wide variety of drinking occasions (Amis and Cornwell, 2005; Brown, 2016). They also expose children and adolescents to alcohol marketing messages. The findings suggest that the alcohol industry should refrain from sponsoring events where children are likely to be present. In particular, alcohol sponsorship of auto racing events is a marketing strategy that seeks to incorporate alcohol brands and products into the national culture and into the enjoyment of leisure activities (Klein, 2000).

A recent systematic review on the relationship between alcohol sports sponsorship and alcohol consumption found an association between

alcohol industry sponsorship of sports and risky drinking among school children and adult athletes (Brown, 2016). Sports sponsorship is also associated with heavier drinking by individual players, teams, and clubs (O'Brien and Kypri, 2008). This is particularly true for university sports sponsored by the alcohol industry. Among university sports in the United Kingdom, those receiving alcohol industry sponsorship were four times more likely to report hazardous drinking than nonsponsored athletes (O'Brien et al., 2014). Although collegiate sports in the United States do not have official alcohol sponsors yet, the National Collegiate Athletic Association (NCAA) has recently sanctioned the sale of beer and wine at NCAA events (Dodd, 2016).

In summary, the evidence suggests that some of the alcohol industry's commercial activities have the potential to increase not only the frequency and amount of alcohol consumption, but also the likelihood of alcohol-impaired driving.

CORPORATE POLITICAL ACTIVITIES

In addition to commercial activities designed to promote alcoholic beverages, some segments of the alcohol industry may act indirectly to create a favorable regulatory environment. These corporate political activities are conducted in many areas of business (Getz, 1997; Hillman and Hitt, 1999; Savell et al., 2014, 2016; Schuler, 1996; Schuler et al., 2002). As described in Table C-4, the main political strategies are (1) using information and other means to gain access to political decision makers; (2) indirectly targeting political decision makers through constituent support; (3) promoting alternative policies or voluntary measures (policy substitution); (4) providing financial incentives to influence government policy makers; and (5) employing legal preemption, litigation, or circumvention. As described below, each strategy includes a variety of tactics, and many of these tactics are carried out under the umbrella of corporate social responsibility.

Access and Information

Gaining access to those who decide public policy may be the alcohol industry's single most important political goal (Hillman and Hitt, 1999; Keim and Zeithaml, 1986; Schuler et al., 2002). The industry attempts to shape policy makers' perceptions of the scientific evidence through the funding and dissemination of information and research (Jiang and Ling, 2013; McCambridge and Hartwell, 2015). Industry activities used to gain and maintain access to political decision makers and to influence the evidence base include donations and campaign contributions, placement of

TABLE C-4 Corporate Political Strategies Used by the Alcohol Industry

Strategy	Tactics
Access or information	<ul style="list-style-type: none"> • Campaign contributions • Direct and indirect lobbying (meetings and correspondence with policy makers) • Shaping the evidence base (e.g., funding and dissemination of research, use of paid consultants, position papers, technical reports) • Partnerships/collaboration (e.g., working industry competitors, civil society groups, and academia to provide technical support and advice)
Constituency building	<ul style="list-style-type: none"> • Forming alliances with trade associations and other industry sectors • Forming alliances with or mobilizing civil society organizations, consumers, employees, and/or the public • Creation of social aspects/public relations organizations • Corporate-image advertising^a • Advocacy advertising^b (press releases, publicity campaigns)
Policy substitution	<ul style="list-style-type: none"> • Developing and promoting self-regulation • Developing and promoting alternative regulatory policy, often under the umbrella of “modernization” of state regulatory regimes • Developing and promoting voluntary activities
Financial	<ul style="list-style-type: none"> • Contributions to political parties • Hiring or offering future employment to people with political, regulatory, governmental, or academic connections • Other financial enticement (travel, honoraria)
Legal actions	<ul style="list-style-type: none"> • Preemption • Litigation (or threat of litigation)

^a Corporate-image advertising seeks to build a favorable image and keep the company’s name in the public eye.

^b Advocacy advertising is defined as an advertisement or public communication that attempts to influence public opinion on a specific issue.

SOURCES: Adapted from Hillman and Hitt (1999) and Savell et al. (2014).

key personnel in positions of authority, partnerships with civil society and governmental organizations, political lobbying, and alcohol advertising (Moodie et al., 2013).

Donations and Campaign Contributions

Through its business presence, the alcohol industry maintains strong connections to the federal government, state governments, and local communities. In addition, the industry uses political action committees to support candidates in ways that may allow them to influence the political process. For example, alcohol producers and other industry organizations contributed a total of \$23,424,228 to the campaigns of both Republicans and Democrats in 2016, according to the Federal Election Commission. This includes \$3,939,367 of unregulated “soft money.” The industry’s top two campaign contributors were the National Beer Wholesalers Association and AB InBev. Other top contributors include Total Wine & More, Kendall-Jackson, and Silver Eagle Distributors (Center for Responsive Politics, 2017).

Industry Lobbying

Lobbying has been identified as a key strategy used by the alcohol industry, particularly to oppose tax increases (Bakke and Endal, 2010; Bond et al., 2010; Collin et al., 2014; Hope, 2006; McCambridge et al., 2013), even though tax increases can significantly reduce harmful alcohol consumption and the prevalence of alcohol-impaired driving (Wagenaar et al., 2010; Xu and Chaloupka, 2011). The alcohol industry spent approximately \$27 million on lobbying in 2016, the highest yearly amount on record. Of the 296 lobbyists hired by the industry in 2016, 220 (74.3 percent) were “revolving door” lobbyists who previously worked for the federal government. The top three alcohol industry lobbying organizations in 2016 were the Distilled Spirits Council of the United States, AB InBev, and the Beer Institute.

While the industry tends to lobby Congress primarily on taxes and regulations, other issues listed on 2016 disclosure forms obtained from <https://lobbyingdisclosure.house.gov> (accessed August 13, 2017) using the Lobbying Disclosure Filing Search include

- Impaired driving and underage drinking prevention issues;
- Centers for Disease Control and Prevention—alcohol research and alcohol programs;
- S. 728/H.R. 1717—Sober Truth on Preventing Underage Drinking Reauthorization Act and H.R. 6 and H.R. 34—21st Century Cures

Act—to provide for programs and activities with respect to the prevention of underage drinking;

- Surgeon General’s Report on Substance Use, Addiction, and Health;
- Nominations to the National Highway Traffic Safety Administration (NHTSA) and Federal Communications Commission; and
- Distracted driving and NHTSA issues.

From the information provided, it is difficult to determine whether the industry’s positions are consistent with evidence-based public health practice, but some industry literature, such as press releases, internal documents, and testimony, suggest that they generally oppose tax increases, while supporting policies and programs that have either been shown to be ineffective (e.g., classroom education, social norms approaches) or have not been sufficiently evaluated (e.g., safe ride programs) (AB InBev, 2016a; Bakke and Endal, 2010; Bond et al., 2009; House of Commons Health Committee, 2010; McCambridge et al., 2013).

One example of industry-sponsored activities that oppose effective drinking and driving policies is a campaign against Utah’s attempt to lower the BAC limit set by state law. In 2017, Utah became the first U.S. state to lower the BAC limit to 0.05%, a policy that was recommended by the National Transportation Safety Board in 2013 (NTSB, 2013). According to a 2014 tax form, the American Beverage Institute (ABI), which has been sponsored by numerous alcohol producers (ABI, 2013), “continued in aggressive opposition to a recommendation by the National Transportation Safety Board to lower the drunk-driving arrest threshold to a 0.05% BAC level” (ABI, 2015). To this end, ABI published a series of ads in Utah and neighboring states mocking the law and implying the law significantly threatens Utah’s tourist industry. ABI has also likened the law to “driving while older” (Weber, 2017), identified lawmakers that would be considered “older” drivers (Weber, 2017), organized a national petition against the law (ABI, 2017a), and wrote several op-eds against the law (ABI, 2017b). Beyond the new BAC law, ABI has “opposed state and federal legislation that would mandate the use of ignition interlock devices or alcohol detection devices for all drunk-driving offenders” in favor of focusing only on repeat and high BAC offenders, according to the 2014 tax form (ABI, 2015).

Partnerships and Collaboration

In many instances, the alcohol industry has built partnerships or is involved in collaborations with government agencies and civil society organizations. These partnerships are generally established to recommend

or develop alcohol-impaired driving countermeasures. However, there is little evidence that they achieve their intended goals, and in some cases they have been criticized because of industry domination of the committee process and failure to consider effective policies. For example, in 2013, the Wisconsin Bureau of Transportation Safety created the Operating While Impaired (OWI)/Impaired Driving Task Force to help shape Wisconsin's Impaired Driving Plan. One year later, four members of the task force resigned, citing the role played by the Tavern League of Wisconsin (the only nongovernmental partner), which advanced ineffective policies such as educational programs and opposed evidence-based interventions (Brown et al., 2014; Marley and Ferguson, 2014). These individuals also documented numerous instances of alcohol industry influence on department of transportation staff members, including exclusive use of industry data that misrepresented underage drinking. The resigning members concluded that their "continued participation on the OWI Task Force simply lends credibility to a hollow process." Other instances of failed industry-government partnerships have been reported in the United Kingdom (Brown, 2015; Gornall, 2014; Knai et al. 2015; Panjwani and Caraher, 2014) in relation to many of the same transnational alcohol producers listed in Table C-2.

Activities to Shape the Evidence Base

The support of research to generate scientific evidence and to demonstrate corporate social responsibility is another strategy used by the industry. In 2015, the International Center for Alcohol Policies (ICAP), the largest alcohol industry social aspects organization, merged with the Global Alcohol Producers Group (GAPG), a major lobbying organization established "to support a constructive policy dialogue with the World Health Organization, member state governments, and the public health community to reduce harmful drinking" (Associated Press, 2008). The merger resulted in the creation of the International Alliance for Responsible Drinking (IARD), which, like its predecessor ICAP, is funded by a consortium of the world's leading alcohol producers (IARD, 2017a).

According to one analysis, most of ICAP's activities were focused on countering the influence of WHO and the public health community (Jernigan, 2012), which have promoted both population-wide and targeted measures (e.g., evidence-based drinking and driving laws) to reduce alcohol-related harms. ICAP publications, conferences, monographs, policy implementation guides, and toolkits, often developed through collaborations between industry-paid academics and industry representatives, emphasized education for heavy drinkers (among the least effective measures to reduce alcohol-related harms) and treatment (among the

most costly), while they attempted to reframe the debate from reducing population levels of consumption to the more limited goal of changing individual patterns of drinking. Since the ICAP/GAPG merger, IARD has continued to claim its activities are intended to support the WHO Global Strategy, but without official authorization or collaboration with WHO (Chan, 2013; IARD, 2017b).

Beyond its corporate social responsibility activities, some segments of the alcohol industry (e.g., Diageo) have been highly critical of academics who have been involved in alcohol policy research. A Diageo presentation, for example, labeled public health academics “alcophobes” who have threatened industry accomplishments, citing declines in the prevalence of drinking and driving.⁹ Several academics, scientific journals, and research organizations, including the Centers for Disease Control and Prevention, and the Center for Alcohol Marketing and Youth, were accused of being “serial alcophobes” for their research on alcohol marketing and the health benefits of higher alcohol taxes.

Funding of Research

A major research organization funded in part by the alcohol industry is the Traffic Injury Research Foundation (TIRF), a registered charity in Canada, and TIRF, USA, which received 501(c)(3) status in 2014 “in order to meet the needs of its U.S. funders, stakeholders, and partners.”¹⁰ TIRF conducts studies of drinking and driving interventions, education measures, and issues related to road traffic safety, such as ignition interlock devices and apprehension of high-risk offenders. TIRF makes it a priority to share its research findings with the media, advocacy organizations, and members of the general public and provides testimony to governments in many states to inform decisions about road safety legislation. TIRF has received support from AB InBev, and it currently lists Beer Canada and the Beer Institute as financial supporters.

Another source of research funding was channeled through an independent organization called the Alcoholic Beverage Medical Research Foundation (ABMRF), which, from 1982 to 2016, supported 570 grantees from around the world.¹¹ Most of these grants were provided to novice researchers, initially to investigate the positive effects of moderate drink-

⁹ Smith, G. 2012. Impact of globalization upon the U.S. alcohol environment. *Responsible Retailing Forum* April 11. Available by request from the National Academies of Sciences, Engineering, and Medicine’s Public Access Records Office (PARO@nas.edu).

¹⁰ For more information, see <http://tirf.us> (accessed December 20, 2017).

¹¹ ABMRF. 2015. *Research reference guide: 1982–present*. Available by request from the National Academies of Sciences, Engineering, and Medicine’s Public Access Records Office (PARO@nas.edu).

ing, and later on a broader range of topics including alcohol-impaired driving. Only 25 grants were awarded on drinking and driving, whereas 171 grants were funded for research on cell biology and 219 grants focused on specific organ systems.¹² While investigators funded by ABMRF were free from direct industry influence, the ABMRF Scientific Advisory Board prioritized research grants with little public health impact.

Constituency Building

The industry collaborates with several allied groups that profit from the sale of alcohol, such as convenience stores, restaurants, bars, hotels, and advertising agencies. The alcohol industry also creates front groups or third-party organizations to lobby on its behalf and forms alliances with NGOs and other civil society organizations. According to Savell et al. (2014, 2016), this generally occurs when the industry is facing a significant regulatory threat.

Forming Alliances with Trade Associations and Other Sectors

Trade associations represent alcohol industry interests to the media, the public, and the government. Within the United States, trade associations are well developed, bringing together industry members to advance common interests. The largest alcohol industry trade associations in the United States are the Beer Institute, the Distilled Spirits Council of the United States, and the Wine Institute. Alcohol producers have also supported other trade associations, and the largest alcohol producers (e.g., AB InBev) often hold affiliate memberships in alcohol retailer and wholesaler associations. Some segments of the alcohol industry have also established alliances with business associations (especially regarding taxes), the tobacco industry, and groups that sell their products to the alcohol industry. The relationship between the alcohol industry and the American Beverage Institute is one specific example of such an alliance.

Policy Substitution

As suggested by the foregoing examples, the alcohol industry often exerts its influence through its investment in alliances and related CSR activities, which sometimes involves partnerships with members of civil society and government. In a review of corporate political activities, Hillman et al. (2004) noted that by sponsoring community projects, a company's or an industry's social activities become new ways to achieve

¹² Ibid.

strategic aims. CSR activities allow the industry to gain access to the public domain and policy makers while improving their reputation and responding to public demands for socially responsible behavior. Alcohol industry prevention and CSR activities include responsible drinking campaigns and educational programs, which emphasize voluntary (rather than legislative) solutions to alcohol-related problems. These activities are designed to improve the public image of the producers as good corporate citizens who are attempting to ensure that their product is used responsibly. As noted in the next section, there is little evidence that the policies and programs favored by the industry are effective.

In 2015, AB InBev pledged to invest more than \$1 billion in projects in the United States and other countries that would reduce the harmful effects of alcohol (AB InBev, 2017). Called “Smart Drinking Goals,” one of the three areas targeted by this initiative is alcohol-impaired driving, and behavior change is to occur primarily through social norms programs, which a Cochrane Review (Foxcroft et al., 2015) concluded were ineffective at changing alcohol consumption.

Conflicts of interest may develop when a highly profitable business enters the public health arena. In a discussion in the *Bulletin of the World Health Organization*, it was argued that industry–civil society partnerships “lend legitimacy and provide a platform for the distilled spirits industry to lobby against proposals to reduce the availability of alcohol, increase the price of alcohol through raising excise taxes, and place restrictions on the marketing of alcohol, despite the global evidence that these measures are the most cost-effective way to decrease alcohol-related harm” (Matzopoulos et al., 2012, p. 67).

These concerns are supported by the business literature that argues that a company’s credibility is the most important characteristic of lobbying (Hillman, 2003; Hillman et al., 2004). A company’s reputation or credibility is associated with a company’s ability to affect public policy decisions (Boddewyn and Brewer 1994; Hillman, 2003; Hillman et al., 2004). According to Boddewyn and Brewer (1994), industry–government partnering conveys a derivative “seal of approval” of what international firms are doing. Perhaps most importantly, industry partnerships divert resources and attention away from evidence-based interventions (Brown, 2015). Speaking at a global conference on health promotion, WHO Director General Margaret Chan (2013) said it was “dangerous” when industry gets “involved in policy making.”

Impact Assessment

The wide variety of political activities described in this section has been used by the alcohol industry to influence the policy environment

related to drinking and driving. Many of these activities are promoted as corporate social responsibility, but they also have the potential to serve the strategic aims of commercial interests, one of which is to sell more alcohol. In most cases, it is difficult to establish a direct link to alcohol policies that either reduce or increase alcohol-impaired driving and alcohol-related traffic injuries, but there is considerable circumstantial evidence that some of these activities are detrimental to public health and traffic safety and that many others serve to dilute the public health response. Furthermore, efforts to increase overall alcohol consumption will inevitably lead to negative alcohol-related consequences including increased alcohol-impaired driving.

For example, political donations to finance electoral campaigns for presidential, congressional, state, and local elections are often bipartisan and may be effective at promoting the industry's agenda. Donations and campaign contributions may create financial dependencies and influence over an organization or individual (Adams, 2016; Bion, 2009; Dana and Loewenstein, 2003). Conflicts of interest can further influence behavior by imposing a "sense of indebtedness," and thereby the obligation to reciprocate (Adams, 2016; Katz et al., 2003).

Regarding the support of scientific research, the alcohol industry may influence available scientific data by commissioning studies that set the research agenda. For example, in a public opinion poll conducted by TIRF and funded by AB InBev, approximately 5,000 U.S. drivers were asked about the suitability of designated driver programs and safe rides (Meister et al., 2015; Powell et al., 2016), which are likely ineffective policies (Ditter et al., 2005). Although media campaigns, local programs, and ridesharing companies may increase the use of designated drivers and/or safe ride services, it is less clear whether these programs lead to a reduction in alcohol-impaired driving and alcohol-related crashes (Brazil and Kirk, 2016; Nielson and Watson, 2009).

Potentially effective policies, such as alcohol tax increases, availability restrictions, and BAC limits, have not been investigated by means of industry-funded studies. According to some observers (Pantani et al., 2012; Wolburg, 2005), the industry finances academic researchers to disseminate messages regarding "responsible drinking" and "alcohol and health" to use scientific arguments to influence public policy and establish a positive public image.

Even when the industry supports evidence-based policies, such as the use of ignition interlock devices, these policies often have limited practical applicability because they focus on individuals who have already committed a drinking and driving offense ("hard-core drink drivers") and cannot prevent first-time offenders.

Although research across a wide range of health and environmental areas (Bero et al., 2007; DeAngelis, 2007; Jørgensen et al., 2008; Kassirer, 2005; Krimsky, 2003; Lesser et al., 2007; Yank et al., 2007) suggests that conflicts of interests are associated with biased research findings that favor commercial interests, there is no evidence from the traffic safety field. Nevertheless, the alcohol industry and its surrogate organizations have been suspected of distorting the science base on a more general level to promote alcohol policies that favor industry economic interests rather than public health (Babor, 2009; Babor and Miller, 2014; Babor and Xuan, 2004; Miller et al., 2017).

There is little research on the potential effect of alcohol industry lobbying, but a news article written by a lobbyist for the Nevada wine and spirits distributors suggests that some alcohol industry lobbyists provide access for their clients and help to arrange campaign contributions on or about the time that legislation is being considered (Williams, 2017).

In the following section we analyze a database collected by the world's largest alcohol producers to demonstrate their collective commitment to good corporate citizenship. As many of these initiatives concern drinking and driving, they provide a way to evaluate the extent to which corporate social responsibility is consistent with evidence-based public health practices concerning road traffic safety. These initiatives also provide a way to evaluate the extent to which policy substitution is evident in the alcohol industry's attempts at corporate social responsibility over an extended period of time.

CONTENT ANALYSIS OF INDUSTRY ACTIVITIES CONDUCTED IN RELATION TO ALCOHOL-IMPAIRED DRIVING

In 2012, a consortium of transnational alcohol corporations and other industry segments released a set of more than 3,500 "industry actions," which they claimed were being conducted in support of the WHO's Global Strategy to Reduce the Harmful Use of Alcohol (WHO Global Strategy). A full list of the actions was posted on the industry actions website (initiatives.global-actions.org), but the website was removed without explanation in 2016. According to the website, 97 industry-sponsored activities had been initiated in the United States in the area of drinking and driving. To the extent that this information represents the alcohol industry's own inventory of activities that were conducted or were considered ongoing at the time of the release of the WHO Global Strategy in 2010, it is likely to be a relatively complete accounting of what various industry segments consider to be their main initiatives in this area. Although the database was created in 2012, many of the initiatives were

listed as “ongoing” and the only major new initiative that was identified was the Smart Drinking Goals program, which was discussed previously.

We analyzed the 97 drinking and driving industry actions to determine what proportion of them

- Conform to the drinking and driving target area as described in the WHO Global Strategy;
- Can be considered as evidence-based activities likely to have a positive impact on drinking behavior or alcohol-impaired driving;
- Have the potential to promote a brand or product (i.e., marketing potential); and
- Have the potential to affect policy or create harm.

Methods

We conducted a content analysis and rated each of the 97 actions on scales developed to evaluate marketing potential, potential to influence policy, and estimated population reach (see Pantani et al., 2017, and Esser et al., 2016, for a more complete description of the methods). Each initiative posted on the industry website consisted of a short description of the program (approximately 100–150 words) as well as information about the program’s year of initiation, the sponsoring company or organization, the WHO Global Strategy area it was intended to address (e.g., alcohol-impaired driving), and whether it was the subject of an evaluation.

Trained raters coded each initiative according to 65 activity types that have been evaluated for evidence of effectiveness in the literature. Actions that did not fall into any of the 65 activity types were coded as 1 of 12 “other” subcodes. Actions coded under these “other” subcodes include online BAC calculators and designated driver posters in bars (coded as “Miscellaneous”).

We also conducted a literature review to identify interventions, strategies, and programs that have been evaluated scientifically for their effect on alcohol-impaired driving and alcohol-related traffic injuries. These ratings were based on procedures developed by Babor et al. (2010) and Nelson et al. (2013) to evaluate the strength of evidence, the extent of research, and the population reach of 29 policy options that have been the subject of research on alcohol-impaired driving.

In addition, each industry action was rated in terms of the type of CSR activity it represented: risk management, as defined by Lantos (2001); strategic; or altruistic philanthropy. Ratings were also made depending on unintended consequences (i.e., potential for harm) and whether the program or initiative had a process or outcome evaluation.

Findings

AB InBev was the leading sponsor of the industry actions (33.0 percent), followed by SABMiller (24.7 percent). Our analysis also found that 37.1 percent of the 97 actions classified by the industry as addressing the WHO Global Strategy target area of “drink-driving” were only tangentially related to alcohol-impaired driving and therefore did not fit into this or any of the other 10 areas for policy options and interventions described in the WHO Global Strategy.

Table C-5 shows the percentage of industry actions classified according to type of activity, estimated effectiveness, strength of evidence, and population reach. The table includes only the 97 activities conducted by the alcohol industry in the United States.

Nearly all (97.9 percent) of the alcohol industry’s U.S. drinking and driving initiatives were rated as either ineffective or of unknown effectiveness. The remaining 2.1 percent consisted of support for more severe punishment of impaired drivers, which has mixed evidence of effectiveness because effects decay over time and depend on enforcement (Babor et al., 2010).

Nearly 15 percent (14.4%) involved a designated driver or responsible drinking message being added to packaging or marketing materials. Approximately 7 percent of actions were coded as “unrelated,” such as a contest for journalists. Only three actions met minimum criteria for promoting designated drivers as described in the literature.

Whereas some activities (e.g., research, miscellaneous, unrelated) did not have sufficient empirical support to even evaluate the strength of the evidence, others (e.g., designated driver programs, safe rides, information campaigns, social norms programs, support of severe punishment for alcohol-impaired drivers) had considerable evidence indicating that they were *ineffective*. In total, 56.2 percent of the actions supported by the industry had evidence of ineffectiveness, and most of the others had either not been evaluated or were unrelated to alcohol-impaired driving.

We also rated the population reach of each action. Population reach refers to the number of individuals likely to be affected by a program initiative. The majority of actions (53.6 percent) were limited to a small number of people, such as patrons within one community or workplace employee programs; 33.0 percent were considered to have no population reach. These included activities like the funding of social aspects organizations and an award presented to AB InBev. Only 13.4 percent had moderate population reach, and none of the actions were found to have large or national reach.

Common industry actions were the distribution of flyers or brochures about designated drivers or responsible drinking, which often doubled as marketing for the alcohol brands. More than 45 percent (45.5 percent)

TABLE C-5 Percentage of Industry Actions Classified According to Type of Activity, Estimated Effectiveness, Strength of Evidence, and Population Reach of 97 Activities Conducted by the Alcohol Industry in the United States in Support of the WHO Global Strategy to Reduce the Harmful Use of Alcohol

Activity	%	Effectiveness ^a	Strength of Evidence ^b	Population Reach ^c
Severity of punishment	2.1	0/+	+++	++
Designated driver programs	3.1	0	+++	0
Social marketing	1.0	0	++	0
Social norms programs	1.0	0	+++	0
Safe ride programs	19.6	0	++	+
Other	73.2	?	?	?
Miscellaneous ^d (e.g., online BAC)	28.9	?	?	?
Activity secondary to alcohol marketing	14.4	?	?	?
Public information/ conferences	14.4	?	?	?
Activities unrelated to alcohol-impaired driving (e.g., journalism award)	7.2	?	?	?
Research on alcohol- impaired driving	5.2	?	?	0
Training for staff other than responsible beverage service	2.1	?	?	?
Alcohol policy development	1.0	?	?	?

^a – net negative effect; 0 no effect; + minimal positive effect; ++ positive effect but secondary efforts required; +++ independent positive effect; 0/+ mixed evidence; ? insufficient evidence.

^b 0 no evidence; + only one to three studies; ++ more than three studies but no systematic reviews or meta-analysis published; +++ one or more systematic reviews or meta-analysis published on the topic.

^c 0 no population effect; + effect only on a small, well-defined group of individuals; ++ community or citywide effect; +++ effect likely felt on a state or national level; ? unknown.

^d Includes campaigns that do not meet minimum criteria to be coded as mass media or social marketing.

were considered to have the potential to promote a brand or product, for example, by means of brand advertising associated with the activity. Raters also found that 20.6 percent of the actions had the potential to affect national or local policy (e.g., Diageo's support for a congressional Stop-DUI caucus event that brought together members of Congress and the industry-funded Century Council, and Heineken's sponsorship of the 2006 Congressional Black Caucus Foundation Legislative Conference).

Ratings of corporate social responsibility consisted of classifying each action into one of the three previously mentioned CSR categories. Most (83.5 percent) of the actions were found to meet the definition of corporate social responsibility as a risk-management strategy (i.e., to prevent legal liability, as defined by Lantos, 2001). The remaining 16.5 percent were classified as strategic (i.e., promoting the industry's commercial objectives). None were considered to be altruistic philanthropy.

Regarding the ratings of unintended consequences, 13.4 percent were found to have the potential for harm. These include safe ride programs that were considered to have the potential to encourage or sanction heavy drinking.

Almost all of the activities lacked a systematic evaluation capable of determining program effectiveness. The industry website reported that 8.2 percent had some type of evaluation component. Raters also coded the type of evaluation based on the industry's description and found that only 5.2 percent met the minimum criteria to be classified as a process evaluation, with only a few reporting what appeared to be an outcome evaluation.

Impact Assessment

The appropriateness of the industry's more than 3,500 global "Industry Actions to Reduce Harmful Drinking," of which the 97 drinking and driving initiatives analyzed here were a part, were questioned in a public statement of concern (Babor et al., 2013) addressed to the director general of WHO by an international group of 17 alcohol policy experts. The statement claimed that the global alcohol producers had misinterpreted their roles with respect to the implementation of the WHO Global Strategy, and therefore should not be conducting public health activities on behalf of WHO other than to allow effective, evidence-based alcohol control measures to be adopted by WHO member states.

According to a similar content analysis of industry actions in Latin America and the Caribbean region (Pantani et al., 2017), only 4 percent of the initiatives could be considered as evidence-based activities capable of affecting drinking behavior or alcohol-related problems, and 55 percent of the actions were considered to have the potential to promote a brand

or product, for example, by means of brand advertising associated with the activity. This analysis also showed that actions considered to have marketing potential were more likely to have a large population reach than those that did not. As this analysis covered many of the same transnational producers operating in the United States, it suggests the alcohol industry's CSR activities are potentially conducted in part for marketing purposes. In another analysis of the 266 drinking and driving initiatives conducted worldwide, which included the 97 U.S. initiatives described above, most actions were conducted by industry-funded social aspects/public relations organizations, and only 0.2 percent met the minimum definition of evidence based (Esser et al., 2016).

The findings provide strong evidence that the industry does not fund or support public health policies that have been shown to affect alcohol-impaired driving and reduce alcohol-related harm. Although the industry has supported the development of ignition interlock devices in the United States and Canada for repeat and high BAC offenders, the population impact of this technology has been limited because of its expense and limited population reach (Elder et al., 2011).

Many of the industry actions included responsible drinking campaigns or messages. Since the 1990s, researchers have analyzed the use of such messages and have concluded that instead of encouraging moderate consumption, the messages create a favorable image of the alcohol brand without influencing excessive drinking (Barry and Goodson, 2010; DeJong et al., 1992; Pantani et al., 2012; Smith et al., 2006; Wolburg, 2005). Therefore, responsible drinking campaigns can potentially be considered another form of alcohol marketing and may even encourage alcohol consumption. Furthermore, the industry has not produced any evidence of their effectiveness, other than to note that message recipients like them.

Consistent with the political activities described in the previous section, segments of the alcohol industry have actively resisted efforts to promote effective, evidence-based drinking and driving policies, such as lower legal permissible blood alcohol concentrations and increased alcohol taxes. Instead, industry-sponsored designated driver or safe ride campaigns are widely promoted, despite the lack of evidence regarding their effectiveness. Research suggests that users of safe rides have significantly higher BAC levels and are more likely to be heavy drinkers compared to nonusers (Caudill et al., 2000), and BAC levels are significantly greater when using free safe rides compared to other occasions when drinking outside the home (Harding et al., 2001). Research shows that designated drivers often do not abstain from alcohol, but rather drink less (Barry, 2013; Rivara et al., 2007). Such voluntary efforts have been interpreted by some as attempts to avoid stricter regulations (Knai et al., 2015; McCambridge et al., 2013; Savell et al., 2016), and to draw attention away

from the alcohol industry's role in opposing effective policies by giving the appearance of extensive collaboration with governments and NGOs.

CONCLUSIONS

This paper has attempted to critically evaluate the strategies and tactics used by the alcohol industry that have implications for road traffic safety. We have provided a general assessment of several major industry segments and a wide range of activities, but it is important to note that the alcohol industry is not monolithic. Some segments of the industry have at times supported laws to reduce underage drinking and have promoted efforts to enforce drinking and driving laws and to punish alcohol-impaired drivers. Other segments, perhaps the large majority of retailers, distributors, and producers, do not engage in political or commercial activities that are likely to affect alcohol-impaired driving. This analysis has focused primarily on the transnational producers, large trade associations, and multistate retailers, so generalizations of the entire industry may be limited. Furthermore, our qualitative analysis of commercial and political activities is limited to information that can be accessed through news reports, industry websites, and the reports of NGOs and watchdog groups. To the extent that this information tends to be anecdotal and circumstantial, it may not be representative of the entire industry. Nevertheless, the industry's own inventory of local, state, and national initiatives provides an indication of the scope and effect of their drinking and driving programs. Most of them were considered to have low population reach, primarily because they were local in nature, and even when their media campaigns reached a larger audience, they simultaneously were considered to have a marketing function.

Taking into account these caveats and limitations, we conclude that activities of the large producers, both in their commercial initiatives (e.g., advertising, product design) and their political activities (e.g., opposition to effective drinking and driving laws and regulations), have been documented in a number of areas that conflict with a public health approach to the management of alcohol-related problems. Three general conclusions are consistent with the evidence presented in this paper. First, some of the industry's promotional activities, combined with product innovations, may increase the frequency and amount of alcohol consumption, as well as the likelihood of alcohol-impaired driving. Second, the alcohol industry's corporate political activities may interfere with effective alcohol policies and improve the public image of the producers as good corporate citizens, rather than reduce the incidence of alcohol-impaired driving. Third, the evidence suggests that the policies and programs favored by the alcohol industry are ineffective.

Commercial Activities

The strategies reviewed here suggest that some of the alcohol industry's marketing and product design activities contribute to the ongoing recruitment of young people, women, and other potentially vulnerable populations, and may increase consumption through the promotion of more frequent drinking occasions. By recruiting new drinkers from the majority population of abstainers and by implementing measures designed to increase the frequency of drinking, there is likely to be an increase in the prevalence of heavy drinking and alcohol-related problems, including motor vehicle crashes. This is illustrated by our analysis of the relationship between the alcohol industry and the energy drink industry, and the use of marketing in association with professional motor-sports leagues. Industry sponsorship of festivals and other youth-oriented public events may contribute to the social acceptance of alcohol and influence the frequency and volume of drinking by increasing public acceptance of a wide variety of drinking occasions.

Corporate Political Activities

Activities such as lobbying, image advertising, and strategic alliances may be used to influence industry-favorable policies in relation to alcohol-impaired driving countermeasures. The findings suggest that multiple tactics are often practiced simultaneously to achieve favorable policy outcomes. Many of the industry's CSR activities were found to be public relations exercises and largely attempts to promote ineffective policies. In its CSR activities, the industry has supported the need to address impaired driving and has actively collaborated with a wide array of civil society and governmental groups seeking to prevent it. At the same time, the industry's corporate political activities have blocked effective measures (e.g., restrictions on outlets and hours of sale; server liability laws; alcohol tax increases) that might reduce overall alcohol consumption.

The findings of this paper suggest that the economic interests of the large transnational producers, combined with their extensive campaign contributions to political parties and politicians, create the conditions for a strong industry influence in the policy-making process around road traffic safety. Some of this influence may be exercised through a set of key agenda items that promote the industry's interests, such as low alcohol taxes, minimum regulation of alcohol availability, and industry self-regulation of alcohol marketing, all of which contribute to alcohol consumption and alcohol-related problems. At the same time, the industry's increasing investments in CSR activities have coalesced around a few themes, such as designated driver programs and increased enforcement of existing laws regardless of their effectiveness.

Promotion of Ineffective Programs and Policies

As indicated in our review of the evidence (Table C-5 and additional appendix tables¹³), the most effective policies to promote road traffic safety and to combat drinking and driving are not only direct interventions such as sobriety checkpoints, but also indirect alcohol control policies in public health that are typically aimed at decreasing per capita consumption to minimize alcohol problems. There is an impressive amount of evidence (Babor et al., 2010) that universal measures to raise the price of alcohol (Elder et al., 2010) and control its availability (Campbell et al., 2009) are among the most effective policy options to reduce alcohol-impaired driving. This evidence is reinforced by the results of a Delphi panel composed of 10 U.S. alcohol policy experts. The experts rated alcohol control policies in terms of their impact on binge drinking and alcohol-impaired driving (Nelson et al., 2013). The highest ratings of efficacy were given to policies limiting price, increasing alcohol taxes, and regulating alcohol availability.

The industry has opposed these approaches and instead champions voluntary action alongside targeted interventions that focus on a minority of heavy drinkers (Babor and Robaina, 2013; Babor et al., 2015; Jernigan, 2012; Knai et al., 2015; Pantani et al., 2017). Of the 29 strategies and interventions that have been evaluated in terms of their effectiveness in preventing or reducing alcohol-impaired driving, few if any are promoted by the industry. On the contrary, we found that the industry's initiatives were largely considered to be either ineffective by current scientific standards or have not been evaluated.

There is concern among some road safety experts that the alcohol industry's activities may compromise the development of public health policy and the work of public health experts (Brown, 2015; Esser et al., 2016). Whereas some would argue that any efforts by the alcohol industry to improve traffic safety should be welcomed, alcohol producers have a major conflict of interest in the policies they promote and oppose.

Recommendations

We close with a set of recommendations regarding the role of the alcohol industry in the development of policy aimed at reducing alcohol-impaired driving and its negative consequences. We also consider the role of federal and state agencies as well as the road traffic safety community.

¹³ Available by request from the National Academies of Sciences, Engineering, and Medicine's Public Access Records Office (PARO@nas.edu).

Alcohol Producers and Other Industry Segments

The alcohol industry has the ability and the responsibility to minimize the harm caused by its products at all stages of the production chain, especially in terms of product design and marketing. This responsibility cannot be regarded solely as a national issue. Transnational corporations should adhere to minimal ethical standards for responsible product design and marketing practices regardless of the country where their products are sold. Global alcohol producers, their trade associations, and community outreach and public relations organizations have an ethical responsibility to do the following:

- Reduce the alcohol content of existing products when warranted to reduce the risk of injury while intoxicated and the toxic effects of chronic drinking.
- Refrain from all marketing that is likely to encourage underage consumption or unsafe driving, including motorsport sponsorship activities.
- Refrain from traffic safety educational activities that purport to protect the public health but do not do so.
- Support research bearing on the public health consequences of alcohol use through independent organizations, rather than through direct funding that raises concerns about agenda setting and research bias.

Role of Federal and State Agencies

Federal and state agencies engaged in public health and traffic safety need to protect the integrity of these policies from commercial and other vested interests, and should be informed by the following considerations:

- Government-sponsored activities for developing and implementing public health and traffic safety measures should be conducted by professionals free of conflicts of interest who have appropriate expertise in these areas. Participation of developers, producers, distributors, marketers, and sellers of alcoholic beverages should be advisory.
- In the absence of clear evidence that the industry is fulfilling its ethical responsibilities, civil society organizations and professional groups should be extremely cautious about entering into partnerships with the commercial alcohol industry, its community outreach and public relations organizations, and other groups substantially funded by the commercial alcohol industry.

Road Traffic Safety Community, Including Research Scientists, NGOs, and Other Public Interest Organizations

Financial support from the alcohol industry and its third-party organizations has the potential to affect professional judgment and may strengthen the influence of private interests in the policy-making process. All participating parties should keep in mind that the evolution of ethical thresholds and standards in recent decades has generally been toward more stringent standards, such as in the case of tobacco. This has led organizations such as Mothers Against Drunk Driving (MADD) Canada to refuse funding from alcohol industry sources (Solomon et al., 2004). The following actions are warranted by the road traffic safety community:

- Do not accept direct funding from industry sources for prevention, research, education, and information dissemination activities.
- Encourage industry support for evidence-based policies.
- Promote rigorous adherence to conflict-of-interest principles.
- Make all information relating to funding and/or partnership work transparent and available for public scrutiny.
- Support funding for research, prevention, and public health surveillance activities through hypothecated tax revenues that are proportionate to the societal costs of alcohol problems.

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