

Leveraging and Enhancing Alcohol Countermeasures to Reduce Drugged Driving: Behavioral and Educational Interventions

The effect of alcohol on crash risk has been well studied. Today, experts rely on proven measurement techniques to assess alcohol levels and have extensively examined how alcohol affects driving behavior. Research and data collection on drugs other than alcohol is not as far advanced, in part because of the sheer number of available drugs — whether prescription, over-the-counter, or recreational — as well as the myriad potential interaction effects when multiple drugs are used. The available evidence suggests that many people drive with drugs other than alcohol present in their system (Kelley-Baker et al., 2017; EMCDDA, 2012). Unfortunately, in contrast to alcohol-impaired driving, the available research-based evidence regarding effective countermeasures for drug-impaired driving is still nascent. That said, it is possible that data and experiences from the alcohol-impaired driving arena can be leveraged to advance the suite of countermeasures against drugged driving. This research brief describes a project that solicited input from subject matter experts (SMEs) across the United States regarding the potential for alcohol-impaired driving countermeasures to be adapted as drugged or drug-impaired driving countermeasures. Throughout, the term ‘drug’ refers to any type of substance other than alcohol that can contribute to impaired driving. The outcomes from the project were grouped into three categories of countermeasures: enforcement-related countermeasures, legal- and policy-based countermeasures, and behavioral and educational interventions. This brief describes behavioral and educational approaches.

METHOD

The purpose of this project was to solicit input regarding current alcohol countermeasures that could be used to reduce drug-impaired driving. Over the course of the project, five workshops were held (Washington, D.C.; Atlanta, Georgia; Denver, Colorado; Irvine, California; and Seattle, Washington) between June and August 2016. Seventy-seven SMEs participated in these workshops. These groups included experts from a variety of fields, including traffic safety, law enforcement, toxicology, advocacy, substance abuse treatment, and alcohol and cannabis licensing. To guide the discussion, the SMEs were provided with a list of countermeasures, including

those in the domains of enforcement, legislation, and education. They were also encouraged to bring new ideas to the table. In identifying those countermeasures that could potentially help reduce drug-impaired driving, SMEs were asked to consider the impact on driving behavior as well as potential for rapid adoption. The following section includes a summary of some of the countermeasures discussed. A brief description of each countermeasure is provided, along with some relevant background literature, followed by the strengths and limitations as well as recommendations for potential application to drug-impaired driving based on input from the SMEs.

COUNTERMEASURES

Behavioral and Educational Interventions	Screening, Brief Interventions and Referral to Treatment (SBIRT)	<i>This Research Brief</i>
	Educational Programs	
	Media Campaigns	
Enforcement-Related Countermeasures	High Visibility Enforcement and Sobriety Checkpoints	
	Standardized Field Sobriety Tests (SFST)	
Legal and Policy-Based Countermeasures	Administrative License Revocation (ALR) /	<i>In a Separate Research Brief</i>
	Administrative License Suspension (ALS)	
	Minimum Age and Zero Tolerance Laws	
	Per Se Limits	

Behavioral and Educational Interventions

Screening, Brief Intervention and Referral to Treatment (SBIRT)

Screening, brief intervention and referral to treatment, also known as SBIRT, is a coordinated, comprehensive manner of identifying and providing services to individuals with, or at risk of, a substance use disorder in order to reduce or eliminate use and prevent related risky behavior and harm, including impaired driving and related crashes (SAMHSA, 2017; Goodwin et al., 2015). SBIRT for alcohol is employed most commonly in emergency departments and trauma centers with injured subjects but can also be applied in primary care and social service settings, as well as in schools and colleges, prior or subsequent to a harmful event (Goodwin et al., 2015).

Screening typically uses questions to rapidly appraise the severity of substance use and suitable intensity of treatment (SAMHSA, 2017; Goodwin et al., 2015). Clinical examination and chemical testing can also be used for screening; however, self-reporting has proven most dependable for alcohol given time and cost, though the accuracy of self-reported use may be reduced by a variety of factors (Higgins-Biddle & Dilonardo, 2013). Brief interventions, also referred to as brief motivational interventions or interviews (BMIs), often involve one or more short meetings that aim to increase awareness

of use and related sequelae, and if needed, motivate change and engagement in treatment (APHA/EDC, 2008; SAMHSA, 2017; Teeters et al., 2015). Referral to more specialized treatment is provided as warranted (SAMHSA, 2017).

A large number of evaluations of SBIRT and its components have generally demonstrated its effectiveness for reducing drinking across a wide variety of populations, though some findings have been inconsistent (Higgins-Biddle & Dilonardo, 2013; Kaner et al., 2018; SAMHSA, 2011). However, the evidence for SBIRT reducing drinking is suggestive of its effectiveness for improving traffic safety, though fewer evaluations have assessed the effects of SBIRT on alcohol-impaired driving and related events (Higgins-Biddle & Dilonardo, 2013). For example, studies conducted in hospital and trauma care settings utilizing SBIRT techniques have shown reductions not only in drinking, but in traffic violations and arrests, including those for DUI (Davis et al., 2012; Higgins-Biddle & Dilonardo, 2013). Further, among adolescents and young adults in hospitals and emergency departments, some studies have indicated reductions in drinking and driving, crash involvement, traffic violations, and/or alcohol-related injuries (Higgins-Biddle & Dilonardo, 2013). Teeters et al. (2015) demonstrated reductions in self-reported

alcohol-impaired driving among college students with alcohol-related issues who participated in BMIs, including BMIs focused on correcting misperceptions of descriptive social norms.

Perhaps even more relevant to traffic safety are SBIRT efforts being utilized in courts. One study recently conducted by the Minnesota Department of Public Safety demonstrated the potential for first-time DUI clients to go through the SBIRT process within a few weeks of their arrest as part of their scheduled time in court (ICSI, 2015). This process was found to speed up case processing time and help clients address their risky behavior.

Strengths. SBIRT and its components have largely demonstrated effectiveness in reducing alcohol-impaired driving and can be tailored to drug-impaired driving. Interventions such as party patrols, in which minors are identified as having used alcohol and given screening and brief intervention rather than citations, could be expanded to marijuana and other drugs. Further, its application and success have been demonstrated targeting various demographic populations in a number of environments including schools, hospitals, and even court systems. Therefore, this strategy was viewed by the SMEs as an opportunity to be implemented rapidly, especially in conjunction with current alcohol intervention measures.

Limitations. While there is substantial evidence supporting SBIRT for alcohol, the evidence supporting SBIRT for drugs is more limited (SAMHSA, 2011). SBIRT is most effective if administered proximally to the offense, before more specialized treatment may be needed; however, a lack of funding for providers and limited time for provision may lead to decreased implementation of SBIRT strategies when needed and in a timely manner. The SMEs thought that the efforts could be somewhat costly to implement, and cooperation of the participants must be obtained for the intervention to be effective. Also, there may be little encouragement or incentive for subjects, such as first-time DUI offenders, to participate in SBIRT. Laws that permit denial of insurance payment based on drug or alcohol use, or the absence of a law prohibiting such denial of payment, applicable in many states, may discourage screening (NHTSA, 2008).

Recommendations. Based on the demonstrated effectiveness of SBIRT, the positive opinions of the SMEs and the ease of adaptation, SBIRT (including BMI)

appears to be a promising countermeasure to reduce and prevent drug-impaired driving. However, there is a need to evaluate the effectiveness of SBIRT approaches for different types of drugs and among different populations (e.g., different age groups).

The school system presents an opportunity to deploy SBIRT approaches with students at varying ages. Further, SBIRT programs can be targeted at students who have had code of conduct violations for alcohol or drugs. However, it is important to note that this should not be used solely in schools; in some cases, law enforcement officers can be involved in the process as well, providing early interventions during the arrest process. Physicians and health care providers also present a unique opportunity to conduct SBIRT. Patients are often more willing to talk to their physicians in a judgment free environment about their alcohol and drug use, and are more likely to receive information about the consequences of alcohol and drug use from these providers. Moreover, being seen in a setting in which alcohol contributed to an injury might make the person more receptive to intervention.

Educational Programs

Educational programs seek in part to influence the motives, attitudes and behaviors of individuals by providing knowledge about the risks associated with consuming illicit substances, driving under the influence, and riding with a driver who is under the influence of alcohol and/or other drugs (Goodwin et al., 2015). One prominent strategy of educational program messaging is to focus on social norms. This approach aims to correct misperceptions about the drinking behaviors of others by providing normative informational messages, which relay accurate data regarding the quantity of peer substance use (Goodwin et al., 2015). For example, education programs can capitalize on current attitudes toward social and behavior change to reduce alcohol-impaired driving (Sheehan et al., 1996).

In the scientific literature, evaluations of the short- and long-term impacts of many specific education programs targeting alcohol-impaired driving generally reveal minimal positive outcomes: Small increases in knowledge, awareness, and perceptions of the risks of alcohol use and driving have been demonstrated, while meaningful reductions in use and driving under the influence have not (Anderson et al., 2009; Bell et al., 2005, 2007; Padgett et al., 2005).

However, the introduction of social norms into educational programs has been found to strengthen their effects and may hold promise (Stigler et al., 2011). Perkins (2002) documented the effectiveness of several approaches aimed at social norms in curbing alcohol misuse in college populations. With respect to alcohol-impaired driving, Linkenbach and Perkins (2005) found that education aimed at correcting public misperceptions concerning the prevalence of drink driving in Montana led to a nearly 14% decline in self-reported drink driving behavior. Others have also noted the potential for targeting social norms as a means of impacting behaviors concerning alcohol or drug use (e.g., Meesman et al., 2015; Wu et al., 2015).

It is important to note, however, while general knowledge and awareness of the risks of alcohol and other drugs among students may increase as a result of participation in school-based education programs, it is noteworthy that these effects may be short-lived and of minimal impact on impaired driving behaviors (Levy et al., 1989; Wilkins, 1999). Thus, research suggests no sustained positive behavioral change (reducing alcohol consumption, reducing alcohol-impaired driving) should be expected from education programs in isolation, without implementation of complementary countermeasures such as increased DUI enforcement and community support (Hover et al., 2000).

Strengths. SMEs considered that education programs could provide an opportunity to change the culture and attitudes surrounding drug use and drug-impaired driving by educating students on the dangers of driving under the influence of drugs. An important part of promoting the cultural shift away from the acceptance of drug-impaired driving through educational efforts is including parents, both as recipients of information and as people delivering the message to their children.

Further, the SMEs believed that educational messages and programs can be tailored and delivered to a wide range of stakeholders. Programs can benefit from focusing the message on the driving risks associated with drug use, which is a shift from abstinence-only education.

Limitations. Education programs with a drug-impaired driving focus often lack partnerships with advocacy and lobbying agencies similar to those that support alcohol-impaired driving education. Importantly, although there are potential short-term benefits, the research does not

support the long-term efficacy of education programs to deter impaired driving. Also, the best time to implement education programs to deter drug-impaired driving is unclear. Education programs for teenagers about the dangers of drug usage and drug-impaired driving may be deployed too late as their perceptions, attitudes, and behaviors may be established at a young age. Moreover, education programs may not get buy-in from students who have not been previously arrested for driving under the influence of drugs. Further, education programs are unable to educate some habitual offenders due to addiction or unwillingness to change.

Further, legalization of marijuana is increasing, as is the medicinal use of drugs, representing a potential culture shift. Culture shifts in attitudes toward alcohol and drug use are difficult to predict, and education programs must be tailored to the current culture to be relevant to students.

Recommendations. In spite of the lack of scientific evidence concerning the long-term efficacy of educational programs, the SMEs believed it to be a potentially effective countermeasure. However, as noted, caution should be heeded before adapting the alcohol-impaired driving message to drug-impaired driving education programs, and rigorous evaluation of any such approach is warranted.

Media Campaigns

Media campaigns are coordinated outreach, messaging, and communications strategies designed to reduce impaired driving. They can utilize several different mediums, such as radio, television, print, and social media (Goodwin et al., 2015). Media campaign content and message themes vary greatly depending on their overall goal. For instance, media campaigns may emphasize awareness via publicizing enforcement efforts, such as sobriety checkpoints, or send social-norms messaging encouraging the public not to drive impaired (Goodwin et al., 2015).

Research has found paid and donated public service announcement (PSA) coverage are equally effective in reducing the self-reported incidence of alcohol-impaired driving and reducing alcohol-impaired driving crashes (Murry et al., 1996). Media campaigns focused on social norms have also been found to decrease normative misperceptions of drinking behaviors, increase the use of

designated drivers, and reduce alcohol-impaired driving among young adults (Perkins et al., 2010; Yanovitzky & Bennett, 1999). There is some evidence that effectiveness of campaigns may decline over time and with increased exposure (Kivikink et al., 1986; Fry, 1996) or that campaigns can lead to unfavorable effects (Hornik et al., 2008). Moreover, research has indicated media campaigns alone may not impact alcohol-impaired driving rates and crashes, and that the effectiveness of media campaigns is greatly enhanced when coupled with other enforcement strategies and countermeasures (Clapp et al., 2005).

Strengths. Drug-impaired driving media campaigns can use similar models that were developed to deter alcohol-impaired driving. Utilizing multiple messages and public information campaigns, coupled with increased law enforcement, will have the most impact on reducing drug-impaired driving.

Media campaigns and messages, and the strategies used to relay them, can be tailored to target a specific market (e.g., state) or population (e.g., older adults). Media campaigns and messages have the ability to reach users through a combination of traditional and innovative outlets, such as conventional pharmacies or cannabis dispensaries. Media campaigns and messaging are important to change social norms and can be powerful, if done thoughtfully. Thinking strategically and utilizing novel outlets, such as “budtenders” and pharmacists, to deliver messaging is key to maximize reach and impact of a campaign.

Limitations. Most media campaigns and messages are centered on alcohol-impaired driving and would need to be adapted or developed for drug-impaired driving. Nationally, there is a lack of a clear anti-drug-impaired driving message. Currently developed messaging focuses primarily on marijuana-impaired driving and rarely addresses the potential risks associated with driving after consuming prescription and over-the-counter (OTC) drugs. Aspects of the media campaign, such as the message’s seriousness, humor, and character portrayals, can affect the overall impact on drug-impaired driving and should be tailored to the audience targeted. Media campaigns delivering the “wrong message” to a population can result in unanticipated, possibly negative, outcomes. The lack of data on drug-impairment thresholds and the broad range of effects that different drugs can have on driving abilities make it difficult to communicate the dangers of drug-

impaired driving to the public, compared with alcohol-impaired driving. In addition, fear-based messaging (i.e., scare tactics) contradicts the real-life experiences of most drug users.

Further, it may prove challenging to isolate the impact of media campaigns on actual drug-impaired driving behavior, above and beyond other countermeasures, and media campaigns are insufficient if used in isolation. It is also noteworthy that the manner in which people consume media is quickly evolving, and media campaigns will have to be adapted to meet this changing landscape. This will make it difficult to implement national campaigns without considering alternative media options.

Recommendations. Media campaigns were recognized by SMEs as a valuable countermeasure to disseminate information about the dangers of drug-impaired driving. However, few SMEs felt media campaigns in and of themselves were enough to reduce the incidence of and crashes associated with drug-impaired driving. Media campaigns were seen by many SMEs as a complementary strategy to the current efforts to reduce and deter drug-impaired driving. For example, media coverage could be specifically tailored to complement sobriety checkpoints or saturation patrols in high visibility enforcement efforts.

General messaging that reminds the public about the impairing effects of drugs could help improve public awareness of dangers of driving under the influence. It is important that media messaging distinguishes between alcohol and drug messages as the general public often does not recognize how drugs can impact their ability to drive safely.

DISCUSSION

The effects of alcohol on traffic safety, and the effectiveness of related countermeasures, have been the topic of much research. In contrast, research into effective countermeasures for driving under the influence of drugs other than alcohol has progressed much more slowly. A group of SMEs was recruited in the current study to discuss the possibility of applying some of the lessons learned from alcohol to drugged driving. Although their discussion touched upon dozens of potential countermeasures, only a few were elaborated upon here and in the sister document describing enforcement, legal and policy-based approaches. Those countermeasures that are discussed in these two documents were clearly

grounded in alcohol-related approaches and had scholarly references available to supplement the SME discussions; participating SMEs also had direct experience with and knowledge of them. Examples of countermeasures excluded from further discussion included those involving drug recognition experts (DRE) and Advanced Roadside Impaired Driving Enforcement (ARIDE), as these were already specific to detection of and enforcement against drug-impaired driving.

It is important to note that findings from the literature review did not always coincide with opinions expressed in the SME workshops, highlighting a discrepancy between research and practice. For instance, SMEs often favored educational programs and media campaigns as strategies to reduce the incidence of drug-impaired driving. However, peer-reviewed literature does not support either of these countermeasures as effective in reducing alcohol-impaired driving or crashes — especially when used in isolation. As previously noted, SMEs generally favored countermeasures that would have a general deterrent effect; thus, their favor of educational programs is not surprising as these efforts are intended to target large groups, rather than individuals.

While every effort was made to ensure a comprehensive evaluative approach, limitations remain. This effort identified many countermeasures to begin the investigation; however, an in-depth analysis of each countermeasure could not be conducted due to the availability of scholarly resources and the lack of exposure of our SME panel members to those countermeasures. As such, the current list is not exhaustive in terms of potential countermeasures against drugged driving. Finally, additional research and scholarly sources may exist that support or oppose the use of countermeasures identified in this effort.

Based on the outcomes from this project and the supporting scientific literature, it is important to underscore that many of the countermeasures discussed are most effective when used in combination. For example, enforcement activities garner better outcomes when used in conjunction with media publicity (e.g., Goodwin et al., 2015). Specific guidance is provided in the sections above; however, this is not exhaustive. Thus, advocates, legal and safety professionals, and legislators are urged to consider a broad array of approaches in addressing the issue of drug-impaired driving. Lastly, it is

important and recommended to evaluate the effectiveness of the countermeasure — whatever form it takes — as this will inform other states and jurisdictions and will guide future improvements to programs.

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