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PERSPECTIVE

A proposal for an alcohol purchase license

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ABSTRACT

Background: Recent advances in technology have allowed for innovative targeting of high-risk alcohol users.

Objectives: We propose the implementation of an alcohol purchase license linked to a state agency managed database, or so-called Banned Drinker Register (BDR).

Methods: Individuals who are unable to drink safely will be identified by a well-founded criterion and their ability to purchase alcohol proscribed. A state agency will be responsible for maintaining the BDR and compiling mandated reports from hospitals, courts, police and child protective agencies of alcohol-related dangerous behavior, adjudicating reports with the input of those involved in these events, and determining which individuals will not be allowed to purchase alcohol. Outlets of alcohol sales will then be required to assess customers for eligibility of alcohol purchase using an electronic card reader (as used for age verification). Individuals wanting to protect themselves from drinking may also self-request to be placed on the BDR.

Results: Overall, the convenience/access for persons who injure themselves with alcohol and others with intoxicated behavior would be reduced. Opportunities for cost savings would come from a decrease in yearly incarcerations, a reduction in preventable traffic accidents and property damage requiring state municipal intervention, a decreased cost to offending individuals by preventing increased insurance rates, loss of jobs to incarceration and loss of potential future wages, and the possibility of preventing long term medical complications of chronic alcohol use and its toll on the health care system.

Conclusions: Health benefits will include increased public safety and awareness about drinking consequences and reduced alcohol-related morbidity and mortality.

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Introduction

The *National Epidemiologic Survey on Alcohol and Related Conditions III*, conducted between April 2012 and June 2013, found alcohol-use disorder defined by the DSM-V to be highly pandemic in the US with a twelve-month prevalence of 13.9% and lifetime prevalence of 29.1% (1). Alcohol-attributable deaths between 2006 and 2010 were estimated to be around 88,000 annually, or 1 in 10 deaths among working-age adults in the United States (2). In 2000, alcohol, as a modifiable risk factor, was the third leading cause of mortality in the United States, trailing closely behind poor diet and physical activity and tobacco use (3). Alcohol use has been strongly correlated with the precipitation of suicidal behavior (4), serious physical violence (5), sexual assault (6), intimate partner violence (7,8), motor vehicle accidents (9), and is identifiable as partially responsible for 30 disease conditions, and causal for 30 more ICD-10 codes (10).

Thus, the true financial cost of an alcoholic beverage carries a hidden fee. In 2010 Sacks et al. (1) estimated that the yearly total cost of excessive alcohol consumption to society in the United States was a staggering $249 billion (1). These numbers were drawn from 26 alcohol-related costs ranging from healthcare, lost productivity at work and criminal justice expenses, to motor vehicle crashes and fire-related losses (11). Comparatively, the estimated yearly cost to society of tobacco was $300 billion in 2010 (12) and $78.5 billion for opioid use in 2013 (13). Adjusting for total alcohol consumed per year in the US, the true cost per beverage on average carried an additional $2.05 fee to society.

The integration of alcohol and tobacco into cultural traditions of our society has produced an ethos of submission when evaluating the negative effects of legal addictive substance use. Until recently (14), suing the makers of a product that causes harm was not pursued, deferring costs for addictive substance use to the taxpayers. Reversing current trends in alcohol use is of the utmost importance to national public health.

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New policy should use new strategies

Legislative strategies that have been employed to reduce alcohol use include an alcohol tax, a national minimum drinking age, restriction on the time of sale, density of outlets and advertising. The effectiveness of each approach is variable, but generally positive (15–19). Of note, however, each of the above strategies is applied to the entire population.

Alcohol use control is historically based on two concepts: single distribution theory and the full-cost model. Ledermann's single distribution theory proposed that the average rate of alcohol consumption is closely related to the rate of excessive alcohol consumption (20); ergo, reducing the average consumption reduces heavy consumption. The full-cost model of alcohol use postulates that by increasing the full-cost of alcohol, defined as convenience plus monetary cost, alcohol use decreases (21). Alcohol control laws are indiscriminate when targeting alcohol consumption, casting a wide net when imposing fees, fines, and restrictions. For instance, while high-risk drinkers are disproportionally burdened with alcohol-related fees (i.e. alcohol tax) (22), consumers often consider this practice to be unfair. Public attitude toward increased alcohol prices have been predominately negative in comparison to other alcohol control policies (23).

Therefore, we are proposing a reduction in convenience, and therefore an increase in the "full cost" of alcohol use, by restricting access for high-risk and high-consequence alcohol users. This would be accomplished by implementing an alcohol purchase license. Just as one can lose their license to drive by violating state traffic laws or being medically disqualified (i.e. epilepsy), one could lose their privilege of alcohol purchase by violating state laws under the influence of alcohol or through medical recommendation. We propose that an alcohol purchase license will be issued to all new license recipients over the age of 21 including license renewals or integrated into already existing state-issued IDs. In either case, to purchase alcohol following the implementation of such a program, all individuals would be required to take a brief on-line educational course with questions such as "How many drinks in two hours would result in your blood alcohol level being over 0.08, too impaired to drive?" and information regarding the dangers of alcohol use.

Rationale for an alcohol purchase license

The idea of retroactive restriction of social liberties as a consequence of gross misconduct is not a new idea and can be seen in such works as *On Liberty* by John Stuart Mill (24). Mill's harm principle offers a framework for justifying the use of power over someone against their will in order to prevent harm to others.

Similar models to the one proposed have been deployed around the world and have met many interesting successes and obstacles. Each model has used unique strategies from ration systems as seen in the Swedish Bratt System (1916–1955), to a variety of purchasing permits used in Finland's "buyer surveillance" system (1943–1957), Ontario's Liquor Permit system (1927–1962), and more modern examples, Australia's Banned Drinker Register (BDR) (25), and South Dakota's "24/7 Sobriety Project". Both the BDR and the 24/7 Sobriety Project focus on high-risk alcohol users.

The Northern Territory of Australia's BDR is a database of citizens' legal drinking status that has been maintained by the government since September 2017. The alcohol purchasing eligibility of every individual purchasing alcohol is confirmed at the time of purchase through government-issued scanning devices. The cost of the scanning equipment is estimated to be $8,000 per alcohol outlet (26). Individuals enrolled in the BDR are prohibited from consuming, possessing or purchasing alcohol. A 12-month evaluation of the BDR showed promising results including an impressive amount individuals with prior alcohol-related criminal and non-criminal events, 40% and 30%, respectively, having no alcohol-related events in the justice system in the year following the implementation of the BDR, as well as a 16% reduction in frequency of alcohol-related events. Results are preliminary and will be further analyzed in part two of the 12-month evaluation and the 24-month evaluation (27).

South Dakota's "24/7 Sobriety Project" commenced in 2005. Between 2005 and 2011, this program enrolled 16,932 individuals (est. 3% of the adult population) that had been arrested for multiple counts of driving under the influence (DUI) (28). This public health initiative employed an assortment of alcohol use monitoring devices for individuals enrolled in the program, including twice-daily breathalyzer tests, drug patches that collect sweat samples, urine testing and Secure Continuous Remote Alcohol Monitor (SCRAM)® bracelets (29). Over a five-year period, this program saw noticeable impacts including a 12% reduction in repeat DUI arrests, a 9% reductions in domestic violence arrests (30), and a 4% reduction in all-cause mortality (28).

The alcohol purchase license program and BDR database

A program such as the BDR in the United States would find its greatest impact on those at greatest risk for serious complications. The target populations (Table 1)

Table 1. Criteria for loss of alcohol purchase license.

- Hospital visits for alcohol-related medical problems that indicate alcohol cannot be consumed safely: alcohol withdrawal seizures, delirium tremens, alcohol-associated liver failure, alcoholic pancreatitis, alcoholic myopathy, alcohol-associated dementia
- Two convictions for driving while intoxicated within a 10-year period
- Child or domestic partner abuse while intoxicated
- Conviction of a felony while intoxicated
- Self-referral

would include individuals who commit child abuse, domestic partner abuse, or a felony under the influence of alcohol [in 1996, an analysis of two crime databases showed that of people incarcerated for violent crimes, around 2 million of 5.3 million (36%) convicted offenders had been under the influence of alcohol when they committed their offense (31)], individuals identified by the healthcare system to be ill-advised to continue drinking alcohol including, but not limited to, those admitted to the hospital for multiple occurrences of alcohol withdrawal symptoms, alcoholic pancreatitis and alcohol-associated liver disease, and individuals with two DUI and driving while intoxicated (DWI) convictions within a 10-year period [it is estimated that one-third of all individuals arrested for DUI and DWI have previous DUI/DWI convictions (32)].

How would one lose the privilege of buying alcohol? Alcohol use resulting in dangerous or life-threatening consequences (see Table 1) will be reported to the state agency managing the BDR database. Individuals who meet criteria will lose their alcohol purchase license and will be offered the opportunity to appeal via court hearing as well as receive a referral for treatment of alcohol use disorder. Individuals may also voluntarily request to have their license to purchase alcohol revoked.

What about broaching medical confidentiality by reporting the conditions with direct correlation to adverse outcomes in relation to alcohol use such as those listed above? This requires the standard weighing of risks and benefits of revealing medical information. In medicine, if someone is at risk of committing suicide, confidentiality can be put on hold. If providers are worried that the person may die from a preventable condition, they are free to speak to others to ensure safety. Some measures even allow involuntary hospital commitment to protect the life of the suicidal individual. Forty-five states already have laws that mandate physicians to report injuries that are a result of weapons, crimes or domestic violence, this practice could be extended to alcohol-related hospitalizations (33).

We appreciate that suicide is an acute danger, while alcoholic drinking might be considered slow suicide. However, alcoholic drinking is expensive to other members of society, and is much more prevalent than suicide. We suggest that the creation of a BDR database that logs alcohol-related offenses bridged across the medical and legal system would be beneficial for the identification of those most inflicting of personal and societal harm with alcohol use. The conditions listed in Table 1 indicate that the person is at significant risk adverse outcomes from drinking alcohol. Court ordered legal intervention for legal and medical indicators has benefits for both individuals and society.

What about voluntary application to lose one's license to purchase alcohol? This provision would aid in treatment. Imagine having this as an option! A motivational-interviewing style discussion about whether an individual would voluntarily give up their license to purchase alcohol would be therapeutic, whatever the final decision. Voluntary enrollment in a program of this nature is not novel; there are several examples of harm-minimization strategies focused on the consumption of "temptation goods" including cannabis (34), the Australian BDR for alcohol, and gambling. At the Australian BDR's 12-month review, the program had received 137 self-referral applications with 68% of requests being completed or in progress at time of data collection (27). In review of self-exclusion programs from gambling venues, there has been variable success and considerable flaws. Under a program in Australia, it was estimated that between 9% and 17% of problem gamblers had chosen to self-exclude themselves with 31–61% of problem gamblers that were surveyed attempting to self-exclude themselves at some time, while in Canada, under a similar program, it was estimated that only 0.6–7.0% of problem gamblers enrolled in self-exclusion. Considerable problems encountered were poor promotion of the programs, poor structure for detecting self-exclusion breaches, participants undermining self-exclusion by engaging in gambling at venues not in their self-exclusion agreement and high drop-out rates (35).

Enforcement

Enforcement of the alcohol purchase license will require a mandated license verification process for all vendors of alcohol. Those purchasing alcohol will be required to have a state issued identification. At the time of sale state issued identification cards will be scanned and electronically compared to the state list of licensed alcohol purchasers. State issued scanners or a phone/tablet application could aid in supply limitations of vendor compliance. Vendors who fail to use the alcohol purchase license apparatus would be subject to a fine. Out of state purchasers may use identification

such as a driver's license from another state to make a purchase. Although state residents who lack a license could drive to another state to purchase alcohol, the convenience would be reduced, likely reducing consumption as well. Unfortunately, this could also result in an increase in cases of drunken driving in border counties such as is seen in "wet versus dry" counties of the southern US (36,37). Interstate compacts, such as the Driver License Agreement which requires all participating states to honor other states licenses and report traffic convictions to the offender's home state, could provide a feasible solution, disrupting interstate bypass of alcohol purchase laws. Participating states would need to adopt mandatory ID verification protocols and report alcohol-related legal offenses to all state authorities. Increased fines and a misdemeanor for prohibited possession of alcohol could be used to deter border country citizens prohibited from purchasing alcohol in-state from traveling to consume or receive alcohol. This could be extended to persons who help banned drinkers acquire alcohol through what is often referred to as "straw purchases."

Repercussions for these actions could be similar to those seen with enforcement of firearm transfer laws. There are unfortunately other legal consequences of individualized prohibition that will need to be considered including black market alcohol sales, increases in theft from liquor stores, and the use of false identification documents. As well as individualized consequences, such as the concern for drug substitution, the thought that those in remission from one substance use disorder are at increased risk for developing another (38); although, there is evidence to suggest the opposite is actually the case (39).

Appeals and re-assessments

Those registered to the BDR database as prohibited individuals would be offered an opportunity to appeal their enrollment at the time of conviction and again following a period of 5 years. The right to a hearing at the time of loss of purchasing privileges invites bringing to the state's attention any misunderstandings or errors. Following enrollment and a period of 5 years the appeals process can be started by the individual and purchasing privileges can be reinstated after a court hearing.

A 5-year enrollment period is not arbitrary. Alcohol-use disorder, or any substance-use disorder for that matter, is at worse a chronic relapsing disorder, and at best a "limited, and after some years, perhaps, … self-correcting disorder (40)." If the former, a 5-year period would allow ample opportunity for an honest attempt at treatment with psychosocial intervention or pharmacologic therapy. If the latter, a 5-year period would offer enough time for prohibited individuals to seek medical care, if needed, and with successful completion of the program, emerge in remission and re-apply for an alcohol purchase license if so desired.

Cost savings

How much would be saved by instituting this new initiative of an alcohol purchase license? Established costs are unknown. Implementation of such a program would require initial and running investments in: legal costs to implement new laws, dispersal of ID verification via mobile applications or devices for alcohol distribution centers, increased demands on alcohol rehabilitation programs, and increased workloads for state employees including administrative staff, courts, lawyers, police officers, and the probation system. Opportunities for cost savings would come from a decrease in yearly incarcerations, a reduction in preventable traffic accidents and property damage requiring state municipal intervention, a decreased cost to offending individuals by preventing increased insurance rates, loss of jobs to incarceration and loss of potential future wages, and the possibility of preventing long-term medical complications of chronic alcohol use and its toll on the health-care system. In review of South Dakota's 24/7 Sobriety Program, jail populations in their two largest counties were observed to have dropped by almost 100 people per day (41), when conservatively scaled to New York's largest county, Kings County, this could equate to over 1,000 inmates per day. In 2017, in New York City, the estimated total daily cost per inmate per day was $742 (42), a reduction in 1,000 inmates per day would save $742,000 per day or around $271 million per year. From a public health perspective, this also sends a message to citizens that buying alcohol is a privilege that requires responsible use to maintain and that hostile, alcohol-fueled behaviors are noticed and proscribed.

Conclusion, evaluation, and outlook

Prevalence of high-risk alcohol use is remarkably high. Current legislative strategies focus on alcohol control through population-wide policies. The availability of new technology allowing for widespread participation and compliance invites innovative regulatory approaches. Improved regulation would address alcohol-related incidents. Evidence suggests that mandating alcohol use disorder treatment in conjunction with existing alcohol deterring devices (ie. ignition interlock devices) can yield impressive decreases in repeat DUI's (43). The

implementation of an "Alcohol Purchase License" will require collaborative efforts of law enforcement, medical professionals, as well as the alcohol industry including alcohol-outlet adherence to mandatory identity verification. Proper appraisal of such a program will require an equally well-developed system of evaluation as the legislation put in place. As described by Robin Room in *Individualized control of drinkers: Back to the Future*, it is evident that even with several examples of large-scale individualized bans on drinking, literature is lacking on the effects of their implementation (25). We recommend multifaceted evaluation as was done with Australia's BDR (44). Evaluation should follow standard guidelines of evaluating policy impact including analysis of enrollment data on a scheduled basis, independent quantitative evaluation of program viability (cost-effectiveness, technology, alcohol distributor adherence to guidelines, etc.) and key informant interviews. The return on investment, increasing public awareness about the dangers of heavy drinking, in protecting the lives of citizens with alcoholism and victims of their dysregulated behavior, as well as the cost of medical, legal and social remedies, could be substantial.

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