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Current Use of Underage Alcohol Compliance Checks by Enforcement Agencies in the U.S.

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Abstract

Background—Compliance checks conducted by law enforcement agents can significantly reduce the likelihood of illegal alcohol sales to underage individuals, but these checks need to be conducted using optimal methods to maintain effectiveness.

Materials and Methods—We conducted a national survey of local and state enforcement agencies in 2010–2011 to assess: (1) how many agencies are currently conducting underage alcohol compliance checks, (2) how many agencies that conduct compliance checks use optimal methods—including checking all establishments in the jurisdiction, conducting checks at least 3–4 times per year, conducting follow-up checks within 3 months, and penalizing the licensee (not only the server/clerk) for failing a compliance check, and (3) characteristics of the agencies that conduct compliance checks.

Results—Just over one third of local law enforcement agencies and over two thirds of state agencies reported conducting compliance checks. However, only a small percentage of the agencies (4–6%) reported using all of the optimal methods to maximize effectiveness of these compliance checks. Local law enforcement agencies with an alcohol-related division, those with at least one full-time officer assigned to work on alcohol, and those in larger communities were significantly *more* likely to conduct compliance checks. State agencies with more full-time agents and those located in states where the state agency or both state and local enforcement agencies have primary responsibility (vs. only the local law agency) for enforcing alcohol retail laws were also more likely to conduct compliance checks; however, these agency characteristics did not remain statistically significant in the multivariate analyses.

Conclusions—Continued effort is needed to increase the number of local and state agencies conducting compliance checks using optimal methods to reduce youth access to alcohol.

Keywords

alcohol sales; underage; minors; compliance checks; law enforcement

INTRODUCTION

Underage alcohol use is a persistent and pervasive public health problem in the United States that creates serious personal, social, and economic consequences (U.S. Department of Health and Human Services, 2007; National Resource Council & Institute of Medicine, 2004). Alcohol is the drug most commonly used and abused by youth in the United States (Johnston et al., 2012; Substance Abuse and Mental Health Services, 2012). One reason youth consume alcohol is that, despite laws prohibiting sales or provision to youth under age 21 in all states, they have easy access to alcohol from various sources (Britt et al., 2006; Freisthler et al., 2003; Toomey et al., 2007; 2008).

Youth report obtaining alcohol from social (e.g., friends family members, etc.) and commercial sources (e.g., bars, restaurants, liquor stores, grocery stores) (Harrison et al., 2000; Hearst et al., 2007; Cremeens et al., 2009). Among those under 21, use of commercial sources is most common among 18–20 year-olds (Paschall et al., 2007; Wagenaar et al., 1996), although even younger adolescents may obtain alcohol from these types of sources (Hearst et al., 2007). Studies show that underage-looking individuals can purchase alcohol without age identification from commercial establishments (Britt et al., 2006; Freisthler et al., 2003; Forster et al., 1994; 1995; Paschall et al., 2007; Preusser & Williams, 1992; Toomey et al., 2008). In the early 1990's, young purchasers were able to purchase alcohol in the majority of alcohol establishments (~75–100%) across communities (Forster et al., 1994; 1995; Preusser & Williams, 1992). More recently estimates for young appearing buyers have ranged from 26 to 39% across cities (Britt et al., 2006; Freisthler et al., 2003; Paschall et al., 2007; Toomey et al., 2008).

A potential reason for this decrease in likelihood of sales to underage youth may be an increase in enforcement against alcohol retailers that illegally sell alcohol to youth, although this has not been directly assessed. One of the most effective methods for preventing underage alcohol sales is enforcement compliance checks, where law enforcement agents supervise underage youth who attempt to purchase alcohol (Barry et al., 2004; Grube, 1997; Preusser et al., 1994; Wagenaar et al., 2005). If an alcohol sale is made, penalties are applied to the server and/or the license holder. Although several studies have found these underage alcohol compliance checks (from here on referred to simply as compliance checks) to be effective, one study suggests that effects of compliance checks decay over time (Wagenaar et al., 2005). In off-premise establishments (i.e., liquor stores, convenience stores, and grocery stores) and on-premise establishments (i.e., bars and restaurants), the likelihood of selling alcohol to youth decreased 17% immediately after a law enforcement check (Wagenaar et al., 2005). Effects of compliance checks in on-premise establishments decayed to an 8.2% reduction in likelihood of sales to youth by three months after the check. Effects dissipated completely in off-premise establishments within that same time period. These results suggest that enforcement checks must be conducted regularly (i.e., optimally three or four times per year) in establishments to effectively decrease alcohol sales to underage youth. Wagenaar and associates (2005) also assessed whether there were general deterrent effects—in other words, did effects of compliance checks spill over onto other establishments in the same community that had not been checked. The deterrent effect was seen only in establishments that had been checked by law enforcement with no spillover

deterrent effect onto other establishments in the same community that had not been checked. This lack of a general deterrent or community-level effect suggests that enforcement checks must be conducted in all establishments in a community—not just some establishments—to effectively decrease alcohol sales to underage youth.

In addition to conducting regular compliance checks and checking all alcohol establishments within a community, another recommendation made by practitioners is to re-check establishments that fail a compliance check within a few months, as some problem establishments may continue to ignore the law. These establishments may need to face more serious consequences or have their alcohol license revoked to maintain the safety of a community. However, some community and state ordinances specify that consecutive compliance check failures (e.g., two, three, or more) only result in severe penalties if the failures occur within a certain period of time (e.g., 12 or 18 months). If establishments are not rechecked within three to six months of a compliance check failure, communities may never reach the failure threshold necessary to remove problem establishments. A final recommendation is make sure that penalties for failing a compliance check are not applied only to the servers/sellers but also to the license holders—license holders are ultimately responsible for setting and enforcing expectations in their establishments

Compliance checks in the U.S. are conducted by local law enforcement and/or state alcohol enforcement agencies. Which agencies have the authority to conduct compliance checks to reduce sales to underage individuals varies by state. Only a few studies have assessed how many law enforcement agencies across the U.S. are conducting compliance checks. Montgomery and associates (2006) surveyed a nationally representative sample of local law enforcement agencies. They found that 73.9% of the local enforcement agencies in larger communities (>25,000 population) and 55.7% of agencies in smaller communities (≤ 25,000) reported conducting compliance checks in the previous 12 months. The overall prevalence of compliance checks was not reported. Agencies that conducted tobacco compliance checks and agencies with a special unit for community policing were more likely to conduct alcohol compliance checks, while agencies that participated in the DARE program were less likely to conduct alcohol compliance checks. Lenk and associates (2009) surveyed local law enforcement agencies and state-level alcohol enforcement agencies that had professional sport stadiums within their jurisdictions in 2005–2006. They found that 84% of local law enforcement agencies and 77% of state agencies reported conducting compliance checks in licensed alcohol establishments.

While these two studies provide important information about compliance check efforts, the information is limited. The studies were conducted several years ago and did not assess all of the elements of conducting compliance checks optimally, such as if all establishments within a community are checked. Additionally, one study only assessed local law enforcement agencies (Montgomery et al., 2006) and the other only assessed state and local law enforcement agencies with professional stadiums in their jurisdictions (Lenk et al., 2009). The present study aims to expand the existing knowledge of compliance checks by assessing agencies across the U.S to determine: (1) how many agencies are currently conducting alcohol compliance checks, (2) how many agencies conducting compliance

checks use optimal methods, and (3) characteristics of agencies conducting compliance checks.

METHODS

We used data from two surveys conducted in 2010–2011: (1) a stratified random sample of local law enforcement agencies in the United States and (2) a census of state alcohol enforcement agencies.

Enforcement Agencies

Local law enforcement agencies—We used a multi-stage strategy to select local law enforcement agencies using a list of 15,833 municipal and county law enforcement agencies from the U.S. Department of Justice Bureau of Justice Statistics (available from <http://bjs.ojp.usdoj.gov/content/pub/pdf/cslla04.pdf>) for 2004 (the most recent list available at the time of the survey). First, we divided the U.S. states into 25 large and 25 small states based on the number of agencies in each state (median = 300). Hawaii had only four local law enforcement agencies, and all four were included in our sample. For the other 49 states, we sampled within each state based on the proportion of agencies that were county sheriff versus municipal police and ensuing equal numbers of large and small agencies (using median number of officers per agency). We selected 40 agencies in large states and 20 agencies in small states for a total of 1,484 agencies ($4 + 24 \times 20 + 25 \times 40$). Additionally, Texas has a unique type of law enforcement agency called "constables." We randomly selected 20 of the 512 constable agencies, bringing our sample to 1,504 agencies. Given that this sampling strategy did not necessarily capture agencies in the largest cities (which tend to account for a high percentage of a state's population), we added the municipal police agency from the three largest cities in each state if they were not already included in our sample ($n=127$). Our final sample consisted of 1,631 law enforcement agencies.

The response rate for local law enforcement agencies was 66.3% (1082/1631). Response rates varied across states (50%–86%). Non-respondents were not significantly different (chi-square tests; $\alpha=0.05$) from respondents in terms of agency type, number of agencies per 1 million residents, the proportion of black residents, proportion of residents aged 15–20, or proportion of residents living in poverty; however agencies in smaller jurisdictions (<10,000) and agencies in jurisdictions with a lower proportion of Hispanic residents (<3%) were *less* likely to respond.

State agencies—We created a list of state agencies and contacts that conduct alcohol enforcement in the U.S. by consulting with multiple organizations, including the National Association of Alcohol Beverage Control Agencies (NABCA) and the National Liquor Law Enforcement Association (NLLEA). We excluded Hawaii because it has four county-level agencies rather than a statewide agency for alcohol enforcement. In 46 states, we surveyed a representative from a state alcohol beverage control agency (ABC) or similar organization or department (e.g., liquor control division; alcohol & tobacco commission); however, the remaining three states had special circumstances. In Nevada and Maryland, alcohol enforcement is primarily conducted at the local level (Mosher et al., 2009) but each has a statewide agency with some alcohol enforcement role—Nevada's State Department of

Taxation and Maryland's State Comptroller—which we included in this study. In Pennsylvania, we surveyed the State Police department rather than an ABC agency because the police department handles alcohol enforcement in that state. Our final sample included 49 statewide agencies.

Survey Administration

For each survey we attempted to survey the person at each agency most knowledgeable about his/her agency's alcohol-related enforcement activities. We identified this person through recommendations, telephone calls to each agency and Internet searches.

Research staff first attempted to complete surveys by telephone. Our initial protocol was to make up to 10 calls to each agency. However, in some states, local agencies were difficult to reach; hence, in states where initially less than 50% of agencies responded, we continued to attempt to reach agencies until we obtained participation from at least 50% of the agencies. Some participants requested the option to complete the survey online; 47% of the local law enforcement agencies and 53% of the state agencies completed the survey online facilitated by UMSurvey, an online survey platform. Additionally, 10 local law enforcement agencies and one state agency completed the survey on paper; research staff then entered their responses into our electronic database. Survey data were housed on a university server using secure sockets layer protocol and maintained according to industry standards for Internet security and standards for research protection established by the University of Minnesota's Institutional Review Board.

Measures

Our outcome measure assessed whether or not the agency conducted compliance checks in the past year. The survey question used for this measure was: *Has your agency conducted routine compliance checks or stings using underage decoys who attempt to purchase alcohol at licensed alcohol establishments such as bars, restaurants or liquor stores?* Response options were “yes”, “no”, “don't know”, or “we do not have the authority to conduct compliance checks or stings”; for analyses we dichotomized this to “yes” vs. “no” (“we do not have the authority...” were treated as missing; there were not any “don't know” responses). A separate measure was constructed for state- and local-level enforcement agencies.

Among agencies that reported conducting compliance checks, we assessed four aspects of the compliance check process: (1) the types of establishments where compliance checks were conducted (all, off-premise only, on-premise only, some selected at random or by geography); (2) the frequency of compliance checks (less than yearly, yearly, twice a year, 3–4 times/year, don't know); (3) whether follow-up checks were conducted at establishments that fail a check (yes, no); and (4) how soon follow-up checks were conducted (within 3 months, within 3–6 months, longer than six months). In addition, we assessed who was typically penalized when an establishment fails a compliance check: the server/clerk, the licensee, or both. We then created a dichotomous “model agency” variable where agencies used methods identified through research and practice as optimal, including: checked all establishments, conducted checks at least 3–4 times per year, conducted follow-

up checks within 3 months, and penalized the licensee (or server/clerk and the licensee) for failing a compliance check.

Independent variables included agency and jurisdiction characteristics that we hypothesized may affect the likelihood of conducting compliance checks based on previous studies of alcohol enforcement practices (e.g. Montgomery et al., 2006; Paschall et al., 2012; Wagenaar & Wolfson, 1995). One measure was common in both the local and state surveys: the number of full-time enforcement agents/officers per population (per 1000 for local agencies and per 1,000,000 for state agencies; population measures obtained from U.S. Census). This ratio measure was highly skewed so we created categorical variables: <2, 2–4, 4 for local and <6, 6 for state. From the local agency survey, we also included: (1) whether the agency had any full-time officers assigned primarily to enforcement of alcohol-related laws (yes/no), and (2) how common underage drinking is in the jurisdiction (not common, somewhat common, very common; recoded to not common vs. somewhat/very common). From the state survey, we included: (1) the agency primarily responsible for enforcing alcohol retail laws and regulation in the jurisdiction (state agency, local agencies, or state agency along with local agencies); (2) how common sales to underage persons are in the jurisdiction (not common, somewhat common, very common; recoded to not common vs. somewhat/very common); (3) the number of on-premise alcohol establishments in the agency's jurisdiction (e.g., bars, restaurants, clubs); and (4) the number of off-premise alcohol establishments in the agency's jurisdiction (e.g., liquor stores, grocery stores). The last two measures had open-ended responses that were very skewed, so we recoded them for analyses as <5000, 5000 for on-premise and <3000, 3000 for off-premise establishments. Recoding of measures was based on frequency distributions.

We also obtained demographic characteristics of the jurisdictions from the 2010 U.S. Census, including total population of jurisdiction (used for creating the number of officers/agents per population), percent living in poverty, percent black, percent Hispanic, and percent aged 15–20. For analyses, because many of these measures were skewed with outliers, we recoded them as either dichotomous (based on median split), or three- or four-level variables depending on the frequency distributions and ease of interpretation (see Tables 3 & 4).

Analyses

We computed descriptive statistics for all measures, weighting the statistics for local agency survey measures to account for sampling and nonresponse. We conducted bivariate analyses between the outcome measure and each independent measure using chi-square test statistics. Independent measures that were statistically significant in the bivariate analyses were included in a multivariate logistic regression model (for the local agency models we included state as a random effect). We assessed correlations between independent variables and did not identify any correlations high enough to raise concerns about collinearity in our multivariate analyses. We also aggregated data for all the local agencies in each state to determine the proportion conducting compliance checks, and created a dichotomous measure using a median split (<40%; 40%). We measured the association between this indicator and the dichotomous indicator of whether the state agency conducted compliance

checks using cross-tabulation. Statistical significance was assessed at $\alpha = 0.05$. All statistical analyses were conducted using SAS Version 9 (SAS Institute, 2004).

RESULTS

Agency/Jurisdiction Characteristics

Of the 1,082 local law enforcement agencies that participated in the survey, 26% of the agencies had at least one full-time agent assigned to specifically work on alcohol-related issues and 7% had an alcohol-related division (Table 1). The vast majority (94%) of the local agency participants indicated that underage drinking was somewhat or very common in their jurisdiction.

In 47% of the states both the state and local law enforcement agencies are responsible for enforcing alcohol retail laws; in 39% of the states, the state agencies alone have primary responsibility for alcohol retail enforcement. Nine state agencies (18%) indicated that illegal alcohol sales were very common in their state. Demographic characteristics of the jurisdictions and states are shown in Table 1.

Compliance Checks

Among all local law enforcement agencies, 35% reported conducting compliance checks; among those who reported they have the authority to conduct alcohol compliance checks, 37% reported doing so (Table 2). Among agencies that conducted alcohol compliance checks, just over half (55%) report checking all alcohol establishments. A small percentage of agencies conduct checks at only off-premise or only on-premise establishments (7% and 10%, respectively) while close to one out of four agencies conduct checks at randomly selected establishments or at establishments within specific geographic areas (28%). One third of agencies conduct the checks at establishments in their jurisdictions annually. About one fourth conduct checks twice per year and about one fourth conduct the checks 3–4 times per year. Follow-up compliance checks at establishments that have failed an earlier compliance check are common among local enforcement agencies, with 76% of agencies reporting doing such follow-up checks. Among the agencies that do follow-up checks, 35% conduct these within three months of the initial check. Forty-three percent of local agencies penalize only the server/clerk for illegal alcohol sales, 10% penalize only the license holder, and 47% penalize the server/clerk *and* the license holder.

At the state level, 76% of the agencies with authority to conduct alcohol compliance checks do so—just over two-thirds of the state agencies overall conduct these checks (Table 2). More than half (59%) conduct the checks at all establishments and 38% conduct the checks at randomly selected establishments or within selected geographic areas. Twenty-four percent conduct alcohol compliance checks less than yearly; 21% conduct them 3–4 times per year. Nearly all (94%) agencies that conduct compliance checks do follow-up checks, with approximately a third of these conducting these follow-up checks more than six months after the initial check. The majority of state agencies penalize the license holder *and* the server/clerk (79%) for illegal alcohol sales, while 14% penalize only the server/clerk and 7% penalize only the license holder.

Among surveyed agencies who reported doing compliance checks, only 6% of state and 4% of local enforcement agencies conducted compliance checks using optimal methods, including checking all alcohol establishments at least three to four times per year, conducting follow-up checks within three months and penalizing at least the licensee.

Considering overall compliance checks efforts in each state via the combined data from state and local agencies, we found that in 16 states, the state agency does checks *and* checks are conducted by at least 40% (median) of local agencies. In 18 states, the state agency conducts checks but less than 40% of local agencies conduct checks. In nine states, the state agencies do not conduct checks but at least 40% of local agencies of local law enforcement agencies do. Finally, in six states, minimal checks are conducted—no checks by the state agency and less than 40% of local agencies do checks. The correlation between state and local compliance checks is negative and nonsignificant ($r = -0.12$, $p = 0.14$).

Bivariate and Multivariate Analyses

In the bivariate analyses for local agencies (Table 3), we found that agencies with an alcohol-related division, and those with at least one full-time officer assigned to work on alcohol issues were more likely to conduct compliance checks. Several jurisdiction characteristics were associated with a higher likelihood of conducting checks: a larger population, a higher percentage of Hispanic residents, and a lower percentage of residents living in poverty (percentage of black residents was significant but not linearly associated). In the multivariate analyses, agency characteristics remained statistically significant, but of the characteristics of the jurisdiction, only population size remained statistically significant.

In the bivariate analyses for state agencies we found that agencies with more full-time agents were more likely to conduct compliance checks (Table 4). In states where the state agency or both the state and local law enforcement agencies are primarily responsible for enforcing alcohol retail laws, state agencies are more likely to conduct checks (vs. where local law enforcement agencies are primarily responsible for this type of enforcement). In the multivariate analyses, neither of these variables remained statistically significant.

DISCUSSION

About one out of three of the local law enforcement agencies reported that they have conducted alcohol compliance checks in the past year. In a study of local law enforcement agencies in 1999 (Montgomery et al., 2006) rates of conducting compliance checks varied by city size: 73% in larger cities (>25,000) conducted compliance checks but only 55% in smaller communities did so. We also found a difference across communities of different sizes. In jurisdictions with fewer than 10,000 people, 30% of the agencies conducted checks. In larger communities, 49% to 66% of agencies conducted checks. This suggests that significant progress has not been made in the past decade to increase the number of law enforcement agencies that are conducting alcohol compliance checks.

No matter how large the staff size is, local agencies that assign an officer to alcohol retail enforcement or that have an alcohol-related division are more likely to conduct compliance checks, no doubt reflecting that alcohol enforcement is a high priority for those agencies.

Local law enforcement agencies that are located in larger jurisdictions are also more likely to conduct compliance checks, which may reflect more resources, greater need in terms of the number of alcohol establishments, or perhaps greater or more political pressure. Additionally, it is possible that in smaller communities, local law enforcers are more likely to know establishment owners and staff, making them more averse to conducting the checks. Agencies in smaller communities may also be less likely to identify an underage decoy who is not known by establishment staff. If this is true, local law enforcement agencies in smaller communities may need to work together to help identify underage decoys that can do checks in the neighboring communities rather than their own communities.

Overall, 69% of the state agencies are conducting compliance checks. In some states, the state agency has primary responsibility for conducting alcohol retail enforcement, and therefore, not surprisingly, are more likely to conduct alcohol compliance checks than state agencies in states where local law enforcement agencies are primarily responsible for conducting alcohol retail enforcement. However, given that the median number of fulltime state enforcement agents per agency is 18 and the median number of licensed alcohol establishments is 3000 for off-premise and 5000 for on-premise establishments, the state agencies do not have sufficient resources to check all alcohol establishments in the state on a regular basis. The state agencies need to be adequately staffed to ensure that they can fully enforce the alcohol laws in their states. Additionally, it may require a combination of state and local enforcement efforts to create sustained reductions in the likelihood of illegal alcohol sales to underage youth. In six states, we found that compliance checks were minimal at both the local and state levels (i.e., less than 40% of local agencies conducted checks and the states did not conduct checks). There appears to be little correlation between state and local compliance checks, although the direction is toward a negative association, suggesting that current practices are more 'one or the other' as opposed to working in combination. More research is needed to determine the ideal level of coordination between local and state agencies.

During the early movement to reduce youth access to alcohol, influencing local and state enforcement agencies simply to conduct compliance checks was considered a successful endpoint. However, recent research suggests that just conducting checks of a small number of alcohol establishments in a community once or twice per year may not be sufficient to maintain a deterrent effect (Wagenaar et al., 2005). Currently, only 4–6% percent of local and state agencies that participated in our survey reported conducting compliance check campaigns using all optimal methods we identified through the research literature and practice (i.e., conducting checks of all establishments, conducting three to four checks per year, conducting follow-up checks within three months, and penalizing the licensees). Research is needed to determine whether the use of these optimal methods results in more effective compliance checks. Additionally, given the limited resources of many enforcement agencies, more research is needed to inform agencies how to most effectively use the resources available to them.

One limitation of this study is that it relies on self-reported data from enforcement agencies, which may introduce socially desirable response bias. However, given that many of our participants reported that their agencies were not conducting compliance checks, this

potential bias may be modest. We also only surveyed one agent from each enforcement agency and this person may not have been knowledgeable about all aspects of compliance checks conducted by his or her agency. To minimize this potential problem, we attempted to survey the individual most knowledgeable about alcohol enforcement within each agency. Finally, we attempted to get a representative sample of local law enforcement agencies from each state, but our response was variable across states with some having only a 50% response rate. Agencies that did not respond to our survey may have been less likely than agencies that did to engage in enforcement activities, suggesting that our results may overestimate the actual percentage of local enforcement agencies conducting alcohol compliance checks.

Despite these limitations, this study provides an updated assessment of alcohol compliance check enforcement actions by law enforcement in the U.S. Reducing access to alcohol may be one of the most effective ways to reduce underage drinking and its related problems and alcohol compliance checks are an effective way to reduce access to alcohol from one source—alcohol establishments. This study suggests that more work is needed to increase the number of local and state enforcement agencies that are conducting compliance checks and to ensure that these agencies are conducting the checks optimally. Currently, there is not a national effort in the U.S. focused on increasing the use of compliance checks to prevent illegal alcohol sales to underage youth. A concerted effort from a national organization such as Mothers Against Drunk Driving (MADD) or other advocacy organizations may be needed to prioritize this type of enforcement effort.

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References

- Barry R, Edwards E, Pelletier A, Brewer R, Naimi T, Redmond A, Ramsey L. Enhanced enforcement of laws to prevent alcohol sales to underage persons --- New Hampshire, 1999–2004. *MMWR Morb Mortal Wkly Rep.* 2004; 53:452–454. [PubMed: 15175569]
- Britt H, Toomey TL, Dunsmuir W, Wagenaar AC. Propensity for and correlates of alcohol sales to underage youth. *J Alcohol Drug Educ.* 2006; 50:25–42.
- Creameens JL, Miller JW, Nelson DE, Brewer RD. Assessment of source and type of alcohol consumed by high school students: Analyses from four states. *J Addict Med.* 2009; 3:204–210. [PubMed: 21769017]
- Forster JL, McGovern PG, Wagenaar AC, Wolfson M, Perry CL, Anstine PS. The ability of young people to purchase alcohol without age identification in northeastern Minnesota, USA. *Addiction.* 1994; 89:699–705. [PubMed: 8069171]
- Forster JL, Murray DM, Wolfson M, Wagenaar AC. Commercial availability of alcohol to young people: Results of alcohol purchase attempts. *Prev Med.* 1995; 24:342–347. [PubMed: 7479623]

- Freisthler B, Gruenewald PJ, Treno AJ, Lee J. Evaluating alcohol access and the alcohol environment in neighborhood areas. *Alcohol Clin Exp Res*. 2003; 27:477–484. [PubMed: 12658114]
- Grube JW. Preventing sales of alcohol to minors: Results from a community trial. *Addiction*. 1997; 92:S251–S260. [PubMed: 9231448]
- Harrison PA, Fulkerson JA, Park E. The relative importance of social versus commercial sources in youth access to tobacco, alcohol, and other drugs. *Prev Med*. 2000; 31:39–48. [PubMed: 10896842]
- Hearst MO, Fulkerson JA, Maldonado-Molina MM, Perry CL, Komro KA. Who needs liquor stores when parents will do? The importance of social sources of alcohol among young urban teens. *Prev Med*. 2007; 44:471–476. [PubMed: 17428525]
- Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. Monitoring the future national survey results on drug use, 1975–2011. Volume I: Secondary school students. Ann Arbor, Institute for Social Research, The University of Michigan. 2012
- Lenk KM, Toomey TL, Erickson DJ. Alcohol-related problems and enforcement at professional sports stadiums. *Drugs: Education, Prevention and Policy*. 2009; 16:451–462.
- Montgomery JM, Foley KL, Wolfson M. Enforcing the minimum drinking age: State, local and agency characteristics associated with compliance checks and cops in shops programs. *Addiction*. 2006; 101:223–231. [PubMed: 16445551]
- Mosher, JF.; Hauck, A.; Carmona, M.; Treffers, R.; Reitz, D.; Curtis, C.; Ramirez, R.; Moore, A.; Saetta, S. Laws prohibiting alcohol sales to intoxicated persons. Washington DC: National Highway Traffic Safety Administration; 2009.
- National Research Council, Institute of Medicine. Reducing underage drinking: A collective responsibility. Washington, DC: The National Academies Press; 2004.
- Paschall MJ, Grube JW, Black C, Ringwalt CL. Is commercial alcohol availability related to adolescent alcohol sources and alcohol use? Findings from a multi-level study. *J Adolesc Health*. 2007; 41:168–174. [PubMed: 17659221]
- Paschall MJ, Grube JW, Thomas S, Cannon C, Treffers R. Relationships between local enforcement, alcohol availability, drinking norms, and adolescent alcohol use in 50 California cities. *J Stud Alcohol Drugs*. 2012; 73:657–665. [PubMed: 22630804]
- Preusser DF, Williams AF. Sales of alcohol to underage purchasers in three New York counties and Washington, D.C. *J Public Health Policy*. 1992; 13:306–317. [PubMed: 1401049]
- Preusser DF, Williams AF, Weinstein HB. Policing underage alcohol sales. *J Safety Res*. 1994; 25:127–133.
- SAS Institute. SAS/STAT 9.1 user's guide. Cary, NC: SAS Institute; 2004.
- Substance Abuse and Mental Health Services Administration. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2012. Results from the 2011 National Survey on Drug Use and Health: Summary of national findings.
- Toomey TL, Fabian LEA, Erickson DJ, Lenk KM. Propensity for obtaining alcohol through shoulder tapping. *Alcohol Clin Exp Res*. 2007; 31:1218–1223. [PubMed: 17511747]
- Toomey TL, Komro KA, Oakes JM, Lenk KM. Propensity for illegal alcohol sales to underage youth in Chicago. *J Community Health*. 2008; 33:134–138. [PubMed: 18196448]
- U.S. Department of Health and Human Services. The surgeon general's call to action to prevent and reduce underage drinking. Rockville, MD: U.S. Department of Health and Human Services; Office of the Surgeon General; 2007.
- Wagenaar AC, Toomey TL, Erickson DJ. Preventing youth access to alcohol: Outcomes from a multi-community time-series trial. *Addiction*. 2005; 100:335–345. [PubMed: 15733247]
- Wagenaar AC, Toomey TL, Murray DM, Short BJ, Wolfson M, Jones-Webb R. Sources of alcohol for underage drinkers. *J Stud Alcohol*. 1996; 57:325–333. [PubMed: 8709591]
- Wagenaar AC, Wolfson M. Deterring sales and provisions of alcohol to minors: A study of enforcement in 295 counties in four states. *Public Health Rep*. 1995; 110:419–427. [PubMed: 7638329]

Table 1

Descriptive statistics for jurisdiction and agency characteristics: Local and state agencies

	Local Agencies (n=1082)	State Agencies (n=49)
	Mean (SD; range)	Mean (SD; range)
Population	72,245 (331,141; 10–8.2 mil.)	6.3 mil (6.9 mil.; 0.56 mil.–37 mil.)
Percent black	8.8% (16%; 0%–88%)	10% (9.5%; 0.38%–37%)
Percent Hispanic	9.3% (14%; 0%–97%)	11% (10%; 1.2%–46%)
Percent poverty	15% (8.9; 0%–50%)	13% (2.9%; 7.8%–21%)
Percent aged 15–20	8.4% (3.0; 0.6%–44%)	8.6% (0.37%; 7.9%–9.5%)
On-premise establishments	--	8227 (10,014; 795–47,000)
Off-premise establishments	--	6623 (10,663; 250–60,000)
Fulltime officers/agents per population ¹	3.3 (22; 0–700)	7.2 (6.7; 0–28)
	Percent of agencies ²	Percent of agencies
Type of agency		
Police	77%	--
Sheriff or Constable	23%	--
Full-time officers assigned to alcohol enforcement		
Yes	26%	--
No	74%	--
Have alcohol-related division		
Yes	7%	--
No	93%	--
Agency primarily responsible for enforcing alcohol retail laws		
State	--	39%
Local	--	14%
Both	--	47%
How common is underage drinking (local)/are illegal sales to minors (state)		
Not common	6%	25%
Somewhat common	56%	57%
Very common	38%	18%

-- indicates variable not included in on survey

¹ For local agencies, number of officers per 1000 persons; for state agencies, number of agents per 1,000,000 persons² Percentages are weighted for local agency survey items

Table 2

Descriptive statistics for compliance check measures: Local and state agencies

	Local agencies ^I (n=1082)	State agencies (n=49)
	Percent of agencies ^I	
Conduct checks at establishments		
Yes	35%	69%
No	60%	22%
No authority	5%	8%
<i>[Among those with authority]:</i>		
Yes	37%	76%
No	63%	24%
<i>[Of those who do checks]:</i>		
Establishments checked		
*All	55%	59%
Off premise only	7%	0%
On-premise only	10%	3%
At random/geography	28%	38%
Frequency of checks		
Less than yearly	16%	24%
Yearly	33%	32%
Twice a year	26%	18%
*3–4 times a year	21%	21%
Don't know	5%	6%
Conduct checks among those that failed		
*Yes	76%	94%
No	24%	6%
<i>[If Yes]:</i>		
Timing of follow-up checks		
*Within 3 months	35%	34%
Within 3–6 months	41%	31%
Longer than 6 months	24%	34%
Party penalized for sales to underage & intoxicated patrons		
Server/clerk	44%	14%
*Licensee only OR both server & licensee	56%	86%
*MODEL AGENCIES	4%	6%

^I Percentages are weighted for local agency survey items

* MODEL AGENCIES = All establishments checked, checks done 3–4 times per year, follow up checks done within 3 months, at least licensee penalized

Table 3

Bivariate and multivariate results for local agencies conducting compliance checks (n=1014)

	Bivariate analyses		Multivariate model
	Percent of agencies ¹	Chi-square(<i>p</i>)	(OR; 95% CI)
Population			
< 10K	30%	80.5 (<.0001) *	0.27(0.13, 0.55) *
10K–50K	49%		0.60 (0.30, 1.2)
50K–250K	66%		0.95 (0.45, 2.0)
> 250K	65%		Ref.
Percent black			
< 1%	38%	9.7 (0.021) *	1.1 (0.59, 1.9)
1–10%	46%		1.2 (0.67, 2.1)
10–25%	48%		1.2 (0.62, 2.2)
> 25%	35%		Ref.
Percent Hispanic			
< 3%	37%	10.1 (0.017) *	0.89 (0.48, 1.6)
3–10%	41%		0.73 (0.40, 1.3)
10–25%	48%		0.87 (0.47, 1.6)
> 25%	51%		Ref.
Percent poverty			
< 15%	42%	7.7 (0.022) *	1.1 (0.63, 1.7)
15–25%	45%		1.2 (0.71, 2.0)
> 25%	31%		Ref.
Percent aged 15–20			
< 8%	38%	4.4 (0.112)	--
8–9.9%	45%		--
10%	46%		--
Fulltime officers per 1000 population			
< 2	44%	4.1 (0.128)	--
2–4	39%		--
4	36%		--
Full-time officer assigned to alcohol retail enforcement			
No	35%	46.2 (<.0001) *	0.51 (0.37, 0.72) *
Yes	58%		Ref.
Have alcohol-related division			
No	38%	44.3 (<.0001) *	0.40 (0.23, 0.71) *
Yes	73%		Ref.
How common is underage drinking			
Not common	20%	1.91 (0.167)	--
Somewhat/very common	42%		--

¹ percentages reported are the percent of agencies doing compliance checks at each level of the independent variable

* statistically significant at $p < .05$

-- = measure not included in multivariate because not significant in bivariate analyses

Table 4

Results of bivariate and multivariate analyses for state agencies conducting compliance checks (n=45)

Independent measures	Bivariate analyses		Multivariate model
	Percent of agencies ¹	Chi-square (p)	(OR; 95% CI)
Population			
< 5 million	68%	1.7 (0.187)	--
5 million	85%		--
Percent black			
< 7%	65%	2.7 (0.099)	--
7%	86%		--
Percent Hispanic			
< 7%	71%	0.36 (0.547)	--
7%	79%		--
Percent poverty			
< 13%	68%	1.3 (0.260)	--
13%	83%		--
Percent aged 15–20			
< 8.55%	64%	3.3 (0.069)	--
8.55%	87%		--
Number of on-premise establishments			
< 5000	68%	1.9 (0.174)	--
5000	86%		--
Number of off-premise establishments			
< 3000	63%	3.0 (0.085)	--
3000	86%		--
Fulltime agents per 1 million population			
< 6	58%	8.3 (0.004) *	0.11 (0.01, 1.36)
6	95%		Ref
Agency primarily responsible for enforcing alcohol retail laws			
State	89%	10.4 (0.006) *	0.98 (0.11, 8.41)
Local	20%		0.12 (0.01, 1.41)
Both	76%		Ref.
How common are illegal sales to minors			
Not common	82%	0.09 (0.760)	--
Somewhat/very common	77%		--

¹ percentages reported are the percent of agencies conducting compliance checks at each level of the independent measure

* significant at p<.05

-- = measure not included in multivariate because not significant in bivariate analyses

Ref. = referent group