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Enforcing Underage Drinking Laws
Field-Initiated Research and Evaluation (FIRE) Program

Identifying Effective Environmental Strategies:
Final Technical Report
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EXECUTIVE SUMMARY

Underage drinking is a persistent threat to the health and well-being of young people and has substantial costs for society. These costs are evident in research examining the deleterious effects of alcohol in the college population, and in adolescents 12 to 17 years of age.

Based on evidence that environmental strategies to reduce underage drinking and associated alcohol-related misconducts are effective, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) supported this approach by providing block grants to all States and the District of Columbia to operate the Enforcing Underage Drinking Laws (EUDL) program. Throughout the EUDL program (1998 to 2012), OJJDP amassed a wealth of data as grantees submitted information on their activities. However, while some of the EUDL discretionary grant programs have been evaluated (see Spera et al., 2010; 2011; Wolfson et al., 2011), including one study that used a randomized controlled trial approach (Wake Forest University School of Medicine 2011), there has not been a systematic evaluation of the impact the States have had in using their EUDL block grant funds to reduce underage drinking and associated misconducts.

ICF was awarded a grant in 2012 to conduct an evaluation of the EUDL program. The grantee-level information provided the independent variables for the analyses, the dependent variables or outcome measures came from a number of external data sources. Two data sources were selected because they offer data at the granular geographic level required for this analysis: 1) the Campus Safety and Security Survey (CSSS), which contains information from institutes of higher education on liquor law violations on their campuses and in the surrounding areas, and 2) the Fatality Analysis Reporting System (FARS), which provides data on automobile crashes, including if the crash was alcohol-related, as well as vehicle and driver characteristics. The covariates used for the analysis include demographic data from the American Community Survey (ACS).

We consistently found that areas with more active coalitions and those with multiple strategies were associated with more campus incidents. Whereas this is opposite our hypothesis, we speculate that areas with more active coalitions may have raised awareness and increased patrols, which led to higher incident reporting. Campus related incidents were significantly lower in areas where educational activities were the focus of grantees' efforts, even controlling for demographics. This is a positive, if unexpected finding as we hypothesized that education alone would have little impact. Traffic fatalities involving minors and alcohol were significantly lower for those grantees that built coalitions with law enforcement organizations.

Our ongoing research will expand our analyses by developing multilevel models which include state-level variables, such as policies and laws related to underage drinking based on our coding of policy data obtained from the Alcohol Policy Information System.

INTRODUCTION

Underage drinking is a persistent threat to the health and well-being of young people and has substantial costs for society. These costs are evident in research examining the deleterious effects of alcohol in the college population. Researchers estimate that each year:

- 1,825 college students between the ages of 18 and 24 die from alcohol-related unintentional injuries, including motor-vehicle crashes.

- 696,000 students between the ages of 18 and 24 are assaulted by another student who has been drinking.

- 97,000 students between the ages of 18 and 24 report experiencing alcohol-related sexual assault or date rape.

- Roughly 20 percent of college students meet the criteria for an alcohol use disorder.

- About 1 in 4 college students report academic consequences from drinking, including missing class, falling behind in class, doing poorly on exams or papers, and receiving lower grades overall.[1]

Even before reaching college age, alcohol negatively effects the U.S. population. In 2014, approximately 679,000 adolescents ages 12–17 had an alcohol use disorder. In the same year, approximately 55,000 adolescents received treatment for an alcohol problem in a specialized facility.[2] Economically, alcohol misuse problems cost the United States $249.0 billion in 2010; 75% of this is related to binge drinking. This is particularly concerning for the underage population because it was estimated in 2014 that about 5.3 million people ages 12–20 were binge drinkers. [3]

An Environmental Prevention Approach

Evidence suggests that environmental strategies to reduce underage drinking and associated alcohol-related misconducts are effective (Cuijpers, 2002; Gottfredson & Willson, 2003; National Institute on Drug Abuse, 2003; Johnson et al., 1990; Dwyer, 1989). The Office of Juvenile Justice and Delinquency Prevention (OJJDP) supported an environmental strategies approach to reducing underage drinking by providing block grants to all States and the District of Columbia to operate the Enforcing Underage Drinking Laws (EUDL) program.

The EUDL program focused on strengthening community collaboration, particularly collaboration between agencies, to leverage shared resources and indirectly limit underage drinking and associated health consequences (Dejong & Langford, 2006; Foran, Heyman, & Slep, 2011; Spera et al., 2012). In addition to the block grants, some States received additional funds through a EUDL discretionary grant program to focus on various sub-populations such as underage Air Force members (see Spera et al., 2010; 2011) or youth living in rural areas (see Saltz, 2009).

Environmental strategies focus on changing the *context* surrounding underage drinking behavior rather than on directly changing the *behaviors* of individual drinkers (Community Anti-Drug Coalition of America). The three principles of an environmental strategies approach to reduce problem/underage drinking include (a) media efforts, (b) community-level collaboration to identify, develop, and

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[1] http://www.collegedrinkingprevention.gov/statistics/consequences.aspx. Retrieved 9/27/16.
[2] http://pubs.niaaa.nih.gov/publications/AlcoholFacts&Stats/AlcoholFacts&Stats.htm. Retried 9/27/16.
[3] Ibid.

implement environmental strategies, and (c) an emphasis on access to alcohol (Freisthler, Gruenwald et al., 2003). Community-level interventions using these environmental strategies emphasize macro or systems-level entities such as policy influences, establishments that serve alcohol, and cultures or social networks that perpetuate permissive or accepting attitudes and behaviors toward drinking (Freisthler, Gruenwald et al., 2003). Common intervention activities using an environmental strategies approach include, but are not limited to:

- Enforcement aimed at reducing the social availability of alcohol including:
  - Shoulder tap operations—when enforcement agencies use minor decoys to stand outside liquor stores or markets and ask adults to buy them alcohol.
  - Controlled party dispersal operations—safely breaking up underage drinking parties
  - Fake ID enforcement
- Server training and compliance checks of local liquor establishments to ensure that they are not selling alcohol to underage patrons (using covert underage buyers).
- Enforcing penalties for use of false IDs, driving while intoxicated, and violating zero-tolerance laws.
- Impaired driving enforcement (i.e., increased number and frequency of driving under the influence [DUI] checks in the community).
- Local policy development, such as educating State legislatures on the issue of underage drinking and working to change policies and laws.

The common agent for change for environmental prevention is a community coalition—a broad-based set of stakeholders working within the community to develop and implement the environmental approach. Coalition members often include elected officials, local police departments, human service agencies such as health and wellness clinics, alcohol beverage control departments, and voluntary organizations such as drunk-driving prevention groups. The coalition often directs activities in other areas such as undercover buy operations, sobriety checkpoints, and media campaigns. Grantees supplied data on activities and costs in four areas: Coalitions, Media, Enforcement, and Education, training and other activities.

ICF's EUDL Evaluation

Throughout the EUDL program (1998 to 2012), OJJDP amassed a rich source of EUDL performance measures data from all States and DC through the submission of semi-annual reports on the use of grant funds and the activities implemented (Appendix A contains the data grantees had to provide to calculate the performance measures). However, while some of the EUDL discretionary grant programs have been evaluated (see Spera et al., 2010; 2011; Wolfson et al., 2011), including one study that used a randomized controlled trial approach (Wake Forest University School of Medicine 2011), there has not been a systematic evaluation of the impact the States have had in using their EUDL block grant funds to reduce underage drinking and associated misconducts. Therefore, ICF was awarded a grant in 2012 to conduct an evaluation of the EUDL program. The evaluation began with an examination of the following three research questions:

1) Which environmental intervention elements are most effective or least effective at changing attitudes, behaviors, and outcomes of underage youth? In short, what works and which widely-used approaches are not producing the intended outcomes?

2) What patterns of effectiveness emerge within and across States? Under what circumstances do certain environmental strategies seem to be most effective?

3) What are the practical applications that can be learned from this research that policymakers, program planners, and the research community can use to augment policy and guide the development of effective interventions?

Hypotheses

Below are the 11 hypotheses ICF developed and tested. The first ten were included in ICF's grant submission and were based on the data we knew grantees provided using DCTAT. Appendix B provides a detailed description of how we operationalized the concepts for each hypothesis.

- Regions with more active and well-rounded coalitions involving youth will have a greater impact on reducing underage drinking and associated misconducts compared to regions with less active and less representative coalitions.
- Regions that coupled non-EUDL funds with EUDL funds to support underage drinking prevention activities will be more likely to see impacts on underage drinking outcome than regions that used only EUDL funds to support activities.
- Regions implementing more intervention activities across the period will observe greater impacts on underage drinking than those implementing fewer activities.
- Media interventions will have a greater impact on high school students given their level of exposure to media compared to other types of environmental strategies.
- Regions that focus on certain activities (e.g. DUI/DWI enforcement) will observe certain outcomes (e.g. decrease in fatal car accidents).
- The impact on underage drinking may be greatest when multiple strategies are leveraged at the same time, such as DUI/DWI enforcement paired with intense media messages in the same reporting period.
- Regions that focus on education activities alone will see little impact on underage drinking outcomes.
- The effects of certain interventions (e.g., law enforcement of underage drinking laws, increased taxes on alcohol) will persist longer than others.
- Grantees in regions that implemented evidence-based strategies will see more positive impacts related to underage drinking and impaired driving compared to grantees in regions that did not implement evidence-based strategies.
- Coalitions in regions that include at least one law enforcement organization will result in more positive impacts related to underage drinking and impaired driving.
- Coalitions with higher self-reported incidents and arrests due to coalition activities will have more of an impact on underage drinking.

METHODOLOGY

Grantees provided information on their activities and costs related to their community coalitions, media efforts, enforcement efforts, and education, training, and other activities undertaken. The grantee-level information provides the independent variables for the analyses, the dependent variables or outcome measures came from a number of external data sources. Two data sources were selected because they offer data at the granular geographic level required for this analysis: 1) the Campus Safety and Security Survey (CSSS), which contains information from institutes of higher education on liquor law violations on their campuses and in the surrounding areas, and 2) the Fatality Analysis Reporting System

(FARS), which provides data on automobile crashes, including if the crash was alcohol-related, as well as vehicle and driver characteristics. The covariates used for the analysis include demographic data from the American Community Survey (ACS).

Independent Measures

Grantees submitted data semi-annually on their activities and costs related to their community coalitions, media efforts, enforcement efforts, and education, training, and other activities. Data were submitted through the OJJDP's online performance reporting tool (DCTAT). We downloaded, cleaned, and processed these data including renaming variables, creating scales for "select all that apply" variables, and identifying and rectifying anomalies, such as variables with no cases, seemingly duplicative variables, missing variables, and extra variables.[4] The overarching goal was to look for inconsistencies and identify ways to re-capture missing data.

Dependent Measures

Campus Safety and Security Survey (CSSS)

We first began building a database for campus liquor violation outcomes, as reported by colleges and universities in the Office of Postsecondary Education's (OPE) annual Campus Safety and Security Survey (CSSS). The CSSS is a required survey of all higher education institutions who participate in the Federal student financial aid program; each year, these colleges and universities are required to disclose information about crime, including liquor law violations,[5] on their campuses and in surrounding areas. For a given year, the CSSS data files include information regarding arrests, crime, discipline, and hate crimes, by institution campus, from the preceding three years (i.e., the 2013 CSSS data files contain information for 2010, 2011, and 2012). The CSSS data files classify the data into three main categories listed below. The categories and offenses associated with them are defined in The Handbook for Campus Safety and Security Reporting.

- Criminal Offenses
    - Criminal homicide
    - Sex offenses
    - Robbery
    - Aggravated assault
    - Burglary
    - Motor Vehicle Theft
    - Arson
- Hate Crimes
- Arrest and Disciplinary Referrals for Violations of Weapons, Drug and Liquor Laws

In addition, this information is separated into different files, based on location – i.e., on campus, on public property within or immediately adjacent to the campus, and in or on non-campus buildings or

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[4] Specifically, variables that are not present in the "Performance Measure Grids," which list the item number, output measure, and data the grantee should provide in their reporting.

[5] Defined as "The violation of laws or ordinances prohibiting the manufacture, sale, transporting, furnishing, or possessing of intoxicating liquor; maintaining unlawful drinking places; bootlegging; operating a still; furnishing liquor to a minor or intemperate person; using a vehicle for illegal transportation of liquor; drinking on a train or public conveyance; and all attempts to commit any of the aforementioned. (Drunkenness and driving under the influence are not included in this definition.)" (http://www.nacua.org/documents/ACE_NACUBO_CleryAct.pdf)

property owned by the academic institution. To create our dataset we focused solely on liquor-related arrests, and discipline on-campus, on public property, and at non-campus locations. We excluded Criminal Offenses and Hate Crimes incidents. This dataset was selected, in part, because it offers data at the granular geographic level required for the analyses.

Fatality Analysis Reporting System (FARS)

Traffic fatality data were pulled from the Fatality Analysis Reporting System (FARS), which provides State-level data regarding automobile crashes. We used three of the FARS databases to create our outcome database.

- **The Accident database** which contains specific information related to each accident. It contains the number of people involved in the accident, the number of vehicles involved in the accident, geographic information about the accident and the data of the accident.
- **The Vehicle database** which contains specific information related to each vehicle involved in the crash.   The information is similar to the accident database. Information about if alcohol impairment was related to any vehicle involved in the accident.
- **The Person database** which contains specific information about each person in the vehicle involved in the crash. This file contains specific information about the driver, including age and any alcohol impairment.

We used the person database to determine the age of the drivers in the accidents and whether they had consumed alcohol prior to the accident. This information combined with the vehicle and accident databases allowed us to create an accident level database that indicated if an accident involved alcohol, and the driver was a minor. For our analysis, we included only alcohol related accidents where the driver was impaired and underage. We used the geographic coordinates of the accident location to map the accidents to zip codes. We then created a zip code level file with a count of accidents involving drivers who were impaired and underage.

Covariate Measures

American Community Survey

To control for shifts in the population demographics within states over time in our analyses, we included demographic data from the American Community Survey (ACS). We first combined ACS data from 2011 and 2013 into a single dataset containing selected demographic variables of interest. Specifically, the combined ACS data file contained information related to total population, race/ethnicity, population for whom poverty status is determined, population below poverty rate, percent of population below poverty rate, number of households, mean income estimate for all households, gender, and age by zip code. These zip code-level records were then aggregated into three-digit zip code-level records for each year, 2011 and 2013.

State Laws

We obtained data from the Alcohol Policy Information System, or APIS.[6] APIS provides detailed information on 35 alcohol-related policies in the United States at both state and federal levels. The nine policies below deal directly with underage drinking.

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[6] https://alcoholpolicy.niaaa.nih.gov/

1) Possession/Consumption/Internal Possession
2) Purchase
3) Furnishing
4) Age of Server-On-Premises
5) Age of Seller-Off-Premises
6) Use/Lose: Driving Privileges
7) Hosting Underage Drinking Parties
8) False Identification
9) Blood alcohol concentration (BAC) limits for drivers under 21

We explored the extent to which these nine state policies could serve as a covariate to help explain outcome data related to underage drinking—for instance, classifying states as "wet" or "dry," or as lenient or restrictive in terms of their policies. For instance, coding each state's policies regarding the minimum age of sellers for off-premise sales for beer, wine and spirits, and if a manager or supervisor must be present. States with higher minimum ages (e.g., 21 instead of 16) received a higher score to denote greater restrictiveness. ICF is currently working on a paper for submission to a peer-reviewed journal that will contain multi-level models incorporating the APIS policy data. We will notify OJJDP if this paper is accepted for publication.

RESULTS

We began by examining the correlations between a range of potential independent variables available from grantees, as well as a number of derived variables, and the dependent variables available in the CCCS and FARS data. We then conducted principal component analysis (PCA) to determine the independent contribution of each independent variable. For most of the derived variables, one or two factors accounted for at least 60% of the variance.

To determine the impact of the of the EUDL grantees' interventions, we divided the data into two time periods. Data from 2006 to 2008 were considered pre-grantees' intervention. Data from 2010 to 2012 were post-grantees' intervention. The CSSS database was then merged with the DCAT database by zip code. Zip codes with a grantee from the DCAT database were considered part of our treatment group and zip codes without grantees were included in the control group.   The same procedure was used on the FARs database.

Within each database, CSSS and FARs, we created four groups for comparisons of the differences-of-differences type:

1) Treatment group pre-intervention
2) Control group pre-intervention
3) Treatment group post-intervention
4) Control group post-intervention

Using our four groups, we wanted to assess two kinds of changes which would indicate potential intervention impacts.   First, was there a change over time within each of the groups? (i.e., did the number of campus alcohol incidents decrease in the treatment group from pre-intervention to post-intervention?) Second, if there was change between time 1 and time 2 within the treatment and control groups, was it significantly different between the treatment and control groups?

Bivariate analysis

The initial impact of the grants was assessed through t-tests that compared the mean levels of the dependent measures in the pre- and post- periods. Almost all of these tests showed significant effects for the grants. We then conducted bivariate analyses that examined the associations between the selected independent variables (based on the PCA results) and the dependent variables. These analyses suggested which candidate predictors (or independent variables) would be entered into the multivariate models.

Multivariate analysis

When we compared the treatment group across time we found that there was a significant change (p-value = .0001) for both the fatality data and the campus safety data. The control group also had a significant change over time (p-value = 0.0001) for the fatality data, but not for the campus safety data (p-value = 0.091). To determine if the change across years was different between the treatment and control groups, we used the difference in differences. We found that there was a significant difference between the control and treatment groups for both databases, p-value=0.05 for the FARs and p-value = 0.0001 for the CSSS data.

We then conducted bivariate analyses that examined the associations between the selected independent variables and the dependent variables. These analyses suggested which candidate predictors (or independent variables) would be entered into the multivariate models. The results of bivariate analyses are not shown as they are very extensive for all the hypotheses of interest.

Our initial multivariate models included all of the hypothesis variables. After eliminating variables that were not significant and controlling for all other variables, we found that areas with *active coalitions* and *coalitions with multiple strategies* were significant predictors of campus incidents; however, the direction is opposite that which we predicted. Specifically, these variables are associated with an increase in campus incidents. Areas with *coalitions that focused solely on educational activities* showed a reduction in campus incidents. Again, this is counter to our hypothesis. Areas with *coalitions with higher self-reported incidents* approaches significance; we have included it in the model. Lastly, Table 1 shows that *coalitions focused only on education activities* was predictive of fewer incidents in the CSSS data—again this is counter to our hypothesis that an educational focus alone would have little impact.

Table 1. Multivariate Analysis of CSSS Data

Derived Variable	Parameter Estimates	Standard Error	t Value	Pr > |t|
Active Coalitions	1.12655	0.29602	3.81	0.0002
Coalitions with multiple strategies	93.08724	46.25412	2.01	0.0449
Coalitions focused on education activities	-11.6146	4.45594	-2.61	0.0095
Coalitions with high self-reported incidents	0.06179	0.03504	1.76	0.0787

Table 2 presents the multivariate models developed for the FARS data. As in the CSSS models, *active coalitions* and *coalitions with multiple strategies* were significant predictors of alcohol-related fatal accidents; however, the direction is opposite that which we predicted. *Coalitions with law enforcement participation* was predictive of a reduction in alcohol-related fatalities, as hypothesized.

Table 2. Multivariate Analysis of FARS Data

Derived Variable	Parameter Estimates	Standard Error	t Value	Pr > |t|
Active Coalitions	2.56721	1.17378	2.19	0.0294
Coalitions with media intervention	95.53406	42.6811	2.24	0.0258
Coalitions with law enforcement participation	*-56.73607*	22.85244	-2.48	0.0135
Coalitions with high self-reported incidents	-0.21708	0.11507	-1.89	0.0601

We also considered more expansive multivariate analyses which included demographic data about the community or locality at the ZIP code level merged from the American Community Survey (ACS). Tables 3 and 4 show the models fit for CSSS data and FARS data, respectively. For CSSS data, the same three grantee characteristics which were significant in Table 1 remain significant in Table 3 when controlling for demographic variables; their direction is also the same as in Table 1. In addition, three demographic variables were significant: the percentages of Hispanics and males, and the median age in the local area. The negative parameter associated with median age indicates that the older the population in the ZIP code, the fewer the campus incidents. This negative relationship is also seen with the percentage of Hispanics. A higher proportion of males in the population is associated with increased campus incidents.

Table 3. Multivariate analysis of CSSS data controlling for ACS data

Derived Variable	Parameter Estimates	Standard Error	t Value	Pr > |t|
Active Coalitions	0.87998	0.28946	3.04	0.0025
Coalitions with multiple strategies	104.57289	54.44966	1.92	0.0556
Coalitions focused on education activities	-9.38995	4.31435	-2.18	0.0302
Coalitions with high self-reported incidents	0.0322	0.03449	0.93	0.3512
Hispanic Population	-0.002	0.00093098	-2.15	0.0325
Median Age	-80.26546	22.90264	-3.5	0.0005
Male Population	0.00251	0.00075114	3.34	0.0009

Table 4 shows that grantees with coalitions that included law enforcement organizations show reductions in alcohol-related fatality data even while controlling for demographic characteristics. Interestingly, the demographics which were significant for fatality data are different from those found significant for campus data (Table 3), particularly for the racial/ethnic composition of the local area. Areas with larger concentrations of blacks and Asians showed an increase in fatalities.

Table 4. Multivariate analysis of FARS data controlling for ACS data

Derived Variable	Parameter Estimates	Standard Error	t Value	Pr > |t|
Active Coalitions	2.61075	0.90003	2.9	0.004
Coalitions with media intervention	95.25842	32.34055	2.95	0.0034
Coalition with law enforcement participation	-68.32385	17.57292	-3.89	0.0001
Coalition with high self-reported incidents	-0.10475	0.08889	-1.18	0.2394
Male Population	-0.02922	0.00232	-12.62	<.0001
Median Age	-111.63726	61.63963	-1.81	0.071
Asian Population	0.02741	0.00787	3.48	0.0006
Black Population	0.01218	0.00346	3.52	0.0005

PRESENTATIONS AND PAPERS

ICF presented a paper titled, "Model-based evaluation of local alcohol prevention programs for under-age drinking" at the Joint Statistical Meetings (JSM) in Chicago, Illinois on August 3, 2016. JSM is the Survey Research Session of the American Statistical Association (ASA). We will submit a paper based on this presentation by September 30, 2016. We are investigating other avenues to disseminate our results, and plan to submit a paper for publication for a peer-reviewed journal that includes multilevel models incorporating state-level policy data related to underage drinking.

STUDY LIMITATIONS

Operationalizing our study hypotheses revealed anomalies in the DCTAT data, such as variables that were worded identically in the performance indicator matrix, but for which grantees reported different data. For instance, both Item #3 in the "Coalition" program category and Item #10 in the "Enforcement" program category required grantees to report on the "Number of youth involved in underage drinking enforcement activities during the reporting period." Cleaning and processing the grantee data were hampered by these issues.

In our proposal, we had proposed to link the grantee data to many outcome measures. In the course of our study, we determined that many of the proposed databases datasets (presented below) either do not collect, or do not report, data at the geographic level needed for our analysis.

- National Emergency Medical Services Information System (NEMSIS)
- The National Survey of Drug Use and Health (NSDUH)
- Behavioral Risk Factor Surveillance System (BRFSS)
- National Alcohol Survey (NAS).
- National Health and Nutrition Examination Survey (NHANES).
- National Health Interview Survey (NHIS)
- National Adolescent Student Health Survey (NASHS).
- National Mortality Follow-back Survey
- National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)
- National Longitudinal Alcohol Epidemiologic Survey (NLAES)
- National Longitudinal Survey of Youth (NLSY)
- Uniform Crime Reporting Program (UCR)

CONCLUSIONS

The research has shown the value of using external data in conjunction with grantee-level data in comprehensive multivariate analyses of the impact of local interventions. By merging two datasets of potential outcome measures with the detailed grantee data, and augmenting the analytic data set with demographic data from the ACS, the analyses assessed the impact of the interventions while controlling for demographics.

Our results lend support to the environmental strategies that are effective in reducing underage drinking. Even controlling for demographics, we consistently found that areas with more active coalitions and those with multiple strategies were associated with more campus incidents. Whereas this is opposite our hypothesis, we speculate that areas with more active coalitions may have raised awareness and increased patrols, which led to higher incident reporting. Campus related incidents were significantly lower in areas where educational activities were the focus of grantees' efforts, even controlling for demographics. This is a positive, if unexpected finding as we hypothesized that education alone would have little impact. Traffic fatalities involving minors and alcohol were significantly lower for those grantees that built coalitions with law enforcement organizations.

Our ongoing research will expand these models even further by developing multilevel models which include state-level variables, such as policies and laws related to underage drinking. Multilevel models are statistical models with parameters that vary at more than one level. For example, we are trying to discover some of the factors that impact the reduction of alcohol related incidents on campus. The grantees are in ZIP codes which are nested in states. We're interested in the effect of a mix of grantee level factors - e.g. well-rounded coalitions or coalitions with law enforcement agencies and state level factors - e.g. age of seller laws. Multilevel modelling provides a useful framework for thinking about how to account for the clustering effect in our sample.

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APPENDIX A - OJJDP ENFORCING UNDERAGE DRINKING LAWS BLOCK GRANT PROGRAM (EUDL) PERFORMANCE MEASURES GRID

The following pages outline the performance measures for the OJJDP Enforcing Underage Drinking Laws Block Grant Program (EUDL). These pages show the performance measures and the data that the grantee must provide to calculate the performance measures. The calculations on the grid are performed automatically by the DCTAT with the values that are entered. Examples of calculated values include percentages, total amounts, and averages.

The performance measures are presented as outputs or outcomes. Output measures are the products of a program's implementation or activities and are usually counts of things, such as amount of service delivered; staff hired; systems developed; sessions conducted; materials developed; or policies, procedures, and/or legislation created. Outcome measures are the benefits or changes observed or realized through the outputs and may include program completion, behavior, attitudes, skills, knowledge, values, conditions, or other attributes.

Grantees are required to provide data for the indicators in the column labeled "data the grantee reports."

The performance measures for activities funded under EUDL are reported in two formats: numeric data, and narrative questions that require a written response. Both formats are entered in the OJJDP Data Collection and Technical Assistance Tool (DCTAT) semiannually.

The activities funded by EUDL are organized into 4 program categories: coalitions; media; enforcement; and education, training, and other categories. The grantee is asked to select the program categories that correspond to the activities approved in each OJJDP application. The system then generates performance measures for each respective category. The grid that follows is divided into the 4 program categories and the corresponding measures for each.

In addition to entering data in the DCTAT, the grantee is responsible for creating a *Performance Data Report* from the DCTAT in January and July of each calendar year. Each grantee then submits this report to OJJDP through the Grants Management System (GMS).

If you have any questions about the DCTAT or performance measures, please call the **OJJDP-DCTAT Help Desk at 1-866-487-0512,** or send an e-mail to: **ojjdp-dctat@csrincorporated.com**

For questions about EUDL block grant programs, please contact your OJJDP Program Manager, who can be found at: http://www.ojjdp.gov/statecontacts/resourcelist.asp

Any changes made to the Performance Measures Grid will be noted in bold blue lettering and dated.

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ENFORCING UNDERAGE DRINKING LAWS BLOCK GRANT PROGRAM

PROGRAM CATEGORY: COALITIONS

Bold indicates mandatory indicators.

#	Output Measure	Definition	Data Grantee Provides	Record Data Here
1	**Number of youth involved in task force activities during the reporting period (i.e., the total number of unique individuals across all activities)**	Total number of youth participating in EUDL task force activities during the reporting period. The total number of youth will include the number of unique individuals across all activities. Program records are the preferred source of data.	A. Total number of youth involved in EUDL task force activities during the reporting period.	
2	**Number of youth involved in task force and/or coalition LEADERSHIP activities during the reporting period**	Total number of youth participating in EUDL task force and/or leadership activities during the reporting period. Program records are the preferred source of data.	A. Total number of youth involved in EUDL task force and/or leadership activities during the reporting period.	
2A	**For those youth involved in task force and/or coalition LEADERSHIP activities, indicate each of the activities in which youth participated**	Select as many as apply from the list:	A. Educational work with schools and colleges B. Educational work with government officials C. Educational work with businesses and community members/groups D. Work with law enforcement as youth advisors, operatives, and/or participants in an enforcement task force E. Prevention Programming F. Serve on task force and/or coalition boards or committees G. Participation in media advocacy-related activities (i.e. print media, events that draw media coverage, radio or television appearances) H. Other	
3	**Number of youth involved in underage drinking ENFORCEMENT activities during the reporting period**	Total number of youth participating in EUDL underage drinking ENFORCEMENT activities during the reporting period. Program records are the preferred source of data.	A. Number of youth involved in EUDL underage drinking ENFORCEMENT activities during the reporting period.	
3A	**For those youth involved in underage drinking ENFORCEMENT activities, indicate each of the activities in which youth participated**	Select as many as apply from the list:	A. Compliance Checks B. Control Party Dispersal Operations C. Shoulder Tap Operations D. Impaired Driving with a Focus on Youth E. Sobriety Checkpoints F. Other	
4	**Number of youth involved in OTHER (non task force/coalition-related) underage drinking enforcement activities**	Total number of youth participating in other EUDL (non-EUDL task force/coalition-related) underage drinking enforcement activities during the reporting period. Program records are the preferred source of data.	A. Number of youth involved in OTHER (non-EUDL task force/coalition-related) underage drinking enforcement activities.	

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PROGRAM CATEGORY: COALITIONS
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#	Output Measure	Definition	Data Grantee Provides	Record Data Here
4A	For those youth involved in OTHER(non task force/coalition-related) underage drinking enforcement activities, indicate each of the activities in which youth participated	Select as many as apply from the list.	A. Education campaigns B. Community fairs C. Other	
5	Number and percent of programs using evidence-based strategies	The number and percent of programs funded by the EUDL using an evidence-based strategies . For the EUDL program, evidence based strategies are those that have been shown, through rigorous evaluation and replication, to be effective at preventing or reducing underage drinking. Examples of these can be found on pages 26 through 30 of the following publication and are generally indicated by a classification of "high priority" http://www.udetc.org/documents/strategies.pdfCompliance checks are a high priority strategy whereas Cops in Shops is a low priority strategy based on research that indicate their respective effectiveness. Evidence based strategies for EUDL typically fall under four categories 1) limits on access to alcohol; 2) a community culture against underage drinking; 3) strategies to reduce underage drinking and driving; and 4) school and youth organization based strategies.	A. The number of programs funded using evidence based strategies B. The total number of programs funded C. Percent (A/B)	
6	Number of agencies involved in task force and/or coalition activities that support underage drinking prevention and/or enforcement of underage drinking laws during the reporting period	Number of agencies involved in EUDL task force and/or coalition activities that support underage drinking prevention and/or enforcement of underage drinking laws during the reporting period. Program records are the preferred source of data.	A. Total number of agencies involved in EUDL task force and/or coalition activities that support underage drinking prevention and/or enforcement of underage drinking laws during the reporting period.	

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PROGRAM CATEGORY: COALITIONS

Bold indicates mandatory indicators.

#	Output Measure	Definition	Data Grantee Provides	Record Data Here
6A	Indicate each of the organization types involved in task force and/or coalition activities	Select as many as apply from the list.	A. Advocacy Organizations B. Business Groups/Associations C. City Government/County Government D. Community-based Organizations E. Court Services F. Criminal Justice Department G. Department of Children and Family Services H. Department of Mental Health and Addiction Services I. Department of Substance Abuse Services J. District Attorney's Office K. Faith Community L. Federal Enforcement Agency M. Fish and Wildlife Division N. Foundations O. General Public P. Governor's Office Q. Health and Human Services R. Higher Education S. Liquor Law Enforcement (ABC, Liquor Control) T. MADD U. Media Affiliations V. Medical Affiliations W. Police Department (Municipal or local enforcement) X. Office of Public Safety Y. Office of Traffic Safety Z. Parent Associations AA. Prevention Services BB. Professional Organizations CC. Secondary Education DD. Sheriff's Department EE. Social Service Agency FF. State Police (Highway Patrol) GG. Youth Organizations HH. Other	
7	**Number and percent of task forces and/or coalitions addressing underage drinking issues in your state that were created as a result of EUDL funding:**	Indicate total number and percent of task forces and/or coalitions addressing underage drinking issues in your state that were created as a result of EUDL funding.	A. Number of task forces and/or coalitions created AS A RESULT OF EUDL funding B. Number of task forces and/or coalitions in existence BEFORE EUDL funding C. Percent of existing task forces and/or coalitions in your State D. Total number of task forces and/or coalitions	

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PROGRAM CATEGORY: COALITIONS

Bold indicates mandatory indicators.

#	Output Measure	Definition	Data Grantee Provides	Record Data Here
8	Does your State have an active state-level task force dedicated to underage drinking prevention/enforcement created as a result of EUDL funding?	Indicate if your State has an active state-level task force dedicated to underage drinking prevention/enforcement.	A. Select yes or no.	
8A	Indicate the organization(s) that heads the state-level task force dedicated to underage drinking prevention/enforcement (select up to two).		A. Advocacy Organization B. Business Groups/Association C. City Government/County Government D. Community-based Organization E. Court Service F. Criminal Justice Department G. Department of Children and Family Service H. Department of Mental Health and Addiction Service I. Department of Substance Abuse Service J. District Attorney's Office K. Faith Community/Faith-based organization L. Federal Enforcement Agency M. Fish and Wildlife Division N. Foundation O. Governor's Office P. Health and Human Service Agency Q. Higher Education R. Liquor Law Enforcement (ABC, Liquor Control) S. MADD T. Police Department (municipal or local enforcement) U. Office of Public Safety V. Office of Traffic Safety W. Parent Association X. Prevention Service Agency Y. Secondary Education Institution Z. Sheriff's Department AA. Social Service Agency BB. State Police (Highway Patrol) CC. Other	

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PROGRAM CATEGORY: COALITIONS

Bold indicates mandatory indicators.

#	Outcome Measure	Definition	Reporting Format	Record Data Here
1	**Number of local coordinators that lead local coalition/task force efforts during the reporting period.**	Number of local coordinators that lead local coalition/task force efforts during the reporting period. Local coordinators are individuals employed by various agencies to plan, implement and oversee projects funded by EUDL grants from the State agency that receives the funds directly from OJJDP.	A. Number of local coordinators that lead local coalition/task force efforts during the reporting period.	
2	**Number of policies or procedures related to underage drinking that were created, changed, or rescinded during the reporting period?**	The number of policies or procedures created, changed, or rescinded during the reporting period. A policy is a plan or specific course of action that guides the general goals and directives of the program or agency. Include policies that are either relevant to the topic area of the program or policies that affect program operations.	A. Number of policies or procedures related to underage drinking that were created B. Number of policies or procedures related to underage drinking that were changed C. Number of policies or procedures related to underage drinking that were rescinded	

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PROGRAM CATEGORY: MEDIA
Bold indicates mandatory indicators.

#	Output Measure	Definition	Reporting Format	Record Data Here
1	**Number of earned media coverage episodes/events that occurred related to EUDL activities, underage drinking prevention, and/or enforcement during the reporting period.**	Total number of earned media coverage episodes/events that occurred related to EUDL activities, underage drinking prevention, and/or enforcement during the reporting period. Earned media refers to media attention on radio, print or TV that has not been purchased (such as PSAs). If a coalition holds a press conference and it appears in the local newspaper or highlighted on television, the media has been "earned" and not paid for.	A. Total number of earned media coverage episodes/events that occurred related to EUDL activities, underage drinking prevention, and/or enforcement during the reporting period.	
1a	**Type of earned media coverage episodes/events that occurred during the reporting period.**	Indicate type of earned media coverage episodes/events that occurred during the reporting period. Respond Yes or No to the items in the list.	A. Op-ed articles B. Letters C. Interviews D. Events that draw coverage (press conference) E. Appearances on broadcast news or issues programs (television)	
2	**The types of media education utilized to advance underage drinking prevention/enforcement initiatives during the reporting period**	Indicate the types of media education utilized to advance underage drinking prevention/enforcement initiatives during the reporting period. Respond Yes or No to the items in the list.	A. Active Enforcement of Underage Drinking Laws B. Zero Tolerance C. Limitations on Access D. School-based Initiatives E. Advertising Restrictions F. Changes in Social Norms G. Other Environmental Strategies	
3	**Type of educational activities conducted, during the reporting period, relative to any of the following topics**	Indicate whether educational activities were conducted, during the reporting period, regarding any of the topics in the list. Respond Yes or No to each of the items.	A. Restrict zoning (outlet locations, density) B. Restrict hours of sale C. Prohibit persons under 21 into bars/nightclubs and/or other adult locations D. Enact keg registration laws/ordinances E. Restrict the availability of alcohol at community festivals and other community events F. Restrict industry sponsorship of public events G. Require conditional use permits H. Ban concurrent sales of alcohol and gasoline I. Restrict alcohol marketing J. Increase penalties for retail/commercial providers K. Increase penalties for social providers L. Enact social host liability ordinances/laws M. Enact dram shop liability ordinances/laws	

#	Output Measure	Definition	Reporting Format	Record Data Here
4	Number and percent of programs using evidence-based strategies	The number and percent of programs funded by the EUDL using an evidence-based strategies . For the EUDL program, evidence based strategies are those that have been shown, through rigorous evaluation and replication, to be effective at preventing or reducing underage drinking. Examples of these can be found on pages 26 through 30 of the following publication and are generally indicated by a classification of "high priority" http://www.udetc.org/documents/strategies.pdfCompliance checks are a high priority strategy whereas Cops in Shops is a low priority strategy based on research that indicate their respective effectiveness. Evidence based strategies for EUDL typically fall under four categories 1) limits on access to alcohol; 2) a community culture against underage drinking; 3) strategies to reduce underage drinking and driving; and 4) school and youth organization based strategies.	A. The number of programs funded using evidence based strategies B. The total number of programs funded C. Percent (A/B)	
5	Institutional policy outcomes implemented in your State as a result of EUDL activities during the reporting period.	Indicate whether any of the institutional policy outcomes listed were implemented in your State as a result of EUDL activities during the reporting period. Respond Yes or No to each of the items.	A. Enforcement-related institutional policy B. Local institutional policy C. School-related institutional policy D. College-related institutional policy	

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PROGRAM CATEGORY: ENFORCEMENT

Bold indicates mandatory indicators.

#	Output Measure	Definition	Reporting Format	Record Data Here
1	**Did you conduct compliance check/minor decoy operations during this reporting period.**	Indicate if you conducted compliance check/minor decoy operations during this reporting period. Compliance check/minor decoy is defined as law enforcement operations that involve the use of underage buyers by law enforcement agencies to test retailers' compliance with laws regarding the sale of alcohol to underage purchasers.	A. Select yes or no.	
1a	**Indicate the types of agencies involved in conducting compliance check/minor decoy operations during this reporting period.**	Indicate the types of agencies involved in conducting compliance check/minor decoy operations during the reporting period. Respond Yes or No to each of the items in the list.	A. Liquor Enforcement (ABC, Liquor Control). Respond Yes or No B. Police Department (municipal or local enforcement); Respond Yes or No C. Sheriff's Department; Respond Yes or No D. State Police (Highway Patrol); Respond Yes or No E. Fish and Wildlife; Respond Yes or No F. Federal Enforcement Agency; Respond Yes or No G. Other; Respond Yes or No	
2	**Number and percent of on-premise, off-premise and combination premise establishments checked during this reporting period that were NOT in compliance**	Number and percent of on-premise, off-premise and combination alcohol establishments checked during this reporting period that were NOT in compliance. An OFF-premise establishment is defined as an alcohol outlet that sells alcohol that is consumed off premise such as liquor and convenient stores. An ON-premise establishment is defined as an alcohol outlet that sells alcohol that is consumed on site such as bars and restaurants. A combination establishment can sell alcohol to be consumed either on or off the premises.	A. TOTAL number of OFF-premise establishments checked during reporting period B. Number of OFF-premise establishments **NOT** in compliance during reporting period C. TOTAL number of ON-premise establishments checked during reporting period D. Number of ON-premise establishments **NOT** in compliance during reporting period E. TOTAL number of combination establishments checked during the reporting period F. Number of combination establishments **NOT** in compliance during reporting period	
3	**Did you conduct underage drinking enforcement operations (other than compliance checks) during this reporting period.**	Indicate whether you conducted underage drinking enforcement operations other than compliance checks during this reporting period.	A. Select yes or no.	

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PROGRAM CATEGORY: ENFORCEMENT

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#	Output Measure	Definition	Reporting Format	Record Data Here
3a	**Types of agencies involved in conducting underage drinking enforcement operations (other than compliance checks) during this reporting period.**	Indicate the types of agencies involved in conducting underage drinking enforcement operations other than compliance checks during the reporting period. Respond Yes or No to each item in the list.	A. Liquor Enforcement (ABC, Liquor Control). Respond Yes or No to each item in the list. B. Police Department (municipal or local enforcement); Respond Yes or No to each item in the list. C. Sheriff's Department; Respond Yes or No to each item in the list. D. State Police (Highway Patrol); Respond Yes or No to each item in the list. E. Fish and Wildlife; Respond Yes or No to each item in the list. F. Federal Enforcement Agency; Respond Yes or No to each item in the list. G. Other; Respond Yes or No to each item in the list.	
3b	**Types of underage drinking enforcement operations (other than compliance check operations) conducted during this reporting period.**	Indicate the types of underage drinking enforcement operations (other than compliance check operations) conducted during this reporting period. Respond Yes or No to each item in the list.	A. Party Patrols/Enforcement of Social Host Laws (Respond Yes or No to each item in the list) B. Shoulder Tap Operations (Respond Yes or No to each item in the list) C. Parking Lot Surveillance (Respond Yes or No to each item in the list) D. Sobriety Checkpoints (Respond Yes or No to each item in the list) E. Emphasis/Saturation Patrols (Respond Yes or No to each item in the list) F. Fake ID Enforcement (Respond Yes or No to each item in the list) G. Yes or No to each item in the Source Investigations (Respond list) Cops in Shops	

Bold indicates mandatory indicators.

#	Output Measure	Definition	Reporting Format	Record Data Here
4	**Number of adult citations issued during enforcement operations conducted during this reporting period.**	Total number of adult citations issued during enforcement operations conducted during the reporting period.	A. Party Patrols/Enforcement of Social Host Laws B. Should Tap Operations C Parking Lot Surveillance D. Other Third Party Provision Operations E. Sobriety Checkpoints F. Emphasis/Saturation Patrols G. Other Impaired Driving with a Focus on Youth H Fake ID Enforcement I. Source Investigations J. Other Innovative Enforcement K. Total	
5	**Number and types of contact between adults and law enforcement**	The number of arrests, warnings, and citations as a result of contacts between law enforcement and adults during the reporting period.	A. Number of adults arrested during reporting period B. Number of warnings issued to adults during reporting period C. Number of possession citations issued to adults during reporting period D. TOTAL number of contacts with adults during reporting period	
6	**Number of youth citations issued during enforcement operations conducted during this reporting period.**	Total number of youth citations issued during the enforcement operations conducted during the reporting period.	A. Party Patrols/Enforcement of Social Host Laws B. Should Tap Operations C Parking Lot Surveillance D. Other Third Party Provision Operations E. Sobriety Checkpoints F. Emphasis/Saturation Patrols G. Other Impaired Driving with a Focus on Youth H Fake ID Enforcement I. Source Investigations J. Other Innovative Enforcement K. Total	
7	**Number and types of contact between youth and law enforcement**	The number of arrests, warnings, and citations as a result of contacts between law enforcement and youth during the reporting period.	A. Number of youth arrested during reporting period B. Number of warnings issued to youth during reporting period C. Number of possession citations issued to youth during reporting period D. Number of consumption citations issued to youth during the reporting period E. TOTAL number of contacts with youth during reporting period	

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PROGRAM CATEGORY: ENFORCEMENT
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#	Output Measure	Definition	Reporting Format	Record Data Here
8	**Educational activities relative to any of the following underage drinking best practices implemented during the reporting period**	Indicate whether educational activities regarding any of the underage drinking best practices listed were implemented during the reporting period. Respond Yes or No to each item in the list.	A. Active Enforcement of Underage Drinking Laws (Respond Yes or No to each item in the list) B. Limitations on Access (Respond Yes or No to each item in the list) C. School-based Initiatives (Respond Yes or No to each item in the list) D. Advertising Restrictions (Respond Yes or No to each item in the list) E. Changes in Social Norms (Respond Yes or No to each item in the list) F. Other Environmental Strategies (Respond Yes or No to each item in the list)	
9	**Agencies that provided funding for underage drinking enforcement/prevention efforts during the reporting period.**	Indicate the agencies that provided funding for underage drinking enforcement/prevention efforts during the reporting period.	A. Community Anti-Drug Coalitions of America (CADCA) B. Higher Education C. National Highway Traffic Safety Administration (NHTSA) D. National Institute on Alcohol Abuse and Alcoholism (NIAAA) E. Substance Abuse & Mental Health Services Administration (SAMHSA)	
9a	**Type of activities that were supported, at least in part, using non-EUDL funds.**	Indicate which of the following activities were supported, at least in part, using non-EUDL funds.	A. Active Enforcement of Underage Drinking Laws B. Compliance Checks C. Party Patrols/Enforcement of Social Host Laws D. Should Tap Operations E. Parking Lot Surveillance F. Sobriety Checkpoints G. Emphasis/Saturation Patrols H. Fake ID Enforcement I. Source Investigations J. Limitations on Access K. School-based Initiatives L. Advertising Restrictions M. Changes in Social Norms (Awareness Building) N. Other	
10	**Number of youth involved in underage drinking ENFORCEMENT activities during the reporting period**	Total number of youth participating in EUDL underage drinking ENFORCEMENT activities during the reporting period. Program records are the preferred source of data.	A. Number of youth involved in EUDL underage drinking ENFORCEMENT activities during the reporting period.	

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Bold indicates mandatory indicators.

#	Output Measure	Definition	Reporting Format	Record Data Here
10a	**For those youth involved in underage drinking ENFORCEMENT activities, indicate each of the activities in which youth participated**	Select as many as apply from the list:	A Compliance Checks B. Control Party Dispersal Operations C Shoulder Tap Operations D. Impaired Driving with a Focus on Youth E Sobriety Checkpoints F Other	
11	**Number of youth involved in OTHER (non task force/coalition-related) underage drinking enforcement activities**	Total number of youth participating in other EUDL (non-EUDL task force/coalition-related) underage drinking enforcement activities during the reporting period. Program records are the preferred source of data.	A. Number of youth involved in OTHER (non-EUDL task force/coalition-related) underage drinking enforcement activities.	
11a	**For those youth involved in OTHER(non task force/coalition-related) underage drinking enforcement activities, indicate each of the activities in which youth participated**	Select as many as apply from the list.	A. Education campaigns B. Community fairs C. Other	
12	Number and percent of programs using evidence-based strategies	The number and percent of programs funded by the EUDL using an evidence-based strategies . For the EUDL program, evidence based strategies are those that have been shown, through rigorous evaluation and replication, to be effective at preventing or reducing underage drinking. Examples of these can be found on pages 26 through 30 of the following publication and are generally indicated by a classification of "high priority" http://www.udetc.org/documents/strategies.pdfCompliance checks are a high priority strategy whereas Cops in Shops is a low priority strategy based on research that indicate their respective effectiveness. Evidence based strategies for EUDL typically fall under four categories 1) limits on access to alcohol; 2) a community culture against underage drinking; 3) strategies to reduce underage drinking and driving; and 4) school and youth organization based strategies.	A. The number of programs funded using evidence based strategies B. The total number of programs funded C. Percent (A/B)	
13	**Number of training requests RECEIVED**	Number of training requests received during the reporting period. Requests can come from individuals or organizations served.	A. Number of training requests RECEIVED during the reporting period.	
14	**Number of technical assistance requests RECEIVED**	Number of technical assistance requests received during the reporting period. Requests can come from individuals or organizations served.	A. Number of technical assistance requests RECIEVED during the reporting period.	
15	**Number training events HELD**	Number of training activities held during the reporting period. Training activities include creation of task forces or inter-agency committees, meetings held, needs assessments undertaken, etc.. Preferred data source is program records.	A. Number of training activities HELD during the reporting period	

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PROGRAM CATEGORY: ENFORCEMENT

Bold indicates mandatory indicators.

#	Output Measure	Definition	Reporting Format	Record Data Here
16	**Number of technical assistance events HELD**	Number of technical assistance events held during the reporting period. Technical assistance events include in-person, telephone, or on-line assistance. Preferred data source is program records.	A. Number of technical assistance events HELD during the reporting period.	
17	**Number of people trained**	Number of people trained during the reporting period (including students, parents, teachers, law enforcement, bar and liquor store owners, etc. The number is the raw number of people receiving any formal training relevant to the program or their position as program staff. Include any training from any source or medium received during the reporting period as long as receipt of training can be verified. Training does not have to have been completed during the reporting period. Preferred data source is program records.	A. Number of people trained during the reporting period	

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PROGRAM CATEGORY: EDUCATION, TRAINING AND OTHER ACTIVITIES

Bold indicates mandatory indicators.

#	Output Measure	Definition	Reporting Format	Record Data Here
1	**Number of training events held during the reporting period.**	Number of training activities held during the reporting period. Training activities include creation of task forces or inter-agency committees, meetings held, needs assessments undertaken, etc.. Preferred data source is program records.	A. Number of training activities held during the reporting period	
2	**Number of program materials developed**	The number of program materials related to education, training, and other programs that were developed during the reporting period. Include only substantive materials such as informational material and handouts, training materials, program materials, and educational information. Do not include program advertisements or administrative forms such as sign-in sheets or tracking forms. Count the number of pieces developed. Preferred data source is program records.	A. Number of program materials related to education, training, and other activities that were developed during the reporting period.	
3	**Number and percent of programs using evidence-based strategies**	The number and percent of programs funded by the EUDL using an evidence-based strategies. For the EUDL program, evidence based strategies are those that have been shown, through rigorous evaluation and replication, to be effective at preventing or reducing underage drinking. Examples of these can be found on pages 26 through 30 of the following publication and are generally indicated by a classification of "high priority" http://www.udetc.org/documents/strategies.pdfCompliance checks are a high priority strategy whereas Cops in Shops is a low priority strategy based on research that indicate their respective effectiveness. Evidence based strategies for EUDL typically fall under four categories 1) limits on access to alcohol; 2) a community culture against underage drinking; 3) strategies to reduce underage drinking and driving; and 4) school and youth organization based strategies.	A. The number of programs funded using evidence based strategies B. The total number of programs funded C. Percent (A/B)	
4	**Number of people trained**	Number of people trained during the reporting period (including students, parents, teachers, law enforcement, bar and liquor store owners, etc. The number is the raw number of people receiving any formal training relevant to the program or their position as program staff. Include any training from any source or medium received during the reporting period as long as receipt of training can be verified. Training does not have to have been completed during the reporting period. Preferred data source is program records.	A. Number of people trained during the reporting period.	
5	**Number of training requests received**	Number of training requests received during the reporting period. Requests can come from individuals or organizations served	A. Number of training requests received during the reporting period	

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PROGRAM CATEGORY: EDUCATION, TRAINING AND OTHER ACTIVITIES

Bold indicates mandatory indicators.

#	Output Measure	Definition	Reporting Format	Record Data Here
6	Type of educational activities conducted, during the reporting period, relative to any of the following topics (see list at right)	Indicate whether educational activities were conducted, during the reporting period, regarding any of the topics in the list. Respond Yes or No to each of the items.	A. Restrict zoning (outlet locations, density) B. Restrict hours of sale C. Prohibit persons under 21 into bars/nightclubs and/or other adult locations D. Enact keg registration laws/ordinances E. Restrict the availability of alcohol at community festivals and other community events F. Restrict industry sponsorship of public events G. Require conditional use permits H. Ban concurrent sales of alcohol and gasoline I. Restrict alcohol marketing J. Increase penalties for retail/commercial providers K. Increase penalties for social providers L. Enact social host liability ordinances/laws M. Enact dram shop liability ordinances/laws	
7	**Number of training curricula develop**	Number of training curricula developed during the reporting period including lessons plans and programs	A. Number of training curricula developed during the reporting period	
8	**Number of training curricula developed with EUDL funds evaluated as effective**	Number and percentage of developed training curricula evaluated as effective (e.g., training participants learn knowledge/skills as intended). Training curricula can address any aspect of the EUDL grant program. Agency records are the preferred source of data	A. Number of training curricula developed during the reporting period that are evaluated as effective B. Number of training curricula development projects C. Percent (A/B)	
9	**Number of training products developed**	Number of EUDL-related training products developed including brochures, manuals, handouts, and workbooks.	A. Number of EUDL-related training products developed during the reporting period	
10	**Number of individuals trained using curricula evaluated as effective**	Number and percentage of individuals who completed training using a training curriculum evaluated as effective. Program records are preferred data source.	A. Number of individuals trained using a curriculum developed with EUDL funds and evaluated as effective B. Number of individuals trained during the reporting period C. Percent A/B	
11	**Number of people exhibiting increased knowledge of the program area**	The number of people who exhibit an increased knowledge of the program area after participating in training. Use of pre and post tests is preferred.	A. Number of people exhibiting an increase in knowledge post-training B. Number of people trained during the reporting period C. Percent A/B (people trained who exhibited increased knowledge)	

APPENDIX B - OPERATIONALIZATION AND SCALE CREATION FOR HYPOTHESIS TESTING

We renamed variables in the grantee database to match the reporting matrix using the letters "C", "M", "E", and "T" as prefixes to denote variables related to "Coalition", "Media", "Enforcement", and "Education, Training and other" activities, respectively. An example from the "Coalition" section is shown in Table A.

Table A. Example of Performance Measure Grid and Renamed Variables

#	Output Measure	Data Grantee Provides	New Variable Name
1	Number of youth involved in task force activities during the reporting period (i.e., the total number of unique individuals across all activities)	A. Total number of youth involved in EUDL task force activities during the reporting period.	C1
2	Number of youth involved in task force and/or coalition LEADERSHIP activities during the reporting period	A. Total number of youth involved in EUDL task force and/or leadership activities during the reporting period.	C2
2A	For those youth involved in task force and/or coalition LEADERSHIP activities, indicate each of the activities in which youth participated	A. Educational work with schools and colleges B. Educational work with government officials C. Educational work with businesses and community members/groups D. Work with law enforcement as youth advisors, operatives, and/or participants in an enforcement task force E. Prevention Programming F. Serve on task force and/or coalition boards or committees G. Participation in media advocacy-related activities (i.e. print media, events that draw media coverage, radio or television appearances) H. Other	C2a C2b C2c C2d C2e C2f C2g C2h

Hypothesis 1

"Regions with more active and well-rounded coalitions involving youth will have a greater impact on reducing underage drinking and associated misconducts compared to regions with less active and less representative coalitions."

The first set of variables defined "active" coalitions and the second set of variables defined "well-rounded" coalitions. Both Item #3 in the "Coalition" program category and Item #10 in the "Enforcement" program category require grantees to report on the "Number of youth involved in underage drinking enforcement activities during the reporting period."

Table 1. Variables used to define active and well-rounded coalitions – Hypothesis 1

Variable Name	Variable label	Notes
C2aseries	Count of types of activities leadership youth participated in	
C3aseries	Count of types of enforcement activities youth participated in	C 3a has identical wording as E10a
C6	Number of agencies involved in TFC	
C7prop (c7a/(c7a+c7b))	Percent of TFC created with EUDL funds	
C8	State-level active TF created by EUDL funds	
Clocal	Number of local coordinators that lead TFC efforts	
C2/C1	Proportion of youth in leadership compared to youth involved	
C3/C1	Proportion of youth involved in UD enforcement	C3 has identical wording as E10
C6aSeries	Org types involved in TFC activities	
E1aSeries	Types of agencies that conducted compliance checks	
E3aseries	Types of agencies that conducted other enforcement activities (not compliance checks)	
E9series	Types of agencies that provided funding for UD enforcement/prevention	

Hypothesis 2

"Regions that coupled non-EUDL funds with EUDL funds to support underage drinking prevention activities will be more likely to see impacts on underage drinking outcome than regions that used only EUDL funds to support activities."

Table 2. Variables used to define use of non-EUDL funds – Hypothesis 2

Variable Name	Variable label
E9aseries	Indication of what types of activities were supported, at least in part, using non-EUDL funds

Hypothesis 3

"Regions implementing more intervention activities across the period will observe greater impacts on underage drinking than those implementing fewer activities."

Note that both Item #3 in the "Media" program category and Item #6 in the "Education, Training, and Other Activities" program category require grantees to report on the "Type of education activities conducted, during the reporting period, relative to any of the following topics." [Grantees were presented with a list of 13 options]. Also, both Item #17 in the "Enforcement" program category and Item #4 in the "Education, Training, and Other Activities" program category require grantees to report on the "Number of people trained."

Table 3. Variables used to define number of intervention activities – Hypothesis 3

Variable Name	Variable label	Notes
M2series	Broad types (n=7) of media education used	M2 has almost identical wording as E8 (M2 has one extra item)
M3series	Specific types (n=13) of education activities	M3 has identical wording as T6
E1	Conducted compliance check/minor decoy	
E3bseries	Types of drinking enforcement ops	
M1	Number of earned media coverage episodes/events	
M1aseries	Type of earned media coverage episodes/events	
T4/T1	Number of people trained per training	T4 identical wording as E17 T1 identical wording as E15
E16	Number of TA events held	

Hypothesis 4

"Media interventions will have a greater impact on high school students given their level of exposure to media compared to other types of environmental strategies." We included intervention activities aimed at college-aged students as well.

Table 4. Variables used to define media interventions – Hypothesis 4

Concept	Variable Name	Variable label
Impact high school students	Media	
	M2c/E8b	School-based initiatives
	M5c	School-related institutional policy
College students	M2f/E8e	Changes in social norms
	M2e/E8d	Advertising restrictions
	M5d	College-related institutional policy
	E3ba-c, f	Party patrols (a), shoulder tap operations (b), parking lot surveillance (c), fake ID enforcement (f)
	E3bd	Sobriety checkpoints

Hypothesis 5

"Regions that focus on certain activities (e.g. DUI/DWI enforcement) will observe certain outcomes (e.g. decrease in fatal car accidents)."

We hypothesized that the first set would have the most impact on fatality accidents involving accidents and that the second set would have the most impact on campus incidents involving alcohol. We tested both sets on each database.

Table 5. Variables used to define targeted intervention activities – Hypothesis 5

Variable Name	Variable label
C3d	Youth involved in enforcement: impaired driving with focus on youth
C3e	Youth involved in enforcement: sobriety checkpoints
M3m	Enact dram shop liability
E3bc	Parking lot surveillance
E3bd	Sobriety checkpoints
C2a	Youth involved in leadership: educ work with schools & colleges
C3b	Youth involved in enforcement: control party dispersal
M5d	College-related institutional policy implemented in state

Hypothesis 6

"The impact on underage drinking may be greatest when multiple strategies are leveraged at the same time, such as DUI/DWI enforcement paired with intense media messages in the same reporting period."

We restricted this to the strongest evidenced-based practices: 1) limit access to alcohol, 2) community culture against underage drinking, 3) strategies that reduce underage drinking and driving, and 4) school and youth organization based strategies.

Table 6. Variables used to define best practice intervention activities– Hypothesis 6

Variable Name	Variable label	Notes
C2a	Educational work with schools and colleges	
C3a to C3f	Youth enforcement activities	Less sure of controlled party dispersal
M3a to M3m	Education activities	
M5a to M5d	Institutional policies	
E1	Conducted compliance checks	
E3b to E3g	Enforcement activities	

Hypothesis 7

"Regions that focus on education activities alone will see little impact on underage drinking outcomes." We created a variable to denote if Education is marked but Media, Enforcement, and Coalitions are not marked.

Hypothesis 8

"The effects of certain interventions (e.g., law enforcement of underage drinking laws, increased taxes on alcohol) will persist longer than others."

Table 7. Variables used to define persistent intervention activities – Hypothesis 8

Concept	Variable Name	Variable label	Notes
Law enforcement	E1	Conducted compliance checks (Y/N)	
	E3b series	Types of enforcement operations conducted	
Policy changes	Policies_total	Created/altered/ rescinded policies; Created by summing C2a-c	Because these will require no additional funding or labor hours to maintain, it is likely they will persist
	M2a/E8 series		
	M3 series		
	M5a-d	Institutional-level policies	
Interventions conducted (at least in part) through non-EUDL funds	E9a series		May be an indicator of sustainability
Programs built upon previously established coalitions	NewCoalitionProportion	=C7a/C7d	May be easier to maintain if based on previously established coalition
Coalition includes volunteer-based organizations	NonPaid_Coalition_Members	= yes to any of the following: C6a C6b C6d C6k C6n C6t C6z C6bb C6gg	Having more coalition members that are not paid for their membership in the organization may indicate their participation was driven more by personal conviction than by the funding

Hypothesis 9

"Grantees in regions that implemented evidence-based strategies will see more positive impacts related to underage drinking and impaired driving compared to grantees in regions that did not implement evidence-based strategies."

Table 8. Variables used to define evidence-based strategies – Hypothesis 9

Concept	Variable Name	Variable label
Use of evidenced-based	C5a/c5b	Proportion of <u>coalition</u> evidence-based programs to total number of programs
	M4a/M4b	Proportion of <u>media</u> evidence-based programs to total number of programs
	E12a/E12b	Proportion of <u>enforcement</u> evidence-based programs to total number of programs
	T3a/T3b	Proportion of <u>training/education</u> evidence-based programs to total number of programs

Hypothesis 10

"Coalitions in regions that include at least one law enforcement organization will result in more positive impacts related to underage drinking and impaired driving."

Table 9. Variables used to define coalitions with law enforcement involvement – Hypothesis 10

Variable Name	Variable label
LawEnforcement_Coalition _Members	= responded yes to one or more of the following: C6l C6m C6s C6w C6x C6y C6dd C6ff

Hypothesis 11

"Coalitions with higher self-reported incidents and arrests due to coalition activities will have more of an impact on underage drinking."

Table 10. Variables used to define incidents and arrests – Hypothesis 11

Variable Name	Variable label	Notes
M5series	Institutional policy outcomes implemented in state resulting from EUDL activities	
E4series	Adult citations in 10 categories	
E5a, E5b, E5c	Adults arrests, warnings, and citations	E5c is worded as "possession citations"
E6series	Youth citations in 10 categories	
E7a, E7b, E7c, E7d	Youth arrests, warnings, and citations	E7c is worded as "possession citations" E7d is consumption citations (unique to youth)