Can novel 'swift-certain-fair' programs work outside of pioneering jurisdictions? An analysis of 24/7 Sobriety in Montana, USA

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ABSTRACT

Background and Aims   The US state of South Dakota's 24/7 Sobriety Program (24/7) requires individuals charged or convicted of alcohol-involved offenses to avoid alcohol and submit to twice-daily or continuous alcohol testing. We evaluated the impact of the 24/7 program in the US state of Montana. **Methods**   Using data from everyone in Montana who was convicted of their second driving under the influence (DUI) offense from 2009 to August 2013, we described program violations among 24/7 participants and then estimated the effect of 24/7 participation on the probability of DUI re-arrest. To address potential selection issues related to individual-level 24/7 participation, we used an instrumental variables approach that exploits county-level variation in program adoption. **Results**   Among 2768 people convicted of a second DUI in our analytical sample, 356 participated in 24/7 and were monitored for an average of 173 days (median = 112 days). Among the 332 participants monitored by breath test, 95.5% of scheduled alcohol breath tests were completed and did not lead to a program violation. After controlling for individual- and community-level covariates as well as year and county fixed effects, our instrumental variable models suggested that participation in 24/7 reduced the 1-year DUI re-arrest probability by at least 80% (preferred model: 86% decrease; 8.9 percentage points) compared with a counterfactual group of people convicted of a second DUI over the same period but not assigned to the program. **Conclusions**   South Dakota USA's 24/7 Sobriety Program appears to work in Montana as well. Certain delivery of immediate but modest sanctions for repeat driving under the influence (DUI) arrestees who violate alcohol abstinence orders appears to be able to reduce future DUI arrests.

Keywords   Alcohol, alcohol monitoring, community supervision, criminal justice, program evaluation, sobriety.

INTRODUCTION

Alcohol consumption can impose tremendous costs on people who use alcohol, their intimates and society [1]. Globally, alcohol use was the seventh leading risk factor for both deaths and disability-adjusted life-years in 2016 and the leading mortality risk factor for people aged 15–49 years [2]. An important share of these costs are attributable to prohibited behaviors such as impaired driving and intentional injury [3].

Policymakers have attempted to reduce alcohol-involved crimes via universal policies such increasing alcohol taxes and decreasing blood alcohol concentration (BAC) thresholds for driving [4] and through targeted efforts focused on those arrested or convicted for an alcohol-involved offense. These targeted efforts include reducing demand for alcohol (e.g. via treatment referrals or mandates), as well as reducing the opportunities to drive impaired (e.g. license restrictions, ignition interlock devices). In the United States, there is increasing interest in 24/7 Sobriety Programs, hereinafter 24/7, that require individuals charged or convicted of DUI and other alcohol-involved offenses to avoid alcohol and submit to frequent alcohol testing Those testing positive or missing a test face an immediate, but brief, jail term[1]; typically, a day or two [5,6]. However, this is not just an American

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[1]In many jurisdictions, including those in Montana, the program's initial focus was on people arrested for DUI and it expanded to other alcohol-involved crimes.

phenomenon: a related approach—'mandatory sobriety'—was recently piloted in multiple UK locations [7] and funding was just made available to use remote alcohol monitoring ('sobriety tags') throughout the England and Wales [8].

Unlike DUI treatment courts, 24/7 does not require individuals to engage in substance use treatment; this has made the approach somewhat controversial. In a commentary published in this journal in 2010 about the first 24/7 Sobriety Program in the US state of South Dakota, Jonathan Caulkins & Robert DuPont argued: 'The initiative has not been evaluated scientifically, but if a formal study produced outcomes approaching those suggested by the descriptive statistics, it might spark some rethinking about approaches to dealing with harms related to substance abuse' [9]. There have now been three positive peer-reviewed articles of South Dakota's 24/7 Program [10–12], but questions remain regarding whether replications of successful programs can produce the outcomes observed in the pioneering jurisdictions [13–15] (e.g. was the effect in South Dakota specific to a few dynamic program officials? Could other jurisdictions immediately incarcerate someone after testing positive for alcohol?). This is especially true for increasingly popular, but controversial, 'swift-certain-fair' approaches for reducing substance use and crime among justice-involved populations (e.g. see [16]).

This analysis of the 24/7 Sobriety program in the US state of Montana makes three contributions. First, it studies the impact of 24/7 outside of South Dakota. Secondly, it offers the type of individual-level analysis of 24/7 called for by the US National Academies of Sciences, Engineering and Medicine [17]. Thirdly, the paper uses a strong quasi-experimental method (instrumental variables) to address potential selection biases.

BACKGROUND

After acknowledging that alcohol was responsible for a tremendous share of crime and incarceration in South Dakota, the Attorney General started a 24/7 Sobriety pilot program with those arrested for repeat DUI in five counties in 2005. The program expanded in terms of offenses as well as geographically, and by 2017 approximately 30 000 unique South Dakotans had participated in the program and accumulated more than 5 million days without an alcohol violation [10]. Because the program was implemented in different counties at different times, researchers have used this variation to show that 24/7 adoption is associated with a reduction in arrests for repeat drunk driving and domestic violence as well as a decrease in all-cause mortality at the county-level [11,12]. These results are consistent with a growing body of evidence suggesting that punishment certainty and celerity create a stronger deterrent to illegal activity than punishment severity [18,19].

Montana has one of the highest alcohol-related traffic fatality rates in the United States [20], and it accounts for 13.2% of deaths among working-aged adults in the state [21]. The State of Montana began piloting 24/7 in Lewis and Clark County in early 2010 and expanded to 22 counties covering more than 80% of the state's population with the passage of House Bill 106 in May 2011. Enrollment in 24/7 is at the discretion of the state's judges. During the study period, participants were assigned by 21 of the state's 56 counties to the program (see Supporting information, Fig. S1) and, with permission, may test at any of 28 sites state-wide.

Mirroring its South Dakota progenitor, Montana's 24/7 Sobriety Program requires justice-involved individuals with alcohol-related charges to abstain from alcohol and submit to frequent alcohol testing monitored via twice-per-day breathalyzer devices (with a 0.02 BAC violation threshold, as opposed to 0.00 in South Dakota) or remote alcohol monitoring devices. In-person tests are performed once in the morning and once in the evening each day at a facility in each county, and remote testing occurs approximately every half-hour via a tamper-resistant sensor that measures transdermal alcohol concentrations. Those testing positive or missing a test face an immediate, but brief, jail term. Jail terms for first violations are typically 24 hours or less, but vary by jurisdiction. Currently, participants who fail to appear for a test in Montana are instructed to come to their test facility's associated jail, then remanded to jail when they appear. Program or court officers do not attempt to apprehend participants outside the testing facility for no-shows.

24/7 typically requires participants to submit to a preliminary breath test (PBT) twice per day, starting immediately after an arrestee is released to community supervision. Participants pay $2 per test to defray some of the costs to law enforcement. While PBT is the most common testing medium, many jurisdictions in Montana also incorporate continuous transdermal alcohol monitoring bracelets or other remote breath devices rented from private providers at a cost of roughly $9–13 per day of monitoring. Since its inception the program has yielded more than 275 000 days without a detected drinking event among participants. For a detailed description of the Montana 24/7 Sobriety program, see Fisher *et al.* [22].

DATA AND METHODS

Data

The most authoritative source of information regarding driving under the influence of alcohol (DUI) convictions in Montana is from the Motor Vehicles Division (MVD). We used these driving infraction data for all individuals

with two or more DUI convictions, the second of which occurred between January 2009, 18 months prior to the program's, and August 2013, twelve months prior to the end of data collection. Prior to transferring the data to RAND, a team of MVD and Justice Department analysts linked DUI conviction records to computerized criminal history data for past arrests (e.g. violent, drug and weapons charges), traffic violation records and court records to find charges without final dispositions. Sixty per cent of records were successfully matched to criminal history data before work was halted due to staffing constraints; records were not prioritized for matching, so criminal history missingness is plausibly random. At RAND, these data were merged with 24/7 administrative information to determine who participated in the program.[2] The final analytical data set included 2768 people convicted of repeat-DUI, 356 of whom participated in 24/7 during our study period. To confirm comparability with the South Dakota 24/7 Program, we conducted interviews with program administrators at the state level in the Montana Office of the Attorney General and site visits at a sample of counties with active programs throughout the state.

While 24/7 targets repeat-DUI arrestees and other justice-involved individuals with criminal histories involving problem alcohol use, we limited this analysis to the subset of 24/7 participants assigned to the program for repeat-DUI offenses; specifically, two DUI arrests leading to conviction within 10 years. We focused on recidivism between second and third DUI arrests exclusively, as this group is the primary target of 24/7 in Montana and as there are more severe consequences for successive DUI arrests. There may also be systematic differences between two and three or more time DUI arrestees.

Not all individuals arrested for repeat-DUI in a county operating 24/7 end up being enrolled into the program after their arrest for a second DUI. We did not observe the reasons why an eligible arrestee is not assigned to 24/7, but hypothesized that it may be due to (1) limits on testing or enrollment capacity, (2) judges' discretion driven by familiarity with or beliefs about the program or (3) some arrestee characteristics we did not observe in the data.

Methods

We first described violation rates among participants in 24/7 convicted of their second DUI offense within 10 years. We then compared DUI re-arrest rates among these individuals against re-arrest rates for a comparison group who did not enter 24/7 because (1) 24/7 was not active in their county at the time of their arrest, (2) they were arrested in a county that does not participate in

24/7 or (3) the judge chose not to assign the arrestee to the program for some other reason. We employed analytical techniques to help address any biases introduced by judicial selection. This analysis uses secondary data and was not pre-registered; the results should be considered exploratory.

Probit model of dichotomous outcome

We first estimated probit models to understand what factors predict DUI re-arrest within a 12-month time-frame among DUI-2 participants. The probability of DUI re-arrest is estimated as a function of 24/7 enrollment as well as individual and time-varying county-level variables. The models also included county-level fixed effects to account for time-invariant characteristics of each county and year-level fixed effects to account for factors that are constant across counties but may vary over time. We tested models including the non-seasonally adjusted unemployment rate, log-transformed annual population estimates in each observation's county of residence in the quarter of their second DUI arrest leading to conviction and alcohol retailer density. Ultimately, these covariates were uninformative after the inclusion of the county and time indicators. However, we included county-level sworn law enforcement officers per 10 000 residents as a proxy for local-level changes in law enforcement [23].

The criminal history data include indicators of prior arrest for violent crime, illegal drugs or weapons and decile buckets for the time in days between an arrestee's first and second DUI leading to conviction to flexibly account for the relationship between unobserved individual characteristics proxied by these selection variables and the outcome of interest (predicted rate of re-arrest within 12 months of the prior arrest date).

Instrumental variable bivariate probit model

Any adult repeat-DUI arrestee in a county with an active 24/7 program is eligible for enrollment, but not all such arrestees are enrolled. Thus, we cannot rule out the possibility of bias from unobserved endogeneity; for instance, judges may systematically select for 24/7 arrestees with traits not captured in the data. We attempted to account for this by using an instrumental variable bivariate probit model. Ideally, the instrumental variable would predict enrollment in 24/7 without being correlated with the residual error in predicting individual's probability of re-arrest.

In this case, we exploited the fact that the program spread from county to county over time and used an indicator for whether the county where an arrestee appeared in court had begun testing participants for 24/7 by the time they were arrested as our instrument. There is little

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[2]We excluded observations indicating an individual to be on the program for 1 day or less as they were assumed to be entered in error.

Table 1 Descriptive statistics of model variables by participant 24/7 status (*n* = 2768; 356 in 24/7).

	Average age	*% Male*	*Days from DUI 1 to 2*	*% Violent*	*% Drug*	*Prior arrests*	*Police per 10 000 residents*
Counterfactual	32.5	73.2	1114	32.8	29.7	3.09	16.0
24/7 program	32.1	68.3	1121	27.5	26.6	2.63	15.9
Absolute Difference	0.4	4.9	7	5.3	3.1	0.46	0.1
P-value of difference	0.550	0.050	0.883	0.098	0.329	0.048	0.753

DUI = driving under the influence.

reason to believe that counties adopted the program due to any particular individual's future re-arrest risk.

We simultaneously estimated the probability of re-arrest based on the prediction of assignment to 24/7. We used a bivariate probit approach to produce consistent estimates, given endogeneity through potentially correlated errors in the models of program assignment and re-arrest [24]. We estimated standard errors to account for heteroskedasticity due to clustering by county. We conducted our analyses using Stata/MP version 16 (StataCorp LP, College Station, TX, USA).

RESULTS

Descriptive analyses

On average, the 356 DUI-2 participants assigned to 24/7 are monitored for 173 days, with a median time of 112 days.[3] Of 60 316 recorded tests among 332 participants monitored using breath tests, 0.28% were positive for alcohol and 4.22% were no-shows. Younger participants were marginally more likely to experience violations—the positive and no-show rates for participants aged more than 40 years were 0.28 and 3.65%, respectively, versus 0.27 and 4.37% for those aged 40 years and under. Eighty-two per cent of participants in the sample tested positive or failed to appear for at least one test.

We estimated re-arrest rates for persons convicted of a secon DUI participating in 24/7 against a set of individuals arrested for the same offense. Overall, 7.0% of people convicted of DUI-2 were arrested for another DUI within 12 months, but the rate among the 356 24/7 participants was just 2.5%. While informative, comparisons between re-arrest rates among the 24/7 participants and other groups (e.g. participants in other preventative programs in Montana, participants in other states' 24/7 Programs or DUI offenders in Montana before 24/7 was instituted) should not be made without accounting for possible systematic differences between the 24/7 and the comparison groups to establish a credible counterfactual.

The two groups were well balanced on the characteristics we observed (Table 1). The 24/7 group exhibited rates of prior criminal involvement that were marginally lower than those exhibited by the comparison group. Key to concerns about endogenous recidivism risk, the average time between DUI arrests was 7 days longer for participants in 24/7 than the comparison group's 1114-day average. This measure directly captures *ex ante* recidivism risk, where more rapid prior re-arrest is indicative of greater recidivism risk, all else being equal. This measure also may capture differences in characteristics between the groups that are not captured in other observed covariates. The empirical similarity between those assigned to 24/7 or not is encouraging for our assumption of balance. We used the distribution of prior recidivism later in the analysis to account for potential endogenous selection issues.

Probit models

Table 2 presents the results from the probit regressions. In model 1, we included 24/7 participation as the only covariate. Model 2 added gender, age decile categories, county unemployment rate, population and police per capita, the selection controls based on days between DUI-1 and DUI-2 and fixed effects for time and county of residence as covariates. Finally, model 3 included information on prior arrests involving violence, illegal drugs or weapons. All three estimates suggested an approximately 65–73% (5.0–7.1 percentage points) decrease in re-arrest rate associated with 24/7 participation. The consistency in estimates across models with varying samples and covariates suggested that the estimate was consistent, although may have been subject to selection bias.

Bivariate probit models

The instrumental variable-based estimates of the effect of 24/7 were similar in magnitude—ranging from 78 to 86% per cent reductions in probability of re-arrest

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[3]To estimate 24/7 program costs to participants for the average duration of 173 days, we assumed the mandated $2 per test × two tests per day for PBT testing and the mid-point daily fee for SCRAM monitoring of $11. Program costs would average $692 under PBT and $1903 under SCRAM, plus any program fees imposed by counties or SCRAM vendors (e.g. initiation or device removal).

Table 2 Probit-predicted re-arrest probability.

Variable	Model 1	Model 2	Model 3
Counterfactual	0.076	0.076	0.097
24/7	0.025	0.026	0.026
Difference (%)	-66.9	-65.6	-72.9
P-value of difference	<0.001	0.031	0.009
Prior offense indicators	No	No	Yes
Time to DUI-2 controls	No	Yes	Yes
County fixed effects	No	Yes	Yes
Time fixed effects	No	Yes	Yes
n	2768	2768	1640

Each column reflects model results with a different set of covariates (designated with a yes or no in the second panel). Robust standard errors are clustered at the county level. DUI = driving under the influence.

Table 3 Instrumental variable bivariate probit average treatment effects.

Variable	Model 4	Model 5	Model 6
Counterfactual	0.080	0.081	0.101
24/7	0.018	0.016	0.017
Difference (%)	−77.6	−80.8	−83.2
P-value of difference	0.003	0.030	0.047
Prior offense indicators	No	No	Yes
Time to DUI-2 controls	No	Yes	Yes
County FE	No	Yes	Yes
Time FE	No	Yes	Yes
n	2768	2768	1640

Each column reflects model results with a different set of covariates (designated with a yes or no in the second panel). The average treatment effect is the estimated change in re-arrest rate due to 24/7 participation. Robust standard errors are clustered at the county level. DUI = driving under the influence; FE = fixed effects.

(Table 3)—but were less precise than the probit models. Models 4 and 5 estimated 6.2 (*P*-value = 0.003) and 6.6 (*P*-value = 0.030) percentage point reductions in the 12-month re-arrest rate, respectively.[4] Our preferred model, model 6, estimated an 8.4 percentage point decrease associated with 24/7 (*P*-value = 0.047) based on a marginally higher base rate of violations in the counterfactual group for whom we obtained criminal history data. Overall, the bivariate probit estimates suggested that 24/7 was associated with at least an 80% decrease in the 12-month re-arrest rate. However, missing criminal history information for approximately half the sample and assumptions about program enrollment, tested in the next section, may have biased these results somewhat.

Table 4 Sensitivity analysis of instrumental variable bivariate probit average treatment effects.

Variable	Model 7	Model 8
Counterfactual	0.081	0.103
24/7	0.013	0.013
Difference (%)	−84.4	−87.6
P-value of difference	0.015	0.002
Prior offense indicators	No	Yes
Time to DUI-2 controls	Yes	Yes
County FE	Yes	Yes
Time FE	Yes	Yes
n	2768	1640

Each column reflects model results with a different set of covariates (designated with a yes or no in the second panel). The average treatment effect is the estimated change in re-arrest rate due to 24/7 participation. Models 7 and 8 replicate models 5 and 6 from Table 3, respectively, but use a more restrictive definition of 24/7 participation. Robust standard errors are clustered at the county level. DUI = driving under the influence; FE = fixed effects.

Sensitivity analyses

We then tested the robustness of our findings to underlying assumptions based on our instrumental variable estimates from models 5 and 6. As described, we assumed that all participants enrolled in 24/7 for at least 2 days at any time after their DUI-2 arrest (and before a subsequent arrest) received the program. We then imposed a stricter assumption, defining participants to be considered treated only if they were enrolled within 60 days of their DUI-2 arrest. *Ex ante*, the relative size of this new estimate was ambiguous. The different classification may have had a positive effect on the estimate, as participants experiencing lagged enrollment received less of a 'dose' than others who were enrolled more quickly, or it may have decreased the estimated effect size as, by construction, the participants had gone at least 60 days without re-arrest for DUI before beginning to participate in 24/7. A more pernicious problem is that an event may have led to incapacitation (e.g. another arrest for some other offense that this analysis missed completely due to its focus solely upon DUI re-arrest). However, it was not clear that the risk of this confounder was any different for the 24/7 group than it would have been for someone in the comparison group.

Based on this definition of 24/7 participation, we recoded 68 of the 356 24/7 participants as members of the counterfactual group. The instrumental variables model (Table 4) estimates a 6.8 (*P* = 0.015) to a 9.0 percentage point (*P* = 0.007) decrease in re-arrest rate, corresponding to 84 and 88% reduction in re-arrest,

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[4]All models indicated that an active 24/7 program is a statistically significant predictor of 24/7 enrollment. A recent working paper by Lee *et al.* [25] proposes '*tF*', a more stringent test of precision for instrumental variables model estimates that adjusts the critical value of the *t*-statistic of coefficient estimates for the strength of the first stage. Under this stricter alternative, the *F*-statistic for the first stage is 32.12, the critical value of *t* is | 2.32 | and the *t*-statistic on the 24/7 policy estimate is −2.16; for model 6 these statistics are 18.77, | 2.67 | and −1.99, respectively. While our *F*-statistics greatly exceeded the rule of thumb of 10, our instrumental variable results would not be significant at the 5% level if the Lee *et al.* approach becomes the new standard.

respectively. We found no support for our previous hypotheses: delayed enrollment participation and confounding non-DUI arrests did not appear to bias results in this analysis.

DISCUSSION

This analysis provides additional support for the hypothesis that 24/7 is an effective approach to deter drinking among individuals who were previously arrested for driving while intoxicated. While 56% of individuals are sanctioned at least once during their first 30 days of monitoring, more than 95% of scheduled tests are taken and passed. This suggests that a significant proportion of a high-risk population in the community reduces their alcohol consumption, but these rates are notably lower than the rate observed among comparable DUI-2 participants in South Dakota. This difference has been attributed to ambiguity introduced by requiring participants to pass a test with a failure threshold of 0.02 BAC compared to zero [26], and is consistent with lower program fidelity under an identical rule in North Dakota [27]. While we caution comparisons of re-arrest rates across states due to differences in enforcement and potential repercussions of arrest and conviction, the estimated impact on DUI re-arrest is large and is not statistically different from the impact of the program found in South Dakota [10]. In combination, these findings also provide support for the hypothesis that differences in program design across jurisdictions may affect the probability of program compliance more than the probability of DUI. As violations lead to costly incarceration, this potential trade-off between offering flexibility to participants and minimizing costs of running the program is an issue that potential adopters of 24/7 must confront.

As we are relying solely upon administrative data provided by the state Attorney General's Office, we do not know whether arrestees enter substance use disorder treatment or are supervised by some additional means. Differences between those assigned to 24/7 and the comparison group on clinical variables such as alcohol use patterns or alcohol use disorder prevalence prior to and after assignment would provide important information on the links between criminal justice contact and alcohol use. If patterns of drinking among the 24/7 and comparison groups were statistically different prior to assignment, our estimates of program impact would potentially be confounded if we only relied upon the probit models, which we do not. Also, we do not have reason to believe that drinking patterns are different for the 24/7 and counterfactual groups prior to program assignment, or that treatment utilization and additional supervision affect the groups differentially, but such data should be considered if they are made available in future analyses.

Another limitation to our findings is the possible effect of competing risks on DUI re-arrest rates. Individuals may have left our sample before our censoring date (the time-period we last observe in the data) at different rates between the 24/7 and comparison group because they were arrested and incarcerated for a non-DUI crime, moved out of state or passed away. It is impossible to truly know the effect of this omission on our results, but we expect attrition to be positively correlated with time. The short 12-month window we focused on here somewhat diminished the risk of bias, but not completely. However, if participants on 24/7 are more likely to be released on bail than the comparison group, then we may expect the results to be biased towards zero, as 24/7 participants have more exposure to be re-arrested.

These findings provide additional evidence that the principles of contingency management can generate behavioral change for people whose alcohol use has led to criminal justice contact [16]. With evidence suggesting that 24/7 can reduce DUI outside its pioneering jurisdiction, we hope other places will consider piloting this program and comparing it to other interventions designed to reduce DUI and other alcohol-involved crimes. As it has been argued for in this journal [28], it is imperative that researchers, criminal justice officials and funders work together to conduct multi-site randomized controlled trials of 24/7 sobriety. We hope future analyses will look beyond traditional criminal justice outcomes and examine the effect of 24/7 on employment and earnings, hospitalizations, treatment participation for substance use disorders (including 12-Step programs) and how 24/7 participation affects family members. To this end, it would be fruitful to conduct interviews with study participants and members of their households to learn more about the overall costs and benefits of 24/7 and the causal mechanisms driving the results.

answering our questions. The views expressed herein are only those of the authors.

Author contributions

Greg Midgette: Conceptualization; formal analysis; methodology. **Beau Kilmer:** Conceptualization; methodology.

References

1. Bouchery E. E., Harwood H. J., Sacks J. J., Simon C. J., Brewer R. D. Economic costs of excessive alcohol consumption in the US, 2006. *Am J Prev Med* 2011; **41**: 516–24.

2. Degenhardt L., Charlson F., Ferrari A., Santomauro D., Erskine H., Mantilla-Herrara A., *et al.* The global burden of disease attributable to alcohol and drug use in 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Psychiatry* 2018; **5**: 987–1012.

3. World Health Organization. Global Status Report on Alcohol and Health. World Health Organization [internet]. 2018. Available at: https://apps.who.int/iris/handle/10665/274603 (accessed 3 June 2021).

4. Carpenter C., Dobkin C. Alcohol regulation and crime. In: *Controlling Crime: Strategies and Tradeoffs*. Chicago, IL: University of Chicago Press; 2010, pp. 291–329.

5. Long L. The 24/7 sobriety project. *Pub Law* 2009; **17**: 2.

6. Kilmer B., Humphreys K. Losing your license to drink. *Brown J World Affairs* 2013; **20**: 267–77.

7. Bainbridge L. Transferring 24/7 sobriety from South Dakota to South London: the case of MOPAC's alcohol abstinence monitoring requirement pilot. *Addiction* 2019; **114**: 1696–705.

8. Ministry of Justice. *'Sobriety tags' come into force* [internet]. London. 2020. Available at: https://www.gov.uk/government/news/sobriety-tags-launched-in-england-to-tackle-alcohol-fuelled-crime (accessed 3 June 2021).

9. Caulkins J. P., Dupont R. L. Is 24/7 sobriety a good goal for repeat driving under the influence (DUI) offenders? *Addiction* 2010; **105**: 575–7.

10. Kilmer B., Midgette G. Deterring crime: insights from an individual-level analysis of 24/7 sobriety. *J Policy Anal Manage* [internet] 2020; **39**: 801–34.

11. Kilmer B., Nicosia N., Heaton P., Midgette G. Efficacy of frequent monitoring with swift, certain, and modest sanctions for violations: insights from South Dakota's 24/7 sobriety project. *Am J Public Health* 2013; **103**: e37–e43.

12. Nicosia N., Kilmer B., Heaton P. Can a criminal justice alcohol abstention programme with swift, certain, and modest sanctions (24/7 sobriety) reduce population mortality? A retrospective observational study. *Lancet Psychiatry* 2016; **3**: 226–32.

13. Lattimore P. K., Dawes D., MacKenzie D. L., Zajac G. Evaluation of the honest opportunity probation with enforcement demonstration field experiment (HOPE DEF). Research Triangle, NC: RTI International; 2018. https://www.ojp.gov/pdffiles1/nij/grants/251758.pdf (accessed 3 June 2021).

14. Kleiman M. A. R. Swift–certain–fair: what do we know now, and what do we need to know? *Criminol Public Policy* 2016; **15**: 1185–93.

15. Hawken A., Kleiman M. *Managing Drug Involved Probationers With Swift and Certain Sanctions: Evaluating Hawaii's HOPE:*

Executive summary. Washington, DC: National Criminal Justice Reference Services; 2009.

16. Humphreys K., Kilmer B. Still HOPEful: reconsidering a 'failed' replication of a swift, certain, and fair approach to reducing substance use among individuals under criminal justice supervision. *Addiction* [internet] 2020 Apr 13 [cited 2020 Apr 28];n/a; https://doi.org/10.1111/add.15049.

17. National Academies of Sciences, Engineering, and Medicine. In: Teutsch S. M., Geller A., Negussie Y., editors. *Getting to Zero Alcohol-Impaired Driving Fatalities: A comprehensive approach to a persistent problem [internet]*. Washington, DC: The National Academies Press; 2018. Available at: https://doi.org/10.17226/24951 (accessed 3 June 2021).

18. Nagin D. S. Deterrence in the twenty-first century. *Crime Justice* 2013; **42**: 199–263.

19. Kleiman M. A. *When Brute Force Fails: How to have less crime and less punishment*. Princeton, NJ: Princeton University Press; 2009.

20. Federal Highway Administration *Fatality Analysis Reporting System*. Washington, DC: US Department of Transportation; 2018.

21. Stahre M., Roeber J., Kanny D., Brewer R. D., Zhang X. Peer reviewed: contribution of excessive alcohol consumption to deaths and years of potential life lost in the United States. *Prev Chronic Dis* 2014; **11**: 130293.

22. Fisher D. A., McKnight A. S., Fell J. C. Intensive DWI supervision in urban areas—Feasibility study. Report no. DOT HS 811 861. Washington, DC: National Highway Traffic Safety Administration; 2013.

23. United States Department of Justice. Federal Bureau of Investigation. Uniform Crime Reporting Program Data: Police Employee (LEOKA) Data, 2015. Inter-university Consortium for Political and Social Research [distributor]. United States Department of Justice; Washington, DC: 2017.

24. Greene W. H. *Econometric Analysis*. Upper Saddle River, NJ: Prentice Hall; 2011.

25. Lee DL, McCrary J, Moreira MJ, Porter J. Valid *t*-ratio inference for IV. arXiv:2010.05058 (econ.EM); 2020.

26. Midgette G., Loughran T. A., Tahamont S. The impact of ambiguity-induced error in offender decision-making: evidence from the field. *J Res Crime Delinq* 2021; https://doi.org/10.1177/00224278211000088.

27. Midgette G., Kilmer B. G., Nicosia N., Heaton P. A natural experiment to test the effect of sanction certainty and celerity on substance-impaired driving: North Dakota's 24/7 sobriety program. *J Quant Criminol* 2020; https://doi.org/10.1007/s10940-020-09458-6.

28. Kilmer B. Commentary on Bainbridge (2019): improving the evidence base for 24/7 sobriety. *Addiction* 2019; **114**: 1706–7.

Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Figure S1. Counties where 24/7 is Currently Operational 24/7 (Blue) or Pending (Light Green) in Analytic Dataset.