An Evaluation of Utah's 24/7 Sobriety Program

Phase 2 Report

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Introduction

The Utah Department of Public Safety (DPS) contracted with the Utah Criminal Justice Center (UCJC) to evaluate the 24/7 Sobriety Program.[1] The program was first piloted in Weber County, Utah, as a collaboration between DPS and state and local partners (i.e., Weber County Sheriff's Office, Weber County Justice Courts, Weber County Attorney's Office, the Utah Administrative Office of the Courts, private probation agencies, public defenders, and the Utah Driver's License Division). The 24/7 Sobriety Program, which relies on a deterrence-based strategy, utilizes intensive supervision to monitor participants' alcohol use. The 24/7 Program is unique from other DUI programs because it restricts the ability to drink through regular (twice daily) alcohol testing. Participants are eligible to keep their driver's license if they comply with requirements of the program, which include: paying fines/fees/restitutions; installation of an ignition-interlock device in their motor vehicle; submit to twice daily testing, and test negative for alcohol consumption. While the current project is a pilot study conducted in one Utah County, results from the study will be used by the State of Utah to guide the upcoming statewide implementation of the program.

The 24/7 Program was intended to target second-time DUI offenders (who would normally lose their license for a period of two years for a second offense that occurs within 10 years of a previous offense). Program participants who do not pass an alcohol or drug screening at one of their check-in sessions (or miss a check-in session) receive swift, certain, and proportionate sanctions (i.e., brief jail stays). Individuals enrolled in the program are required to pay for each alcohol/drug screening. Additionally, there is a reward component to the program; participants receive their license back immediately following the payment of their fines and installation of an ignition-interlock device in their vehicle. Program personnel at the testing sites also offer verbal praise for receiving a "clean" test (i.e., no presence of alcohol and drugs). Reward- and sanction-based interventions have received increased attention and show promising results in community supervision settings (Viglione & Sloas, 2012; Trotman & Taxman, 2011).

The 24/7 Program is designed to achieve specific deterrence. Specific deterrence occurs when sanctions for criminal behavior discourage the individual who was sanctioned from engaging in future criminal behavior (DeJong, 1997; Andenaes, 1968). In this case, the 24/7 Program would presumably enhance participants' perceptions of the certainty, fairness, and swiftness of the sanctions compared to the typical sanctions received for a DUI violation. The 24/7 Program combines aspects of procedural fairness (certainty, fairness, and swiftness of sanctions) with deterrence theory (intensive supervision). The program also encourages sobriety through the frequent monitoring and testing for alcohol consumption while participants are enrolled for one year. Therefore, it is hypothesized that the 24/7 participants would be less likely to commit subsequent alcohol-related DUI offenses and analogous behaviors compared to the individuals who received "treatment as usual."

[1] Established in the 2017 Utah legislative session under H.B. 250 and expanded statewide during the 2021 session under H.B. The program is codified as Utah Administrative Rule R714-510. For more information on this program see UCJC's previous reports.

Evaluation Plan and Objectives

This report considers whether there are differences in DUI recidivism between individuals randomly assigned to the treatment and control groups. Specifically, we examine recidivism one year post-sentence date. The limited study timeframe, randomization process, and small sample sizes present some issues to executing the evaluation plan as proposed. UCJC conducted a series of analyses to examine the impact of the 24/7 program implementation on aggregate-level DUI recidivism as well as individual-level changes in DUI recidivism between the treatment and control groups. With respect to the individual-level analyses, it is important to note that there are limitations associated with the random assignment process that should be considered when interpreting the findings. Specifically, stakeholders may have used personal discretion to assign participants to a condition rather than utilizing the court's assigned condition in all cases.

Because of limitations with random assignment, we used a regression point displacement design analysis to compare rates of third-time DUI convictions in years prior to 24/7 implementation for the treatment county (Weber County) and all other Utah counties to the rates of third-time DUI convictions in three-year blocks post-24/7 implementation. The regression point displacement design is a quasi-experimental strategy. In this analysis, we examine whether the difference in posttest (i.e., after 24/7 implementation) displacement rates of third-time DUI convictions is statistically significant between Weber County (24/7 implementation) and all other counties in Utah that had not adopted the 24/7 Program during the pilot. UCJC obtained DUI counts by county from the Driver's License Division (DLD).

We also conduct a series of survival analyses to examine whether program participation had an effect on DUI recidivism. Specifically, this analysis allows us to estimate hazard ratios to determine time-to-event for the treatment and control groups.

UCJC also analyzed survey and interview data from 24/7 Program participants. The surveys and interviews were designed to allow respondents to rank how the program affected their alcohol consumption and describe their experience in, and perception of, the program.

UCJC is evaluating various aspects of the 24/7 Program. The Phase II report addresses the following objectives related to the 24/7 evaluation:

1. Examine survey results of self-reported alcohol use for 24/7 Program participants;
2. Analyze interview data with 24/7 participants to assess patterns in their perceptions of the program and its perceived effectiveness at reducing alcohol misuse;
3. Provide a descriptive analysis of the 24/7 participant group and the control group to examine the effects of the program on recidivism; and
4. Conduct a regression point displacement analysis to compare alcohol recidivism between the treatment county and all other Utah counties prior to and post-24/7 implementation.
5. Conduct survival analysis to estimate time to DUI recidivism for the treatment and control groups.

Note that this is a Phase II report evaluating the aforementioned objectives of the program. The upcoming final phase (Phase III) of this project will examine DUI recidivism two years post-

sentence, self-reported alcohol-related behaviors for second-time DUI offenders, and DUI recidivism in Weber County compared to other counties in Utah prior to and after the implementation of the 24/7 Program.

Qualitative Methods & Findings

Analytic Strategy

A purposive sampling strategy was used, wherein the Lead Inmate Case Manager at Weber County Jail contacted participants at program exit to request an interview. The questionnaire was comprised of three closed- and seven open-ended questions. Of the 54 individuals who completed the program between July 2019 and November 2020, the case manager was able to make contact with 31, and 30 of those agreed to be interviewed. The open-ended questions asked participants to describe those aspects of the program that were helpful; their experience in the program; the program's impact on their behavior and other aspects of their lives; and suggestions for improving the program.

All open-ended survey questions were uploaded into ATLAS Ti, a qualitative research software program. The survey questions, pertaining to various topics, guided the overarching themes of the codes, thus deductive thematic analysis informed the identified themes. Inductive thematic analysis of participant responses was used to further refine the identified codes (Clarke & Braun, 2016). Several inductive techniques were used to strengthen the internal validity of the analysis. The data were read multiple times to code passages and make notes on preliminary observations; codes were sorted under themes, which were refined and renamed into a codebook (Braun & Clarke, 2006). Further, a constant comparative approach was used to develop and rework categories as the data were coded (Silverman, 2009). This allowed for further refinement or rejection of initial identified analytic patterns. The aim was to record and present the most common patterns in participant perceptions. Thematic analysis involved identifying codes and themes that emerged across all survey responses.

Results

Table 1, below, shows that 87% of the participants who completed an interview had successfully completed the 24/7 Program. Half (50%) received at least one sanction; of those with any sanction, 13% identified the sanction was administered as a response to substance use. Three-fourths (73%) of those with a sanction indicated they received it for other reasons (most commonly for missing a testing appointment); the remaining individuals did not disclose the reason for the sanction. Ten percent (10%) of respondents indicated that they continued to use substances while in the 24/7 Program. Of those, two completed the program successfully; one indicated that use was never detected or sanctioned.

Closed-Ended Questions

Participants were asked three closed-ended questions to gauge their perception about the program's effectiveness in helping them avoid substance use and criminal behavior. The majority of participants (87%) characterized the program as helpful in terms of supporting abstinence from alcohol use (one person answered "not applicable" to this question and indicated that he/she did not use alcohol). Of those who did not find the program helpful in this regard, two

nonetheless completed the program successfully. With respect to use of illegal drugs, 27% of respondents indicated that they had never used illegal drugs (and were therefore not in need of support to avoid use). The remaining participants indicated that the program helped them abstain from illegal drug use (91%). Similarly, the vast majority of participants (97%) 29 believed the program supported them in their attempts to avoid lawbreaking behaviors.

Table 1: Interview Participants

N=30	(%)
Successful completion	87
Sanctioned at least once	50
Sanctioned for substance use	13
Sanctioned for non-substance use	73
Indicated ongoing substance use	10

Beneficial Components of the 24/7 Program

The results above demonstrate that the majority of participants felt the program was broadly helpful in terms of fostering prosocial behaviors. The current section considers those specific aspects of the program that were helpful in promoting behavior change. Table 2, below, characterizes those aspect of the 24/7 Program that participants felt were most helpful to them.

Table 2: Beneficial Aspects of the 24/7 Program

N=30	(%)
Structure (twice daily testing)	50
Maintain employment	20
Maintain employment without breaking the law	10
Supportive staff	37
Camaraderie	10

Structure. As noted earlier, the 24/7 Program requires participants to present for testing twice daily; for half of respondents (50%; Table 2), this very structured design was perceived as a primary reason they were able to abstain from substance use and criminal behavior. In some instances, that was because twice daily testing created constraints around their free time. This is exemplified in the following quote, wherein the respondent describes what he/she found most useful about the program:

> *"The structure, having to wake up and be somewhere."*

The following quote further underscores the degree to which some individuals felt that they needed the structure of twice daily testing, often because it left little discretion for them to make their own choices:

> *"I believe that checking in twice a day is necessary. If people in the program were only required to check in once a day they would have a lot more freedom to get drunk or do drugs because they would have a larger window of time for it to pass out of their system before testing."*

In addition to twice daily testing, program participants were required to have an ignition-interlock device installed in their car. Several respondents identified that twice daily testing alone would not have been sufficient to prevent antisocial behaviors; one of those indicated that the device, in conjunction with frequent testing, was what allowed him to be successful. For this respondent, the interlock device presented itself as the main way that he/she planned avoid drinking and driving both during and after program completion:

> *"The interlock device has been very beneficial because without it I think I would eventually end up drinking and driving. I will probably keep it in my car longer than the three years it's required."*

As noted above, many found the program's structure beneficial because the prospect of regular testing created limits on their discretion and served as an external mechanism that prevented them from making bad choices. For a smaller portion of respondents (13%), the structure of the program was helpful because it facilitated an appraisal of their behavior and its impact on their life and relationships. In the following example, the constraints on choice (as created by the program structure) resulted in both sobriety and a change in thinking. In this instance, the participant identifies the structure of the program as the mechanism through which he/she acquired insight such that the program becomes unnecessary (e.g., the participant now feels able to avoid antisocial behaviors without external constraints, such as the prospect of twice daily testing).

> *"For my specific situation this program was awesome. Obviously, if it had been my choice, I would not have done the program so that I could still drink but once I hit the 3 month mark my thinking and understanding of the program and why I need to be sober changed. I started realizing that I need to be sober for my family and need to be more involved with them and started to see how uninvolved with them I had been."*

Employment. In addition to the structural components of the program, which either forced or facilitated abstinence from substance use and criminal behavior, one-fifth (20%) said the program was helpful because retaining their driver's license allowed them to maintain their employment. One participant said:

> *"I would not be employed if that perk wasn't there."*

The ability to maintain employment was perceived as a valuable reward that incentivized program participation and compliance. In some cases, keeping a license was described as essential to both current employment and future livelihood:

> *"For me, I have to have a driver's license for work. I work for the State of Utah and if I would've lost my job, I would've lost my pension, benefits, etc. The program was a lot more time and effort, but it saved my job. I would've been in a lot worse situation without the program."*

For many of these respondents, the opportunity to keep both their license and livelihood, more than program structure, incentivized abstinence from substance use and illegal behavior. The ability to maintain employment was also identified as helpful because having a job provided structure that was perceived as incompatible with substance use, as noted by the same respondent:

"In my situation where I'm working all day, I think if I would've just gone in once a day [for testing], it would have been enough for me."

A small portion of respondents (10%) indicated that, without the option to maintain their driver's license, they would have considered driving on a suspended license in order to keep their job. In this way, the 24/7 Program provided a means for them to resolve two competing tensions (breaking the law vs making a living):

"I liked that it gives you a way to make a living and not be a criminal. I understand why someone would try to drive on a suspended or revoked license. This made it so you didn't have to take the chance."

Of note, responses that were coded this way were also coded as demonstrating antisocial thinking, which is associated with increased risk of recidivism (Bonta & Andrews, 2017). This was because respondents tended to express sympathy for individuals who broke the law by driving on a suspended license. In responses coded this way, individuals placed the responsibility for antisocial behavior on the system's behavior (taking a license away) rather than their own behavior (the license was suspended because they were driving under the influence). The following response, wherein the respondent considers what would have happened if he/she had not been placed in 24/7, exemplifies this type of antisocial thinking:

"[T]his could lead you to break the law by driving without a license to get to work."

Program Staff. One important aspect of deterrence-based interventions is that participants perceive the process as being fair and transparent, and that staff are honest, try to do their jobs well, and their actions are morally justified and appropriate. There was the general response from all participants that the staff who administered the program treated them well. The few instances where participants did not feel well-treated by staff were typically described as exceptions (e.g., a particular staff person or situation). Participants generally expressed that staff were fair and wanted to help the participants succeed. One-third (37%) specifically identified program staff as one of the most helpful aspects of the program. In some instances, this was attributed to the fact that the relationship with staff was perceived as a valuable source of information and positive appraisal:

"I enjoyed [the officer]; he was a good guy and so was everyone else he had to work with. They are all very nice. I liked to take notes from the program and enjoyed the honesty from the officers. I even kept the certificate because I am proud of it."

Others described program staff as a source of social support who engaged with participants on issues beyond the scope of daily testing, as exemplified in the following response:

"The program works very well the way it is. I don't think there is much that should be changed. The staff were more than willing to help, not just do the test, but also talk if you just needed to vent."

Finally, a portion of respondents indicated that staff were helpful when they were flexible and accommodating in circumstances that made it difficult to meet the twice daily testing requirements. Typically, this stemmed from employment-related problems getting to the testing site within the requisite hours:

"[Staff] were willing to work with me if I stayed in contact with them, if I was stuck at work plowing snow, and going to be late or something."

Camaraderie. For a subsample of respondents (10%), the 24/7 Program was identified as helpful because it gave them a community of individuals who were going through a similar experience. In addition to social support provided by program staff, these respondents indicated they liked the "*social aspect of the program*" and even looked forward to daily testing:

"I liked seeing everyone who was going through the program in the mornings when I came to check in. It's nice to have people who are going through the same thing that I was who are trying to get sober."

Improving the 24/7 Program

Participants were also asked what suggestions they had for improving the 24/7 Program. The results are presented in Table 3, below, and show some disagreement amongst participants. For example, while some participants identified program structure as being central to their ability to abstain from substance use and criminal behavior (see previous section), others found it negatively impacted other aspects of their lives, such as family relationships. In a few cases, participants described the structure as both helpful and difficult. Similarly, while keeping a driver's license made it possible for many to keep their job, the structure and timing of testing was sometimes incompatible with the requirements of that job. Participants also expressed concern around the financial burden of participation, lack of communication between stakeholders, and perceived lack of equity in terms of how participants were held accountable to program requirements. Additional details and recommendations about the themes in Table 3 are provided below.

Table 3: Improving the 24/7 Program

N=30	(%)
Structure	83
Schedule of testing	*50*
Wait time for testing	*43*
Impact on employment	*40*
Financial costs	20
Disparity in treatment	23
Lack of coordination between entities	23

Structure. The vast majority of program participants indicated that the structure of the 24/7 Program (in terms of the number, timing, and logistics of testing) was difficult to comply with. Often, even participants who benefited from the structure of the program found it onerous:

"It's time consuming, but I liked it for the most part."

A small percentage of clients indicated the structure had no benefit for them:

"I didn't like anything about the program."

However, even this client conceded, later in the interview, that there were beneficial aspects to the program, although, for him, that was not because the structure held him accountable or supported

his behavior change. When asked if the benefits of the program were worth the time and effort to complete it he/she responded:

> *"Yes. It was nice to not have to do jail time, because that can have a trickle-down [effect]. Jail time can have negative effects like losing your license or you could lose your job. This could lead you to break the law by driving without a license to get to work. Being able to keep my license was what I believed to be the best thing about the program."*

Approximately 13% of respondents expressed similar sentiments, in terms of believing that keeping a license was the only benefit of the program.

Respondents expressed concern for the amount of time the testing schedule required. Even those who felt the program helped them felt that other aspects of their lives, such as family relationships, were negatively impacted. When asked if he/she thought the program was helpful, one respondent said:

> *"Mostly yes, but if the judge had given me the option to decline, I would have declined because of how much time it took away from my kids."*

For half (50%) of respondents, the structure of the program was difficult because of the hours when testing was available. This was particularly true for respondents whose work hours were in conflict with the testing schedule:

> *"Check in times should be extended more; it's too narrow of a window. My method for making check in times is staying up all night. I became paranoid had anxiety about making the check ins. Yesterday I stayed up all morning. If testing was between 5-9, I could make the testing. Having narrowed options for check in's makes it hard to check in when you have a job."*

This concern was exacerbated by the perception that program staff were extremely strict and would sanction people who showed up even one minute after the end of the testing window. Several respondents indicated that when they called to say they would be late, they were advised not to come and then sanctioned for missing a test. There was some variability in respondents' experiences in this regard, as respondents also provided examples of staff flexibility, especially when the lateness was attributed to a work-related problem with scheduling (versus another reason, such as waking up late).

Many participants suggested wider or more frequent testing windows or more testing sites, which would shorten the distance and time it took to present for testing. For others (43%), the structure of the program was difficult because of the actual time it took to get tested once they arrived on-site.

> *"[Testing] was pretty prompt, but my only comment is that sometimes the wait time got pushed out a little too much and some of us have pretty strict schedules."*

In one case, the respondent attributed this to problems in implementation when the program was new and indicated that testing wait times improved over time:

> *"[I]n the beginning, I waited a lot longer to test. As the program progressed, the wait time got better, even with more people in the program.*"

Others characterized the problem of long wait times as ongoing and often worse on the weekends. Several respondents explained the lengthy wait times as a product of inadequate staffing:

> *"I disliked…the lack of staff when I had to go test. I had to be at work at a certain time but when I would show up to test I would have to wait around for a staff member to come out to do the testing and I would end up being late for work. There should be more officers to run the program, so testing can get done in a timelier manner so people don't have to wait."*

Several respondents suggested adding additional testing staff, at least for the busiest times. Other respondents felt like there were staff who simply did not prioritize the 24/7 Program testing:

> *"I do get frustrated when an individual that is supposed to test you is just sitting there talking or doing things on their computer and can see you there, but makes you wait for a long time. I understand sometimes there are situations that are time sensitive and are higher priorities that have to be taken care of, but sometimes it seemed like they were just chatting and thought, 'They're the one in trouble, they can wait.'"*

In this instance, the respondent identifies the lengthy wait times as an intentional act on the part of correctional staff in order to teach participants a lesson. The respondent also hints at a labelling effect, wherein the interaction with program staff classifies, and reifies, him as "the one in trouble." To the degree that the 24/7 Program is impactful due to participants' perception that the process is fair and they are treated respectfully, this perception may undermine its efficacy.

In addition to the impact of daily testing on clients' work and home life, many felt that the duration of the program was simply too long. Over the course of a year, respondents felt that they missed out on many important life events and relationships, as described below:

> *"A year is a long time to not be able to go anywhere. . .I did like the fact that if you have been good you can request a furlough and go out of town, but I have kids out of state that I wasn't able to see for a year. I missed my family reunion and if the program was statewide I could have gone to it. This was my first offense[2] and thought a year was a really long time for a first offense and I will not be a repeat offender."*

Respondents had several suggestions for mitigating the negative impacts of the program's structure. Those included more testing sites, wider testing windows, and more staff to complete the testing. In addition, participants suggested compliance-based adjustments to the testing schedule. While the aforementioned respondent indicated that clients who were doing well could request a furlough, other respondents suggested that the program incorporate a structured rewards system in addition to the reward of keeping a driver's license. Multiple respondents suggested reducing the amount of time in the program, or the number of daily tests, for individuals who had a sustained amount of time with no violations:

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[2] Of note, this client identifies the current offense as her first offense; typically first-time DUI offenders would not be in the program for a full year. However, no data is available to shed light on this event.

"I thought the program was too long. A year is too long and six months would have been better. I suggest having a six month program where if you go a certain amount of time without violations then you get reward time off of your sentence."

Given research showing the efficacy of rewards, as compared to sanctions, in terms of reducing recidivism (Bonta & Andrews, 2017), the imposition of a graduated rewards system—alongside the main incentive of retaining one's license—may increase the efficacy of the 24/7 Program.

Other respondents suggested the negative impacts of the program structure could be mitigated by removing the twice daily testing and replacing it with random testing, which some had experience with from other times on probation. One respondent indicated he/she had to turn down multiple job offers due to conflicts between the work schedule and the testing schedule. He/she and others suggested technologies that would allow them to test remotely, thereby widening the testing window and also reducing the time spent traveling to, and waiting for, testing:

"Alcohol bracelets that monitor if alcohol is being taken instead of having to come in for the breath test. Having to come in twice per day was very inconvenient, especially being a single father and having to arrange child care every time. Also extra staff due to the fact that you have to wait at least five minutes to do a test."

Finally, a small portion of respondents felt that the structure of the program was redundant, in that they were required to be on probation, install an ignition-interlock device, and participate in twice daily testing. In such cases, respondents felt like the redundancies only served to increase the time and financial burdens of the program, without increasing its efficacy. When asked about the necessity of twice daily testing, one respondent answered:

"Feels twice a day is excessive but understands why. Has to use interlock to get here so feels that makes once [a day] ok."

Financial Burden. Twenty percent (20%) of respondents indicated they were burdened by the financial cost of program involvement. The program costs more for participants than traditional handling of DUI cases, due to the frequent testing and travel to/from testing sites. As noted by the following participant, even individuals who benefitted from the program felt burdened by the cost:

"My life has mostly changed in a positive way with the exception being financially. I would have to travel from to Clearfield to Ogden then back home, paying for gas was a strain on my budget."

Another participant described the combined cost of testing and installing the interlock system as a strain on their finances. Respondents also expressed frustration with the redundancy of the program, in terms of incurring additional financial costs:

"I also think the 24/7 Program should count as probation rather than putting someone on formal probation in addition to the program, especially since they see you twice per day and can drug test you any time they have suspicion of drug use as well. It would be more cost effective and wouldn't make people duplicate what they have to do to remain in compliance or pay the fees for the same things at two places [i.e., probation and 24/7 Program]."

Finally, several participants questioned the relevance of the financial costs to their specific situation. In these cases, clients were referred to the program for a drug-related DUI and felt the program was tailored toward alcohol testing. The cost of the ignition-interlock device was described by these participants as a burden that did not assist them in maintaining sobriety.

Disparity in Treatment. One-fourth of participants expressed concern regarding the procedural fairness of the 24/7 Program, which has implications for the program's efficacy. For example, procedural fairness has the potential to shape participant and staff interactions as well as result in equitable outcomes for participants. Procedural fairness can also impact participants' views of staff legitimacy and their level of trust in the program and staff. One of the 24/7 participants indicated that he/she felt like staff made exceptions to the rules for participants that they favored:

> *"My perception was it just seemed like there was some favoritism with certain people and certain ones they were harsher on. There was an individual who was constantly asking to go out of town and it seemed like…they got to do things…when others would ask for lesser accommodations…they wouldn't be allowed. I don't know if it's because they had been granted special allowances from the court or what. They had also been late and didn't serve sanctions…when other people were required to do sanctions for being late*."

While the partial nature of the respondent's information makes it impossible to assess the veracity of this claim, the perception of inequity can itself undermine program efficacy. Another participant expressed similar concerns in terms of who was granted flexibility with respect to program compliance:

> *"I felt that there was favoritism…(and) would like to see consistency with expectations and regulations. Wants to make sure there are no discrepancies in the program exceptions that aren't applied to everyone in the program."*

Several respondents felt that staff discretion in terms of testing decisions meant that some participants were able to continue using substances without being sanctioned:

> "*While I was in the program, I knew of some people would drink a lot of alcohol and then drink a lot of water so they would test negative. I want to know why they don't UA everyone."*

Another indicated that he/she received both BA and UA testing and was subsequently sanctioned twice for the same incident. One participant felt like the installation of the ignition-interlock device was inconsistently monitored:

> *"I had a really good experience with the program. I saw a lot of people through my time in the program that were driving without the interlock device, so my only suggestion would be to try to find a way to identify those individuals."*

Lack of Coordination amongst Stakeholders. Because 24/7 was in a pilot phase at the time this study was conducted, it is expected there would be problems identified in implementation. In terms of participants' experience, those emerged mainly in the form of miscommunication between stakeholders, including contradictory messaging to participants, which led to problems in getting a license reinstated, understanding program requirements, and loss of employment and treatment opportunities. One respondent, who was enrolled in the very

beginning, described difficulties due to a lack of coordination between the justice courts and the Driver's License Division (DLD):

> *"…there was some confusion and lack of communication in the beginning between the DLD, the court, and the 24/7 Program. I did everything I was supposed to do to get my license back, but I had issues with the DLD when I went to get my license back. I also didn't find out I was supposed to have the interlock device in my vehicle until after I started the program. When I went back to DLD, they had revoked my license again and wanted to charge me to reinstate it a second time when I had already done everything else I needed to the first time. I've heard from other individuals that they have also had difficulties with getting their license back. They have to get a letter from the court to take to the DLD. There needs to be better coordination between the court and DLD."*

One participant was under the impression that he/she might not have to physically check in twice a day or would be given a device to remotely test for alcohol–neither of which were accurate. The same participant also mentioned that the rules for non-compliance were inconsistently applied, with some participants receiving their license back after failing out of the program:

> *"I think it would be beneficial to have it be more clear from the beginning about how the whole thing is going to go and what the true consequences are if you do quit or fail the program. I was originally lead to believe that it would start out with twice a day check ins and then would reduce over time with compliance or that I might even be given something I could take with me so I didn't have to go out to 26th St twice a day. And as far as I know, not one person has actually lost their license for 10 years and a couple I knew ended up getting their licenses back only a couple months afterward, so I think there should be more clarity and transparency from the start."*

While it is impossible to know the full circumstances of the incidents this participant is referring to, there was a clear thread in the data wherein respondents expressed their confusion, in terms of program elements, differential treatment, and staff and stakeholder roles:

> *"… I also never knew who was in charge. Especially at first, it made me feel like I was at each individual's mercy. I think it's important for everyone to know who is ultimately in charge and makes the final decisions"*

Another participant felt that this lack of coordination in terms of program requirements resulted in a loss of treatment. As described below, the court ordered treatment at a specific provider, which meant his relationship with an ongoing provider was terminated.

> *"My last comment isn't necessarily about the program, but is about my court ordered counseling. Prior to when I received my sentence and got on the program, I was already seeing a therapist one on one that was paid for by my work and was making progress in dealing with some of my issues, got on a medication that helped me stabilize my anxiety, etc. However, when I was sentenced, I was told I couldn't continue with that therapist and had to do group counseling at a court-approved provider. That counseling didn't help me much at all and I couldn't address my individual issues, but I had to do it instead of what was helping me. I don't think that's right. I think the court should be willing to allow someone to pursue therapy or treatment with any licensed provider they choose."*

Other Program Impacts

In addition to its impact on substance use and criminal behavior, respondents described a range of impacts, both positive and negative, that 24/7 had on their lives. As noted earlier, the majority of participants characterized the structure of the program, which required twice a day check-ins, as its most challenging aspect; nonetheless, they expressed that those difficulties were worth the benefits they accrued:

> *"I thought it was a wonderful program. It was a pain in the ass but it was very worth it."*

Many respondents simply said that the program was "great," but some provided additional detail. The positive impacts often accrued from the individual's ability to stay sober and maintain employment, which resulted in improved relationships and overall well-being. For example, one participant responded to the question 'How has your life changed (positive or negative) since beginning the program?' by stating:

> *"Positive, for sure. My own personal health (mental, physical, and relationship) has improved immensely. The program was such a blessing and set me up for success rather than failure. And not losing my license for two years was awesome. I cannot stress enough how beneficial this program is for me and others in a similar position."*

Others also described a widespread and positive impact on their life:

> *"My life has changed in a positive way because I was able to get employed, my relationship with my kids and family has gotten 100% better. I've been able to have open conversations with my children about alcohol use and lessen the stigma around it."*

Some (13%) reported that the 24/7 Program taught them consequential thinking, with one participant saying:

> *"Risky behavior is not worth it… and… the program taught [me] coping mechanisms."*

Another stated:

> *"[the program taught me to] grow up and pay attention to what I was doing."*

Respondents also characterized some negative impacts of the program. Some of these have been described elsewhere, in terms of problems with work and family. Additional impacts included elevated anxiety due to the rigid testing schedule and the prospect of going to jail as a sanction for missing a test. As described below, for several participants the program structure interacted with other physical and mental health concerns to cause elevated stress and anxiety:

> *"[I] served 12, 24, and 48 [hours in jail as a sanction]. [It] didn't help correct behavior because it was my sleep patterns that lead to the sanctions. I didn't deserve the first sanction because I was here at 8:30 but it was argued that I was here at 831 so I received a sanction. I had a hard time sleeping, this has added to my anxiety. I felt the sanctions wasted my life and I just want to get back to school and be done with the program."*

Of note, participants who were sanctioned for substance use, rather than technical issues, tended to be more accepting of the sanction as an expected and fair outcome. Those individuals often reported that the behavior was corrected as the result of the sanction; although, some individuals who reported they stopped using substances as the result of being sanctioned also identified they

were sanctioned multiple times, suggesting the impact was not as immediate as implied. In contrast, those who were sanctioned for missing a test, especially when there were work or health reasons that caused them to miss, felt misunderstood and unfairly treated by the sanction. The following statement is also from the respondent quoted above:

> *"My method for making check in times is staying up all night. I became paranoid had anxiety about making the check ins. Yesterday I stayed up all morning. If testing was between 5-9 I could make the testing. Having narrowed options for check in's makes it hard to check in when you have a job…My judge said I could keep my license if I served 10 days. Serving ten days now on top of the time on the program. The anxiety I felt was not worth it."*

Two respondents felt negatively impacted by the way the program caused them to be labeled as an offender. For one of those participants, this stemmed from the fact that participants are classified as inmates for the duration of their time in the program; this is done so that individuals can be sanctioned (spend a period of time in jail) immediately rather than waiting for a judge to hear the case. For this respondent, the fact of being classified as an inmate had both emotional and practical implications, as described below. In this case, the participant felt the impacts were so great that he/she would not have done the program had he/she known beforehand that he/she would be classified as an inmate. This was despite that the participant otherwise described the program as "great."

> *"The biggest issue I had with the program is that I was recorded as an inmate for a year for a misdemeanor first offense; I don't even have a speeding ticket. Being recorded as an inmate cost me my job, I worked for [a] school district and they performed a random background check on me and I was fired since I was reported as inmate. I never spent a day in jail and wasn't even booked in; this doesn't seem fair to be reported as inmate on my record and it mortifies me to my soul. The program is not about shaming people but making them better, and I think the program does that with the exception of being labeled an inmate on your record; that is very negative and can ruin someone's life."*

Quantitative Methods & Findings

This section introduces the methods, analytic approaches, and results for the quantitative data. First, this section provides a descriptive analysis of the 24/7 treatment and control groups. Due to the issues associated with implementing a Randomized-Control Trial (RCT) design, as was originally planned, UCJC proposed using a different design to examine outcomes related to the implementation of the 24/7 pilot program in Weber County, UT.[3] After consulting with the Department of Public Safety, it was determined that a Regression Point Displacement Design (RPDD) would be the most appropriate method to examine the effectiveness of the 24/7 program as it relates to DUI recidivism across all Utah counties. Second, we provide an overview of the RPDD and discuss the findings. Lastly, we use record data obtained from the courts and the

[3] These issues were discussed in greater detail in the Phase 1 Report. Specifically, there is a substantial imbalance in the treatment and control group sample sizes, which indicates that stakeholders deviated from the randomization processes.

Bureau of Criminal Identification (BCI) to examine time to recidivism for the 24/7 treatment and control groups.

Data

The 24/7 Sobriety project was piloted in Weber County, Utah. Justice Courts are responsible for hearing DUI cases in the state of Utah (unless the case rises to a felony-level charge). 24/7 Sobriety Program stakeholders decided to conduct a randomized-control trial; whereby, eligible DUI cases were randomly assigned to the 24/7 program (i.e., treatment group) or to treatment-as-usual (i.e., comparison group). All second-time DUI offenders are considered eligible for the program as long as they do not have outstanding fines/license holds with the DLD. Individuals were determined to be ineligible for participation in the study by the Department of Public Safety. Specifically, individuals who were first-time DUI offenders and DUI offenders with three or more DUI convictions in the past 10 years were excluded from the evaluation. These criteria align with those described in the South Dakota and Montana 24/7 Sobriety programs (see, e.g., Midgette, 2014; Midgette & Kilmer, 2015).

The randomization process involved assigning the treatment condition to specific Weber County Justice Courts. All people in the court were automatically within the court's assigned condition. The treatment group consists of 26 individuals who were assigned to the 24/7 program during the study timeframe and 77 individuals who received treatment as usual. For Ogden City Justice Courts, UCJC randomized the treatment/control condition on a weekly basis. Every Friday the randomization assignments for the upcoming week were mailed to two judges at Ogden City Justice Courts. The Justice Courts that these judges presided over were the only Justice Courts that were randomly assigned to condition on a weekly basis. All other Justice Courts participating in the pilot program kept the condition that was assigned to them at the start of the study. Based on the descriptive statistics presented below, it appears that the randomization process did not work as expected. Specifically, we would expect that the treatment group would be similar in size to the comparison group. However, there were only 26 eligible, second-time DUI offenders who were sentenced to the 24/7 Program during the study timeframe (treatment group) compared to 77 second-time DUI offenders that received treatment as usual (control group). This suggests that stakeholders, likely owing to the logistics of specific cases, used personal discretion to assign participants to a condition rather than utilizing the court's assigned condition in all cases.

In order to identify whether individuals were assigned to the treatment or comparison group, UCJC was given permission to access the SCRAM software by Weber County Sheriff's Office (i.e., software package used to monitor 24/7 participants testing/sanctions). Research staff at UCJC began extracting individual record data from the SCRAM system in September 2019. Other data elements collected from the SCRAM system included: name, case number, violation(s) description, sanction(s) description, 24/7 status, and sentence date. After the June 2019 24/7 Steering Committee meeting, it was determined that the randomization process was set to end on July 1, 2019 and that the program would be available to all individuals charged with a DUI that met the eligibility criteria. For the purposes of the evaluation, the treatment group was selected if they were sentenced to the 24/7 program for a second-DUI offense between November 1, 2018 and June 30, 2019 (n=26).

UCJC collaborated with Administrative Office of the Courts (AOC) to develop a query protocol to be used to identify all eligible study participants. The search query used by AOC looked for individuals who were convicted for a DUI-related charge between January 1, 2011 and October 31, 2018 from any Utah jurisdiction and whether those persons were convicted of a subsequent DUI-related offense between November 1, 2018 and June 30, 2019 in Weber County, Utah.[4] AOC provided the data to UCJC in April 2020. The following data elements were included in the data: name, birth date, case number, driver's license number, driver's license state, SID, court location, county, filing date, case type, offense code and description, blood alcohol description, judgement date, and sentence date. AOC indicated that they do not have the Impaired Driving Assessment results in their data system. These data were merged with the data obtained from the SCRAM system. After merging the two data files, 5 cases were dropped from the treatment group because they were not included in the AOC data file. This resulted in a total of 21 cases in the treatment group for the analysis.[5]

AOC agreed to provide UCJC with a second run of the initial query protocol in November 2020 to identify study participants who recidivated for a DUI offense one-year post sentence date. The AOC research team reran the query protocol with an updated timeframe to account for potential recidivism (i.e., November 1, 2018 through June 30, 2020). Due to the COVID-19 pandemic, it is possible that a number of court hearings between March 2020 and June 2020 were delayed and may not be represented in the data. In order to address the potential lag between arrest for DUI recidivism and sentence date, UCJC also requested recidivism data from the Utah Bureau of Criminal Identification (BCI).

UCJC sent the list of study participants identified using the AOC query protocol to BCI to obtain recidivism data. BCI provided UCJC with a complete run of the study participants' criminal history in December 2020. UCJC created several measures to capture study participants criminal history profile prior to their sentence date for the second DUI offense. Any offenses that occurred after the participants' sentence date were used to create measures of recidivism for a variety of offenses (including DUI).

UCJC collaborated with the DLD to develop a data query protocol in November 2020 to obtain county-level counts of DUI recidivism and number of licensed drivers. The data was pulled in six-month intervals from January 1, 2017 to December 31, 2020. The data requests were fulfilled by January 2021. These data are used to conduct the Regression Point Displacement Design analysis to examine whether there was a county-level treatment effect associated with the implementation with the 24/7 Program in Weber County.

UCJC was also in contact with the Utah Department of Alcoholic Beverage Control (DABC) to obtain a list of licensed bars and state-controlled wine or liquor stores. After speaking with several contacts at DABC, UCJC was informed that DABC does not maintain historical records of all licensed bars and wine and liquor stores. Rather, the list is only current on the date

[4] AOC's current data system only includes record data for cases beginning in January 1, 2011. Based on the inclusion criteria set by DPS, record data should include all cases that date back to November 1, 2008.

[5] One of the criteria used to determine eligibility for the 24/7 program is that the individual received their second DUI offense within 10 years of their first. Given that AOC's current data system only includes record data for cases beginning on January 1, 2011, it is possible that the five missing cases received their first-DUI between November 1, 2008 and January 1, 2011. If this is the case, because of the historic data limitation, these individuals would not be flagged as second-time DUI offenders in the AOC data.

requested. UCJC received a list of all licensed establishments that can sell/serve alcohol as of January 25, 2021. UCJC cleaned the data and created a total count variable by county, which includes only licensed bars and state-controlled wine or liquor stores, to control for in the RPDD analysis (described in detail below).

Descriptive Analysis

The descriptive analysis below provides an overview of the key baseline characteristics and recidivism for the 24/7 and comparison groups. When appropriate, bivariate analysis are conducted to examine whether there were pre-existing differences between the treatment group and comparison group. The data used below were obtained from BCI and AOC.

Findings

Table 4: Criminal History Two Years Prior to DUI Sentence by Sample

Offense Type	Count	Control Group N (%)	Treatment Group N (%)
Person	0	67 (87%)	19 (90.5%)
	1	10 (13%)	2 (9.5%)
Property	0	64 (83.1%)	21 (100%)
	1	9 (11.7%)	0 (0%)
	2	4 (5.2%)	0 (0%)
Drug	0	52 (67.5%)	17 (81%)
	1	17 (22.1%)	4 (19%)
	≥2	8 (10.4%)	0 (0%)
Public Order	0	58 (75.3%)	20 (95.2%)
	1	13 (16.9%)	1 (4.8%)
	≥2	6 (7.8%)	0 (0%)
Weapon	0	72 (93.5%)	21 (100%)
	1	5 (6.5%)	0 (0%)
Traffic	0	68 (88.3%)	18 (85.7%)
	≥1	9 (11.7%)	3 (14.3%)
Obstruction	0	62 (80.5%)	21 (100%)
	1	13 (16.9%)	0 (0%)
	2	2 (2.6%)	0 (0%)

As previously mentioned, a total of 98 individuals were identified for inclusion in the study between November 1, 2018 and June 30, 2019. Seventy-seven persons were included in the control group and 21 individuals in the treatment group. Given that we were unable to obtain the impaired driving risk assessment results, UCJC examined criminal history records for individuals two years prior to their sentence date for a second DUI offense (see Table 4 above). Based on the random assignment process, we would expect that the treatment and control groups would look similar in terms of prior arrests. However, there were some noteworthy differences between the two groups.

In most instances the findings from Table 4 reveal that individuals in the control group had more extensive criminal histories in the two years prior to being sentenced for their second-DUI

offense compared to the treatment group.[6] A higher prevalence of individuals in the control group were arrested for a property-related offense compared to the treatment group (i.e., 17% and 0%, respectively). A slightly higher percentage of the control group was arrested for at least one drug-related offense (32.5%) when compared to individuals in the treatment group (19%). With respect to public order offenses, 24.7% of the control group had at least one arrest compared to 4.8% of the treatment group. Although a small percentage of individuals in the control group were arrested for a weapon-related offense (6.5%), no individuals in the treatment group were arrested for this type of offense. Finally, 19.5% of the control group was arrested for an obstruction of justice offense compared to 0% in the treatment group.

There are three exceptions to this pattern, which include: person offenses, traffic offenses, and sex offenses. A similar percentage of individuals from the treatment and control groups committed person and traffic offenses. No individuals in either the treatment or control groups were arrested for a sex offense in the two years prior to the sentence date for a second DUI offense.

Recidivism Findings

Similar patterns emerged when examining recidivism by study group; however, the differences between the two groups were smaller (see Table 5 below). Across the majority of offense types, a greater percentage of the control group had a post-DUI sentence rearrest when compared to individuals in the treatment group. A greater percentage of the control group also had at least one rearrest when compared to the 24/7 participants (40.3% and 14.3%, respectively).

Table 5: Recidivism Post DUI Sentence by Group

Offense Type	Count	Control Group N (%)	Treatment Group N (%)
Person	0	71 (92.2%)	20 (95.2%)
	1-2	6 (7.8%)	1 (4.8%)
Property	0	69 (89.6%)	19 (90.5%)
	1-2	8 (10.4%)	2 (9.6%)
Drug	0	68 (88.3%)	20 (95.2%)
	1-2	9 (11.7%)	1 (4.8%)
Public Order	0	68 (88.3%)	21 (100%)
	1	6 (7.8%)	0 (0%)
	≥2	3 (3.9%)	0 (0%)
Weapon	0	76 (98.7%)	21 (100%)
	1	1 (1.3%)	0 (0%)
Traffic	0	73 (94.8%)	21 (100%)
	1	4 (5.2%)	0 (0%)
DUI	0	64 (83.1%)	20 (95.2%)
	1	12 (15.6%)	1 (4.8%)
	2	1 (1.3%)	0 (0%)

[6] Note that the cell counts are small. Percentages are sensitive to small changes in counts. Interpret differences with caution.

Obstruction	0	66 (85.7%)	21 (100%)
	≥1	11 (14.3%)	0 (0%)

A total of 34 individuals included in the study recidivated. Thirty-one individuals in the control group were arrested for an offense following the sentence date of their second DUI as opposed to three in the treatment group (40.3% and 14.3%, respectively). Of those who recidivated, the average number of days to recidivism in the control group was 178 compared to 142 days in the treatment group. When considering all individuals in the group, 16.9% of individuals in the control group had a subsequent DUI offense; whereas, 4.8% of the cases in the treatment group were arrested for a new DUI offense. Of the 31 individuals who recidivated in the control group, 13 were arrested for a new DUI offense (41.9%) compared to 1 out of 3 in the treatment group (33.3%). We conducted a binary logistic regression analysis to examine whether there were significant differences in the odds of recidivism between the 24/7 and control groups. The findings reveal that the treatment group was significantly less likely to be arrested for a subsequent offense. Specifically, the likelihood of rearrest for a new offense is approximately 75% lower for the treatment group compared to the control group. However, there was not a significant difference in the odds of DUI recidivism between the treatment and control groups.

Among the 21 individuals in the treatment group, the minimum number of days spent in the program was 41 and the maximum was 368. The mean number of days in the 24/7 program was 320 (standard deviation [sd]=101). On average, individuals were charged $1,279.80 for breath tests and an additional $30 administrative program fee. Seventeen of the 21 individuals in the treatment group successfully completed the program (i.e., 81% success rate). Of those who completed the program, the time spent in the program ranged from 365 days to 368 days (mean=366; sd=0.99). On average, successful completers were charged $1,462.84 for breath tests as well as the $30 administrative program fee. Of the 17 individuals that successfully completed the 24/7 program, they committed a total of 20 violations while in the program. A total of 12 24/7 program completers committed at least one rule infraction. The most common rule infractions committed were failing to appear for a breath test (n=9) and failing a breath test (n=9) followed by a positive urinalysis screening (n=2). These individuals received a sanction for each rule infraction ranging from 8 hour to 24 hour jail stays.

Among the four who did not successfully complete the 24/7 program, the number of days spent in the program ranged from 41 to 224 (mean=126; sd=77). The non-completers, on average, were charged $502.00 for breath tests plus the $30 program administrative fee. Two of the four non-completers were arrested for a new offense; although the arrests were not for a DUI offense. The four individuals who did not successfully complete the 24/7 program committed a total of 16 violations while in the program (4 each). The most common rule infraction committed was failing to appear for a breath test (n=9) followed by failing a breath test (n=5), a positive urinalysis screening (n=1), and failing to obtain a driver's license (n=1). These individuals received a sanction for each rule infraction ranging from 8-hour to 48-hour jail stays.

Regression Point Displacement Design (RPDD)

The RPDD analysis discussed below compares pre- and post-randomization outcomes (i.e., DUI recidivism) between Weber County, or the 24/7 program pilot site, and all other Utah counties. UCJC conducted the RPDD analysis because the RCT design was not implemented with fidelity.

The RPDD allows researchers to examine a program designed to change a specific outcome. This section describes the RPDD methodology, the data sources that were used to conduct the analyses, and the findings. Implications of the findings will be presented in the discussion section of the report.

Method

The RPDD is a quasi-experimental analytic approach that has important implications for policy and practice – this is especially true for community-based research (Trochim & Donnelly, 2007; Trochim, 2020; see also, Shadish, Cook, & Campbell, 2002). One of the challenges in conducting community-based program evaluations is that it is difficult to assess for a causal relationship. This is particularly important in determining whether the program/intervention produced a desired effect as opposed to other potential factors. In many instances community-level interventions are implemented in a single community either because it is being pilot tested or the costs associated with the intervention preclude it from being implemented in more than one community. When tasked with evaluating the effectiveness of the community-based intervention, agencies often compare pre- and post-outcomes in the community to see whether there was a change. If possible, agencies may choose to compare the pre- and post-results from the treatment community to a similar community. However, this restricts the evaluation to a single unit of measurement for both the treatment and control group.

To address the issue of comparing outcomes based on a single unit in the treatment and control group, evaluators can use a RPDD to compare outcomes for the single treatment unit to a larger set of comparison units (see Figure 1 for RPDD notation [Trochim & Donnelly, 2007; Trochim, 2020]). In the context of community-based research this translates to comparing pre- and post-results for the treatment community to a set of other communities. This method addresses the potential concern of relying on a single non-equivalent community by using results from a set of heterogeneous non-equivalent communities. When conducting a RPDD analysis, results from the comparison communities are modeled and then compared with the results from the treatment community – greatly enhancing a researcher's ability to make causal inferences about the intervention's effectiveness.

Figure 1: Regression Point Displacement Design Notation

Treatment Unit	N=1	$O_{(pre)}$	X	$O_{(post)}$
Comparison Units	N^*	$O_{(pre)}$		$O_{(post)}$

Notes: O = results; X = intervention; * = number of comparison units

When introducing a methodology, it is always beneficial to consider its application using a real-world example. Sundt and colleagues (2016) were interested in examining whether prison populations can be reduced without endangering public safety. In 2011, the Governor of California signed into law Assembly Bill (AB) 109 with the goal to significantly reduce the state's prison population. By 2014, it appeared that the state prison populations had dropped from nearly 200% capacity to 139%. One of the major concerns of the legislation was whether the drastic drop in prison population would lead to an uptick in crime rates across the state. Furthermore, the researchers examined whether A.B. 109 had an impact on crime rates and how that compared to changes in crime rates in the remaining 49 states. Overall, the findings suggest

that drastically reducing the state prison population in California did not increase the risk of public safety.

Another advantage to the RPDD is that it is easy to create meaningful visuals that are simple to interpret. Figure 2 below is an example of a bivariate (i.e., two variable) pre-post distribution using a scatterplot. The X-axis represents the pre-results and the Y-axis represents the post-results. Similar to the notation above, the white Os represent the comparison units and red O denotes the treatment unit. The dark blue line in the figure signifies the regression line for the population. The red line from the regression line to the X (i.e., treatment unit) represents the displacement of the treatment unit from the population regression line. From this image, we can see that the treatment group deviates quite drastically from the regression line. Based on the approximate pre-result for the treatment group (i.e., a rate of 38), if there were no events creating change, we would expect the post-result value to be about 52 (the point where the red and blue line intersect). However, the figure indicates that the post-result value for the treatment group is closer to 28, indicating a sizeable decrease given this fictional example. In order to formally test the relationship, analysis of covariance (ANCOVA) is used to estimate the size and statistical significance of the treatment effect.

Figure 2: Visualization of the RPDD

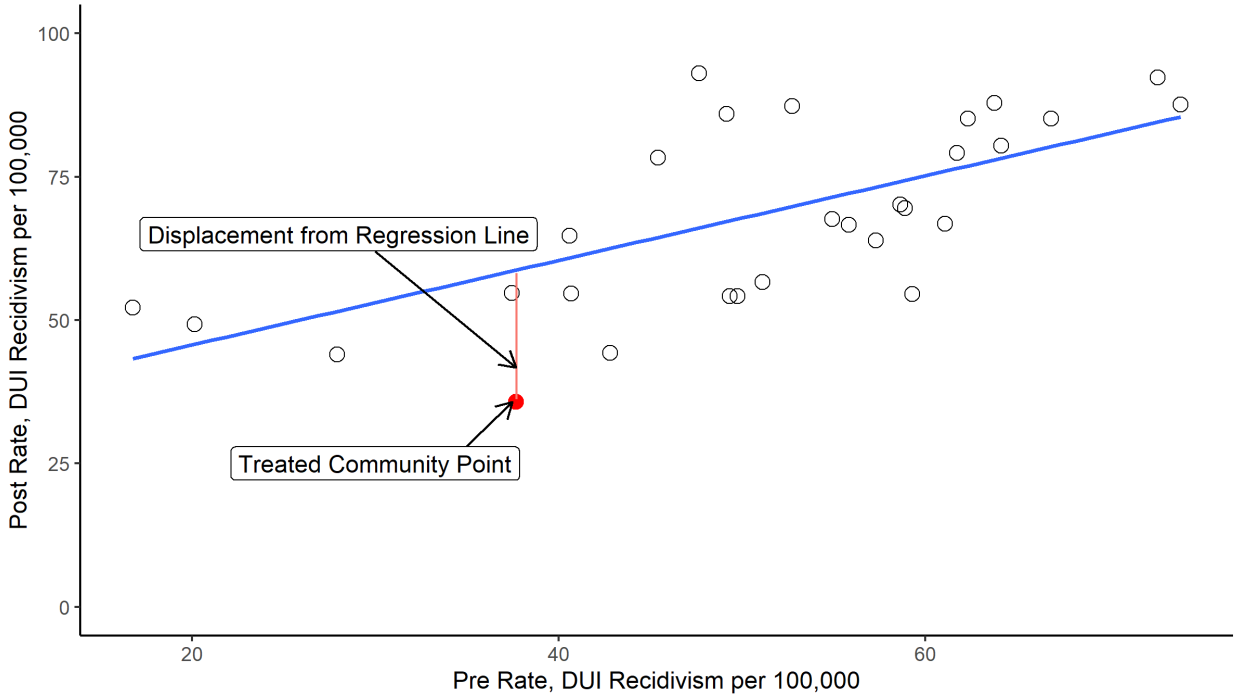


Image adapted from Trochim & Donnelly (2007) to reflect the DUI modeling process

In the current study we are interested in examining whether there is a significant difference in DUI recidivism for Weber County, UT (i.e., the treatment unit) when compared all other Utah Counties after the 24/7 program was fully implemented in 2018. In order to answer this research question, we use an RPDD. There are a couple of important considerations to address prior to using this methodology. First, there is a question as to whether the treatment group belongs to the population and whether the control group can yield an unbiased estimate of the true population regression line (Trochim & Campbell, 2012). Indeed, we would expect that these conditions are met given the inclusion of all Utah counties in the study. Another potential confounder is based

on the method used to assign the treatment (i.e., 24/7 program) to a particular unit (i.e., Weber County [Linden, Trochim, & Adams, 2006]). In the context of this study, there could be an interaction between the 24/7 program and recidivism. However, the decision to select Weber County as the pilot location was not the result of perceived or real changes in DUI recidivism in Weber County. Lastly, there is the threat of historical effects. That is, we do not know if there are factors specific to Weber County that affect DUI recidivism and occurred at the time of implementing the 24/7 program. This potential confounder cannot be ruled out with this research design nor in this study.

Data & Measures

For the purposes of this analysis, we utilize two of the data sources described above (i.e., DLD and DABC data). The main data source used for the RPDD analysis is the data obtained from DLD. DLD provided the research team with raw counts of third-time DUI offenses by county across each year from 2017 to 2020. They also provided the research team with the number of licensed drivers by county across each of the aforementioned years. Using this data, we generated an average rate of DUI recidivism cases by number of licensed drivers for all Utah Counties in the years preceding the implementation of the 24/7 program (i.e., 2017 and 2018) and an average rate of DUI recidivism cases in the years subsequent to the implementation of the 24/7 program (i.e., 2019 and 2020).[7] The rates were standardized by 100,000 (i.e., the rate of DUI recidivism per 100,000 licensed drivers).

DABC provided the research team with raw counts of alcohol licensees by county. We created a variable to capture the number of licensed bars and state-maintained liquor stores by county. These data were merged with the DLD data by county. We obtained DLD and DABC data for all 29 Utah Counties. We examined the functional form of the relationship between the pre-24/7 DUI recidivism rates and post-24/7 DUI recidivism rates to ensure that the model appropriately fit the data. We determined that the relationship between the pre- and post-rates was not linear (see discussion below). In the first model, we estimate the effect of the 24/7 program on the post-24/7 DUI-recidivism rate while accounting for the pre-24/7 DUI recidivism rate. In the final model, we estimate the treatment effect of the 24/7 program on third time DUI offenses while accounting for the pre-24/7 DUI recidivism rate and the number of licensed bars and state-controlled liquor stores. The findings are discussed below.

Findings

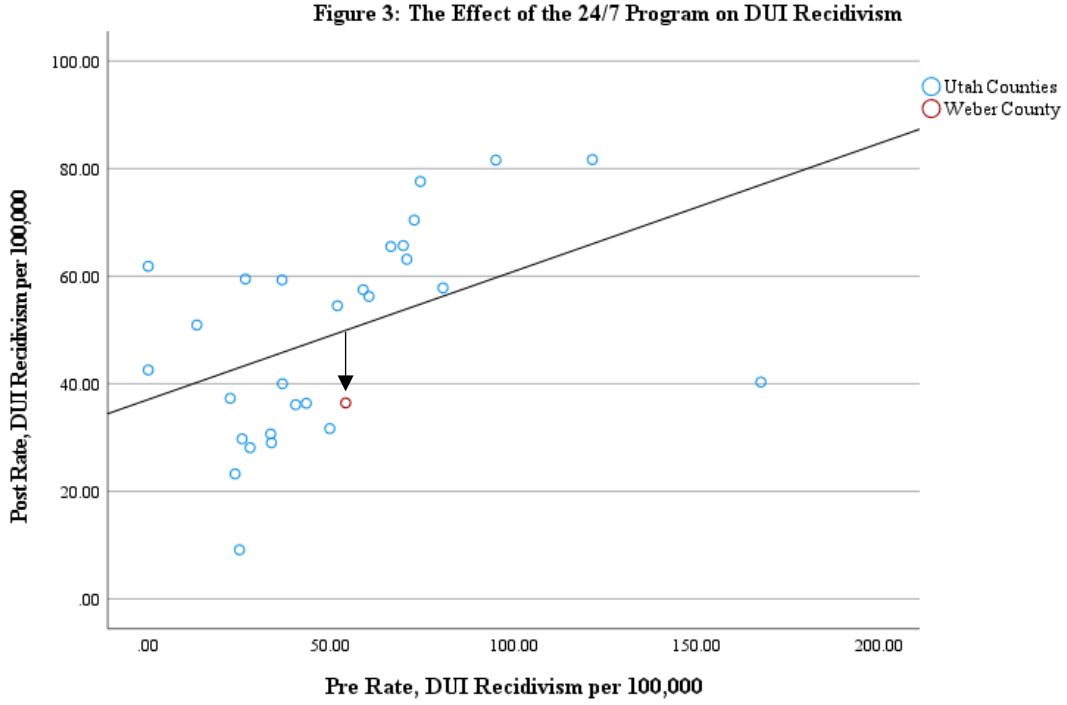
Across all four years (i.e., 2017-2020), the minimum number of DUIs reported by county was 0 and the maximum number of DUIs was 371. In each year, the overwhelming majority of counties (i.e., > 50%) reported 10 or less DUIs. In regard to licensed drivers by county, the minimum number of licensed drivers was 798 and the maximum number was 827,701. It is important to note that approximately 45% of counties had less than 15,000 licensed drivers in a given year. Rates are sensitive when cases have a small denominator – or in this case the number of licensed drivers. Small changes to the numerator for counties with a small population of licensed drivers can drastically impact the rates of DUIs by number of licensed drivers. For

[7] Although the 24/7 program started enrolling participants in July 2018, data were obtained for DUI recidivism in 6 month intervals between 2017 and 2020. The decision was made to start the post-24/7 implementation period on January 1, 2019 because very few participants were enrolled in the program between July 1, 2018 and December 31, 2018 and the program was not fully implemented until November 1, 2018.

example, we consider how small changes in the number of DUIs can impact the yearly rate of DUIs per 100,000 licensed drivers in Kane County. In 2017, 1 DUI was reported and there were 5,569 licensed drivers. This equates to a rate of 17.96 DUIs per 100,000 licensed drivers. In 2018, 2 DUIs were reported among a population of 5,677 licensed drivers. This results in a rate of 35.23 DUIs per 100,000 licensed drivers or approximately 1.96 times the rate in 2017.

When conducting an RPDD it is important to consider how well the model fits the data. We assessed for a linear relationship. An important component of the RPDD is the visual inspection of a scatterplot that displays the pre-24/7 rate by the post-24/7 rate by county (see Figure 3 below). If the model fits the data well, we would expect that the cases (represented by the Os) would be tightly clustered around the regression line. We see that there are several counties that are not close to the regression line (i.e., outliers). We examined the data to identify influential cases. Beaver County was identified as an influential case and we reestimated the models in a sensitivity analysis after filtering out influential cases. The findings indicate that the DUI recidivism rate in Weber County was not significantly different from the remaining Utah Counties (b=-16.36; t=-1.11; R^2 =0.48).

Figure 3: The Effect of the 24/7 Program on DUI Recidivism

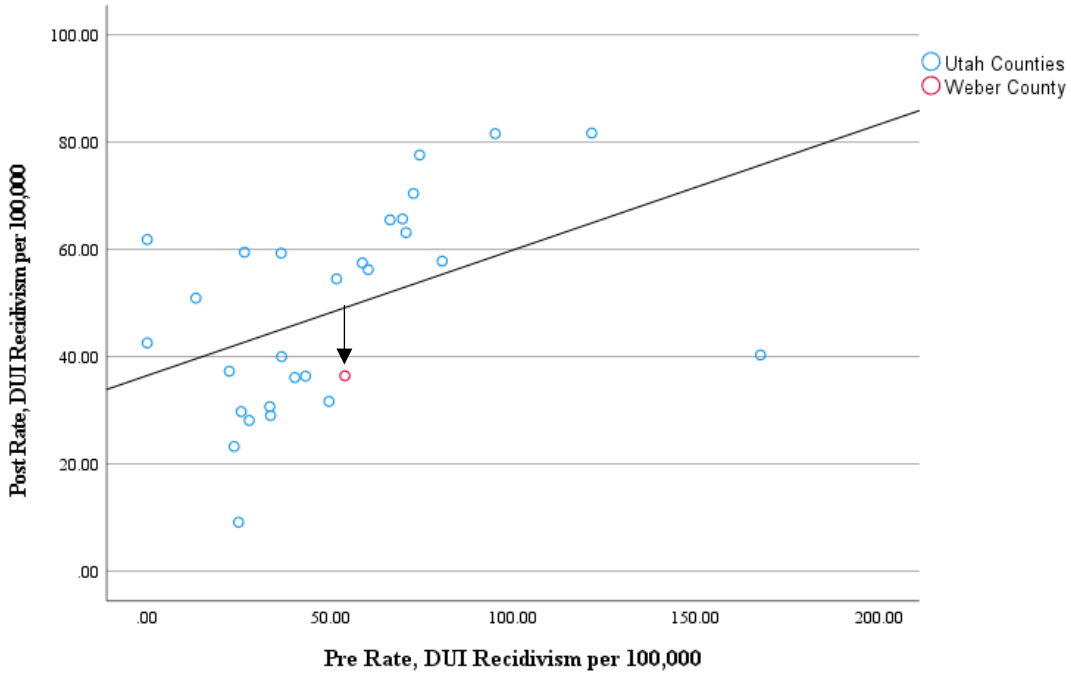


As one can see in Figure 3, most cases are clustered near the regression line. The R^2 value indicated that the pre-24/7 DUI recidivism rate and 24/7 implementation accounted for approximately 22% of the variation in the post-24/7 recidivism rate. As the pre-24/7 rate increases the post-24/7 rate increases. Weber County is represented by the red O in the figure. We can see that there is a negative displacement from the regression line (i.e., Weber County falls below it). Based on this visualization, it appears that the post-24/7 DUI recidivism rate is lower in Weber County based on the pre-24/7 rate. However, findings from the analysis reveal that the point displacement for Weber County is 13.48 less than the expected rate but not

statistically significant (i.e., b = -13.48; t = -0.78, p = 0.44). This suggests that the 24/7 Program did not have a significant effect on the post-24/7 DUI recidivism rate in Weber County.

In the full model, we include a covariate that captures the total number of licensed bars and state liquor stores by county (see Figure 4 below). The inclusion of this variable had a minimal impact on the regression line. Additionally, it minimally increased the R^2 value to 23.2% - likely due to small variation in number of licensed bars and state-liquor stores across counties with the exception of Weber, Summit, and Salt Lake Counties. Similar to the previous analysis, the point displacement for Weber County is not statistically significant (b=-12.42; t=-0.70, p = 0.48).

Figure 4: The Effect of the 24/7 Program on DUI Recidivism - Full Model



Survival Analysis

The survival analysis described below allows us to examine the time to an event occurrence (i.e., DUI recidivism) for the 24/7 treatment and control groups. Unlike the previous section, we utilize individual-level data obtained from BCI to determine whether there are significant differences in the time to DUI recidivism. It is important to consider limitations when interpreting the findings. Specifically, stakeholders may have used personal discretion to assign participants to a condition rather than utilizing the court's assigned condition in all cases. This likely contributed to the small number of participants that were sentenced to the 24/7 Program in comparison to the control condition during the study timeframe; it also likely explains the pre-existing differences in prior offending, as such pre-randomization differences would not be expected in a random process. This, though analyzed as an RCT in this section, that method is not entirely appropriate, and can be misleading, given the deviation from the random assignment

procedure. This section describes the methodology, the data, and the results from the analyses. Implications will be discussed in the subsequent section of the report.

Method

Survival analysis is also known as time-to-event analysis (see Allison, 2014). Originating in the biomedical sciences field, survival analysis was often used to observe time to death of patients or laboratory animals. Social sciences have also found value in conducting survival analysis to examine a variety of topics including marriage, employment changes, and substance use relapse. Survival analyses produce hazard ratios as a metric of an effect. Hazard rates, also referred to as failure rates, can be conceived as the relative risk of failing (recidivism) at any one instant during the study time period.

There are certain features of some datasets that create challenges for analyzing those using traditional statistical models like linear regression (e.g., censoring [Allison, 2014]). A censored observation can be defined as an observation with incomplete information. In the case of this study, we had to censor cases that had not been arrested for a subsequent DUI. Specifically, we right censored observations because the individuals did not have an event during the time that the subject was part of the study. Given the nature of the data and the research questions, the study does not span enough time in order to observe DUI recidivism for all subjects in our sample.

It may be helpful to consider an example of survival analysis in the criminal justice literature. Wallace and colleagues (2015) studied the relationship between a legitimacy-based approach to crime prevention and risk of subsequent incarceration. Specifically, the authors were interested in whether individuals will be more likely to comply with the law if the laws and its agents were seen as fair and just. The sample contained all individuals who were released from prison between 2001 and 2006 in Cook County, Illinois. They estimate time to reincarceration using a series of Cox proportional hazard models. The findings indicate that participation in the Project Safe Neighborhoods offender notification forums (i.e., a legitimacy-based program) was associated with significantly longer intervals that prior offenders remained out of prison.

Data & Measures

We used data obtained from BCI and AOC to examine the time to DUI recidivism for the treatment group and control group. We created several summary measures of prior criminal history in the two years prior to individuals' sentence date for their second DUI offense. Additionally, we created a time to event variable to capture the number of days between the sentence date for individuals' second DUI and a subsequent DUI arrest. For those who did not have a subsequent DUI, the variable captured the number of days between their second DUI sentence date and the study timeframe.

Findings

Prior to conducting the survival analysis, we explored the data using univariate analysis. We examine the Kaplan-Meier curves for the categorical predictor (i.e., treatment condition). The log-rank test for equality of survivor functions revealed a p-value of 0.18, which indicates that the two groups are equivalent to one another. For age, we estimate a Cox proportional hazard model because it allows for covariates while Kaplan-Meier does not. We also consider the Chi-squared test and the p-value for age is 0.69 indicating that age is not significantly related to time to rearrest for a DUI offense. We also estimate a Cox proportional hazard model for the potential

predictor that captures number of prior arrests. The analysis revealed a p-value of 0.23, which also indicates that number of prior arrests is not significantly related to time to rearrest for a DUI offense. Therefore, we do not include number of prior arrests as a predictor in the final model. We also estimate a Cox proportional hazard model for the count of prior drug and alcohol arrests. We include count of prior drug and alcohol arrests in the final model because it is marginally significant (p=0.10).

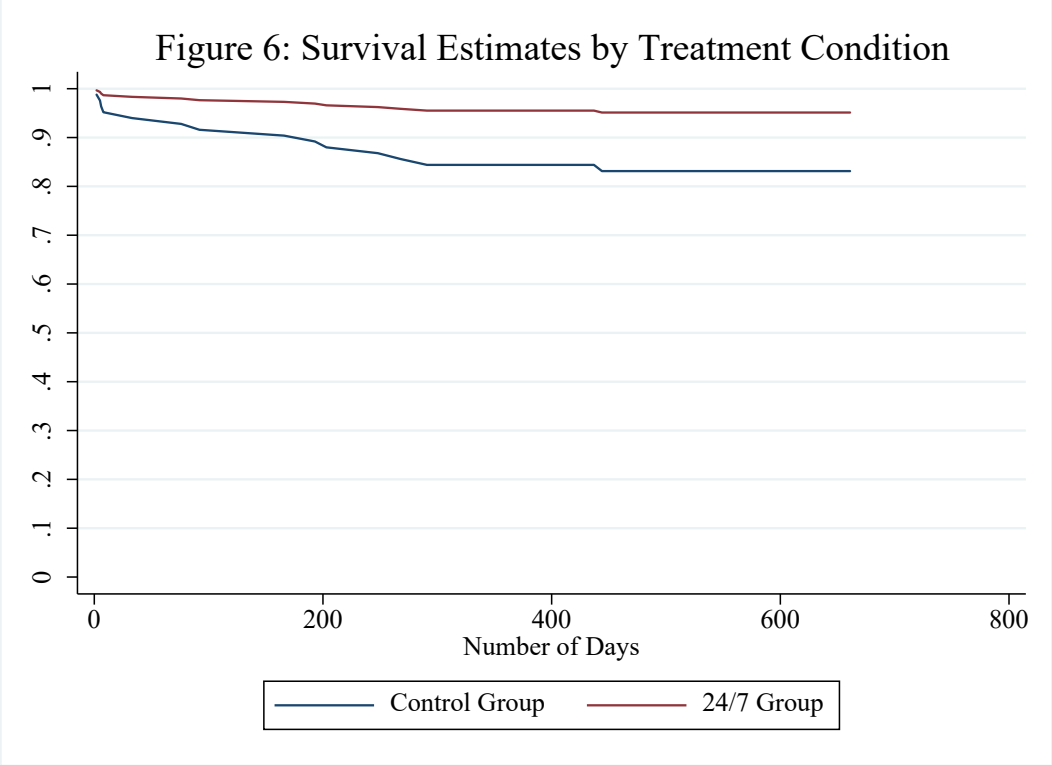


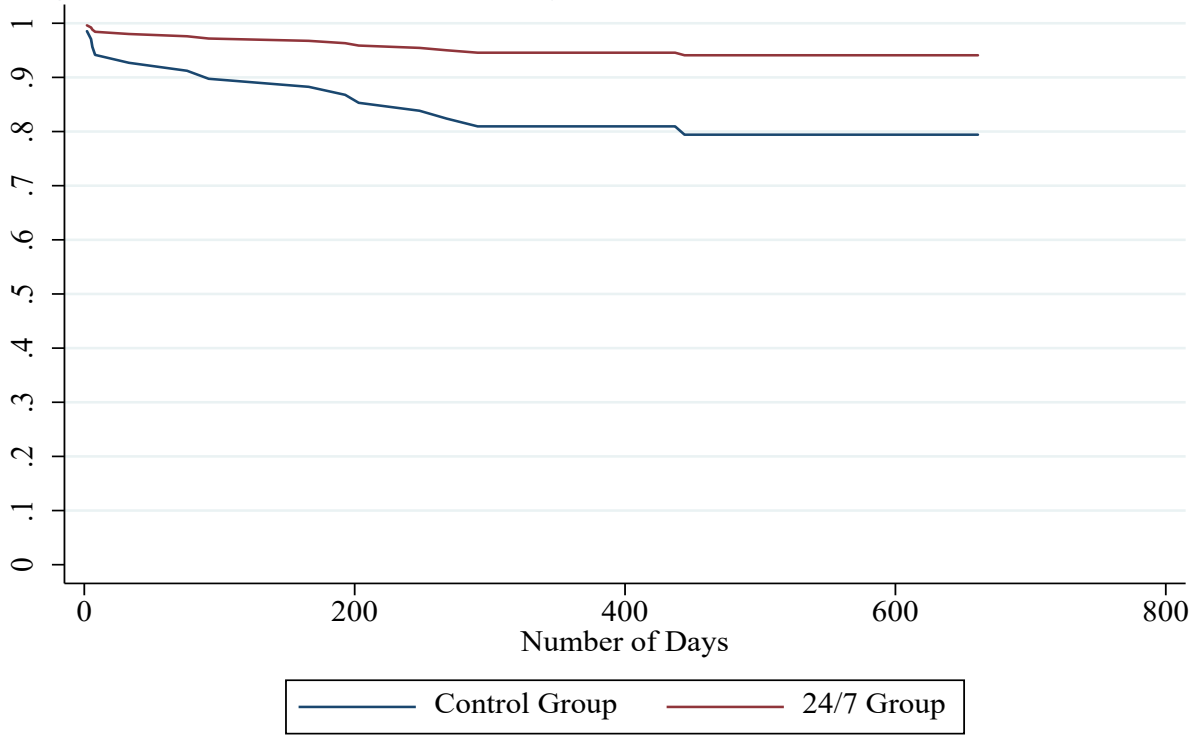
Figure 6 above displays the findings from the Cox proportional hazard model. In the figure, the blue line represents the survival curve for the control group and the red line represents the survival curve for the treatment group. The x-axis displays the number of days to rearrest for a third DUI offense. The y-axis displays the survival estimates. Note that only one person in the treatment group was arrested for a subsequent DUI (hence the flattening of the curve in Figure 6). We can see that the treatment group was rearrested for a DUI offense slightly more quickly than the control group but that their curve flattens out very quickly; whereas, the control group's curve continues to have more recidivism events over time. The findings from the Cox proportional hazard model indicate that there was not a statistically significant difference between the survival curve for the treatment group and the survival curve for the control group (Hazard Ratio=0.27; p=0.21).[8] The hazard ratio is an estimate of the ratio of the failure rate in

[8] Note the p-value differs from the log-rank test findings reported above because they are different models. The Kaplan-Meier estimates a survival curve and the log rank test provides a statistical comparison of two groups. The Cox proportional hazard method allows for both continuous and binary predictors. The Kaplan-Meier method is a non-parametric procedure; whereas, the Cox proportional hazard method is a semi-parametric procedure.

the treatment versus control group at any moment in time. The findings suggest that participation in the 24/7 program is associated with a point estimate reduction in the risk of DUI recidivism of 73% (or 1-0.27; CI [0.04, 2.07]); however, the finding was not statistically significant (p=0.21) and the fact that the confidence interval contains the value of 0 suggests a non-trivial possibility of no program effect. Therefore, we accept that the two groups are equivalent in terms of the relative risk of DUI recidivism.

In the final, full model neither the count of prior drug and alcohol offenses nor the 24/7 program were statistically significant; although we can visually see some differences in time to recidivism between the two groups (see Figure 7). Specifically, the differences in survival estimates do not continue to increase after about 425 days. The findings indicate that the differences between the two groups are not likely explained by participating in the 24/7 program (Hazard Ratio=0.26; p=0.20; CI [0.03, 2.02]) nor number of prior arrests for drug and alcohol-related offenses (Hazard Ratio=0.58; p=0.12; CI [0.29, 1.15]). One primary concern with interpreting these findings is that many cases were censored early; that is, they had little post-randomization time to reoffend given restrictions on the timeframe of the study. Having a larger sample size and more follow-up time would be helpful to judging an effect. However, this assumes that the two groups were similar before randomization and since an RCT was not implemented, and because differences were observed on criminal histories prior to randomization, this assumption is likely inaccurate.

Figure 7: Survival Estimates by Treatment Condition - Full Model



Discussion

Summary of Qualitative Analysis

In general, respondents, who were primarily second-time DUI offenders, felt that the 24/7 Program helped them to avoid driving while under the influence and more generally, consuming alcohol. This was largely due to the structure of the program, the incentive of retaining a driver's license, and support received from staff and other participants. The majority of respondents held favorable views of the 24/7 Program. These factors also highlight participants' perceived fairness and legitimacy of the 24/7 Program and its staff, which has implications for achieving law-abiding behavior and cooperation through procedural justice (see Bottoms & Tankebe, 2012).

Participants described program-related improvements in employment and family relationships, both of which are criminogenic needs. While some participants described reductions in substance use and criminal thinking, others did not. It may be useful to incorporate or amplify treatment interventions to target those criminogenic needs (see Bonta & Andrews, 2017). Considering the Risk, Needs, and Responsivity framework, it is also important to attend to risk. Participants have indicated that they are mixing/hanging around with one another. Separation or staggering testing windows can attend the risk principle and may improve perceptions of fairness since it would not be as easy to see other participants' testing results. Additionally, some respondents indicated that the 24/7 Program interfered with prosocial aspects of their lives (e.g., family, work, well-being). These are important considerations as both prosocial supports and prosocial activities have been shown to be associated with reductions in recidivism (see e.g., Cochran, 2014; MacKenzie & Brame, 2001)

The most common critique of the 24/7 Program was its cost in terms of time and finances. Respondents offered a range of suggestions to mitigate these problems, including expanding the availability of testing times and sites, increasing the number of program staff, and compliance-based reductions in testing requirements. This latter suggestion, in particular, may increase program efficacy due to research demonstrating reductions in recidivism for programs that employ a graduated rewards and sanctions structure. With respect to time, it is also important to ensure that 24/7 Program participation does not result in the loss or interfere with other court-ordered substance abuse treatment.

Additionally, participants identified issues with program implementation, which could impact the outcome analysis. Some of the comments suggested that various aspects of the program were not standardized. For example, several participants mentioned that there were inconsistencies in the application of sanctions by program personnel. One participant indicated that he/she was aware of individuals who failed the program and did not receive the mandatory 10 year license revocation.

Finally, many participants spoke highly of their relationship with program staff. There were, however, some concerns with coordination and communication, both with participants and between stakeholders. Ongoing training may improve this and thereby, increase participants' perception that the program is fair and they are treated respectfully. Enhanced training for staff,

as well as participants, has the potential to enhance perceptions of legitimacy by reducing perceptions (or actuality) of disparate treatment.

Summary of Quantitative Findings

The analytic sample consisted of 21 individuals in the treatment group and 77 in the control group. The sample imbalance demonstrates the challenges of implementing a randomized-controlled trial in criminal justice settings. As previously discussed in the Phase I Report, it is likely that the randomization process deviated from the methodology at some point during the study timeframe. Although we cannot speak to the actual cause of this discrepancy in sample size, it is possible that eligible second-time DUI offenders declined to participate in the program during the sentencing hearing, program partners deviated from the randomization process, or second-time DUI offenders who would otherwise be eligible for the program could not participate due to holds on their license or they had outstanding fees due to DLD. Given these issues, we analyzed county-level data using a RPDD in addition to the individual-level data using descriptive and time-to-event analyses.

The findings from the RPDD analysis suggest that post-24/7 DUI recidivism was lower than predicted by the fitted regression line in Weber County; however, the displacement was not statistically significant. 24/7 Program implementation in Weber County did not produce a significant change relative to rates in other counties, where, in some cases, rates dropped as well. One of the potential limitations to this analysis is that DUI recidivism is a relatively rare event – especially for a third DUI offense. Furthermore, a number of counties in Utah have a relatively small number of licensed drivers. Taken together, these issues can greatly impact the DUI rates and subsequent analysis. When considering the theoretical underpinnings of the 24/7 Program, it is expected that participation in the 24/7 Program would result in a specific deterrent effect. That is, only individuals who participate in the program would be expected to be less likely to recidivate for a DUI. Given the small sample size of 24/7 participants, it would be difficult to detect a county-wide reduction in DUI recidivism since the inception of the 24/7 program. This increases the difficulty in identifying a treatment effect using aggregate data.

The individual-level, descriptive analyses of recidivism revealed statistically significant differences between the treatment group and control group. The control group had a higher likelihood of being rearrested after their second DUI charge. Additionally, the descriptive analyses of criminal history indicated that individuals in the control group had more extensive histories than the treatment group. The survival analysis revealed that both groups had similar hazard estimates for DUI recidivism initially after their sentence date. However, after a few days the hazard curves were differentiated with the treatment group having higher survival rates. The hazard curves continued to differentiate from one another until about 450 days after their sentence date. While these findings indicate that there are differences in hazard rates between the two groups, 24/7 participation was not significantly related to differences in the hazard rates.

One of the potential limitations to the quantitative analysis is that the groups were small and that DUI reoffending was a rare event. Small sample sizes decrease statistical power, making it difficult to detect an effect. Only 1 individual from the treatment group was arrested for a subsequent DUI compared to 13 individuals in the control group. Therefore, the change in the survival curve for the treatment group was based on one individual's experience. It is also worth noting that many DUI offenders drive under the influence a number of times before their actions

are detected by law enforcement (Centers for Disease Control, 2015). This, again, has implications for using official record data to examine recidivism. Also, the findings from this analysis will also remain a bit ambiguous given the non-equivalent groups. Lastly, the data do not contain all important variables that could be related to recidivism and time to recidivism (e.g., sociodemographic characteristics, risk/needs assessment results, blood alcohol content). It may be helpful to continue to evaluate DUI recidivism for individuals in these groups to increase the time they are in the community.

Next Steps

The final report will examine recidivism data two years post-sentence date for the analytic sample. Specifically, we will have additional post-24/7 yearly data as well as another year of recidivism data. We will re-estimate the survival models using an additional year's worth of recidivism data. Given the issues with sample size and potential issues with the randomization process, we will employ the same quantitative methodologies described in this report. That is, we will re-estimate the RPDD models up to the point where the 24/7 Program goes statewide. Since the program is still only operated in Weber County for now, future analyses might benefit from greater participation in Weber County now that the RCT process is over.

UCJC is also administering web-based, self-report surveys to the 24/7 participants that engaged in the program during the study timeframe (n=26). The surveys are designed to allow respondents to self-report their use of alcohol and DUI as well as comment on how the 24/7 Program has affected their lives. Aggregate survey results will be compared to aggregate official record data on DUI offenses obtained from BCI, which are often very different from one-another.

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