Michigan's Hybrid Courts Recidivism Analysis

Summary of Findings and Recommendations

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Executive Summary

This report summarizes evaluation findings for the Michigan Hybrid Courts. The Michigan Community Corrections Act was enacted in 1988 to investigate and develop alternatives to incarceration. Four years later, in June 1992, the first female drug treatment court in the nation was established in Kalamazoo, Michigan. Since then, Michigan has implemented 84 problem-solving courts for adults, juveniles, family dependency, and DUI offenders (Michigan Courts: One Court of Justice, 2016).

In 2016, the State Court Administrative Office of Michigan contracted with the National Center for State Courts (NCSC) to complete an impact evaluation of the adult drug courts operating in Michigan and to answer key impact questions related to the hybrid courts operating in Michigan. To be included in the study, a hybrid court had to be operational between FY12 and FY16, have at least ten program completers, and contribute data to Michigan's Drug Court Case Management Information System (DCCMIS), which resulted in a 53-court study sample. Participant-level data were collected for the cohort actively participating in one of the 53 hybrid courts being studied between FY12 and FY16. Analyses focused on describing the hybrid court participant sample, assessing program completion rates, and both two-year and four-year recidivism rates for hybrid court participants compared to a matched business-as-usual (BAU) comparison group.

Several interesting findings emerged that are consistent with prevailing hybrid court trends. Key findings are summarized below:

- Demographics and Placement
    - The typical Michigan hybrid court participant was a single white male, aged 21 to 40 years old at entry, with a high school diploma or some college education.
    - Most participants were either unemployed or employed full-time at program entry and most were employed at program exit.
    - The majority of hybrid court participants were placed into the program on a new, misdemeanor DUI or alcohol offense. Most hybrid court participants had at least one prior conviction (most of which were misdemeanors) and the most common drug of choice among hybrid court participants was alcohol.
- Treatment and Diagnosis
    - The average number of days from arrest to treatment entry was approximately 4.5 months, and participants spent a little over two weeks on average between program entry and treatment.
    - Nearly all hybrid court participants had a substance use diagnosis at entry and over half had previously received substance abuse treatment.
    - More than one-quarter of hybrid court participants had a co-occurring diagnosis at entry and approximately 20 percent had a history of mental illness.
    - The majority of participants received outpatient treatment and many received residential treatment, although the treatment sometimes exceeded the participant's ASAM criteria level. Most participants received at least one incentive and/or one sanction during their time in the program and approximately 40 percent of participants received jail as a sanction.

- Completion Status and Length of Stay (LOS)
    - The majority of hybrid court participants successfully graduated from the program with over one-third unsuccessfully exiting. The majority of terminated participants were terminated for non-compliance with smaller proportions terminated for absconding or a new offense. The average length of stay for hybrid court participants was 1 year and 1 month, with graduates spending more time in the program than non-graduates.
- Drug and Alcohol Testing
    - Almost three-quarters of all hybrid court participants tested positive at least once for drugs or alcohol during their time in the program. Significantly fewer graduates tested positive during their time in the program compared to non-graduates, and graduates had a significantly longer period of time from entry until their first positive test. Graduates who tested positive at least once also had significantly fewer positive tests overall, compared to non-graduates who tested positive at least once.
- Recidivism
    - Regarding recidivism, significantly fewer graduates were reconvicted within one, two, three, and four years of program entry compared to non-graduates for both all conviction types and drug and alcohol convictions, specifically. When comparing hybrid court participants to the BAU comparisons, significantly fewer hybrid court participants were reconvicted of any offense including a drug or alcohol-specific offense within one, two, three or four years of entry.

The NCSC evaluation team conducted hierarchical binary logistic regressions to examine which program-level and participant-level variables predict successful program completion, two-year recidivism, and four-year recidivism.

- Completion Status: Two program variables predicted successful program completion: program maturity and average time from arrest to treatment – less than 90 days. Eleven individual-level variables predicted successful program completion: race, age (51 to 60 and 60+), drug of choice (alcohol), marital status, proxy risk level, mental health history, length of stay, drug testing at least twice weekly throughout program, and receiving residential treatment (either solely or with outpatient treatment).
- Two-Year Recidivism: Two program-level variables significantly predicted two-year recidivism: requiring weekly court attendance in Phase 1 and programs in which law enforcement attends court. Nine individual-level variables significantly predicted two-year recidivism: race, age, drug of choice, treatment hours (100 to 200 hours and over 200 hours), completion status, receiving residential treatment (solely or with outpatient treatment), and treatment in excess of ASAM criteria.
- Four-Year Recidivism: Four individual-level variables significantly predicted four-year recidivism: placement charge severity, high proxy risk level, receiving greater than 200 hours of treatment, and completion status. No program-level variables significantly predicted four-year recidivism.

Based on the findings, the NCSC evaluation team makes the following recommendations:

Recommendation 1: Adjust the current matching process to include proxy risk variables.

- In order to adjust the current matching process to account for participant and comparison risk, other information could be gathered in the Judicial Data Warehouse, including factors for age at placement, age at first arrest (including juvenile arrests, if possible), and number of prior arrests (including juvenile arrests, if possible).
- Short of including a statewide risk-needs assessment discussed below, including age at placement, age at first arrest, and number of prior arrests in the matching process is the next best option to better ensure the participant-comparison pairs match in risk.

Recommendation 2: Adopt a statewide risk-needs Instrument.

- In order for the court programs to best serve the high-risk/high-need population and reduce recidivism, NCSC recommends the adoption of a validated, statewide risk-needs assessment for both hybrid court participants and probationers in general.
- Not only would the use of a validated risk assessment instrument allow for better matching between hybrid court participants and their comparisons, it would also allow staff to better create case management, treatment, and supervision plans, taking into account participants' individual needs and risk levels.

Recommendation 3: Assess the use and effectiveness of residential treatment.

- The NCSC evaluation team recommends an examination of who is receiving residential treatment; to what extent drug court participants receive treatment above and below their ASAM criteria need; to what extent participants who receive residential treatment successfully complete; and to what extent residential treatment providers are effectively utilizing evidence-based practices.

Introduction and Background

The first drug court in the United States began operating over twenty years ago in response to increasing numbers of drug-related court cases entering and cycling through the criminal justice system. As of December 31, 2014, there were an estimated 3,057 problem-solving courts nationwide, serving approximately 127,000 people per year (Marlowe, Hardin, & Fox, 2016). Nationally, 1,540 problem-solving courts were adult drug courts, 407 were hybrid adult and DUI courts and 262 were DUI courts. Drug Courts have proliferated at a remarkable rate nationally, growing in aggregate number by 24 percent in the past five years (Marlowe, Hardin & Fox, 2016).

In November 2016, the State Court Administrative Office (SCAO) chose to align Michigan's problem-solving courts with the federal definition of problem-solving courts found in *Painting the Current Picture: A National Report on Drug Courts and Other Problem-Solving Courts in the United States* (Marlowe et al., 2016). The model definitions include adult drug courts, which accept only non-impaired driving offenders, sobriety courts, which accept only impaired driving offenders, and hybrid courts, which accept both non-impaired driving and impaired driving offenders.

A hybrid court is similar to a drug court and is a specialized docket within the court system designed to treat non-violent, drug-addicted defendants. Michigan hybrid courts accept both defendants with or without an impaired driving offense. A hybrid court judge serves as the leader of an inter-disciplinary team of professionals. The collaboration between the court and treatment provider is the center of the hybrid court program but numerous other professionals, such as probation and law enforcement officers, play a vital role in making these programs successful. Hybrid courts have demonstrated the ability to reduce recidivism and substance abuse among high-risk substance abusing offenders and increase their likelihood of successful rehabilitation through:

- early, continuous, and intense treatment,
- close judicial supervision and involvement (including judicial interaction with participants and frequent status hearings),
- mandatory and random drug testing,
- community supervision,
- appropriate incentives and sanctions, and
- recovery support aftercare services.

The specific design and structure of hybrid courts is typically developed at the local level, to reflect the unique strengths, circumstances, and capacities of each community.

Michigan's Hybrid Courts

Much like the growth of drug courts nationally, Michigan's problem-solving courts developed locally in response to local needs. Michigan Compiled Laws 600.1060(c) defines drug treatment courts as ". . . a court supervised treatment program for individuals who abuse or are dependent upon any controlled substance or alcohol." These courts are specially designed to reduce recidivism and substance abuse among nonviolent substance-abusing offenders and to increase the offenders' likelihood of successful

habilitation through early, continuous, and intense judicially-supervised treatment, mandatory periodic drug testing, and use of appropriate sanctions.

Since the enactment of the Michigan Community Corrections Act in 1988, Michigan has implemented 84 problem-solving courts for adults, juveniles, family dependency, and DUI offenders. The five specific goals outlined in legislation for Michigan's drug treatment courts include: (1) reducing drug addiction and drug dependency among offenders; (2) reducing recidivism; (3) reducing drug-related court workloads; (4) increasing personal, familial, and societal accountability among offenders; and (5) promoting effective planning and use of resources among criminal justice system and community agencies. As of 2016, Michigan's hybrid treatment courts operate in 48 counties; however, the five tribal drug courts have special jurisdictions (Michigan's Problem Solving Courts Report, 2016).

Project Approach

In 2016, the Michigan State Court Administrative Office contracted with the National Center for State Courts (NCSC) to complete an impact evaluation of the hybrid courts operating in Michigan. The primary purpose of the impact evaluation was to answer key impact questions related to the hybrid courts operating in Michigan. Specifically, the evaluation sought to answer the following questions:

- Who was served by Michigan's hybrid courts during the study period?
- What was the operational structure of the Michigan hybrid courts during the study period?
- What combination and types of services were delivered in Michigan's hybrid courts during the study period?
- Do hybrid court participants reduce their substance use and make other positive changes while enrolled in Michigan's hybrid courts?
- How do Michigan hybrid courts differ from one another as it relates to program practices and populations served?
- How do participants exit Michigan's hybrid courts and what participant and program characteristics are associated with successful completion/graduation?
- How does the recidivism rate of Michigan's hybrid courts compare to the recidivism rates of a matched probation sample?
- What participant and program characteristics are associated with lower recidivism rates?

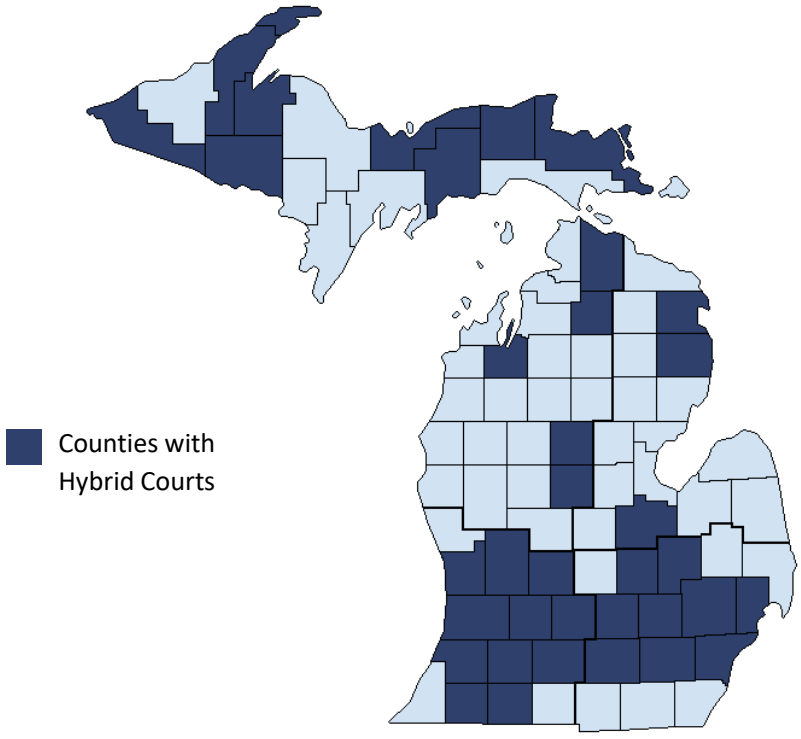
Courts Included in the Study

To be included in the study, a hybrid court had to be operational between FY12 and FY16, have at least ten program completers, and contribute data to Michigan's Drug Court Case Management Information System (DCCMIS). The 53 hybrid court sites meeting these criteria and included in this study were:

- 10th Circuit, Saginaw
- 10th District, Battle Creek
- 11th Circuit, Alger/Schoolcraft
- 14B District Court, Washtenaw
- 15th District, Ann Arbor
- 16th District, Livonia
- 20th Circuit, Ottawa
- 21st Circuit, Isabella
- 23rd Circuit, Alcona
- 23rd District, Taylor
- 33rd District, Woodhaven
- 35th Circuit, Shiawassee

- 36th Circuit, Van Buren
- 36th District, Detroit
- 37th Circuit, Calhoun (Men's and Women's)
- 37th District, Warren
- 3rd Circuit, Wayne
- 41B District, Clinton Twp.
- 41st Circuit, Iron
- 44th Circuit, Livingston
- 44th District, Royal Oak
- 45th Circuit, St. Joseph
- 48th Circuit, Allegan
- 4th Circuit, Jackson
- 4th District, Cass
- 50th Circuit, Chippewa
- 51st District, Waterford
- 52nd-3 District, Rochester Hills
- 52nd-4 District, Troy
- 53rd Circuit, Cheboygan
- 54B District, East Lansing
- 55th District, Ingham
- 56B District, Barry
- 56th Circuit, Eaton
- 58th District, Ottawa
- 5th Circuit, Barry
- 61st District, Grand Rapids
- 67th District, Genesee
- 6th Circuit, Oakland
- 7th Circuit, Genesee
- 80th District, Clare/Gladwin
- 86th District, Grand Traverse
- 87th District, Otsego
- 88th District, Alpena/Montmorency
- 89th District, Cheboygan
- 8th Circuit, Ionia
- 8th District, Kalamazoo
- 92nd District, Mackinac/Luce
- 93rd District, Alger and Schoolcraft
- 95B District, Iron
- RDWI, 97th District
- UDCI - 6th Circuit, Oakland
- UDCI - 7th Circuit, Genesee

Figure 1: Michigan Hybrid Courts Included in the Current Study



Sources of Data

For this report, a variety of data collection techniques were employed to maximize the depth of the evaluation process. Participant-level data were collected for the cohort actively participating in one of the 53 hybrid courts being studied between FY12 and FY16.

Supreme Court of Michigan Drug Court Case Management Information System (DCCMIS) and Judicial Data Warehouse

The Michigan Supreme Court State Court Administrative Office (SCAO) administers a web-based case management system known as the Drug Court Case Management Information System (DCCMIS). Administrative data, including demographics, service delivery data (e.g., treatment services, drug tests, sanctions and incentives), and program completion rates were gathered from DCCMIS for the analysis of participant outcomes and to help assess program practices. The data contained in DCCMIS were extracted by the SCAO and used to identify a comparison group in the Judicial Data Warehouse. NCSC received a complete data extraction of all participants who entered a Michigan hybrid court between FY12 and FY16 as well as their matched comparison person. Courts that do not submit data to the Judicial Data Warehouse were excluded from the study since a comparison group could not be pulled for this group.

FY14 Grant Applications

NCSC reviewed programmatic information submitted in the FY14 grant applications from funded courts in Michigan to identify program practices to be used in the evaluation model. The FY14 grant applications were used to align practices with the study period.

NCSC Hybrid Court Coordinator Survey

The National Center for State Courts created an online survey for hybrid court coordinators to complete. The survey was designed to collect basic information about program characteristics such as capacity, target population, structure, services and basic operation. The survey was distributed in the fall of 2016 and 100 percent of the project sites completed the survey.

Statistical Significance

Throughout this report, the term “statistically significant” is used. In any analysis, there is a possibility that a result is simply due to random chance or error, even if it looks convincing. A statistically significant result tells us there is strong evidence that a relationship is not due simply to random chance. We can more confidently say a result is true when it is statistically significant. The smaller the p-value, the more confident we are that the result is reliable. The conventional, accepted p-value of a statistically significant result is .05 although p-values between .10 and .051 are described in the report as approaching significance. *Table 1* provides an explanation for the p-values found throughout this report.

Table 1: Explanation of Statistical Significance

p-value	Possibility Finding is a Result of Chance/Error	Possibility Finding is the Result of Factors Studied
.05	5%	95%
.01	1%	99%
.001	0.1%	99.9%

Participant Characteristics

Drug and DUI courts have been shown to reduce recidivism when compared to traditional criminal justice interventions (e.g., Aos, Phipps, Barnoski, & Lieb, 2001; Carey, Mackin, & Finigan, 2012; Carey & Waller, 2011; Government Accountability Office, 2005; Lowenkamp, Holsinger, & Latessa, 2005; Mitchell, Wilson, Eggers, & MacKenzie, 2012; Shaffer, 2011). Adhering to evidence-based practices that have been shown to be associated with improved outcomes for participants can enhance the effectiveness of drug courts in reducing recidivism. When conducting evaluations of individual drug courts, it is important to collect data that reflects differences between participants that could plausibly be related to differences in outcomes. These include both individual characteristics (e.g., their criminal history, drug of choice) and factors related to the programming they received (e.g., length of program, number of sanctions received). At the level of individual courts, there is no variation in the program characteristics at any given point in time, only variations at the participant level regarding individual characteristics and the programming (both type of programming and dosage) that the individual received. In the next two sections, we first review the literature to recognize participant characteristics that have also been identified as being related to outcomes, and then we review program-related variables related to participant outcomes that can be expected to vary between courts.

In the following section, we examine characteristics of Michigan hybrid court participants, including demographics (gender, race, age), marital status, education and employment at entry, placement offense information, and treatment history. The data use the full sample of hybrid court participants as opposed to the matched sample. Consequently, these data provide the most valid and comprehensive picture of hybrid court participants.

Demographics. Michigan hybrid court participants were 69.1 percent male and 30.9 percent female. *Table 2* shows that 79 percent of participants were Caucasian and 14.9 percent were African American. Fewer participants were multi-racial, Hispanic or Latino, or belonged to racial groups labeled “other”. The majority of hybrid court participants were between the ages of 21 and 40. The largest proportion of hybrid court participants at entry were 21 to 30 years old (41.3 percent), followed by 31- to 40-year-olds (23.9 percent) and 41- to 50-year-olds (17.0 percent). Participant demographics have been shown to be highly related to recidivism, in particular age and gender (e.g., Lanagan & Levin, 2002), as well as race (e.g., Gendreau, Little, & Goggin, 1996). It should be noted that the effect of race is greatly diminished or disappears for some drug court outcomes when factors related to race (e.g., previous criminal history, unemployment, and education) are controlled (e.g., Dannerbeck, Harris, Sundet, & Lloyd, 2006), suggesting that race is a proxy for these variables.

Table 2: Demographics of Hybrid Court Participants

Demographics	Number of Participants	% of Participants
Gender		
Male	4,672	69.1%
Female	2,089	30.9%
Age		
<21	459	6.8%
21-30	2,792	41.3%

Demographics	Number of Participants	% of Participants
31-40	1,619	23.9%
41-50	1,146	17.0%
51-60	616	9.1%
>60	128	1.9%
Race		
Caucasian	5,341	79.0%
African American	1,005	14.9%
Multi-racial	76	1.1%
Hispanic/Latino	212	3.1%
Other*	127	1.9%

*Other includes Asian American/Pacific Islander, Native American, and Other.

Marital Status. *Table 3* shows Michigan hybrid court participants by marital status at program entry. The majority of participants were single (67.5 percent). Married and divorced participants comprised the next largest categories, with 13.2 percent and 15.2 percent of the total, respectively. Over 4 percent of hybrid court participants were separated or widowed at entry.

Table 3: Marital Status of Hybrid Court Participants

	Number of Participants	% of Participants
Single	4,562	67.5%
Divorced	1,027	15.2%
Married	891	13.2%
Separated	218	3.2%
Widowed	62	0.9%

Education. *Table 4* illustrates the participants' highest educational level achieved at the time of program entry. High school graduates represented the highest number of participants (28.7 percent), and 24.6 percent of hybrid court participants attended some college. Almost 19 percent of participants did not graduate high school and 10.3 percent received a GED. The remaining participants had a variety of educational experiences including, some completing a two-year college program (4.1 percent), some completing a four-year college program (7.2 percent), and some having attended trade school (4.4 percent) or post-graduate school (1.7 percent).

Table 4: Educational Attainment of Participants at Entry

	Number of Participants	% of Participants
11th grade or less	1,279	18.9%
GED	699	10.3%
High school graduate	1,937	28.7%
Trade school	295	4.4%
Some college	1,665	24.6%
College graduate 2-year program	275	4.1%
College graduate 4-year program	489	7.2%
Some post graduate/advanced degree	114	1.7%

Employment Status at Entry/Prior or Current Military Status. *Table 5* illustrates the employment status of Michigan's hybrid court participants at the time of program entry. A significant number of participants were employed full-time (40.7 percent) or part-time (14.1 percent) at the time of

entry. Fewer than half were unemployed at entry (37.7 percent). Over seven percent of hybrid court participants were not in the labor force, disabled, or retired at entry**.**

Table 5: Employment and Military Status at Hybrid Court Entry

	Number of Participants	% of Participants
Employment Status at Entry		
Unemployed	2,546	37.7%
Employed part-time	950	14.1%
Employed full-time	2,755	40.7%
Not in labor force	424	6.3%
Disabled	48	0.7%
Retired	28	0.4%
Prior or Current Military Service		
Yes	308	4.6%
No	2,154	31.9%
Unknown	4,299	63.6%

Placement Offense. Michigan's hybrid courts accept a variety of placement offenses. *Table 6* shows the most common placement offense was a DUI/Alcohol offense (62.0 percent). Drug offenses were the second most common type of placement offense accepted into Michigan's hybrid courts (22.1 percent). Examples of what is included in each category of offense can be found in *Appendix A.*

Table 6: Placement Offense Type in Michigan's Hybrid Courts

	Number of Participants	% of Participants
DUI/Alcohol Offense	4,189	62.0%
Drug Offense	1,493	22.1%
Property Offense	571	8.4%
Other/Unknown Offense*	433	6.4%
Traffic Offense	48	0.7%
Domestic Violence Offense	27	0.4%

*Other includes non-violent sex offenses.

Placement Offense Severity. The majority of Michigan hybrid court participants entered the program on a misdemeanor-level offense (61.5 percent) as a result of a new criminal offense (91.3 percent) (see *Table 7*). The type of offense appears to be related to recidivism, with property and drug offenses associated with greater risk (Lanagan & Levin, 2002). Evidence for the severity and type of entry offenses that are related to improved outcomes in drug courts is mixed. Carey et al. (2012) found that drug courts that accepted nondrug charges had 95 percent greater reductions in recidivism than drug courts that limited their entry offenses to drug charges. Conversely, Cissner et al. (2013) determined drug courts that served more participants with drug-related offenses as opposed to property or other charges were more likely to see reductions in recidivism.

For severity, Carey et al. (2012) found the inclusion of violent offenders did not affect recidivism rates positively or negatively, meaning courts that accept violent offenders do as well as those that do not. However, other studies have found that the inclusion of violent offenders in drug court programs is associated with increases in recidivism (Mitchell et al., 2012; Shaffer, 2011). One explanation for these disparate findings is the possibility that the key factor in entry offense type and severity is not the

offense in and of itself, but how the court responds to offenders with different entry offenses, as related to the risks and needs described above.

Table 7: Placement Offense Severity and Legal Status

	Number of Participants	% of Participants
Placement Offense Level		
Felony	2,549	37.7%
Misdemeanor	4,159	61.5%
Other	51	0.8%
Legal Status at Placement		
New Criminal Offense	6,171	91.3%
Prob. Violation – New Crim. Off.	131	1.9%
Prob. Violation – Tech. Viol.	352	5.2%
Parole Violation – New Crim. Off.	33	0.5%
Parole Violation – Tech. Viol.	23	0.3%
New Petition	50	0.7%

Time to Placement. Hybrid court participants take an average of 129 days from arrest to program entry, *see Table 8*. Once accepted into the hybrid court, participants enter treatment within 17 days on average. Participants who went on to graduate from the hybrid court program, compared to participants who did not graduate, were placed into treatment significantly more quickly after program entry. Finally, research indicates that 50 days between arrest to program entry results in a greater reduction of recidivism (Carey et al., 2012). Although graduates entered the program slightly quicker than non-graduates, the difference was not significant. The average participant, regardless of how they eventually exited the program, took more than 50 days to enter the program after arrest.

Table 8: Average Time to Placement

	Average Number of Days	Median Number of Days
Average number of days from arrest to program entry		
All participants	129 days	81 days
Graduates	124 days	82 days
Non-graduates	134 days	78 days
Average number of days from program entry to treatment		
All participants	17 days	7 days
Graduates	16 days**	7 days
Non-Graduates	18 days	6 days

**Significant $p < .025$

Criminal History. *Table 9* displays the extent to which hybrid court participants had prior involvement with the adult criminal justice system at the time they entered the program. Most hybrid court participants (88.4 percent) had at least one prior criminal conviction. Fewer than thirty percent (29.6 percent) of participants had at least one prior felony conviction and approximately 85 percent had at least one prior misdemeanor conviction. A substantial body of research shows drug courts that focus on high-risk/high-need defendants reduce crime approximately twice as much as those serving less serious defendants (Cissner et al., 2013; Fielding et al., 2002; Lowenkamp et al., 2005) and return approximately

50% greater cost savings to their communities (Bhati et al., 2008; Carey et al., 2008, 2012; Downey & Roman, 2010). While criminal history is just one component of being high-risk, it is a good proxy for risk.

Table 9: Prior Felony and Misdemeanor Convictions of Participants

	Number of Participants	% of Participants
Any Prior Conviction		
Yes	5,979	88.4%
Prior Convictions by Offense Level		
Prior misdemeanor convictions	5,751	85.1%
Prior felony convictions	2,000	29.6%

Considering only Michigan hybrid court participants who had at least one prior conviction, *Table 10* demonstrates Michigan's hybrid court participants averaged 4.3 misdemeanor convictions and 2.4 felony convictions prior to entering hybrid court.

Table 10: Average number per participant of felony and misdemeanor convictions

	Average number of prior convictions
Average number of prior misdemeanor convictions	4.3
Average number of prior felony convictions	2.4

Drug of Choice. Upon admission into the hybrid court program, participants are asked to disclose their preferred drugs of choice. Information is based on self-report but may be interpreted by staff in light of other available information, such as the drug involved in the offense at referral and the results of baseline drug tests at intake. It is important to note that not all participants are forthcoming about the nature and extent of their drug use at intake or assessment and this may become clearer once the participant is involved in the program. In addition, preference for multiple drugs is common among participants. *Table 11* portrays the most frequently cited drugs of choice reported by participants.

This analysis reveals that the majority of participants reported alcohol, heroin/opiates, and marijuana as the top three preferred drugs. For participants who reported, the average age of first drug use was 17and the age of first alcohol use was almost 17. Almost 20 percent of Michigan hybrid court participants reported a history of IV drug use (17.8 percent).

Table 11: Drug of Choice Among Hybrid Participants

	Number of Participants	% of Participants
Alcohol	4,064	60.1%
Heroin/Opiates	1,123	16.6%
Marijuana	662	9.8%
Cocaine/Crack Cocaine	351	5.2%
Poly Drug	230	3.4%
Methamphetamines	224	3.3%
Other*	107	1.6%

*"Other" includes barbiturates, club drugs, hallucinogens, inhalants, sedatives, amphetamines, and benzodiazepines.

Diagnosis at Entry and Treatment History Prior to Entry. *Table 12* shows that a significant number of the participants had a substance use disorder at the hybrid court screening (93.0 percent). More than half (65.2 percent) of the Michigan hybrid court participants received substance abuse treatment prior to hybrid court entry. A significant number of hybrid court participants had a co-occurring disorder at program entry (30.1 percent). Almost 20 percent of hybrid court participants had a history of mental health illness (19.7 percent) prior to program entry.

Table 12: Treatment History and Diagnosis Prior to Program Entry

	Number of Participants	% of Participants
Diagnosis at Entry		
Substance Use Disorder Diagnosis	6,291	93.0%
Co-Occurring Disorder Diagnosis	2,033	30.1%
Prior Treatment History		
Prior substance abuse treatment	4,405	65.2%
Mental health history	1,329	19.7%

Proxy Risk. Michigan does not employ a statewide risk-needs assessment. In the absence of such a tool, NCSC calculated a proxy risk score for each probationer using the Proxy Risk Triage Screener (where data was available).[1] The Proxy Risk Triage Screener tool is a 3-item screen that calculates a risk score based on:

- age at program placement;
- age at first arrest; and
- number of prior adult arrests.

The NCSC evaluation team had access to the data points needed to calculate risk using this method with the exception of "age at first arrest," which was restricted to adult arrests only based on available data. The Proxy Risk Triage Screener has been used by other states and localities to triage offenders prior to conducting a full assessment with a third-generation risk and needs assessment tool (Hawaii); as part of reentry planning (Miami-Dade); and to make bond recommendations or screen at booking (Eau Claire, Wisconsin).

Like all screening and assessment instruments, proxy risk must be normed and validated for the target population. The sample of FY12 through FY16 completers was used to establish cut-off points for scoring purposes. Information about scoring proxy risk can be found in *Technical Appendix: Proxy Risk Scoring.* *Table 13* shows the distribution of proxy risk scores within the hybrid court sample.

[1] See Bogue, Brad, William Woodward, and Lore Joplin. 2005. *Using Proxy Score to Pre-screen Offenders for Risk to Reoffend*.

Table 13: Distribution of Proxy Risk Scores

Proxy Score	N	Distribution of Sample	Risk Level
2	271	5.1%	Low
3	576	10.8%	Low
4	551	10.3%	Low
5	962	18.0%	Low
6	1,105	20.6%	Medium
7	896	16.7%	Medium
8	488	9.1%	High
Unknown	507	9.5%	Unknown

Participant-Level Variables

In order to examine which participant-level variables predict lower recidivism rates and/or successful completion from the hybrid court, the NCSC evaluation team conducted a hierarchical binary logistic regression. The full model included the following individual-level variables:

- gender;
- age;
- race;
- drug of choice;
- marital status at entry;
- employment status as entry;
- placement offense category;
- participant proxy risk level;
- prior substance abuse treatment;
- total number of treatment hours;
- history of mental illness;
- number of days in court (median split at 420 days);
- drug tested twice per week on average; and
- substance abuse treatment type received (non-residential only, residential only, both residential and non-residential).

Additional information about these variables can be found in *Technical Appendix: Detailed Analysis.*

Conclusion. This section examined a variety of characteristics of those being served in Michigan's hybrid courts. The typical hybrid court participant is a single, Caucasian male between the ages of 21 and 40 at entry. Over half of hybrid court participants have graduated from high school or have obtained some college education. Most participants entered the hybrid court program as a result of a misdemeanor offense. Most hybrid court participants had at least one prior misdemeanor conviction and some participants had at least one prior felony conviction. Almost all participants had a diagnosis of substance use disorder at program entry and 65 percent received substance abuse treatment prior to program entry. Approximately half of the participants in hybrid courts had either a co-occurring disorder or previous mental health history at program entry. Most participants reported their average age of first

drug use at 17and first alcohol use at almost 17. Almost half of Michigan hybrid court participants report a history of IV drug use (48.8 percent).

Program Structure of Michigan's Hybrid Courts

With substantial evidence that drug courts can be effective in producing such outcomes relative to traditional practices, a body of literature has developed in the last fifteen years focusing on the characteristics of effective drug court programs. Research has found support for effective practices in program structure, drug testing intensity, judicial supervision, team staffing and participation, services and curriculum. This section examines the structure and design of Michigan's hybrid courts. A brief overview regarding program capacity and number of active participants is provided, followed by a discussion of eligibility, assessment, staffing, treatment, incentives and sanctions, drug testing and evaluation.

In the following section, we discuss the types of services delivered to participants enrolled in Michigan's hybrid courts as well as the incentives and sanctions imposed as a result of program compliance and non-compliance. In all of the tables, the figures represent the average for both graduates and non-graduates. It is important to note that in reviewing the service level data, the average length of stay for all participants (graduates and non-graduates combined) in the program was 407.9 days, or slightly over 13 months. This is consistent with recommended best practice that program length should be between 12 and 16 months (Shaffer, 2006: Carey et. al., 2012). *Table 14* reflects the number and proportion of programs by number of years of operation.

Table 14: Number of Years the Program has been Operational

	Number of Programs	% of Programs
Less than 3 years	6	12.0%
4 – 5 years	11	22.0%
6 – 10 years	12	24.0%
11 – 15 years	14	28.0%
16+ years	7	14.0%

Number of Participants. Hybrid courts in Michigan are dynamic organizations developed to meet the needs of local constituents. The number of active participants ranged from as few as ten to as many as 225 participants during the study period. *Table 15* shows the program capacity of the 53 hybrid courts surveyed. It should be noted that best practice data suggest that courts with a caseload of 125 or more produce poorer outcomes than courts with smaller caseloads (Carey et al., 2012).

Table 15: Program Capacity

	Number of Programs	% of Programs
Fewer than 31 participants	19	38%
31 – 60 participants	14	28%
61 – 90 participants	7	14%
91 – 120 participants	7	14%
121 – 150 participants	2	4%
Greater than 150 participants	1	2%

Hybrid Court Team. Studies have assessed the impact of the relationships between Drug Court employees and treatment providers, assessment, and curricula on program success. Shaffer (2006) found that reductions in recidivism were associated with drug courts that employed internal treatment

providers, rather than external treatment providers. This finding was supported in a subsequent study (Shaffer, 2011), which observed that drug courts with internal providers outperformed those with external providers, and that multiple providers produced better outcomes than drug courts using a single provider. Findings related to team participation indicate that outcomes are improved when treatment providers are integral members of the drug court team and regularly attend staff meetings, which can be difficult or impossible with a large number of treatment providers (Carey et al., 2012). The presence of dedicated prosecutors and public defenders on the drug court team was also associated with reduced recidivism (Cissner et al., 2013).

While there was very little variation among the hybrid courts in terms of judicial, treatment and supervision attendance in staffing and court, *Table 16* shows that 70 percent of hybrid courts reported that a prosecutor regularly attended staffing and 66 percent reported that a prosecutor regularly attended court. Eighty-four (84) percent of hybrid courts reported that a defense representative regularly attended staffing and 88 percent of courts reported that a defense representative regularly attended court. Finally, 32 percent of courts reported that a law enforcement representative regularly attended court. This data reflects practices as of 2014 to coincide with the study period and may not reflect current practices.

Table 16: Hybrid Court Team Attendance in Staffing and Court

Team Member	Attend Staffing	Attend Court
Prosecutor	70%	66%
Defense Attorney	84%	88%
Law Enforcement	Not available	32%

Substance Abuse Treatment Services. Substance abuse treatment is an effective intervention for individuals with substance use disorders (National Institute of Drug Abuse [NIDA], 2014). Drug court treatment produces its strongest effect on participant behavior and subsequent outcomes when it reflects the following characteristics: (1) a continuum of care for substance abuse treatment is offered (including detoxification, residential, sober living, day treatment, intensive outpatient and outpatient services); (2) one or two treatment agencies have primary responsibility for delivering treatment services, and clinically trained representatives from these agencies are core members of the Drug Court Team; (3) treatment providers administer treatments that are manualized and demonstrated to improve outcomes for addicted offenders (e.g., Moral Reconation Therapy (MRT),the MATRIX model, and Multi-Systemic Therapy (MST); Marlowe, 2010); (4) participants are assigned to a level of care based on a standardized assessment of their treatment needs, such as the ASAM criteria, as opposed to relying on professional judgment; and (5) participants have access to prescribed psychotropic or addiction medications (Medically-Assisted Treatment or MAT) when warranted (National Association of Drug Court Professionals [NADCP], 2013; Best Practice Standard V).

Seventy (70) percent of hybrid courts reported using more than two treatment providers. *Table 17* shows that most participants received outpatient treatment (71 percent) and over 20 percent received residential treatment and/or intensive outpatient treatment (21.7 percent and 20.5 percent, respectively).

Table 17: Substance Abuse Treatment

Substance Abuse Treatment	# of Participants	% of Participants
Outpatient	4,801	71.0%
Residential	1,469	21.7%
Intensive outpatient	1,387	20.5%
Sub-acute detox	53	0.8%
Outpatient detox	20	0.3%

Table 18 shows a summary of the mean and median number of hours of substance abuse treatment delivered to participants (both graduates and non-graduates) in the 53 hybrid courts participating in the study. Michigan hybrid court participants spent the most hours in residential treatment (704.8), sub-acute detox (147.7), and intensive outpatient treatment (107.6).

Table 18: Substance Abuse Treatment Hours by Treatment Type

Substance Abuse Treatment	Mean Hours	Median Hours
Residential	704.8	330
Sub-acute detox	147.7	30
Intensive outpatient	107.6	87
Outpatient	29.3	23
Outpatient detox	17.0	12.5

Participants must receive a sufficient dosage and duration of substance abuse treatment to enjoy long-term sobriety and recovery from addiction. Participants who receive six to ten hours of substance abuse counseling per week during the initial phase of treatment, and approximately 200 hours of counseling over nine to twelve months, will achieve better outcomes than similar offenders who experience treatments of shorter duration and fewer hours (NADCP, 2013: Best Practice Standard V). Considering only participants who had treatment data, participants received slightly over 200 hours of treatment on average during their time in the hybrid court program. Graduates received significantly fewer treatment hours (119.7) on average compared to non-graduates (391.9).

Table 19: Substance Abuse Treatment Hours by Completion Type

	Mean Hours	Median Hours
All participants	208.8	42.0
Graduates	119.7***	40.0
Non-Graduates	391.9	60.0

***Significant $p < .001$

Table 20 further details the number of participants identified by ASAM level at program entry as well as the type of treatment participants in each level received during their tenure in the program. Over half of participants (58.3 percent) were identified as ASAM Level I Outpatient at entry and most of the remaining participants were identified as requiring Level II Intensive Outpatient/Partial Hospitalization (25.7 percent) or Level III Residential/Inpatient treatment (13.9 percent). The proportion of participants who received their identified level of treatment varied by ASAM level, with the number and percentage of participants who received each treatment type displayed in the table below. For some levels, participants were sometimes over-treated (Level I participants, for example) while participants were

often under-treated in other levels (Level II, for example). It is important to note that participants often receive treatment of more than one modality within ASAM levels, so the proportion levels do not necessarily equal 100 percent.

Table 20: Treatment by ASAM Levels – Hybrid Courts

	Number of Participants N=6,760	%
Assessed ASAM Criteria Level		
Level 0.5 Early Intervention	100	1.5%
Level I Outpatient	3,942	58.3%
Level II Intensive Outpatient/Partial Hospitalization	1,735	25.7%
Level III Residential/Inpatient	940	13.9%
Level IV Medically Managed Intensive Inpatient	43	0.6%
Treatment Received by ASAM Criteria Level		
Level 0.5 Early Intervention (n=100)		
Received SA Outpatient Detox Treatment	0	0.0%
Received SA Outpatient Treatment	77	77.0%
Received Intensive Outpatient Treatment	5	5.0%
Received SA Residential Treatment	29	29.0%
Received SA Sub-Acute Detox Treatment	0	0.0%
Level I Outpatient (n=3,942)		
Received SA Outpatient Detox Treatment	11	0.3%
Received SA Outpatient Treatment	3,099	78.6%
Received Intensive Outpatient Treatment	550	14.0%
Received SA Residential Treatment	604	15.3%
Received SA Sub-Acute Detox Treatment	34	0.9%
Level II Intensive Outpatient/Partial Hospitalization (n=1,735)		
Received SA Outpatient Detox Treatment	7	0.4%
Received SA Outpatient Treatment	1,082	62.4%
Received Intensive Outpatient Treatment	625	36.0%
Received SA Residential Treatment	268	15.4%
Received SA Sub-Acute Detox Treatment	10	0.6%
Level III Residential/Inpatient (n=940)		
Received SA Outpatient Detox Treatment	2	0.2%
Received SA Outpatient Treatment	515	54.8%
Received Intensive Outpatient Treatment	197	21.0%
Received SA Residential Treatment	541	57.6%
Received SA Sub-Acute Detox Treatment	9	1.0%
Level IV Medically Managed Intensive Inpatient (n=43)		
Received SA Outpatient Detox Treatment	0	0.0%
Received SA Outpatient Treatment	27	62.8%
Received Intensive Outpatient Treatment	10	23.3%
Received SA Residential Treatment	27	62.8%
Received SA Sub-Acute Detox Treatment	0	0.0%

Table 21 shows a summary of the mean and median number of recovery support group meetings participants attended (e.g., NA/AA meetings). On average, graduates completed 164 hours of recovery support meetings while non-graduates completed an average of 78 recovery support meetings. This difference is statistically significant and explained by length of stay.

Table 21: Recovery Support Services

	Mean Hours	Median Hours
All participants	141	108
Graduates	164***	139
Non-Graduates	78	43

*** Significant $p < .001$

Mental Health Treatment Services. Some hybrid court participants reported engagement with mental health treatment services. Twenty-one participants received doctor/medication review services and therapy services. *Table 22* shows the services provided in terms of treatment hours provided to hybrid court participants. Participants who received mental health treatment received numerous hours of doctor/medication review (532.4 hours), inpatient/partial day hospitalization (519.3 hours), and therapy services (904.2 hours).

Table 22: Mental Health Treatment Hours by Treatment Type

	Mean Hours	Median Hours
Doctor/Medication review	532.4	441
Inpatient/Partial day hospitalization	519.3	6
Therapy services	904.2	971

Court Appearances. Eleven hybrid courts (22 percent) required weekly court appearances in Phase 1; 31 hybrid courts (62 percent) required court attendance every other week in Phase 1; 2 courts (4 percent) required monthly court attendance in Phase 1; and 6 courts (12 percent) were unspecified. The NCSC team did not have complete data for three hybrid courts. *Table 23* shows a summary of the mean and median number of scheduled court appearances made by hybrid court participants (both graduates and non-graduates) for the hybrid courts included in the study. During the judicial review hearings, the judge discusses the participant's progress in treatment and supervision directly with the participant. On average, hybrid court participants were scheduled to appear before the court almost 18 times over the course of their participation in hybrid court. The range among all participants in the study was from 0 to 102 court appearances, with graduates having significantly more scheduled court appearances than non-graduates. The effect remained even when we controlled for the number of days spent in the program, meaning the number of scheduled court appearances is related to graduation status beyond simply spending more time in the program.

Table 23: Scheduled Court Reviews and Length of Stay by Hybrid Court Participants

	Mean	Median
All participants	17.9 appearances	16 appearances
Graduates	21.5 appearances***	20 appearances
Non-Graduates	12.9 appearances	9.9 appearances

*** Significant $p < .001$

Drug Testing. The hybrid treatment court programs conducted over 1,567,686 drug tests during the evaluation period, with an average of 231.9 drug screens per participant. Graduates had, on average, 305.1 drug screens while in the program while non-graduates had an average of 125.7 drug screens while in the program (see *Table 24*). Moreover, the effect remained when we controlled for a

participant's length of stay in the hybrid court program, meaning that a longer length of stay did not completely explain why graduates received a significantly greater number of drug tests during their participation in the hybrid court program.

Table 24: Average Number of Drug/Alcohol Tests Administered

Program Completion Type	Average Number Tests
All participants	231.9
Graduates	305.1***
Non-Graduates	125.7

*** Significant $p < .001$

Carey et al. (2012) found programs that performed drug tests at least twice a week in the first phase experienced a 38 percent larger reduction in recidivism, supporting results of a previous study that associated such frequent drug testing with the most effective Drug Courts (Carey, Finigan, & Pukstas, 2008). A statewide analysis of Drug Court practices in New York, however, found no significant results from frequent drug tests within the first three months of the program on new arrests within three years (Cissner et al., 2013). The requirement that participants have no positive drug tests in the ninety days before program graduation is associated with improved outcomes (Carey et al., 2012). Twenty-eight Michigan hybrid courts (56 percent) reported using remote alcohol testing in Phase 1 and 36 courts (72 percent) reported drug testing at least twice a week in Phase 1. Nearly all courts (98 percent) reported testing for marijuana, cocaine, and benzodiazepines while only a small portion of courts tested for synthetic marijuana (26 percent) or bath salts (16 percent).

Sanctions and Incentives. Based on drug court research, the use of sanctions and incentives is firmly grounded in scientific literature and is a key component of drug courts throughout the United States. Within drug court programs, reinforcement (incentives) and punishment (sanctions) are used to increase desired behavior. According to the national research, sanctions tend to be least effective in the lowest and highest magnitudes, and most effective within the intermediate range (see, e.g., Marlowe and Wong, 2008). Drug courts tend to be more effective and cost-effective when they use jail detention sparingly. One study found that drug courts that tended to apply jail sanctions of less than two weeks' duration reduced crime approximately two and a half times more than those tending to impose longer jail sanctions (Carey et al., 2012). Moreover, because jail is an expensive resource, drug courts that tended to impose jail sanctions of longer than two weeks had 45 percent lower cost savings in the national studies.

Incentives are used in drug court and in other treatment settings to motivate participant behavior toward pro-social behavior. Incentives are used to shape behavior gradually by rewarding the participant's positive behavior or achievement of a specific target behavior to reinforce this positive behavior. Applying drug court research to Michigan's hybrid courts, long-term gains are more likely to be realized if hybrid courts use positive reinforcement to increase productive behaviors that compete against drug abuse and crime after participants are no longer under the authority of the hybrid court. Incentives can be as simple as praise from a staff member or the hybrid court Judge, a certificate for completion of a specific milestone of the program, or medallions that reward and acknowledge specific lengths of sobriety.

Table 25 shows a summary of the number of incentives and sanctions given to hybrid court participants. The majority of hybrid court participants received at least one incentive (75.9 percent) and at least one sanction (67.6 percent) during their time in the program. For those participants who received at least one incentive, the average number of incentives received was 8.1; similarly, for participants who received at least one sanction during their time in the program, the average number of sanctions received was 3.8. Fewer participants received a jail sanction (39.5 percent); and participants who received at least one jail sanction received an average of 19.2 days. In general, graduates received significantly fewer sanctions, fewer days of jail sanctions, and more incentives compared to non-graduates.

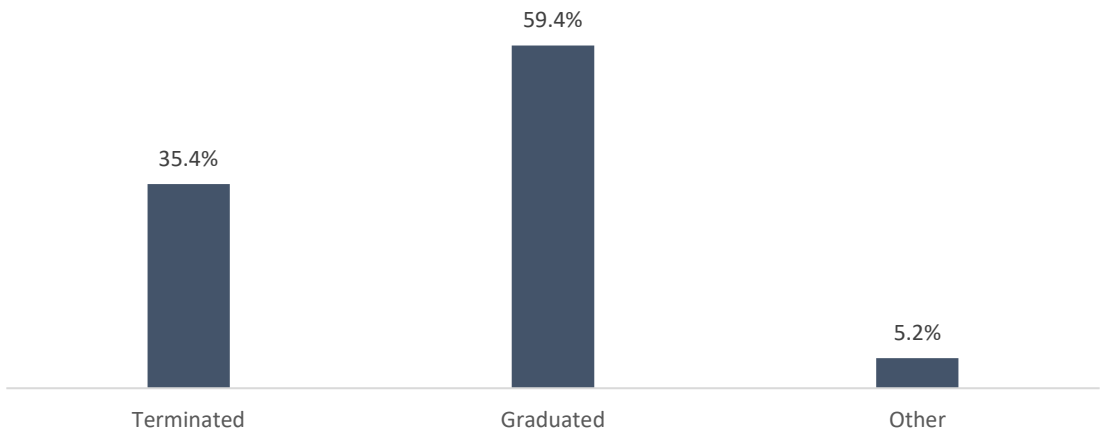
Table 25: Number of Incentives and Sanctions Given to Hybrid Court Participants

Behavioral Response	N = 6,761
Incentives	
% of participants who received at least one incentive	75.9%
Average # of incentives per person	8.1
Sanctions - General	
% of participants who received at least one sanction	67.6%
Average # of sanctions per participant	3.8
Sanctions - Jail	
% of participants who received at least one jail sanction	39.5%
Average # of jail days (sanctions)	19.2

Some studies (e.g., Gendreau, 1996) have found that a 4:1 ratio of incentives to sanctions is associated with significantly better outcomes among offenders. Michigan hybrid courts have a ratio of 8.1 incentives to 2.6 sanctions, applying the research-based ratio, this is approximately 3 incentives to 1 sanction. Michigan hybrid courts should strive to ensure a better balance of sanctions and rewards.

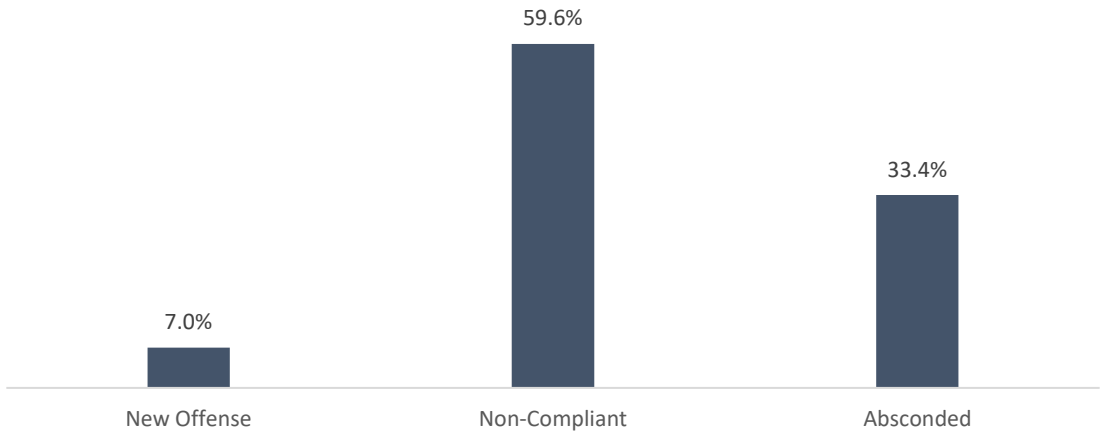
Type of Program Exit. Approximately 59 percent of the 6,761 hybrid court participants exited successfully from the program by means of graduation (see *Figure 2*). Another 35.4 percent were terminated. The remaining participants exited as a result of death (0.7 percent), medical discharge (0.7 percent), voluntarily withdrawal (2.2 percent), or for reasons unknown (1.6 percent).

Figure 2: Type of Program Exit



Reason for Program Termination. *Figure 3* shows the reasons for termination. Non-compliances accounted for 59.6 percent of unsuccessful program terminations. Absconding accounted for 33.4 percent of program terminations, and new offenses accounted for 7.0 percent of terminations.

Figure 3: Reasons for Program Termination



Time in Program. On average, all program participants (graduates and non-graduates) remained in the program 407.9 days (see *Table 26*). Graduates spent 1.4 years (497.6 days) in the program, with a range of 67 days (2 months) to 1,497 days (4.1 years). Non-graduates (terminated participants) spent an average of 9 months (283.1 days) in the program, with a range of 1 day to 1,491 days (4.1 years). Half of all non-graduates spent more than 8 months (240 days) in the program.

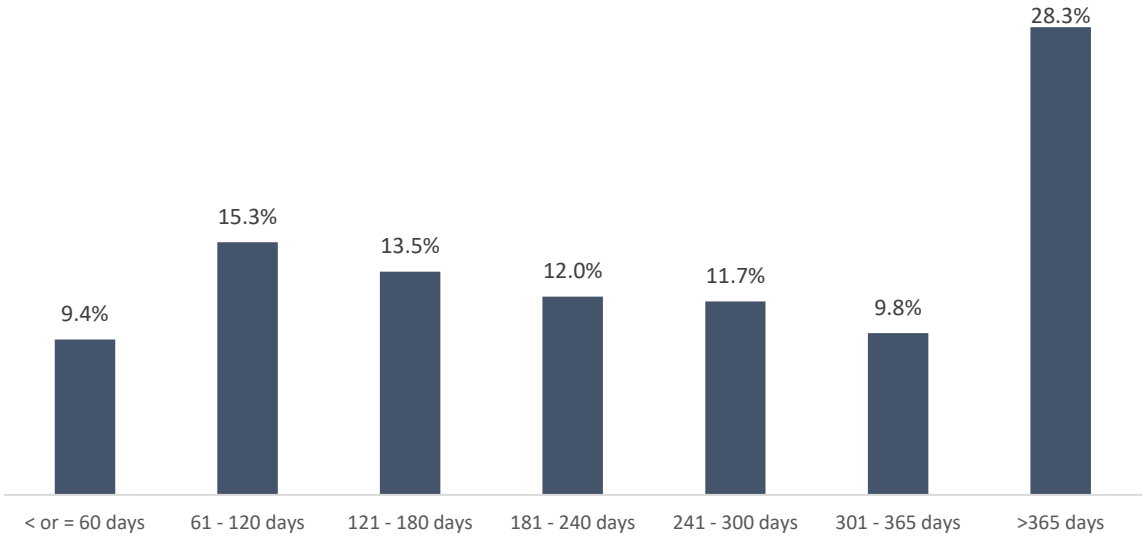
Table 26: Time in Program

	Average Length of Stay	Range
All Participants (N=6,761)	1 year, 1 month	0 - 1,578 days
Graduates (N=4,014)	1 year, 4 months	67 – 1,497 days
Terminated Participants (N=2,393)	9.4 months	1-1,491 days

*This chart does not include the length of stay for the 354 participants who were closed as "Other." "Other" includes 110 participants without closure data, 148 voluntary withdrawals, 48 deaths, and 48 medical discharges.

A sub-analysis of the amount of time between program acceptance and termination was conducted, as shown in *Figure 4* for the 2,393 hybrid court terminations. Approximately 25 percent were terminated from the program within the first 120 days (four months) after acceptance, while almost 50 percent were terminated between four months and one year of acceptance. The remaining 28.3 percent were terminated more than a year after acceptance.

Figure 4: Number of Days from Program Entry to Termination



These data reflect that participants are not routinely terminated without first having been given ample time to succeed in hybrid court. They also reflect that hybrid courts are investing resources in participants that are for the most part terminated late in their hybrid court programs. Given this investment, hybrid courts should avoid termination if at all possible. It is recommended that individual programs examine the point in time that terminations occur in their programs (similar to the analysis above) and seek to strengthen their programs at the points where most terminations occur.

Program Characteristics Examined

In order to examine which program-level variables predict successful completion from hybrid court and/or recidivism, the NCSC evaluation team conducted hierarchical binary logistic regressions. The full models may have included the following program-level variables:

- program capacity;
- program maturity, measured as younger than 10 years versus 10 years old and older;
- programs' average length of stay;
- programs' average length of stay in phase 1;
- programs' average time from arrest to treatment;
- programs that require weekly court attendance in phase 1;
- programs that require weekly contact with supervision in phase 1;
- programs that require daily AA meetings in phase 1;
- programs in which law enforcement attends court;
- programs in which prosecutor and defense attorneys attend staffing;
- programs in which prosecutor and defense attorneys attend court;
- programs with no more than two treatment providers;
- programs that maintain at least a 4:1 incentive to sanction ratio;
- programs that alcohol test weekly in phase 1;
- programs that drug test weekly in phase 1;

- programs that use remote testing;
- programs that require four months of sobriety to graduate; and
- rural versus suburban and urban courts.

Additional information about these variables can be found in the *Technical Appendix: Detailed Analysis*.

Conclusion. Most Michigan hybrid court participants received outpatient treatment (71.0 percent) and many received residential treatment (21.7 percent) and/or intensive outpatient treatment (20.5 percent). Analyses breaking down participants' ASAM levels and treatment received showed most participants were identified as requiring Level I Outpatient treatment, and over three-quarters of participants (78.6 percent) in this group received outpatient treatment. Sanctions and incentives are frequently employed to manage offender behavior and compliance with program and treatment requirements. Most participants received at least one incentive (75.9 percent) and/or one sanction (67.6 percent) during their time in the program. Fewer participants, although a sizable chunk, received jail as a sanction (39.5 percent). Finally, the majority of hybrid court participants successfully completed the program, and the majority of those terminated exited for non-compliance.

Short-Term Outcomes

Short-term outcomes are one measure of court program effectiveness. The following section describes sobriety during the hybrid court program and employment at program entry and program discharge.

Sobriety. Sobriety, both during and after hybrid court participation, is a goal of all hybrid courts because it fosters offender rehabilitation, public safety, and offender accountability. The majority of participants tested positive for drugs and/or alcohol at some point in the program. Seventy percent (70.2 percent) of all participants demonstrated some level of substance relapse while active in the hybrid court program (see *Table 27*). Among graduates, 62.9 percent tested positive at least once in the program for drugs or alcohol while 83.4 percent of non-graduates tested positive at least once in the program. This difference is statistically significant. Overall, 8.4 percent of all drug tests were positive and the graduates' rate of positive screens was significantly lower (1.9 percent) than the non-graduates' rate (19.5 percent).

Table 27: In-Program Positive Drug Tests

	Percent of participants that tested positive at least once while in hybrid court	Percent of all drug tests that were positive
All participants	70.2%	8.4%
Graduates	62.9%***	1.9%***
Non-Graduates	83.4%	19.5%

*** Significant $p < .001$

Table 28 shows that the average number of days to the first positive drug or alcohol screen (including only those participants who had at least one positive screen) was 82.6 days, with graduates having a significantly longer period of time between entry and their first positive test (102.8 days) compared to non-graduates (58.3 days). Participants who graduated had a lengthy period of sobriety – an average of 330.0 days. Non-graduates who were eventually terminated had an average of 100.9 days of sobriety, or just over three months. This difference is also statistically significant. Research on drug courts shows that drug courts that require 90 days of abstinence (measured by continued negative drug tests) before graduation have 164 percent greater reductions in recidivism than programs that require less clean time or that have no minimum required clean time before graduation (Carey et al., 2012). Not surprisingly, there is a significantly higher number of positive drug screens (10.2) for participants who tested positive at least once during their participation among the terminated hybrid court participants compared to the graduates (5.5).

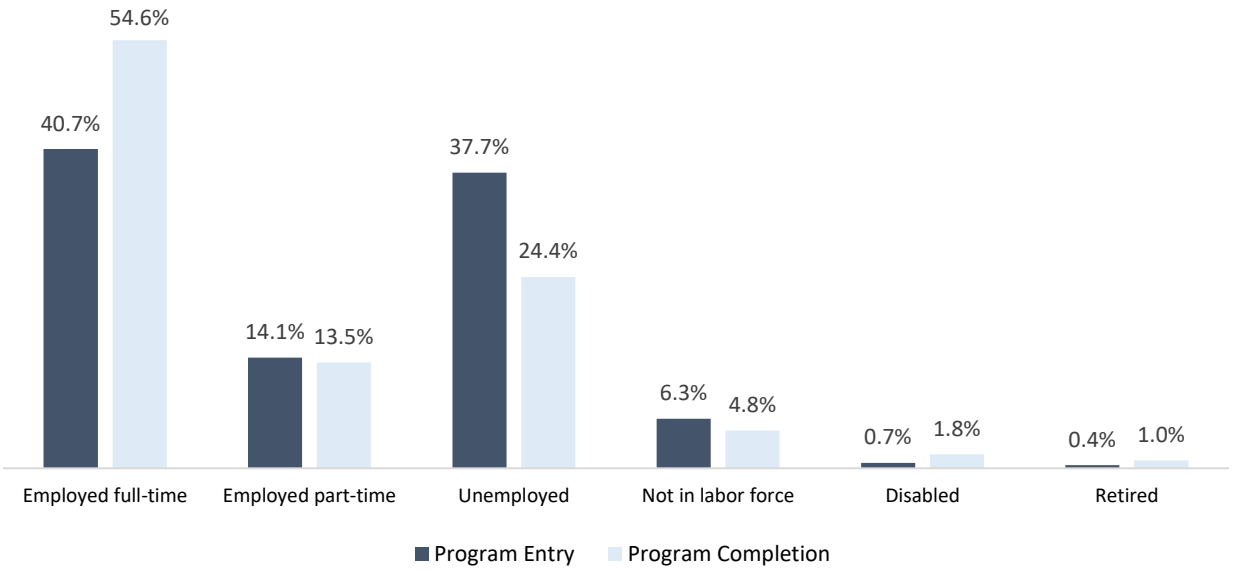
Table 28: In-Program Sobriety by Participant Closure Type

Type of program completion	Average number of days to first positive screen	Average # of positive drug/alcohol tests per participant	Longest period of sobriety
All participants	82.6 days	7.6	244.5 days
Graduates	102.8 days***	5.5***	330.0 days***
Non-Graduates	58.3 days	10.2	100.9 days

*** $p < .001$

Employment. *Figure 5* examines gains in employment, a key interim outcome area for participants in hybrid court. Almost thirty-eight percent (37.7 percent) of all participants (graduates and non-graduates combined) entered the hybrid court unemployed while 24.4 percent of all participants left the hybrid court unemployed.

Figure 5: Employment Status of Hybrid Participants at Program Entry and Program Completion



Among hybrid court graduates, the impact is more pronounced. Nearly 55 percent of future graduates entered the program employed and 65.6 percent of graduates were employed at program completion (see *Figure 6*). Furthermore, as displayed in *Figure 7*, significantly more graduates (87.3 percent) were employed at program completion compared to non-graduates (32.8 percent).

Figure 6: Employment Status of Hybrid Court Graduates at Program Entry and Program Completion

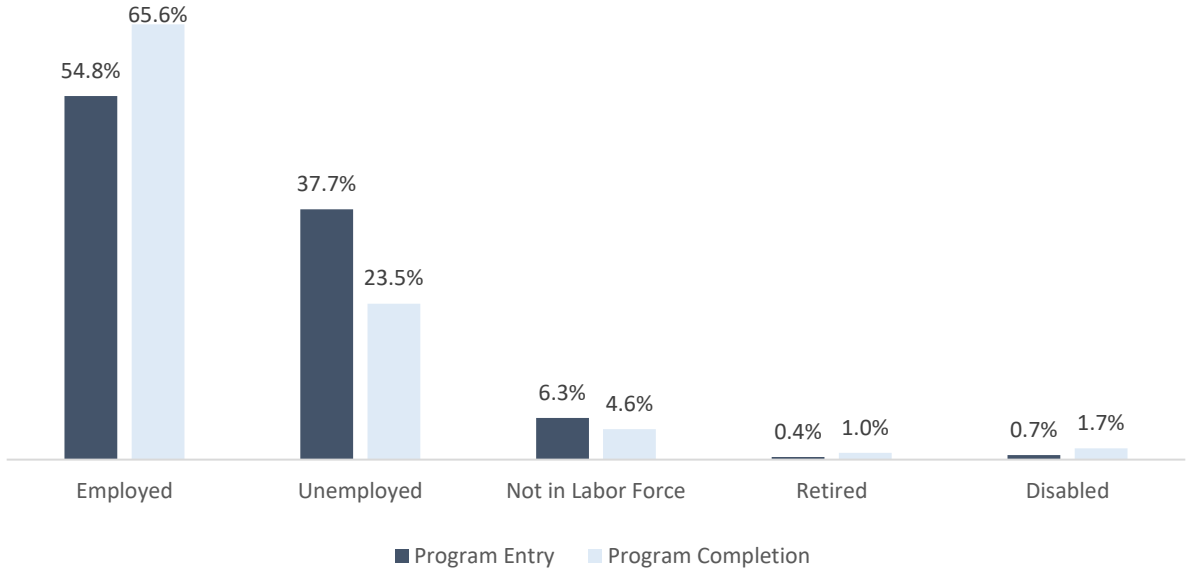
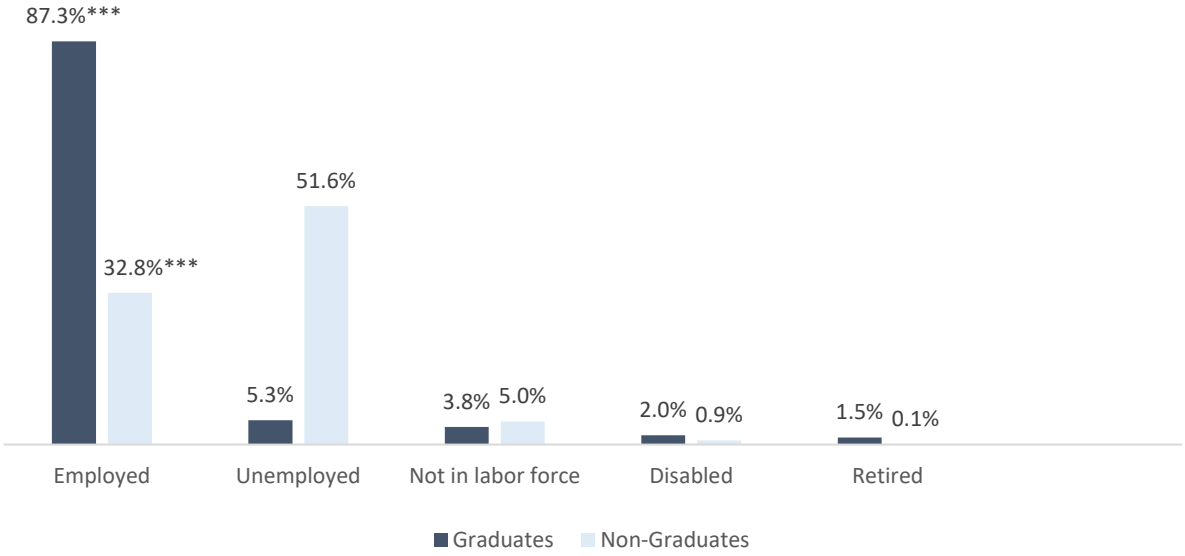


Figure 7: Employment Status of Hybrid Court Graduates and Non-Graduates at Program Exit



***Significant $p < .001$

Conclusion. Nearly three-quarters of Michigan hybrid court participants tested positive for drugs or alcohol on at least one occasion during their participation in the program, with non-graduates accounting for the majority of positive tests. Participants who went on to successfully complete a hybrid court program (1) tested positive at least once during the program significantly less often than participants who did not graduate; (2) had fewer positive drug tests during the program compared to non-graduates if they did test positive at least once; (3) had a significantly longer period of time before their first positive screen compared to non-graduates; and (4) had a significantly longer period of sobriety compared to non-graduates. Furthermore, more graduates were employed at exit than entry. Although more participants were employed full-time at program exit than entry, significantly fewer non-graduates were employed full-time at program exit compared to graduates.

Predicting Successful Program Completion

Both the attributes of a program and the individual characteristics of the participant may influence outcomes, such as successful program completion. To assess which program-level and individual-level variables predict successful program completion, the NCSC evaluation team conducted a hierarchical binary logistic regression, which first takes into account qualities of the program and then considers characteristics of the participants. First, chi-square analyses, which assess the goodness-of-fit between expected and observed values, determined which program-level variables were related to program completion; program-level variables that were significantly related to program completion were included in the full model. The full chi-square analyses are in the *Technical Appendix: Detailed Analysis.* The program-level variables identified in the chi-square analyses and all individual-level variables were then included in the hierarchical binary logistic regression. Some program-level variables were fairly consistent across programs and therefore, were not good predictors of program completion. Not all program-level variables appear in the full models because when program-level variables were very similar across programs, they were excluded.

As displayed in *Tables 29* and *30* below, several program-level and individual-level variables significantly predicted successful program completion in the full model. Two program-level variables significantly predicted successful program completion (see *Table 29)*. Controlling for all other factors entered into the model, participants in programs that are older than ten years are more likely to successfully complete the hybrid court program; participants in programs that have an average arrest to treatment time of less than 90 days are less likely to successfully complete. The full model is in *Technical Appendix: Detailed Analysis.*

Table 29: Program Variables Predicting Successful Program Completion for Hybrid Court Participants

Program Variables	Impact	Significance Level *p*
Maturity of Program	The odds of graduation for participants enrolled in a hybrid court program that is more than ten years old are 72% higher than the odds of participants enrolled in programs developed in the last ten years.	.012
Average Time from Arrest to Treatment – Less than 90 Days	The odds of graduation for participants enrolled in a hybrid court program that has an average time from arrest to placement in treatment of less than 90 days are 49% lower than the odds of participants enrolled in programs that have an average time from arrest to placement in treatment of more than 90 days.	.006

As shown in *Table 30* below, eleven participant-level factors also predicted successful program completion when included in the full model. Participants who were (1) white (compared to black); (2) 51 to 60 years old at entry or (3) over 60 years old at entry (compared to less than 21 at entry); (4) whose drug of choice was alcohol (versus opiates/heroin); (5) married; (6) low-risk (compared to high-risk); (7) had no history of mental illness; (8) spent at least 420 days in the program; (9) drug tested at least twice per week on average during the program; (10) did not receive only residential treatment; and (11) did

not receive both residential and outpatient treatment were more likely to successfully complete the program.

Table 30: Participant Variables Significantly Predicting Successful Program Completion for Hybrid Court Participants

Participant Variables	Impact	Significance Level *p*
Race - Black	The odds of successful completion for a black hybrid court participant is 70% lower than the odds of an otherwise similar white hybrid court participant.	< .001
Age – 51 to 60	The odds of successful completion for a hybrid court participant aged 51 to 60 years old at entry is 153% higher than the odds of an otherwise similar hybrid court participant who is under the age of 21 at entry.	.031
Age – older than 60	The odds of successful completion for a hybrid court participant older than 60 years old at entry is 1,130% higher than the odds of an otherwise similar hybrid court participant who is under the age of 21 at entry.	.004
Drug of choice - Alcohol	The odds of successful completion for a hybrid court participant whose drug of choice is alcohol is 86% higher than the odds of an otherwise similar hybrid court participant whose drug of choice is opiates/heroin.	.049
Marital Status	The odds of successful completion for a hybrid court participant who was married at entry is 98% higher than the odds of an otherwise similar hybrid court participant who was not married at entry.	.007
Proxy Risk Level	The odds of successful completion for a hybrid court participant who is low-risk (per proxy risk) is 67% higher than the odds of an otherwise similar hybrid court participant who is medium-risk (per proxy risk).	.008
Mental health history	The odds of successful completion for a hybrid court participant with a history of a mental health diagnosis is 41% lower than the odds of an otherwise similar hybrid court participant who does not have a history of a mental health diagnosis.	.002
Length of time in program is longer than 420 days	The odds of successful completion for a hybrid court participant who participates in the program for at least 420 days is 1,056% higher than the odds of an otherwise similar hybrid court participant who participates for less than 420 days.	< .001
Drug tested at least an average of twice per week throughout the program	The odds of successful completion for a hybrid court participant who is drug tested an average of twice per week throughout the program is 64% higher than the odds of an otherwise similar hybrid court participant who is not drug tested a minimum of	.021

Participant Variables	Impact	Significance Level *p*
	twice per week throughout the program.	
Residential treatment only	The odds of successful completion for a hybrid court participant who participates in residential treatment only is 66% lower than the odds of an otherwise similar hybrid court participant who does not attend residential treatment while enrolled in the court.	.008
Residential treatment and outpatient treatment	The odds of successful completion for a hybrid court participant who participates in residential treatment and outpatient treatment is 59% lower than the odds of an otherwise similar hybrid court participant who does not attend residential treatment while enrolled in the court.	< .001

Because the odds ratios were so large for "Age – older than 60" and "Length of time in program" in the model above, the NCSC evaluation team conducted a second hierarchical logistic regression. The second model collapsed the age group to "51 and older" and included a continuous variable for "time in program." This model showed that the odds of successful completion for a hybrid court participant who was 51 or older at entry was no longer significant, and the odds of successful completion for participants who spent more time in court was 9 percent more than the odds of successful completion for a participant who spent less time in the program. The full model is in the *Technical Appendix: Detailed Analysis.*

Conclusion. Using hierarchical binary logistic regression, several program-level and individual-level variables predict successful or unsuccessful program completion, including maturity of program, average time from arrest to treatment, participant race, age, drug of choice, marital status at entry, participant proxy risk score, mental health history, length of time in program, participants who were drug tested at least twice weekly during their stay, and receiving residential treatment.

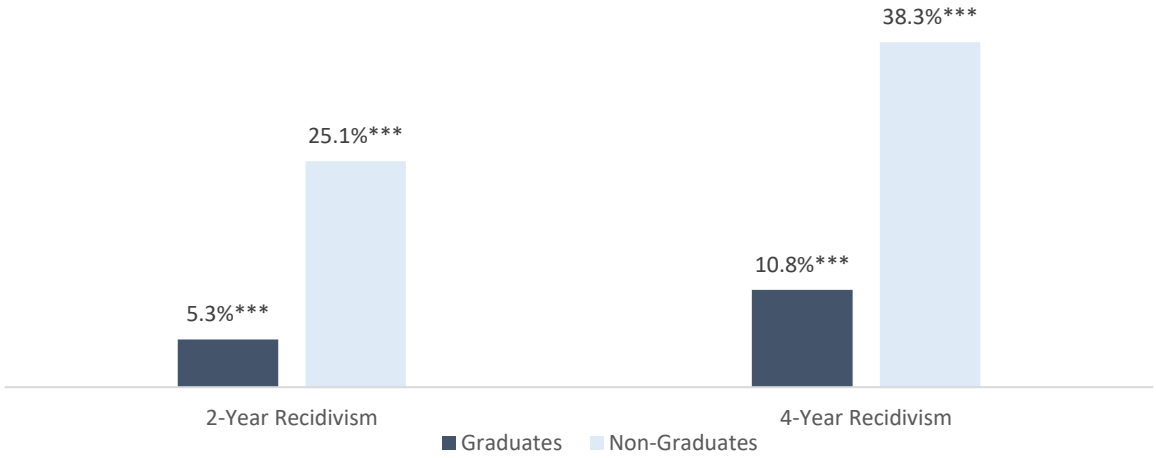
Long-Term Outcomes: Recidivism Rates of the Hybrid Court Participants by Program Completion Type

One of the most important and interesting outcomes of a treatment court program is the rate of participants reoffending during and after the program. The Michigan State Court Administrative Office (SCAO) defines recidivism with two definitions and in two timeframes. First, recidivism is broadly defined as *any new conviction* falling within the following offense categories: violent offenses; controlled substance use or possession; controlled substance manufacturing or distribution; other drug offenses; driving under the influence of drugs or alcohol first offense; driving under the influence of drugs or alcohol second offense; driving under the influence of drugs or alcohol third offense; other alcohol offenses; property offenses; breaking and entering or home invasion; nonviolent sex offenses; juvenile status offenses of incorrigible, runaway, truancy, or curfew violations; neglect and abuse civil; and neglect and abuse criminal.

Second, recidivism is narrowly defined as a *new drug or alcohol conviction* falling within the following categories: controlled substance use or possession; controlled substance manufacturing or distribution; other drug offenses; driving under the influence of drugs or alcohol first offense; driving under the influence of drugs or alcohol second offense; driving under the influence of drugs or alcohol third offense; and other alcohol offenses. Both the broad (all convictions) and narrow (drug and alcohol convictions) recidivism rates are calculated within two years and four years of entry into the hybrid court program. The following analysis reports recidivism rates under both definitions from both two and four years from entry. Because of the time from entry requirement, all recidivism analyses included only those hybrid court participants (and later their business-as-usual (BAU) comparisons) who had sufficient time from entry to recidivate.

Figure 8 displays the two-year and four-year recidivism rates for both hybrid court graduates and non-graduates. Within two years of entry, significantly fewer graduates (5.3 percent) reoffended compared to non-graduates (25.1 percent). The pattern remained the same within four years of admission, such that significantly fewer graduates (10.8 percent) reoffended compared to non-graduates (38.3 percent).

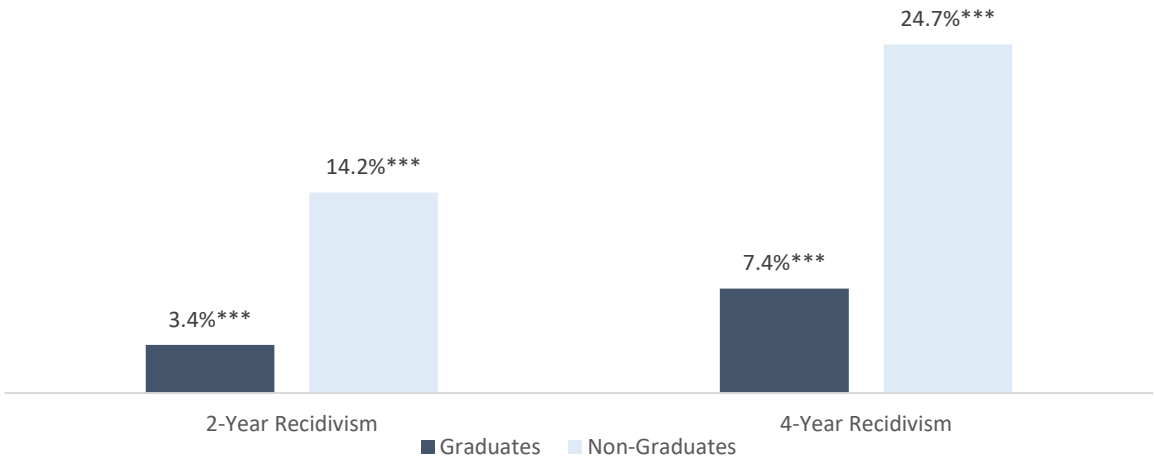
Figure 8: Hybrid Court Graduates and Non-Graduates General Recidivism Rates (All Convictions)



*** Significant $p < .001$

Figure 9 shows the two-year and four-year recidivism rates for hybrid court graduates and non-graduates for drug and alcohol convictions. Within two years of entry, significantly fewer graduates (3.4 percent) reoffended compared to non-graduates (14.2 percent). The pattern remained the same within four years of entry, such that significantly fewer graduates (7.4 percent) reoffended with a drug or alcohol conviction compared to non-graduates (24.7 percent).

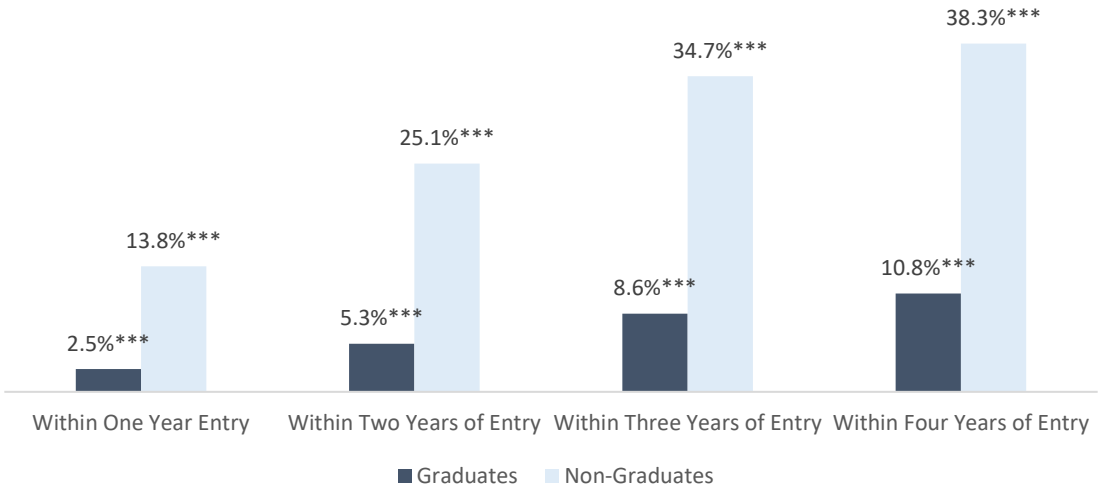
Figure 9: Hybrid Court Graduates and Non-Graduates General Recidivism Rates (Drug or Alcohol Convictions)



***Significant $p < .001$

Time to New Conviction. Significantly more participants who went on to be non-graduates were reconvicted within one year of entry (13.8 percent) compared to graduates (2.5 percent) (see *Figure 10*). The pattern continued for convictions within two, three, and four years of entry, such that significantly more non-graduates were consistently reconvicted compared to graduates.

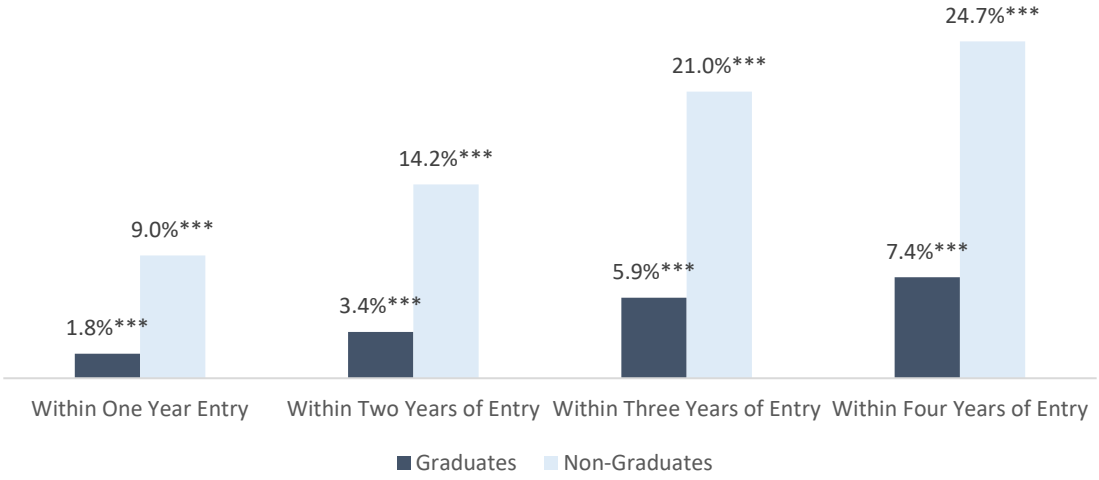
Figure 10: Time from Placement to New Conviction for Graduates versus Non-Graduates (All Convictions)



*** Significant $p < .001$

Figure 11 shows the drug and alcohol reconviction rates of graduates and non-graduates at one, two, three, and four years from program entry. Like all reconvictions generally, significantly more non-graduates were consistently reconvicted of a drug or alcohol offense at all time points post-entry.

Figure 11: Time from Placement to New Conviction for Graduates versus Non-Graduates (Drug and Alcohol Convictions)



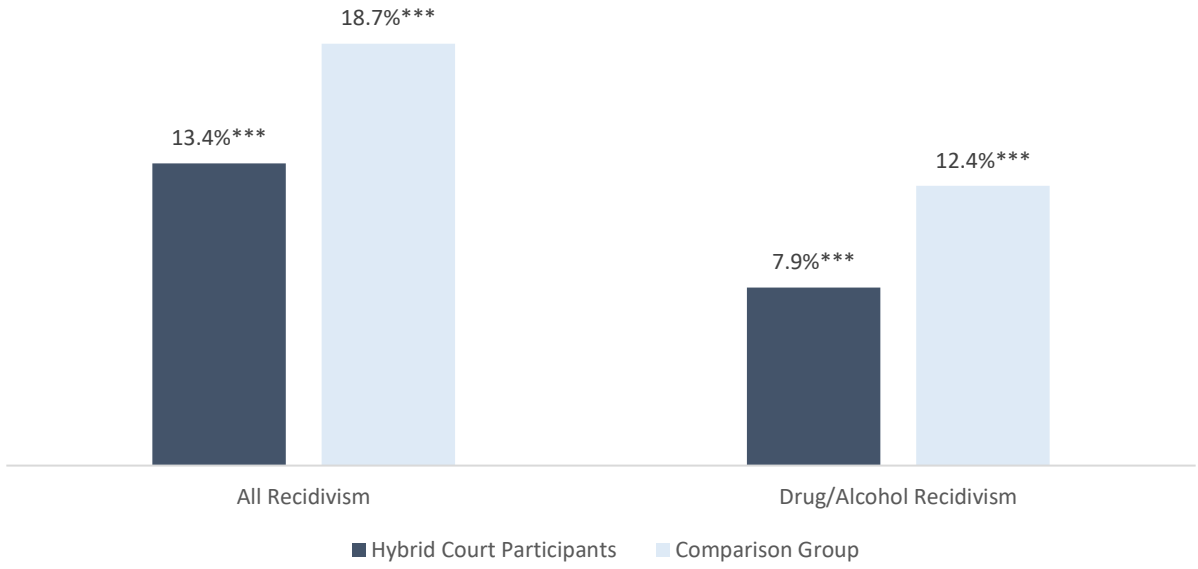
*** Significant $p < .001$

Recidivism Rates of the Hybrid Court Participants Compared to Business-As-Usual

To accurately and practically examine recidivism rates among hybrid court participants, the NCSC team used a matched comparison group. The Michigan SCAO uses the Judicial Data Warehouse to match each hybrid court participant to a comparison person. To be considered an accurate match, the comparison person must have a matching offense in the same county and court as the hybrid court participant; the comparison person must be the same gender and fall within the same age group; be in the same year of offense group and in the same offense category; and must fall within the same range for number of cases in the previous two years as the hybrid court participant. To be matched to a hybrid court participant, the comparison group person must not have previously participated in any drug court program or had a violent offense on his or her record. Analyses examine whether the participant-comparison pair do not statistically differ from one another to ensure comparable pairs. Any new offenses are reported to the SCAO for both the hybrid court participant and their matched BAU comparison person.

Only hybrid court participants who had a matched comparison person were included in the following analyses. *Figure 12* displays the two-year recidivism rates for hybrid court participants and their business-as-usual (BAU) comparisons. For all recidivism, significantly more BAU comparison people were reconvicted of an offense within two years of entry (18.7 percent) compared to hybrid court participants (13.4 percent). Similarly, for drug and alcohol recidivism, significantly more BAU comparison people were reconvicted of a drug or alcohol offense within two years of entry (12.4 percent) compared to hybrid court participants (7.9 percent).

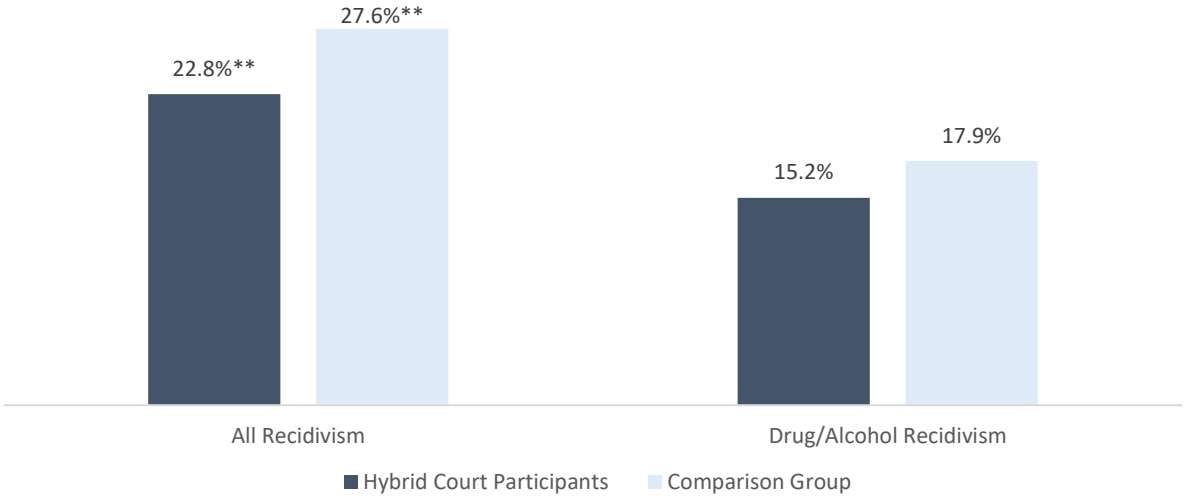
Figure 12: Two-Year Recidivism Rate for Hybrid Court Participants and Comparison Group



*** Significant $p < .001$

For four-year recidivism rates**,** significantly more BAU comparison people were reconvicted of an offense within four years of entry (27.6 percent) compared to hybrid court participants (22.8 percent) for all recidivism**.** Although more BAU comparisons were reconvicted of a drug or alcohol offense within four years of entry, the difference was not significant**.**

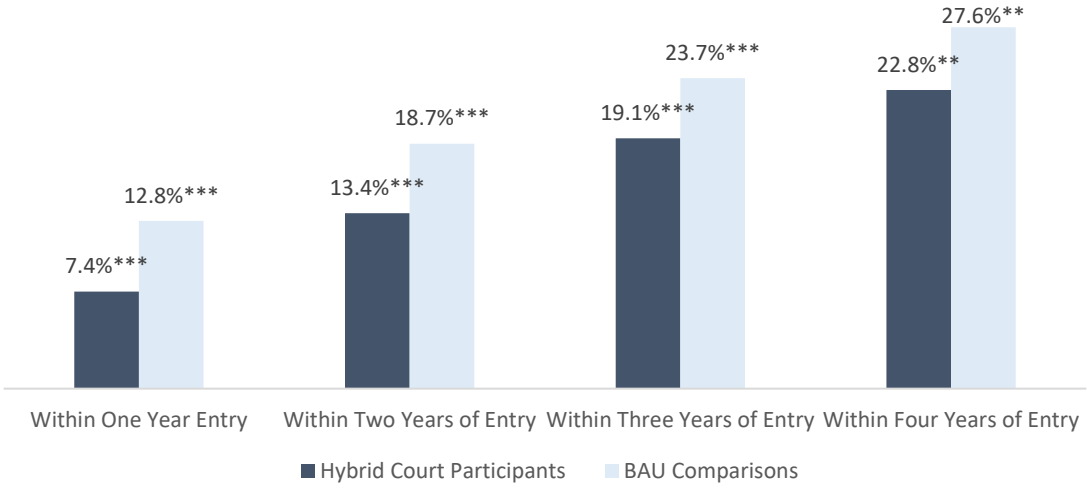
Figure 13: Four-Year Recidivism Rate for Hybrid Court Participants and Comparison Group



** Significant $p < .01$

Time to New Conviction Among Participants and Comparisons. *Figure 14* shows that significantly more BAU comparison people were reconvicted (any charge) within one year of entry (12.8 percent) compared to hybrid court participants (7.4 percent). The pattern continued for reconvictions within two, three, and four years of entry such that significantly more BAU comparison people were consistently reconvicted compared to hybrid court participants.

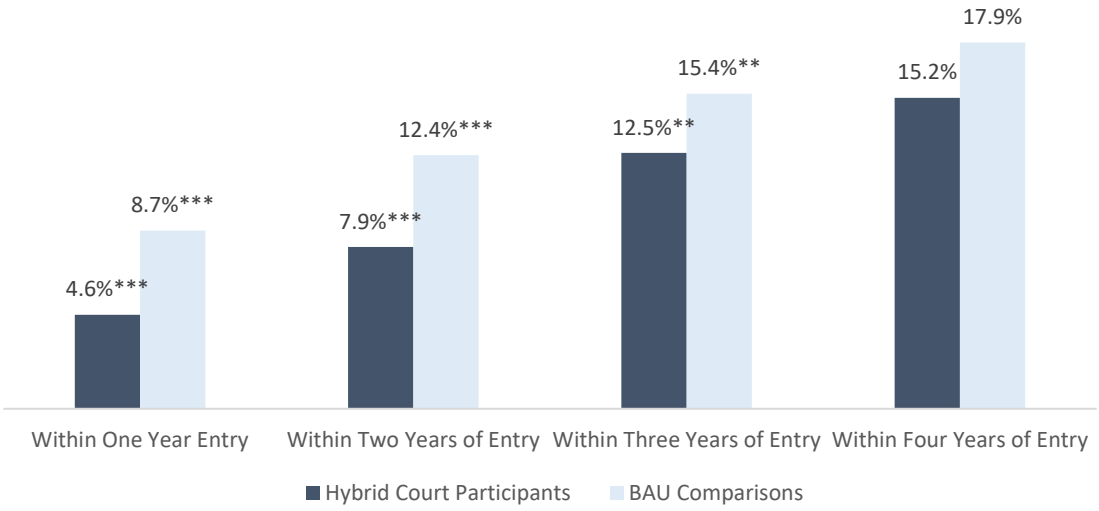
Figure 14: Time from Placement to New Conviction for Hybrid Court Participants versus BAU Comparisons (All Convictions)



*** Significant $p < .001$ ** $p < .01$

Figure 15 shows that significantly more BAU comparison people were reconvicted with drug and alcohol charges within one year of entry (8.7 percent) compared to hybrid court participants (4.6 percent). The pattern continued for reconvictions within two and three years of entry, such that significantly more BAU comparison people were consistently reconvicted compared to hybrid court participants. By four years' post-entry, however, there was no significant difference between hybrid court participants and the BAU comparisons.

Figure 15: Time from Placement to New Conviction for Hybrid Court Participants versus BAU Comparisons (Drug and Alcohol Convictions)



*** Significant $p < .001$ ** $p < .01$

Predicting Recidivism

As with predicting successful program completion, the NCSC evaluation team conducted two hierarchical binary logistic regressions to assess which program-level and individual-level variables predict recidivism. First, chi-square analyses determined which program-level variables were related to two-year and four-year recidivism; program-level variables that were significantly related to recidivism were included in the full models. The full chi-square analyses are in the *Technical Appendix: Detailed Analysis.* The program-level variables identified in the chi-square analyses and all individual-level variables were then included in two hierarchical binary logistic regressions – one predicting two-year recidivism and one predicting four-year recidivism. Because some program-level variables were extremely consistent across programs and therefore not good predictors, it was not uncommon for program-level variables to drop out of the models due to collinearity. Moreover, while the sample size of participants used in the recidivism models is large enough to conduct the evaluation analysis, a larger sample size may result in more robust findings.

Two-Year Recidivism

As displayed in *Table 31*, two program-level variables significantly predicted two-year recidivism. Controlling for all other factors entered into the model, participants in programs that required weekly court attendance in phase 1 were less likely to reoffend within two years. Alternatively, participants in programs in which a law enforcement officer attended court were more likely to reoffend within two years from entry.

Table 31: Program Variables Significantly Predicting Two-Year Recidivism for Hybrid Court Participants

Participant Characteristics	Impact	Significance Level *p*
Attend court weekly in Phase 1	The odds of recidivating within two years for participants placed into a hybrid court that requires participants to attend court weekly in Phase 1 are 44% lower than the odds of recidivating within two years for an otherwise similar participant enrolled in a program that does not require weekly court attendance in Phase 1.	.029
Law enforcement attends court	The odds of recidivating within two years for participants placed into a hybrid court where law enforcement attends court are 54% higher than the odds of recidivating within two years for an otherwise similar participant enrolled in a program that does not have law enforcement attend court.	.035

As displayed in *Table 32*, nine individual-level variables significantly predicted two-year recidivism in the full model. Controlling for all other factors entered into the model, participants were less likely to recidivate within two years if they: (1) were non-white other (compared to white); (2) were 31 to 40 years old at entry (compared to 21 to 30 years old at entry); (3) preferred a drug classified as "other"

versus opiates/heroin (e.g., cocaine, marijuana, and poly-substance); (4) received 100 to 200 hours; or 5) more than 200 hours of treatment (compared to fewer than 100 hours of treatment); (6) were a successful graduate; (7) did not receive only residential treatment; (8) did not receive a combination of residential and outpatient treatment; and (9) did not receive treatment that exceeded their ASAM level.

Table 32: Participant Variables Significantly Predicting Two-Year Recidivism for Hybrid Court Participants

Participant Characteristics	Impact	Significance Level *p*
Race	The odds of recidivating within two years for a participant who is not black or white is 65% lower than the odds of recidivating within two years for an otherwise similar white hybrid court participant.	.014
Age	The odds of recidivating within two years for a participant who is between the ages of 31 and 40 is 49% lower than the odds of recidivating within two years for an otherwise similar hybrid court participant who is between the ages of 21 and 30.	.016
Drug of choice – Other (e.g. cocaine, marijuana, and poly-substance)	The odds of recidivating within two years for a participant whose drug of choice is "other" is 39% lower than the odds of recidivating within two years for an otherwise similar hybrid court participant whose drug of choice is opiates/heroin.	.038
Treatment hours between 100 and 200	The odds of recidivating within two years for a participant who receives between 100 and 200 hours of treatment is 60% lower than the odds of recidivating within two years for an otherwise similar hybrid court participant who receives less than 100 hours of treatment.	.007
Treatment hours greater than 200	The odds of recidivating within two years for a participant who receives greater than 200 hours of treatment is 70% lower than the odds of recidivating within two years for an otherwise similar hybrid court participant who receives less than 100 hours of treatment.	.001
Completion status	The odds of recidivating within two years for a participant who successfully completed the program is 80% lower than the odds of recidivating within two years for an otherwise similar hybrid court participant who did not successfully complete the program.	< .001
Residential treatment only	The odds of recidivating within two years for a participant who participates in residential treatment only is 258% higher than the odds of recidivating within two years for an otherwise similar hybrid court participant who does not attend residential treatment while enrolled in the court.	.003

Participant Characteristics	Impact	Significance Level *p*
Residential treatment and outpatient treatment	The odds of recidivating within two years for a participant who participates in residential treatment and outpatient treatment is 149% higher than the odds of recidivating within two years for an otherwise similar hybrid court participant who does not attend residential treatment while enrolled in the court.	.012
Over treated in relation to ASAM criteria	The odds of recidivating within two years for participants who are over treated in relation to their assessed ASAM level are 114% higher than the odds of recidivating within two years for an otherwise similar participant who is treated at the level assessed by ASAM criteria.	.042

The NCSC team conducted a binary logistic regression to examine the extent to which the participant type (participant versus BAU) and proxy risk categories predicted two-year recidivism. Generally, BAU comparisons were significantly more likely to reoffend within two years of entry compared to hybrid court participants; low-risk participants and comparisons were significantly less likely to reoffend within two years compared to medium-risk participants and comparisons; and high-risk participants and comparisons were more likely to reoffend within two years compared to medium-risk participants and comparisons. The results were consistent when the proxy risk category was weighted so that perfect proxy risk matches between participants and comparisons took precedence in the model. The full regression model is in the *Technical Appendix: Proxy Risk Scoring*.

Four-Year Recidivism

Several individual-level variables significantly predicted four-year recidivism in the full model (see *Table 33*). While no program-level variables significantly predicted four-year recidivism, four individual-level variables significantly predicted four-year recidivism in the full model. Controlling for all other factors entered into the model, participants were less likely to recidivate within four years if: (1) their placement charge was a misdemeanor rather than a felony; (2) they were medium rather than high-risk; (3) they received more than 200 hours of treatment (compared to fewer than 100 hours of treatment); and (4) they successfully completed the hybrid court program. The full model is in *Technical Appendix: Detailed Analysis*.

Table 33: Four-Year Recidivism – Participant Characteristics for Hybrid Court Participants

Participant Characteristics	Impact	Significance Level *p*
Placement charge severity	The odds of recidivating within four years for a participant whose placement charge is a felony is 77% higher than the odds of recidivating within four years for an otherwise similar participant charged with misdemeanor who is placed in a hybrid court.	.020

Participant Characteristics	Impact	Significance Level *p*
Proxy Risk Level - High	The odds of recidivating within four years for a participant who is high-risk (per proxy risk) is 93% higher than the odds of recidivating within four years for an otherwise similar hybrid court participant who is medium-risk (per proxy risk).	.006
Treatment hours greater than 200	The odds of recidivating within four years for a participant who receives greater than 200 hours of treatment is 51% lower than the odds of recidivating within four years for an otherwise similar hybrid court participant who receives less than 100 hours of treatment.	.027
Completion Status	The odds of recidivating within four years for a participant who successfully completed the program is 75% lower than the odds of recidivating within four years for an otherwise similar hybrid court participant who did not successfully complete the program.	< .001

The NCSC team conducted a binary logistic regression to examine the extent to which participant type (participant versus BAU) and proxy risk category predicted four-year recidivism. Generally, BAU comparisons were significantly more likely to reoffend within four years of entry compared to hybrid court participants; low-risk participants and comparisons were significantly less likely to reoffend within four years compared to medium-risk participants and comparisons; and high-risk participants and comparisons were more likely to reoffend within four years compared to medium-risk participants and comparisons. The results were with a weighted proxy risk category. The full regression model is in the *Technical Appendix: Proxy Risk Scoring*.

Recommendations

Recommendation 1: Adjust the current matching process to include proxy risk variables.

The Michigan State Court Administrative Office (SCAO) compiles data from the Drug Court Case Management Information System (DCCMIS) in the Judicial Data Warehouse which allows SCAO to match drug court participants to a comparable probationer. In order to be matched to a drug court participant, the comparison person must match the participant on (1) an offense in the same county and court; (2) gender; (3) age range; (4) year of offense range; (5) current offense category; and (6) the number of court cases in the previous two years. The potential comparison person must not (1) have participated in a drug court program previously or (2) have a violent offense on his or her record. Once a match is made, the pair is assessed statistically to ensure they are comparable. Comparable pairs are matched in the system and any and all new offenses are recorded in the system.

Although the matching process ensures participants and their comparisons are matched on geography (court), some demographic factors (gender and age group), criminal history factors (number of cases two years prior and no violent offense history), and offense types (current offense category and year range), it does not attempt to match participant-comparison pairs on all elements of risk. In the current assessment, NCSC evaluators created a proxy risk score for each participant and his or her matched comparison person based on (1) age at placement (either drug court or probation); (2) age at first adult arrest; and (3) number of prior adult arrests. This technique allowed NCSC to identify participants and comparisons as high-, medium-, or low-risk at entry and analyses showed that approximately 50 percent of the participant-comparison pairs perfectly matched on proxy risk score. To sum up, even though participants are comparable on geography, demographic factors, and criminal offense factors, that is only the first step to ensuring comparable participant-comparison pairs.

In order to adjust the current matching process to account for participant and comparison risk, additional information could be gathered in the Judicial Data Warehouse, including factors for age at placement, age at first arrest (including juvenile arrests, if possible), and number of prior arrests (including juvenile arrests, if possible). Short of including a statewide risk-needs assessment (as discussed below), including these factors in the matching process is the next best option to better ensure the participant-comparison pairs are comparable in risk.

Recommendation 2: Adopt a statewide risk-needs instrument.

A substantial body of research shows drug courts that focus on high-risk/high-need defendants reduce crime approximately twice as much as those serving less serious defendants (Cissner et al., 2013; Fielding et al., 2002; Lowenkamp et al., 2005) and return approximately 50 percent greater cost savings to their communities (Bhati et al., 2008; Carey et al., 2008, 2012; Downey & Roman, 2010).

Criminogenic risk refers to the probability that a person under criminal justice supervision will re-offend at some time in the future, and is by definition, highly correlated with outcomes. Typically, third and fourth generation instruments used to assess criminogenic risk use both *static* factors, which are fixed and invariant (e.g., age of first arrest), and *dynamic* factors that are subject to change and are also

referred to as criminogenic needs (see below) (Andrews, Bonta, & Wormith, 2006). Drug courts should target high-risk/high-needs offenders (NADCP, 2013: Best Practice Standard I).

Criminogenic needs are conditions or statuses of offenders that increase their risk for re-offending and that should be addressed in case management planning (Andrews et al., 2006). For example, Andrews and Associates identify eight primary criminogenic needs (history of antisocial behavior, antisocial personality pattern, antisocial cognition, antisocial associates, family and/or marital, school and/or work, leisure and/or recreation, and substance abuse) while other researchers identify other needs such as financial problems and social adjustment (Northpointe, 2012). Many instruments (e.g., LS/CMI, LIS-R, COMPAS, ORAS) are used to assess and provide scores that reflect the magnitude of criminogenic needs, and these scores are related to outcomes, some more strongly than others.

To ensure court programs best identify and serve the high-risk/high-need population and reduce recidivism, NCSC recommends the adoption of a validated, statewide risk-needs assessment for both hybrid court participants and probationers in general. Not only would the use of a validated risk assessment instrument allow for better matching between hybrid court participants and their comparisons, it would also allow staff to better create case management, treatment, and supervision plans, taking into account participants' individual needs and risk levels.

Recommendation 3: Assess the use and effectiveness of residential treatment.

Due to the interesting findings surrounding residential treatment, the NCSC evaluation team recommends an examination of who is receiving residential treatment and to what extent the treatment is above or below their ASAM criteria level; to what extent participants who receive residential treatment successfully complete it; and the current practices of residential treatment providers.

First, NCSC recommends that further investigation be made into who is receiving what level of treatment and why it is warranted to determine the impact on outcomes. In some instances, participants received residential treatment even though it is below or exceeds their ASAM criteria level. The two-year recidivism regression model showed that hybrid court participants who were over-treated in relation to their assessed ASAM level (received some treatment above their assessed ASAM criteria need) were more likely to reoffend within two years of entry.

Second, the NCSC evaluation team recommends a quality assurance assessment of treatment providers to ensure evidence-based practices are present and being accurately utilized. As previously discussed in this report, drug court treatment produces its strongest effect on participant behavior and subsequent outcomes when it reflects the following characteristics: (1) a continuum of care for substance abuse treatment is offered (including detoxification, residential, sober living, day treatment, intensive outpatient and outpatient services); (2) one or two treatment agencies have primary responsibility for delivering treatment services and clinically trained representatives from these agencies are core members of the Drug Court Team; (3) treatment providers administer treatments that are manualized and demonstrated to improve outcomes for addicted offenders (e.g., Moral Reconation Therapy (MRT),the MATRIX model, and Multi-Systemic Therapy (MST); Marlowe, 2010); (4) participants are assigned to a level of care based on a standardized assessment of their treatment needs such as the ASAM criteria, as opposed to relying on professional judgment; and (5) participants have access to

prescribed psychotropic or addiction medications (Medically-Assisted Treatment or MAT) when warranted (National Association of Drug Court Professionals [NADCP], 2013; Best Practice Standard V). The regression model predicting successful program completion showed that hybrid court participants who received residential treatment (either solely or in combination with outpatient treatment) were less likely to successfully complete and were more likely to reoffend within two years of entry. Investigation and quality assurance assessment into residential treatment practices should help explain the effects of residential treatment.

Finally, we know that residential treatment plays an important role in long-term outcomes, but one piece of the residential treatment puzzle is missing. Specifically, we do not know who successfully completed and who unsuccessfully completed residential treatment. Knowing whether someone successfully exited residential treatment may shed light on the outcomes of treatment type.

Appendix A: Explanation of Offense Categories

Table 34: Explanation of Offense Categories

Offense Category	Examples of Offenses within this Category
Drug Related	Controlled Substance Use/Possession Controlled Substance Manufacturing/Distribution Other Drug Offense
Alcohol Related	DUI of Alcohol/C.S. 1st DUI of Alcohol/C.S. 2nd DUI of Alcohol/C.S. 3rd Other Alcohol Offense
Juvenile	Juvenile Status Offense – Incorrigible Juvenile Status Offense – Runaway Juvenile Status Offense – Truancy Juvenile Status Offense – Curfew Violation
Neglect/Abuse	Neglect and Abuse Civil Neglect and Abuse Criminal
Other	Breaking and Entering/Home invasion Property Offense Non-violent traffic offense (criminal) Other traffic offense (criminal)

Technical Appendix: Detailed Analysis

Table 35: Program Variables included in Models

Program Variable	Description
Program Capacity > 40	Programs with capacity ≤ 40 = 0 Programs with capacity > 40 participants = 1
Program Maturity	Programs operational < 10 years = 0 Programs operation ≥ 10 years = 1
Average Length of Stay (LOS) < 12 Months	Programs with LOS ≥ 12 months = 0 Programs with LOS < 12 months = 1
Average Arrest to Tx < 90 Days	Programs with average time from arrest to treatment ≥ 90 days = 0 Programs with average time from arrest to treatment < 90 days =1
Require Weekly Court Attendance in Phase 1	Programs that do not require weekly court attendance in Phase 1 = 0 Programs that require weekly court attendance in Phase 1 = 1
Require Weekly Supervision Contact in Phase 1	Programs that do not require weekly supervision contact in Phase 1 = 0 Programs that require weekly supervision contact in Phase 1 = 1
Require Daily AA in Phase 1	Programs that do not require daily AA/NA in Phase 1 = 0 Programs that require daily AA/NA in Phase 1 = 1
Law Enforcement Attends Court	Programs in which law enforcement does not attend court = 0 Programs in which law enforcement attends court = 1
Prosecutor & Defense Attend Staffing	Programs in which attorneys do not attend staffing = 0 Programs in which attorneys attend staffing = 1
Prosecutor & Defense Attend Court	Programs in which attorneys do not attend court = 0 Programs in which attorneys attend court = 1
No More than Two Treatment Providers	Programs with three or more treatment providers = 0 Programs with no more than two treatment providers = 1
Maintains at Least 4:1 Incentive to Sanction Ratio	Programs that do not maintain at least a 4:1 incentive to sanction ratio = 0 Programs that maintain at least a 4:1 incentive to sanction ratio = 1
Alcohol Tests Twice Weekly in Phase 1	Programs that do not test for alcohol twice weekly in Phase 1 = 0 Programs that test for alcohol twice weekly in Phase 1 = 1
Drug Tests Twice Weekly in Phase 1	Programs that do not test for drugs twice weekly in Phase 1 = 0 Programs that test for drugs twice weekly in Phase 1 = 1

Program Variable	Description
Uses Remote Testing	Programs that do not use remote testing = 0 Programs that use remote testing = 1
Requires Four Months Sobriety to Complete	Programs that do not require four months of sobriety to complete = 0 Programs that require four months of sobriety to complete = 1
Court Location – Rural	Suburban or Urban programs = 0 Rural programs = 1

Table 36: Demographic Variables

Participant Factors	Explanation
Gender (compared to male)	Male = 0 Female = 1
Age Group (compared to < 21)	< 21 years old at entry = 0 21 – 30 years old at entry = 1 31 – 40 years old at entry = 2 41 – 50 years old at entry = 3 51 – 60 years old at entry = 4 > 60 years old at entry = 5
Race (compared to White)	White = 0 Black = 1 Other Non-White = 2
Drug of Choice Collapsed (compared to Opiates/Heroin)	Opiates/Heroin = 0 Alcohol = 1 Methamphetamine/Amphetamines = 2 Other = 3
Marital Status (compared to Non-Married)	Non-Married = 0 Married = 1
Employment at Entry (compared to unemployed)	Unemployed = 0 Employed = 1
Placement Offense Category (compared to Drug)	Drug = 0 Property = 1 Other = 2
Prior Convictions	No prior convictions = 0 Prior convictions = 1
Proxy Risk Category (compared to Medium Risk)	Medium Risk = 0 Low Risk = 1 High Risk = 2
Total Number of Treatment Hours (compared to < 100 hours)	< 100 hours = 0 100 – 200 hours = 1 > 200 hours = 2
Mental Health History	No mental health history = 0 Mental health history = 1
Number of Days in Court (Median Split)	< 420 days = 0 > 419 days = 1
Drug Tested Twice Per Week on Average	Not tested twice per week on average = 0 Tested twice per week on average =1
Substance Abuse Treatment Groups (compared to Non-Residential Only)	Non-Residential Only = 0 Residential Only = 1 Both Residential and Non-Residential = 2

Table 37: Chi-Square Analyses Assessing Which Program-Level Variables Are Related to Successful Program Completion (N=6,047)

Program Variables	Completion					
	Non-Graduates		Graduates		Total	
	#	%	#	%	#	%
Program Capacity > 40 X^2 (1, N=6,319) = 1.77, p = .183						
No	335	39.3%	517	60.7%	852	100.0%
Yes	2,020	36.9%	3,447	63.1%	5,467	100.0%
Program Maturity *Significant:* X^2 (1, N=6,319) = 4.17, p = .041						
No	565	39.6%	863	60.4%	1,428	100.0%
Yes	1,790	36.6%	3,101	63.4%	4,891	100.0%
Average Length of Stay < 12 Months X^2 (1, N=6,039) = 0.69, p = .405						
No	1,499	37.0%	2,553	63.0%	4,052	100.0%
Yes	757	38.1%	1,230	61.9%	1,987	100.0%
Average Phase 1 Length of Stay < 5 Months *Significant:* X^2 (1, N=6,036) = 70.46, p < .001						
No	1,219	42.9%	1,625	57.1%	2,844	100.0%
Yes	1,034	32.4%	2,158	67.6%	3,192	100.0%
Average Arrest to Tx < 90 Days *Significant:* X^2 (1, N=5,145) = 19.14, p < .001						
No	1,557	38.1%	2,528	61.9%	4,085	100.0%
Yes	327	30.8%	733	69.2%	1,060	100.0%
Require Weekly Court Attendance in Phase 1 *Significant:* X^2 (1, N=5,409) = 34.10, p < .001						
No	1,569	33.6%	3,105	66.4%	4,674	100.0%
Yes	328	44.6%	407	55.4%	735	100.0%
Require Weekly Supervision Contact in Phase 1 *Significant:* X^2 (1, N=4,362) = 6.93, p = .008						
No	504	39.7%	767	60.3%	1,271	100.0%
Yes	1,280	35.5%	2,324	64.5%	3,091	100.0%
Require Daily AA in Phase 1 X^2 (1, N=4,956) = 3.68, p = .055						
No	1,391	35.0%	2,585	65.0%	3,976	100.0%
Yes	311	31.7%	669	68.3%	980	100.0%
Law Enforcement Attends Court X^2 (1, N=6,319) = 0.32, p = .571						
No	1,940	37.4%	3,242	62.6%	5,183	100.0%
Yes	415	36.5%	721	63.5%	1,136	100.0%
Prosecutor & Defense Attend Staffing X^2 (1, N=6,319) = 1.76, p = .184						
No	1,271	38.0%	2,071	62.0%	3,342	100.0%
Yes	1,084	36.4%	1,893	63.6%	2,977	100.0%
Prosecutor & Defense Attend Court X^2 (1, N=6,319) = 0.13, p = .720						
No	1,217	37.5%	2,030	62.5%	3,247	100.0%
Yes	1,138	37.0%	1,934	63.0%	3,072	100.0%
No More than Two Treatment Providers X^2 (1, N=6,319) = 0.74, p = .391						

Program Variables	Completion					
	Non-Graduates		Graduates		Total	
	#	%	#	%	#	%
No	1,896	37.5%	3,156	62.5%	5,052	100.0%
Yes	459	36.2%	808	63.8%	1,267	100.0%
Maintains at Least 4:1 Incentive to Sanction Ratio N/A						
No	0	0.0%	0	0.0%	0	0 (0.0%)
Yes	2,248	37.3%	3,782	62.7%	6,030	100.0%
Alcohol Tests Twice Weekly in Phase 1 *Significant:* X^2 (1, N=6,319) = 46.78, $p < .001$						
No	1,202	41.8%	1,672	58.2%	2,874	100.0%
Yes	1,153	33.5%	2,292	66.5%	3,445	100.0%
Drug Tests Twice Weekly in Phase 1 *Significant:* X^2 (1, N=5,171) = 54.15, $p < .001$						
No	275	26.9%	748	73.1%	1,023	100.0%
Yes	1,629	39.3%	2,519	60.7%	4,148	100.0%
Uses Remote Testing X^2 (1, N=6,319) = 3.32, $p = .068$						
No	1,870	37.9%	3,070	62.1%	4,940	100.0%
Yes	485	35.2%	894	64.8%	1,379	100.0%
Requires Four Months Sobriety to Complete *Significant:* X^2 (1, N=4,616) = 14.27, $p < .001$						
No	397	32.0%	842	68.0%	1,239	100.0%
Yes	1,286	38.1%	2,091	61.9%	3,377	100.0%
Court Location – Rural *Significant:* X^2 (1, N=6,319) = 8.75, $p = .003$						
No	2,175	36.8%	3,736	63.2%	5,911	100.0%
Yes	180	44.1%	228	55.9%	408	100.0%

As a result of the above analysis, NCSC included all independent variables that had a significant chi-square into the regression model (although some were later excluded for collinearity). Program-level variables entered included:

- Program Maturity
- Average Phase 1 Length of Stay < 5 Months
- Average Arrest to Treatment < 90 Days
- Require Weekly Court Attendance in Phase
- Require Weekly Supervision Contact in Phase 1
- Alcohol Tests at Least Twice Weekly in Phase 1
- Drug Tests at Least Twice Weekly in Phase 1
- Requires Four Month Sobriety to Complete Program
- Court Location Type – Rural

Table 38: Chi-Square Analyses Assessing Which Program-Level Variables Are Related to Two-Year Recidivism

Program Variables	Two-Year Recidivism					
	Participants Did Not Recidivate		Participants Recidivated		Total	
	#	%	#	%	#	%
Program Capacity > 40 *Significant:* X^2 (1, N=4,519) = 18.65, p < .001						
No	518	82.1%	113	17.9%	631	100.0%
Yes	3,431	88.2%	457	11.8%	3,888	100.0%
Program Maturity *Significant:* X^2 (1, N=4,520) = 9.71, p = .002						
No	896	84.6%	163	15.4%	1,059	100.0%
Yes	3,054	88.2%	407	11.8%	3,461	100.0%
Average Length of Stay < 12 Months X^2 (1, N=4,519) = 1.31, p = .253						
No	2,691	87.0%	402	13.0%	3,093	100.0%
Yes	1,258	88.2%	168	11.8%	1,426	100.0%
Average Phase 1 Length of Stay < 5 Months *Significant:* X^2 (1, N=4,519) = 7.46, p = .006						
No	1,844	86.0%	301	14.0%	2,145	100.0%
Yes	2,105	88.7%	269	11.3%	2,374	100.0%
Average Arrest to Tx < 90 Days X^2 (1, N=3,877) = 0.19, p = .666						
No	2,673	87.1%	397	12.9%	3,070	100.0%
Yes	698	86.5%	109	13.5%	807	100.0%
Require Weekly Court Attendance in Phase 1 *Significant:* X^2 (1, N=3,795) = 17.60, p < .001						
No	2,898	89.2%	350	10.8%	3,248	100.0%
Yes	454	83.0%	93	17.0%	547	100.0%
Require Weekly Supervision Contact in Phase 1 X^2 (1, N=3,434) = 1.81, p = .178						
No	662	87.3%	96	12.7%	758	100.0%
Yes	2,384	89.1%	292	10.9%	2,676	100.0%
Require Daily AA in Phase 1 *Significant:* X^2 (1, N=3,474) = 5.44, p = .020						
No	2,402	88.8%	304	11.2%	2,706	100.0%
Yes	658	85.7%	110	14.3%	768	100.0%
Law Enforcement Attends Court *Significant:* X^2 (1, N=4,519) = 16.31, p < .001						
No	3,232	88.4%	426	11.6%	3,658	100.0%
Yes	717	83.3%	144	16.7%	861	100.0%
Prosecutor & Defense Attend Staffing *Significant:* X^2 (1, N=4,519) = 4.02, p = .045						
No	2,041	88.4%	269	11.6%	2,310	100.0%
Yes	1,908	86.4%	301	13.6%	2,209	100.0%
Prosecutor & Defense Attend Court *Significant:* X^2 (1, N=4,519) = 8.83, p = .003						
No	1,981	88.9%	248	11.1%	2,229	100.0%
Yes	1,968	85.9%	322	14.1%	2,290	100.0%
No More than Two Treatment Providers X^2 (1, N=4,519) = 0.20, p = .653						

Program Variables	Two-Year Recidivism					
	Participants Did Not Recidivate		Participants Recidivated		Total	
	#	%	#	%	#	%
No	3,296	87.3%	480	12.7%	3,776	100.0%
Yes	653	87.9%	90	12.1%	743	100.0%
Maintains at Least 4:1 Incentive to Sanction Ratio N/A						
No	0	0.0%	0	0.0%	0	0.0%
Yes	3,948	87.4%	570	12.6%	4,518	100.0%
Alcohol Tests Twice Weekly in Phase 1 *Significant:* X^2 (1, N=4,519) = 21.69, $p < .001$						
No	1,792	84.9%	318	15.1%	2,110	100.0%
Yes	2,157	89.5%	252	10.5%	2,409	100.0%
Drug Tests Twice Weekly in Phase 1 *Significant:* X^2 (1, N=3,628) = 9.51, $p = .002$						
No	688	90.4%	73	9.6%	761	100.0%
Yes	2,471	86.2%	396	13.8%	2,867	100.0%
Uses Remote Testing X^2 (1, N=4,519) = 3.43, $p = .064$						
No	3,265	87.0%	489	13.0%	3,754	100.0%
Yes	684	89.4%	81	10.6%	765	100.0%
Requires Four Months Sobriety to Complete X^2 (1, N=3,263) = 0.29, $p = .593$						
No	798	87.1%	118	12.9%	916	100.0%
Yes	2,028	86.4%	319	13.6%	2,347	100.0%
Court Location – Rural X^2 (1, N=4,519) = 0.03, $p = .859$						
No	3,673	87.4%	529	12.6%	4,202	100.0%
Yes	276	87.1%	41	12.9%	317	100.0%

As a result of the above analysis, NCSC included all independent variables that had a significant chi-square into the regression model (although some were later excluded for collinearity). Program-level variables entered included:

- Program Capacity
- Program Maturity
- Average Phase 1 Length of Stay < 5 Months
- Require Weekly Court Attendance in Phase 1
- Require Daily AA in Phase 1
- Law Enforcement Attends Court
- Prosecutor & Defense Attend Staffing
- Prosecutor & Defense Attend Court
- Alcohol Tests at Least Twice Weekly in Phase 1
- Drug Tests at Least Twice Weekly in Phase 1

Table 39: Chi-Square Analyses Assessing Which Program-Level Variables Are Related to Four-Year Recidivism

Program Variables	Four-Year Recidivism					
	Participants Did Not Recidivate		Participants Recidivated		Total	
	#	%	#	%	#	%
Program Capacity > 40						
X^2 (1, N=1,702) = 2.49, p = .114						
No	161	74.2%	56	25.8%	217	100.0%
Yes	1,172	78.9%	313	21.1%	1,485	100.0%
Program Maturity						
Significant: X^2 (1, N=1,702) = 3.96, p = .047						
No	252	74.3%	87	25.7%	339	100.0%
Yes	1,081	79.3%	282	20.7%	1,363	100.0%
Average Length of Stay < 12 Months						
X^2 (1, N=1,702) = 1.51, p = .220						
No	898	77.5%	261	22.5%	1,159	100.0%
Yes	435	80.1%	108	19.9%	543	100.0%
Average Phase 1 Length of Stay < 5 Months						
X^2 (1, N=1,702) = 0.13, p = .717						
No	683	78.0%	193	22.0%	876	100.0%
Yes	650	78.7%	176	21.3%	826	100.0%
Average Arrest to Tx < 90 Days						
X^2 (1, N=1,414) = 0.11, p = .736						
No	880	77.4%	257	22.6%	1,137	100.0%
Yes	217	78.3%	60	21.7%	277	100.0%
Require Weekly Court Attendance in Phase 1						
X^2 (1, N=1,332) = 1.98, p = .159						
No	924	81.3%	212	18.7%	1,136	100.0%
Yes	151	77.0%	45	23.0%	196	100.0%
Require Weekly Supervision Contact in Phase 1						
X^2 (1, N=1,232) = 0.00, p = .974						
No	169	81.3%	39	18.8%	208	100.0%
Yes	831	81.2%	193	18.8%	1,024	100.0%
Require Daily AA in Phase 1						
X^2 (1, N=1,274) = 0.06, p = .814						
No	751	78.9%	201	21.1%	952	100.0%
Yes	256	79.5%	66	20.5%	322	100.0%
Law Enforcement Attends Court						
Significant: X^2 (1, N=1,702) = 20.19, p < .001						
No	1,101	80.5%	266	19.5%	1,367	100.0%
Yes	232	69.3%	103	30.7%	335	100.0%
Prosecutor & Defense Attend Staffing						
Significant: X^2 (1, N=1,702) = 5.01, p = .025						
No	691	80.5%	167	19.5%	858	100.0%
Yes	642	76.1%	202	23.9%	844	100.0%
Prosecutor & Defense Attend Court						
Significant: X^2 (1, N=1,702) = 11.36, p = .001						
No	663	81.9%	147	18.1%	810	100.0%
Yes	670	75.1%	222	24.9%	892	100.0%
No More than Two Treatment Providers						

Program Variables	Four-Year Recidivism					
	Participants Did Not Recidivate		Participants Recidivated		Total	
	#	%	#	%	#	%
Significant: X^2 (1, N=1,702) = 5.43, p = .020						
No	1,120	79.4%	291	20.6%	1,411	100.0%
Yes	213	73.2%	78	26.8%	291	100.0%
Maintains at Least 4:1 Incentive to Sanction Ratio N/A						
No	0	0.0%	0	0.0%	0	0.0%
Yes	1,333	78.3%	369	21.7%	1,702	100.0%
Alcohol Tests Twice Weekly in Phase 1 *Significant:* X^2 (1, N=1,702) = 24.69, p < .001						
No	669	73.7%	239	26.3%	908	100.0%
Yes	664	83.6%	130	16.4%	794	100.0%
Drug Tests Twice Weekly in Phase 1 X^2 (1, N=1,378) = 1.19, p = .275						
No	252	80.3%	62	19.7%	314	100.0%
Yes	823	77.3%	241	22.7%	1,064	100.0%
Uses Remote Testing X^2 (1, N=1,702) = 0.78, p = .377						
No	1,162	78.0%	328	22.0%	1,490	100.0%
Yes	171	80.7%	41	19.3%	212	100.0%
Requires Four Months Sobriety to Complete X^2 (1, N=1,151) = 1.29, p = .256						
No	231	79.7%	59	20.3%	290	100.0%
Yes	658	76.4%	203	23.6%	861	100.0%
Court Location – Rural X^2 (1, N=1,702) =3.04, p = .081						
No	1,242	77.9%	353	22.1%	1,595	100.0%
Yes	91	85.0%	16	15.0%	107	100.0%

As a result of the above analysis, NCSC included all independent variables that had a significant chi-square into the regression model (although some were later excluded for collinearity). Program-level variables entered included:

- Program Maturity
- Law Enforcement Attends Court
- Prosecutor & Defense Attend Staffing
- Prosecutor & Defense Attend Court
- No More than Two Treatment Providers
- Alcohol Tests at Least Twice Weekly in Phase 1

Table 40: Full Regression Model Predicting Successful Program Completion

Variables	B	S.E.	Odds Ratio
Program Variables			
Program Maturity (10+ Years)*	**.543**	**.216**	**72%**
Average Phase 1 Length of Stay < 5 Months†	.448	.234	-
Average Time from Arrest to Tx < 90 Days**	**-.672**	**.242**	**49%**
Requirement of Weekly Court Attendance – Phase 1	.074	.274	-
Requirement of Weekly Contact with Supervision – Phase 1	.312	.224	-
Alcohol Test Twice per Week – Phase 1†	-.540	.310	-
Require Four Months Sobriety to Complete	.209	.231	-
Court Location Type – Rural	-.381	.313	-
Individual Variables			
Gender (compared to male)	-.169	.167	-
Age Group (compared to < 21)			
21 – 30	.402	.303	-
31 – 40	.366	.354	-
41 – 50	.495	.372	-
51 – 60*	**.929**	**.431**	**153%**
> 60**	**2.510**	**.881**	**1,130%**
Race (compared to White)			
Black***	**-1.113**	**.283**	**70%**
Other Non-White	-.481	.331	-
Drug of Choice (compared to Opioids/Heroin)			
Alcohol*	**.618**	**.314**	**86%**
Methamphetamines/Amphetamines	.793	.756	-
Others	.174	.290	-
Marital Status (compared to Non-Married)**	**.685**	**.256**	**98%**
Employment at Entry (compared Unemployed)	.227	.169	-
Placement Offense Category (compared to Drug)			
DUI/Alcohol	.249	.327	-
Property†	-.690	.354	-
Other	-.066	.352	-
Charge Type (compared to Non-Felony)†	.486	.291	-
Prior Convictions (No v. Yes)	-.098	.244	-
Participant Proxy Risk Category (compared to Medium Risk)			
Low Risk**	**.511**	**.192**	**67%**
High Risk†	-.469	.279	-
Prior Substance Abuse Treatment (No v. Yes)	-.240	.174	-
Total Number of Treatment Hours (compared to < 100)			
100 – 200 hours	-.110	.250	-
> 200 hours†	-.437	.281	-
Mental Health History (No v. Yes)**	**-.526**	**.167**	**41%**
Number of Days in Court (compared to < 420 days)***	**2.448**	**.174**	**1,056%**
Drug Tested Twice Per Week on Average*	**.492**	**.213**	**64%**
Substance Abuse Treatment (compared to Non-Residential Only)			
Residential Only**	**-1.086**	**.411**	**66%**
Both Residential and Non-Residential***	**-.899**	**.240**	**59%**
Constant	-1.813	.702	.163

***Significant $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$

Table 41: Full Regression Model Predicting Successful Program Completion – Collapsed Age Group and Number of Days in Court as Continuous Factor

Variables	B	S.E.	Odds Ratio
Program Variables			
Program Maturity (10+ Years)* **	**.754**	**.234**	**112.6%**
Average Phase 1 Length of Stay < 5 Months* **	**1.009**	**.265**	**174.4%**
Average Time from Arrest to Tx < 90 Days	-.182	.258	-
Requirement of Weekly Court Attendance – Phase 1	.335	.303	-
Requirement of Weekly Contact with Supervision – Phase 1†	.497	.259	-
Alcohol Test Twice per Week – Phase 1* **	**-1.185**	**.334**	**69.4%**
Require Four Months Sobriety to Complete*	**.662**	**.262**	**93.9%**
Court Location Type – Rural**	**-.919**	**.341**	**60.1%**
Individual Variables			
Gender (compared to male)	-.207	.184	-
Age Group (compared to < 21)			
21 – 30	.132	.330	-
31 – 40	.179	.386	-
41 – 50	.411	.407	-
> 50†	.793	.454	-
Race (compared to White)			
Black* **	**-1.084**	**.297**	**66.2%**
Other Non-White	-.564	.346	-
Drug of Choice (compared to Opioids/Heroin)			
Alcohol	.422	.346	-
Methamphetamines/Amphetamines	.615	.818	-
Others	.051	.322	-
Marital Status (compared to Non-Married)*	**.611**	**.277**	**84.3%**
Employment at Entry (compared Unemployed)	.089	.185	-
Placement Offense Category (compared to Drug)			
DUI/Alcohol	-.033	.355	-
Property*	**-.872**	**.401**	**58.2%**
Other	-.008	.388	-
Charge Type (compared to Non-Felony)	.353	.318	-
Prior Convictions (No v. Yes)	-.048	.262	-
Participant Proxy Risk Category (compared to Medium Risk)			
Low Risk**	**.613**	**.207**	**84.5%**
High Risk	-.286	.307	-
Prior Substance Abuse Treatment (No v. Yes)	-.207	.186	-
Total Number of Treatment Hours (compared to < 100)			
100 – 200 hours	-.154	.271	-
> 200 hours*	**-.759**	**.303**	**53.2%**
Mental Health History (No v. Yes)* **	**-.612**	**.185**	**45.7%**
Number of Days in Court* **	**.009**	**.001**	**9.0%**
Drug Tested Twice Per Week on Average**	**.638**	**.235**	**89.3%**
Substance Abuse Treatment (compared to Non-Residential Only)			
Residential Only	-.529	.480	-
Both Residential and Non-Residential* **	**-1.031**	**.264**	**64.3%**
Constant	-4.596	.808	.010

***Significant $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$

Table 42: Full Regression Model Predicting Two-Year Recidivism

Variables	B	S.E.	Odds Ratio
Program Variables			
Program Capacity > 40	-.269	.229	-
Program Maturity (10+ Years)	-.091	.224	-
Average Phase 1 Length of Stay < 5 Months	.173	.188	-
Requirement of Weekly Court Attendance – Phase 1*	**-.571**	**.262**	**44%**
Requirement Daily AA Meetings – Phase 1†	.413	.216	-
Law Enforcement Attends Court*	**.428**	**.203**	**54%**
Alcohol Test Twice per Week – Phase 1	-.001	.203	-
Individual Variables			
Gender (compared to male)	-.009	.175	-
Age Group (compared to 21 – 30)			
31 – 40*	**-.680**	**.283**	**49%**
41 – 50	-.152	.324	-
51 – 60	-.360	.370	-
Race (compared to White)			
Black	.090	.263	-
Other Non-White	**-1.038**	**.421**	**65%**
Drug of Choice (compared to Opioids/Heroin)			
Alcohol†	-.542	.309	-
Methamphetamines/Amphetamines	-.708	.474	-
Others*	**-.501**	**.241**	**39%**
Marital Status (compared to Non-Married)	-.114	.247	-
Employment at Entry (compared Unemployed)**	-.493	.174	-
Placement Offense Category (compared to Drug)			
DUI/Alcohol	-.195	.327	-
Property	.130	.265	-
Other	.227	.307	-
Charge Type (compared to Non-Felony)	.268	.228	-
Prior Convictions (No v. Yes)	.247	.340	-
Participant Proxy Risk Category (compared to Medium Risk)			
Low Risk	-.282	.199	-
High Risk	.291	.236	-
Prior Substance Abuse Treatment (No v. Yes)	.136	.175	-
Total Number of Treatment Hours (compared to < 100)			
100 – 200 hours**	**-.918**	**.338**	**60%**
> 200 hours***	**-1.210**	**.364**	**70%**
Mental Health History (No v. Yes)	.074	.178	-
Number of Days in Court (compared to < 420 days)	.003	.174	-
Discharge Status (compared to Non-Graduate)***	**-1.629**	**.188**	**80%**
Drug Tested Twice Per Week on Average†	-.142	.188	-
Substance Abuse Treatment (compared to Non-Residential Only)			
Residential Only**	**1.275**	**.425**	**258%**
Both Residential and Non-Residential*	**.913**	**.362**	**149%**
Constant	-.049	.534	.952

***Significant $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$

Table 43: Full Regression Model Predicting Two-Year Recidivism – Includes Overtreatment

Variables	B	S.E.	Odds Ratio
Program Variables			
Program Capacity > 40	-.403	.442	-
Program Maturity (10+ Years)	-.627	.450	-
Average Phase 1 Length of Stay < 5 Months	-.200	.375	-
Requirement of Weekly Court Attendance – Phase 1†	-.927	.546	-
Requirement Daily AA Meetings – Phase 1*	**1.367**	**.576**	**292%**
Law Enforcement Attends Court	.448	.412	-
Alcohol Test Twice per Week – Phase 1	-.233	.481	-
Individual Variables			
Gender (compared to male)	-.432	.350	-
Age Group (compared to 21 – 30)			
31 – 40	-.258	.554	-
41 – 50	.055	.659	-
51 – 60	.367	.746	-
Race (compared to White)			
Black	-.163	.615	-
Other Non-White	-1.485	1.093	-
Drug of Choice (compared to Opioids/Heroin)			
Alcohol	-.339	.613	-
Methamphetamines/Amphetamines	-1.244	.884	-
Others**	**-1.425**	**.455**	**76%**
Marital Status (compared to Non-Married)	-.350	.478	-
Employment at Entry (compared to Unemployed)	-.380	.358	-
Placement Offense Category (compared to Drug)			
DUI/Alcohol	-.790	.713	-
Property	.409	.446	-
Other	.323	.512	-
Charge Type (compared to Non-Felony)	-.484	.451	-
Prior Convictions (No v. Yes)	.297	.568	-
Participant Proxy Risk Category (compared to Medium Risk)			
Low Risk	-.183	.395	-
High Risk	.284	.441	-
Prior Substance Abuse Treatment (No v. Yes)	-.258	.361	-
Total Number of Treatment Hours (compared to < 100)			
100 – 200 hours*	**-1.803**	**.761**	**84%**
> 200 hours*	**-1.298**	**.592**	**73%**
Mental Health History (No v. Yes)	-.048	.338	-
Number of Days in Court (compared to < 420 days)	-.248	.363	-
Discharge Status (compared to Non-Graduate)*	**-.822**	**.406**	**56%**
Drug Tested Twice Per Week on Average	-.305	.370	-
Overtreated (No v. Yes)*	**.761**	**.375**	**114%**
Constant	2.187	1.202	8.907

**Significant $p < .01$, * $p < .05$, † $p < .10$

Table 44: Full Regression Model Predicting Four-Year Recidivism

Variables	B	S.E.	Odds Ratio
Program Variables			
Program Maturity (10+ Years)	-.185	.230	-
Law Enforcement Attends Court†	.439	.227	-
Prosecutor & Defense Attend Staffing	-.073	.350	-
Prosecutor & Defense Attend Court	.058	.398	-
Number of Treatment Providers	-.020	.044	-
Number of Treatment Providers (polynomial)	.001	.001	-
Alcohol Test Twice per Week – Phase 1	.205	.228	-
Individual Variables			
Gender (compared to male)	-.115	.176	-
Age Group (compared to 21 - 30)			
31 – 40†	-.532	.282	-
41 – 50	-.043	.321	-
51 – 60	-.080	.355	-
Race (compared to White)			
Black	-.012	.274	-
Other Non-White	.022	.313	-
Drug of Choice (compared to Opioids/Heroin)			
Alcohol	-.276	.324	-
Methamphetamines/Amphetamines	.127	.398	-
Others	-.245	.239	-
Marital Status (compared to Non-Married)	-.091	.229	-
Employment at Exit (compared to Unemployed)	-.078	.194	-
Placement Offense Category (compared to Drug)			
DUI/Alcohol	-.266	.326	-
Property	.106	.261	-
Other	.295	.335	-
Charge Type (compared to Non-Felony)*	**.570**	**.245**	**77%**
Prior Convictions (No v. Yes)	-.023	.263	-
Participant Proxy Risk Category (compared to Medium Risk)			
Low Risk†	-.322	.192	-
High Risk**	**.658**	**.248**	**93%**
Prior Substance Abuse Treatment (No v. Yes)	.132	.173	-
Total Number of Treatment Hours (compared to < 100)			
100 – 200 hours	-.195	.292	-
> 200 hours*	**-.702**	**.318**	**51%**
Mental Health History (No v. Yes)	.250	.172	-
Number of Days in Court (compared to < 420 days)†	.312	.179	-
Discharge Status (compared to Non-Graduate)***	**-1.402**	**.201**	**75%**
Drug Tested Twice Per Week on Average†	-.162	.193	-
Substance Abuse Treatment (compared to Non-Residential Only)			
Residential Only	.217	.387	-
Both Residential and Non-Residential	.533	.300	-
Constant	-.263	.560	.769

***Significant $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$

Technical Appendix: Proxy Risk Scoring

The cut-off points for each item are described in detail below.

Current age (at the time of probation/hybrid court placement): A value of 0, 1 or 2 was assigned based on the participant's age at placement, relative to the remainder of the population. A score of 2 was assigned to the youngest third of the population (anyone under 28.4 years of age at the time of placement), a 1 was assigned to the middle third of the population (anyone between the ages of 28.4 and 38.8 years of age), and a 0 was assigned to oldest third of the population (anyone over the age of 38.8).

Age at first adult arrest: A value of 3, 2 or 1 was assigned based on the participant's age at first arrest, relative to the remainder of the population. A score of 3 was assigned to the third of the population arrested at the youngest age (anyone first arrested before the age of 19.7), a 2 was assigned to the middle third of the population (anyone first arrested between the ages of 19.7 and 26 years of age), and a 1 was assigned to oldest third of the population (anyone first arrested after the age of 26).

Number of Prior Adult Arrests: A value of 3, 2 or 1 was assigned based on the number of times a participant had been arrested as an adult. A score of 3 was assigned to the third of the population with the highest number of prior offenses (more than 5 prior arrests), a 2 was assigned to the middle third of the population (anyone with 3-5 prior arrests) and a 1 was assigned to the third of the population with fewer than 3 prior adult arrests.

Table 45 shows the distribution of proxy risk across the hybrid court sample and the recidivism rate (as measured by a new conviction within two and four years of program placement) associated with each proxy risk score for all participants who had a proxy risk score. Recidivism levels are displayed in *Table 45* for only those participants who entered the program at an early enough date to have the opportunity to reoffend. Hybrid court participants with proxy risk scores between 2 and 5 were considered low-risk (44.1 percent of the sample) and had two-year recidivism rates of 8.2 percent and four-year recidivism rates of 15.4 percent. Hybrid court participants with proxy risk scores of 6 or 7 were considered medium-risk (37.4 percent of the sample) and had two-year recidivism rates of 16.1 percent and four-year recidivism rates of 26.8 percent. Hybrid court participants with a proxy risk score of 8 were considered high-risk (9.1 percent of the sample) and had two-year recidivism rates of 24.8 percent and four-year recidivism rates of 42.6 percent.

Table 45: Proxy Risk Scores and Recidivism Rates of the Hybrid Court Sample

Proxy Score	N	Distribution of Sample	Two-Year Recidivism Rate	Four-Year Recidivism Rate	Risk Level
2	271	5.1%	2.9%	8.1%	Low
3	576	10.8%	6.8%	13.8%	Low
4	551	10.3%	9.1%	13.9%	Low
5	962	18.0%	9.9%	19.3%	Low
6	1,105	20.6%	14.6%	24.0%	Medium
7	896	16.7%	18.0%	30.0%	Medium
8	488	9.1%	24.8%	42.6%	High
Unknown	507	9.5%	8.5%	15.0%	Unknown

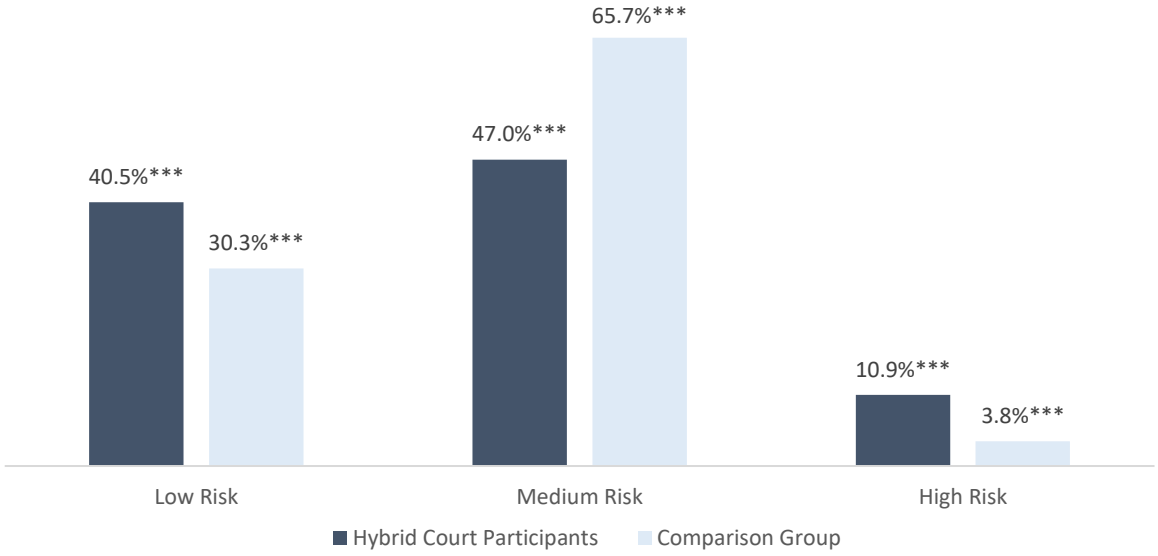
Table 46 shows the distribution of proxy risk across the BAU comparison group sample and the recidivism rate (as measured by a new conviction within two and four years of program placement) associated with each proxy risk score for all participants who had a proxy risk score. Recidivism levels are displayed in *Table 46* for only those participants who entered the program at an early enough date to have the opportunity to reoffend. Comparison group probationers with proxy risk scores between 2 and 5 were considered low-risk (48.4 percent of the sample) and had two-year recidivism rates of 15.1 percent and four-year recidivism rates of 21.2 percent. Comparison group probationers with proxy risk scores of 6 or 7 were considered medium-risk (23.6 percent of the sample) and had two-year recidivism rates of 25.2 percent and four-year recidivism rates of 38.7 percent. Comparison group probationers with a proxy risk score of 8 were considered high-risk (3.1 percent of the sample) and had two-year recidivism rates of 34.1 percent and four-year recidivism rates of 54.9 percent.

Table 46: Proxy Risk Scores and Recidivism Rates of the BAU Comparison Group Sample

Proxy Score	N	Distribution of Sample	Two-Year Recidivism Rate	Four-Year Recidivism Rate	Risk Level
2	493	9.2%	11.1%	15.9%	Low
3	609	11.4%	12.0%	17.9%	Low
4	597	11.1%	16.7%	21.8%	Low
5	892	16.7%	18.5%	25.9%	Low
6	806	15.0%	21.9%	31.6%	Medium
7	458	8.6%	31.4%	52.1%	Medium
8	167	3.1%	34.1%	54.9%	High
Unknown	1,334	24.9%	9.2%	11.9%	Unknown

As shown in *Figure 16*, significantly more hybrid court participants were lower risk than their BAU comparisons. In general, hybrid court participants are less likely to reoffend within two years compared to comparisons; low-risk participants and comparisons are less likely to reoffend within two years compared to medium-risk participants and comparisons; and high-risk participants and comparisons are more likely to reoffend within two years of entry compared to medium-risk participants and comparisons, as expected (see *Table 47*). When we adjust for the differences in risk levels between the drug court participants and the comparison group, the pattern is consistent.

Figure 16: Proxy Risk Comparison Two-Year Recidivism Sample



*** There is a significant difference between hybrid court participants and the individuals in the comparison group based on risk ($p < .001$).

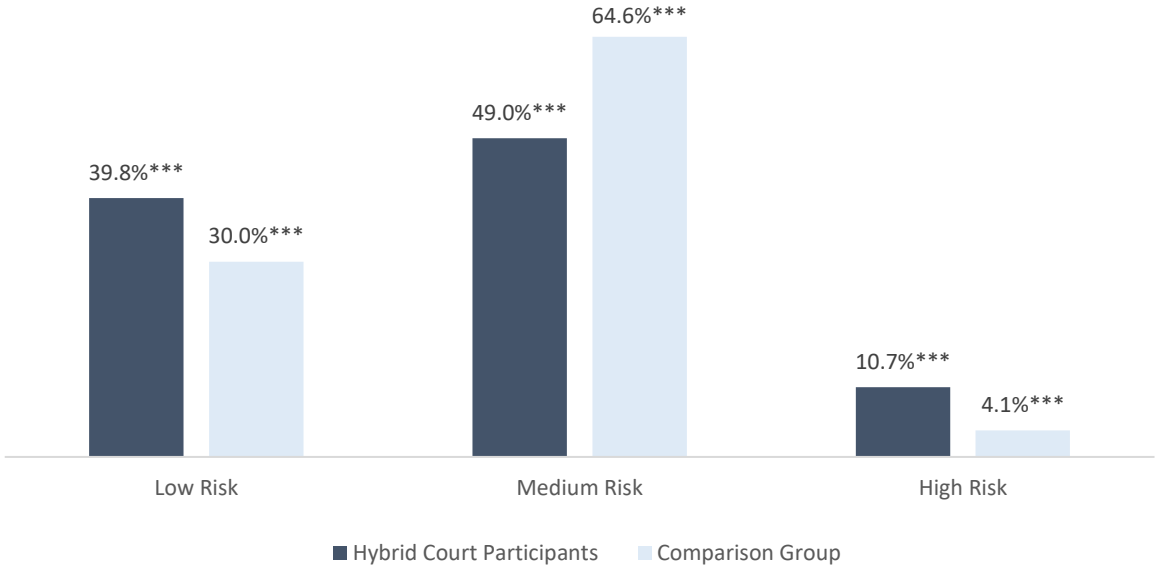
Table 47: Participant Type and Proxy Risk Predicting Two-Year Recidivism

Variables	B	S.E.	Odds Ratio
BAU (compared to Participant)* **	**.579**	**.073**	**78.5%**
Proxy Risk Category: Medium Risk			
Proxy Risk Category: Low Risk (compared to Medium)* **	**-.706**	**.075**	**50.6%**
Proxy Risk Category: High Risk (compared to Medium)* **	**.494**	**.119**	**63.8%**
Constant	-1.649	.065	.192

***Significant $p < .001$

As shown in *Figure 17*, significantly more hybrid court participants were lower risk than their BAU comparisons. Similar to the two-year model in *Table 47*, *Table 48* shows that hybrid court participants are less likely to reoffend within four years compared to comparisons; low-risk participants and comparisons are less likely to reoffend within four years compared to medium-risk participants and comparisons; and high-risk participants and comparisons are more likely to reoffend within four years of entry compared to medium-risk participants and comparisons, as expected (see *Table 48*). When we adjust for the differences in risk levels between the drug court participants and the comparison group, the pattern is consistent.

Figure 17: Proxy Risk Comparison Four-Year Recidivism Sample



***There is a significant difference between hybrid court participants and the individuals in the comparison group based on risk ($p < .001$).

Table 48: Participant Type and Proxy Risk Predicting Four-Year Recidivism

Variables	B	S.E.	Odds Ratio
BAU (compared to Participant)* **	**.450**	**.100**	**56.9%**
Proxy Risk Category: Medium Risk			
Proxy Risk Category: Low Risk (compared to Medium)* **	**-.788**	**.104**	**54.5%**
Proxy Risk Category: High Risk (compared to Medium)* **	**.712**	**.171**	**103.8%**
Constant	-.975	.089	.377

***Significant $p < .001$

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