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Comprehensive Opioid, Stimulant, and Substance Use Site-Based Program Evaluation

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About Syracuse University Maxwell X Lab

The Maxwell X Lab partners with the public and nonprofit sectors to build evidence for what works. We leverage behavioral science and randomized controlled trials (RCT) to intelligently design and rigorously evaluate everything we do. Together, these powerful techniques allow practitioners to work with the Maxwell School to improve outcomes cost-effectively and understand the precise impact of each change.

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Executive Summary

Opioid Courts aim to prevent death from overdose by providing individuals with access to immediate medication-assisted treatment, stabilization, peer recovery support, and court supervision. The New York State Office of Addiction Services and Supports (OASAS) has been working in collaboration with New York State Unified Court System (UCS) and the Center for Justice Innovation to provide evidence-based cognitive behavioral treatments to Opioid Court participants. More specifically, clinicians, court staff and certified recovery peer advocates across New York State courts are now trained in Moral Reconation Therapy-Opioid (MRT-O) and Interactive Journalling (IJ). The Maxwell X Lab conducted an evaluation of the present evidence-based cognitive behavioral therapies to assess if these techniques improve treatment engagement and retention relative to participants receiving only the standard process of court supervision and medication for opioid use disorder.

This evaluation uses propensity score matching estimates to analyze differences in treatment engagement and criminal recidivism between participants that received MRT-O or IJ relative to participants who did not benefit from cognitive behavioral therapies but look similar on demographics. Data used for matching and outcomes was collected from UCS and the Department of Criminal Justice New York (DCJS) on all participants who entered the Opioid Courts between January 2017 to April 2023. We should note that our analysis was designed initially to use treatment engagement and outcome data from OASAS. However, we were unable to merge OASAS data to information from other sources given the absence of universal identification number across the agencies. This report details the methodological approach used, presents key findings and limitations, and provides recommendations on future data collection practices.

Our findings do not indicate a significant difference between participants who received MRT-O or IJ compared to participants who did not on treatment engagement, retention, and criminal recidivism outcome variables. One significant difference suggests that those receiving MRT-O or IJ are more likely to successfully graduate from their treatment program. We also discuss data limitations, which suggest that the results should be interpreted with caution.

Introduction and Project Overview

Opioid related deaths continue to increase in New York state, with the most recent New York Department of Health Opioid Annual Data Report (2022) citing 4,233 opioid overdose deaths in 2020. This constitutes a 294% increase from 2010, highlighting the growing and devastating consequences of the epidemic. The opioid epidemic places substantial pressure on the criminal justice system, increasing caseloads for courts and requiring new approaches to address the unique treatment and stabilization needs of opioid users. The New York State Unified Court System (UCS) recognizes that immediacy of engagement in treatment and supportive services is necessary to address the high risk of overdose in arrestee populations. In October 2016, UCS launched the new Opioid Court in Buffalo, becoming the first of its kind in the country. This court is structured to provide immediate intervention and treatment for defendants who screen positive for risk of opioid overdose. Modeled after successful therapeutic court programs, the Opioid Court aims to prevent death from overdose by providing individuals with access to immediate medication for opioid use disorder, stabilization, peer recovery support, and court supervision. Since 2016, New York state has continued to expand Opioid Court availability through the state. There are now over 20 Opioid Courts across the state that should model national guidelines on the "The Ten Essential Elements of Opioid Intervention Courts[1];" expanding the population served, focusing on immediacy of services, and ensuring the use of evidence-based treatment for Opioid Use Disorders (OUD).

Mental health disorders are common among people in the United States living with OUD (Jones & McCance-Katz, 2019). OUD co-occurs with many mental illnesses, including major depression, bipolar disorder, panic disorder, and generalized anxiety disorders. The emerging standard of care for OUD is medication for opioid use disorder (MOUD), which combines medication (methadone, buprenorphine, or naltrexone) with behavioral or psychosocial therapies, and counseling. There is significant research demonstrating that MOUD results in better outcomes than either medication or behavioral therapies alone. Collaborative care models such as MOUD have proven effective in improving medication adherence, recovery, and abstinence in randomized control trials (Dutra et. Al, 2008). However, many counselors working in substance use disorder treatment programs in the criminal justice system have not been trained to provide these successful collaborative care models.

The New York State Office of Addiction Services and Supports (OASAS) has been working in collaboration with UCS and the Center for Justice Innovation to develop and implement a comprehensive plan that provides cognitive behavioral treatments, recovery support services, and assistance with the transition to community-based services for the pretrial population. This includes conducting trainings and certifications in evidence-based cognitive behavioral interventions for utilization by clinicians, court staff and certified recovery peer advocates (CRPA) who work in Opioid Courts.

[1] https://www.innovatingjustice.org/publications/10-elements-opioid-courts

This report is an evaluation of the newly developed and implemented collaborative systems of care that focus on the use of evidence-based cognitive behavioral therapies for participants in Opioid Courts with OUD. The analysis aims to address the question of whether the use of evidence-based cognitive behavioral therapies in Opioid Courts across NY state improves treatment engagement and retention relative to participants who only receive the standard process of court supervision and MOUD.

Cognitive Behavioral Therapies

The Risk-Need Responsivity model is often used to describe the principles and practices that are most effective for reducing criminal recidivism (Andrews & Bonta, 2010). The model states that treatment planning should focus on the modifiable factors that best predict future risk for recidivism such as maladaptive behavior patterns and dysfunctional thoughts. These include antisocial traits, cognitions, and attitudes, and are strongly associated with substance use disorders. Cognitive- behavioral treatments that provide skills that help cope with these traits have the strongest evidence for reducing criminal recidivism among individuals in the criminal justice system (Landenberger & Lipsey, 2005; Wilson, Bouffard, & MacKenzie, 2005). Drawing from this evidence-base, OASAS and UCS are implementing collaborative systems of care that utilize cognitive behavioral therapies for individuals with substance use disorders in the criminal justice system.

Under the newly implemented approach, CRPAs across New York State are now trained in Moral Reconation Therapy-Opioid (MRT-O) and Interactive Journalling (IJ). MRT-O is a manualized intervention structured around objectively defined steps that focus on addressing seven risk factors, including anti-social attitudes and values; pro-criminal associates and isolation from pro-social associates; behavioral characteristics like egocentrism, impulsivity, weak problem-solving and social skills; criminal history, negative family factors like abuse, unstructured or undisciplined environment, criminality and substance use in the family; low levels of vocational and educational skills; and substance use by the individual. MRT-O is a 12-week, specialized program workbook targeting opioid-focused courts and individuals in treatment for opioid-related issues. The program is open-ended, which means clients can begin participation at any time, and the format is flexible to allow for individual, group, or client-driven delivery. Of note, MRT-O is a condensed version of Moral Reconation Therapy. IJ is a goal-directed, client-centered model that aims to reduce substance use and substance-related behaviors, such as recidivism, by guiding adults and youth with substance use disorders through a process of written self-reflection. The model is based on structured and expressive writing techniques, principles of motivational interviewing, cognitive behavioral interventions, and the integration of the transtheoretical model of behavior change. Specific tasks include worksheets with nonconfrontational questions intended to help participants think and then write about their substance use problem and its association with their current negative life situation, including circumstances that resulted in being treated through Opioid Court. Using the journal, participants explore and resolve a variety of topics, including ambivalence toward their substance use, recognition

that they have a substance use problem, the connection between substance use and their current situation, health and other consequences of substance use, and irresponsible behavior while under the influence of substances.

MRT-O and IJ are not mandated in Opioid Courts; therefore, variation in usage exists across the state. Most of the Opioid Courts in New York offer individuals an opportunity to engage in MRT-O and IJ as part of their treatment program. The analysis in this report focuses on evaluating the impact of MRT-O and IJ on individuals' engagement with the treatment program and their subsequent outcomes.

Methods

This report evaluates the impact of individuals receiving MRT-O or IJ during their opioid treatment program on their treatment engagement, retention, and criminal recidivism. This analysis requires estimating what would have happened to these treated individuals had they not gone through MRT-O or IJ. Access to these behavioral therapies was not randomly assigned, and we cannot observe the counterfactual of individuals who did not receive MRT-O or IJ. To best address this issue, this analysis utilizes a quasi-experimental design with a matched comparison group. Data on all participants who entered the Opioid Courts between January 2017 to April 2023 were pulled for the analysis, with a flag for participants that received MRT-O or IJ during their treatment. Through matching, a comparison group that looks similar to the treated on select observables is utilized to measure the impact of MRT-O and IJ.

Based on data availability, participants on MRT-O or IJ and comparison participants were tracked through existing administrative databases for a period of 6 to 18 months following the arrest that led to entering the Opioid Court. The evaluation team used data from UCS and the Department of Criminal Justice New York (DCJS) to determine whether the treatment and comparison groups differed significantly in treatment engagement and results, and subsequent criminal justice involvement. It is important to note that the evaluation team was initially expecting to use data from OASAS to provide key information on treatment engagement and outcomes. Unfortunately, due to a lack of universal identifier linking participants across the agencies, OASAS data was not provided for this analysis. The analysis uses the limited treatment data that is available in UCS to compensate for the OASAS absent data. Limitations from this data issue are discussed in more detail in the Challenges and Limitations section of the report. The table below summarizes the data received.

Table 1: Data Sources

Data	Source
Opioid Courts Data	
- Participant demographics - Program start and end dates - Program activities	New York Unified Court System's Universal Case Management System (UCMS)

- Program achievements, incentives, sanctions, and infractions - Drug test outcomes	
Criminal Justice Data - Dates of arrests - Case filing - Disposition and sentencing - Top charge	Division of Criminal Justice Services (DCJS)

Opioid Court Participant Data

The evaluation team received an anonymized subset of New York's Universal Case Management System (UCMS) data which included all individuals who entered Opioid Courts from 2017 to data export in April 2023. UCMS data was provided in Excel workbooks and included participant demographics, achievements, activities, assessment responses, charges, drug tests administered, drug test results, infractions, incentives, sanctions, and court referrals.

DCJS Case Data

UCS shared a list of the Opioid Court participants from 2017 to 2023 with DCJS. DCJS identified the corresponding criminal justice data on the list of participants and shared an anonymized version with the evaluation team. The data included all criminal case histories available for those individuals up to April 2023 including dates of arrest, case filing, disposition; the top charge associated with each case; and limited demographics. DCJS data were used to assess prior criminality and recidivism outcomes.

Sample Selection and Propensity Score Matching

For the analytical sample, the evaluation team drew from the pool of all individuals who entered Opioid Courts from 2017 to data export in April 2023. Participants who had data available for the variables used for matching and for the outcomes of interest were included. The treated group is defined as Opioid Court participants that received MRT-O or IJ during their treatment. The comparison group is participants in Opioid Courts that did not receive MRT-O or IJ during their treatment. As participants were not randomly assigned to the treated or comparison group, the two groups could systematically differ from each other, and those differences, rather than the use of MRT-O or IJ, could explain differences in the outcome measures. To reduce this selection bias, a propensity score matching method was used to identify participants from the comparison sample that have similar demographics and criminal histories as the treated participants.

The idea behind the propensity score is to identify the exogenous observable attributes of an individual that help predict their likelihood of receiving the MRT-O or IJ treatment. Based on select attributes,

individuals who receive MRT-O or IJ are matched with individuals that have a similar likelihood of receiving MRT-O or IJ but did not. If there are treated individuals that have different likelihoods of receiving MRT-O or IJ than anyone in the comparison group, the treated individual is said to lie outside the common support of the propensity score. Convention is to remove individuals outside the common support to reduce bias in the estimate of the impact. One treated individual in our study was outside common support and was removed.

The first step in the propensity score match is to estimate the probability (propensity score) of an individual receiving MRT-O or IJ based on their observable attributes. The evaluation team used gender, age, ethnicity, race, and whether the individual was arrested before their 18th birthday to predict the likelihood of receiving MRT-O or IJ. These variables were used as they were widely available for all Opioid Court participants. Important factors such as prior substance use disorder and treatment engagement were not available for the analytical sample, and therefore, could not be used to match the treated individuals with the comparison group. Using the weighted propensity scores, the evaluation team matched Opioid Court participants that received MRT-O and IJ with those who did not using a one-to-one matching method, with replacement (comparison group members could be used more than once).

Matching Results

After matching, we tested the validity of the match. Table 2 reports summary statistics that assess whether the observable characteristics are well-balanced between the matched treated and control groups. Results of the balancing tests indicate that the two groups are well-balanced after matching, with most of the t-tests for the difference of means showing no statistical significance at conventional levels of confidence. One can observe the importance of matching in Table 2. For many variables, there are considerable differences between the unmatched treatment and comparison groups. Table 2 illustrated that our matched treated and comparison groups are similar on the range of available information.

Table 2: Demonstration of Successful Matching

Variable	Sample	Treatment	Comparison	p-value
Female	**Unmatched**	**24.67%**	**32.95%**	**0.04*** **
	Matched	**25.00%**	**18.75%**	**0.26**
Male	**Unmatched**	**75.33%**	**67.05%**	**0.04*** **
	Matched	**75.00%**	**81.25%**	**0.26**
American Indian and Alaskan Native	Unmatched	0.00%	0.21%	0.58
	Matched	0.00%	0.00%	.
Asian Pacific Islander	**Unmatched**	**1.99%**	**0.10%**	**0.00*** **
	Matched	**1.79%**	**0.89%**	**0.56**
Black	**Unmatched**	**27.15%**	**14.72%**	**0.00*** **
	Matched	**32.14%**	**31.25%**	**0.89**

Other	Unmatched	0.00%	0.42%	0.43
	Matched	0.00%	0.00%	.
White	Unmatched	57.62%	70.77%	0.00***
	Matched	65.18%	67.86%	0.67
Mean Age at Beginning of Treatment	**Unmatched**	**37.85**	**32.40**	**0.00*** **
	Matched	**38.04**	**38.00**	**0.99**
Hispanic	Unmatched	19.35%	19.54%	0.96
	Matched	20.54%	20.54%	1.00
Arrested by 18	**Unmatched**	**24.11%**	**13.92%**	**0.00*** **
	Matched	**27.68%**	**29.46%**	**0.77**

Note: * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01

Outcomes

The analyses test whether there are significant differences between the treated and matched comparison group on treatment engagement, retention, and recidivism. Working with the available data, the outcomes include treatment program attendance, drug test compliance, medication adherence, treatment completion status, length of stay in treatment program, number of infractions, sanctions, incentives during treatment activities, and rearrests and reconvictions six months and one year after end of treatment. There is incomplete outcome data for all participants; discrepancies in sample sizes for different outcomes are noted throughout the report.

Results

This section presents the results of the outcome evaluation. For the purposes of this report, the treatment group refers to participants on MRT-O or IJ, the comparison group is all Opioid Court participants that did not receive MRT-O or IJ, and the matched comparison group is participants that did not receive MRT-O or IJ but are similar to the treatment group based on their propensity score.

MRT-O or IJ Take Up for Opioid Court Participants

Opioid Courts across NY State offered MRT-O and/or IJ to participants but were not mandated to provide these therapies. This results in variation across the state in take-up of MRT-O or IJ. In the data received, 151 participants received MRT-O or IJ. The following table provides an overview of the courts where these 151 participants were receiving treatment:

Table 3: Courts MRT-O or IJ Take Up

Court	Participants (N)
Beacon City Court	7
Dunkirk City Court	15
Dutchess County Court	3
Kings Criminal Court	68

Kings Supreme Criminal Court	20
Nassau District Court	16
Oswego County Court	15
Suffolk 1st District Court	3
Syracuse City Court	1
Watertown City Court	2

Demographics

Tables 4 and 5 provide basic demographics and criminal history for the treated and comparison group prior to matching. There are 151 participants that received MRT-O or IJ during the analytic period, and 958 Opioid Court participants that did not receive MRT-O or IJ therapies during the data time period. The majority of participants receiving MRT-O or IJ were male and non-Hispanic whites. In comparison to Opioid Court participants as a whole, MRT-O or IJ participants were markedly different. Black individuals were overrepresented in the treated group compared to the rest of the Opioid Court participants. The treated group was 57% white and 27% black compared to the rest of the Opioid Court participants who were 71% white and 15% black. A higher proportion of the treated participants (24%) were arrested before the age of 18 when compared to the rest of the Opioid Court participants (14%) during this time period. Table 5 shows that members of the treated group were arrested and convicted on average 3.92 times in the two years prior to the index booking event compared to the comparison group members who were arrested 2.22 times on average.

Table 4: Full Sample Demographics

Variables	**Treatment**	**Comparison**
Total Sample N	151	958
Gender		
Female	24.67%	32.95%
Male	75.33%	67.05%
Race		
AIAN	0.00%	0.21%
API	1.99%	0.10%
Black	27.15%	14.72%
Other	0.00%	0.42%
White	57.62%	70.77%
Age at Beginning of Treatment		
Mean Age	37.85	32.40
Ethnicity		
Hispanic	19.35%	19.54%
Not Hispanic	80.65%	80.46%
Arrested by 18		
No	75.89%	86.08%
Yes	24.11%	13.92%

Table 5: Full Sample Prior Arrests and Convictions (2 Years)

Variables	Treatment	Comparison
Total Sample N	151	958
Average Number of Arrests (2 Years Prior)		
All	3.92	2.22
Drug	0.89	1.02
DWI	0.03	0.03
Person	0.62	0.35
Property	2.38	0.76
Society	0.17	0.15
Other	0.00	0.06
Class:		
Misdemeanor	2.48	1.77
Felony	1.44	0.45
Violent Felony Offense (VFO):		
VFO	0.26	0.08
Not VFO	3.66	2.14
Average Number of Convictions (2 Years Prior)		
All	3.92	2.22
Drug	0.60	0.66
DWI	0.04	0.03
Person	0.88	0.35
Property	1.75	0.58
Society	0.42	0.41
Other	0.23	0.18
Class:		
Misdemeanor	2.21	1.36
Felony	0.70	0.21
Violent Felony Offense (VFO):		
VFO	0.13	0.04
Not VFO	3.66	2.14

After referral to Opioid Court, court staff use a standardized assessment form with participants to determine their history and experience with substance use. Unfortunately, the data have significant amounts of missing information for the assessment variables; therefore, the evaluation team was unable to use these data to match. However, we do provide summaries of the available data in Table 6 with the caveat that findings might be considerably different with complete data.

As expected, based on the target population of the Opioid Courts, almost all participants reported using substances in both treated and comparison groups. The majority of participants had taken part in substance use disorder treatment prior to intake (69% in the treated group vs. 61% in the control group). Almost all Opioid Court participants (81% vs. 75% for treated and comparison groups, respectively) were single, with just 11% married at the time of the assessment. In the treated group,

nearly half did not complete high school and 23% were employed at intake. In the comparison group, 60% had completed high school and 27% were employed at intake.

Table 6: Full Sample Assessment Results

Assessment Results	Treatment	Comparison
Marital Status		
Married/Domestic Partner	11.11%	11.40%
Divorced	3.03%	7.89%
Separated	5.05%	4.39%
Single	80.81%	75.44%
High School Graduate		
Yes	49.49%	59.65%
No	50.51%	40.35%
Experiencing Withdrawal		
Yes	8.08%	11.40%
No	91.92%	88.60%
Veteran		
Yes	1.01%	1.75%
No	98.99%	98.25%
Employed		
Yes	23.23%	26.62%
No	76.77%	73.38%
Previous Treatment		
Yes	68.69%	60.47%
No	31.31%	39.53%
Admitted to Drug Use		
Yes	93.94%	95.61%
No	6.06%	4.39%
Used Substances by 18		
Yes	26.26%	27.20%
No	73.74%	72.80%
Received Mental Illness Assessment		
Yes	61.62%	68.52%
No	38.38%	31.48%
ER/ED Visit		
Yes	37.37%	57.41%
No	62.63%	42.59%
Traumatic Brain Injury		
Yes	14.14%	15.74%
No	85.86%	84.26%

Note: N ranges from 99 in the treated group and from 86 to 114 in the comparison group due to incomplete or missing data for some assessment items

After implementing propensity score matching, the demographic composition of the treated group and the matched comparison group were not significantly different (Table 2).[2] Given that we were unable to match on prior criminal history, the matched control group is still significantly lower on average number of times arrested in the two years prior to the index booking event relative to the treated (Table 7). This suggests that the matched control group is not similar on all observables to the treated group, which may bias the estimated impact of MRT-O or IJ on the outcomes. As mentioned, there were so few assessment results for matched group with data available that a table for the matched group assessment results is not included.

Table 7: Matched Sample Prior Arrests and Convictions (2 Years)

Variables	Matched Treatment	Matched Control
Total Sample N	112	112
Average Number of Arrests (2 Years Prior)		
All	4.46	3.51
Drug	0.91	1.04
DWI	0.03	0.02
Person	0.71	0.54
Property	2.80	1.84
Society	0.00	0.13
Other	0.19	0.08
Class:		
Misdemeanor	2.79	2.71
Felony	1.66	0.80
Violent Felony Offense (VFO):		
VFO	0.31	0.16
Not VFO	4.14	3.35
Average Number of Convictions (2 Years Prior)		
All	4.46	3.51
Drug	0.68	0.66
DWI	0.04	0.02
Person	1.07	0.79
Property	2.04	1.34
Society	0.37	0.52
Other	0.27	0.19
Class:		
Misdemeanor	2.60	2.00
Felony	0.77	0.54
Violent Felony Offense (VFO):		
VFO	0.17	0.14

[2] The treated sample declines from 151 to 112 once we move to the matched treatment and comparison groups. Thirty-eight treated individuals did not have data on either their gender, age, race/ethnicity or arrest prior to age 18. An additional case was dropped because it was outside common support.

Not VFO	4.14	3.35

Substance Use Treatment Program Details

Opioid Court participants are all referred to and enrolled in a substance use treatment program. Case managers and CRPAs help ensure that participants access their MOUD appointments and participate in some form of treatment. The data we received indicated that many participants were not receiving substance use treatment. However, officials from the Division of Technology & Court Research at UCS informed the evaluation team that everyone taking part in an Opioid Court should be receiving substance use treatment and data that suggests otherwise is likely due to case manager's failure to input the information.

In Table 8 below we provide a summary of the treatment program modalities for the full sample of participants for whom there is data available on substance use treatment program participation.

According to the available data, the most common treatment modality provided was outpatient treatment for both treated and comparison groups. For the full sample, one third of participants in both treated and comparison groups received inpatient treatment. The treated group also had a large proportion of participants receiving residential treatment compared to the comparison group.

Table 8: Full Sample Program Modality

Variables	**Treatment N**	**Treatment**	**Comparison N**	**Comparison**
Total Sample N		151		958
Percent of Participants in Substance Use Treatment:				
	82	54.30%	355	37.06%
SAT by Program Modality:				
Crisis	5	6.10%	35	9.86%
Inpatient	28	34.15%	131	36.90%
MOUD	16	19.51%	59	16.62%
Outpatient	57	69.51%	256	72.11%
Residential	33	40.24%	58	16.34%

Table 9 provides the same overview of substance use treatment program modalities for our matched treated and comparison groups. Similar to the full sample, there is a lot of missing data for the matched sample on program modalities. The information available suggests similarly that outpatient services were the most common program modality for the matched treated and comparison groups.

Table 9: Matched Sample Program Modality

Variables	**Matched Treatment N**	**Matched Treatment**	**Matched Comparison N**	**Matched Comparison**
Total Sample N		112		112

Percent of Episode Numbers with Substance Use Treatment (SUT):				
	55	49.11%	60	53.57%
SUT by Program Modality:				
Crisis	4	7.27%	9	15.00%
Inpatient	15	27.27%	26	43.33%
MOUD: Methadone	13	23.64%	11	18.33%
Outpatient	37	67.27%	36	60.00%
Residential	21	38.18%	7	11.67%

Impact Evaluation

To understand the impact of receiving MRT-O or IJ on treatment engagement, retention, and criminal recidivism, the following analysis focuses only on the matched treated and comparison groups only. Table 10 presents the differences between the treated and comparison groups on key outcomes of interest, including program completion status, program length of stay, and average number of infractions, sanctions, and incentives during the treatment program. The results indicate that participants on MRT-O or IJ were significantly more likely to have graduated successfully from their treatment programs (51% for the treated group vs. 30% for the comparison group). The comparison group had a significantly higher proportion of participants that had a voluntary and involuntary incomplete during their treatment program. The treated group also had a significantly higher average number of sanctions during their treatment program.

Table 10: Matched Sample Treatment Outcomes

Variables	**Matched Treatment**	**Matched Comparison**	**p-value**
Total Sample N	112	112	
Treatment Participation Status			
Active	35.71%	10.71%	0.00***
Graduated	50.89%	30.36%	0.00***
Voluntary Incomplete	1.79%	32.14%	0.00***
Involuntary Incomplete	11.61%	26.79%	0.00***
On Warrant	0.00%	0.00%	-
Deceased	0.00%	0.00%	-
Treatment Program Details			
Program Length of Stay			
Average Program Length of Stay (Days)	156	193	0.34
Average Number of Infractions, Sanctions, and Incentives:			
Infractions	6.51	5.54	0.70

Sanctions	4.03	0.11	0.00***
Incentives	0.88	0.59	0.35

Note: * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01.

Tables 11 and 12 present the differences between the treated and comparison groups on rearrests and reconvictions 6 months and 1 year following participant's treatment program exit. The results indicate that there are not many significant differences between these two groups on rearrests and reconvictions. However, the control group does have a slightly higher average number of convictions one year following treatment program exit (0.81 for the control group vs. 0.56 for the treated group).

Table 11: Matched Sample Rearrests and Reconvictions (6 Months)

Variables	**Matched Treatment**	**Matched Comparison**	**p-value**
Total Sample N	112	112	
Average Number of Rearrests (6 Months)			
All	0.56	0.47	0.61
Drug	0.08	0.14	0.25
DWI	0.00	0.00	.
Person	0.13	0.11	0.70
Property	0.35	0.22	0.24
Society	0.00	0.03	0.08*
Other	0.04	0.01	0.37
Class:			
Misdemeanor	0.31	0.30	0.94
Felony	0.25	0.17	0.38
Violent Felony Offense (VFO):			
VFO	0.07	0.01	0.07*
Not VFO	0.49	0.46	0.87
Average Number of Reconvictions (6 Months)			
All	0.47	0.33	0.16
Drug	0.03	0.09	0.12
DWI	0.00	0.00	.
Person	0.24	0.15	0.30
Property	0.18	0.16	0.80
Society	0.07	0.05	0.58
Other	0.04	0.02	0.36
Class:			
Misdemeanor	0.25	0.29	0.71
Felony	0.05	0.07	0.61
Violent Felony Offense (VFO):			
VFO	0.07	0.01	0.07
Not VFO	0.49	0.46	0.87

Note: * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01.

Table 12: Matched Sample Rearrests and Reconvictions (1 Year)

Variables	Matched Treatment	Matched Comparison	p-value
Total Sample N	112	112	
Average Number of Rearrests (1 Year)			
All	0.93	0.65	0.29
Drug	0.16	0.17	0.93
DWI	0.00	0.00	.
Person	0.21	0.15	0.46
Property	0.55	0.33	0.13
Society	0.00	0.04	0.04**
Other	0.04	0.03	0.62
Class:			
Misdemeanor	0.55	0.46	0.64
Felony	0.38	0.19	0.09*
Violent Felony Offense (VFO):			
VFO	0.11	0.02	0.03**
Not VFO	0.82	0.63	0.43
Average Number of Reconvictions (1 Year)			
All	0.56	0.81	0.06*
Drug	0.06	0.12	0.35
DWI	0.00	0.00	.
Person	0.37	0.21	0.22
Property	0.30	0.22	0.43
Society	0.13	0.07	0.14
Other	0.06	0.04	0.51
Class:			
Misdemeanor	0.41	0.39	0.90
Felony	0.10	0.08	0.70
Violent Felony Offense (VFO):			
VFO	0.06	0.00	0.07
Not VFO	0.82	0.63	0.43

Note: * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01.

In the appendix, we show differences between the matched treatment and comparison groups for attendance rates, drug test results, and medication adherence. We report these in the appendix because we have particularly strong concerns about the validity of the findings given the small sample sizes due to missingness in the data.

Challenges and Limitations

The findings of this report should be qualified by the following limitations, most of which are related to data. We should note that our data collection efforts were hampered by the lack of a universal

identification number across multiple government agencies that collect information relevant to Opioid Courts. Gaining a comprehensive understanding of an individual's experience that ties to Opioid Courts, the New York State Office of Addiction Services and Supports (OASAS), and the Department of Criminal Justice is, at this point, impossible.

Individual Level Data Assumptions

The data provided by UCS is based on episode numbers. Each episode number represents a separate experience in the Opioid Courts with no clear indicator of the associated individual. We were forced to assume that each episode was a unique individual's experience; however, it is certainly possible, and indeed quite likely, that the same individual participated in Opioid Courts at different times creating more than one different episode number. If true, then our analysis is not based on 151 or 112 (in the case of the matched analysis) unique individuals but many fewer. This has implications for the precision of our estimates of the impact of the program, making the estimates we provide seem more accurate than they actually are.

Missing Data

The biggest issue, as we have described throughout this report, is missing data. The missing data occurred at several points during the analysis. First, of the 151 treated cases, 38 had missing data on the crucial factors that lead to the propensity score. We used many fewer factors to generate the propensity score than is common practice to limit the lost cases due to missingness. Propensity score matching relies on access to data on observable attributes to create an accurate match For example, comparing the outcomes of one White male aged 25-35 years old with prior experience with substance use treatment programs to another participant with those same observable attributes will be more meaningful on average than comparing the outcomes of two males matched on gender alone. A rich, complete data set on observable attributes is necessary for a more unbiased impact evaluation. Initially, the evaluation team aimed to match participants on gender, race, age, ethnicity, primary language, homeless, employment, veteran status, education, marital status, income, children, parent's substance use, mental illness, previous treatment, previous drug use, ER visits, and prior arrests and treatment. However, after cleaning the data, it was determined that only gender, race, ethnicity, age, and arrest before 18 could be used for matching due to availability of the data. Our treated and matched control group look similar on the observables that have complete data but could still be very different on characteristics that influence the outcomes analyzed.

Similarly, there was poor data completeness for several outcomes used in the evaluation. Drug tests, attendance rates, and program modalities were not reported for many in the analytical sample. This missingness could be due to intake where the information was never collected, erroneous information being entered into the system, or transferal issues as several different agencies took the anonymized data and merged it. This led to lower variable counts than optimal.

Unavailable Treatment Services and Referrals Data

Through UCS, the evaluation team received program data housed by the courts on court specific activities. However, data regarding treatment services and referrals, drug tests administered outside of the court, or other services provided by partnering agencies in the program were not made available to the team. As mentioned earlier, this issue resulted from the difficulties in data sharing and linking participant identifiers across OASAS and UCS.

Conclusion

Collaborative care models for individuals with OUD that meaningfully engage patients, address overall mental health, and provide peer support may result in better treatment engagement, retention, and outcomes. This report evaluated the impact of the use of MRT-O or IJ therapies specifically in conjunction with MOUD for participants in Opioid Courts. The matched results do not indicate a significant difference between the treated and control groups on treatment engagement, retention, and criminal recidivism. The one significant difference suggests that those receiving MRT-O or IJ are more likely to successfully graduate from their treatment program. However, as we have noted repeatedly in this report, with the limited data availability, one should interpret these results with caution.

Moving forward, we would recommend that UCS and OASAS address two data issues. First, many of the important variables currently scheduled to be collected are incomplete, which makes analysis exceedingly difficult. These missing data include not only important outcome measures but also demographic information. Second, we would encourage some agreement between the key agencies that work with the Opioid Courts to develop a method to match individuals across their databases. While confidentiality issues are paramount, these agencies are not collecting enough information about identities to merge data files across agencies with any confidence. Standard data practice is to weigh the importance of an individual's privacy with the research gains that can be had with some form of universal identification. It seems conceivable that a new process that provides better identification for cross-agency collaboration while maintaining privacy is possible and should be considered.

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APPENDIX

In this appendix, we provide results showing the differences between the matched treatment and comparison groups for attendance rates, negative drug tests, and medication adherence. Please note that the sample size for the outcome variables are much smaller than the total matched sample size (e.g., only 24 of the treatment group had data on therapeutic drug test outcomes). We caution one should not have confidence in the differences reported. We provide them as context for future research.

Appendix Table 1: Matched Sample Conditional Outcomes

Variables	Matched Treatment N	Matched Treatment	Matched Comparison N	Matched Comparison	p-value
Total Sample N		112		112	
Average Attendance Rate					
	55	52.28%	60	42.46%	0.23
Average Drug Test Compliance					
Overall Negative Tests	80	42.82%	51	63.24%	0.01***
Negative Opioid Tests	80	85.15%	51	94.30%	0.01**
Therapeutic Drug Test Compliance					
Positive Therapeutic Tests	24	99.88%	21	100.00%	0.36

Note: * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01.