



# The Concordance Academy Evaluation: A Quasi-Experimental Test of Recidivism

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A report submitted to the Concordance Academy

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## Executive Summary

### Objectives

Despite years of evidence-based capacity-building, few prisoner reentry programs are developed upon a foundation of research-based best practices. Most evaluations of prisoner reentry programs show small or no effects on either new offending or new criminal justice system contact. However, these studies do not typically follow rigorous, best-practice methods of evaluation, which may affect their results. The Concordance Academy in St. Louis, MO was designed by scholars at Washington University upon the principles of evidence-based best practices, implemented with fidelity to that model, and relies on a data-driven process to update programming and policies. It, therefore, represents a real-world test of the effectiveness of the dominant prisoner reentry model. This paper presents the results of a retrospective, quasi-experimental test of the efficacy of a comprehensive, wrap-around prisoner reentry program serving prisoners returning from state prison to a mid-sized city.

### Methods

The research design is a retrospective quasi-experiment, where non-participants in the Concordance Academy who would have been eligible for the program had they been offered the treatment were retrospectively matched to program participants to test the effect of the program on recidivism. The challenge of any quasi-experimental design is to “balance” the treatment and comparison groups, such that the two groups are identical at baseline—and would therefore be expected to have identical outcomes at the end of the study. If the two samples (cohorts in research jargon) are balanced at baseline (the beginning of the study), then there is a strong presumption that any differences observed at the end of the study result from the intervention. In this study, observations for each treatment (n=166) and comparison (2,509) group members were conditioned on a rich dataset of pre-existing attributes to control for any observable differences in program participant characteristics that might confound the interpretation of the effect of the program on outcomes.

### Results

The study finds consistent decreases in the likelihood of recidivism and the number of recidivism events across nine key outcomes, including parole violations and reincarceration, although these decreases were mainly not statistically significant. The study also finds substantial treatment heterogeneity in outcomes: outcomes for individual participants varied across the types of treatment received. In particular, the program updated operating procedures midway through the study period to adopt better practices around employment training, including the addition of a physical facility to simulate employment. Thus, the key source of treatment heterogeneity was enrollment in an earlier class (Classes 7-10) compared to a later class (Classes 11-14).

Differences across the nine outcomes for classes 11-14 were mainly statistically significant at  $p < 0.10$ <sup>1</sup>.

## Conclusions

The results for the Concordance Academy are promising. The relatively small sample, which is typical for a prisoner reentry program, limits the power of the evaluation<sup>2</sup>. However, compared to the broader prisoner evaluation literature, which shows modest or no effects, the results for the Concordance Academy are supportive of prior research suggesting that strong, evidence-based models combined with implementation fidelity offer the highest probability of success with this difficult to serve population.

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<sup>1</sup>  $P < 0.10$  is a 'p-value' which can be interpreted as the probability that the observed difference is due to chance. A p-value less than 10 percent implies that the observed difference between that the chance that the difference is actually zero is less than ten percent.  $P < 0.05$  is the conventional standard for this type of study, but here a slightly wider confidence interval was used, acknowledging the relatively small sample size.

<sup>2</sup> 'Power' is a statistical term referring to the likelihood that there are enough observations, given the expected variability in outcomes, to detect a true effect (a reduction in recidivism) if that reduction actually occurred.

## Project Overview

A central problem with the U.S. correctional system is that it is ineffective in preparing returning prisoners for successful reintegration into their local communities. A “recently released (2018), nine-year study of recidivism for 401,288 state prisoners that were released in 2005 found that 83.4 percent were rearrested within nine years post-release” (NIJ 2019). While a substantial body of research has focused on how to reduce recidivism among reentering prisoners, evidence of successful practices has been generally limited to a few specific inmate subgroups in isolated circumstances. As a result, few model programs are effective in preparing people returning from prison for a successful transition and are intentionally designed to be both replicated and scaled to have a national impact. Each year, there are more than 650,000 inmates released from prison. Prior scholarship has identified promising practices for several subgroups, but successful approaches to scaling those solutions to meet the substantial and recurring demand for effective reentry programs have not been demonstrated.

This study explores the effectiveness of prisoner reentry programming at the Concordance Academy, a prisoner reentry program serving the city of St. Louis, St. Louis County, and St. Charles County, MO. Concordance Academy programming is built on a comprehensive, wrap-around model that blends best practices identified in prior research, including pre-release, transition, and post-release services. The wrap-around holistic case-management approach (rather than targeting services to one cognitive-behavioral or skills-based mechanism) is widely held to be the most promising prisoner reentry platform (Lattimore, Steffy, and Visser 2010), and programs of this type have promising cost-benefit results (Cowell and Roman 2011). Notably, the Concordance model is designed as a franchise concept, where the central office in St. Louis develops the curriculum and the overall model design and coordinates replication that adheres to core principles.



This report is the first of two studies of the Concordance Academy, a program providing comprehensive services to people returning from custody in the Missouri Department of Corrections. Concordance Academy participants serve at least one year in state prison and return to St. Charles County, St. Louis County, and the city of St. Louis. The two studies analyze the effect of the comprehensive services before and after release from prison by the Concordance Academy on participant recidivism. In addition, the studies explore the potential of the Concordance Academy business model for prisoner reentry services, which was intentionally designed to be replicable throughout the state and across the country. The two products from the Concordance Academy study are:

- **The Concordance Academy Evaluation: A Quasi-Experimental Test of Recidivism.** In this retrospective evaluation, NORC will compare past program participants to a matched cohort of eligible inmates contemporaneously released to the Concordance catchment area. The retrospective evaluation will include participants from Concordance classes 7-14, released between May 1, 2018 and August 31, 2019.
- **The Concordance Academy Evaluation: A Randomized Controlled Trial.** In this prospective evaluation, NORC will conduct a randomized controlled trial comparing Concordance Academy participants released between September 1, 2019 and August 31, 2020 to a randomly selected control group of contemporaneously eligible non-participants.

## Prior Research on Prisoner Reentry

Overall, there is little consensus about what works in prisoner reentry. The empirical evidence from systematic reviews of adult prisoner reentry research is inconclusive about the general effectiveness of prisoner reentry programs, due to heterogeneity in research methods, programming, and implementation (Berghuis 2018). However, several attributes of prisoner reentry programs consistently rate as most promising. Programs that include both corrections-based and community-based interventions have better outcomes on average than programs that focus exclusively on a single setting (Duwe 2012). An intensive focus on the transition period appears to have the largest impact on recidivism reduction (Bouffard and Bergeron 2007). The wrap-around, holistic case-management approach (rather than targeted services to one cognitive-behavioral or skills-based mechanism) is widely held to be the most promising prisoner reentry program model (Lattimore and Visser 2010). A consistent finding that emerged in the earliest multisite studies of prisoner reentry programming found that case manager interaction was associated with increases in full-time employment that, in turn, were associated with criminal desistance (Rossman and Roman 2003). Programs of this type—with comprehensive programs beginning in the pre-release period, with a focus on the transition period and effective case-management—have the most promising cost-benefit results (Cowell and Roman 2011). Programs of this type are resource-intensive and require a long-term commitment to each participant. Various barriers have consistently emerged to the implementation of these effective practices, including bureaucratic issues in partnering with correctional systems, substantial limitations in capital formation among nonprofit service providers, and a general lack of political support.

Thus, while some effective practices have emerged through a large body of research, the central question has not been answered: when all the elements of prisoner reentry programming are put together in a real-world setting, are these programs effective at reducing recidivism? Definitively answering this question requires a randomized controlled trial (RCT) of prisoner reentry programs. The research clearinghouse at the U.S. Department of Justice, CrimeSolutions.gov, systematically reviewed 59 U.S.-based prisoner reentry programs but identified only 10 RCTs and a small number of other rigorous designs. However, among these few highest-quality evaluations, Crime Solutions.gov rated several programs that included comprehensive case-management services similar to those of the Concordance Academy as “effective” or “promising.” Four of these programs closely follow the Concordance Academy model. Specifically, these programs include a spiritual component within a comprehensive case-management program, offering formerly incarcerated participants programming in the areas of behavioral health and wellness, community and life skills, and education and employment. Only one of these programs was evaluated using an RCT design. These four programs are reviewed below.

The Minnesota Comprehensive Offender Reentry Plan (MCORP) is a comprehensive program that offers participants a host of services, including access to vocational training, income support, mentoring, and education, employment, and housing services in a faith-based setting. Using an RCT design, Duwe (2012) found reductions in recidivism as well as significant improvements in

employment, decreased homelessness, broadened systems of social support for participants, and increased treatment group participation in community support programming. Specifically, Duwe found MCORP significantly reduced the risk of recidivism: by 37 percent for rearrest, 43 percent for reconviction, and 57 percent for reincarceration for a new offense. Additional analyses suggested that recidivism outcomes were significantly enhanced for participants who were successful in securing post-release employment, participated in community-support programming, had broader social support systems, and received a continuum of chemical dependency treatment from release through reintegration to their communities (Duwe 2013).

The Boston Reentry Initiative (BRI) is a comprehensive reentry program that provides a variety of services, including aftercare and reentry, mentoring, probation/parole, and wrap-around/case-management to high-risk youth with violent criminal histories. In addition to partnering with law enforcement agencies and social service providers (e.g., substance abuse treatment, mental health treatment, vocational training), this program collaborates with faith-based organizations and pairs each participant with a faith-based mentor. A post hoc quasi-experimental design found BRI to reduce recidivism by significantly increasing the length of time between release and rearrest (Braga et al. 2009). Participants were also found to have significantly lower rates of any arrest or a violent arrest through three years post-release.

The InnerChange Freedom Initiative (InnerChange) is a comprehensive program that provides alcohol and drug treatment, aftercare and reentry services, individual therapy, mentoring, vocational training, and therapeutic communities. InnerChange is a voluntary, faith-based reentry program that aims to prepare formerly incarcerated people for reintegration, with an emphasis on securing employment through values-based programming. Using a retrospective quasi-experimental design with administrative data, Duwe (2012) matched program participants to a comparison group based on LSI-R assessments and found that members of the treatment group were rearrested, reconvicted, and reincarcerated significantly less than those in the comparison group. Duwe concluded that faith-based organizations can effectively reduce recidivism for returning prisoners if they adhere to evidence-based practices that focus on providing behavioral interventions within a therapeutic community.

The YouthBuild Offender Program (YouthBuild) offers a comprehensive suite of services, including academic skills development, conflict resolution/interpersonal skills, individual therapy, and vocational training to low-income, formerly convicted youth. The programs across the United States are diverse, based in both community-based and faith-based organizations. Cohen and Piquero's (2008) outcome evaluation of YouthBuild used a weak quasi-experiment comparing graduates to dropouts and found program participation significantly reduced recidivism while increasing receipt of a high school diploma, GED, trade license, or equivalent training certificate. Overall, Cohen and Piquero estimate that participants experienced a reduction in recidivism of 3.4 percent to 9 percent compared with YouthBuild dropouts.

## The Project in Brief: The Concordance Academy

The Concordance Academy model is a spirituality-based, long-term, wrap-around case-management reentry program serving prisoners before and after release (Figure 1).

Figure 1. Concordance Case Processing



The Concordance Academy model was developed by researchers at the George Warren Brown School of Social Work at Washington University. Researchers conducted a systematic review through keyword searches of academic databases (EBSCO, PubMed, Web of Science) for 1) prior research on interventions and 2) prior research on practice. About 5,000 articles were selected and reviewed by the research team. From this research, RCT studies of programs with a target population that met Missouri Department of Corrections (MODOC) eligibility criteria and had program/practice goals aligned with Concordance objectives informed the development of an evidence-based, trauma-informed care model with central coordination via a case manager intended to be holistic and integrated.

Concordance Academy services are delivered through case manager coordinated care in three domains. In the Behavioral Health and Wellness domain, cognitive and relational skills are developed through evidence-driven, manualized interventions to facilitate skills and related to coping mechanisms, improved cognitions, positive interpersonal relationships and engaging in prosocial activities<sup>3</sup>. Concordance also delivers structured mental health programs and referrals to physical health providers. Intervention for alcohol and substance use disorders (AUD/SUD) is delivered through a combination of 12-step and cognitive-behavioral programming. The centerpiece of the Education and Employment domain is guaranteed employment through the Concordance temporary agency and career support. Participants complete 10 weeks of job readiness training and workplace simulations at the Concordance Academy. A career educator

<sup>3</sup> The intervention is said to be manualized when the procedures and practices are documented and those documented activities are implemented with fidelity rather than implemented ad hoc.



prepares participants to take the HiSET (high school equivalency exam) and prepare for postsecondary education. The Community and Life Skills domain includes spiritual support through the Concordance chaplain, community involvement activities, family reunification through a variety of family-focused activities, and legal services provided through a pro bono regional law firm. The quality and fidelity of delivered programming is monitored by the Concordance Institute (integrated but distinct from the Concordance corporate structure) that manages all aspects of service delivery and integration. Concordance employs a variety of staff titles, including case managers, therapists, employment counselors, and community-support specialists.

Concordance also leverages spirituality through both the 12-step AUD/SUD intervention and as part of the program climate. Reviews of spirituality/faith-based programs find similar promising but heterogeneous effects in the broader reentry literature (La Vigne, Brazzell, and Small 2007; Mears et al. 2006). However, faith-based programs have been shown to have a greater potential to scale, given the ubiquity of faith-based institutions and affiliated community-based organizations in American communities (Buck, Brazzell, and Kim 2011; Roman and Roman 2019). The program emphasizes employment training and transition to work. Berghuis (2018) finds that reentry employment programs are associated with significant first-year gains in employment that attenuate, but Duwe (2014) finds a program similar in structure to the Concordance Academy maintained employment effects well above average rates of violence as compared to other New York City Housing Authority properties.

## The Survey Instrument and Data Collection

In this first phase of the study, NORC reports the results of a retrospective study of prior program participants (from Concordance classes 7-14, released between May 1, 2018, and August 31, 2019) to test for program effects against a comparison group of prisoners released from MODOC at the same time but not enrolled in the Concordance Academy.

For both studies, data were collected from the Concordance Academy on program participants and MODOC on all study participants. Additionally, NORC explored data from local law enforcement agencies and the court system through the Regional Justice Information System. All identifiable data was transferred to NORC in encrypted format using NORC's Secure File Transfer Protocol. NORC merged the administrative data from MODOC and Concordance Academy to create a unified research database for the analysis.

### Analysis

NORC conducted the following analyses:

- Logistic regressions tested hypotheses about key binary dependent (outcome) variables, such as any rearrest and reconviction. Prior research suggests that the most salient dependent variable (and, given the relatively small sample size, the dependent variable

most likely to allow detection of a true effect) will be a binary dependent variable measuring whether or not critical events occur.

- Poisson/negative binomial models test hypotheses about key count variables such as the number of new arrests. Typically in programs such as Concordance, criminal justice events do not follow a normal distribution (a bell curve) but rather follow what researchers refer to as a count distribution where zero or one event occurs for many participants, with a smaller number experiencing two or more events. Poisson models allow for a rigorous hypothesis test for this type of outcome data.
- Survival analyses test hypotheses about the time to important events, such as days on the street before a new arrest or reincarceration. For many reentry programs, substantial benefits to the participant and the community can be obtained through the delay of negative outcomes. For example, relapse is typically a part of substance misuse recovery, and delaying a relapse often increases the likelihood of a stable recovery. Survival analyses are structured to optimize hypothesis tests of this sort.

## Results

The challenge of any quasi-experimental design is to “balance” the treatment and comparison groups, such that the two groups are identical at baseline—and would therefore be expected to have identical outcomes at the end of the study. If the two samples (cohorts in research jargon) are balanced at baseline (the beginning of the study) then any differences observed at the end of the study can logically be the result of the intervention alone, acknowledging that the results of real-world research are always subject to some uncertainty. In RCTs, one homogenous group of individuals is randomly assigned to either get the treatment or to get business-as-usual case processing.

This study includes both a prospective randomized design and a retrospective, quasi-experimental design (QED), and here we report the results of the QED. Here, we have attempted to balance the treatment and comparison cohorts by selecting non-participants for our comparison group, an analogous group of returning people. The design assigns to the comparison group any person returning from prison at the same time as the treated Concordance Academy participants. In addition to the two groups leaving MODOC at an identical time, the two groups are also returning to the same communities—all of the comparison cohorts returned to the same three communities as the Concordance participants: St. Louis County, St. Charles County, and the city of St. Louis. Finally, only those individuals who would have been eligible for Concordance Academy were included in the study. This is what researchers call our identification strategy—including in the comparison only those people who are returning from prison at the same time, to the same places as the Concordance participants, and who meet the same eligibility rules.

Unlike a randomized trial, this identification strategy does leave open the possibility that the Concordance group differs from the comparison group in some systematic way, resulting in what researchers call “bias.” For instance, people must volunteer to participate in the Concordance

Academy and the same motivation that leads to participation might lead to better outcomes, all else being equal, with or without the Concordance intervention.

While there is no silver bullet solution to this problem, it is often possible to detect any bias by comparing all available attributes of the treatment and comparison cohorts. In studies of this sort, even in randomized trials, it is common to observe differences between the two groups on some of these observable attributes. The key to detecting bias is to determine whether there is a systematic bias, where the treatment group tends to share attributes that are both different from the comparison group and which tend to favor better outcomes for the treatment group. Again, this kind of systematic bias would suggest that the treated group would have had better outcomes regardless of the intervention.

In the tables below, we compare baseline attributes of the treatment and comparison groups. Overall, we find little evidence of systematic bias. Where bias is observed, it tends to favor the comparison group. That is, the bias tends to suggest that the Concordance Academy participants had attributes that were associated with a higher risk of recidivism than the comparison. **Table 1** describes the offense that led to the period of incarceration for the study participants. In total, 166 people participated in the eight Concordance classes included in this study (classes 7-14). Concordance participants were slightly more likely to have been incarcerated for a property or violent offense and slightly less likely to be incarcerated for a drug offense. On balance, the recidivism literature suggests that property offenders are more likely to recidivate.

**Table 1. Type of Offense (all classes)**

Offense Group	Concordance		Other Parolees (comparison)	
	n	%	n	%
Drugs	37	22%	796	31%
DWI	1	1%	62	2%
Property	74	45%	1064	41%
Violent	54	32%	668	26%
Total	166	100%	2590	100%

**Table 2** describes the admission category for each participant, that is, the type of event that led the participant to be sentenced to prison. Cases fall into one of three admission categories: a new court commitment resulting from an arrest for a new offense, a probation revocation or an existing or pending case, and a violation of parole after a previous release from prison. **Table 2** compares the treatment and comparison cohorts by admission category on three measures: the percentage of each cohort in each admission category, the time served under the sentence that made that person eligible for Concordance or the comparison cohort, and the Salient Factor Risk score. The Salient Factor Risk score is completed before the first parole hearing and is an overall assessment of offender risk. The measure is somewhat counterintuitive, where lower scores and

negative scores indicate higher risk and positive scores indicate less risk. The score includes such metrics as prior incarcerations, prior convictions, prior escape, drug addiction, and conduct violations while incarcerated and a lower score is associated with higher risk.

**Table 2. Admission Status, Months Served, and Salient Factor Risk Score (all classes)**

Admission Status	Concordance				Other Parolees (comparison)			
	n	%	Months Served	SF Score	n	%	Month Served	SF Score
New court commitment	53	32%	78.3	0.91	734	28%	60.7	1.34
Probation revocation	60	36%	41.6	-0.80	990	38%	26.9	0.12
Parole	53	32%	48.5	-0.96	866	34%	24.9	-0.11
Total	166	100%	55.5	-0.31	2590	100%	37.9	0.46

Again, the Concordance Academy participants are generally at higher risk than the comparison cohort. The overall risk factor is lower for Concordance participants, suggesting higher risk, and the time served is substantially longer (longer sentences suggest a more serious criminal event, a more serious criminal history, or more violations while incarcerated). In addition, the Concordance participants were more likely to have a revocation of probation or parole, which is also generally associated with a higher risk of recidivism, particularly when recidivism is measured as a return to prison.

**Table 3** describes the recidivism of the full Concordance cohort, comparing all participants in classes 7-14 to the comparison cohort. To measure the six- and 12-month parole violation, NORC calculated the time to violation by subtracting the release date from the start date of the post-release supervision episode that was categorized as a violation. To measure the percent incarcerated at different time points post-release, NORC calculated the time to reincarceration by subtracting the release date from the start date of the post-release supervision episode that was categorized as a prison stay. To measure percent with new convictions at different time points post-release, NORC calculated the time to new offense by subtracting the release date from the new offense sentence date or new offense probation date, whichever came first (see Table 3).

**Table 3. Recidivism Measures (all classes)**

Admission Status	n	% with Parole Violation within			% with Incarceration within			% with New Offense within	
		6 mos	12 mos	2 yrs	6 mos	12 mos	2 yrs	12 mos	2 yrs
<b>Concordance</b>									
New court commitment	53	1.9%*	18.9%	20.8%	1.9%	15.1%	18.9%	1.9%	5.7%
Probation revocation	60	5.0%	15.0%*	21.7%*	3.3%	13.3%	20.0%*	3.3%	5.0%
Parole	53	7.6%	22.6%	39.6%	5.7%	13.2%	30.2%	0.0%*	5.7%
<b>Total</b>	<b>166</b>	<b>4.8%*</b>	<b>18.7%</b>	<b>27.1%*</b>	<b>3.6%*</b>	<b>13.9%</b>	<b>22.9%</b>	<b>1.8%</b>	<b>5.4%</b>
<b>Other Parolees</b>									
New court commitment	734	6.8%	17.0%	25.7%	5.7%	13.4%	20.8%	0.7%	1.8%
Probation revocation	990	8.7%	26.0%	39.5%	6.9%	20.3%	31.5%	1.5%	3.1%
Parole	866	10.5%	24.9%	37.2%	8.1%	18.6%	29.6%	1.7%	3.6%
<b>Total</b>	<b>2590</b>	<b>8.8%</b>	<b>23.1%</b>	<b>34.8%</b>	<b>6.9%</b>	<b>17.8%</b>	<b>27.8%</b>	<b>1.4%</b>	<b>2.9%</b>

Note. Within a column, Concordance percentages with \* are significantly different from Other Parolees group in the same admission status category.

Overall, the Concordance Academy participants experienced a statistically significant ( $p < 0.10$ ) reduction in recidivism in several categories. Significantly fewer of the 166 treated participants had a parole violation at six months and two years, and significantly fewer Concordance participants were incarcerated at six months. At other periods, Concordance participants were less likely to have a parole violation or reincarceration, although those results were not statistically significant. The comparison cohort had fewer new offenses, although those differences were also not significant.

### Regression Results

One of the common challenges of quasi-experimental studies is that there are few measures to statistically correct for potential bias. Here, and as described in great detail in the Appendix, there are a wealth of measures describing the baseline attributes of both the Concordance participants and the comparison cohort. Here, we use regression analysis to statistically control for any observable differences in the two cohorts. Because there is so much rich information about the two cohorts available from MODOC, we are unusually confident in our ability to control for any observable baseline differences.

To account for these imbalances across groups, all of the variables from **Table A.1** were retained as covariates in the regression models predicting different measures of recidivism. Whether or

not releases violated parole, the number of times they violated parole, whether or not releases were incarcerated, the number of times they were incarcerated, the length of total reincarceration, and whether or not releases were convicted of new offenses were predicted in separate models by the treatment (Concordance vs. Other Parolees), controlling for all covariates listed in Table A.1.

In **Table 4**, two types of regression results are reported. Where the outcome being tested was binary (for example, someone violated parole (Y=1) or they did not (Y=0)), the difference between the Concordance cohort and the comparison cohort is reported as an odds ratio. Odds ratios can be interpreted as having greater odds for the treated group (the Concordance cohort) if the odds ratio is greater than 1, or smaller odds if the odds ratio is less than one. As a rule of thumb, an odds ratio of 0.75 could be interpreted as indicating that the odds of a parole violation were 25 percent less for the Concordance participants than the comparison cohort. For the continuous outcomes (length of incarceration, for example), the reported estimate is a coefficient where a positive value means more days incarcerated and a negative value means fewer days incarcerated for the Concordance cohort as compared to the comparison group. Hazard ratios can be interpreted in the same manner as the ordinary least squares (OLS) coefficients.

**Table 4. Treatment Effect Estimates Comparing Concordance Group (all classes) vs. Other Releases Group**

<b>Recidivism Measure</b>	<i>Estimate</i>	<i>SE</i>	<i>t or z</i>	<i>P</i>	<i>Cohen's d</i>
Violated parole vs. not (odds ratio)	0.75	0.19	-1.49	0.135	-0.16
Number of parole violations (OLS)	-0.08	0.06	-1.32	0.185	-0.11
Incarcerated vs. not (odds ratio)	0.83	0.20	-0.92	0.360	-0.10
Number of times incarcerated (OLS)	-0.06	0.05	-1.21	0.227	-0.10
Length of incarceration (OLS)	-7.53	9.58	-0.79	0.431	-0.06
New offense vs. not (odds ratio)	2.35*	0.40	2.15	0.031	0.47
Incarcerated at six months (odds ratio)	0.50	0.47	-1.45	0.146	-0.38
Incarcerated at 12 months (odds ratio)	0.79	0.25	-0.96	0.335	-0.13
Time to incarceration (hazard ratio)	0.88	0.17	-0.77	0.440	-0.07

There were no significant differences in any of these six outcome measures between the Concordance group and the Other Parolees group except for new offenses (see **Table 4**). Specifically, those in the Concordance Academy group were 2.35 times more likely to be convicted of a new offense compared to the Other Parolees.

NORC also examined the timing of recidivism in a few different ways: reincarceration at six months post-release, reincarceration at 12 months post-release, and overall time to incarceration

as predicted by the treatment (Concordance vs. Other Parolees) and covariates listed in Table A.1. There were no significant differences in any of the time-related recidivism measures for incarceration between the Concordance group and the Other Parolees group (see **Table 4**).

### Results for Concordance Academy Classes 11-14

The Concordance Academy program shifted programming rather dramatically from classes 7-10 to 11-14. Although the Academy had enrolled 10 classes by 2018, the program had been in operation for only two years, and the shift in programming represented an early evolution in programming, based on lessons learned in the field. The program in operation today closely aligns with the practices in classes 11-14 and less closely with classes 7-10. Classes 15-20 that were enrolled in the companion study to this one, the RCT, received programming that was very similar to classes 11-14 but less similar to classes 7-10. Thus, the analysis above was repeated using only the subgroup of classes 11-14. The results for classes 11-14 were notably different from the prior comparison with the full Concordance group, with classes 11-14 having better recidivism scores than the Other Parolee group (see **Table 5**).

**Table 5. Recidivism Measures (classes 11-14)**

Admission Status	n	% with Parole Violation within		% with Incarceration within		% with New Offense within
		6 mos	12 mos	6 mos	12 mos	12 mos
<b>Classes 11-14</b>						
New court commitment	24	4.2%	12.5%	4.2%	8.3%	0.0%
Probation revocation	22	0.0%	4.5%	0.0%	0.0%	0.0%
Parole	18	11.1%	27.8%	11.1%	16.7%	0.0%
<b>Total</b>	<b>64</b>	<b>4.7%</b>	<b>14.1%</b>	<b>4.7%</b>	<b>7.8%</b>	<b>0.0%</b>
<b>Other Parolees</b>						
New court commitment	734	6.8%	17.0%	5.7%	13.4%	0.7%
Probation revocation	990	8.7%	26.0%	6.9%	20.3%	1.5%
Parole	866	10.5%	24.9%	8.1%	18.6%	1.7%
<b>Total</b>	<b>2590</b>	<b>8.8%</b>	<b>23.1%</b>	<b>6.9%</b>	<b>17.8%</b>	<b>1.4%</b>

In contrast to the full Concordance group, those in classes 11-14 were marginally less likely to violate parole, had marginally fewer parole violations, were marginally less likely to be reincarcerated, had marginally fewer reincarcerations, and shorter reincarceration days overall compared to the Other Parolees (see **Table 6**). Those in classes 11-14 were also marginally less likely to be incarcerated at 12 months compared to the Other Parolees. There were no differences between classes 11-14 and the Other Parolee group in the odds of being incarcerated at six

months or the overall time until reincarceration. As a note, there were no parolees in the classes 11-14 group that were convicted of a new offense. Therefore, a comparison could not be made for that variable.

**Table 6. Treatment Effect Estimates Comparing Class 11-14 vs. Other Releases Group**

<b>Recidivism Measure</b>	<i>Estimate</i>	<i>SE</i>	<i>t or z</i>	<i>p</i>	<i>Cohen's d</i>
Violated parole vs. not (odds ratio)	0.54†	0.32	-1.90	0.057	-0.34
Number of parole violations (OLS)	-0.17†	0.09	-1.81	0.070	-0.23
Incarcerated vs. not (odds ratio)	0.55†	0.35	-1.70	0.089	-0.33
Number of times incarcerated (OLS)	-0.13†	0.08	-1.75	0.080	-0.21
Length of incarceration (OLS)	-32.54*	14.79	-2.20	0.028	-0.27
New offense vs. not (odds ratio)	-	-	-	-	-
Incarcerated at six months (odds ratio)	0.86	0.62	-0.24	0.811	-0.08
Incarcerated at 12 months (odds ratio)	0.44†	0.48	-1.70	0.090	-0.45
Time to incarceration (hazard ratio)	0.74	0.31	-1.00	0.320	-0.17

Note. †  $p < 0.10$ . \*  $p < 0.05$ .

## Conclusion

The study finds evidence that the Concordance Academy reduced recidivism along the full spectrum of recidivism measures for classes 11-14. The analysis employed a QED that leveraged a rich set of covariates to balance the two nonexperimental groups. The full analysis, including classes 7-10 that participated in an earlier iteration of the Concordance program, found reductions in recidivism, although those effects were not significant.

The finding of recidivism reductions across multiple measures is notable for several reasons. First, the Concordance Academy programming was generally developed from best practices identified in the prisoner reentry literature, and these findings serve as a replication of those extant results. Second, as noted in the literature review, although specific components of prisoner reentry programs are effective, few prior evaluation results find that a program as a whole had significant reductions in recidivism. Finally, the results are particularly promising because the program is designed to be replicated and scaled and thus the results hold promise beyond the communities the Concordance Academy currently serves.



## Appendix – Balance Tables

### Full Sample (Concordance Classes 7-14)

The two cohorts (Concordance vs. Other Parolees/Control) were compared on several demographic and institutional variables to assess the level of balance between groups (see Table 4). Seven variables were considered imbalanced between the groups (highlighted in red) and 13 variables questionably balanced between the groups (highlighted in yellow). The Concordance Academy group was typically higher in risk-oriented variables (e.g., violations during the prison stay, institutional risk).

**Table A.1. Balance Table for Covariates Used in Treatment Comparisons (all classes)**

Variable	Type	Control Mean or Proportion	Concordance Mean or Proportion	Std Mean Diff	P-value
Violations in stay	Contin.	9.12	15.38	0.35*	0.000
First classification custody level	Contin.	2.19	2.72	0.35*	0.000
Stay (months)	Contin.	35.77	55.51	0.34*	0.000
Failed one or more programs	Binary	0.20	0.42	0.22*	0.000
Days on work release	Contin.	25.74	8.60	-0.21*	0.039
Substance abuse needs screen	Contin.	3.51	3.29	-0.21*	0.009
Race (white)	Binary	0.38	0.19	-0.20*	0.000
Race (black)	Binary	0.60	0.79	0.19*	0.000
Days in education class	Contin.	224.79	369.23	0.18*	0.033
Institutional risk	Contin.	1.60	1.79	0.15	0.052
Institutional drug treatment	Binary	0.22	0.07	-0.15*	0.000
Cognitive programs	Binary	0.38	0.53	0.15*	0.000
Sentence years	Contin.	8.80	10.31	0.14	0.107
Age	Contin.	36.55	35.05	-0.14	0.079
Marital status (never married)	Binary	0.71	0.84	0.13*	0.000
Major violations in stay	Contin.	0.11	0.19	0.13	0.085
Anger management	Binary	0.19	0.33	0.13*	0.000
Days in MO Vocational Enterprises	Contin.	47.14	135.46	0.11*	0.005
Total days in programs	Contin.	230.11	266.51	0.10	0.198

Variable	Type	Control Mean or Proportion	Concordance Mean or Proportion	Std Mean Diff	P-value
Education (HS or GED)	Binary	0.29	0.39	0.10*	0.007
St. Charles County	Binary	0.22	0.13	-0.08*	0.010
Drug offense	Binary	0.31	0.22	-0.08*	0.022
Criminal code D	Binary	0.57	0.49	-0.07	0.071
Violent offense	Binary	0.26	0.33	0.07	0.056
Criminal code A	Binary	0.09	0.16	0.07*	0.005
Job in MO Vocational Enterprises	Binary	0.09	0.16	0.07*	0.005
Criminal code B	Binary	0.23	0.28	0.06	0.084
Reentry program before release	Binary	0.02	0.08	0.05*	0.000
Basic life and job skills	Binary	0.08	0.13	0.05*	0.019
St. Louis City	Binary	0.41	0.46	0.05	0.195
Criminal code E	Binary	0.10	0.05	-0.05*	0.031
Admission type (new court)	Binary	0.28	0.32	0.04	0.321
Nonviolent offense	Binary	0.41	0.45	0.03	0.375
St. Louis County	Binary	0.37	0.40	0.03	0.384
Admission status (probation)	Binary	0.38	0.36	-0.02	0.593
Sex (male)	Binary	0.90	0.88	-0.02	0.446
DWI offense	Binary	0.02	0.01	-0.02	0.134
Admission status (parole)	Binary	0.33	0.32	-0.02	0.690
Days as instructor	Contin.	10.02	11.02	0.01	0.873
Race (other)	Binary	0.01	0.02	0.01	0.139
Vocation classes	Binary	0.07	0.08	0.01	0.798
Criminal code U	Binary	0.02	0.01	0.00	0.654
Criminal code C	Binary	0.00	0.01	0.00	0.441
Days in a vocational class	Contin.	12.29	12.20	0.00	0.983

Note. \*  $p < 0.05$ . Std = Standardized.

### Partial Sample (Concordance Classes 11-14)

The two cohorts (Concordance classes 11-14 vs. Other Parolees/Control) were compared on the same demographic and institutional variables to assess the level of balance between groups (see Table 7). 14 variables were considered imbalanced between the groups (highlighted in red) and 12 variables questionably balanced between the groups (highlighted in yellow). The Concordance Academy classes 11-14 group was typically higher in risk-oriented variables (e.g., violations during the stay, institutional risk) as well as education days and education.

**Table A.2. Balance Table for Covariates Used in Treatment Comparisons (classes 11-14)**

Variable	Type	Control Mean or Proportion	Classes 11-14 Mean or Proportion	Std Mean Diff	P-value
Violations in stay	Contin.	9.12	17.45	0.45*	0.000
First classification custody level	Contin.	2.19	2.86	0.45*	0.000
Stay (months)	Contin.	35.77	60.81	0.41*	0.000
Institutional risk	Contin.	1.60	2.03	0.33*	0.006
Total days in programs	Contin.	230.11	339.97	0.30*	0.014
Days in education class	Contin.	224.79	479.47	0.29*	0.018
Substance abuse needs screening	Contin.	3.51	3.25	-0.26*	0.044
Failed one or more programs	Binary	0.20	0.45	0.25*	0.000
Education (HS or GED)	Binary	0.29	0.53	0.24*	0.000
Days on work release	Contin.	25.74	6.77	-0.24	0.155
Race (white)	Binary	0.38	0.16	-0.23*	0.000
Sentence years	Contin.	8.80	11.45	0.22	0.077
Race (black)	Binary	0.60	0.81	0.21*	0.001
Major violations in stay	Contin.	0.11	0.23	0.20	0.106
Days in MO Vocational Enterprises	Contin.	47.14	272.47	0.18*	0.000
Cognitive programs	Binary	0.38	0.56	0.18*	0.004
Violent offense	Binary	0.26	0.42	0.16*	0.003
Criminal code D	Binary	0.57	0.42	-0.14*	0.022
Age	Contin.	36.55	35.01	-0.14	0.256
Criminal code B	Binary	0.23	0.36	0.13*	0.011

Variable	Type	Control Mean or Proportion	Classes 11-14 Mean or Proportion	Std Mean Diff	P-value
Institutional drug treatment	Binary	0.22	0.09	-0.12*	0.016
Drug offense	Binary	0.31	0.19	-0.12*	0.040
Marital status (never married)	Binary	0.71	0.83	0.12*	0.039
Anger management	Binary	0.19	0.31	0.12*	0.019
Days in a vocational class	Contin.	12.29	8.05	-0.11	0.481
St. Charles County	Binary	0.22	0.11	-0.11*	0.038
Admission type (new court commitment)	Binary	0.28	0.38	0.09	0.109
Days as instructor	Contin.	10.02	4.67	-0.09	0.588
St. Louis County	Binary	0.37	0.45	0.08	0.174
Criminal code E	Binary	0.10	0.03	-0.07	0.070
Job in MO Vocational Enterprises	Binary	0.09	0.16	0.07	0.074
Reentry program before release	Binary	0.02	0.08	0.05*	0.007
Admission status (parole)	Binary	0.33	0.28	-0.05	0.373
Criminal code A	Binary	0.09	0.14	0.05	0.172
Admission status (probation)	Binary	0.38	0.34	-0.04	0.531
Vocation classes	Binary	0.07	0.05	-0.03	0.426
St. Louis City	Binary	0.41	0.44	0.02	0.691
DWI offense	Binary	0.02	0.00	-0.02	0.211
Nonviolent offense	Binary	0.41	0.39	-0.02	0.746
Race (other)	Binary	0.01	0.03	0.02	0.140
Basic life and job skills	Binary	0.08	0.06	-0.02	0.597
Criminal code U	Binary	0.02	0.03	0.01	0.370
Sex (male)	Binary	0.90	0.91	0.01	0.831
Criminal code C	Binary	0.00	0.00	0.00	0.677

Note. \*  $p < 0.05$ . Std = Standardized.