CENTER FOR APPLIED RESEARCH & ANALYSIS

Outcome Evaluation of the Bernalillo County Community Connections Supportive Housing (CCSH) Program

September 2024

Prepared By:

Alex Severson, Ph.D.

Reanna Sanchez Chavez, M.A.

Paul Guerin, Ph.D.

Prepared For:

Bernalillo County Behavioral Health Initiative (BHI)

UNIVERSITY OF NEW MEXICO, INSTITUTE FOR SOCIAL RESEARCH
CENTER FOR APPLIED RESEARCH & ANALYSIS

Table of Contents

Introduction

In February 2015, the Bernalillo County Commission and voters approved a gross-receipts tax expected to generate between $17 and $20 million yearly to establish and maintain a synchronized and integrated behavioral health system in the county and the surrounding areas (CPI, 2015). This continuum of care seeks to provide support for individuals and their families living with behavioral health conditions, defined by the American Medical Association (AMA) as "mental health and substance use disorders, life stressors and crises, and stress-related physical symptoms" (American Medical Association, 2022). In April 2015, the Bernalillo County Commission contracted with Community Partners, Inc. (CPI) and created a business plan that proposed behavioral health programs across different areas. One of the interventions funded as part of this initiative was the Community Connections Supportive Housing (CCSH) program.

The CCSH program aims to provide housing and intensive case management to persistently unhoused individuals in the Albuquerque area who have mental illness and substance use disorders and who are frequent utilizers of medical emergency services and the criminal justice system. The longer-term goals of the CCSH program are to help this population acquire permanent housing, reduce emergency medical services used, and decrease criminal justice system involvement. The CCSH program is a partnership involving the Behavioral Health Initiative (BHI), the Bernalillo County Housing Department (HD), and the City of Albuquerque Family and Community Services (FCS). BHI and FCS supply the funding for housing vouchers, which HD distributes to eligible individuals. Additionally, Bernalillo County has contracted with two local organizations, Crossroads for Women (CFW) and the University of New Mexico Hospital Community Based Services (UNMH - CBS), to deliver intensive case management for voucher recipients. Between 2017 and 2022, the CCSH program served over 470 participants in Bernalillo County.

We completed a process evaluation of the CCSH program in December 2023, which summarized the implementation quality of the CCSH program between 2017 and 2023 for the CFW and CBS programs and the Bernalillo County Housing Department (HD). Among other findings, we reported that while "…the two case management contractors, CFW and CBS, appear to generally provide services of the intensity and types outlined in planning documents" (Rosenberg et al., 2023, p. 48), there were some areas for improvement for the contractors, specifically relating to the extended housing voucher wait-lists for HD and data standardization issues (i.e., there were non-standardized discharge reasons listed across providers). On balance, the process evaluation suggested that the CCSH program had adhered to best practices. For a review of the theoretical foundations of the CCSH program and a summary of our review of the CCSH program's implementation quality, we refer interested readers to our 2023 process evaluation linked here (Rosenberg et al., 2023).

Whereas the process evaluation aimed to explore how well the CCSH program was being implemented, the present outcome evaluation aims to evaluate how engagement in the CCSH program impacted criminal justice system involvement in Bernalillo County[1]. In what follows, we describe how we constructed the sample for our outcome analysis. We then provide a descriptive overview of the study sample, summarizing respondent demographics. We then present descriptive statistics on participants' criminal justice system involvement using jail bookings into the MDC and court data. We pair the descriptive analysis with regression analysis to better understand whether elements of CCSH programming – specifically, case management dosage – are associated with changes in recidivism. We then comment on the limitations of the present report and conclude by summarizing key findings.

[1] We originally intended to explore how participation in the CCSH program impacted patterns of health system usage. Unfortunately, due to delays in receiving this data from the University of New Mexico Health Sciences Division, we were unable to secure access to the health information exchange data necessary to evaluate the impact of program participation on volume and patterns of health system use.

Sample Construction

We constructed the sample using CCSH participant data of former and current enrollees in the CCSH program at CFW and CBS. Participant service records included participant demographics (i.e., date of birth, gender, ethnicity), referral and intake dates, assessment results (e.g., clinical diagnoses), date, type, and duration of services received, and discharge dates and reasons.

We initially obtained data for 473 unique participants. However, we excluded participants from the sample if (1) their date of birth was not provided in the participant-level data since we used name and date of birth jointly to manually match participant records to relevant criminal justice data (n = 7), (2) cases where participant records indicated discharge due to death (n = 5), and cases where participant records were inaccurate (e.g., participant ages greater 100 were listed or the enrollment date was listed as before the start date of the program) (n = 17). These inclusionary criteria reduced the sample by 6.5% (n = 31).

We obtained electronic jail booking data from the MDC and electronic court data from the New Mexico Administrative Office of the Courts (AOC), which we used as a proxy for arrest data, given known issues with accessing arrest records directly from local police agencies. We used fuzzy matching procedures to link participant-level data provided by CFW and CBS with jail and court records conditional on matches of full name and date of birth. Following matching and data cleaning, the final sample size for analysis was 442 participants.

Sample Description

Table 1 presents descriptive statistics summarizing the enrolled CCSH participant population meeting inclusion criteria between January 2017 and December 2021 for the pooled sample[2]. Most participants (54.3%; n = 240) were female. Most racially identified as White (74.7%; n = 330), and most ethnically identified as Hispanic (55.9%; n = 247). The average age of participants was 38.2 years old. Fifty-eight-point six percent (n = 259) of participants participated in the UNMH-CBS program, and 41.4% (n = 183) participated in the CFW program. The median amount of case management participants received was 29 hours. We present descriptive statistics of CCSH participants for each provider separately in Tables 2 and 3 respectively.

Excluding program completers (8.6% of the sample; n = 38), 48.9% (n = 216) of CCSH participants were discharged before the study sample period ended. Of the subset of discharged participants who did not complete the program by the time of data collection (n = 404), program non-compliance was the most common reason for discharge (18.8%; n = 76) followed by loss of voucher (6.7%; n = 27), loss of contact (6.7%; n = 27), and incarceration (4.2%; n = 17). Moreover, of the subset of individuals who were discharged before the study sample period ended, the mean duration of time enrolled in the program was 348.4 days and the median duration of time enrolled in the program was 225.5 days.

[2] When we refer to the pooled sample in this evaluation, we are referring to the sample of all individuals enrolled in both the CFW and UNMH CCSH programs.

Table 1.
Descriptive Statistics of CCSH Participants – Pooled Sample (n = 442)

	Percent (n)	Mean	Median
Gender			
Female	54.3% (n = 240)	--	--
Male	45.7% (n = 202)	--	--
Race			
White	74.7% (n = 330)	--	--
Native American	9.7% (n = 43)	--	--
Black	9.5% (n = 42)	--	--
Other	2.4% (n = 11)	--	--
Unknown	3.6% (n = 16)	--	--
Ethnicity			
Hispanic	55.9% (n = 247)	--	--
Non-Hispanic	37.8% (n = 167)	--	--
Unknown	6.3% (n = 28)	--	--
Age		38.2 years	37 years
Referral Agency			
UNMH – CBS	58.6% (n = 259)	--	--
CFW	41.4% (n = 183)	--	--
Case Management (Hours)	--	42.8 hours	29 hours
Discharged			
No	51.1% (n = 204)	--	--
Yes	48.9% (n = 216)	--	--

Table 2.
Descriptive Statistics of CCSH Participants - UNMH (n = 259)

	Percent (n)	Mean	Median
Gender			
Female	22.0% (n = 57)	--	--
Male	78.0% (n = 202)	--	--
Race			
White	74.5% (n = 193)	--	--
Native American	8.9% (n = 23)	--	--
Black	11.6% (n = 30)	--	--
Other	2.7% (n = 7)	--	--
Unknown	2.3% (n = 6)	--	--
Ethnicity			
Hispanic	46.3% (n = 120)	--	--
Non-Hispanic	42.1% (n = 109)	--	--
Unknown	11.6% (n = 30)	--	--
Age		38.9 years	38 years
Case Management (Hours)	--	33.8 hours	25.1 hours
Discharged			
No	59.5% (n = 154)		
Yes	40.5% (n = 105)		

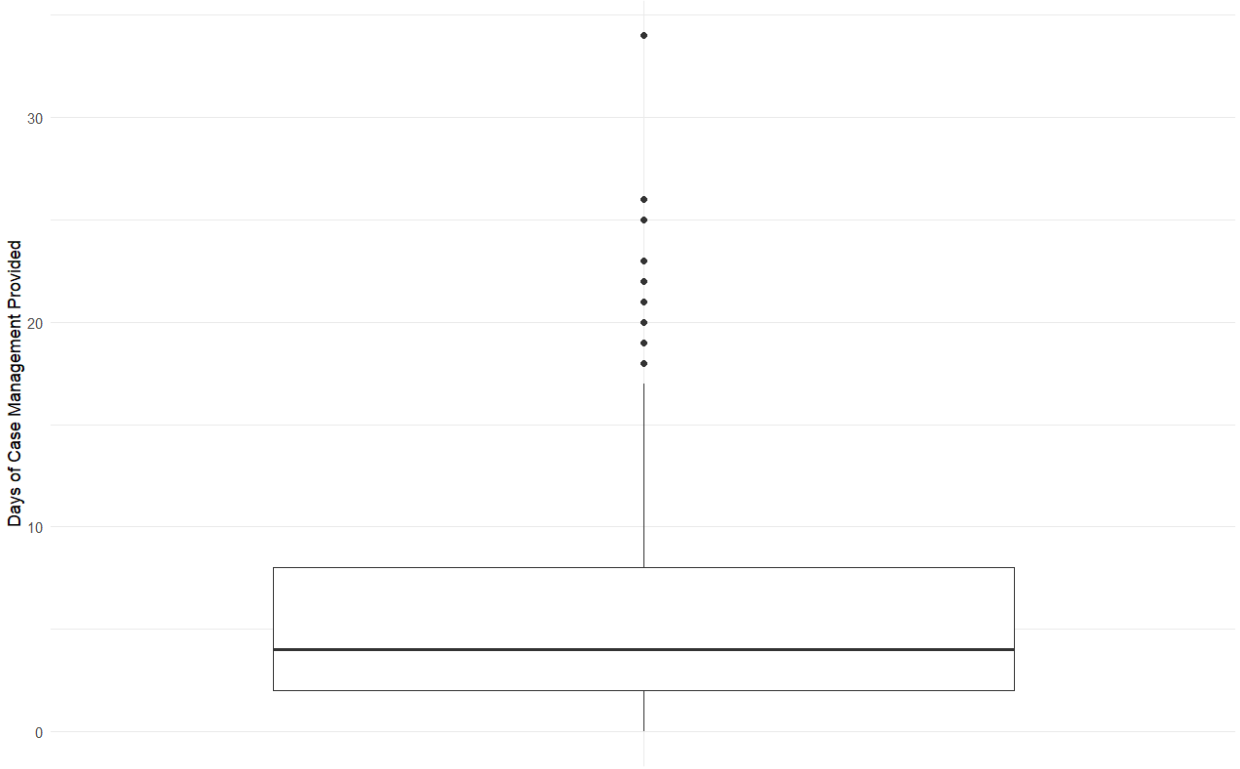
Table 3.
Descriptive Statistics of CCSH Participants - CFW (n = 183)

	Percent (n)	Mean	Median
Gender			
Female	100.0% (n = 183)	--	--
Male	0.0% (n = 0)	--	--
Race			
White	74.9% (n = 137)	--	--
Native American	10.4% (n = 19)	--	--
Black	6.6% (n = 12)	--	--
Other	4.9% (n = 9)	--	--
Unknown	3.2% (n = 6)	--	--
Ethnicity			
Hispanic	69.4% (n = 127)	--	--
Non-Hispanic	30.6% (n = 56)	--	--
Unknown	0.0% (n = 0)	--	--
Age		37.3 years	36 years
Case Management (Hours)		55.5 hours	39.75 hours
Discharged			
No	39.3% (n = 72)	--	--
Yes	60.1% (n = 111)	--	--

As the CCSH intervention relies on intensive case management (i.e., high volume and frequency of contacts between case managers and participants and low case manager-to-participant caseloads), it is important to understand the distribution of case management services provided to CCSH participants. To this end, in Figure 1, we present a boxplot of the dosage of case management provided. For ease of interpretation, we converted the case management hour variable to workdays (i.e., one day is the equivalent of eight hours of case management services provided). Results suggest that while the median number of case management days of the service supplied to a participant is approximately four workdays, the interquartile range (i.e., the 25^{th} to 75^{th} percentile of case management services) is a range of six days, suggestive of considerable variability in the dose provided to CCSH participants.

Figure 1.

Boxplot of Case Management Days Provided to CCSH Participants



Results

Jail & CCSH Data

We evaluated how the volume of bookings at the MDC changed before and after participants enrolled in the CCSH program. In Table 4, we present descriptive statistics that show the percent of participants booked into the MDC within the sampling frame (i.e., one to three years before and after enrolling in CCSH) alongside mean and median booking counts for the same periods. As a preliminary test, we conducted paired sample t-tests to evaluate whether there were statistically significant differences in average booking counts pre-post by participant.

Results of paired sample t-tests indicated statistically significant differences in booking counts within each pre-post period for the pooled sample, suggesting that individuals had significantly fewer booking counts into the MDC after enrollment. Specifically, booking counts for the one-year post-period ($M = 0.47$, $SD = 1.43$) were considerably lower than arrest counts for the one-year pre-period ($M = 0.76$, $SD = 1.07$), $t(441) = 11.5$, $p < 0.01$, booking counts for the two-year post-period ($M = 0.84$, $SD = 1.70$) were significantly lower than arrest counts for the two-year pre-period ($M = 1.95$, $SD = 2.72$), $t(441) = 10.51$, $p < 0.01$, and booking counts from the three-year post-period ($M = 1.15$, $SD = 2.10$) were significantly lower than booking counts within the three-year pre-period ($M = 2.85$, $SD = 3.9$), $t(441) = 11.5$, $p < 0.01$. Similar results were obtained when we stratified the sample by the provider (see Tables 5 and 6).

Table 4.
Descriptive Summaries of MDC Bookings Before and After CCSH Enrollment – Pooled Sample

	% Booked	Mean Booking Count	Median Booking Count
One Year Before Enrollment	38.0% (n = 168)	0.76	0
One Year After Enrollment	23.8% (n = 105)	0.47	0
Two Years Before Enrollment	60.2% (n = 176)	1.95	1
Two Years After Enrollment	33.5% (n = 148)	0.84	0
Three Years Before Enrollment	66.5% (n = 294)	2.85	2
Three Years After Enrollment	40.3% (n = 178)	1.15	0

Table 5.
Descriptive Summaries of MDC Bookings Before and After CCSH Enrollment - CFW

	% Booked	Mean Booking Count	Median Booking Count
One Year Before Enrollment	31.7% (n = 58)	0.57	0
One Year After Enrollment	18.0% (n = 33)	0.27	0
Two Years Before Enrollment	53.6% (n = 98)	1.52	1
Two Years After Enrollment	25.1% (n = 46)	0.46	0
Three Years Before Enrollment	62.3% (n = 114)	2.20	1
Three Years After Enrollment	35.0% (n = 64)	0.70	0

Table 6.
Descriptive Summaries of MDC Bookings Before and After CCSH Enrollment - UNMH

	% Booked	Mean Booking Count	Median Booking Count
One Year Before Enrollment	42.5% (n = 110)	0.89	0
One Year After Enrollment	27.8% (n = 72)	0.61	0
Two Years Before Enrollment	64.9% (n = 168)	2.26	1
Two Years After Enrollment	39.4% (n = 102)	1.11	0
Three Years Before Enrollment	69.5% (n = 180)	3.32	2
Three Years After Enrollment	44.0% (n = 114)	1.46	0

We also explored the frequency of bookings between the pre and post-period, specifically among the subset of participants who had a prior booking history in the pre-enrollment period, as we might imagine there would be differential effects of the program on the subset of participants who had pre-enrollment criminal histories compared against those who did not. When we subset the analysis to only include individuals with at least one arrest in the three-year pre-period (n = 220), the difference in arrest counts between the before and after enrollment periods was even more pronounced. We present these differences in Table 7.

Table 7 suggests that relative booking counts were lower for the subset of participants with MDC bookings in the pre-enrollment period, particularly when we compared two and three-year pre-post periods. For example, of the subset of participants arrested at least once in the pre-enrollment period, the median participant was booked three times in the three years before enrolling. In contrast, the median participant was booked only once in the three years following enrollment. Similar results were obtained when we stratified the sample by the provider (see Tables 8 and 9).

Table 7.

Descriptive Summaries of MDC Bookings Before and After CCSH Enrollment among Subset with Criminal Justice System Involvement in the Pre-Period – Pooled Sample (n = 294)

Period	% Booked	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	57.1% (n = 168)	1.14	1
One Year After Enrollment	32.3% (n = 95)	0.67	0
Two Years Before Enrollment	90.5% (n = 266)	2.94	2
Two Years After Enrollment	45.9% (n = 135)	1.17	0
Three Years Before Enrollment	100.0% (n = 294)	4.29	3
Three Years After Enrollment	54.8% (n = 161)	1.59	1

Table 8.

Descriptive Summaries of MDC Bookings Before and After CCSH Enrollment among Subset with Criminal Justice System Involvement in the Pre-Period – CFW Sample (n = 114)

Period	% Booked	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	49.1% (n = 56)	0.92	1
One Year After Enrollment	24.6% (n = 28)	0.39	0
Two Years Before Enrollment	86.0% (n = 98)	2.45	2
Two Years After Enrollment	36.0% (n = 41)	0.67	0
Three Years Before Enrollment	100.0% (n = 114)	3.54	3
Three Years After Enrollment	49.1% (n = 56)	0.99	0

Table 9.

Descriptive Summaries of MDC Bookings Before and After CCSH Enrollment among Subset with Criminal Justice System Involvement in the Pre-Period – UNMH Sample (n = 180)

Period	% Booked	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	61.1% (n = 110)	1.28	1
One Year After Enrollment	37.2% (n = 67)	0.85	0
Two Years Before Enrollment	93.3% (n = 168)	3.26	3
Two Years After Enrollment	52.2% (n = 94)	1.49	1
Three Years Before Enrollment	100.0% (n = 180)	4.78	3
Three Years After Enrollment	58.3% (n = 105)	1.98	1

It is important to evaluate whether engagement with the CCSH program predicted changes in arrest counts following enrollment after conditioning for other factors that may influence criminal activity. To

this end, we conducted logistic regressions predicting arrest (0 = No Arrest; 1 = Arrest) at one-year, two-year, and three years following enrollment as a function of the number of arrests in each unique pre-enrollment period, participant age, participant gender, CCSH case management provider (i.e., UNMH - CPS or CFW), whether the participant was discharged from the program, the cumulative number of hours of case management received (converted into days), and the year of program enrollment to account for time-variant differences in program quality across years. We present these results in Table 10 as odds ratios.

We encourage readers to focus on the odds ratio for the case management variable as this variable represents the theoretical pathway through which the CCSH intervention is theorized to work (i.e., as case management volume increases, we would hypothesize that the volume of bookings would be lower as participants are ostensibly linked to more services). Notably, the dose of case management was associated with significantly lower odds of being booked within the one year and two years following enrollment in CCSH: that is, for each one day (i.e., 8 hours) increase in case management provided, the odds of being arrested within the year following enrollment, adjusting for other factors including previous arrest history and demographics, decreased by approximately 8%. The odds of being booked within the two years following enrollment declined by 5% with each one-day increase in case management services provided.

Notably, we only observe this effect in Models 1 and 2 and not for Model 3, which predicts arrests three years following enrollment. This is possible because, to the extent that case management exerts a causal effect on recidivism, as distance from the program enrollment increases, case management would have less of an impact (i.e., if an individual receives more case management earlier on in their program enrollment, then the presumptive recidivism-reducing effect of case management might be expected to decay with time naturally). We cannot statistically evaluate whether this theorized mechanism explains the lack of a significant relationship for Model 3 since we do not have access to data on when participants received case management services. Importantly, these findings are suggestive and not causal; they represent an *association* between case management hours and recidivism. However, they do not necessarily tell one whether case management *causes* a decline in recidivism risk.

Table 10.
Odds Ratios Predicting Whether CCSH Participant Was Booked into MDC – Pooled Sample[3]

	Model 1	Model 2	Model 3
Days of Case Management Received (1 Day = 8 hours CM)	0.92***	0.95**	0.97
Status: Discharged	1.34	1.70**	1.78*
Provider: CFW	1.08	1.23	1.23
Sex: Male	1.71	2.44**	2.18**
Race: Non-White	0.68	0.97	0.94
Ethnicity: Non-Hispanic	0.77	0.95	0.77
Age	1.01	1.00	1.00
Arrest Dummy (Pre-Period)	4.02***	7.77***	9.73***

Notes: Reference categories for categorical variables represent the most frequent response. The reference category for Status isN Non-Discharged at Time of Data Collection. The reference category for Provider is UNMH. The reference category for Sex is Female. The reference category for Race is White. The reference category for Ethnicity is Hispanic. *** p<.001, ** p<.01, * p<.05, + p<.1

While the logistic results suggest a main effect of case management on recidivism, we also wanted to explore whether the impact of case management on recidivism was moderated by prior booking history (i.e., to observe whether case management matters more – leads to more significant reductions in criminal justice system involvement - for more at-risk participants). To this end, we replicated Models 1 - 3, but this time, we included an interaction term between (1) the total count of MDC bookings in the three-year pre-enrollment period and (2) days of case management received. These models' results indicate no statistically significant interaction between short-term criminal history and case management dose. We report these model results in Appendix A.

Court & CCSH Data

We were also interested in evaluating how the volume of arrests, as proxied by the volume of court cases filed, and charge severity changed before and after participants enrolled in the CCSH program. In Table 11, we present descriptive statistics that show the percent of participants arrested in each sample period (i.e., one to three years before and after enrolling) alongside mean and median arrest counts for the same periods. We conducted paired sample t-tests to evaluate whether there were statistically significant differences in average arrest counts pre-post within each participant.

Results of paired sample t-tests indicated that while there were no statistically significant differences in arrest counts within the year following program enrollment relative to the year preceding enrollment, there were statistically significant differences in arrest counts for the two and three-year pre-post periods, suggesting that following enrollment, individuals had significantly lower arrests. Specifically, arrest counts from the two-year post-period ($M = 0.52$, $SD = 1.30$) were considerably lower than arrest counts within the two-year pre-period ($M = 0.90$, $SD = 1.66$), $t(441) = 5.00$, $p < 0.01$, and arrest counts from the three-year post-period ($M = 0.75$, $SD = 1.61$) were significantly lower than arrest counts within the three-year pre-period ($M = 1.32$, $SD = 1.98$), $t(441) = 6.12$, $p < 0.01$. Similar results were obtained when we stratified the sample by the provider (see Tables 12 and 13)

[3] Model 1 evaluates the relationship between these variables and booking likelihood in the one year following enrollment, Model 2 evaluates the relationship between these variables and booking likelihood in the two years following enrollment, and Model 3 evaluates the relationship between these variables and booking likelihood in the three years following enrollment. Results of logistic models that control for listed factors and adjust for year-fixed effects. Note * indicates a p-value <0.10. ** indicates a p-value < 0.05. *** indicates a p-value < 0.01. Reference categories represent the majority/plurality group. The reference category for Status is Non-Discharged. The reference category for Race is White. The reference category for ethnicity is Hispanic. The reference category for Sex is Female.

Table 11.

Descriptive Summaries of Arrests as Proxied by Court Data Before and After CCSH Enrollment – Pooled Sample

Period	% Arrested	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	22.4% (n = 99)	0.33	0
One Year After Enrollment	16.3% (n = 72)	0.26	0
Two Years Before Enrollment	40.3% (n = 178)	0.90	0
Two Years After Enrollment	26.0% (n = 115)	0.52	0
Three Years Before Enrollment	49.8% (n = 220)	1.32	0
Three Years After Enrollment	32.8% (n = 145)	0.75	0

Table 12.

Descriptive Summaries of Arrests as Proxied by Court Data Before and After CCSH Enrollment – CFW Sample

Period	% Arrested	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	22.4% (n = 41)	0.27	0
One Year After Enrollment	14.2% (n = 26)	0.19	0
Two Years Before Enrollment	41.5% (n = 76)	0.80	0
Two Years After Enrollment	23.5% (n = 43)	0.38	0
Three Years Before Enrollment	48.1% (n = 88)	1.16	0
Three Years After Enrollment	31.7% (n = 58)	0.58	0

Table 13.

Descriptive Summaries of Arrests as Proxied by Court Data Before and After CCSH Enrollment – UNMH Sample

Period	% Arrested	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	22.4% (n = 58)	0.39	0
One Year After Enrollment	17.8% (n = 46)	0.31	0
Two Years Before Enrollment	39.4% (n = 102)	0.98	0
Two Years After Enrollment	27.8% (n = 72)	0.63	0
Three Years Before Enrollment	51.0% (n = 132)	1.44	1
Three Years After Enrollment	33.6% (n = 87)	0.88	0

We also explored the frequency of arrests between the pre and post-period, specifically among the subset of participants who had prior criminal justice histories in the pre-enrollment period, as we might imagine there would be differential effects of the program on the subset of participants who had pre-enrollment criminal histories compared against those who did not. When we subset the analysis to only include

individuals with at least one arrest in the three-year pre-period (n = 220), the difference in arrest counts between the before and after enrollment periods was even more pronounced.

Table 14 suggests that arrest counts declined in the sample most at risk of criminal justice system engagement, particularly when we compared the two- and three-year pre-post periods. For example, of the subset of participants arrested at least once in the pre-enrollment period, the median participant was arrested two times in the three years before enrolling. In contrast, the median number of arrests was zero in the three years following program enrollment for this same subset. Similar results were obtained when we stratified the sample by the provider (see Tables 15 and 16).

Table 14.

Descriptive Summaries of Arrests as Proxied by Court Data Before and After CCSH Enrollment among Subset with Criminal Justice System Involvement in the Pre-Period – Pooled Sample (n = 220)

Period	% Arrested	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	45.0% (n = 121)	0.68	0
One Year After Enrollment	25.5% (n = 56)	0.43	0
Two Years Before Enrollment	80.9% (n = 178)	1.82	1
Two Years After Enrollment	40.0% (n = 88)	0.86	0
Three Years Before Enrollment	100.0% (n = 220)	2.65	2
Three Years After Enrollment	47.3% (n = 104)	1.23	0

Table 15.

Descriptive Summaries of Arrests as Proxied by Court Data Before and After CCSH Enrollment among Subset with Criminal Justice System Involvement in the Pre-Period – CFW Sample (n = 88)

Period	% Arrested	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	46.6% (n = 41)	0.57	0
One Year After Enrollment	20.5% (n = 18)	0.31	0
Two Years Before Enrollment	86.4% (n = 76)	1.67	1
Two Years After Enrollment	36.4% (n = 32)	0.61	0
Three Years Before Enrollment	100.0% (n = 88)	2.41	2
Three Years After Enrollment	43.2% (n = 38)	0.90	0

Table 16.

Descriptive Summaries of Arrests as Proxied by Court Data Before and After CCSH Enrollment among Subset with Criminal Justice System Involvement in the Pre-Period – UNMH Sample (n = 132)

Period	% Arrested	Mean Arrest Count	Median Arrest Count
One Year Before Enrollment	43.9% (n = 58)	0.76	0
One Year After Enrollment	28.8% (n = 38)	0.51	0
Two Years Before Enrollment	77.3% (n = 102)	1.93	1
Two Years After Enrollment	42.4% (n = 56)	1.04	0
Three Years Before Enrollment	100.0% (n = 132)	2.81	2
Three Years After Enrollment	50.0% (n = 66)	1.46	0.50

We also explored how charge severity - defined as petty misdemeanors, misdemeanors, and felonies - varied within individuals between the pre-enrollment and post-enrollment periods. Table 17 summarizes frequencies of charge types alongside mean and median charge counts by period. We observed a similar pattern here: on balance, there were reductions in the frequency and counts of different types of charges between the pre-enrollment and post-enrollment periods. For example, 25.3% (n = 112) of participants had committed a petty misdemeanor in the three years before enrolling in CCSH compared to 15.6% (n = 69) who committed a petty misdemeanor in the three years after enrolling in CCSH. Similarly, 28.1% (n = 124) of CCSH participants had committed a misdemeanor in the three years before enrolling in CCSH compared to 19.2% of CCSH participants who committed a petty misdemeanor in the three years after enrolling in CCSH. Additionally, whereas 28.7% (n = 127) of participants committed a felony in the three years before enrolling in CCSH, only 15.2% (n = 67) committed a felony in the three years after enrolling in CCSH. Importantly, we could not control for whether a specific participant was indicted and subsequently incarcerated for a given charge. Thus, while it may be tempting to conclude that the program caused a reduction in charge count and severity, it could also be the case that subsequent incarceration – via its incapacitation effect – could also lead to a reduction in post-enrollment criminal activity.

Table 17.

Descriptive Summaries of Charge Severity Before and After CCSH Enrollment

	% with Charge	Mean Charge Count	Median Charge Count
Petty Misdemeanors			
One Year Before Enrollment	10.9% (n = 48)	0.14	0
One Year After Enrollment	7.2% (n = 32)	0.11	0
Two Years Before Enrollment	19.0% (n = 84)	0.29	0
Two Years After Enrollment	12.9% (n = 57)	0.22	0
Three Years Before Enrollment	25.3% (n = 112)	0.41	0
Three Years After Enrollment	15.6% (n = 69)	0.28	0
Misdemeanors			
One Year Before Enrollment	10.9% (n = 48)	0.16	0
One Year After Enrollment	7.5% (n = 33)	0.08	0
Two Years Before Enrollment	22.6% (n = 100)	0.38	0
Two Years After Enrollment	13.8% (n = 61)	0.20	0
Three Years Before Enrollment	28.1% (n = 124)	0.49	0
Three Years After Enrollment	19.2% (n = 85)	0.32	0
Felonies			
One Year Before Enrollment	12.9% (n = 57)	0.15	0
One Year After Enrollment	7.9% (n = 35)	0.11	0
Two Years Before Enrollment	28.7% (n = 127)	0.44	0
Two Years After Enrollment	15.2% (n = 67)	0.24	0
Three Years Before Enrollment	38.2% (n = 169)	0.69	0
Three Years After Enrollment	22.4% (n = 99)	0.39	0

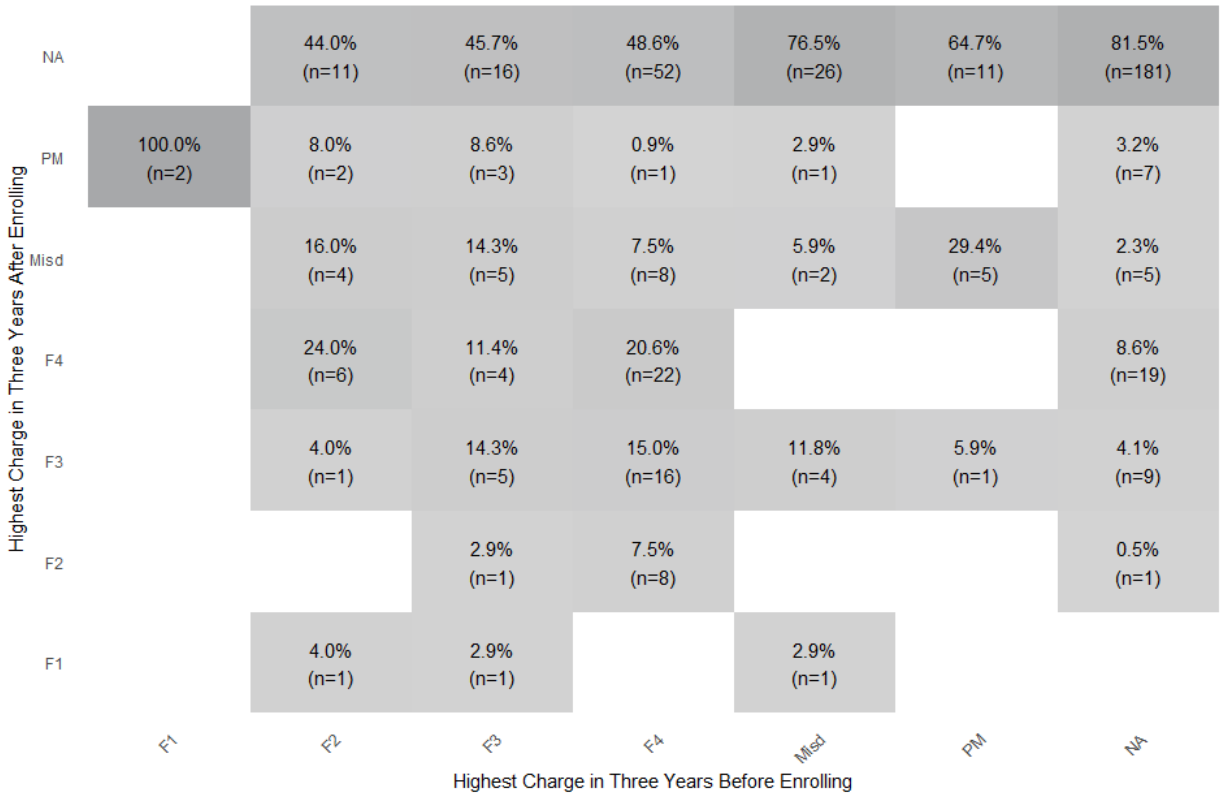
It is also important to evaluate whether there were meaningful differences in charge severity between the pre-enrollment and post-enrollment periods (i.e., whether a participant who committed a felony in the pre-enrollment period committed a felony in the post-enrollment period or whether the type of criminal activity they engaged in the post-enrollment period was less severe).

Figure 2 shows pre-enrollment charge severity compared to post-enrollment charge severity using the three-year pre-post window as the benchmark. Figure x generally shows that charge severity decreased following enrollment. For example, of the 25 participants whose highest pre-enrollment charge was an F2 felony, 96% had less severe or no charges in the three years post-enrollment (n = 24). Of the 35 participants whose highest pre-enrollment charge was an F3 felony, 80% (n = 28) had less severe or no charges in the three years post-enrollment.

In sum, 44% (n = 11) of participants whose most severe pre-enrollment charge was an F2 felony, 45.7% (n = 16) of participants whose most severe pre-enrollment charge was an F3 felony, 48.6% (n = 52) of participants whose most severe pre-enrollment charge was an F4 felony, 76.5% (n = 26) of participants whose most severe pre-enrollment charge was a misdemeanor, and 64.7% of participants whose most severe pre-enrollment charge was a petty misdemeanor did not get arrested in the three years following program-enrollment.

Figure 2.

Heatmap Showing How Charge Severity Changed Pre-Post CCSH Enrollment



It is important to evaluate whether engagement with the CCSH program predicted changes in arrest counts following enrollment after conditioning for other factors that may influence criminal activity. To this end, we conducted logistic regressions predicting arrest (0 = No Arrest; 1 = Arrest) at one-year, two-year, and three years following enrollment as a function of the number of arrests in each unique pre-enrollment period, participant age, participant gender, CCSH provider (i.e., UNMH - CPS or CFW), whether the participant was discharged from the program, the cumulative number of hours of case management received, and the year of program enrollment to account for time-variant differences in program quality across years. We present these results in Table 18 as odds ratios.

As before, we encourage readers to focus on the odds ratio for the case management variable, as this variable represents the theoretical pathway through which the CCSH intervention is theorized to work. Notably, the dose of case management was associated with significantly lower odds of arrest within the one year following enrollment in CCSH: that is, for each one day (i.e., eight hours) increase in case management provided, the odds of being arrested within the year following enrollment, adjusting for other factors including previous arrest history and demographics, decreased by approximately 6%. Notably, we only observe this effect in Model 4 and not in Models 5 and 6, which predict arrests at two

and three years following enrollment. This is possible because, to the extent that case management exerts a causal effect on recidivism, as distance from the program enrollment increases, case management would have less of an impact (i.e., if an individual receives more case management earlier on in their program enrollment, then the presumptive recidivism-reducing effect of case management might be expected to decay with time naturally). Notably, we cannot statistically evaluate whether this theorized mechanism explains the lack of a significant relationship for two and three years post-enrollment since we lack raw data on the sequencing or timing of case management. Importantly, these findings are suggestive and not causal; they represent an *association* between case management hours and recidivism. However, they do not necessarily tell us whether case management *causes* a decline in recidivism risk.

Table 18.
Odds Ratios Predicting Whether CCSH Participant Arrested per Charging Data – Pooled Sample[4]

	Model 4	Model 5	Model 6
Days of Case Management Received (1 Day = 8 hours CM)	0.94*	1.00	1.01
Status: Discharged	1.80	2.86***	3.22***
Provider: CFW	1.10	1.01	0.91
Sex: Male	1.46	1.70	1.47
Race: Non-White	0.92	0.95	0.90
Ethnicity: Non-Hispanic	0.99	1.07	0.96
Age	1.00	0.99	0.98
Arrest Dummy (Pre-Period)	3.45***	2.88***	3.38***

Notes: Reference categories for categorical variables represent the most frequent response. The reference category for Status is Non-Discharged at Time of Data Collection. The reference category for Provider is UNMH. The reference category for Sex is Female. The reference category for Race is White. The reference category for Ethnicity is Hispanic. *** p<.001, ** p<.01, * p<.05, + p<.1

Study Limitations

A few limitations to the outcome evaluation impacted our ability to examine the effectiveness of the CCSH intervention. As mentioned, after two years of requesting access, we did not gain access to Synchrony's Health Information Exchange (HIE) data due to various concerns expressed by UNMH surrounding access to UNMH data and data protection. This data would have allowed us to evaluate the CCSH program's effect on various indicators of health system usage (e.g., emergency room use, inpatient and outpatient health care, behavioral health, diagnoses).

As we noted previously, we could not evaluate the causal effect of program participation on recidivism because we did not have a control group of individuals who were otherwise comparable to CCSH participants but did not receive the intervention. In the absence of a quasi-experimental or experimental research design, such as a randomized control trial, researchers must contend with the fact that there may be some variables omitted from their models that could be determinative of model outcomes. Stated differently, even though our findings are positive (i.e., we found that case management dosage was associated with reduced bookings in the two years following enrollment and was associated with a reduction in arrests in the year following enrollment), we cannot rule out the possibility that an unobserved third factor (e.g., incarceration length) could explain the negative association (i.e. if a

[4] Model 4 evaluates the relationship between these variables and arrest likelihood in the one year following enrollment, Model 5 evaluates the relationship between these variables and arrest likelihood in the two years following enrollment, and Model 6 evaluates the relationship between these variables and arrest likelihood in the three years following enrollment. Results of logistic models that control for listed factors and adjust for year-fixed effects. Note * indicates a p-value <0.10. ** indicates a p-value < 0.05. *** indicates a p-value < 0.01. Reference categories represent the majority/plurality group. The reference category for Status is Non-Discharged. The reference category for Race is White. The reference category for ethnicity is Hispanic. The reference category for Sex is Female.

participant is indicted and incarcerated following program enrollment, their sentence length may preclude them from reoffending). However, there is no reason to anticipate that this potential bias would uniquely impact observations in the post-enrollment period.

Another limitation of the present analysis is the lack of standardized data across providers, a point we referenced as a limitation in our 2023 process evaluation and a point we have encouraged Bernalillo County to consider previously, as in our 2022 report on the need to create a minimum adequate dataset and performance measure standardization in the context of the YDI program (see link here). For example, CFW and CBS have different labels to define why participants are discharged from the program. This can make it challenging to compare reasons participants disengage from the program across providers (i.e., one provider reports a discharge when a participant completes the program and the other does not; one provider reports a discharge when a participant dies, and the other does not). This impacts the quality of our sample inclusion criteria and our ability to evaluate how program discharge might influence downstream outcomes. Similarly, the CBS program reports diagnosis codes, whereas the CFW program does not. Mandating that providers who provide similar interventions (e.g., housing supports; harm reduction) use standardized questions to evaluate similar information (e.g., having standard psychosocial batteries deployed at intake and having similar discharge categories) could enhance data quality in a manner that would both (1) allow researchers to understand critical elements of program effectiveness better and (2) allow providers to understand better the dynamics of program attrition and the characteristics of the target populations that they serve.

Conclusion

Between 2017 and 2022, the CCSH program served 473 participants in Bernalillo County. The 442 participants within our outcome sample received over 18,906 hours of case management services (i.e., a median of 29 hours of case management per participant), consistent with the finding of our process evaluation that the program appears to be delivering enough case management services consistent with the ICM model. By the study sample period end-date, approximately 23.8% (n = 105) of participants had a formal discharge reason listed. Of the subset of discharged participants, the most common reason for discharge was the loss of a housing voucher (25.7%; n = 27). In addition to concerns about the extended waitlist to receive housing vouchers, our outcome evaluation suggests that the loss of vouchers following enrollment may also be a reason for pause.

We found that being discharged from the CCSH program was significantly and negatively associated with both bookings into MDC and arrests following enrollment. After controlling for other factors, being discharged from the CCSH program was significantly associated with 66% increased odds of being booked into MDC within the three years following enrollment. Similarly, being discharged from the CCSH program was significantly associated with a 186% increase in the odds of being arrested within two years of enrolling and a 222% increase in the odds of being arrested within the three years following program enrollment[5].

Additionally, we found that the percentage of participants booked or arrested was lower in the post-enrollment period than in the pre-enrollment period across all three time horizons (i.e., one-year to three-year). Similarly, 44% (n = 11) of participants whose most severe pre-enrollment charge was an F2 felony, 45.7% (n = 16) of participants whose most severe pre-enrollment charge was an F3 felony, 48.6% (n = 52) of participants whose most severe pre-enrollment charge was an F4 felony, 76.5% (n = 26) of

[5] Of the subset of participants with successful discharges, the mean and median time in the program was significantly longer (534.2 days; 463.5 days) compared to the subset of participants with unsuccessful discharges (325.1 days; 180.5 days). Moreover, at the time of data collection, only 11.1% (n = 24) of the pooled sample were successfully discharged (i.e., cases where participants exited the program due to completion or securing housing). Robustness tests that regressed discharge success status on recidivism found a negative – though not statistically significant – association between successful discharge and odds of recidivism (i.e., participants who completed the program or secured housing within the program duration had lower odds of engaging in new criminal activity).

participants whose most severe pre-enrollment charge was a misdemeanor, and 64.7% of participants whose most severe pre-enrollment charge was a petty misdemeanor did not get arrested in the three years following program-enrollment.

Additionally, we found evidence that case management volume – defined as the number of hours of case management services a participant received – was significantly and negatively associated with the volume of MDC bookings and arrests. For example, for each one-day (i.e., eight-hour) increase in case management a participant received, the odds of being arrested within the year following enrollment, adjusting for other factors including previous arrest history and demographics, decreased by approximately 7%. We also found that the relationship between case management volume and recidivism both (1) faded as more time from program enrollment elapsed (i.e., case management volume was not a statistically significant predictor of criminal justice outcomes three years following enrollment in Models 3 or 6) and (2) was not moderated by previous criminal justice history (i.e., the negative association between increased case management volume and booking/arrest counts did not vary conditional on the number of bookings or arrests in the pre-enrollment period).

In sum, while our findings suggest a potential positive effect of the program on recidivism outcomes, we are limited in our ability to make claims about the causal effect of the CCSH program on criminal justice outcomes due to the research design (i.e., we do not have a control group to compare changes in recidivism against; we do not know the post-enrollment exposure period for CCSH participants). Future research into the CCSH program should also explore, if available, the program's impact on health system use outcomes.

References

AMA. (2022, August 22). *What is behavioral health?* American Medical Association. https://www.ama-assn.org/delivering-care/public-health/what-behavioral-health

CPI. (2015). *Bernalillo County Behavioral Health Business Plan* (Bernalillo County Board of County Commissioners). Community Partners, Inc.

Rosenberg, C., Lenihan, A., & Guerin, P. (2023). *Bernalillo County Behavioral Health Initiative: Community Connections Supportive Housing Process Evaluation*. University of New Mexico Institute for Social Research. https://isr.unm.edu/reports/

Appendix A – Interactive Model Results: MDC Bookings

	Dependent variable:		
	One Year	Two Year	Three Year
	(1)	(2)	(3)
Arrests: One Year Before Enrollment	1.9 (1.2)	--	--
Arrests: Two Years Before Enrollment	--	1.6 (1.1)	--
Arrests: Three Years Before Enrollment	--	--	1.6 (1.1)
Days of Case Management Received	0.9 (1.0)	1.0 (1.0)	1.0 (1.0)
Race: Non-White	0.8 (1.4)	1.0 (1.3)	0.9 (1.3)
Ethnicity: Non-Hispanic	0.8 (1.3)	0.9 (1.3)	0.8 (1.3)
Sex: Male	1.6 (1.5)	2.3 (1.5)	1.8 (1.5)
Age	1.0 (1.0)	1.0 (1.0)	1.0 (1.0)
Discharge Status	1.4 (1.4)	1.4 (1.4)	1.6 (1.4)
Program: CFW	1.2 (1.5)	1.5 (1.5)	1.7 (1.5)
Arrests (One Year Pre) * Days of CM	**1.0 (1.0)**	**--**	**--**
Arrests (Two Years Pre) * Days of CM	**--**	**1.0 (1.0)**	**--**
Arrests (Three Years Pre) * Days of CM	**--**	**--**	**1.0 (1.0)**
Constant	0.1 (2.6)	0.1 (2.2)	0.2 (2.1)
Observations	442	442	442
Log Likelihood	-206.9	-228.2	-232.4
Akaike Inf. Crit.	441.8	484.4	492.7
Note:			*p**p***p<0.01