

memorandum



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From Shelby Hickman, Claudia Masters, and Nikitha Reddy

Subject Incarceration and reincarceration among Roca participants in Massachusetts

This report presents results from two analyses of Roca participants at the Boston, Chelsea, Lynn, Holyoke, and Springfield, Massachusetts (MA) sites¹ one, two, and three years after being determined eligible for Roca programming.

- First, we present an overview of **incarceration rates** for Roca participants regardless of whether they have a history of prior incarceration. We compare the proportion of participants who are incarcerated after program referral for violent versus non-violent offenses for all Roca participants in the sample and for participants with a violent criminal history (i.e., those who were arraigned for a violent offense prior to joining Roca).
- Second, for Roca participants **with a history of incarceration** in MA prior to their eligibility date, we calculate the proportion of Roca participants in each annual cohort, 2013-2017 who are **reincarcerated** after referral to Roca at one, two and three years. For the 2017 Roca cohort, we compare their rate of reincarceration to the rate of reincarceration of 18- to 24-year-old men in MA who are reincarnated after their release from jail or prison during the same time period (2017 cohort). This comparison is only possible for the 2017 cohort, the only year that MA (all counties) data are available where at least two follow up periods are not affected by the COVID-19 pandemic.

Finally, we provide a brief discussion of these findings, including implications and recommendations for Roca Massachusetts.

Key Takeaways

- **A low proportion of Roca participants are incarcerated within three years of program eligibility.**

- Less than one-third (32%; N=453) of male Roca participants ages 18-24 in MA are incarcerated within three years of eligibility.
- **Among Roca participants who were arraigned for a violent offense prior to joining Roca, incarceration rates for a violent offense after beginning Roca are low.**
 - Eight percent (N=102) of Roca participants who have been arraigned for a violent crime prior to the program are incarcerated for a violent offense within one year of being determined eligible for the program, and just 19% of Roca participants that have been arraigned for a violent crime prior to the program are incarcerated for a violent offense after three years (N=197).
- **Roca participants who have a history of incarceration prior to their Roca eligibility date have low rates of reincarceration at one, two and three years after joining Roca.**

Methods

Data. Our analyses draw on Roca ETO and state criminal history data sources. To obtain data on incarceration and reincarceration for Roca participants, we use Criminal Offender Record Information provided by the Department of Criminal Justice Information Services in the Commonwealth of Massachusetts through August 22, 2023.

Sample.

To calculate incarceration rates, we use male Roca participants ages 18-24 with eligibility dates between 2013 and 2022 for the Boston, Chelsea, Lynn, Holyoke, and Springfield sites. Our sample inclusion criteria are designed to capture Roca participants in MA for whom we have at least one year of follow up data (i.e., referred no later than August 2022). The median age in our sample is 21 years and the total sample size is 1,767 young men. Table 1 summarizes our pooled sample size across years for all Roca participants at each follow up period. The two and three year follow up periods have smaller sample sizes primarily because some of the individuals in the sample have not been in Roca long enough yet to have two or three year follow ups.

Table 1. Sample size of Roca participants at each follow-up period	
Post-eligibility follow-up period	Sample size
One year follow up	1,767
Two year follow up	1,569
Three year follow up	1,419

To calculate reincarceration rates, male Roca participants 18-24 with a history of incarceration in MA prior to their eligibility date, are separated by annual cohorts in 2013, 2014, 2015, 2016, and 2017 for the Boston, Chelsea, Lynn, Holyoke, and Springfield sites. Our sample inclusion criteria are designed to match the recidivism cohort structure used by Massachusetts for their recidivism analysis. Sample sizes for each annual cohort are described in Table 2, below. MA all counties estimates are available only for 2017.

Table 2. Sample size for Roca participants with a history of incarceration by annual cohort			
Eligibility year	All eligible Roca participants	Roca participants with a history of incarceration	MA all counties release cohort total releases ^a
2013	94	44	N/A
2014	249	165	N/A
2015	174	128	N/A
2016	222	136	N/A
2017	223	151	991
a: source: https://www.mass.gov/info-details/cross-tracking-system-recidivism-query-model			

Incarceration Analyses. For the full sample (regardless of prior incarceration), we report on the proportion of Roca participants who are incarcerated at one, two, and three years after Roca program eligibility. In addition, we examine incarceration for violent offenses among all Roca participants in our sample and among a subgroup of Roca participants in our sample who were arraigned for a violent offense prior to being referred to Roca. We define a history of violent offending as arraignment for a violent offense prior to their Roca eligibility date.

Reincarceration Analyses. We then calculate the proportion of Roca participants with a history of incarceration in MA prior to being eligible for Roca programming who are reincarcerated after their eligibility date and finally the proportion of Roca participants with a history of incarceration for a violent offense who are reincarcerated for a violent offense. The total sample of Roca participants, Roca participants with a history of incarceration prior to Roca eligibility, and sample sizes for the release cohorts for MA all counties for each annual cohort 2013-2017 is described in Table 2 above. A Roca cohort includes all participants in that calendar year that were determined eligible for Roca programming. The MA all counties cohort includes all individuals that were released from Houses of Corrections (HOC) or jail in a calendar year for all counties in MA.

Comparison of Roca reincarceration to MA reincarceration rates. We compare (descriptively, not statistically) the rates of reincarceration for Roca participants who have a history of incarceration prior to

their Roca eligibility date in our 2017 cohort sample to rates of reincarceration for young men ages 18-24 in all counties in MA in the 2017 cohort. We use 2017 for comparison because this is the last year for which at least two years of follow up data are available that were not impacted by the COVID-19 pandemic. During the COVID-19 pandemic, changes to arrest, release, transfer, and court policies and procedures are associated with unusual trends for incarceration and reincarceration.

The MA all counties' estimates include jails and houses of correction. Individuals can be held in jails while they await trial or sentencing and in houses of corrections for sentences up to 2.5 years. Given that Roca participants in our sample for the reincarceration analysis are 18–24-year-old young men with a history of incarceration in MA, this is the best reference groups we can obtain using publicly available reports. However, there are also important differences in the Roca Massachusetts sample and the state proportions we report that do not make these populations direct comparisons for the purposes of examining statistical differences or assessing the relative impact of Roca's programming.

First, to conduct a statistical test of differences for two proportions, a requirement is that the two samples are independent of one another. In this case, individuals from the Roca sample who are reincarcerated are also included in MA all counties sample. Thus, any comparisons we make are purely descriptive to provide a reference point for the Roca calculations. We cannot make any inferences about statistical differences between the Roca sample and MA all counties' samples.

Second, our incarceration calculations for Roca participants include each individual only one time per calendar year. That is, if a Roca participant enrolls in Roca, is incarcerated, released, and re-enrolls in Roca multiple times within one year, they contribute only one time to the proportion of participants who were incarcerated that year for their eligibility cohort. By contrast, for MA, each release during the year is counted, making it possible for one individual to be included multiple times. This may elevate the rate of recidivism estimated by the MA all counties' cohorts when compared to the incarceration rates we report out for Roca. However, it is rare for a Roca participant to reenroll in Roca after incarceration within the same calendar year.

Third, the “clock” for our reincarceration calculations for Roca participants begin the day participants are determined to be eligible for Roca programming, whereas state data begin the “clock” the day an individual is released from jail or prison. This means the Roca numbers are calculating what proportion of Roca participants end up being reincarcerated after Roca programming begins, and the MA numbers calculate what proportion of prior incarcerated individuals are reincarcerated after they are released. Since

the starting point for each group is different, Roca participants do not get “credit” for not being reincarcerated until they are determined to be eligible for Roca, and all MA estimates getting “credit” from the day they are released. This means Roca estimates may be biased toward higher levels of incarceration than the state comparison for reincarceration.

Incarceration for Roca participants (full sample)

We find that among all Roca participants in MA sites, 16% (N=277) are incarcerated within one year of their eligibility date, 25% (N=395) recidivate within two years, and 32% (N=453) within three years (See Table 3).

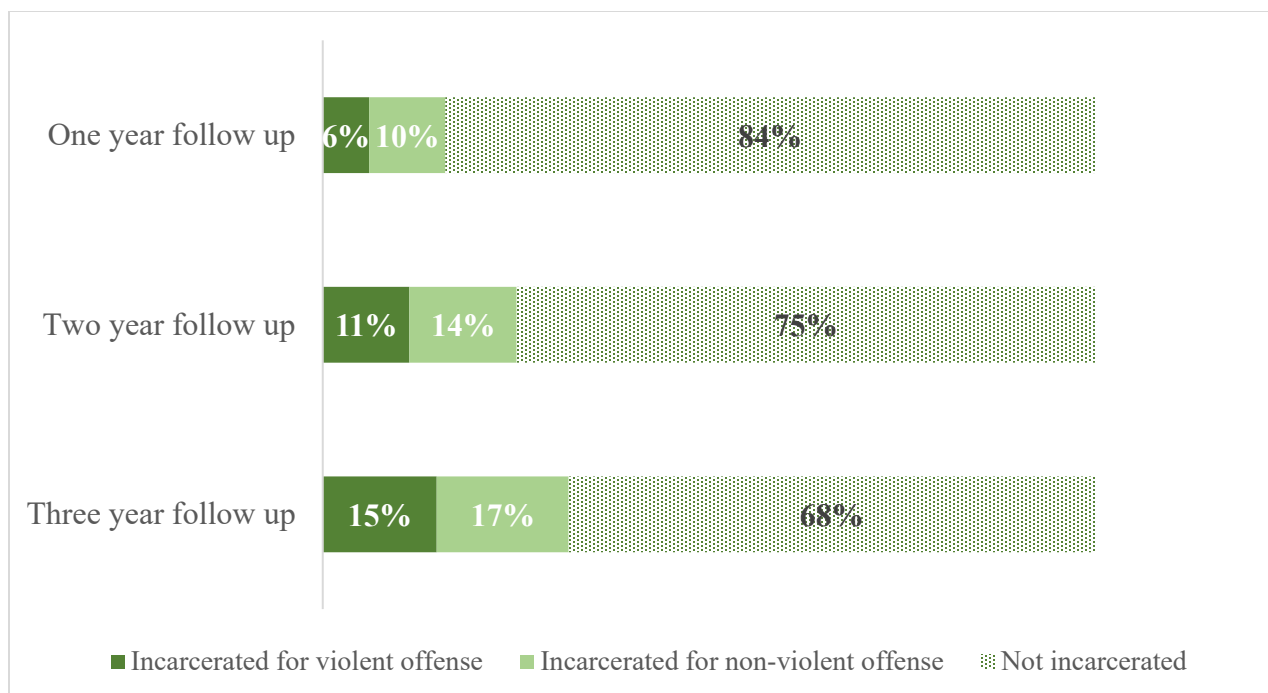
Table 3. Incarceration for any offense among Roca Participants after program eligibility			
Post-eligibility follow up period	Total sample	N (%) incarcerated for any offense	
	N	N	%
One year follow up	1,767	277	16%
Two years follow up	1,569	395	25%
Three years follow up	1,419	453	32%

Next, we examine incarceration for violent offenses, since a major focus of Roca’s model addresses emotional regulation and other behavior change as a means of reducing violence and 67% of Roca participants in our sample report a history of behavior involving violence like gang activity at intake. As shown in Table 4 we find that among all Roca participants in MA, 6% (N=109) are incarcerated for a violent offense within one year of their eligibility date, 11% (N=175) within two years, and 15% (N=210) within three years.

Table 4. Incarceration for a violent offense among Roca Participants after program eligibility			
Post-eligibility follow up period	Total sample	Incarcerated for a violent offense	
	N	N	%
One year follow up	1,767	109	6%
Two years follow up	1,569	175	11%
Three years follow up	1,419	210	15%

Exhibit One shows, among Roca participants who were incarcerated at each follow-up period, the proportion incarcerated for violent versus non-violent crimes.

Exhibit 1. Proportion of Roca participants incarcerated for violent and non-violent offenses at one, two, and three years after program eligibility determination



Incarceration for Roca participants (among those with prior arraignment for violent crime)

For Roca participants in Massachusetts, 73% were arraigned for a violent offense prior to joining Roca. Many of those individuals do not get incarcerated for a violent crime after joining Roca. Indeed, as shown in Table 5, 19% of Roca participants who were previously arraigned for a violent offense are incarcerated for any offense at one year post eligibility, 30% at two years, and 38% at three years. Yet even when individuals who had previously been arraigned for a violent crime are incarcerated, most still do not get arrested for a violent offense. Among all Roca participants with a violent criminal history, only 8% are incarcerated for a violent offense within one year of program eligibility, 14% within two years of eligibility, and 19% within three years of eligibility.

Table 5. Incarceration for violent any offense and violent offense among participants with an arraignment for a violent crime prior to joining Roca

Post-eligibility follow-up period	Total sample	Incarcerated for any offense		Incarcerated for violent offense	
		N	%	N	%
One year follow up	1,271	244	19%	102	8%
Two years follow up	1,153	350	30%	165	14%
Three years follow up	1,053	399	38%	197	19%

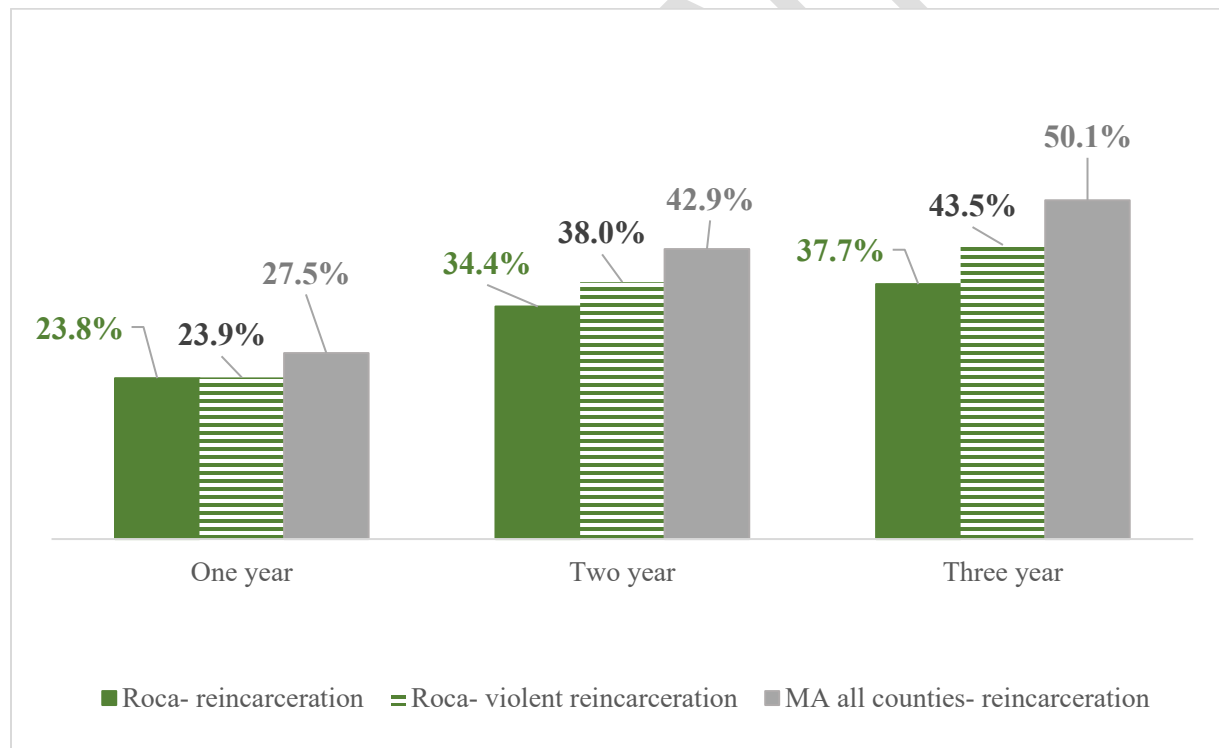
Reincarceration (Roca participants with prior incarceration by annual cohort)

We examined reincarceration rates for Roca participants with a history of incarceration prior to their Roca eligibility date for participants in 2013-2017 cohorts. For the 2017 cohort, we compare these estimates to

the reincarceration rates for the MA all counties released males ages 18-24 in the same annual cohort. A Roca cohort includes all participants in that calendar year that were determined eligible for Roca programming. The MA all counties cohort includes all individuals that were released from HOC or jail in a calendar year. We did not conduct a statistical test of differences for these groups. All comparisons of rates in this section refer to descriptively relative comparisons, not statements of statistical significance.

As shown in Exhibit Two, below, for the 2017 cohort, we see that Roca participants consistently have lower rates of reincarceration relative to the MA all counties' samples at one, two and three years. Among the Roca participants at highest risk for reincarceration- those who have previously been incarcerated for a violent offense- rates of reincarceration for a violent offense remain lower than the MA all counties total reincarceration rates.

Exhibit 2. One, two, and three year reincarceration rates for Roca and Massachusetts 2017 cohorts



Reincarceration rates and violent reincarceration rates for Roca participants for each annual cohort 2013-2017, as well as reincarceration rates for the MA 2017 cohort are summarized in Table 6, below. Roca reincarceration rates vary by cohort. For participants who have been incarcerated for a violent offense prior to joining Roca, violent reincarceration rates range from 19.4% (2013 cohort) to 32.1% (2016

cohort) at one year, 37.2% (2015 cohort) to 45.2% at two years (2013 cohort), and 43.5% (2017 cohort) to 50.5% (2014 cohort) at three years. For the 2017 cohort, both overall reincarceration and violent reincarceration rates for those with a prior violent incarceration for Roca participants are lower than the reincarceration rates for all MA counties. The difference between Roca and MA reincarceration rates grows over time and is greatest at three years, where the MA rate is 33% higher than Roca's.

Table 6. Reincarceration rates at one- two- and three-years for Roca and Massachusetts all counties

Follow up period	Cohort	Roca prior incarceration N	Roca reincarceration %	Roca prior violent incarceration N	Roca violent reincarceration %	MA reincarceration % (N)
One Year	2013	44	15.9%	31	19.4%	
	2014	165	28.5%	109	29.4%	
	2015	128	25.0%	86	26.7%	
	2016	136	27.2%	81	32.1%	
	2017	151	23.8%	92	23.9%	27.5%
	2013	44	38.6%	31	45.2%	
Two Year	2014	165	40.0%	109	42.2%	
	2015	128	38.3%	86	37.2%	
	2016	136	38.2%	81	38.3%	
	2017	151	34.4%	92	38.0%	42.9%
	2013	44	47.7%	31	48.4%	
	2014	165	46.7%	109	50.5%	
Three Year	2015	128	46.9%	86	46.5%	
	2016	136	50.0%	81	46.9%	
	2017	151	37.7%	92	43.5%	50.1%

a: A Roca cohort includes all participants in that calendar year that were determined eligible for Roca programming. The MA all counties cohort includes all individuals that were released from HOC or jail in a calendar year for all counties.

b: MA all counties estimates are only available for the 2017 cohort

c: source for MA all counties estimate: <https://www.mass.gov/info-details/cross-tracking-system-recidivism-query-model>

Summary

Roca aims to serve individuals living in communities with high rates of crime and violent crime and those individuals at greatest risk of criminal justice system involvement. Despite serving only the most high-risk individuals, our analyses find that rates of incarceration among Roca participants are low at one, two, and three years after program enrollment. These low rates of incarceration are, perhaps, a testament to the promise of Roca's intervention model. The analyses presented in this memo, however, do not isolate the effect of Roca's programing. We present incarceration rates in this memo without context or controlling

for factors known to influence likelihood of offending and incarceration. Factors like services received in jail, social and family supports, employment, conditions of parole or probation can all affect likelihood of incarceration and would provide a more nuanced understanding of recidivism among Roca's Massachusetts participants. Overall, even without the benefit of a direct comparison group for these estimates that would tell us what incarceration would have been if these individuals did not enroll in Roca, only a small proportion of Roca participants are incarcerated, and an even smaller proportion are arrested for a violent offense.

When we examine overall reincarceration rates for the 2017 cohort, the findings are even more promising. Roca participants, despite being the highest risk individuals by design, have lower rates of reincarceration than what is seen for MA in the same cohort (2017). Notably, we see the gaps in reincarceration rates between Roca and MA releases grow over time, suggesting that longer engagement with Roca may have added marginal benefit for participants. The long period of engagement is central to Roca's program model and these trends show that, indeed, longer engagement seems to have a payoff. Further, when we look at a subset of Roca participants for whom we would expect to see the highest rates of offending and reincarceration—those who were previously incarcerated for a violent offense—the rates of reincarceration for another violent offense remain lower than overall reincarceration for MA, though we cannot test whether the difference is statistically significant. This trend shows promise for Roca's harm reduction model. Given that Roca engages participants during the period of the life course when offending rates are highest (18-24), it is possible that any impacts of Roca programming on incarceration are sustained as participants age out of this high-risk period. A rigorous evaluation can shed more light on the isolated effects of Roca's programs on incarceration and violent offending.