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BRIEF TECHNICAL EVALUATION REPORT

CARES Act: Analysis of Recidivism

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Key Findings

After release from FBOP custody, and when compared to matched people who were sent to home confinement under non-CARES circumstances, individuals with a CARES assignment were less likely to recidivate in the year following release from custody (3.7% vs. 5.0%), and marginally less likely to be re-arrested for violent offenses (0.9% vs. 1.3%).

Overall, the use of CARES Act to send individuals with a health vulnerability to home confinement sooner and for longer periods did not have an apparent negative impact on their recidivism rates compared to others in home confinement with similar profiles.

INTRODUCTION

Congress passed the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) on March 25, 2020, early in the COVID-19 pandemic. Among other changes, this Act allowed individuals in federal correctional facilities who were a Low- or Minimum- security risk and had Centers for Disease Control-established COVID-19 risk factors to serve their sentence in home confinement earlier than they would have been eligible to do so without the CARES Act, and for potentially longer periods of time. The Federal Bureau of Prisons (FBOP) released guidance to its employees the next day, and the first home confinement placements under the CARES Act followed soon after.

1. Failures during Home Confinement:

This study investigated whether rates of FBOP home-confinement failure (before release from FBOP home confinement) differed between individuals in custody with a CARES home

confinement placement compared to similar, matched persons in home confinement whose length of community placement was statutorily constrained.

2. Failures after release from FBOP Home Confinement:

Also, this study examined the recidivism rates of people with and without a CARES home confinement placement after being released from FBOP custody.¹

In both samples, recidivism was defined as a return to a FBOP correctional facility or a re-arrest, whichever came first. Additionally, violent recidivism was measured using re-arrests for violent offenses, and was analyzed only for the second sample who were released from FBOP.

CARES Act Eligibility

FBOP issued guidance in April 2020 and April 2021 defining eligibility criteria for a CARES Act assignment (CARES assignment).² Initially,

¹ Note that release from FBOP home confinement merely marks the end of FBOP's custody and monitoring. Some home confinement may or may not continue under Federal Probation's supervision afterwards,

depending on the particular case. This study is only focused on the CARES Act and FBOP's home confinement placement.

² For matching, this study used the best available variables which corresponded to these criteria.

persons with a CARES assignment were required to be in Minimum or Low security, have a clean misconduct record for the past year, have no violence or gang-related misconduct, have a re-entry plan (including having a home to be confined in), be minimum recidivism risk on the PATTERN risk assessment, and have a CDC-defined COVID risk factor that could be identified. Guidance also directed employees to consider the offense for which the individual was incarcerated when considering eligibility.

In April 2021, guidance was updated in four ways. First, the Warden could use discretion to refer an individual under the CARES Act authority to those with minor misconduct incidents³ in the past year. Second, an individual eligible for CARES Act consideration due to a COVID risk factor was also required to have served at least 50% of their sentence or to have served at least 25% with no more than 18 months remaining to serve. Third, in addition to minimum recidivism risk, individuals with Low recidivism risk were also to be considered eligible. Fourth, individuals could not have any current or prior offenses related to violence, sex, or terrorism.⁴ In addition to the above eligibility criteria, after April 2021, a committee at FBOP headquarters reviewed and released additional individuals who were borderline eligible (e.g., within 48% of release) who otherwise had qualitative reasons for being released from secure custody despite falling short on the objective criteria.

Simple comparison shows lower recidivism with CARES assignment

Running a simple comparison of those with and without CARES assignment demonstrates the need for the creation of comparable groups.

Findings indicate that a straight comparison without matching shows much more marked differences in recidivism rates than after matching is conducted.

For the full pre-release dataset, 4.6% of individuals with a CARES assignment were re-arrested or returned to a FBOP correctional facility while in home confinement, compared to 6.9% of individuals in home confinement without a CARES assignment. After release from home confinement, those with a CARES assignment had a 3.6% recidivism rate over one year whereas those without a CARES assignment had a 13.0% recidivism rate. Without matching, this result was expected, because regardless of the effect of the CARES assignment itself, CARES Act release consideration required individuals to be Low recidivism risk, with therefore expectedly lower recidivism rates.

Matched comparison shows lower recidivism with CARES assignment only after release

The difference in recidivism rates became smaller after matching those with a CARES assignment to similar people without a CARES assignment. For the pre-release dataset, the recidivism or failure rates were 4.2% for individuals with a CARES assignment and 1.3% for persons without one. That difference would appear to be important, yet statistical power is rather low and the sample too small to conclude the difference is any more than a chance occurrence. For the post-release dataset, individuals with a CARES assignment had a 3.7% recidivism rate as compared to 5.0% for matching persons without one, which was confirmed as a significant difference.⁵ Also for

³ Defined as 300 and 400 level offenses within FBOP's disciplinary regulations. See 28 C.F.R. §.541.3, Table 1.

⁴ Individuals with sex offenses were ineligible for home confinement generally, with or without any special prohibition in the April 2021 CARES guidance.

⁵ Note that this study did not match based on time in home confinement for the post-release sample and did not require the control group to have spent time in home confinement. That refinement was a necessary requirement for the control group in the pre-release sample. If one does

the post-release dataset, those with a CARES assignment had a 3.7% recidivism rate as compared to 5.0% for matching those without a CARES assignment.

For the matched pre-release dataset, the recidivism window is inconsistent from one individual to the next, so this study used a Cox Proportional Hazard Model instead of the usual logistic regression model, accounting for whether and *when* the released individual recidivated. Cox Proportional Hazards models factor time out of the effect calculation. The matching process controls for all other factors, so the analysis used the CARES assignment as the only predictor of recidivism, which did not significantly impact the risk of recidivism pre-release ($\chi^2 = 2.27, p = .131, \text{Hazard Ratio} = 1.266$) compared to other persons in home confinement. The recidivism or failure rates were 4.2% for individuals with a CARES assignment and 1.3% for individuals without one.

In the matched post-release dataset, the analysis utilized the CARES assignment as the

sole predictor of 1-year recidivism, but with a logistic regression model instead of a Cox model. Those with a CARES assignment recidivated significantly less than comparable persons who did not receive a CARES assignment ($\chi^2 = 12.23, p = .0005, \text{Odds Ratio} = 0.724$). Persons with a CARES assignment had a 3.7% recidivism rate as compared to 5.0% for matched persons without one.

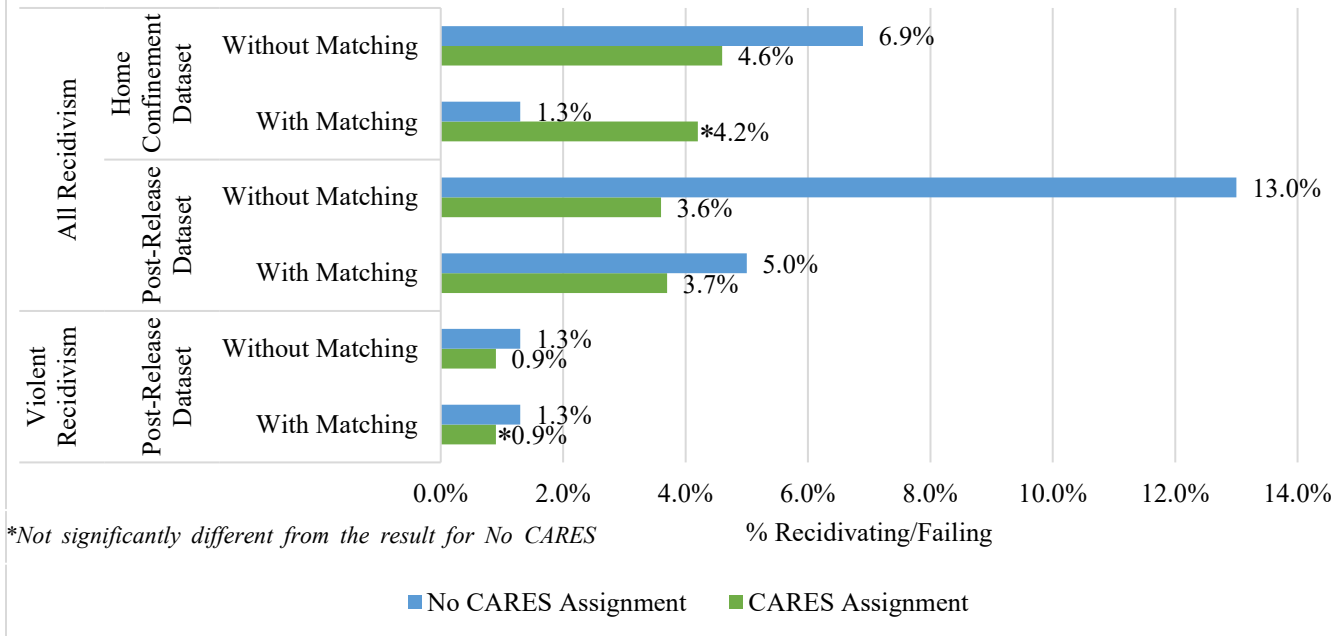
This study repeated the same test with violent recidivism, using a slightly different matched dataset. People with a CARES assignment violently recidivated marginally significantly less than comparable people who did not receive a CARES assignment ($\chi^2 = 3.53, p = .0602, \text{Odds Ratio} = 0.710$). The violent recidivism rates were 0.9% for people with a CARES assignment and 1.3% for those without one. With a marginally significant effect, the results suggest a possible reduction in violent recidivism but fall short of the usual scientific standards for significance.

match on home confinement in the post-release sample, this study found no effect of a CARES assignment on recidivism..



March 2024

Figure 1. Recidivism rates for matched and unmatched Individuals with and without a CARES assignment



Conclusions

Overall, the use of the CARES Act to send individuals to home confinement sooner and for longer periods did not have an apparent negative impact on their recidivism rates compared to others in home confinement. Results indicate that while in home confinement individuals with a CARES assignment fail no more or less than comparable persons in home confinement. And those with a CARES assignment fail less often than comparable persons after release.

This study does have important limitations in its design. First, the results of matching only apply to matched individuals in the analysis. A large number of the cases were not included in the final models, including some individuals with a CARES assignment, because no comparable match could be found. It is possible that the effect of the CARES Act releases may have been different for those noncomparable individuals, and this study would not be able to show

that. In short, the results do not generalize to all persons in FBOP custody.

Second, matching assumes that when predicting a CARES assignment, any unexplained variance is essentially random or at least is unrelated to recidivism. This assumption cannot be tested. There is subjectivity to some of the eligibility criteria for CARES Act release, which is likely part of the unexplained variance. Ultimately, CARES Act consideration and release are not offered randomly to provide a truly comparable experiment, even after accounting for the explicit eligibility criteria as best as possible, so it is difficult to confirm that the matched comparison group is a true experimental comparison, even as a quasi-experimental design.

Overall, this study tentatively concludes that post-release recidivism (and possibly post-release violent recidivism) is reduced for individuals with a CARES assignment, though the reasons for this result are unclear at this time.

Methodology

It is important to note some distinguishing language in FBOP populations. A person is still considered to be in FBOP custody while in a placement of home confinement – if FBOP made that placement. They are still serving the term to which they were sentenced and are therefore still in custody. Interpretations of terminology regarding pre- and post-release status in this study should be mindful of this caveat. Second, as it pointed out in the narrative, recidivism is defined by either being re-arrested or returning to a correctional facility, whichever occurs first. Being returned to a correctional facility refers to a traditional prison, rather than a placement in home confinement. Recidivism was further analyzed for those who had been released from home confinement, in the post-release comparisons, examining re-arrest for violent offenses. Finally, this study was strictly exploratory, leaving more to study regarding the relationship between placements and outcomes. Further and more detailed clarifications can be found in the following.

Creating Pre-release and Post-release Datasets

This study assembled two datasets from FBOP’s management database. There is some overlap in the members of the two datasets:

To examine home confinement failure before release from FBOP custody, the first dataset included everyone with a FBOP home confinement assignment between March 1, 2020 and December 31, 2022. This group included 41,674 individuals, of whom 12,181 were given a CARES assignment. In this dataset, re-arrest was only relevant for the period when the individual was in home confinement, not after release.

To examine post-release recidivism and violent recidivism, the second dataset included any person released from FBOP custody (with or without a prior home confinement assignment) between March 1, 2020 and January 30, 2022. The latter date is one year before the collection of the re-arrest data from the National Law Enforcement Telecommunications System (NLETS). Individuals were excluded from this analysis if they had a detainer, meaning another agency took custody of the individual upon FBOP release (e.g., to serve a state prison sentence or for execution of a deportation order). This exclusion left 98,185 cases, of whom 8,710 were given a CARES assignment at some point prior to release.

Matching Overview

Within each of the two main datasets (the home confinement dataset and the post-release dataset), matching was used to create a group that had a CARES assignment, and a group that was comparable but did not have a CARES assignment. This facilitates a fairer comparison of similar individuals, with only the CARES assignment differentiating them.

This analysis was conducted with propensity score matching (PSM). Other research designs were considered that would have been more internally valid than PSM, but they were not feasible. In theory, a regression discontinuity analysis could be done with the classification tool misconduct risk scores (used to classify individuals to a correctional-facility security level) and/or the PATTERN recidivism risk scores (used to determine early release), since only certain security levels and PATTERN recidivism risk levels were eligible for CARES Act consideration. However, classification tool scores⁶ determine security levels in addition to CARES Act eligibility and would confound the effects of the two. Also, at the time of this study, FBOP had only been recording final PATTERN risk levels rather than the continuous PATTERN score, so analysis with the total

⁶ The FBOP’s risk prediction instrument, Bureau Risk Assessment Verification and Observation (BRAVO) was designed to predict serious misconduct in prison.

PATTERN scores was not possible.⁷ Additionally, any pre-post design would not separate the effect of CARES Act releases from the effect of the COVID pandemic, since they both happened simultaneously. Matching was the best available methodology.

TABLE 1 Candidate matching variables

| Variable Name | Coding, Detail, and Source |
|---|--|
| PATTERN risk level | Set of 3 dummy codes for Low, Medium, or High risk, with “minimum” as reference. |
| Security level | Dummy code for Medium/High vs. Low/Minimum. Determined by classification tool score and other FBOP policies. |
| Violent History | 0, 1, 2, 3, 4, 5, 6, 7. BRAVO risk item. Higher numbers indicate more severe and more recent violence. |
| Time Since Last Misconduct Incident | 0, 1, 2, 3. PATTERN risk item. Higher numbers indicate more recent misconduct. |
| Time Since Last Serious Misconduct Incident | 0, 1, 2, 3. PATTERN risk item. Higher numbers indicate more recent serious misconduct. |
| Walsh Sex Offender | Dummy code. Flags both current and prior sex offenses. |
| Violent Current Offense | Dummy code from PATTERN risk item. |
| Sex | Dummy code for female. |
| Age | Set of dummy codes with 10-year categories, with 39 or less as reference category and 80+ as oldest category. Coding was adjusted and simplified for matching according to the age-recidivism relationship in each sample. |
| Sentence Length | Months, capped at 600 and log-transformed for positive skew. |
| RRC Assignment | Dummy code. Indicates prior stay in Residential Re-entry Center, for home confinement dataset only. |
| Homeless | Dummy code. Indicates no valid address in the management system. Record may be outdated if circumstances change. |
| Smoking History | Dummy code. From Health Services Department (HSD) records. |
| Diabetes | Dummy code. From HSD records. |
| Hypertension | Dummy code. From HSD records. |
| Cancer | Dummy code. From HSD records. |
| Weight | Set of dummy codes for underweight, overweight, obese, and morbidly obese, with normal as reference category. From HSD records. |
| Other Health Problems | Dummy code. Combined from multiple HSD records. A diverse set of statistically rare conditions. ⁸ |
| Guidance Date | Dummy code for whether the home confinement start date (for home confinement dataset) or release date (for post-release dataset) was after the April 2021 change to the CARES eligibility criteria. |

⁷ Using other management records, one can reconstruct what the PATTERN scores *should* be in historical FBOP datasets, and this study did so in order to include some specific PATTERN risk items in the matching process. However, the actual total PATTERN score is what is used for risk level assignments and CARES eligibility decisions, and the actual PATTERN score was not constructed without error in the early years when it was calculated by hand. One cannot re-create the actual total PATTERN score accurately enough for a regression discontinuity.

⁸ Includes HIV, emphysema, cirrhosis, sickle cell anemia, thalassemia, chronic kidney disease, solid organ transplant, cystic fibrosis, dementia, cerebrovascular dx, dialysis, cardiomyopathy, and heart failure.

For PSM, the candidate matching variables were selected to represent the eligibility criteria in the guidance. These matching variables are listed in Table 1. All matching variables were measured at the time of the home confinement date for the home confinement dataset or at the time of release for the post-release dataset. If the variable originated from PATTERN or the security classification tool, then it was measured at the time of the last classification tool assessment before the home confinement or release date, which could be up to a year earlier. To account for changes in the eligibility criteria, this study also included candidate interactions for matching: between guidance date and PATTERN Low-risk status (eligible after April 2021 but not before), between guidance date and current violent offense status (ineligible after April 2021, ambiguous eligibility before then), and between guidance date and time since last misconduct incident (recent minor misconduct may be eligible after April 2021).

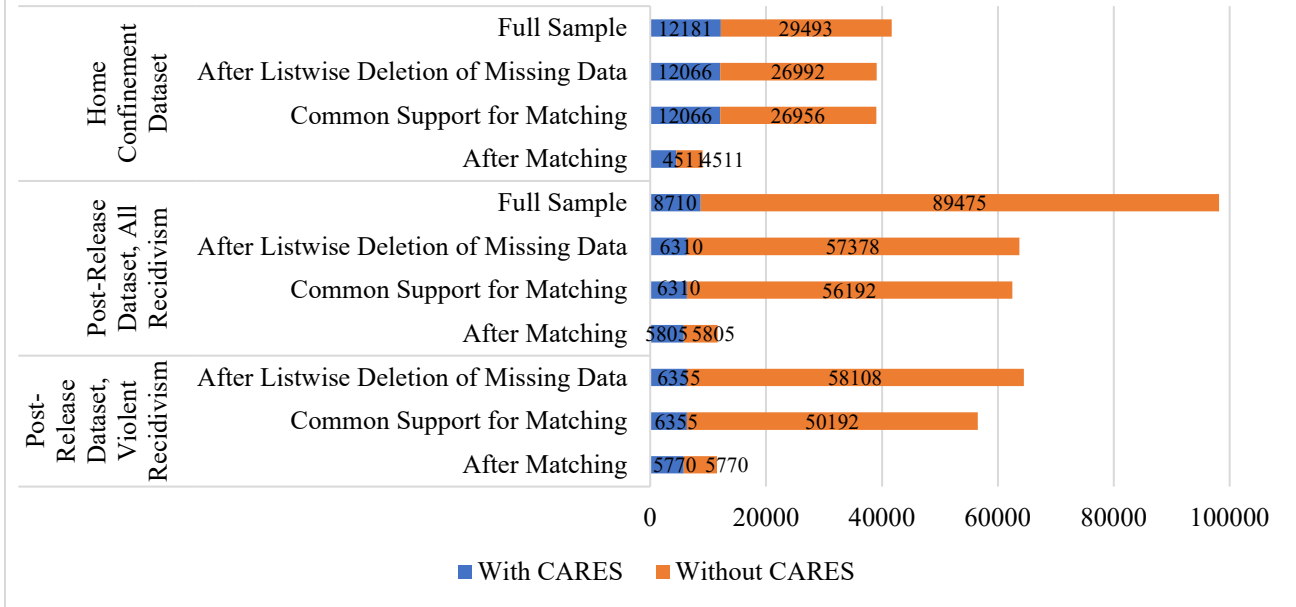
Pre-Release Matching

Figure 2 shows how many cases had to be cut for missing data or during matching. Missing data primarily concerned variables that related to the security classification tool and PATTERN. To have data for both, the last classification tool score before home confinement needed to be a re-classification, which is typically completed 7 months after FBOP entry. Missing individuals were not re-classified before release and generally had very short sentences. As such, this study's results only concern those who spent longer than a few months in a FBOP correctional facility.

Candidate matching variables were included in a Cox proportional hazard model predicting recidivism and then CARES assignment, removing any variables that did not independently, significantly predict both outcomes. Initial matching attempts found imbalances that were corrected with additional interactions that involved the imbalanced variables. Ultimately, the pre-release dataset was matched on guidance date, PATTERN risk level (and the interaction between Low PATTERN risk and guidance date), Violent History, Violent Current Offense (and its interaction with guidance date), Time Since Last Serious Misconduct, Walsh Sex Offender, sex, sentence length, homelessness, Residential Reentry Center (RRC) history (and its interaction with sentence length), age (with 18 to 49 as the reference category), smoking history, diabetes, hypertension, obesity, morbid obesity, other health problems, and security level (with its two-way interactions with guidance date, Violent History, Walsh Sex Offender, and RRC history).

CARES assignment was predicted very strongly, where Area Under Curve = 0.933. Individuals were greedily matched on log propensity scores with a caliper of 0.1. There were 12,066 individuals with a CARES assignment, of whom all were in the region of common support, and 26,992 persons without a CARES assignment, of whom all but 36 (0.1%) were in the region of common support. The remaining individuals were matched into just 4,511 pairs. There were no significant post-matching imbalances; the greatest difference was in sentence length ($t = -1.71$, standardized difference = 0.036) which was not significantly different between the two groups.

Figure 2. Number of Individuals in sample



Post-Release Matching

In the post-release sample, candidate matching variables were included in a logistic regression predicting 1-year recidivism and then CARES assignment, removing any variables that did not independently, significantly predict both outcomes. Unlike with the pre-release sample, no additional interactions were needed to achieve balance. Ultimately, the post-release dataset was matched on guidance date, PATTERN risk level (and the interaction between Low PATTERN risk and guidance date), security level, Violent History, Violent Current Offense (and its interaction with guidance date), Time Since Last Misconduct, Walsh Sex Offender, sentence length, homelessness, age (but only as “less than or greater than 50”), smoking history, diabetes, overweight, and morbid obesity.

Recidivism and CARES assignment were both predicted very strongly, where Area Under Curve = 0.787 and 0.900 for the two models, respectively. As with the other dataset, cases were greedily matched on the log propensity score with a caliper of 0.1. Post-match balancing was appropriate; the largest difference was on overweight status ($t = 1.80$, standardized difference = .033), which was not significantly different between cases with or without a CARES assignment.

Since the first step of the propensity-matching process involved predicting the outcome measure, this study had to repeat the matching process for the violent re-arrest outcome on the post-release dataset. This comparison selected a different set of variables compared to all recidivism, where it excluded all of the health variables, but included sex as well as a number of extra interactions that were needed to achieve balance.⁹ There were no significant post-matching imbalances; the largest difference was in sentence length ($t = -1.79$, standardized difference = .033).

⁹ Included two-way interactions between security level and each of: PATTERN medium risk, PATTERN high risk, guidance date, Violent History, and Walsh Sex Offender. Also included two-way interactions between sentence length and each of: PATTERN Low risk, guidance date, Walsh Sex Offender, Current Violent Offense, and Age.

Analysis

For the matched pre-release dataset, the recidivism window is inconsistent from one individual to the next, so this study used a Cox Proportional Hazard Model instead of the usual logistic regression model, accounting for whether and *when* the individual recidivated. Cox Proportional Hazards models factor time out of the effect calculation. The matching process controls for all other factors, so the analysis used the CARES assignment as the only predictor of recidivism, which did not significantly impact the risk of recidivism pre-release ($\chi^2 = 2.27$, $p = .131$, Hazard Ratio = 1.266) compared to other persons in home confinement. The recidivism or failure rates were 4.2% for persons with a CARES assignment and 1.3% for persons without. This gap would initially appear to be a notable difference, but with 9,022 persons and just 249 recidivists to predict, statistical power is rather low to conclude the difference is any more than a chance occurrence.

In the matched post-release dataset, the analysis utilized CARES assignment as the sole predictor of 1-year recidivism, but with a logistic regression model instead of a Cox model. Persons with a CARES assignment recidivated significantly less than comparable persons who did not receive a CARES assignment ($\chi^2 = 12.23$, $p = .0005$, Odds Ratio = 0.724). Those with a CARES assignment had a 3.7% recidivism rate as compared to 5.0% for matching those without one.¹⁰

This study repeated the same test with violent recidivism, using a slightly different matched dataset. Individuals with a CARES assignment violently recidivated marginally significantly less than comparable persons who did not receive a CARES assignment ($\chi^2 = 3.53$, $p = .0602$, Odds Ratio = 0.710). The violent recidivism rates were 0.9% for persons with a CARES assignment and 1.3% for those without one. With a marginally significant effect, the results suggest a possible reduction in violent recidivism but fall short of the usual scientific standards for significance.

¹⁰ Cases were not matched based on time in home confinement for the post-release sample and did not require the control group to have spent time in home confinement. That was a necessary requirement for the control group in the pre-release sample. If one does match on home confinement in the post-release sample, this study found no effect of CARES assignment on recidivism.