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REPORT

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Evaluating the Camden County Correctional Facility's Medications for Opioid Use Disorder Program

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About the Camden Coalition

The Camden Coalition works to improve care for people with complex health and social needs in Camden, NJ, and across the country. The organization implements person-centered programs and pilots new models that address chronic illness and social barriers to health and well-being. Supported by a robust data infrastructure, cross-sector convening, and shared learning, its community-based programs improve outcomes for some of society's most vulnerable individuals. The Camden Coalition's National Center for Complex Health and Social Needs (National Center) connects complex care practitioners with each other and with data, tools, and other resources. For more information, visit www.camdenhealth.org.



About CCCF

The Camden County Board of Commissioners is dedicated to improving the quality of life of the more 500,000 Camden County residents by providing a wide variety of services, programs, and special initiatives. Through close partnerships with local, state, and federal partners, the Board of Commissioners is committed to representing constituents.

The Board of Commissioners oversees the Camden County Correctional Facility (CCCF), which aims to provide safe, secure, and humane custody to all inmates committed to its care. CCCF is committed to meeting acceptable standards and protecting the community.

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Executive summary

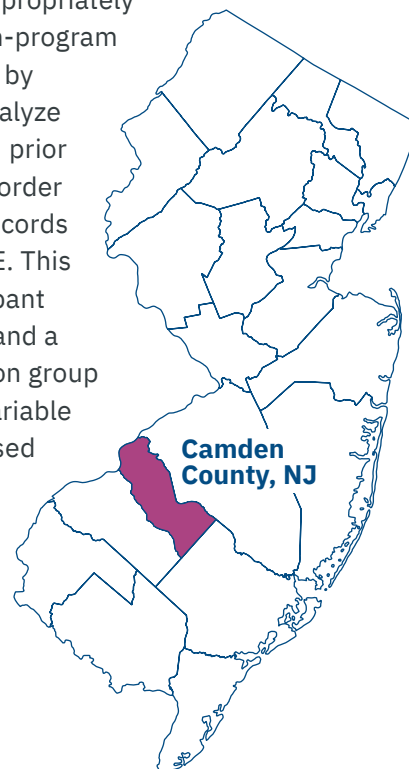
Like many states across the country, New Jersey has seen a significant uptick in fatal overdoses because of the opioid epidemic. Within the state, Camden County has been among the hardest hit, with the highest per capita rate of fatal overdoses across all counties. The epidemic has been particularly acute within the correctional system, where a large proportion of individuals who are incarcerated also suffer from opioid use disorder. Not only does this present treatment challenges for jail and medical staff while individuals are incarcerated, but it also leads to a highly vulnerable moment as individuals are released back into the community following their jail stay.

In response to the growing crisis, the Camden County Correctional Facility (CCCF) launched a medications for opioid use disorder (MOUD) program to better support individuals entering the jail with an opioid use disorder. At the time of launch, jail-based MOUD programs were relatively novel, and significant work was undertaken by CCCF and its medical provider, CFG Health Systems, LLC (CFG), to pilot and scale the program. Over time, the program expanded to include the medications Suboxone, methadone, and Vivitrol, allowing patients to continue treatment for any pre-existing medication as well as choose between Suboxone and Vivitrol when initiating treatment. In addition to medication administration, the program also included a variety of additional supports, including care coordination.

In this report, we present findings from an evaluation of CCCF's MOUD program conducted by the Camden Coalition. The evaluation covered program years 2019 and 2020, starting from the point the program was operating at significant capacity with multiple forms of MOUD, and allowing for a full year of time to elapse in the post period (2021) to study the program's impact on longer term outcome measures. Enabling this evaluation was the Camden Coalition's integrated data systems, including the Camden Coalition Health Information Exchange (HIE) and Camden ARISE, which allowed individuals to be linked across the health, criminal justice and overdose tracking data systems.

These data were supplemented with MOUD program data. The key outcome measures were post-release overdose rates and jail recidivism across different time intervals.

Camden Coalition analysts conducted descriptive analyses of the MOUD program population (n=1,225) as a subset of the full population (n=10,592) booked into the jail in 2019 and 2020. In addition to studying overdose and jail re-incarceration trends across the full jail population, the Camden Coalition wanted to find a way to appropriately compare program and non-program participants. They did this by selecting individuals to analyze from both groups who had prior evidence of opioid use disorder documented in hospital records housed in the Camden HIE. This created a program participant cohort of 462 individuals and a non-participant comparison group of 842 individuals. Multivariable regression analysis was used to study 30-, 180-, and 365-day post-jail release overdose outcomes among these cohorts.



Highlights from the evaluation:

1. 1,225 individuals received MOUD while incarcerated at the CCCF over the two year period.

Program participants were 36.7 years old, on average; three-quarters were male (76%), 55.6% were White non-Hispanic, 26.7% were Black non-Hispanic, and 17.2% were Hispanic. The majority were residents of Camden County (67.0%). Most program participants were initiated into treatment in the facility (54.2% received Suboxone <12mg; 9.7% received Vivitrol), and one-third received medication as a continuation of treatment that had been initiated elsewhere (20.7% received Suboxone 12+ mg; 15.4% received Methadone). One-fifth (22.3%) of individuals received MOUD treatment during two or more jail stays over the two-year period.

2. Analysis suggests that CCCF's MOUD program was successful in reducing overdoses among individuals leaving the jail.

Among a subset of individuals incarcerated in the facility who had an opioid-use diagnosis based on hospital records, **10.0%** of MOUD program participants and **14.5%** of non-participants had an overdose 180 days after a jail release, and **12.8%** of program participants and **18.2%** of non-participants had an overdose within 365 days of release. Based on multivariable regression analyses, program participants were **41.2% less likely** to experience an overdose within 180 days of a jail release and **38.5% less likely** to experience an overdose within 365 days. Program participants were also less likely to have more than one overdose within one year of jail release.

3. While the program reduced the risk of having an overdose after jail release, there remained a significant relationship between past and future overdoses for program participants and non-participants alike.

Among a subset of incarcerated individuals who had an opioid-use diagnosis based on hospital records, **27.0%** of program participants who had experienced two or more overdoses in the year prior to first receiving MOUD in the facility experienced an overdose within 365 days of jail release, compared to **40.9%** of non-participants. Among those with no overdose in the year prior to their index commitment, **9.8%** of program participants and **15.5%** of non-participants had a post-release OD within 365 days of jail release. The association between past and future overdoses and differences between program participants and non-participants were also significant 180 days after jail release. These findings underscore the need for medical providers in the facility to access reliable data to assess an individual's risk of an overdose following release from jail and to facilitate treatment continuity in the community.

4. A racial imbalance in who received treatment was evident.

Whereas 37.2% of incarcerated individuals who may have been eligible for treatment based on the Clinical Opiate Withdrawal scale were of Black, non-Hispanic race, 26.7% of those receiving treatment in the CCCF were of similar race. Individuals of White, non-Hispanic race were more likely to participate in the MOUD program, representing 55.6% of participants despite comprising 44.4% of those who were potentially eligible. This imbalance may have resulted from bias on the part of jail staff or race differences in experiences and preconceptions that may lead some people to be less amenable to program participation.

Background

The opioid epidemic

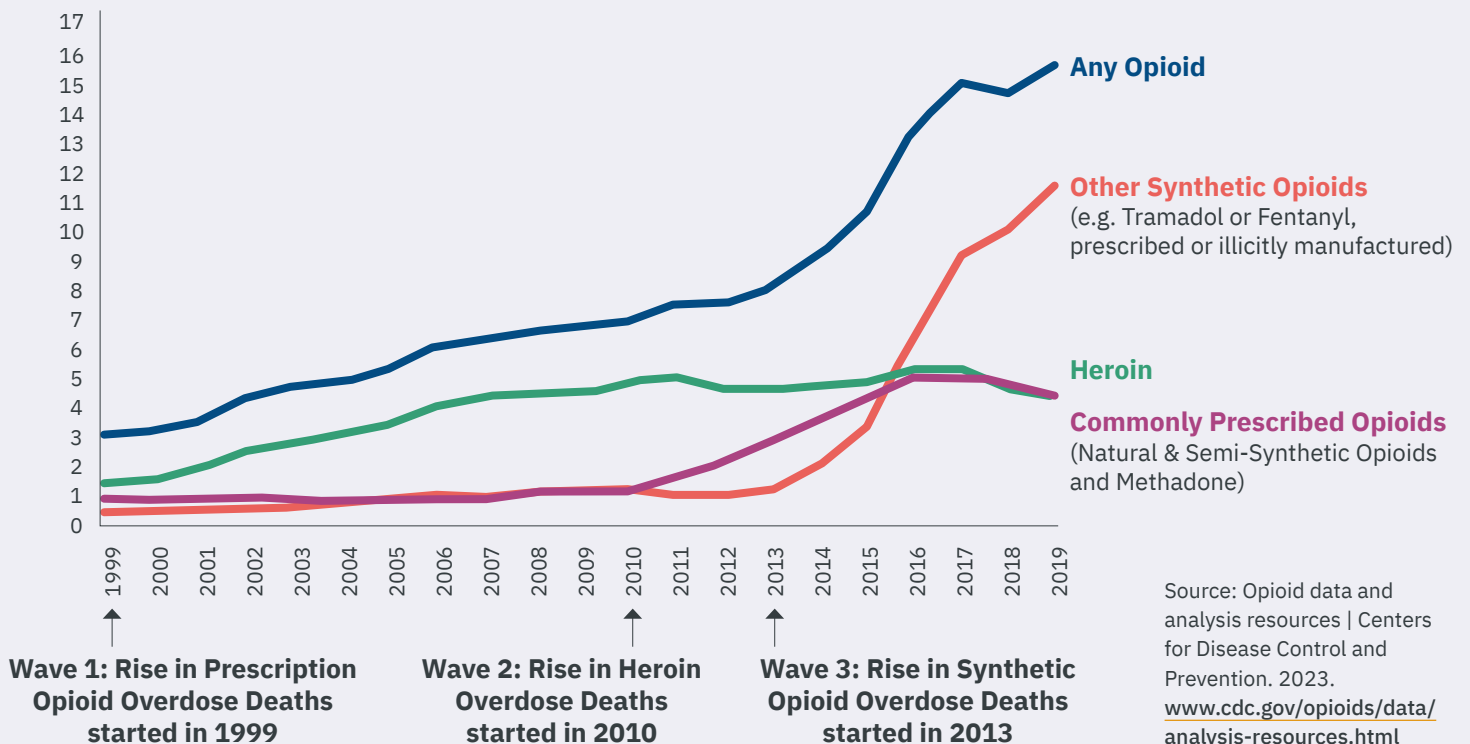
In 2017, the US Department of Health and Human Services declared the opioid crisis a national public health emergency. Deaths from opioids, which includes prescription opioids, heroin, and synthetic opioids like fentanyl, have increased nearly six-fold since 1999.¹ In 2020, the US Congress Joint Economic Committee released an analysis that estimates the opioid epidemic cost the US economy almost \$1.5 trillion for just the 2020 fiscal year.² Worryingly, opioid addiction and overdose continues to be a growing problem in the United States.^{1,2}

Opioid epidemic and the criminal justice system

The criminal justice system is affected by and in turn affects the opioid epidemic.^{3,4} Research indicates that people with an opioid use disorder (OUD) are up to 13 times more likely to interact with the criminal justice system than those without an OUD.⁴ According to the 2015 National Survey on Drug Use and Health (NSDUH), an estimated 17 percent of state prison inmates report regularly using opioids, while 65 percent of all incarcerated individuals meet the criteria for a diagnosis of substance use disorder.⁴ Almost 15 percent of state prisoners and jail inmates convicted of violent crimes and 40 percent of those convicted of property crimes reported committing their offense to support a drug addiction.^{3,4}

Figure 1: Three waves of the rise in opioid overdose deaths

Deaths per 100,000 population



Individuals with OUD who are transitioning from incarceration back into the community are at high risk of adverse health events.⁵ In fact, drug overdose is a leading cause of death among formerly incarcerated individuals. Prisoners and jail inmates released to the community are estimated to be more than 10 times more likely to die of overdose than the general population within the first two weeks after reentering society.⁶ Within three months of release from custody, 75 percent of formerly incarcerated individuals with an OUD relapse to opioid use and approximately 40 percent are arrested for a new crime within the first year.^{5,6,7} When individuals with OUD return to the criminal justice system, the reasons extend beyond drug-related offences and include high rates of serious crime, including assault, theft, and domestic violence.^{6,8}

Taken together, these findings from across the country highlight the need for health interventions that involve the criminal justice system.

Medications for opioid use disorder (MOUD)

Also known as medication-assisted treatment (MAT), MOUD has been shown to be effective in treating OUD, while numerous publications support the use of MOUD as standard of care for treating OUD.^{9,10} Three generic medications have been approved by the US FDA to treat OUDs: methadone, buprenorphine (brand name Suboxone or Sublocade), and naltrexone (brand name Vivitrol). Though all are FDA approved, their different mechanisms of action, administration, and the length of time being FDA approved means that many studies of MOUD are medication-specific.

Jail-based MOUD programs

Although MOUD is regarded as critical, evidence-based treatment option for individuals with OUD, few corrections facilities implement medication-based treatment programs. From 2007 to 2009, less than 1 percent of state prison and jail inmates with moderate to severe substance use disorders received any medically supported treatment services while in custody.¹¹ In 2020, only one state (Rhode Island) offered all three FDA-approved medications in corrections facilities state-wide.

Jail-based MOUD programs are split into two categories based on the initiation point of treatment: maintenance programs that treat inmates who arrive at the correctional facility already participating in a community-based MOUD program, and initiation programs that divert interested inmates, who meet established criteria, into starting MOUD at their correctional facility.¹²

In most states across the country, there has been little coordinated funding for and investment in jail-based MOUD programs. New Jersey is an exception, receiving federal dollars to fund MOUD programs in local jails beginning in 2018. The published research conducted on jail-based MOUD outcomes has focused on programs with diverse inmate populations, medication choice, and implementation details. Therefore, in looking at the published research, the existence of findings with varying results and significance is to be expected, but there are general trends and replicated results in the growing body of literature.

Studies have examined a variety of outcomes of jail-based MOUD programs. Outcomes of interest include opioid overdose rate after jail release, engagement in community-based treatment programs, and criminal activity/recidivism rates among program participants. The research has also focused on secondary outcomes like employment and housing stability, injection drug use, and contraction of sexually transmitted infections.^{6,13-15}

There is strong evidence across studies that requiring inmates to discontinue or change a medication regimen that was previously successful is associated with poor health outcomes and a lower likelihood of resuming MOUD after release from custody. Additionally, inmates required to withdraw involuntarily from MOUD upon incarceration face a substantially increased risk of overdose and death if they resume illicit opioid use.¹⁴ Conversely, evidence indicates that providing methadone or buprenorphine both during custody and after release is associated with substantially lower rates of opioid overdose and mortality.¹⁵

The evidence on the effectiveness of MOUD treatment on measures of criminal justice-related outcomes are not always statistically conclusive. However, individual studies have found reliable effects from treatment on criminal justice outcomes, including re-arrest rates, re-conviction rates, reincarceration rates, and self-reported criminal activity.^{6,13-15}

Local context

About Camden County

The Camden County Correctional Facility (CCCF) is located in the city of Camden and serves all 37 municipalities across Camden County. Camden County is the eighth largest county by population in the state of New Jersey and contains a mixture of urban and suburban areas. There is also wide variation in socioeconomic status across the county, with a handful of very affluent areas as well as areas that are socially and economically distressed with high rates of poverty, unemployment, substance abuse, and crime. These issues are particularly acute in the City of Camden, where a large proportion of inmates reside prior to entering the jail.

New Jersey, like most other states, has experienced a large increase over the last decade in the number of fatal overdose deaths. These rates remain high even as fatal overdoses rates have leveled off over the past few years. As of 2020, New Jersey ranks twentieth across all states in overdose deaths, with 32.1 deaths per 100,000. Camden County has been hit particularly hard by the opioid epidemic, with the highest rates of per-capita fatal overdoses across all 20 counties in the state: 69.5 per 100,000.¹⁶

Jail MOUD program overview

As Camden County was hit particularly hard by the opioid epidemic, so too was the Camden County Correctional Facility. Like many correctional settings, CCCF has had to combat high rates of substance use disorder and opioid use disorder within its incarcerated population. A 2018 assessment found that 71% of individuals in the jail reported active substance use at the time of booking; 48% reported active opioid use. In response to these high rates of incarcerated individuals with opioid use disorder, CCCF began pursuing funding opportunities to implement a jail based MOUD program. Since 2018, CCCF has received more than \$2.2 million dollars in grant funding from the state of NJ to implement and expand its MOUD program.

Launched in 2018, the MOUD program first offered individuals access to naltrexone. In February 2019, the program was expanded to include Suboxone and methadone; Sublocade (long-lasting, injectable buprenorphine) was added in 2021. Individuals already receiving MOUD in the community prior to their incarceration have the option to continue their treatment with Suboxone 12+ mg or methadone. Vivitrol, Suboxone < 12mg, and Sublocade are



administered to individuals who had not initiated MOUD treatment prior to entering the facility. CCCF's clinical provider, CFG Health Systems, LLC, played an integral role in administering the program. CFG staff identified and screened eligible individuals and administered the medications. In addition to providing access to the medication, the MOUD program also included navigators who provided face-to-face coordination, including assisting with connections to community treatment providers, pharmacies, and other supports. After noticing time delays in access to medications post-discharge from the jail, the program was expanded to include a parting dose to support better continuity of care as individuals reentered the community.

As Camden County was hit particularly hard by the opioid epidemic, so too was the Camden County Correctional Facility. Like many correctional settings, CCCF has had to combat high rates of substance use disorder and opioid use disorder within its incarcerated population.

New Jersey's changing landscape

The MOUD program was implemented during a period of significant changes to the criminal justice landscape in New Jersey, including bail reform, decriminalization of marijuana, and the COVID-19 pandemic. Each of these had major effects on the volume of individuals entering the correctional system.

Bail reform, enacted in 2017, aimed to reduce the number of people held in jail by swapping the monetary bail system for the public safety assessment (PSA). PSA is an evidence-based tool to evaluate risk of flight and danger to community, and to inform detention decisions. Bail reform required every person arrested for a Superior Court offense to be automatically remanded to a county jail where the PSA would be completed within 24-72 hours. The overall impact of both bail reform and marijuana decriminalization has been a significant reduction in the number of people who are held in jail.

The COVID-19 pandemic also had a significant impact on jail and prison systems across the United States. As jails are confined spaces where social distancing is challenging, inmates were particularly vulnerable to outbreaks. As such, the NJ Supreme Court ordered the release of incarcerated individuals who met certain criteria. These measures generated a large, but temporary, drop in the incarcerated population in the Camden County Jail.

Program evaluation

Data sources overview

The evaluation of CCCF's MOUD program required access to a variety of data systems from across sectors and institutional partners. For each data set, individual identifiers were extracted, and person linkage was done to create a common identifier that would allow individuals to be tracked across data systems. The Camden Coalition incorporated data from the following sources:

- 1. Camden County Correctional Facility administrative data:** CCCF provided data from two internally managed data sources, the Offender Management System (OMS) and the MOUD program logs. OMS data provided all bookings and release records to track individuals as they entered and left the jail as well as the charges that led to their incarceration. MOUD program logs enabled tracking of who was identified eligible for the MOUD program as well as the type of MOUD and total dosage received. Together, the two data sources provided critical insight into who entered the jail, whether they interacted with the MOUD program, when the individual reentered the community, and whether subsequent reincarcerations occurred.
- 2. Camden Coalition Health Information Exchange:** The Camden Coalition Health Information Exchange (HIE), developed and operated by the Camden Coalition, is a real-time, web-based portal and database that unifies patient data from across clinical providers in Southern New Jersey. Included in the HIE are the region's major hospital systems: Cooper, Virtua, Jefferson, and Inspira. The HIE is operated on CareEvolution's platform and, among other data, includes admission, discharge, and transfer data for emergency department (ED) and inpatient encounters. HIE data provided valuable insight into individuals' opioid use disorder histories as well as overdose-related encounters.

- 3. New Jersey state overdose data:** In addition to the overdose records extracted from the Camden HIE, additional overdose records were obtained via two New Jersey statewide data systems: NJ Drug Monitoring Initiative (DMI), which included fatal overdose records, and Overdose Detection Mapping Application Program (ODMAP), which included law enforcement-involved overdoses and naloxone administrations (fatal and non-fatal). While some overdoses in these data systems also were present in the HIE, not all overdoses resulted in a hospital encounter and thus the NJ administrative data provided supplemental value to the HIE data. After the two data sources were linked to the HIE, a deduplication step was done to remove overdoses present in both the HIE and the state administrative data.

Characteristics of the jail population and MOUD program participants

Demographics

Between January 1, 2019, and December 31, 2020, 10,593 individuals were booked into the Camden County Correctional Facility (CCCF) at least once. Of these, 1,225 (11.5%) participated in the jail's MOUD program, which began in October 2018. Our evaluation focuses on individuals booked into the facility in 2019 and 2020 (the study period).

Table 1 lists characteristics of the full jail population, the program population, and individuals potentially eligible for the program based on the Clinical Opiate Withdrawal Scale (COWS) that was administered at admission and then 10 days afterwards to anyone suspected of substance use, who self-reported substance use, and/or who presented with symptoms of withdrawal.

Table 1: Demographic information for individuals committed to the Camden County Correctional Facility, January 1, 2019–December 31, 2020

	Full population (n= 10,593 individuals)	Program participants (n=1,225 individuals)	COWS Suboxone discharges ² (n=1,341 individuals)
Age			
Average in years [median]	35.7 [33.9]	36.7 [35.1]	35.4 [34.0]
< 30	3722 (35.1%)	306 (25.0%)	414 (30.9%)
30-64	6781 (64.0%)	917 (74.8%)	924 (68.9%)
>=65	89 (0.8%)	2 (0.2%)	3 (0.2%)
Gender			
Male	8696 (82.1%)	931 (76.0%)	1049 (78.2%)
Female	1892 (17.9%)	294 (24.0%)	292 (21.8%)
Race & ethnicity			
Black, non-Hispanic	5248 (51.2%)	327 (26.7%)	499 (37.2%)
White, non-Hispanic	3196 (30.2%)	681 (55.6%)	596 (44.4%)
Hispanic	1819 (17.2%)	211 (17.2%)	237 (17.7%)
Other	149 (1.4%)	6 (0.5%)	9 (0.7%)
Other characteristics			
Married	776 (7.3%)	76 (6.2%)	110 (8.2%)
Employed	3355 (31.7%)	248 (20.2%)	250 (18.6%)
Education level >= high school	8069 (76.2%)	869 (70.9%)	953 (71.1%)
Camden County resident ¹	6555 (61.2%)	821 (67.0%)	929 (69.3%)

Notes: Denominators for calculating percentages were the total number of individuals with no missing information for the specified variable. 21.4% of individuals represented in the first two columns, and 14.2% of individuals found in the Clinical Opiate Withdrawal Scale (COWS) data were missing information on residential location. The COWS data were derived from a separate program file.

When they first entered the facility, program participants were 36.7 years old on average, were predominately male (76.0%), of White, non-Hispanic race (55.6%), had at least a high school degree (70.9%), and were Camden County residents (67.0%). Less than 1 in 10 (6.2%) were married when they were committed to the facility, and 1 in 5 (20.2%) were employed. Compared to the individuals potentially eligible for the program based on their COWS score, program participants were less likely to be of Black,

non-Hispanic race (37.2% of eligible population vs 26.7% of program population).

There were also a few notable ways in which the program participants differed from the full jail population. Higher proportions of individuals within the full jail population compared to program participants were under age 30 (35.1% vs. 20.0%), of Black, non-Hispanic race (51.2% vs. 26.7%) and were employed when they entered the jail (31.7% vs. 20.2%).

Jail incarceration

The 1,225 program participants had a total of 2,982 commitments over the study period for an average of 2.4 commitments per person (Table 2). These included commitments occurring during the study period but prior to an individual’s first program intake (i.e., the first commitment during which a person received MOUD). The jail length-of-stay distribution was highly skewed, with a mean of 31.6 days and a median of 8 days. One-quarter of commitments among program participants were for 30 days or longer and 17% lasted only one day. Most commitments among program participants were for non-violent offenses (81.3% of commitments), and just over one-half were for possession of a controlled, dangerous substance (CDS) (55.2%); 17.7% were for a technical violation.

For program participants, we defined the first jail commitment during which they received MOUD as their “index” commitment. Among the 1,225 program participants, 499 had at least one jail commitment in 2019 or 2020 *prior* to their first MOUD intake (index commitment), with an average of 1.9 pre-intake commitments. The mean length of incarceration for those commitments was 13 days (median of 3 days), much shorter than for the program participant population overall. More than one-half (52.9%) of pre-index commitments among eventual program participants lasted for one day only. Commitments coinciding with a participant’s first MOUD intake (index commitment) and those after that commitment tended to be much longer, with a mean of 40 days (median of 12 days); 9.3% of those commitments lasted for one day. On average, program participants had 1.7 commitments in 2019 or 2020 following and including their index commitment.

Table 2: Characteristics of jail commitments, January 1, 2019–December 31, 2020

	All commitments (n=17,629)	Program participant commitments (n=2,982)	Program participant pre-index commitments (n=943)	Program participant index and later commitments (n=2,039)
Total number of individuals	10,593	1,225	499	1,225
Average number of commitments per person	1.7	2.4	1.9	1.7
Average length of stay in days [median]	28.7 [4]	31.6[8]	13.1[3]	40.1[12]
Commitments lasting one day only	4895 (29.5%)	501 (17.1%)	314 (52.9%)	187 (9.3%)
Commitments lasting seven or fewer days	10649 (64.3%)	1433 (48.9%)	676 (73.1%)	757 (37.7%)
Jail length of stay 75th percentile	15 days	30 days	8 days	42 days
Offense types				
Non-violent offenses	12245 (69.4%)	2423 (81.3%)	770 (81.7%)	1657 (81.3%)
Violent offenses	5393 (30.6%)	555 (18.6%)	179 (18.3%)	382 (18.7%)
Controlled, dangerous substance (CDS)	6700 (38.0%)	1645 (55.2%)	578 (61.3%)	1066 (52.3%)
Public order	6248 (35.4%)	941 (31.6%)	299 (31.7%)	642 (31.5%)
Property	4817(27.3%)	1073 (36.0%)	338 (35.8%)	734 (36.0%)
Technical violation	2124 (12.0%)	526 (17.7%)	58 (6.2%)	469 (23.0%)
Traffic	3012 (17.1%)	434 (14.6%)	145 (15.4%)	289 (14.2%)
Persons	4414 (25.0%)	453 (15.2%)	145 (15.4%)	308 (15.1%)
Weapons	1747 (9.9%)	134 (4.5%)	29 (3.1%)	105 (5.1%)

Notes: Release dates were missing for 6.0% (n=1,060) of commitments among the full jail population and 1.7% (n=50) of commitments among program participants specifically.

When compared to the program participant subset, the full jail population averaged a lower number of commitments over the study period (1.7 vs. 2.4) with a shorter median length of stay (4 days vs. 8 days), a higher proportion of one-day incarcerations (29.5% vs. 17.1%), a higher percentage booked for a violent crime (30.6% vs. 18.6%), and lower proportions with CDS (38.0% vs. 55.2%) and technical violation commitments (12.0% vs. 17.7%).

Health

We assessed health and hospital utilization for program participants and the full jail population using data from the Camden Coalition Health Information Exchange (HIE). Data were found for 49.7% of individuals in the full jail population and 57.8% of program participants (Table 3).

Among all program participants, 47.8% had at least one emergency department (ED) visit during the study period. Those who did have an ED encounter averaged 7.2 visits, and 4.6% had 16 or more visits. One-in-five program participants (21.5%) had a hospital admission, and those with an admission averaged 2.3 hospitalizations over the study period. For all program participants with a hospital encounter, nearly one-half (45.3%) had a substance-related diagnosis, and 28.9% had a mental health diagnosis. The medical conditions most common among program participants that are included in the Charlson Comorbidity Index, an inventory of chronic illnesses that are correlated with mortality, were chronic obstructive pulmonary disease (13.8%), mild liver disease (9.3%), and diabetes (2.4%). These were also the three most common serious illnesses among the full jail population. Other common conditions that may be prevalent among incarcerated individuals, such as asthma, are not included in the Charlson Comorbidity Index.

Emergency department use and hospital admissions were less frequent among the full jail population compared to program participants specifically. Within the full jail population, 38.6% had an emergency department encounter and 12.3% were admitted to the hospital at least once. On average, individuals in the full jail population with any ED use had 5.5 ED encounters, with 2.2% having had 16 or more (compared to 4.6% of program participants). While the admission rate was lower for the full jail population compared to program participants (12.3% vs. 21.5%), the average number of

hospitalizations among those with at least one admission was similar (2.2 vs. 2.3). Compared to program participants specifically, smaller percentages of the full jail population had a substance-related (27.0% vs. 45.3%) or mental health diagnosis (18.5% vs. 28.9%).

We had visibility into overdoses via the Camden Coalition HIE (hospital-involved overdoses) and two New Jersey (NJ) state databases (ODMAP for non-fatal, law enforcement involved overdoses and NJ Drug Monitoring Initiative (DMI) for fatal overdoses). We combined the NJ state data with the HIE data to attain a count of all fatal and non-fatal overdoses. The overdose rate among program participants during the study period, irrespective of timing from jail commitment or release, was nearly triple that for the full jail population: 9.5% vs. 3.5% (Table 3), affirming the success of the program in identifying individuals most at-risk of an overdose.

Medication dispensation in the jail

Medication dosing

There were 1,616 MOUD intakes among the 1,225 program participants, including a handful of cases in which there were multiple intakes for an individual during a single jail commitment, either because the medication or dosage changed, or the individual was temporarily released from the facility and restarted on medication upon return. Most participants (77.6%) had a single program intake over the study period; 16.1% had two intakes, and 6.2% had 3 or more (Table 4). On average, 2.5 days elapsed between booking and initial program intake, with a median of 0 days, and there was a mean of 6.7 days between intake and first medication dose, with a median of 1 day. The mean number of days between jail entry and dosing decreased from 2.9 days in 2019 to 1.9 days in 2020, and the mean number of days between intake and first medication dose also fell over the study period, from 9.8 days to 2.7 days.

Across all intakes, Suboxone (≤ 12 mg or 12+ mg) was the most dispensed medication (74.9% of intakes), followed by methadone (15.4%) and Vivitrol (9.7%). The proportion of intakes during which program participants were prescribed Vivitrol declined from 15.4% in 2019 to 2.4% in 2020 as Suboxone administration increased from 68.7% to 82.5% over the two study years. These numbers partially reflect the timing of availability of the different medication types.

Table 3: Hospital utilization and health conditions among program participants and all individuals committed to the jail in 2019 and 2020

	Full population (n= 10,593)	Program participants (n=1,225)
Found in Camden Coalition Health Information Exchange	5267 (49.7%)	708 (57.8%)
Emergency department use		
Any emergency department (ED) encounter	4095 (38.6%)	586 (47.8%)
1-3 ED encounters	2272 (21.4%)	269 (21.9%)
4-6 ED encounters	899 (8.4%)	133 (10.8%)
7-10 ED encounters	473 (4.4%)	78 (6.3%)
11-15 ED encounters	212 (2.0%)	48 (3.9%)
16-20 ED encounters	94 (<1%)	28 (2.2%)
> 20 ED encounters	145 (1.3%)	30 (2.4%)
Average number of ED encounters (among ED users)	5.54	7.23
Hospitalizations		
Any hospitalization	1303 (12.3%)	264 (21.5%)
1 hospitalization	744 (7.0%)	143 (11.6%)
2-4 hospitalizations	438 (4.1%)	93 (7.5%)
5-7 hospitalizations	73 (<1%)	17 (1.3%)
8-10 hospitalizations	22 (<1%)	6 (<1%)
> 10 hospitalizations	26 (<1%)	5 (<1%)
Average number of hospitalizations (among all with admissions)	2.26	2.30
Any substance-related diagnosis	2867 (27.0%)	555 (45.3%)
Any overdose during study period	375 (3.5%)	117 (9.5%)
Any mental health related diagnosis	1963 (18.5%)	355 (28.9%)
Medical conditions diagnosed at hospital		
Chronic obstructive pulmonary disease	1206 (11.3%)	170 (13.8%)
Mild liver disease	417 (3.9%)	115 (9.3%)
Diabetes	302 (2.8%)	30 (2.4%)
Myocardial infarction	169 (1.5%)	24 (1.9%)
Cerebrovascular disease	164 (1.5%)	25 (2.0%)
Congestive heart failure	138 (1.3%)	25 (2.0%)
Moderate or severe kidney disease	111 (1.0%)	12 (<1%)
HIV/AIDS	81 (<1%)	20 (1.6%)
Peripheral vascular disease	115 (1.0%)	17 (1.3%)
Diabetes with end organ damage	76 (<1%)	4 (<1%)
Rheumatic disease	42 (<1%)	9 (<1%)
Hemiplegia, tetraplegia	45 (<1%)	8 (<1%)
Peptic ulcer disease	45 (<1%)	5 (<1%)
Moderate or severe liver disease	30 (<1%)	3 (<1%)
Metastatic cancer	31 (<1%)	5 (<1%)
Dementia	9 (0.2%)	2 (0.3%)

Notes: The medical conditions included in this table are taken from the Quan Index, an updated version of the Charlson Index, which is a weighted index to predict risk of death within 1 year of hospitalization for patients with specific comorbid conditions. Overdose data were combined from NJ statewide data systems and the Camden Coalition HIE.

Table 4: MOUD program intakes 2019-2020 [n=1,616 intakes over 1,605 jail commitments]

Participants with 1 intake	951 (77.6%)		
Participants with 2 intakes	198 (16.1%)		
Participants with 3 + intakes	76 (6.2%)		
	All years (n=1616 intakes)	2019 (n=902 intakes)	2020 (n=714 intakes)
Medication administered			
Any Suboxone	1211 (74.9%)	620 (68.7%)	589 (82.5%)
Suboxone < 12 mg	876 (54.2%)	421 (46.7%)	455 (63.7%)
Suboxone 12+ mg	334 (20.7%)	201 (22.3%)	133 (18.6%)
Methadone	249 (15.4%)	141 (15.6%)	108 (15.1%)
Vivitrol	156 (9.7%)	139 (15.4%)	17 (2.4%)
Timing			
Average [median] days between commitment and intake	2.5 [0]	2.9 [0]	1.9 [0]
Average [median] days between intake and first dose	6.7 [1]	9.8 [1]	2.7 [1]

Notes: Number of intakes and number of commitments are distinguished because program participants could have received more than one type of medication intake during a single commitment. Suboxone < 12 mg and Vivitrol were administered to individuals initiating MOUD treatment in the jail; Suboxone 12+ mg and Methadone were administered to individuals continuing MOUD treatment in the jail after having been initiated elsewhere prior to their incarceration.

Table 5: Dosing duration per commitment, 2019-2020 [n=1,616 intakes over 1,605 jail commitments]

	Suboxone	Methadone	Vivitrol
Average [median] number of doses offered	27.4 [9.0]	22.0 [4.0]	1.9 [1.0]
Average [median] number of doses refused	0.83 [0.0]	0.06 [0.0]	0.03 [0.0]
Average [median] number of doses administered	26.5 [9.0]	22.0 [4.0]	1.9 [1.0]
Doses administered per incarceration			
0-7	529 (43.4%)	159 (58.2%)	
8-14	207 (13.7%)	33 (12.1%)	
15 –30	200 (16.4%)	29 (10.6%)	
30+	284 (23.3%)	52 (19.0%)	

Notes: The means and medians for doses offered, refused, and administered are based on all commitments during which program participants received medication. Suboxone < 12 mg and Vivitrol were administered to individuals initiating MOUD treatment in the jail; Suboxone 12+ mg and methadone were administered to individuals continuing MOUD treatment in the jail after having been initiated elsewhere prior to their incarceration.

The amount of dosage in milligrams for Suboxone and methadone varied among program participants, with almost all program participants receiving the same dosage amount from the beginning to the end of their commitment. The Suboxone distribution was bimodal, reflecting medication initiation (4 or 8 mg; 54.2% of intakes) or continuation (12 - 24 mg; 20.7% of intakes). For methadone, which was given only to individuals who had been receiving the medication prior to their commitment, dosage strength ranged from 8 mg to 240 mg, with a median dose of 100 mg.

The number of doses received during a single commitment depended on the medication type and the length of a person’s stay in the jail. Suboxone and methadone are

daily medications, whereas Vivitrol is dispensed once monthly. Most individuals received 7 or fewer doses of the former two medications per incarceration: 43.4% of Suboxone doses and 58.2% of methadone doses were administered for one week or less (Table 5). 39.7% of Suboxone doses and 29.6% of methadone doses were administered for more than 2 weeks. Across all medication types, a small fraction of doses offered to program participants were refused (< 3.0%).

Several demographic differences were observed among individuals receiving the different types of medication (Table 6). Those receiving methadone were slightly older: 83.6% were over age 30, compared to 74.9% of Suboxone recipients and 68.8% of those receiving

Table 6: Demographic information for program participants by medication received

	All Suboxone recipients (n=913)	Suboxone < 12 mg recipients (n=702)	Suboxone 12+ mg recipients (n=272)	Methadone recipients (n=207)	Vivitrol recipients (n=152)
Age					
Average in years (median)	25.0%	36.3 [34.5]	36.5 [35.1]	38.4 [37.0]	36.0 [33.9]
< 30	25.0%	25.3%	24.3%	16.4%	31.3%
30-64	74.9%	74.7%	75.4%	83.2%	68.8%
>=65	0.1%	0.0%	0.3%	0.4%	0.0%
Gender					
Male	80.9%	80.6%	81.6%	68.8%	68.3%
Female	19.1%	19.4%	18.4%	31.2%	31.7%
Race & ethnicity					
Black, non-Hispanic	26.4%	27.3%	24.3%	18.4%	39.9%
White, non-Hispanic	53.8%	51.1%	60.8%	68.0%	44.2%
Hispanic	19.3%	21.3%	13.9%	13.2%	15.4%
Other	0.5%	0.3%	0.9%	0.4%	0.5%
Other characteristics					
Married	5.9%	5.7%	6.5%	4.8%	5.3%
Employed	19.0%	18.7%	19.9%	20.0%	20.7%
Education level >= high school	70.4%	70.0%	71.2%	72.0%	62.0%
Camden County resident	66.9%	66.5%	68.0%	57.2%	74.0%

Notes: Numbers do not add to total number of program participants because an individual could have received more than one type of medication during a single commitment or during different commitments. Suboxone < 12 mg and Vivitrol were administered to individuals initiating MOUD treatment in the jail; Suboxone 12+ mg and methadone were administered to individuals continuing MOUD treatment in the jail after having been initiated elsewhere prior to their incarceration.

Vivitrol. Nearly one-third of methadone (31.2%) and Vivitrol (31.7%) recipients were women, compared to one-fifth (19.1%) of those receiving Suboxone. Higher proportions of participants continuing medication (i.e., methadone, or Suboxone 12+ mg) were of White, non-Hispanic race compared to those initiating treatment in the jail, whereas 4 in 10 (39.9%) Vivitrol recipients were of Black, non-Hispanic race, compared to 26.7% of program participants overall. Additionally, methadone recipients were less likely to have been Camden County residents (57.2% compared to 67.0% of the program population overall).

Outcomes analysis

The analysis in the previous section offered a descriptive snapshot of MOUD program participants as a subset of the full population of individuals incarcerated in CCCF in 2019 and 2020. To assess the effectiveness of the MOUD program in reducing post-release overdoses, we created comparable groups by selected a smaller subset of individuals from both the non-program and program participant populations who were booked into the jail between January 1, 2019, and December 31, 2020, and who had evidence of an opioid use disorder (OUD) in the HIE data (referred to as the **OUD subset**). We identified 462 individuals in the program population (37.7% of

original program population) and 842 individuals in the non-program population (9.0% of original non-participant population) with an OUD diagnosis based on HIE records covering ED visits and hospital admissions occurring any time prior to January 1, 2021.

For our comparative analysis, we studied the following outcomes:

1. Any overdose following release from jail
2. Number of overdoses following release from jail
3. Any commitment following release from jail
4. Number of commitments following release from jail

All outcomes were assessed 30, 180, and 365 days after index and subsequent commitments. For the non-participant subset, the first commitment during the study period was flagged as the index commitment. For the program participant subset, the first commitment during which MOUD was administered was flagged as the index commitment. A total of 1,457 incarcerations among the non-participant subset and 1,264 incarcerations among the program participant subset were included in the analysis. To clarify the selection of index commitment, Figure 2 shows timelines for four individuals included in the analysis. The timeline shows all commitments, releases, and overdoses for these individuals occurring during the study period.

Figure 2: Timeline for two program participants and two individuals in the non-participant (comparison) group illustrating choice of index commitment and method for calculating post-release overdose and incarcerations occurring after release from index and post-index jail commitments.

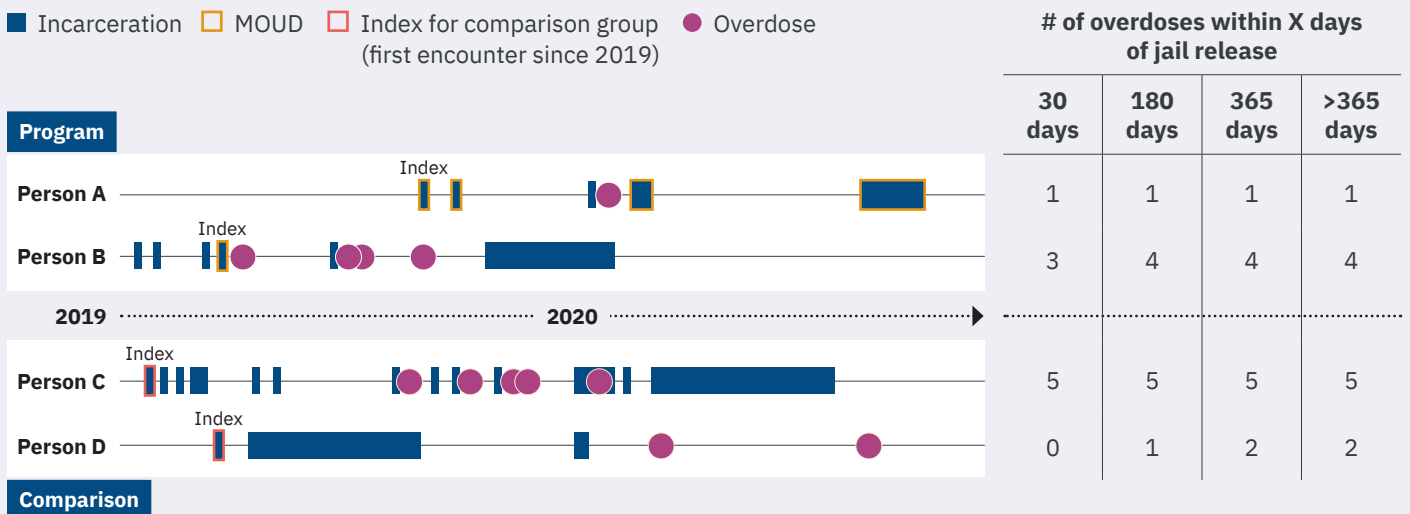


Table 7: MOUD commitment profile for full program population and the program participant OUD subset, 2019-2020

	Program population (n=1,225 individuals)	OUD subset (n=462 individuals)
Number of MOUD commitments per person		
1	956 (78.0%)	329 (71.2%)
2	194 (15.8%)	95 (20.6%)
3	50 (4.1%)	23 (5.0%)
4	14 (1.1%)	6 (1.3%)
5	11 (0.9%)	9 (1.9%)
Medication administered per commitment		
Any Suboxone	1211 (74.9%)	486 (74.0%)
Suboxone < 12 mg (initiation)	876 (54.2%)	335 (51.1%)
Suboxone 12+ mg (continuation)	334 (20.7%)	150 (22.9%)
Methadone	249 (15.4%)	122 (18.6%)
Vivitrol	156 (9.7%)	50 (7.6%)
Average [median] number of doses per commitment		
Any Suboxone	32.1 [10]	41.1 [15]
Suboxone < 12 mg	30.3 [9]	37.4 [14.5]
Suboxone 12+ mg	31.9 [13]	36.4 [12.5]
Methadone	24.6 [6]	33.6 [8]
Vivitrol	2.0 [1]	1.7 [1]

Notes: Numbers for specific medication types do not add to total number of jail commitments for the program population because participants could have received more than one type of medication during a single commitment. Suboxone < 12 mg and Vivitrol were administered to individuals initiating MOUD treatment in the jail; Suboxone 12+ mg and methadone were administered to individuals continuing MOUD treatment in the jail after having been initiated elsewhere prior to their incarceration.

While we flagged the first commitment with a program intake in 2019 or 2020 as the index commitment for everyone in the program participant subset, 212 (45.9%) had at least one booking with no program intake before their index commitment. This group totaled 404 commitments prior to their index commitment, with 55 individuals having three or more commitments in 2019 or 2020 before their first program intake. Pre-index commitments among the participant subset had a much shorter mean (13.3 days) and median (2 days) length of stay compared to index MOUD commitments (36.7 days, 13 days), with seventy-five percent of them lasting 8 or fewer days. Among the program participant incarcerations occurring *after* the index MOUD commitment, one-half involved a MOUD intake. The median length of stay for post-index commitments with a MOUD intake was 14 days

longer than that for those with no MOUD intake (19 days vs. 5 days). Commitments for non-participants were generally shorter compared to index and post-index commitments among participants, averaging 21.7 days with a median of 3 days, and with 75% lasting 11 or fewer days.

Table 7 shows the characteristics of MOUD intakes for the program participant subset with documented opioid use disorder compared to the full program participant population. A slightly smaller proportion of program participants selected for the program subset had only one MOUD intake during the two-year study period (71.2% vs. 78.0%). The distribution of medication received and the number of doses of each medication were similar for the program subset and full program participant population.

Methodology for overdose outcomes evaluation

We used multivariable binary logistic regression to assess the effect of the program on overdose rates, and Poisson regression to assess the effect of the program on overdose counts. For each release from an index or subsequent commitment, we counted any overdose or incarceration occurring within 30, 180, and 365 days of that release. For rates, the dependent variable flagged whether any overdose occurred after an index or post-index jail release during the program period within the specified timeframes; for counts, the dependent

variable was the number of overdoses following any jail release within the specified timeframes. We included several covariates in our models to adjust for other factors that may influence overdose outcomes. These variables included: age at index commitment, number of overdoses in the year prior to the index commitment, gender, race/ethnicity, education, and Camden County residence (Table 8). To correct for any imbalances in the data, we generated propensity scores and reweighted the analytic models. Results for unweighted and reweighted data were similar, so we only report the unweighted results for ease of interpretation.

Table 8: Information for individuals included in OUD subset

	Program participants (n=462)	Non-participants (n=842)
Age at index commitment*		
Average in years	37.6	38.5
< 30	97 (21.0%)	172 (20.4%)
30-64	364 (78.8%)	661 (78.5%)
>=65	1 (0.2%)	9 (1.1%)
Gender*		
Male	355 (76.8%)	626 (74.3%)
Female	107 (23.2%)	216 (25.7%)
Race & ethnicity*		
Black, non-Hispanic	120 (26.0%)	294 (35.0%)
White, non-Hispanic	262 (56.7%)	448 (53.2%)
Hispanic	77 (16.7%)	94 (11.2%)
Other	2 (0.4%)	3 (0.4%)
Other characteristics		
Married	33 (7.1%)	57 (6.8%)
Employed	72 (15.6%)	166 (21.0%)
Education level >= high school*	315 (68.2%)	624 (74.7%)
Camden County resident*	322 (69.7%)	541 (64.3%)
Overdose rate [and average number] prior to index commitment		
30 days	4.1% [.04]	2.6% [.03]
180 days	11.9% [.08]	12.1% [.06]
365 days*	20.8% [.15]	21.6% [.15]
Any pre-index OD	44.4% [.32]	39.4% [.30]
Average number of jail incarcerations in 2019 and 2020 beginning with index commitment*		
	1.85	1.73

Notes: An asterisk indicates that a version of this variable was included as a covariate in regression models. For individuals in the non-participant group, the index commitment is the first commitment in 2019 or 2020. For program participants, the index commitment is the first commitment in 2019 or 2020 during which MOUD was administered. Rates were calculated based on overdoses occurring within 30, 180, and 365 days or at any time before the index commitment date based on available data.

Results

Table 9 shows the overdose rates and average counts for the program participant and non-participant subsets with the odds ratios (for rates), incidence rate ratios (for counts), and confidence intervals for the differences between the two groups. The differences between the program and non-program subsets for the 30-day overdose rates and average counts were not statistically significant. In the 180-day and 365-day models, program participation was statistically significant and associated with a **lower** likelihood of having an overdose after release from jail and lower numbers of overdoses.

Based on these results:

- ▶ Adjusting for model covariates, program participants were **41.2%** less likely to experience an overdose within 180 days of a jail release, and **38.5%** less likely to experience an overdose within 365 days.
- ▶ Adjusting for model covariates, program participants' probability of having an additional overdose within 180 days of jail release was **34.9%** lower than that for program non-participants, and **28.6%** lower for overdoses occurring within 365 days.

To further highlight associations between program participation and post-release overdoses, differences between the participant and non-participant subsets in overdose rates prior to an index commitment and after an index commitment are illustrated graphically in Figure 3.

Table 9: Post-release overdose outcomes for program participant and non-participant OUD subsets

Outcomes	Program Participants (unadjusted)	Non-participants (unadjusted)	Odds ratio/incidence rate ratio (95% confidence interval)
Rates			
30-day	4.3%	6.8%	.601 (.059, 1.14)
180-day	10.0%	14.5%	.588 (.208, .968)*
365-day	12.8%	18.2%	.615 (.262, .968)*
Average counts			
30-day	.052	.087	.675 (.410, 1.11)
180-day	.123	.196	.651 (.463, .914)*
365-day	.177	.252	.714 (.526, .970)*

Notes: The actual overdose rates and counts for program participants and non-participants are presented in the table. The odds ratios (for rates), incidence rate ratios (for counts), and confidence intervals for the program group coefficient are based on the regression models. An asterisk indicates that the difference between program participants and non-participants is statistically significant.

Figure 3: Overdose rates for program participants and non-participants with an OUD diagnosis, pre- and post-index commitment

The analysis covers overdoses occurring 30, 180, and 365 days after a jail release. “Pre” rates are for overdoses occurring after a jail release in the period before the index commitment. “Post” rates are for all jail releases following the index commitment.

Percent of jail releases followed by an OD

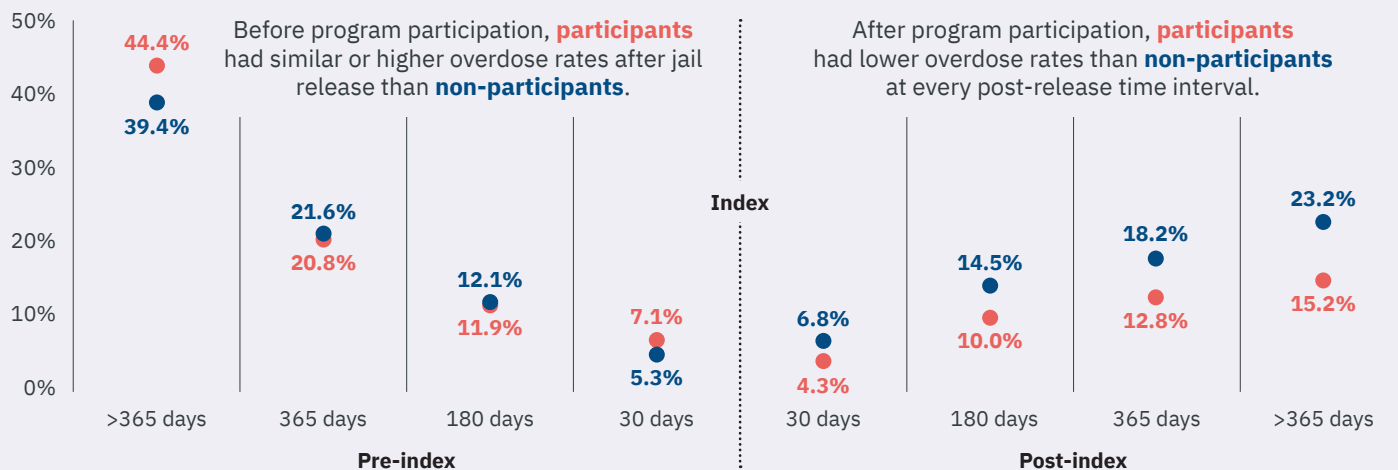


Table 10: Post-release (30-, 180-, and 365-days) overdose rates for program participant and non-participant OUD subsets by number of overdoses in the year prior to index commitment

# prior ODs:	0	1	2+
30 days			
Non-participants	5.5% (36)	9.4% (13)	18.2% (8)
Participants	3.8% (14)	5.1% (3)	8.1% (3)
180 days			
Non-participants	11.8% (78)	20.3% (28)	36.4% (16)
Participants	7.4% (27)	16.9% (10)	24.3% (9)
365 days			
Non-participants	15.5% (102)	23.9% (33)	40.9% (18)
Participants	9.8% (36)	22.0% (13)	27.0% (10)

Notes: Percentages are based on the total number of individuals in the study group; numbers in parentheses are the number of individuals who experienced an overdose based on study group status and the number of prior ODs indicated in the column. Differences between participants and non-participants were significant in binary logistic regression models for 180-day and 365-day post-release ODs, but not for 30-day post-release ODs.

In our regression models, the number of overdoses experienced in the year before a person’s index commitment was positively and significantly associated with having an overdose within 180 or 365 days of jail release (Table 10).

While the likelihood of an overdose was lower among program participants, those who experienced an overdose in the year prior to their index commitment were more likely to overdose again, irrespective of program participation. Figure 4 below illustrates the relationship between past overdose and experiencing an overdose after release from an individual’s index or any subsequent commitment.

Incarceration outcomes

We were unable to reliably test for group differences in commitments for “new” or “pre-existing” offenses because a high percentage of individuals in both the participant and non-participant subsets had no warrant or indictment number for any of their pre- or post-index commitments.

Within the OUD subset, 39.4% of participants and 43.0% of non-participants had no warrant or indictment information for any of their incarcerations. For descriptive purposes (i.e., no conclusions should be drawn about program impact on re-incarceration), Table 11 shows post-index incarceration rates and average counts for all post-index incarcerations and those for new or existing offenses among the individuals with complete warrant/indictment information.

Figure 4: Pre- and post-index commitment overdose rates for program participants and non-participants with an OUD diagnosis

Differences between participants and non-participants were significant in binary logistic regression models for 180-day and 365-day post-release ODs, but not for 30-day post-release ODs.

Percent having an OD within 1 year of jail release

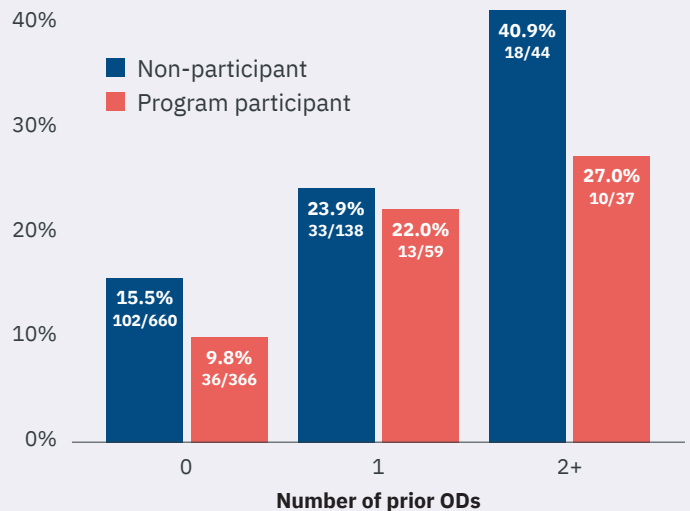


Table 11: Post-release incarcerations following index commitment for program participant and non-participant OUD subsets

Outcome	Program participants	Non-participants
Incarceration Rates		
All 30-day	4.8% (22/462)	5.5% (46/842)
All 180-day	29.4% (136/462)	24.1% (203/842)
All 365-day	40.9% (189/462)	34.2% (288/842)
New 30-day	4.3% (14/323)	5.2% (27/521)
New 180-day	20.1% (65/323)	21.7% (113/521)
New 365-day	26.9% (87/323)	32.6% (170/521)
Existing 30-day	3.2% (6/186)	11.5% (17/148)
Existing 180-day	31.7% (59/186)	38.5% (57/148)
Existing 365-day	50.5% (94/186)	53.4% (79/148)
Average # incarcerations		
All 30-day	.0498	.0701
All 180-day	.4286	.3717
All 365-day	.6991	.5879
New 30-day	.0433	.0614
New 180-day	.2570	.2821
New 365-day	.3994	.4549
Existing 30-day	.0323	.1486
Existing 180-day	.3871	.5676
Existing 365-day	.6935	.8108

Notes: “All” refers to any incarceration; “New” refers to incarcerations for new warrants; “Existing” refers to incarcerations for existing warrants. Rates are the percentages of individuals with any incarceration following release from index commitment. Averages are the mean number of incarcerations following release from index commitment and include individuals with no post-index incarcerations. Incarcerations based on new or existing warrants is limited to the subset of individuals who had no missing warrant or indictment numbers. 60.6% (n=280) of participants had no missing information and 57.0% (n=480) of non-participants had no missing information. For rates, the numerator in parentheses is the number of individuals with a post-index incarceration, and the denominator is the total number of individuals with complete data for calculating the statistic. Denominators for average counts are the same as shown for rates. Statistical tests of significance were not applied.

Conclusions and recommendations

The evaluation of the Camden County Correctional Facility's MOUD program shows that the program was successful in administering medication to high-risk individuals, and that incarcerated individuals who participated in the program had fewer post-release overdoses compared to individuals who did not participate in the program. We were unable to reliably assess the program's impact on recidivism. The evaluation yielded several recommendations for improving the program and for evaluating the program in the future:

1. Explicit criteria for inclusion in the program should be developed.

It is difficult to fully assess the quality of program implementation without these criteria. Further, while we were able to identify a group of incarcerated individuals who could reasonably be compared to program participants, explicit criteria for program inclusion would help evaluators design a more rigorous study of program outcomes.

2. Identify strategies for improving the collection of data needed to measure criminal justice recidivism.

The distinction between arrests/incarcerations for new and pre-existing offenses is critical for studying recidivism, but because warrant and indictment numbers were missing for a high percentage of incarcerations, we were unable to study program impact on recidivism in a reliable and rigorous way.

3. Data suggest a racial imbalance in program inclusion.

We cannot tell from the data whether this imbalance resulted from bias on the part of jail staff or race differences in experiences and preconceptions that may lead some people to be more or less amenable to program participation. We suggest that program administrators investigate both possibilities and develop strategies for addressing barriers to program inclusion.

4. Ensure that jail staff have access to and use current and reliable data for identifying individuals who have a high risk of overdosing after jail release.

While the data do suggest that the program reached a high-risk population, many individuals who had experienced an opioid overdose prior to their incarceration were not program participants, and this group experienced overdoses after jail release. Because there were no explicit criteria for inclusion in the program, we do not know if these individuals were intentionally excluded, refused to participate, or if their opioid use or risk of overdosing after jail release was unknown to staff.

5. Finally, data on post-release MOUD treatment is necessary for fully understanding the impact of the facility's MOUD program.

For example, we do not know whether program participants experiencing no overdose after jail release continued treatment in the community. The second phase of the evaluation of the MOUD program will include an assessment of the peer reentry specialist program and will shed light on post-release engagement in community-based services and its impact on overdose outcomes.

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