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Opioid Use Disorder Treatment in Jails and Prisons

Medication provided to incarcerated populations saves lives

Overview

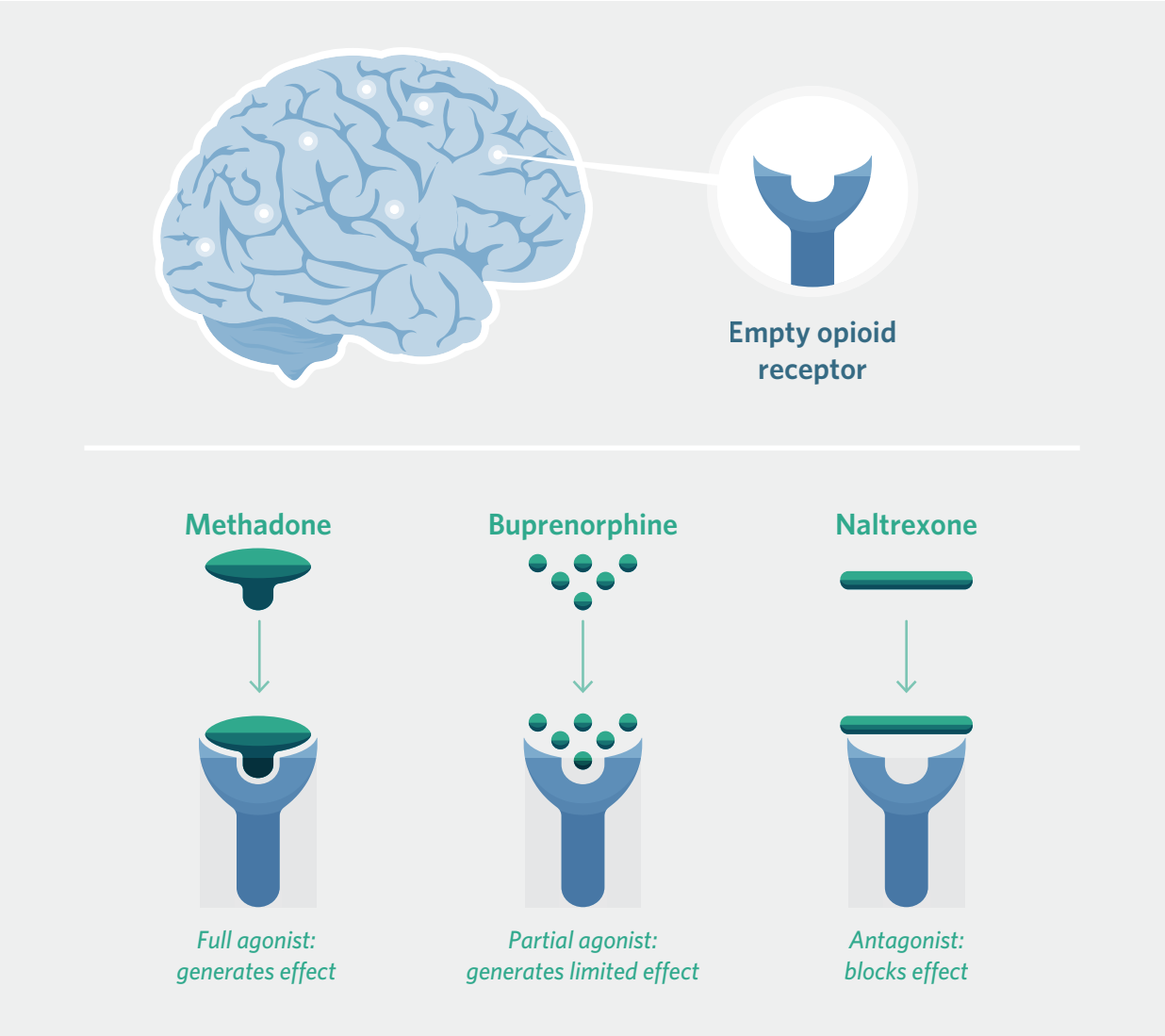
The most effective therapy for people with opioid use disorder (OUD) involves the use of Food and Drug Administration-approved medications—methadone, buprenorphine, and naltrexone. Despite evidence that this approach, known as medications for opioid use disorder (MOUD), reduces relapse and saves lives, the vast majority of jails and prisons do not offer this treatment. This brief examines what policymakers should consider when exploring how to best manage OUD in incarcerated populations.

It helps to first answer this question: How common is OUD in incarcerated populations? Data from 2007-2009 (the most recent available) showed that more than half of individuals in state prisons or those with jail sentences met the criteria for a non-alcohol and nicotine-related substance use disorder (SUD), meaning a problematic pattern of using a drug that results in impairment in daily life or noticeable distress, compared with only 5 percent of adults in the general population.

The gold standard of care is MOUD. In community-based settings, such as opioid treatment programs and primary care facilities, methadone and buprenorphine have been proved to reduce overdose deaths and illicit opioid use as well as the transmission of infectious diseases such as HIV and hepatitis C. A growing body of literature also exists on the benefits of naltrexone, the third Food and Drug Administration-approved medication.

Figure 1

How OUD Medications Work in the Brain



Within correctional settings in the United States, the use of MOUD is a relatively recent phenomenon, with just a few exceptions. Today, only a small number of correctional institutions provide even one of these medications. Accordingly, there have been fewer studies examining the effects of providing this treatment to people who are incarcerated than there have been for those in communities. However, it's possible for policymakers to adopt lessons learned from numerous community studies that have demonstrated positive health outcomes from MOUD and then allocate resources to provide this treatment in jails and prisons.

What should policymakers do? Given the high prevalence of SUD among people who are incarcerated, states should prioritize treating these individuals with OUD using methadone or buprenorphine—the medications supported by the most evidence—and then connect them to maintenance care upon re-entry into the community. Doing so will help reduce the number of opioid overdose deaths among those recently released. Connecting people to community treatment is particularly critical in states that have implemented bail reform, which decreases the length of stay in jails. For individuals with shorter stays, jails should consider adopting emergency department protocols: screening and brief intervention, stabilization, initiation of buprenorphine treatment, and referral to community-based treatment.[1]

Specifically, policymakers should earmark funding to ensure that:

- Jails and prisons are able to screen anyone incarcerated for OUD, and provide MOUD and counseling.
- Jails and prisons have adequate data infrastructure and personnel to track MOUD treatment outcomes.
- Medicaid agencies, state substance use and mental health agencies, and other state and local entities work together to ensure seamless connections to community-based OUD treatment and other services.

The information here summarizes existing research on offering MOUD to individuals who are incarcerated and explores the following post-release data points: overdose deaths, illicit opioid use, engagement in treatment, and subsequent intersections with the criminal justice system. Appendices also provide four case studies outlining how different jurisdictions have implemented jail- and prison-based medication programs. In addition, a companion report from The Pew Charitable Trusts, "How States and Counties Can Help Individuals With Opioid Use Disorder Reenter Communities," explores key issues around the transition of care after individuals who have been incarcerated are discharged.

Defining jails and prisons

Jails are typically city- or county-run correctional facilities that house individuals serving sentences generally less than a year long, as well as persons awaiting trial.

Prisons are state- or federally run correctional facilities that house individuals convicted of crimes for which they are serving sentences of a year or longer.

Medication and counseling in jails and prisons can lower overdose deaths after release

With repeated drug use, a person becomes physiologically dependent on the drug, taking more to reach the intended effect—which is known as increased tolerance.[2] However, people with OUD lose this increased tolerance while incarcerated due to presumed abstinence and thus are at high risk of overdose death in the weeks post-release.[3] Given this risk, people who are incarcerated should be a priority population for OUD medications. A study in Washington state found that over a four-year period, drug overdose was the leading cause of death among formerly incarcerated persons, with the risk of death elevated in the weeks immediately following release.[4]

Unified public safety systems

Six states—Alaska, Connecticut, Delaware, Hawaii, Rhode Island, and Vermont—run a "unified public safety system," meaning that both the jails and prisons fall under state administration. As a unified system, these states retain custody of individuals from their time of arrest to sentencing and release. This contrasts with the majority of states, where state-run prisons are responsible for individuals serving sentences generally longer than a year, while jails run by counties or cities usually house individuals sentenced to a year or less, as well as individuals awaiting trial.

In 2016, the Rhode Island Department of Corrections (RIDOC) began offering a choice of all FDA-approved medications to individuals who screened positive for OUD. Of note, the patients and medical providers overwhelmingly selected methadone and buprenorphine for treatment; few chose naltrexone. A recent RIDOC study examined the effect that providing medications for OUD during incarceration had on overdose deaths post-release. After the program's implementation, post-incarceration deaths decreased 61 percent compared with the previous year. Indeed, the reduction in deaths post-release among incarcerated persons accounted for much of the state's 12 percent reduction overall in overdose deaths.[5]

Rhode Island was the first state to provide all three FDA-approved OUD medications to the entire detainee population. Prior to launching the full-scale program in November 2016 with a $2 million state legislative appropriation, the RIDOC program had several iterations: medically assisted withdrawal for those entering the facility on methadone or buprenorphine, medication continuation throughout pregnancy for individuals initiated on one of these medications in the community, an injectable naltrexone-only program, and a pilot program to maintain women on methadone or buprenorphine initiated in the community. The RIDOC contracted with a statewide, community-based provider to deliver in-facility OUD treatment, which aided the continuity of care upon release.[6]

Given the benefits of medication and counseling for OUD in the general population and RIDOC's experience, it is likely that a comprehensive treatment program in correctional settings would reduce mortality rates for people reentering the community.[7] However, more research is needed to understand the impact that jail- and prison-based programs of this nature have on long-term mortality, recidivism, and other outcomes. Much of the jail and prison research undertaken to date has had several methodological weaknesses, including:

- Small numbers enrolled in the study.
- A focus on just one medication—typically methadone, because of the length of time it has been available—instead of studying outcomes associated with each of the three medications.

Despite these limitations, MOUD is the standard of care and should be provided regardless of treatment setting.

Illicit opioid use following release

Nationwide studies conducted among community residents show how medication and counseling for OUD can result in a reduction in illicit opioid use, which is also associated with health outcomes such as reduced HIV and hepatitis C transmission due to injection drug use.[8]

These benefits may also extend to those started on medication and counseling in criminal justice settings. A study of persons initiated on methadone in prison showed reduced illicit use of opioids by injection post-release as compared to persons who were instead forced to undergo detoxification in prison.[9] Further, a randomized study of incarcerated men in Baltimore found that those who received counseling and methadone in prison were less likely to have positive urine screens for opioids at 12 months post-release than people receiving either prison-based counseling only or counseling and a referral to methadone treatment upon release.[10]

Although these and other studies show the benefits that methadone, in particular, has in reducing illicit opioid use upon release, one study showed no differences in illicit opioid use post-release when comparing persons initiated on buprenorphine while incarcerated and those initiated upon release.[11] Additionally, there have been fewer studies examining the effect of naltrexone on illicit opioid use after release. Consequently, research that examines the effects of all three FDA-approved medications on illicit opioid use after release would be helpful; however, neither medication nor counseling should be withheld in the absence of such additional studies.

Treatment engagement upon release

A systematic review of several studies examined whether starting or continuing people on medication and counseling for OUD in jails and prisons increases the likelihood of their entering treatment or the length of time the person remains in community treatment once released. Many of the studies included discharge planning and referrals to community treatment, which are important components of any effort to improve post-release outcomes. The preponderance of evidence suggests that people who are incarcerated and started on medication and counseling in jail or prison are more likely to engage in treatment post-release than people who do not receive medication while incarcerated.[12] Further, with additional training, probation and parole officers may encourage treatment engagement post-release and reemphasize the importance of continuing community-based care.

Effect of medication and counseling programs on criminal justice outcomes

Another set of studies has explored whether the initiation or continuation of medication and counseling in jails and prisons influences rearrests, reincarcerations, and criminal activity; at present, however, available data do not allow firm conclusions. Although some studies have shown improved criminal justice outcomes in the short term (e.g. one to six months), others have shown no effect.[13]

A study of people in a large metropolitan southwestern U.S. jail who were continued on methadone started in the community were less likely to be rebooked and had longer periods of time in the community prior to rebooking compared to persons with OUD who did not receive methadone while incarcerated.[14] In contrast, a study of persons initiated on buprenorphine while incarcerated found no post-release differences in the number of people arrested, the mean number of arrests, the time to first arrest, or the severity of new charges when compared to people initiated on buprenorphine after their release.[15]

Varied methodologies, different group characteristics, and the small number of study participants all contributed to the overall inconclusive findings. Despite noting the value of additional studies assessing criminal justice outcomes, the American Society of Addiction Medicine reports that medication and counseling should be the standard of care for individuals with OUD in criminal justice settings.[16]

Next steps for policymakers

Policymakers should provide resources and introduce policy changes to help jails and prisons offer medication and counseling for OUD and help people transition to community-based care as they leave incarceration. As

a first step, policymakers should request data from state agencies to understand the nature of the substance misuse and treatment needs of individuals who are incarcerated. This information will inform what regulatory and programmatic interventions are necessary and help estimate the needed funding to support jail- and prison-based treatment and re-entry services. It may also be necessary to fund integrated data systems that facilitate health information exchange and care continuity across settings.

Further, after jails and prisons receive funding, policymakers should expect prompt program implementation but be mindful that these facilities need time to develop the necessary medication and counseling program protocols, calculate demand for services, launch the program, and coordinate with other agencies such as Medicaid and the state's substance use disorder and mental health treatment agency. Policymakers should request regular updates on persons served and the program's successes and challenges.

Case Study: Pennsylvania Department of Corrections

A major American prison system expands from a naltrexone-only program to offer buprenorphine systemwide

Background

Pennsylvania was the fifth most populous U.S. state in 2018, with a population of 12.8 million.[17] In 2017 it had the third-highest rate of drug overdose deaths at 44.3 per 100,000 individuals, or about 5,400 deaths.[18]

The Pennsylvania Department of Corrections (DOC) housed a population of 46,163 individuals as of Sept. 30, 2019, and had a fiscal year 2018-2019 health care budget of $270 million.[19] Pennsylvania provides health care services in its correctional facilities largely through a contract with a private health care vendor, although some nurses are state employees.[20]

History of the OUD treatment program

The DOC has long maintained or initiated pregnant women on methadone by transporting the women to an opioid treatment program (OTP) in the community.

In 2014, the DOC began a pilot program at one facility that offered oral and injectable naltrexone to nonpregnant incarcerated women scheduled to leave prison within 30 days. For subsequent doses, program staff set follow-up appointments with providers in the communities where the individuals were scheduled to return post-prison. Pennsylvania, a state that suspends rather than terminates Medicaid enrollment upon entrance into a correctional facility, also ensured that participants were enrolled or reactivated in Medicaid before they left prison.

Also as part of this pilot program, a parole officer helped facilitate care continuity upon release for individuals with a substance use disorder, HIV, or a serious mental illness. This initial pilot program expanded to additional prisons after 2014. The DOC hired a full-time statewide coordinator in March 2016 who plans and leads the implementation and monitors the operation of the DOC's OUD treatment program. Its program includes the offer of counseling to participants receiving medication in most cases.

Benefits of Medicaid suspension

The Centers for Medicare and Medicaid Services has long encouraged states not to terminate coverage for enrolled individuals during their time in correctional facilities, but rather to suspend it until release or until enrollees are sick enough to require off-site inpatient care—the only type of care Medicaid covers for incarcerated populations. Suspension allows for all Medicaid services to resume seamlessly upon re-entry to the community, a time of particularly high mortality.[21]

An early evaluation

Drexel University researchers led a randomized, controlled, nonblinded study of participants in the naltrexone program between September 2015 and April 2017. Enrollment consisted of individuals soon to be released from four prisons who volunteered and consented to participate. The interested and eligible (i.e., clinically able, per a small test dose, to tolerate naltrexone without experiencing undue side effects) individuals were randomly assigned to receive either a naltrexone injection or nothing, with both groups receiving standard group behavioral health treatment in the community. Forty-seven individuals were assigned to each group and followed for at least six months post-release. Researchers found that participants who received injections had a statistically significant reduction in relapse during parole as measured by drug testing, but no significant reduction in recidivism as measured by either a rearrest or a return to DOC custody. The researchers did not explore emergency department utilization, mortality, or other metrics.[22] Although this was a very small study that did not assess all outcomes of interest, it was encouraging enough that the DOC decided to expand the program.

Expanding Pennsylvania's naltrexone program

By April 2018, the DOC offered a single naltrexone injection pre-release to anyone in Pennsylvania's 25 prisons with alcohol or opioid use disorder. If an individual expressed interest in naltrexone, one month prior to his or her release the DOC would do preparatory testing, including the administration of a few days of oral naltrexone, called a naltrexone challenge. Administering this low dose tests a patient's physical dependence on opioids and is used to confirm the absence of physiologic dependence prior to administration of a naltrexone injection, which should be given only after seven to 10 days of abstinence from an opioid.[23]

Social workers scheduled monthly follow-up appointments for individuals before their release, and parole officers assisted with coordinating and keeping appointments. In addition to parole officers' involvement, specially designated social workers in several regions of the state were assigned to help released individuals adhere to their treatment plan and to help problem-solve other factors that might jeopardize their treatment. Because about half of all Pennsylvania counties lack sufficient providers willing to administer naltrexone (a medication that requires no additional licensure other than being authorized to prescribe medication in general), the state contracted with Positive Recovery Services (PRS) to operate mobile vans to administer follow-up injections. PRS is a community-based organization providing medical management of naltrexone in 24 Pennsylvania counties through both office-based and mobile offices.[24]

In January 2019, the DOC modified its pilot program to begin offering up to three injections prior to a person's release. This expansion was designed to help individuals adjust to any medication side effects before leaving prison and to increase the rate of individuals continuing injections once back in the community. All individuals not already taking any other form of medication for OUD or who have been on oral naltrexone maintenance (currently offered at six state correctional institutions) will continue to be offered up to three injections prior to release, while the DOC expands its other medication offerings (see program participation section). The effect

of the three-injection pilot will be assessed at least partially through a review of 2019 Medicaid claims (the presumed post-prison payer for the injections) to determine whether those who received multiple injections before release continued their community treatment of naltrexone longer than those who had only one pre-release injection. A Substance Abuse and Mental Health Services Administration (SAMHSA) grant is covering the cost of all three injections.

Program participation

In 2016, 78 incarcerated individuals took a single naltrexone injection before leaving prison. In 2018, that figure was 742. And in the first four months of 2019 alone, 315 injections were administered under the new prerelease multiple injection protocol.

More recently, the department began a smaller naltrexone program for newly incarcerated individuals with short sentences who were admitted to the DOC's opioid therapeutic community programs—residential treatment units contained within a state prison and designed to support recovery from SUD.

As part of its ongoing effort to comprehensively address Pennsylvania's opioid crisis, which Governor Tom Wolf had termed a "disaster emergency," in spring 2019 the DOC took major steps toward expanding its OUD medication program.[25] One prison housing people under parole supervision undergoing a 14-day detoxification piloted the offering of Suboxone induction followed by a long-acting Sublocade injection (a monthly buprenorphine injectable); the individuals were then released in an outpatient or inpatient treatment setting. Assuming that the pilot is successfully completed, Sublocade will be used on a case-by-case basis, depending on where an individual is housed within the correctional system and what resources are available there. The DOC's statewide OUD treatment coordinator says individuals will be prescribed the medicine that they and their clinicians think is most appropriate.

Table 1

FDA-Approved Medications to Treat Opioid Use Disorder[26]

Medication	Mechanism of action	Route of administration	Dosing frequency	Available through
Methadone	Full agonist	Tablet, liquid, wafer	Daily	Opioid treatment program
Buprenorphine	Partial agonist	Tablet or film placed inside cheek or under tongue. Monotherapy: Subutex Includes naloxone (Suboxone)	Daily	Any clinician with a waiver and appropriate license or under an OTP dispensing authority
		Extended release injectable formulation (Sublocade)	Monthly	
		Implant beneath the skin (Probuphine)	Every six months	
Naltrexone	Antagonist	Tablet	Daily	Any clinician with the authority to prescribe
		Extended release injectable formulation	Monthly	

In addition, as of June 1, 2019, the DOC will continue buprenorphine or naltrexone for anyone entering a Pennsylvania DOC facility who had been an active enrollee in either a community or county jail OUD medication program prior to incarceration. For example, the Philadelphia jail offers all three forms of medication to people incarcerated there; some portion of those people transition to a DOC facility to serve their sentence where they will now be able to continue their treatment.

The DOC has encouraged county jail wardens to maintain their incarcerated populations on OUD medication after dosage verification with the person's community provider—and told them that the DOC will then continue the maintenance when such an individual is admitted to a state prison reception site. Those entering the DOC as an active methadone program participant will be eligible to switch to either buprenorphine or naltrexone until methadone becomes more widely available within DOC facilities.[27]

The DOC is working to modify its methadone program for pregnant women who are incarcerated, including bringing the OTP provider to the prison rather than transporting the women to the OTP, reducing transportation costs and staff time. The DOC is also adding buprenorphine as an alternative to methadone as it perceives buprenorphine to have several advantages, including dosing that can be done in the prison facility with fewer licensing requirements, an easier and shorter taper course (the gradual lowering of a drug's dosage over a period of time) postpartum for the mother, and an easier course of withdrawal for the newborn. Currently, if a pregnant woman comes in to the facility on Subutex (buprenorphine without the added naloxone of Suboxone), the DOC transitions her to methadone and then tapers her postpartum. Its eventual goal is to adhere to the American College of Obstetricians and Gynecologists' recommendations against tapering mothers postpartum. [28]

Costs

The DOC is using State Opioid Response funding from SAMHSA for its program expansion. It has budgeted $3.2 million per year for the naltrexone and Sublocade expansion, including staffing costs for an addiction physician.

Case Study: Vermont Department of Corrections

A unified state system offers all three types of FDA-approved medications

Background

In 2018, Vermont had a population of 626,000 people, making it the second least populous state.[29] Under Vermont's unified public safety system, in-state jails and prisons both fall under state administration. The system's average in-state daily population in 2018 was 1,515 individuals across six facilities. Vermont also houses approximately 15 percent of its incarcerated persons (270 individuals in 2018) in a contracted, out-of-state facility due to lack of bed availability.[30]

The Vermont Department of Corrections' (DOC) budget in fiscal year 2019 was about $157 million.[31] Vermont provides facility correctional health care services at its in-state facilities through a contract with a private health care provider, currently Centurion of Vermont.

History of the OUD treatment program

Until late 2014, the DOC offered all individuals who entered the state correctional system with a verified prescription for buprenorphine or methadone maintenance of their medication regimen for 30 days. With this 30-day maintenance period, many Vermonters who entered the DOC for short periods of time could avoid

discontinuation/detoxification while in custody and then immediately resume treatment when released back to the community. Because Vermont's system is unified—with the state controlling both its jails and prisons—many pretrial individuals are in custody for short stays, which is characteristic in jails in states with nonunified systems.

In October 2014, at the direction of the Vermont Legislature, the DOC began a two-facility pilot project that lengthened the treatment maintenance period for both individuals awaiting trial and those who had been sentenced with verified prescriptions from 30 to 90 days.[32] Treatment included medication and the offer of counseling as required under Vermont law. Individuals taking either buprenorphine or methadone who remained incarcerated past 90 days were medically withdrawn from their medication. A total of 323 people, representing 413 corrections admissions, participated in the demonstration. Ninety-eight percent (406 admissions) either completed the 90-day maintenance period or were on continued medication when released from detention prior to expiration of the 90-day period. Seven individuals were disenrolled from the pilot via a medical withdrawal for violating the program conditions.[33]

Pilot program results

Over the pilot's year-long time frame (October 2014 through September 2015), 62 program participants (an average of 28 percent) who reentered the community while active on medication returned to incarceration. However, comparable return-to-incarceration data for individuals maintained only for a 30-day period—the standard maintenance period prior to the legislative directive—are not available. Specific health outcomes for pilot participants were not studied.

The work group reported at least two challenges during the pilot. The first was heightened security concerns for program participants, with reported incidents of injury and violence thought to be due to attempts by nonparticipants to divert prescribed medications. Incidents were traced to the highly visible dosing procedure, which violated patient privacy standards and made participants more easily identifiable and thus more easily targeted.

Second, the DOC provided methadone through a licensed community OTP because neither of the pilot facilities was licensed. The community provider proved expensive and cumbersome for the DOC, especially if anyone needing the medication was admitted to the facility during a weekend or holiday.[34] Federal treatment guidelines state that any variation from standard treatment protocols, such as an unexpected admission to the prison of someone maintained on methadone, requires exemption permission, which is not obtainable 24/7.[35]

The DOC reported a cost of $1,600 per month in medical services to administer the medications through the pilot program. Security associated with the pilot program—such as correctional officers assigned to closely oversee administering the medications to preclude diversion—cost approximately an additional $1,100 per month in each of the two pilot sites.[36]

Current OUD treatment program under Act 176

Building on the two-facility buprenorphine maintenance pilot, on May 25, 2018, the Vermont governor signed into law Act 176, which established medication and counseling as the prevailing medical standard for the treatment of OUD.[37] Effective July 1, 2018, the DOC was required to immediately initiate or continue patients who met medical necessity on any of the three FDA-approved medications if the patient elected to do so, for as long as medically necessary.

At the time of Act 176's implementation, a higher-than-expected number of incarcerated individuals submitted requests for screening and assessment for the OUD treatment program. Prior to Act 176, there was no process

to determine medical necessity for the treatment of those not already prescribed medication when entering custody, so a great demand existed among individuals wishing to be assessed for OUD medication initiation.

Centurion, the DOC's contracted medical provider, first identified individuals requiring treatment initiation at booking through a common approach to potential substance use disorder known as screening, brief intervention, and referral to treatment (SBIRT) and the clinical opiate withdrawal scale (COWS), a tool used to rate common signs and symptoms of opioid withdrawal and monitor these symptoms over time.[38] During early stages of implementation, the screening and assessment process was changed to include the use of the National Institute on Drug Abuse Quick Screen and the DSM-5 Opioid Use Disorder Checklist.

Centurion initially followed the National Commission on Correctional Health Care's treatment guidelines for OUD, which indicate that to minimize the risk of post-release overdose and death, initiation (if not initiated at the point of incarceration) should occur within 30 days prior to release.[39] However, in a unified system like Vermont, many incarcerated persons could be released without notice or have unknown length of stays; this presented difficulties in making induction decisions and arranging care coordination with community-based providers upon release. To address this issue, the DOC provided comprehensive information on release dates to Centurion when available, especially for those already serving sentences who hadn't had access to medication and counseling when they were admitted. Having this information allowed Centurion to initiate approximately 470 new patients on the treatment in a brief period in the fall of 2018, winnowing down the wait list for treatment among those already in the DOC system. Centurion also hired a physician with expertise in addiction medicine to develop an extensive screening and induction process.[40] Comprehensive DOC policies, procedures, and clinical guidelines have been developed and implemented, and DOC is seeking peer review of its program from national experts.

Once the initial backlog of screenings was completed, the number of patients initiated on OUD medication per month stabilized. On any given day, the DOC has approximately 550 patients on buprenorphine and 70 on methadone. Only a small number of patients take oral naltrexone. A daily snapshot on May 21, 2019, indicated that 60 percent of incarcerated women and 40 percent of men were receiving medication and were offered counseling for OUD.[41]

Payment

In late 2018, the DOC and Centurion negotiated a contract amendment that included an increase to the per inmate per month (PIPM) capitation. The new rate reflects the ongoing expanded program (except the medications themselves) as well as other concurrent programmatic changes to Vermont's correctional health care services. Although the costs of these various modifications were combined in one capitation negotiation, the DOC described the change in rate—from $1,181.02 to $1,248.86 PIPM—as almost entirely due to the cost of the program.[42] The new capitation is paid on all individuals who are incarcerated, whether or not they are prescribed medication or participating in counseling for OUD treatment.

The DOC has Centurion purchase and pay for the medications through its subcontracted pharmacy vendor because it can obtain better pricing than the DOC. However, the DOC directly reimburses Centurion rather than have medications folded into the PIPM.[43]

Evaluation

Act 176 requires an evaluation of the OUD treatment program on or before Jan. 15, 2022. The DOC is in the process of developing a proposal request for the evaluation, which will seek an individual, agency, or organization—either independently or in partnership with collaborators—to assist the DOC in conducting a comprehensive evaluation of the effectiveness and impact of the program. The evaluation will rely on data collected by the DOC's electronic health record, Offender Management System, and other statewide

databases. The evaluation will focus on four primary areas: 1) measures of program adherence, 2) measures of program efficacy, 3) quality assurance and program fidelity, and 4) integrated care coordination. The evaluation team will develop specific measures for these areas.

Case Study: Denver

A safety net institution administers health care, OUD medication in the local jails

Background

Denver, the capital of and most populous municipality in Colorado, had a 2017 population of almost 675,000 residents.[44] From 2008 to at least 2014, Denver County's age-adjusted drug overdose death rate rose to exceed 20 deaths per 100,000 residents, putting it above the national average.[45] Denver operates both a city and a county jail. During the week of Jan. 14, 2019, the jails had a combined average daily population of 1,977 individuals, with the downtown city jail housing two-thirds (1,303) of them, but the county jail had far shorter lengths of stay.[46] The health care services provider in both jails is Denver Health and Hospital Authority (Denver Health), a primary safety net institution that describes itself as caring for the needs of special populations such as the poor, uninsured, pregnant teens, persons addicted to alcohol and other substances, victims of violence, and the homeless.[47] Between November 2017 and October 2018, more than 3,900 incarcerated individuals reported opioid dependence upon entry to jail, with 69 percent of them citing moderate to severe opioid withdrawal symptoms.[48]

History of the OUD treatment program

For individuals entering either Denver jail while enrolled in a methadone program, the jail has offered "continuing" methadone for at least 10 years through its health contractor's methadone clinic at Denver Health.[49] Pregnant women with OUD who are not already maintained on methadone can access methadone induction via admission to a secure inpatient medical unit at Denver Health.[50]

Its treatment program first broadened to focus on naltrexone but found individuals hesitant to use the medication and to follow up once released. This led to the current program, which was formally launched on Jan. 1, 2018, and consists of:

- Buprenorphine three-day detoxification for all persons experiencing opioid withdrawal.
- Buprenorphine continuation if an individual has an existing prescription and provider in the community.
- Buprenorphine initiation if the individual qualifies for adult probation and has pending criminal charges only in Denver.[51] This last condition is necessary because neither neighboring counties nor the state department of corrections (which manages Colorado's prisons) offer agonist forms of OUD medication, and Denver's jail administrators are unwilling to initiate someone who may be transferred to face charges elsewhere, leaving them without access to the medicine.
- Methadone continuation for entering individuals already maintained on that medication.
- Methadone initiation for pregnant women with OUD entering the jail not already taking that medication.

Staff, funding, and evaluation

The program currently employs an overseeing psychiatrist, an OUD medication supervisor/physician assistant,

two registered nurses, two masters-level counselors—specifically therapeutic case workers—and two community care coordinators.

Medications are funded primarily through one of the federal State Targeted Response to the Opioid Crisis grants to the Denver jails programs division. Any excess medication costs are borne by a $425,000 grant from Colorado's substance abuse authority, the Office of Behavioral Health. This office also funds the OUD medication supervisor, one of the masters-level counselors, and the two community care coordinators. Buprenorphine films (dissolvable strips taken orally) cost $30,000-$40,000 per year. Program staff are paid from funds passed through the state's Marijuana Tax Cash Fund.[52] All program staff work for Denver Health, but the city of Denver pays salaries not otherwise covered by grants.

The distribution of medications in the jails was as follows:

Table 2

Medication Distribution Jan. 1, 2018, Through Dec. 31, 2018

Medication/protocol	Number of orders*	Number of unique individuals*
Opiate withdrawal protocol	1,513	1,117
Buprenorphine or Suboxone continued from community	423	256
Buprenorphine or Suboxone inducted	597	322
Vivitrol	30	28
Methadone	458	319

*Difference between numbers represents repeat offenders.

For those initiated on buprenorphine/Suboxone in jail, 33 percent followed up with treatment post-release, which is considerable given how difficult it is to connect individuals exiting jail with treatment. Those who did continue with care had subsequent follow-up rates similar to those initiated in emergency departments.[53] This may indicate that the first connection to care post-release is the most important step in engaging patients with ongoing treatment.

Next steps

Staff may try to get the jail licensed as an OTP, which would allow it to dispense both methadone and buprenorphine 24 hours a day to meet the needs of a continuous incoming jail population. This change would also grant flexibility to switch individuals from one medication to the other, depending on patient preference and clinical need. The move would require additional staff, including at least another physician assistant, two more nurses, and a social worker, in addition to a separate accreditation by the organization that accredits jail and prison health services.

Denver uses funding from the statewide Marijuana Tax Cash Fund to finance some of its substance use treatment and has committed to picking up the shortfall for the jail program if or when grant funding runs out.[54]

The city's jails use a health care provider with a large presence in the community, particularly among underserved populations, which helps facilitate care continuity, medical record exchange, and "warm handoffs" (where a transfer of care between providers is done with the patient present or participating). Specifically, the contractor's status as a large OUD treatment provider, including an authorized OTP, enables the jails to offer methadone without completing the extensive licensing process themselves. Similarly, Denver Health's pharmacy is an important partner to the jails' treatment program, performing certain functions under its state and federal licenses that the jail would otherwise have to contract out independently, such as the ability to stock naltrexone and buprenorphine.

The city and county of Denver have made a concerted effort to improve SUD treatment services in the community, which should lead to more individuals entering the jail already on some form of medication—notable because it's easier, faster, and less expensive to continue the treatment than to initiate. It will also make it easier to connect persons leaving the jails with care upon their return to the community. Denver's five-year strategic action plan, announced in mid-2018, funds a pilot program at $431,000 and includes a regional intake initiation center for rapid treatment admissions centered at Denver Health.[55] It provides people with the opportunity to initiate treatment any time day or night, seven days a week. Those who begin the program will receive a bio-psycho-social evaluation to inform an individualized treatment plan.[56]

Challenges

The Denver jail behavioral health staff pointed to chronic homelessness as its largest systemic challenge to retaining individuals on medication for OUD treatment.[57]

Staff also cited in-jail diversion of the medication.

Staff stated that having more buprenorphine-waivered providers and behavioral clinics would help increase access to treatment in the community at large; statewide data bears out this perception of shortage. Currently, fewer than 1 in 3 (29 percent) of the state's SUD treatment facilities offer any form of medication for OUD treatment, and only seven facilities offer all three.[58] In contrast, nationally, 41 percent of OTPs provide at least one form of medication, and 3 percent provide all forms.[59] Data show that, in 2017, Colorado had 1.03 buprenorphine-waivered prescribers per 10,000 residents, a number below that of neighboring New Mexico (2.27 per 10,000 residents) and Utah (1.51 per 10,000 residents) but higher than Arizona (0.97 per 10,000 residents), Nebraska (0.39 per 10,000 residents), or Oklahoma (0.68 per 10,000 residents).[60] Close to half of Colorado counties—31 out of 64—had no place where a person could go for OUD medication, according to a June 2017 report.[61] An additional 15 counties had just one such provider. Some of these counties had overdose death rates well above the state average.[62]

A better public transportation network, a more general reevaluation of daily dosing requirements or guidelines, expansion of initiation and continuance of medication at other jails and the state Department of Corrections (DOC), and a better coordination of treatment between the various jails and DOC would also help in treating Denver's jail population, according to the jail's behavioral health staff.

Case Study: Middlesex County, MA

A county participates in legislatively driven treatment expansion

Background

Located north and west of Boston, Middlesex County, Massachusetts, had a 2016 population of 1.59 million residents (23 percent of the state's population), making it the most populous county in both Massachusetts and New England. [63] Between 2010 and 2016, opioid-related overdoses increased by more than 300 percent among county residents. Additionally, in 2016, 19 percent of all fatal opioid-related (heroin, prescription opioids, and other unspecified opioids) overdoses in Massachusetts happened in the county.[64]

The Middlesex Sheriff's Office (MSO) supervises approximately 1,000 men at any time who are awaiting trial or sentenced for up to 2½ years in the Middlesex Jail & House of Correction (MJHOC). Women are held elsewhere by the Massachusetts Department of Correction.[65] Generally, 35-45 percent of those detained here have been sentenced to 30 months or less, while the rest are awaiting trial. A September 2019 data snapshot of the population indicated that nearly 40 percent required immediate drug or alcohol detoxification at intake, with nearly three quarters needing opioid detoxification.[66] The MSO had a fiscal year 2019 budget of almost $69 million, with medical costs (including medical providers) accounting for 9 percent of the budget.[67] In contrast to most other states, jail operations within the commonwealth are funded by the Massachusetts Legislature, but counties operate them.[68]

History of OUD treatment program

In response to a growing number of opioid overdose deaths in Middlesex County and the prevalence of individuals entering custody with an OUD, the MSO started the Medication Assisted Treatment and Directed Opioid Recovery (MATADOR) program in late 2015.

All individuals entering custody were given a comprehensive medical and behavioral health screening. Those who self-identified or screened as having an OUD were educated about approved medications, especially injectable naltrexone, the only medication MATADOR offered until September 2019. Of the eligible individuals who participated in the program, approximately two-thirds were sentenced rather than awaiting trial.[69] They were given information about the program, screened for possible medical side effects through the administration of a low dose of naltrexone (i.e., oral naltrexone challenge), and asked to authorize the shared medical information needed for care coordination and program evaluation post-release. All participants had their first naltrexone injection approximately 48 hours prior to release, were connected to a recovery coach/navigator while in custody, and received counseling post-release (in-custody mental health services are available at the MJHOC but not automatically offered to MATADOR participants).

Coaches followed their assigned participants for six months post-release as advocates and emotional support persons for the individuals and communications links between the various entities involved in the person's treatment and re-entry.

MSO pointed to at least four attributes of the MATADOR program that worked to its advantage:

- Enrollment has been strictly voluntary.
- Services began during incarceration and continued after program participants were released from custody regardless of their status within the justice system.

- All individuals were screened for and enrolled in Medicaid, which provides comprehensive coverage when the individual leaves custody.
- A large number of community resources were available to program participants upon release.

Connection to community care following release has improved since an earlier unsuccessful iteration of the program, when fewer than five community providers offered naltrexone injections. In 2018, the MATADOR program had over 50 such community providers, with each required to designate a single point of communication with MSO for referrals.

Staff, funding, evaluation

As of September 2019, MATADOR program staff includes a program director, program coordinator, and program navigator, all of whom work directly with MSO medical and re-entry staff for program efficiency, with the coordinator and navigator in the process of becoming licensed recovery coaches. A statistician and research analyst are also assigned to the program.

The majority of MADATOR's program funding, including for the naltrexone challenge, came from the jail's operating budget. The initial dose of injectable naltrexone, the only one administered while the participant is incarcerated, was donated by the medication manufacturer.

Two grants provided initial support for the program, with a third now taking their place.

- The Edward Byrne Memorial Justice Assistance Grant Program (Byrne JAG) provided an award of $139,000 per year for two years.
- The 21st Century Cures Act funded $97,000 a year for two years from the Massachusetts Department of Public Health.[70]
- A one-year State Opioid Response/State Targeted Response grant of $348,000 followed the above grants.

Five hundred thirty-six unique individuals (several people started the program more than once because they had more than one jail admission and release during the study period) enrolled in the program and received at least one naltrexone injection between its launch in 2015 and September 2019. Seventy-seven percent of all participants, regardless of program completion status, did not recidivate—defined as a reconviction, reincarceration, and/or a violation of probation/parole that leads to additional jail time. However, among the 125 individuals who completed the six-month program of monthly injections and worked with a recovery coach, a slightly higher 82 percent did not recidivate.[71]

Fifty-six percent of those enrolled in the program while in MSO custody did not complete it, with 60 percent dropping out after receipt of the first naltrexone injection.[72] The MSO attributed that number, which is not uncommon in post-release naltrexone programs, to a lack of sufficient contact between program participants and staff; it hopes to address this by using federal funds for additional recovery navigators. As of June 2018, 96 percent of MATADOR participants—regardless of their tenure in the program—had not succumbed to a fatal overdose post-release.[73]

Expanding availability of OUD medications

In 2018, Massachusetts passed Chapter 208, An Act for Prevention and Access to Appropriate Care and Treatment of Addiction, authorizing a four-year pilot administering all three FDA-approved medications to treat OUD in five jails, including Middlesex (two other jails, including Suffolk/Boston, subsequently joined). Sheriffs were required to submit their expected program costs and pilot program implementation plans by August 2019, including adoption of best practices for delivery of the medications and counseling, guidelines to

protect correctional staff and all individuals incarcerated in the jail, and clinical protocols. The three-medication treatment program started in September 2019.[74]

The participating pilot jails must:

- Maintain or provide for the capacity to possess, dispense, and administer all FDA-approved medications for OUD.
- Continue the form of medication a person who enters custody was already prescribed throughout his or her incarceration.
- Provide any of the three forms of medication no less than 30 days prior to release to any sentenced individual not having entered with an existing prescription.
- Offer behavioral health counseling as part of the facility's opioid use disorder treatment program.

The seven jails met regularly to discuss the program implementation challenges, the facility infrastructure and regulatory changes needed to provide methadone (the most heavily regulated of the three medications), how to ensure security of agonist medications, and the measures necessary for cross-site evaluation.[75]

The expanded treatment program retains core components of the original naltrexone-only MATADOR program such as in-facility SUD educational programming, post-release behavioral therapy, and the assignment of a peer recovery coach for six months in the community. In order to expand its medication options, MSO contracted with one buprenorphine-waivered physician for approximately eight hours per week as well as a second on-call physician. For individuals entering MJHOC with an existing methadone prescription or opting to be initiated on methadone before release, MSO arranges needed doses from a nearby OTP. Two correctional officers and a registered nurse pick up the medication daily, while another correctional officer and registered nurse return the empty methadone bottle(s) each day. This labor-intensive delivery system will last until the jail completes construction of a methadone dispensary on its premises.

Sheriffs participating in the pilot expect that peer support upon release (covered under MassHealth, the Massachusetts Medicaid program, through a Section 1115 demonstration waiver) and care coordination will play a large part in the pilot. According to the MSO, challenges foreseen by at least some of the sheriffs' offices include significant differences among the jails themselves, including urban/suburban/rural settings and differing levels of experience with OUD medications to date. Additionally, varying models of providing health care services within the jails (contracted vendors versus county-employed clinicians) and community health workforce shortages will affect patient referral in some counties more than others.[76]

In order to conduct a comprehensive evaluation of the pilot's effectiveness, the National Institute on Drug Abuse awarded a five-year, $10 million grant to Baystate Medical Center and the University of Massachusetts Amherst to explore the findings.

Enhancing re-entry services for those with behavioral health disorders

In July 2019, the Massachusetts Executive Office of Health and Human Services announced the launch of a new demonstration program through MassHealth that offers intensive re-entry services for some individuals exiting Middlesex or Worcester county jails, exiting state prison into those counties, or currently on parole or probation in those two counties.[77] Individuals eligible for intense re-entry services have a serious mental illness, a SUD, or co-occurring diseases—therefore some participants are likely to also be part of MSO's MATADOR program. The participating justice entities will be responsible for identifying and referring individuals to two nonprofit behavioral health providers selected through a competitive request for proposals. Staff from those organizations will conduct in-person visits with referred individuals at correctional facilities or meet them at probation and

parole offices. The organizations are charged with providing intensive support to this high-needs population, including connecting participants to appointments with medical and behavioral health providers, accessing social services and benefits, and obtaining stable housing post-release. Enrollment into the program, which is currently funded with state-only Medicaid dollars, began in the two jails in August 2019, with the goal of expanding it statewide in 2021.

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