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# Methadone and buprenorphine treatment in United States jails and prisons: lessons from early adopters

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## ABSTRACT

**Aims** To identify implementation barriers and facilitators to the adoption and implementation of programs that provide opioid agonist treatments (OAT) with methadone and buprenorphine to treat opioid use disorder in jails and prisons in the United States. **Design** Qualitative analysis: semi-structured interviews were conducted and thematic analyses of transcripts and notes were performed using a hybrid inductive/deductive coding approach. **Setting** Jails and prisons in the United States. **Participants** From August 2019 to January 2020, we conducted 20 key informant interviews with 35 individuals representing 19 carceral systems that both initiate and maintain OAT. **Measurements** Interviews covered four domains: (1) program adoption; (2) policy influence on implementation; (3) program structure; and (4) program outcomes. **Findings** Stigma among staff, particularly medical staff, challenged program adoption, but reduced over time as staff were exposed to the program. Regulations on OAT dispensation, such as licensing requirements and prescribing limits, were key challenges to program implementation and shaped program structure. Dispensing medication required significant staff, time and space. Facilities were further challenged to overcome stigma and concerns about diversion, as OAT medication is often treated as contraband in carceral settings. Some systems deviated from evidence-based treatment by limiting OAT dosage to low levels, requiring counseling for participation and requiring detoxification before medication initiation. Despite these challenges, early adopters felt strongly that other jails and prisons in the United States should provide OAT and that legislation and litigation may soon force OAT expansion in these carceral settings. **Conclusions** Despite identifying regulatory and logistical challenges, early adopters of opioid agonist treatment (OAT) programs in US jails and prisons demonstrate that OAT programs can successfully be implemented in carceral settings with tailoring to the specific context.

**Keywords** Opioid agonist treatment, jail, prison, carceral settings, United States, opioids.

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## INTRODUCTION

People with opioid use disorder experience high rates of carceral involvement [1]. Upon release from jails and prisons, incarcerated individuals are substantially more likely to die of an overdose than the general population [2–4].

Opioid agonist treatments (OAT) with buprenorphine and methadone are key tools in treating opioid use disorder and preventing overdose. Despite robust evidence on effectiveness, use of these medications remain highly stigmatized [5–8]. In addition, the use of OAT to treat opioid use disorder is strictly regulated in the United States. Methadone, a full agonist treatment, can only be dispensed by opioid treatment programs registered with the Drug Enforcement Agency (DEA) and certified by the Substance Abuse and Mental Health Services Administration (SAMHSA) [5]. Buprenorphine, a partial opioid agonist medication with lower overdose risk, can only be prescribed by clinicians who complete a training, become waivered by the DEA and are subject to prescribing limits [5]. Extended-release injectable naltrexone, an opioid

antagonist, is also approved for the treatment of opioid use disorder; however, the evidence base for improved treatment outcomes is more robust for OAT [5].

Due in part to these barriers, very few jails and prisons in the United States provide OAT. Most that do limit treatment to pregnant individuals or, in fewer cases, maintain treatment for individuals receiving OAT at arrest or, in even fewer cases, initiate OAT for previously untreated individuals [5,9,10]. This is contrary to many other countries that provide OAT in carceral settings [11]. Evidence from the United States, United Kingdom and Australia shows that OAT programs that both initiate and maintain treatment in carceral settings can dramatically reduce mortality post-release [12–15]. Given that opioid use disorder is a medical condition, several lawsuits are seeking to establish denial of OAT in US carceral settings as a violation of the American Disabilities Act or incarcerated individuals' constitutional right to basic health care [16].

Diffusion of innovations theory provides insights into the characteristics of leaders that have already initiated carceral OAT programs, called innovators and early adopters, and what information future adopters may seek [17,18]. Lessons learned from innovators and early adopters can contribute to the continued diffusion of an innovation, as the majority of adopters seek implementation success stories, evidence of effectiveness and pressure from peers to motivate adoption. Single-site studies of OAT implementation among innovators and programs that only provide medication maintenance identify space and staffing constraints, stigma and difficulty in arranging post-incarceration care as key challenges to implementation [19–21].

A critical research gap is understanding the implementation of programs that both initiate and maintain OAT across multiple US carceral settings [22]. Lessons learned from these early adopters can provide key information for jurisdictions considering carceral OAT programs and guide policies around the provision of OAT in these settings. Through key informant interviews with leadership from current carceral OAT programs, this study aimed to characterize facilitators and barriers to program adoption and implementation among early adopters.

## METHODS

The sample included 35 participants working in US jail and prison systems that initiate and maintain OAT. Participants included leaders in the carceral system with responsibility for establishing or overseeing the OAT program, such as medical directors, mental health service directors and wardens. Participants were excluded if they did not have a leadership role in overseeing the OAT program. Systems were identified as potentially initiating OAT via SAMHSA's Buprenorphine Practitioner Locater and Opioid Treatment Program Directory, news media reports and expert sources. We excluded systems that were solely providing OAT for pregnant individuals, individuals already using OAT at arrest or for withdrawal management. We also excluded systems that only offered extended-release naltrexone initiation, due to the recognized importance of offering OAT as part of standard of care. We first contacted systems that were identified through multiple sources as meeting inclusion criteria and then contacted remaining systems in order to achieve balance in system type and regional variation. We contacted systems until data saturation was reached [23].

We conducted semi-structured interviews from August 2019 to January 2020 covering four domains: (1) program adoption; (2) policy influence on implementation; (3) program structure; and (4) program outcomes (interview guide in Supporting information, Appendix A). Interviews lasting 45–60 minutes were conducted over the telephone or in person at jail or prison administrative offices. With the exception of two interviews that did not allow for recording due to security protocols, all interviews were audio-recorded and transcribed. This study was approved by the Johns Hopkins Blomberg School of Public Health Institutional Review Board.

Transcripts and notes were analyzed using a hybrid inductive/deductive approach. The development of an initial codebook was informed by the Consolidated Framework for Implementation Research (CFIR), a framework used to evaluate policy and program implementation [24]. Two study team members piloted the codebook by double-coding six transcripts, and refined the codebook through an iterative process of developing and organizing themes. The remaining 14 interviews were coded by a single study team member using the final codebook.

## RESULTS

We conducted 20 interviews representing 19 jail or prison systems and one carceral health-care company. Of the 19 systems represented, 14 were county-run jail systems, two were state-run prison systems and three were unified systems where jails and prisons were administered in the same state-run system (Table 1).

All 19 systems initiated at least one type of OAT. Sixteen of the 19 systems maintained and initiated buprenorphine. One system offered only buprenorphine maintenance. Ten of 19 systems offered methadone initiation and maintenance and six systems offered only methadone maintenance. In addition to OAT, all systems offered extended-release injectable naltrexone.

Several interviews included multiple participants from both security and medical leadership, for a total of 35 participants. Six of the 19 systems included interviews

 

**Table 1** Characteristics of the jail and prison systems included in study participant interviews.

| *Characteristics* | *No. of systems (%)* |
|---|---|
| System type | |
| Jail systems | 14 (74) |
| Prison systems | 2 (11) |
| Unified jail and prison systems | 3 (16) |
| Buprenorphine services offered | |
| Buprenorphine initiation and maintenance | 16 (84) |
| Buprenorphine maintenance only | 1 (5) |
| No buprenorphine | 2 (11) |
| Methadone services offered | |
| Methadone initiation and maintenance | 10 (53) |
| Methadone maintenance only | 6 (32) |
| No methadone | 3 (16) |
| Non-opioid agonist medication services | |
| Extended-release injectable naltrexone | 19 (100) |
| Participants' roles | |
| Security/custody | 6 (32) |
| Medical | 16 (84) |
| Other | 5 (26) |

Unified jail and prison systems refers to integrated state-level systems that operate both jail and prisons in the state. Initiation refers to starting opioid agonist treatment (OAT) for an individual not receiving OAT at the time of arrest. Maintenance refers to continuing OAT for individuals receiving OAT at the time of arrest. Other participant roles included: financial administrators, data managers and other staff not directly associated with security or medical operations.

with senior security staff (e.g. wardens, sheriffs), 16 included interviews with senior medical staff (i.e. medical director, mental health service director, nursing director) and five included interviews with participants with other affiliations, such as data managers.

## OAT program adoption

Several common themes related to program adoption, including motivation, leadership roles, stigma among staff and building up programs step-by-step, were expressed (Table 2).

### *Leadership roles*

Systems differed on whether their program adoption was led by security or medical staff. Carceral health providers who were affiliated with a community-based public health system (i.e. local health department or public hospital system) perceived themselves as having more control over implementation of OAT programs compared to providers from for-profit contractors. One medical provider reported: 'I know that from talking to colleagues throughout the country that when it's the sheriff's department that is running the show, usually via a contracted healthcare provider, I've seen colleagues really struggle with how to advocate and try to effect change'.

### *Stigma among medical and security staff*

The vast majority of participants reported high initial stigma among staff, both medical and security, against OAT. Several participants reported greater challenges building buy-in from medical staff compared to security staff. This was in part due to the hierarchical security staffing structure. Once high-level leadership bought into the program, lower-level officers often acquiesced. Almost all systems reported that staff buy-in improved after program implementation, once staff saw first-hand the effects of OAT. As one participant said: 'Particularly, the nurses and the officers, once they saw the benefits of getting rid of these really difficult withdrawal patients and kind of eliminating that problem that they don't have to deal with anymore, they were quick to convert their attitude'.

## Building up programs

Peer learning was critical to overcome the lack of guidance on how to set up logistics and clinical protocols, and participants consistently expressed an eagerness to share their experiences with other systems. As one participant said: 'Come see us, come talk to us, come reach out and learn from folks that have already been through the process'.

## Policy influence on implementation

Interpreting and complying with legal restrictions on OAT dispensing caused challenges to implementation (Table 3).

### *Buprenorphine waiver*

Participants consistently expressed frustration at requirements to be waivered to prescribe buprenorphine; for example, one participant said: 'Get rid of the X-waiver… It's a ridiculous barrier that just inhibits our ability to address this problem'. The size of OAT programs was limited to comply with prescribing limits, particularly in early implementation phases. Several jurisdictions mandated that all providers become waivered, and some offered incentives to fulfill waiver requirements, such as group trainings and reimbursement for waiver costs.

### *Methadone regulations*

Most participants providing methadone decided against becoming a licensed opioid treatment program, because the regulations were too burdensome and confusing. One provider said: '[T]he process is extremely complicated. I have a few colleagues in county jails that have tried to do it and they've been at it for two years, and they cannot get the license'. Because of this burden, most participants partnered with a community-based opioid treatment program to provide methadone treatment

**Table 2** Illustrative study participant quotes related to adoption of opioid agonist treatment programs in jails and prisons.

| *Theme* | *Illustrative study participant quotations* |
|---|---|
| Motivation for adoption | |
| Motivated to prevent fatal overdose and promote recovery | 'In an effort to reduce harm and reduce the number of individuals that are leaving our correctional facility with a substance use disorder, [and] to reduce the overdose deaths, we as a team decided that we wanted to participate in the [medication] program' |
| Leadership roles | |
| Adoption led by security or medical staff | '[We were] not asking for permission as much as saying, "This is a care need for our patients and we are moving in this direction, but you have a role in this"' |
| Providers affiliated with community health systems perceived as having more autonomy | 'I know that from talking to colleagues throughout the country that when it's the sheriff's department that is running the show, usually via a contracted healthcare provider, I've seen colleagues really struggle with how to advocate and try to effect change' |
| Security leadership needed for successful adoption | 'We had a sheriff who… took a really hardline position of no, we are not a substance abuse treatment center, we are a jail. And that's the way it's going to be. And then he fortunately quit, and we ended up with a new sheriff who has I think a much more nuanced worldview and she was very receptive to the idea' |
| Opioid taskforces and elected officials spur adoption | 'Having the task force, [and] the mayor say to [do] it was helpful, it would've taken us a lot longer to get this started if we did not have that directive' |
| Staff stigma | |
| High levels of stigma among staff | 'The stigma exists in our offender population, it exists in our provider population, and it exists in the uniformed custody staff and administrators' |
| Staff buy-in improve over time | 'Particularly, the nurses and the officers, once they saw the benefits of getting rid of these really difficult withdrawal patients and kind of eliminating that problem that they do not have to deal with anymore, they were quick to convert their attitude' |
| Building up programs | |
| Programs built step-by-step | 'This was not a turnkey system. This was built one step at a time. First starting with naloxone and naltrexone, and then adding buprenorphine, and then adding access to methadone' |
| Peer learning is critical | 'Come see us, come talk to us, come reach out and learn from folks that have already been through the process' |

services. In these cases, the jail or prison would transport individuals receiving methadone to the community provider every day, or had an agreement for the community provider to dispense methadone directly in the carceral facility or provide 1–2 weeks' worth of doses for the carceral medical staff to dispense under a guest dosing agreement. For those participants who pursued becoming a licensed opioid treatment program, they reported high costs to comply with licensing standards and perceived the requirements, particularly around security, as unnecessary inside carceral facilities. As one participant said: 'There's a lot of regulations that come into play which, for inside a correctional facility, quite frankly seem kind of silly to me. But I think their challenge is that they are stuck with community standards that they have to enforce and they don't have any standards or regulations specific to correctional facilities'.

**OAT program structure**

Several common themes emerged regarding aspects of OAT program structure, including eligibility determination, medication dispensing, program requirements and re-entry services (Fig. 1).

*Determining eligibility for OAT participation*

Challenges to screening for program eligibility included detained individuals' fear of repercussions for reporting opioid use during the intake process and provider availability, as many systems did not have around-the-clock coverage of OAT providers. In addition, some respondents found the issue of transfers between carceral facilities to be challenging, particularly transfers between jails with OAT to prisons without OAT. To avoid having to stop treatment due to such transfers, most programs screened out individuals who were perceived as likely to

 

**Table 3** Illustrative study participant quotes related to policy influence on implementation of opioid agonist treatment programs in jails and prisons.

| *Theme* | *Illustrative study participant quotations* |
|---|---|
| Buprenorphine waiver | |
| Limits ability to provide services | 'Get rid of the X waiver, I am 100% in support of that. I think it is just—it's a ridiculous barrier that just inhibits our ability to address this problem, but nonetheless, I have my X waiver and so do all of our doctors' |
| Requirements and incentives to waiver providers | 'I said, "If your clinicians are to remain employed while working in the Department of Corrections, every clinician must go get their X waiver." And I went with them. I said, "I will go with you." So… we had our own session and the DOC paid for it all' |
| Confusion about how patients count towards waiver limits | 'We had a sit down with the DEA and we got assurance of two things that were important. One was that as long as you kept under your waiver limit, you would not be pursued [for enforcement action]. And the other was that when a person was released from custody, they were no longer listed as part of the person's panel, which was a question that has come up around the country' |
| Methadone regulations | |
| Challenges becoming licensed as an opioid treatment program (OTP) | 'The process is extremely complicated. I have a few colleagues in county jails that have tried to do it and they have been at it for two years, and they cannot get the license. So we have completely forgone that as an option' |
| Most partner with community-based OTP | 'Every week, if the person is still here, we pick up [the medication] at the clinic and bring it back to the facility. Logistically, it makes it so much easier' |
| Mismatch of community OTP standards | 'There's a lot of regulations that come into play which, for inside a correctional facility, quite frankly seem kind of silly to me. But I think their challenge is that they are stuck with community standards that they have to enforce and they do not have any standards or regulations specific to correctional facilities' |

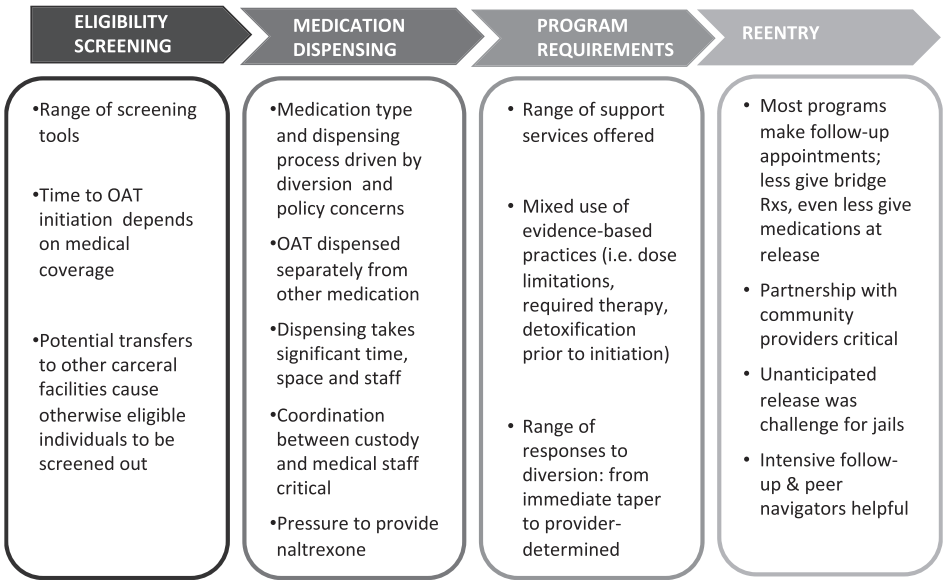


**Figure 1** Themes related to jail and prison opioid agonist treatment program structure [Colour figure can be viewed at wileyonlinelibrary.com]

be transferred, most often using having a felony charge as an exclusion criterion. As one participant reported: 'We don't want to set someone up for withdrawal upon jail to prison. So sometimes there are patients that are very clinically indicated and appropriate, and everyone would love to start the medication but has decided not to basically because they are likely headed to prison'. However, one system removed the use of felony charges as exclusion

 

criteria after it found that the vast majority of individuals with felony charges were not actually transferred to prison, but remained in the jail system until a plea bargain was negotiated.

*Medication dispensing*

Initiation of OAT occurred shortly after intake, with the exception of one system that initiated buprenorphine 60 days prior to release.

Protocols for OAT dispensing were consistently driven by regulatory requirements for methadone and attempts to reduce diversion (i.e. OAT patients or staff selling, giving away or trading medication). Executing these dispensing protocols required significant staffing, space and time. As one participant described: 'We're already dealing with sort of a clinical operations that were close to capacity. And so then now that you add on this process that's fairly time-intensive for nurses and requires custody officer participation and cooperation to make sure it happens safely, that's been a real problem'.

Individuals receiving buprenorphine often received medication in small groups, waited until the medication fully dissolved and had their mouths checked by medical and custody staff. This process took a dedicated OAT team from several hours to almost a full day to complete, depending upon the size of the program. For programs providing methadone through an agreement with a community provider, staff were required to transport individuals to the provider or to travel to the provider to pick up methadone doses for the week. These efforts required significant coordination between medical and security staff, including determining how and when to move individuals around the facility to receive medication, to keep individuals with distinct security classifications separate and to confirm eligibility without upsetting clinical workflow. As one medical provider said: 'As long as it's not medically compromising anyone, making security happy is priceless… it's all about teamwork. I couldn't give out medications without security'.

Despite their preferences for providing OAT, participants reported facing pressure to provide extended-release injectable naltrexone to ease diversion concerns, particularly by security leadership and judges. Most participants reported the vast majority of patients preferred OAT.

**Program requirements**

Participants reported mixed use of evidence-based practices. Almost all programs required OAT patients to also engage in counseling. As one participant said: 'That's critical to their success. And so the medication makes them able to participate successfully in therapy.' Among the two systems that did not require counseling, one participant explained: 'We made it optional because the primary objective was to reduce deaths in the first couple weeks after release and we didn't want to do anything that would keep people from participating in the program'. Most systems placed limits on the maximum dosage of buprenorphine allowed, citing concerns for diversion when providing higher dosages. Some facilities placed all buprenorphine patients on the same dosage regardless of clinical indications. Several programs, particularly in prison settings, placed limits on how long an individual could receive OAT. At least one program had patients undergo withdrawal prior to OAT initiation.

The programs' responses to diversion varied from strict responses of OAT termination after the first diversion incident to more moderate responses allowing medical staff to make case-by-case determinations of consequences placing priority on keeping patients on treatment. As one participant said: 'We wouldn't take somebody off of their anti-psychotic medications if they diverted a couple of times. You find out some way to get around that, mitigate that, and offer them support because you don't want them destabilized by not being on their meds'.

*Re-entry*

To address continuity of OAT treatment upon release, most systems made follow-up appointments with community providers when possible, but fewer than half provided bridge prescriptions to participants so they could pick up medications after release, and only three provided patients with a supply of medication at release.

The availability of community-based providers and the strength of partnerships with those providers were key to effectively connecting individuals to post-release care and seen as vital for preventing overdose after release. As one participant said: 'It doesn't matter how good the program is on the inside if people don't have same day, next day access upon release into the community… doing that continuity of care piece in the community is obviously the heavy lift'. Systems where the OAT medical provider was also a community-based provider reported easier re-entry coordination, as participants could be sent directly to the community-based clinics operated by the same provider.

The timing of release caused significant challenges to re-entry planning, particularly for jails, where a large number of unanticipated releases occur directly from court. This limited the ability to plan ahead and connect with community-based providers prior to release. In response to this, one OAT provider who worked both in the carceral system and community set up a walk-in bridge prescription clinic in the community.

Participants perceived intensive follow-up by OAT staff in the 24–48 hours after release and the use of peer navigators as greatly improving the likelihood of patients showing up to their first follow-up community

 

appointment. As one participant described: 'Our biggest helper for decreasing both intentional and accidental overdose on opioids has been the peer navigators. By far, that is the strongest factor'.

Few programs provided naloxone, an overdose reversal drug, to participants at release. One program funded naloxone provision by providing it immediately after an individual's release and billed the service to Medicaid.

### Program outcomes

Participants reported that programs were well received by patients. While several systems reported collecting data on program implementation, few had completed formal program evaluations. One system reported reductions in mortality, and another reported reduction in naloxone use in the facility. Several participants reported fewer disruptions and self-harm attempts.

Most programs reported relatively small program sizes, less than 20% of the daily population, suggesting that these programs were not yet operating at scale. The limited reach was in part due to limited staff, funding, space, re-entry services and strict eligibility criteria.

Despite the challenges in setting up these programs, participants stressed that OAT can and should be offered in carceral facilities. As one participant said: 'We are in the midst of the crisis still, and jurisdictions should be interested in starting services as soon as possible, not waiting until they think they have the absolute perfect program that is ready to be rolled out'. There was also a perception that the views on OAT in other carceral systems were beginning to align to their own. As one participant said: 'People who used to call me a drug pusher, now are asking me, how do I get the program started?'. Several participants expressed that, as litigation risk increases, other jails and prisons may be required to adopt OAT sooner than they might otherwise. As one participant said: 'Every state knows the lawsuits are coming. It's going to come eventually. So do we want to get ahead of it and plan it ourselves or be told how to do it, which might be more expensive and less effective?'.

## DISCUSSION

The experiences of these early adopters can provide implementation success stories and guidance on program structure to other carceral programs considering adopting OAT. Consistent with prior research, we find that OAT provision is challenged by logistic constraints, stigma and difficulty with reentry services [19–21]. Participants in our study offer ways to overcome such barriers, including partnering with community OAT providers, eliminating unnecessary eligibility criteria and utilizing peer navigators.

The findings of this study also offer insight into what policy barriers impeded program implementation among early adopters and could be addressed to spur further diffusion of OAT in carceral settings. Regulations around dispensing were among the most significant challenges to the implementation of carceral OAT programs, particularly regulations regarding methadone dispensation. Regulation of OAT dispensation specific to carceral settings could alleviate these challenges and increase the likelihood of adoption of carceral OAT programs. Carceral authorities may also consider administering OAT under the 'three-day rule', which allows for providers without DEA certification to dispense OAT to relieve acute withdrawal symptoms for up to 72 hours [25]. This may be particularly important for jails treating individuals with short-term confinements. This regulation does not explicitly exclude carceral settings, but because it is typically applied in acute care hospital settings, [26] clarification of the applicability of these regulations to carceral settings could also expand access to care.

Many carceral programs impose requirements that may limit their reach. Low dose limitations, detoxification prior to initiating OAT and requirements for counseling were reported as part of some OAT programs. These practices are not supported by consensus guidelines [5] and can cause some patients to disengage from OAT [27–29].

Consistent with prior research, we find that the availability of community-based OAT treatment and the ability to link individuals to providers following release was a significant challenge [30,31]. In 2014, fewer than 5% of individuals referred to treatment upon release from the criminal legal system received OAT or naltrexone [32]. Participants in our study reported that limited community OAT capacity constrained their ability to partner with a provider to dispense medication within the carceral facility and provide effective re-entry services. Therefore, efforts to expand OAT in carceral settings should also be met with efforts to expand community-based OAT. Prior research has also demonstrated that the experience of incarceration has profoundly negative effects on physical and mental health outcomes [33]. Pre-arrest diversion programs that do not rely upon the carceral system to access treatment may allow for engaging in OAT in a more therapeutic, community-based environment.

Participants consistently reported that patients had positive views towards treatment. Given that carceral settings are characterized by unequal power dynamics between staff and incarcerated individuals and the history of inadequate, and sometimes harmful, medical services in these settings [34], learning about OAT programs directly from patients in carceral settings is a critical area for future research.

### Limitations

This study should be considered in the context of several limitations. First, these interviews were conducted prior to the COVID-19 pandemic. Prior work has documented that the pandemic curtailed OAT programs in carceral settings, which may affect the reported themes in this analysis [35]. Secondly, results may be subject to response bias due to self-selection of individuals agreeing to participate and social desirability bias driven by desire to present their respective OAT programs in a positive light. To minimize these concerns, confidentiality of participants was assured.

Despite low uptake in the United States, data from Rhode Island and outside the United States indicate that OAT programs in carceral settings can have significant impacts on overdose and mortality upon release [12–15]. Early adopters' experience interpreting existing laws, navigating the politics of introducing OAT and developing protocols to dispense OAT under the constraints found in carceral settings can provide a key resource to other jails, prisons and policymakers interested in expanding access to OAT in these settings.

### Declaration of interests

None.

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### Author contributions

**Sachini Bandara**: Conceptualization; investigation; methodology; formal analysis; writing-original draft. **Alene Kennedy-Hendrick**: Conceptualization; investigation; methodology; writing-review & editing. **Sydney Merritt:** Investigation; formal analysis; writing-review & editing. **Colleen L. Barry:** Conceptualization; methodology; writing-review & editing. **Brendan Saloner:** Conceptualization; investigation; funding acquisition; investigation; methodology; supervision; writing-review & editing.

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## Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**Data S1** Supporting information.