Use of Telemedicine to Provide Linkages From Jail to Primary Care for Persons With Opioid Use Disorder

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ABSTRACT

Background: This pilot primary care transition program evaluated the impact of a prerelease intervention for incarcerated individuals with opioid use disorder (OUD) on linkage to care and treatment retention.

Methods: Participants with opioid use disorder who were incarcerated for an opioid-use offense, had a diagnosis of OUD, or were receiving medications for OUD were recruited from local county jails. Using peer support specialists, participants completed prerelease telemedicine visits with a primary care physician were scheduled for follow-up with 1 week of release.

Results: High rates of treatment retention were observed at 1 week (28/30; 93%), 3 months (24/30, 80%), and 15 months (16/30, 53%), despite 45% of participants (13/29) being unhoused.

Discussion: Integrating primary care physicians and peer support specialists into jail reentry programs for individuals with OUD may improve continuity of care and linkage to treatment following release from incarceration.

BACKGROUND

Approximately 30% to 50% of individuals incarcerated in the United States have a substance use disorder, a percentage significantly higher than that in the general population.[1]

In addition to behavioral health services and peer support, medications for opioid use disorder (MOUD), including naltrexone, buprenorphine, and methadone, have been shown to reduce overdose deaths and recidivism.[2-5] Despite the availability of these effective interventions, more than 80% of individuals with opioid use disorder (OUD) never receive treatment during incarceration, and most receiving MOUD have their medication discontinued, leading to forced withdrawal.[2-5]

As of 2021, only 25 of 61 (41%) Wisconsin jails and 5 of 25 (14%) prisons offer any form of MOUD, most commonly intramuscular (IM) naltrexone. Only 8 county jails and 1 prison offer buprenorphine continuation. Three jails and no prisons offer methadone continuation.[6]

Providing MOUD and reentry support is vital, as individuals released from incarceration are 40 times more likely to die of an overdose and face barriers such as lack of housing, access to health care, employment, and transportation.[7] Little is known about the impact of linking individuals with OUD to primary care after incarceration. This report presents the effects of a pilot program that integrated a community-based primary care team, peer support, and an initial prerelease telemedicine visit on linkage to care and OUD treatment retention.

METHODS

Program Development and Design

A real-world pilot program was developed through a collaboration among an academic family medicine clinic at the University of Wisconsin (UW) School of Medicine and Public Health Department of Family Medicine and Community Health, UW Health, and leadership at Wisconsin's Dane and Columbia County jails to create new service delivery linkages for incarcerated individuals. The 18-month enrollment period (April 2021 to September 2022) was based on the duration of grant funding. With assistance from a longitudinal nurse care coordinator, par-

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ticipants were offered a prerelease telemedicine appointment with a family medicine physician; an in-person follow-up visit with the same physician was scheduled within 1 week of release from jail, and an application for insurance was completed. Cab vouchers were provided for the initial follow-up visit and subsequent visits. A certified peer support specialist also met with participants in person at the initial follow-up visit and provided ongoing telephone support. Patients could select telemedicine or in-person follow-up visits based on their preference.

Most participants relied on Medicaid coverage, which was suspended within 30 days of incarceration and not reinstated until participants reapplied after release. Grant funds covered visits and medication during this coverage gap. At the time of this study, buprenorphine and methadone could not be initiated or continued in either participating jail.

Before study initiation, a UW-Madison Quality Improvement/Program Evaluation Self-Certification Tool was completed, and the project was deemed exempt by the institutional review board.

Participant Recruitment

Twenty-six participants from the Dane County jail and 4 from the Columbia County jail were enrolled. Participants were identified by reentry coordinators employed by the jails during reentry assessments. The number of individuals who were approached but declined to participate was not collected.

Participants met inclusion criteria if they were aged 18 years or older, agreed to participate, and met at least 1 of the following criteria: incarcerated with a diagnosis of OUD; incarcerated for an opioid-use offense with OUD confirmed at initial visit; or previously treated with MOUD and seeking to continue treatment.

Data Collection and Outcome Measures

Demographic data, including age, gender, race, ethnicity, postincarceration housing status, and mental health diagnoses, were collected at the initial telemedicine visit.

Participant retention was selected as the primary outcome because the program sought to understand how an enhanced support services can improve patient engagement. Participant retention is an accepted surrogate measure for both treatment engagement and treatment success in the addiction medicine literature.[4]

Outcomes included attendance at the 1-week postincarceration follow-up appointment; retention at 3, 6, 12, and 15 months, defined as at least 2 follow-up visits; housing status, mental health diagnoses and psychiatric medication use; preventive health measures; and type of MOUD treatment.

Care was provided longitudinally in accordance with accepted evidence-based addiction medicine practices, including periodic urine drug screening based on individualized patient needs. Participants were not removed from the study because of gaps in follow-up, urine drug screen results, or medication nonadherence during the study period. Participant retention was defined as the interval between program enrollment and the last documented contact with the treatment team.

Table 1. Outcome Measures

	n	%
Telemedicine visit occurred while incarcerated	30	
Yes	22	73
No, referred by jail staff but initial visit occurred after release	8	27
Attendance at first appointment after release	30	
Attended	28	93
No show	2	7
Medication for OUD prescribed at first appointment after release	28	
Buprenorphine (sublingual)	14	50
Intramuscular naltrexone	12	43
Buprenorphine (long-acting injectable)	2	7
Preventive health care including immunization and routine screenings accepted by patient	28	
Yes	24	86
No	4	14
Retention	30	
>3 months	24	80
>6 months	20	67
>12 months	17	57
>15 months	16	53
Prescribed a mental health medication	29	
Yes	27	93
No	2	7

Abbreviation: OUD, opioid use disorder.

Data Analysis

Chi-square tests were used to determine associations between categorical variables and 15-month retention. The Mann-Whitney-Wilcoxon test was used to assess associations between 15-month retention and both age and the percentage of visits conducted via telemedicine. No adjustment for multiple comparisons was performed despite the potential for inflation of type I error. Statistical significance was assessed at $\alpha = 0.05$.

RESULTS

Participant Characteristics

The study population was predominantly male (63%), aged 26 to 44 years (80%), and predominantly White (90%). This contrasts with the Dane County jail population, of which 49% is Black. Demographic data for the Columbia County jail population could not be obtained. Nearly half of participants(45%) were unhoused, and nearly all (97%) had a diagnosed mental health condition.

Follow-up Duration and Additional Outcome Measures

Twenty-eight of 30 participants (93%) attended their initial postrelease follow-up visit within 1 week. Medications used during the study are displayed in Table 1. The primary care physician also prescribed psychiatric medications for 93% of participants and provided preventive care to 83%.

Treatment retention was 80% (24/30) at 3 months, 67% (19/30) at 6 months, 57% (17/30) at 12 months, and 53% (16/30) at 15 months.

Older age ($P = .028$), male gender ($P = .023$), and a diagnosis of depression ($P = .024$) were associated with higher rates of follow-up at 15 months (Table 2). Although telemedicine visits comprised a lower median percentage of total visits among participants retained in treatment at 15 months (25%) than those lost to follow-up before 15 months (50%), the association between percentage of telemedicine visits and duration of follow-up was not statistically significant ($P = .344$).

Table 2. Follow-up Duration of at Least 15 months by Participant Characteristics

Variable/Category	15-month follow-up n (%)	*P* value
Visit type		
All in-person	3/5 (60)	.389
All telemedicine	1/4 (25)	
Mixed	13/21 (62)	
Age (years)		
21 to 29	2/7 (29)	**.028**
30 to 39	9/16 (56)	
40 to 55	6/7 (86)	
Gender		
Female	3/10 (30)	**.023**
Male	14/19 (74)	
Transgender male	0/1 (0)	
Race		
Black	2/3 (67)	.93
White	15/17 (88)	
Ethnicity		
Non-Hispanic Black	2/3 (67)	.672
Non-Hispanic White	14/26 (54)	
Hispanic/Latino	1/1 (100)	
Family	7/10 (70)	.166
Housing after release		
Family	7/10 (70)	.166
Homeless	8/13 (62)	
Missing	0/1 (0)	
Residential	1/5 (20)	
Sober living	1/1 (100)	
Attention-deficit hyperactivity disorder		
Yes	5/11 (45)	.346
No	12/19 (63)	
Bipolar disorder		
Yes	2/5 (40)	.410
No	15/25 (60)	
Depression		
Yes	11/14 (79)	**.024**
No	6/16 (38)	
Generalized anxiety disorder		
Yes	11/21 (52)	.469
No	6/9 (67)	
Posttraumatic stress disorder		
Yes	4/9 (44)	.376
No	13/21 (62)	

Bold *P* values indicate statistical significance (<.05).

DISCUSSION

Although MOUD in jail settings can reduce recidivism rates,[2] few studies have evaluated the role of prerelease linkage to a primary care clinician in OUD treatment retention.[8] This real-world pilot project demonstrated high rates of initial follow-up (93%), short-term retention (80% at 3 months), and long-term retention (57% at 12 months and 53% at 15 months). These findings contrast with those of Lee et al, who reported an approximately 37% retention rate 12 months after release.[8]

Retention in the present study was also comparable to or higher than rates reported in the general population with OUD, for whom retention varies widely, with average retention rates of 59% for buprenorphine and 20% to 50% for naltrexone after at least 1 month of treatment.[4] These findings are notable given that 45% of participants were unhoused.

A 2022 meta-analysis investigated factors associated with treatment retention, including recruitment methods, study duration, required psychosocial interventions, and requirements for remaining in the study.[4] Although the results should be interpreted cautiously because of high heterogeneity among studies, retention was positively associated with recruitment and negatively associated with study duration and required psychosocial intervention; however, the effect size for study duration was small. Study participation requirements were not significantly associated with retention.[4] Therefore, the high retention rates observed in the present study may be related to effective participant recruitment and the absence of required psychosocial interventions.

We also hypothesize that the favorable retention rates were influenced by several key program components, including strong partnerships between jail staff and community treatment providers, intensive follow-up immediately after release, and the involvement of nurse care coordinators and peer support specialists.

Although prerelease telemedicine visits were discontinued after the grant period, referrals to the clinicians involved in the program continued and anecdotally appeared to contribute to increased stakeholder engagement. An additional advantage of involving primary care clinicians was the ability to offer medical care beyond MOUD treatment, including mental health care, preventive health services, chronic disease management, immunizations, and routine screenings. This is particularly relevant given the high prevalence of comorbid mental health conditions (97%) among study participants.

Limitations

There program faced several implementation challenges. Providing follow-up appointments within 1 week of release required rapid appointment availability, which can be difficult to achieve in primary care settings. Additional challenges included lack of insurance coverage and uncertainty regarding release dates, which contributed to coverage gaps.

Grant funding covered the costs of medications and visits during these coverage gaps, and future programs should consider these expenses essential for long-term sustainability. Importantly, this model may face fewer barriers in states where Medicaid coverage remains active for 90 days after release or is suspended rather than terminated during incarceration.

An additional limitation was the small sample size.

At the time of this study, buprenorphine and methadone could not be initiated or continued in either participating jail. County jails commonly cite medication costs, inadequate staffing, the time required to administer medications, and concerns about diversion as barriers to offering MOUD. Continued partnerships with county jails are critical to addressing these barriers and expanding access to MOUD.

White incarcerated individuals were disproportionately represented among participants enrolled in the program, a finding that has been observed in other studies.[2] The reasons for these racial disparities are unclear but may relate to structural racism and medical mistrust. Recent literature demonstrates stark disparities in access to MOUD among racial groups despite a 7-fold rise in opioid overdose deaths among Black Americans during the past decade.[9]

CONCLUSIONS

Our pilot study demonstrated that integrating multidisciplinary support services and primary care clinicians into prerelease and reentry programs can improve treatment engagement and retention among individuals with OUD. Although retention measures differ across studies, the retention rates observed in this program were higher than those reported in several previous studies, suggesting that a primary care-based model incorporating prerelease telemedicine may improve continuity of care and linkage to treatment following release from incarceration.

The use of telemedicine during ongoing follow-up was not significantly associated with treatment retention. Primary care clinicians may also play an important role in recovery by addressing acute, chronic, and preventive health care needs while providing continuity of care and facilitating connections to community-based resources that support long-term recovery.

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