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RESEARCH ARTICLE

Access to Services for Pregnant People With Opioid Use Disorder in Jails in the United States

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Abstract

The aim of this study was to assess the availability of medications for opioid use disorder (MOUD) and other services for pregnant people in jails in counties heavily impacted by opioid overdose in the United States. Counties were selected based on absolute number and population rate of opioid-overdose fatalities. Structured interviews were completed with representatives from 174 jails that house pregnant women. Descriptive statistics examine MOUD availability and differences in service provision and community-level characteristics based on MOUD availability. Most jails in the study sample (84.5%) had MOUD available for pregnant people; however, less than half of these jails ensured continuity of care. Jails without MOUD available are more likely to provide non-MOUD substance use services. These jails are more often located in smaller, rural counties in the Midwest and have higher rates of White residents and lower rates of Hispanic and African American residents. Gaps in MOUD availability in jails and continuity of care violate medical guidelines for treatment of pregnant patients with opioid use disorder and increase their risk of overdose. In addition, there are disparities across communities in access to MOUD for pregnant people in jails.

Keywords: pregnant women, jail, opioid use disorder, medications for opioid use disorder, reentry

Introduction

Two societal trends have increased the number of pregnant people with opioid use disorders (OUDs) who are incarcerated. First is the increased prevalence of OUD in the general population over the past decades (Hedegaard *et al.*, 2020), with several studies showing greater increases among women (McHugh *et al.*, 2021). Data from the National Survey on Drug Use and Health from 2007 to 2014 found that women increased heroin use at a faster rate than men; at the same time, they decreased nonmedical prescription opioid use at a slower rate (Marsh *et al.*, 2018). Moreover, rates of opioid misuse and OUD are highest among women of child-bearing age, from 18 to 49. The prevalence of OUD among pregnant people increased more than fourfold during this same period (Admon *et al.*, 2019; Haight *et al.*, 2018).

Second, the number of women confined in jail increased by 11.4% from 2008 to 2019, whereas the number of men in jail decreased by 9% (Zeng & Minton, 2021). In 2019, there were 10.3 million admissions to jails in the United States, with an average daily population of 734,500 individuals; women comprised approximately 15% of adults in jail (Zeng & Minton, 2021). Sufrin, Jones, *et al.* (2020) estimated that there are nearly 55,000 annual pregnancy admissions to jails. Moreover, Sufrin and Knittel (2021) point out that policy makers

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often focus on the downward trend in overall incarceration rates, which obscures the accelerating incarceration rates of women.

With the convergence of these trends, the number of pregnant people with OUD who are confined in jail has increased dramatically in the United States. The treatment needs of pregnant people in confinement are of critical public health concern. In particular, treatment with medications for OUD (MOUD) is associated with better maternal and neonatal outcomes (Peeler *et al.*, 2019; Tran *et al.*, 2017). Yet provision of MOUD to pregnant people is far from comprehensive, even in the general population.

A study of Medicaid recipients from 2009 to 2015 found that 44.1% of pregnant people received no opioid pharmacotherapy, either buprenorphine or methadone (Krans *et al.*, 2019). Similarly, Ahrens *et al.* (2021) found that only one-half of Medicaid recipients who were pregnant and had a diagnosis of OUD received consistent treatment with medication 5 months before delivery. Moreover, consistent treatment with MOUD significantly reduced hospitalizations and emergency department visits 1 year postpartum.

Access to MOUD for pregnant people with OUD in jail is even more limited. One study found that 14% of pregnant people admitted to six jails had OUD (Sufrin, Sutherland, *et al.*, 2020); only four of these jails had MOUD available. Methadone was most frequently prescribed (81% of patients), most often continuing treatment among those who had received it before incarceration and discontinuing treatment postpartum. In another survey, nearly half of a sample of 59 jails reported that pregnant people with OUD went through withdrawal without medication; one third reported allowing incarcerated pregnant people to continue methadone treatment if it was prescribed before they entered the jail, and less than a quarter of facilities reported that they initiated MOUD if it had not been previously prescribed (Kelsey *et al.*, 2017).

In another study using state administrative records, two thirds of pregnant patients in the sample continued receiving MOUD for a full year postpartum; however, incarceration either during pregnancy or after delivery approximately doubled the risk of MOUD discontinuation in the year after delivery (Schiff *et al.*, 2021). Moreover, White, non-Hispanic women were more likely to continue treatment with MOUD postpartum than women of color.

Individuals with OUD face numerous barriers to accessing treatment with MOUD upon their release to the community (Mitchell *et al.*, 2021); these are further compounded among pregnant people. Some of these challenges are logistical and resource-related, such as lack of transportation, housing, and financing for treatment.

Other barriers stem from the stigma and discrimination regarding pregnant people with OUD among health care providers (Crawford *et al.*, 2022), including MOUD providers (King *et al.*, 2021). Pregnant people often encounter stigma and a lack of support from their family members, who may discourage them from using these medications (Chou *et al.*, 2022). Pregnant people themselves may have internalized stigma related to OUD and use of MOUD, have misperceptions about how MOUD may affect unborn children (Boeri *et al.*, 2021), or fear that MOUD treatment will lead to loss of child custody due to mandated reporting to child protective services for opioid exposure at delivery (Schiff *et al.*, 2022).

The combined challenges faced by pregnant people with OUD, both during confinement in jail and following their release, greatly diminish their ability to obtain continuous treatment with MOUD throughout their pregnancy and afterward, despite strong evidence that continuity of care increases positive outcomes for both mothers and their children. Indeed, involvement with the criminal-legal system among women with documented prenatal opioid use is one of several indicators of social vulnerability that significantly increased risk of overdose and death in the year following birth hospitalization (Camden *et al.*, 2022).

This study sought to contribute to the growing body of research on the provision of services to pregnant people with OUD in jails within the context of the current opioid crisis. The study uses the framework of the OUD service cascade (Socías *et al.*, 2018; Williams *et al.*, 2017, 2018) to assess availability and uses of MOUD for pregnant people, other services provided to pregnant people with OUD, and reentry services to connect patients with community MOUD providers. Because our focus is on counties that have been highly impacted by the opioid epidemic, we also examine MOUD availability in relation to the population-level characteristics of the counties in which the jails are located.

Method

Study Overview

The method of selecting jails for inclusion in this study has been described in detail elsewhere (Scott *et al.*, 2022). Briefly, this study identified counties with the highest concentrations of opioid overdose in 2017 using two criteria: the total number of opioid overdose deaths and the rate of opioid overdose deaths. The research team used information from the Bureau of Justice Statistics, National Institute of Corrections, and internet searches to identify the jails within the selected counties. These jails could be public or privately run, included other confinement facilities (e.g., detention centers), and included individuals who were both pre- and post-adjudication.

Although most counties had only one primary jail, the list included some large city jails, regional jails serving more than one county, and jails that held people

from other jurisdictions. Community supervision programs (e.g., diversion, electronic monitoring, house arrest, probation, parole) and temporary holding facilities only used by courts or police for 72 hours or less were excluded.

Interview Development and Methods

The research team sought to interview representatives of jails in the targeted counties who were knowledgeable about the OUD-related treatment and services provided. The interview was structured to assess availability and accessibility of (a) opioid withdrawal management; (b) screening and assessment to identify opioid use problems; (c) MOUD provision, including eligibility and how it is used; (d) provision of other OUD-related services; and (e) reentry planning and services. The current study uses items that asked specifically about the provision of these services to pregnant people in their facility. More information on interview development and administration are in Supplementary Data S1.[1]

Structured interviews were completed with representatives from 185 of 244 (76%) targeted jails. The interview duration was 30 to 90 minutes. Interviewees were not compensated for their participation. All interviews were conducted between December 2019 and February 2021; questions focused on the prior 12-month period, which occurred before the onset of the COVID-19 pandemic. The study obtained a Certificate of Confidentiality from the National Institutes of Health and approval from the Chestnut Health Systems' institutional review board for the protection of human subjects.

Geocode Data

To help understand the patterns of OUD service delivery in jail, additional county-level geocoded data were linked to the interview data to examine community characteristics, such as racial and ethnic demographics, urbanicity, and level of poverty in the county in which the jail was located. Some of these data are represented as average percentages of population characteristics across counties and others are mean values. These data came from the Opioid Environment Policy Scan database (Kolak *et al.*, 2021). This public use data set includes data from the Bureau of Justice Statistics, Centers for Disease Control and Prevention, the Current Population Survey, and the Substance Abuse and Mental Health Services Administration (Paykin *et al.*, 2021).

Analysis

Data were analyzed with IBM SPSS™ Version 26, using the frequencies and descriptive procedures. The analysis is restricted to jails that housed pregnant women ($N = 174$) and examined the availability and provision of different types of MOUD and other services for pregnant people. The jails were then categorized into two groups: those in which MOUD[2] (i.e., methadone, buprenorphine) was available to pregnant people and those in which it was not. Bivariate analyses examined the provision of other substance use treatment services, reentry services, and community characteristics between these two groups using crosstabs and *t* tests.

[1]The interview guide and other documentation from this project are available at https://chestnut.box.com/v/JCOINSurveyPublicFolder.

Results

Jail and Respondent Characteristics

The study sample includes 174 jails that house pregnant women (94% of the total sample). Of these, nearly all (95%) were under the auspices of the sheriff's office and/or the county and the remainder were part of a unified prison/jail or were managed by a state, municipality, or private contractor. Regarding health services delivery, 74% indicated they contracted out for services, 11% used direct service provision, and 14% use a hybrid or other service model.

The respondents for the 174 jails included jail administrators (44%), medical/behavioral health directors (17%), health services administrators (14%), program/service directors (9%), medical/behavioral health providers (6%), and other administrative staff (10%). They reported an average of 5.1 years ($SD = 5.2$) in their current position and 15.2 years ($SD = 10.9$) in the corrections field.

MOUD Availability and Method of Use

Table 1 displays the availability of MOUD in the study sample and how it is provided (i.e., model of service delivery). The majority of jails (84.5%) provide some type of MOUD (methadone and/or buprenorphine) to pregnant people and 15.5% provide neither. Among jails in which MOUD is available, methadone is available in 85.0%, buprenorphine in 77.6%, and both medications are available in 62.6%. About one-fifth (22.5%) offer only methadone and 15.0% provide only buprenorphine.

Methadone is most frequently provided by a contracted licensed provider, either off-site (64.8%), on-site (44.8%), or by a mobile unit (2.4%); buprenorphine is most frequently provided on-site by a contracted provider or physician (70.2%). In a minority of cases, jails are licensed to directly dispense methadone as an opioid treatment provider (13.6%) and/or have a waivered physician on-site to dispense buprenorphine (19.3%).

Among jails that only provide methadone, most (78.8%) both initiate treatment and continue treatment for those who are already using the medication at jail entry. Similarly, nearly all jails (95.5%) that only provide buprenorphine both initiate and continue treatment with

[2]Although naltrexone is also approved by the Food and Drug Administration for treatment of OUD, its use is not recommended for pregnant patients. Since it is a full opioid antagonist, patients must withdraw from all opioids before initiation, which is deemed too risky given the high risk of relapse as well as lack of benefits to neonatal outcomes (Peeler *et al.*, 2019).

Table 1. Availability, Administration, and Use of Medications for Opioid Use Disorder for Pregnant People in Jails by Type of Medication ($N = 174$)

	No. of jails responding "yes"/No. of relevant subgroup	*Percentage*
Any MOUD is available	147/174	84.5
Methadone is available	125/147	85.0
How provided		
Off-site via medical transport	81/125	64.8
Off-site by a mobile unit	3/125	2.4
On-site by jail with a certified opioid treatment program license	17/125	13.6
On-site by external agency/provider	56/125	44.8
Other	9/125	7.2
Buprenorphine is available	114/147	77.6
How provided		
Off-site via medical transport	13/114	11.4
Off-site by a mobile unit	0	0
On-site by jail health care team or waivered physician	80/114	70.2
Combination of above	10/114	8.8
Other	5/114	4.4
Neither is available	27/174	15.5
Among jails that provide MOUD ($n = 147$)		
Methadone only is available	33/147	22.5
Continue MOUD used at booking only	6/33	18.2
Initiate treatment and continue	26/33	78.8
Initiate treatment only (at off-site facility)	1/33	3.0
Buprenorphine only is available	22/147	15.0
Continue MOUD used at booking only	1/22	4.5
Initiate treatment and continue	21/22	95.5
Both methadone and buprenorphine are available	92/147	62.6
Continue MOUD used at booking only for both	11/92	12.0
Initiate treatment and continue for both	41/92	44.5
Initiate and continue for buprenorphine, continue only for methadone	31/92	33.7
Other combination	9/92	9.8

MOUD, medications for opioid use disorder.

it. Jails in which both medications are available for treatment of pregnant people have more diversified patterns of use: 12% continue MOUD used at booking for both, but do not initiate treatment; 44.5% initiate and continue treatment for both; 33.7% initiate and continue treatment for buprenorphine, but only continue treatment with methadone; and the remainder (9.8%) use other combinations of initiation and continuation of the two medications.

Provision of Other Treatment and Reentry Services

Use of a standardized instrument to screen for OUD was more prevalent among jails in which MOUD is available for pregnant people than others (22.4% vs. 3.7%, respectively), although there was no significant difference between groups in whether OUD assessment was conducted by clinical staff rather than corrections staff. Jails in which MOUD is available for pregnant people had higher rates of transferring pregnant individuals to a hospital or other facility for induction or monitoring (50.3% vs. 25.9%), whereas jails in which MOUD is not available for pregnant individuals had somewhat higher rates of providing other, non-MOUD treatment (42.3% vs. 24.5%) and other non-MOUD services (29.6% vs. 3.5%; see Table 2).

As seen in Table 3, jails that provide MOUD to pregnant people were significantly more likely than jails that do not to also provide several reentry services. These include providing individuals with a list of MOUD providers in the community (70.7% vs. 37.0%), transportation to a MOUD provider in the community (42.2% vs. 14.8%), a bridge supply of MOUD (25.8% vs. 0%), and a written prescription for MOUD (23.1% vs. 0%).

Community Characteristics

The characteristics of communities in which jails were located varied between jails that did and did not provide MOUD for pregnant people (Table 4). Jails that do not provide MOUD were more likely to be located in less populous, rural counties, with higher percentages in the Midwest. In contrast, a greater percentage of jails with MOUD availability were in counties that were urban or suburban, more populated, and located in the Northeast and West. Jails without MOUD availability were also more often located in counties with higher population rates of White, non-Hispanic residents (87% vs. 78%), and lower rates of Hispanic (5% vs. 12%) and African American (8% vs. 12%) residents. The two groups did not differ with regard to the percentage of the population living below the poverty line in their respective communities.

Although the counties with jails that do not provide MOUD had a lower average jail population, likely due to their smaller size, they had a higher jail admissions rate, meaning a higher proportion of their county

Table 2. Services Provided to Pregnant People in Jail by Provision of Medications for Opioid Use Disorder

	Provides MOUD (n = 147)	*Does not provide (n = 27)*	*Total (N = 174)*	*Chi-square*	p
Use standardized instrument to screen for OUD as general procedure	33	1	34	5.10	**0.025**
	22.4%	3.7%	19.5%		
Clinical staff conduct OUD assessment as general procedure	107	17	124	1.075	0.300
	72.8%	63.0%	71.3%		
Medication-assisted withdrawal management is used	63	14	77	10.46	1.021
	43.2%	53.9%	44.8%		
Transfer to local hospital for induction and/or fetal monitoring	74	7	81	5.46	**0.019**
	50.3%	25.9%	46.6%		
Provide other, non-MOUD substance use treatment	35	11	46	8.46	0.060
	24.5%	42.3%	27.2%		
Other services	5	8	13	22.33	**0.000**
	3.5%	29.6%	7.6%		

Bolded values are significant at $p < .05$.
OUD, opioid use disorder.

population is entering jail. Moreover, these jails also had higher rates of incarceration of White residents relative to the population.

Nearly all jails in the study (97%) were located in counties with a MOUD provider that was within 10 miles of the population center. However, access differed by type of MOUD; 95% of all jails had access to a buprenorphine provider within the county, but jails that provide MOUD to pregnant people were significantly more likely to have county access to a methadone provider compared with jails that did not (54% vs. 30%).

Discussion

There is considerable variability in policies that govern MOUD provision for pregnant people in correctional settings across states and locales (Weizman *et al.*, 2021). This study sought to understand how jails have responded to the increasing numbers of pregnant people with OUD entering their facilities. Using two criteria to identify counties experiencing a high impact of opioid overdose ensured inclusion of jails that were most likely to have encountered individuals with OUD within their facilities. These jails are also potentially more likely to have made programmatic changes to address the needs of these individuals or felt pressures to do so.

Overall, a majority of the jails (85%) report that MOUD is available for pregnant people, with most of these (63%) initiating or continuing treatment with methadone and/or buprenorphine. However, 15.5% indicated they did not have MOUD available for pregnant patients in their jails, which contravenes recommended medical guidelines for treatment of pregnant patients with OUD, including those issued by the American College of Obstetricians and Gynecologists (Committee Opinion, 2017), American Society of Addiction Medicine (2017), and Substance Abuse and Mental Health Services Administration (2018), as well as the National Sheriffs' Association and National Commission on Correctional Health Care (2018).

In addition, use of medications for withdrawal management of pregnant patients was reported by 45% of the respondents, which is concerning given the potential

Table 3. Reentry Services to Facilitate Linkage to Medications for Opioid Use Disorder

Services provided on day of release (as general practice)	*Provides MOUD (n = 147)*	*Does not provide (n = 27)*	*Total (174)*	*Chi-square*	p
Provide a list of MOUD providers in their community of release	104	10	114	10.46	**0.001**
	70.7%	37.0%	65.5%		
Provide or arrange transportation to MOUD provider in community	62	4	66	6.42	**0.011**
	42.2%	14.8%	37.9%		
Provide a bridge supply of multiple doses/days of MOUD	38	0	38	8.46	**0.004**
	25.8%	0%	21.8%		
Provide written prescriptions for MOUD	34	0	34	7.24	**0.007**
	23.1%	0%	19.5%		
Other things to facilitate linkage to MOUD	16	4	20	0.36	0.551
	10.9%	14.8%	11.5%		

Bolded values are significant at $p < .05$.

Table 4. Medications for Opioid Use Disorder Availability for Pregnant People in Jails by Community Characteristics

Community characteristics	*Provides MOUD (n = 147)*	*Does not provide (n = 27)*	*Total (n = 174)*	*Chi-square*	p
Census region				13.308	**0.004**
Northeast	41	2	43		
	28%	7%	25%		
Midwest	41	16	57		
	28%	59%	33%		
South	51	9	60		
	35%	33%	35%		
West	14	0	14		
	10%	0%	8%		
Population, mean (*SD*)	637,005	213,934	571,356	21.268	**0.000**
	(840,444)	(263,895)	(793,835)		
Population, median	306,713	104,800	253,284		
Population aged 18 to 64, mean (*SD*)	398,267	132,149	356,973	21.653	**0.000**
	(531,151)	(167,075)	(501,621)		
% of census tracts					
Urban	79%	49%	74%	15.602	**0.000**
Suburban	17%	3%	19%	13.260	**0.000**
Rural	5%	18%	7%	5.839	**0.016**
Race/ethnicity					
% Hispanic or Latinx origin	12%	5%	11%	16.139	**0.000**
% White non-Hispanic	78%	87%	79%	12.089	**0.001**
% Black non-Hispanic	12%	8%	11%	3.833	**0.050**
% below the poverty line	13%	13%	13%	0.106	0.744
Jail data					
Total jail admissions rate, mean (*SD*)	4,540	6,770	4,977	11.377	**0.001**
	(2515)	(3419)	(2860)		
Total jail population, mean (*SD*)	1,220	403	1,095	17.294	**0.000**
	(1644)	(403)	(1544)		
Jail/community rate per 100,000, mean (*SD*)					
Total population, mean (*SD*)	324	356	329	0.149	0.699
	(155.3)	(194.7)	(161.8)		
Female	100	113	102	0.001	0.972
	(67.9)	(94.7)	(72.6)		
Male	558	581	561	0.003	0.955
	(282.5)	(330.5)	(289.5)		
Hispanic/Latinx	344	327	341	0.007	0.932
	(434.5)	(358.3)	(422.6)		
White non-Hispanic	240	313	252	4.123	**0.042**
	(146.7)	(184.2)	(154.8)		
Black non-Hispanic	1,218	1,195	1,214	0.243	0.622
	(1280.9)	(680.5)	(1205.9)		
Distance to MOUD provider <10 miles from population center					
Any MOUD provider	96%	100%	97%	1.141	0.285
Buprenorphine provider	95%	96%	95%	0.058	0.809
Methadone provider	54%	30%	51%	5.609	**0.018**

Bolded values are significant at $p \leq .05$.

harms associated with prenatal withdrawal and lack of demonstrated benefits to prenatal outcomes (Peeler *et al.*, 2019).

We note, however, that MOUD availability may not reflect actual provision of these medications to individuals. Findings from the overall survey showed that although nearly all jails reported MOUD availability in some form to some individuals at some point during incarceration (most frequently to individuals who are pregnant, using MOUD at time of jail entry, or before discharge), only 20% of jails provide MOUD to ''anyone with an OUD'' (Scott *et al.*, 2022).

Findings from this study can be compared with those of another recent study of MOUD availability for pregnant people in jails in the United States. In contrast to the targeted approach for sampling jails in the current study, Sufrin *et al.* (2022) surveyed all jails identified in the National Jails Compendium, which is a continuously

updated database of all known U.S. jails (Foudray *et al.*, 2021). This approach yielded a study sample of 836 jails (survey response rate of 39.5% and analysis sample of 29% of surveys sent), compared with a sample of 185 jails (76% completion rate) in the current study.

Overall MOUD availability was somewhat higher in the current study, 84.5% versus 60.3%. However, the percentages of each study sample that reported availability of methadone or buprenorphine were roughly comparable, with somewhat higher rates of availability of both methadone and buprenorphine in the current study (62.6% vs. 52.0%). This comparison suggests that there is greater MOUD availability in jails in counties that have had the highest impact of opioid-related fatalities.

This is evident when comparing the geographic distribution of the two study samples: the current study oversampled jails in the Northeast, an area with high impact from opioid overdose, relative to the Sufrin *et al.* (2022) study (25% vs. 8.5%), and undersampled those in the West (8% vs. 20.2%), an area that has lower population rates of overdose. Although there is somewhat greater availability of MOUD in jails located in the more heavily impacted counties, availability is far from universal, and fully 15% of the jails in the current study reported no MOUD availability for pregnant people in their custody.

Coordination with community MOUD treatment providers is essential to ensuring continuity of care from jail to the community (Ferguson *et al.*, 2019). Jails face numerous regulatory challenges to providing MOUD to pregnant people in their facility and often contract with community providers to administer medications or transport pregnant patients to community-based providers (King *et al.*, 2021) or to hospitals for initial induction and monitoring (O'Connor & Bowling, 2020).

In this study, jails with MOUD availability had higher rates of transporting pregnant patients to a hospital or other facility for induction or monitoring. This finding deserves additional research, as it is unclear under what circumstances pregnant patients with OUD are transported to hospitals and whether it is medically necessary. In contrast, jails without MOUD availability were more likely to provide pregnant patients with non-MOUD treatment services, over half provided medication-assisted withdrawal, and few provided reentry services for linking individuals to community MOUD providers upon their release.

Even in jails that administer MOUD to pregnant people, fewer than half ensured continuity of care by providing transportation to a MOUD provider at release, a bridge supply of MOUD, or prescription for MOUD. Lack of continuity of care poses both a serious risk of pregnancy complications and poor birth outcomes and increases risk of opioid relapse and overdose upon release (Peeler *et al.*, 2019). In addition, recent guidelines issued by the U.S. Department of Justice, Civil Rights Division (2022) to prevent discrimination against people who are in treatment for OUD state that withholding treatment with MOUD for those who are already being treated with it at entry to jail is a form of discrimination based on the Americans with Disabilities Act.

The parent study found that a majority of jails in the study endorsed needs for training and technical assistance in several domains relevant to provision of MOUD to pregnant patients; these include clinical aspects of MOUD administration, collaborations with community MOUD providers, and strategies for strengthening reentry services (Scott *et al.*, 2022).

Additionally, commonly noted barriers to expansion of MOUD and other OUD-related services were lack of funding, limited clinical expertise, concerns about diversion, and MOUD-related stigma across a range of stakeholders. Although these pertain to administration of MOUD generally, given the clinical imperative to provide access to MOUD for pregnant people as the standard of care (Peeler *et al.*, 2019), policies to improve training, technical assistance, and funding are clearly warranted.

The current study found that access to OUD services for pregnant people in jails varied by community characteristics. Jails located in the Midwest and in communities with lower population density, higher rates of incarceration, and higher proportions of White residents and lower proportions of Hispanic and African American residents were less likely to provide MOUD. The communities in which these jails were located also had less access to methadone providers.

Other studies have shown that jails in rural areas with high rates of OUD and overdose fatalities also have less access to community MOUD treatment providers (Singer & Kopak, 2021). A recent study found that rural counties were less likely to have MOUD providers, either licensed programs or waivered physicians; furthermore, counties that lacked MOUD providers and had high opioid overdose rates also exhibited higher rates of unemployment and less access to primary care providers (Haffajee *et al.*, 2019).

Limited access to the full spectrum of prevention, treatment, and harm reduction services; geographic barriers that limit service accessibility; sociodemographic factors (such as low educational attainment, unemployment, and economic dislocation); and social factors (such as pervasive opioid use among social networks) lead to greater vulnerability to opioid use and criminal justice contact in rural counties (Pear & Monnat, 2019; Rigg *et al.*, 2018).

The study findings suggest that access to treatment with MOUD for pregnant people in jail may vary by structural aspects of the community health systems in which the jails are located, which are likely to intersect with individual predisposing characteristics. Other studies have found

that incarcerated women with substance use disorders who are younger, African American, and uninsured are less likely to access medical services before their incarceration (Timko *et al.*, 2019). Hence, lack of availability of MOUD for pregnant people in jails reflects the broader health disparities that characterize their communities.

Strategies to improve access to MOUD for pregnant people in jails need to address the jail-to-community cascade of services, in which collaborative relationships between jails and community providers are essential to improving access within both (Grella *et al.*, 2020; Monico & Mitchell, 2016).

Limitations to interpretation of study findings include the lack of more detailed information on methods for pregnancy screening, determining MOUD eligibility, withdrawal management, continuation of MOUD following a pregnancy, and how jails that do not provide MOUD manage OUD, apart from the services reported in Table 2. Moreover, data on the numbers of pregnant individuals who received MOUD was deemed unreliable given the large amount of missing data on these questions; respondents often lacked access to information on specific numbers of individuals over specific time frames. Interpretation of study findings should also consider the self-report nature of the data; administrators' responses about the availability of MOUD and other services may not have corresponded to actual provision of services within their setting.

Finally, the study findings are time-specific and reflect the status of MOUD availability when the interviews were completed. Recent research using data on pharmaceutical sales to retail and nonretail outlets suggests that availability of buprenorphine in prisons and jails increased considerably from 2016 to May 2021, overlapping with the latter part of the study time frame (Thakrar *et al.*, 2021). Conversely, recent research indicates that access to buprenorphine for pregnant people in jail may have been reduced in some areas following the onset of the COVID-19 pandemic (Lensch *et al.*, 2022).

In sum, the provision of services for pregnant people with OUD who are arrested, incarcerated, and then released to the community needs to ensure that procedures for screening, for both pregnancy and OUD; treatment with MOUD, both continuation and initiation; and continuity of access to MOUD following pregnancy, both during incarceration and at release, are consistent with recommended treatment guidelines. Moreover, training and resources to expand jail capacity to provide OUD-related services for this population need to be made widely available, particularly to jails in under-resourced communities.

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Authors' Contributions

C.E.G.: Conceptualization (supporting), analyses (lead), writing–original draft (lead), writing–review and editing (lead). C.K.S.: Conceptualization (equal), funding acquisition (equal), method (equal). M.L.D.: Conceptualization (equal), funding acquisition (equal), method (equal), data curation (lead), writing–review and editing (supporting). R.A.L.: Formal analyses (lead), writing–original draft (supporting), writing–review and editing (supporting).

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Supplementary Material

Supplementary Data S1

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