



Published in final edited form as:

Addiction. 2020 November ; 115(11): 2057–2065. doi:10.1111/add.15030.

Opioid Use Disorder Incidence and Treatment Among Incarcerated Pregnant People in the U.S.: Results from a National Surveillance Study

Carolyn Sufrin, MD, PhD^{1,2}, Lauren Sutherland³, Lauren Beal, MPH¹, Mishka Terplan, MD⁴, Carl Latkin, PhD², Jennifer G. Clarke, MD, MPH⁵

¹Johns Hopkins University School of Medicine, Department of Gynecology and Obstetrics; Johns Hopkins Bayview Hospital; 4940 Eastern Ave, A121; Baltimore, MD; 21224

²Johns Hopkins Bloomberg School of Public Health, Department of Health, Behavior and Society; 24 N. Broadway; Hampton House 737; Baltimore, Maryland 21205

³Johns Hopkins University School of Medicine; 733 N Broadway, Baltimore, MD 21205

⁴Friends Research Institute, 1040 Park Ave Suite 103, Baltimore MD 21201

⁵Rhode Island Department of Corrections; Rhode Island Department of Corrections, 39 Howard Ave, Cranston, RI 02920

Abstract

Background and Aims—Established standard care in pregnancy is medication for opioid use disorder (MOUD); however, many institutions of incarceration do not have MOUD available. We aimed to describe the number of incarcerated pregnant people with opioid use disorder (OUD) in the U.S. and jails' and prisons' MOUD in pregnancy policies.

Design—Epidemiologic surveillance study of 6 months of outcomes of pregnant, incarcerated people with OUD and cross-sectional survey of institutional policies.

Setting—USA

Participants—Twenty-two state prison systems and six county jails

Measurements—Number of pregnant people with OUD admitted and treated with methadone, buprenorphine, or withdrawal; policies on provision of MOUD and withdrawal in pregnancy.

Findings—Twenty-six percent of pregnant people admitted to prisons and 14% to jails had OUD. One-third were managed through withdrawal. The majority who were prescribed MOUD were on methadone (78%, prisons; 81%, jails), not buprenorphine. While most sites (n=18 prisons, n=4 jails) continued pre-incarceration MOUD in pregnancy, very few initiated in custody (n=4 prisons; n=2 jails). Two-thirds of prisons and 3/4 of jails providing MOUD in pregnancy discontinued it postpartum.

Conclusions—In this sample of US prisons and jails, one-third required pregnant people with opioid use disorder go through withdrawal, contrary to medical guidelines. More people were

Declaration of competing interest: none

prescribed methadone than buprenorphine, despite the fewer regulatory barriers on prescribing buprenorphine. Most sites stopped medication for OUD postpartum, signaling prioritization of the fetus, not the mother. Pregnant incarcerated people with OUD in the US frequently appear to be denied essential medications and receive substandard medical care.

Introduction

Opioid use disorder (OUD) in pregnancy is a complex issue with far reaching consequences for pregnant people, their children, and communities. The rate of OUD during pregnancy more than quadrupled over 16 years in the United States, from 1.5 per 1,000 delivery hospitalizations in 1999 to 6.5 in 2014 (1); relatedly, between 2007 and 2016, pregnancy-associated mortality for opioid related causes more than doubled from 4% of all pregnancy-related deaths to 10% (2). Untreated OUD in pregnancy can lead to significant adverse obstetrical and other health consequences for mothers and newborns (3). Treatment for OUD in pregnancy, on the other hand, reduces the risk of preterm birth and has other established benefits (*ibid*).

While the rate of opioid use among pregnant people has dramatically increased, so too has the number of women confined in jails and prisons in the United States. With over 225,000 incarcerated women in 2017, this represents a 45% increase from 1999 (4–6); moreover, female incarceration rates continue to rise, even as rates for males decline across states in the U.S. (4,5). This surge is part of the phenomenon of mass incarceration, referring to the unprecedented and exponential rise in the number of people behind bars in the U.S. since the early 1980s; it has resulted from many political, social and economic factors, including racism that characterizes U.S. society (7). During this time, increasingly punitive drug policies have gone into effect, contributing to the problems of mass incarceration. This includes a dominant approach of criminalizing substance use disorders instead of providing robust treatment and confining people in prisons and jails that are ill-equipped to address their needs. These phenomena have targeted pregnant people in specific ways in the U.S., with some states passing laws that incarcerate pregnant people with substance use disorders, punishing them for “fetal endangerment” instead of providing them with the medical and mental health treatment in the community that they need (8,9).

The majority of incarcerated women in the U.S. are of childbearing age, have been sexually active and not been using regular contraception in the months prior to incarceration, and therefore some enter jail or prison pregnant (10). An average of 4% of people admitted to state prisons were pregnant from 2016–2017, and a 2012 report found that up to 51% of incarcerated women had OUD (10,11). While we can therefore infer that some pregnant incarcerated people will have OUD, data on how many are not available.

Medications for opioid use disorders (MOUD), specifically methadone, and more recently buprenorphine, have long been the standard of care for pregnant people with OUD (12–14). Pregnant people who go through medically supervised withdrawal have low rates of completion and high rates of recurrence, which pose ongoing risks to the pregnant person and fetus, including overdose and infectious complications (15). Moreover, people who attempt medically supervised withdrawal in pregnancy do not have lower rates of neonatal

abstinence syndrome (15). MOUD in pregnancy is associated with improved adherence to addiction treatment, prenatal care, in-hospital delivery; and decreased risk of HIV, hepatitis, recurrence, and overdose (16–18). Therefore, MOUD is recommended during pregnancy to optimize long term outcomes for the pregnant individual and newborn (12–14).

Although MOUD is the established standard of care in pregnancy, MOUD is not consistently available in incarcerated settings. While U.S. institutions of incarceration are constitutionally mandated to provide health care (19), there are no mandatory standards or oversight to ensure quality care. Voluntary accreditation programs for health care services in jails and prisons exist, and institutions that choose to pursue this accreditation must follow the program's established standards (14); however, since accreditation is not mandatory or tied to funding streams, many institutions do not pursue accreditation. This lack of standardization leads to widely variable health care services, including prenatal care, at the discretion of local state, county, prison, or jail officials. A 2009 study of U.S. state prisons reported that half of the 28 prison systems that had methadone provided it only for pregnant individuals-- signaling a recognition of the unique circumstance of pregnancy (20). A national survey of polices at 53 U.S. county jails found that nearly half forced pregnant people with OUD to undergo withdrawal (21); only one-third of these jails permitted pregnant individuals to continue pre-incarceration methadone, and even fewer (22%) initiated methadone in jail. These studies provide a glimpse of availability of MOUD in pregnancy in carceral settings, but lack details about policies. In the U.S., state prisons incarcerate people who are generally serving sentences longer than 1 year for convicted felonies, more serious level crimes. Jails, under local jurisdiction, generally house people for shorter durations, and a majority of people detained in jails are pre-trial. People in jail may be transferred to prison if convicted of a felony, but prisons and jails usually operate under different policies. These temporal and administrative distinctions have implications for initiating and continuing standard MOUD in pregnancy.

Despite the importance of MOUD for pregnant incarcerated people, information about the availability of medications is limited, and there are no existing data reporting the number of pregnant people in prisons and jails with OUD in the U.S. To address this gap, we prospectively collected such data from large county jails and state prisons in the U.S., along with policies on opioid withdrawal and availability of MOUD for pregnant incarcerated people.

Methods

From 2016–2017, we conducted a cross-sectional policy survey and a 6 month epidemiologic surveillance study of U.S. state prison systems and county jails participating in the Pregnancy in Prison Statistics (PIPS) study. Recruitment and methods of the PIPS study are described in detail elsewhere (10). Briefly, state prison systems were recruited first through purposive sampling of large prison systems, followed by planned snowball sampling of prisons of any size. Similarly, we recruited the nation's 5 largest jails, and also enrolled a smaller jail that wanted to participate. The PIPS study was primarily focused on prisons, as there are over 3000 jails in the country. The study was deemed non-human subjects research by the Johns Hopkins School of Medicine Institutional Review Board, and we followed each

institution's system for research approval. The analysis plan for this study was not pre-registered on a publicly available platform.

The PIPS study collected monthly data for 1 year on pregnancy outcomes such as births, miscarriages, abortions, and prevalence. For six months, a subset of sites—20 prisons, representing over 37,000 (38%) females in U.S. state prisons (22) and 4 jails, representing over 2300 (2%) of females in jails (23)-- chose to complete an optional, supplemental, monthly reporting form on numbers of pregnant people with OUD admitted and how they were treated (Table 1). This subset reported the following aggregate, de-identified numbers: pregnant people newly admitted and in custody with OUD in the last month (asked as “number of pregnant women who had opioid addiction, e.g. heroin, prescription painkillers”); newly admitted pregnant people who underwent medically supervised withdrawal (asked as “detoxed cold turkey” or “with medications only to help with detox”); and newly admitted pregnant people who were initiated or continued on MOUD (asked as “medication assisted treatment [MAT]”) in custody and whether with methadone or buprenorphine. We did not ask about naltrexone since there is currently insufficient evidence to recommend it in pregnancy (24). The assessment of number of people with OUD was based on the site reporter's knowledge of these diagnoses, which is usually assessed at the medical intake screening; screening practices in prisons and jails vary from validated screening tools, to assessing self-report, to urine drug tests, though our survey did not assess which means the prison or jail used (25).

Each site had a designated person who tracked and reported these numbers at the end of each month either via the study's online system or an electronic pdf. In addition, all PIPS sites completed a baseline survey describing their policies regarding pregnancy testing and OUD treatment in pregnancy, whether the prison's or jail's health care system was accredited (by American Correctional Association [ACA], National Commission on Correctional Health Care [NCCHC], or both), and privately contracted health care. Study data were collected and managed using the secure, web-based application Research Electronic Data Capture (REDCap) (26).

Due to the nature of aggregate data collection from each prison and jail system, no specific demographic characteristics about individuals-- such as race, age, and gender identity-- were collected, and nor could we correlate birth outcomes with OUD and treatment. Data were analyzed for frequencies and other descriptive statistics. Due to the highly variable nature of health care delivery systems among institutions of incarceration, we did not assess statistical associations of policies at institutions. Chi-square analysis was performed to assess associations between the number of pregnant people treated with medications in prisons and accreditation, privatization, and prison size greater than 2000 females. Due to the small number of jails in the study, we did not plan any statistical tests of association among the jail sample.

Results

Policies and Procedures on Treatment of OUD in pregnancy

All 22 state prisons and 6 county jails that participated in the broader PIPS study responded with information on policies and procedures related to how pregnant people with OUD at their sites were managed (Table 1). Participating prisons were from diverse geographic regions. Half provided healthcare that was privately contracted, and two-thirds had some form of voluntary accreditation (Table 2); no jails privately contracted health care and half had accreditation. Among the 17 prisons and jails that had any formal accreditation, all but 2 provided MOUD for pregnant individuals (one with ACA and one with both ACA and NCCCHC accreditation). All of the prisons with private health care contracts provided medications.

The majority of prisons and jails provided MOUD to pregnant people, with 4 prisons and 2 jails that did not (Table 2). However, most of the prisons and half of the jails that had MOUD only continued medication from the community, but did not initiate it (Table 2). One prison indicated that it used “Norco” (hydrocodone/acetaminophen) for withdrawal of pregnant people with OUD, and this site provided neither methadone nor buprenorphine for the treatment of OUD. Methadone was more commonly provided than buprenorphine. Nearly 2/3 of the prisons and 3/4 of the jails that provided some MOUD in pregnancy discontinued the treatment after the pregnancy was over. One of these prisons indicated that they would only continue MOUD postpartum if the release date was less than 90 days from when the pregnancy ended. Only 4 of the prisons and 1 of the jails that had MOUD for pregnant people also provided MOUD to non-pregnant individuals, and these 5 sites also allowed postpartum people to continue MOUD. There was no difference in provision of MOUD between prisons that did routine pregnancy testing at intake and those that did not (86% vs. 88%); the one jail that did not do pregnancy testing at intake provided MOUD.

When we asked about logistics, all 4 MOUD-providing jails did so onsite either through a community provider coming to the jail to “guest dose” methadone (n=1), by having an onsite methadone provider (n=2), or, for all of them, by having an onsite buprenorphine prescriber (n=4). For the prisons, 7 transported patients to a community provider for daily methadone; one prison indicated that prior to setting up this care, they invoked the U.S. Drug Enforcement Administration’s (DEA) “3 day rule,” allowing them to dose methadone onsite for 3 consecutive days even though they are not an OTP (27); this site then transferred people to another prison for continued methadone treatment. Seven prisons had arrangements to enable methadone administration in the prison by an onsite prison provider, 1 prison arranged for “guest dosing,” and one contracted with a community provider for all services onsite. Of the 8 prisons providing buprenorphine, 2 transported patients off site.

Number of pregnant people with OUD and treatment received

Of the 445 pregnant people admitted to the 20 OUD-reporting prison systems in 6 months, 117 (26%) had OUD, with a range of 0–36 at individual state prisons (Table 3); for the 4 jails, 50 (14%) of the 353 admitted pregnant people in 6 months were reported as having OUD (range, 10–16 per jail). The monthly average census of pregnant people with OUD

was 27 in the 20 state prison systems combined and 9 in the 4 jails combined. The highest number of pregnant people with OUD admitted to one state prison system in a single month was 13, representing 50% of newly admitted pregnant people there. In 2 states, there were months when 5 out of 5 of newly admitted pregnant people had OUD. Nearly one-third of these admitted pregnant individuals with OUD at all study sites underwent withdrawal (Table 3). Of those people that either continued or initiated MOUD in custody, the majority were on methadone (78% in prisons, 81% in jails).

Ninety percent of pregnant people with OUD at prisons with privately contracted health care received MOUD, compared to 52% of pregnant people at prisons that were not privately contracted ($p < .001$). No significant differences were seen in the proportion of people in prisons who were treated with MOUD based on accreditation status ($p = .057$) or overall female census greater than 2000 ($p = .56$).

Discussion

This study documents that there are pregnant people with OUD who are admitted to U.S. prisons and jails. Despite the established, evidence-based standard of care in pregnancy to receive MOUD and the recommendation against opioid withdrawal, not all prisons and jails have policies that provide this standard of care. Nearly one third of pregnant people with OUD admitted to these prisons and jails were either withdrawn from treatment or not offered MOUD while withdrawing from opioids.

This departure from standard of care in prisons and jails raises concerns. Opioid withdrawal in pregnancy is known to have a high failure rate and recurrence rates are high. Relatedly, opioid related death is a major cause—and in some states the leading cause—of pregnancy-associated mortality in the U.S. (28,29). In parallel, overdose deaths among people recently released from prison and jail in this country are higher than in the general population, in part related to the changed tolerance of people who are abstinent during incarceration, then use opioids again upon release (30); the state of Rhode Island demonstrated a 2/3 reduction in overdose deaths post-release when their unified prison-jail system began a comprehensive MOUD program with medication continuation and inductions (31). Although it has not been directly studied, based on these studies, we can infer that the risk of overdose for pregnant people on re-entry is likely high. Providing MOUD for pregnant people while in custody and continuing it upon release is thus essential for ensuring the short- and long-term survival of pregnant people and their children.

It is notable that most jails and prisons in our study had policies of discontinuing pharmacotherapy when a pregnancy ended; it is possible that some postpartum people wanted to stop medication treatment, but the fact that it was standard policy at most sites to discontinue is troubling. Opioid related pregnancy associated deaths are highest in the postpartum period, and MOUD at this vulnerable and transitional time is protective against overdose mortality (18,29). Thus, discontinuing MOUD postpartum in prison or jail increases risks for patients, especially those who might be getting released. This strategy fails to recognize OUD as a chronic condition that needs long term treatment, rather than just a condition needing treatment in pregnancy. Underlying this pregnancy-only approach is

an implicit prioritizing of the well-being of the fetus, but not the well-being of the pregnant person. Not only is this strategy not person-centered, but it sends a message that the pregnant individual is only valuable for her reproductive capacity. The non-availability of MOUD to postpartum people in our study is consistent with previous surveys of MOUD for non-pregnant people in U.S. prisons and jails (20). Some prison administrators fear that prescribing MOUD will lead people to divert the medications (20, 32). Yet forced withdrawal in incarcerated settings may lead some to procure opioids and other substances through non-prescribed means while in custody in order to self-medicate withdrawal symptoms, and a systematic review demonstrated reduced drug use in custody for those on MOUD (33).

We found that methadone was more commonly provided than buprenorphine. This is notable because, in the U.S., buprenorphine is easier to prescribe, especially for a jail or prison, as a provider can apply to the DEA for a special waiver (“DEA-X”) for buprenorphine whereas methadone requires a clinical site to have more involved, regulated certification. Both medications are safe and effective in pregnancy. Some evidence suggests that babies born to mothers on buprenorphine may have less severe neonatal opioid withdrawal syndrome, but treatment discontinuation rates in pregnancy appear to be higher with buprenorphine (12); patients, too, have medication preferences based on dosing schedules and prior experience. Thus, the choice of medication should be individualized. Yet buprenorphine may be a particularly useful option for pregnant people in prisons and jails because it is easier than methadone to integrate into existing clinical services in these settings not only for prescribing regulations but also because some jails, especially rural ones, may be far from a methadone provider. This geographic issue also has implications upon release, as it might be easier for a pregnant person to continue buprenorphine than methadone in the community. Although our data do not illuminate reasons for this difference, it may relate to cost or concerns over buprenorphine being more commonly diverted in incarcerated settings compared to methadone (34). It is also possible that methadone was more available because of sites’ considerations of what medication people might be taking pre-incarceration, and recommendations against switching from methadone to buprenorphine due to precipitated withdrawal. Another potential explanation is that people who are sentenced may have higher levels of addiction and buprenorphine may not meet their needs.

People at prisons with privately contracted health care were more likely to receive MOUD. One site with ACA accreditation did not have MOUD available, which is consistent with ACA standards that do not require MOUD for pregnant women (35). One site with dual accreditation did not have MOUD for pregnant people, in contrast to NCCHC’s accreditation standards that require medication treatment for pregnant people in custody (14). Health care accreditation was confirmed on these departments’ of corrections websites. While these are interesting findings, given the variability in other services from privatized and accredited health care services, it is difficult to make conclusions.

Lack of provision of MOUD for pregnant incarcerated people with OUD raises not only serious clinical concerns, but also broader ethical issues, with forced withdrawal in carceral settings being likened to cruel and unusual punishment, and therefore a violation of the Eighth Amendment of the U.S. Constitution (36). Furthermore, there are potential legal

vulnerabilities to jails and prisons that do not provide this established pregnancy standard of care. One site in our study reported using an oral opioid to ease withdrawal symptoms, which not only fails to provide MOUD to pregnant patients, but is also not an approved use of the medication. The judicial and legislative systems are increasingly mandating MOUD for all incarcerated individuals, in some cases as compliance with the Americans with Disabilities Act, a federal law that prohibits discrimination against people with disabilities, deeming substance use disorder to be a disability (37); for instance, federal judges in the state of Massachusetts ordered prisons and jails to continue people's pre-incarceration methadone, and the state passed a law in 2019 that requires the methadone and buprenorphine at both women's prisons and one men's prison in the state (38).

While prisons and jails should provide MOUD to pregnant incarcerated people with OUD, doing so must be person-centered and adapted to the unique environment of incarceration, including the potential for coercion from the power dynamics and diminished autonomy that define carceral settings. For instance, a qualitative study of 39 non-incarcerated patients in a methadone maintenance program in Canada reported feeling coerced and therefore less likely to continue treatment when started in a vulnerable crisis moment of incarceration or pregnancy (39). Pregnant incarcerated individuals might have concerns of mistrust of the institution, which may amplify other concerns that non-incarcerated patients have identified, such as fear of neonatal opioid withdrawal syndrome, other misconceptions about medication therapy, overlaid with the influence of prior trauma.

There are limits to the generalizability of our data, especially for jails, given that we could not collect data from all prisons and jails in the country. Moreover, there is a possibility that selection bias may have affected responses, as prisons and jails that chose to participate in this study may already be more attuned to addressing the needs of pregnant incarcerated people with OUD. The policy data were collected in 2016, and it is possible that growing recognition of the impact of OUD in pregnancy since then has led other U.S. jails and prisons to change their policies. According to 2019 queries of the websites of the 4 state departments of corrections that reported no MOUD in 2016, policies in one of these states now state that pregnant women should not go through withdrawal, and in another indicates that if a pregnant person was already on MOUD it will be continued (40,41); no information was available on the other 2 states. We relied on site reporters for numbers of pregnant people with OUD, but we did not assess how prisons and jails screened for this condition; some pregnant people may have not reported their drug use. Thus, our data may under-represent the prevalence of pregnant people with OUD in these settings. Nonetheless, the results reflect what prisons and jails believed to be the number of pregnant people with OUD that they had to treat.

The de-identified and aggregate nature of our data means that we cannot analyze outcomes according to patient variables or individual prenatal care practices at each site. While we know that black women are incarcerated at two times the rate of white women in the U.S. (5), our study could not collect individual level data from participating sites to know whether there are differences according to race or other demographic characteristics. Furthermore, each aggregated statistic corresponds to a collection of individual people's lived experience of being pregnant and incarcerated, information that varies from person to person.

Some of the pregnant people with OUD who were in jails and prisons during the study period were released while still pregnant, and others may have given birth while in custody. Our study was not designed to collect these data, and nor could prison or jail site reporters know what happened to the babies since incarceration institutions do not have access to hospital nursery records. Future research should address the outcomes among newborns and their mothers among people with OUD who gave birth in custody or who were incarcerated at other points in their pregnancies.

Our study was not designed to explore the reasons why some pregnant incarcerated people underwent withdrawal or why some prisons and jails did not provide MOUD; for instance, some pregnant people with OUD may not want MOUD, even if they are offered treatment (42). Previous surveys of prison medical staff and drug courts in the U.S. have identified barriers to providing MOUD in custody that include cost concerns, regulatory constraints of who can prescribe methadone, a philosophy that prisoners do not deserve MOUD, being distrustful that that incarcerated people will divert medications, lack of awareness of medical standards, and lack of qualified staff (20,43,44). But these barriers have not been studied for pregnant people, whose circumstances are different. This includes the need to consider the maternal-fetal dyad both for their short-term health and the long-term, chronic care needs for a person with substance use disorder. Furthermore, pregnant people with OUD face significant discrimination in the U.S.; vilifying views of them have even resulted in the incarceration of pregnant people because of drug use (8,9).

Training for prison and jail health care staff aimed at improving their knowledge of standard treatment for pregnant people with OUD, along with training to reduce discrimination towards these patients, can result in better care for this marginalized group of patients. A better understanding of the challenges and nuances in treatment practices for and perspectives of incarcerated pregnant people with opioid use disorder is critical in developing programs and policies that optimize their pregnancy and long-term care.

Institutions of incarceration in the U.S. are responsible for and uniquely positioned to provide crucial treatment to pregnant people with OUD, including those who may not have had access to such care pre-incarceration. This is especially true for jails, where people typically are incarcerated for short stays and then return to the community; such flux creates high impact potential for jails to reach pregnant people with OUD. Furthermore, there are profound racial and economic inequities embedded in incarceration practices in the U.S. (45,46), which overlap with racialized responses to the opioid epidemic and racial disparities in OUD treatment (47, 48). Thus, ensuring access to treatment for incarcerated pregnant people can be an important part of reducing health inequities and promoting social justice for a group of people who have long been overlooked.

Acknowledgements

Dr. Sufrin was supported by grants from the NIH (NICHD-K12HD085845 and NIDA- 5K23DA045934-02) and the Society of Family Planning Research Fund.

References

1. Haight SC, Ko JY, Tong VT, Bohm MK, Callaghan WM. Opioid Use Disorder Documented at Delivery Hospitalization — United States, 1999–2014. *MMWR Morb Mortal Wkly Rep.* 2018 8 10;67(31):845–9. [PubMed: 30091969]
2. Gemmill A, Kiang MV, Alexander MJ. Trends in pregnancy-associated mortality involving opioids in the United States, 2007–2016. *Am J Obstet Gynecol.* 2019;220(1):115–6. [PubMed: 30273587]
3. Patrick SW, Davis MM, Lehmann CU, Lehman CU, Cooper WO. Increasing incidence and geographic distribution of neonatal abstinence syndrome: United States 2009 to 2012. *J Perinatol Off J Calif Perinat Assoc.* 2015 8;35(8):650–5.
4. Zeng Z Jail Inmates in 2017 Washington, DC: Bureau of Justice Statistics;;NCJ 251774.
5. Bronson J, Carson EA. Prisoners in 2017. Washington, DC: Bureau of Justice Statistics; 2019;NCJ 252156.
6. Beck AJ. Prison and Jail Inmates at Midyear 1999. Washington, DC: Bureau of Justice Statistics; 2000 Report No.: NCJ 181643.
7. Roberts DE. The Social and Moral Cost of Mass Incarceration in African American Communities. *Stanford Law Rev.* 2004;56:1271–305.
8. Paltrow LM, Flavin J. Arrests of and forced interventions on pregnant women in the United States, 1973–2005: Implications for women’s legal status and public health. *J Health Polit Policy Law.* 2013 4;38(2):299–343. [PubMed: 23262772]
9. Bowers Orisha A., Stewart J Scott, Cherisse Thompson T-A, Zuniga C Paltrow LM, et al. Tennessee’s Fetal Assault Law: Understanding its Impact on Marginalized Women [Internet]. Tennessee: Sisterreach; 2019 [cited 2019 Jul 8]. Available from: https://sisterreach.org/images/2019/fetalassaultreport_sr-final.pdf
10. Sufrin C, Beal L, Clarke J, Jones R, Mosher WD. Pregnancy Outcomes in US Prisons, 2016–2017. *Am J Public Health.* 2019 5; 109(5):799–805 [PubMed: 30897003]
11. Fazel S, Yoon I, Hayes A. Substance use disorders in prisoners: An updated systematic review and meta-regression analysis in recently incarcerated men and women. *Addiction.* 2017 112(10): 1725–1739. [PubMed: 28543749]
12. Opioid Use and Opioid Use Disorder in Pregnancy - ACOG Committee Opinion 711. *Obstet Gynecol.* 2017;130:e81–94. [PubMed: 28742676]
13. Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants [Internet]. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2018 p. 165 Report No.: HHS Publication No. (SMA) 18–5054. Available from: <https://store.samhsa.gov/system/files/sma18-5054.pdf>
14. National Commission on Correctional Health Care. Standards for Health Services in Prisons Chicago, IL; 2018.
15. Terplan M, Laird HJ, Hand DJ, Wright TE, Premkumar A, Martin CE, et al. Opioid Detoxification During Pregnancy: A Systematic Review. *Obstet Gynecol.* 2018 5;131(5):803–14. [PubMed: 29630016]
16. Jones HE, O’Grady KE, Malfi D, Tuten M. Methadone maintenance vs. methadone taper during pregnancy: maternal and neonatal outcomes. *Am J Addict.* 2008 10;17(5):372–86. [PubMed: 18770079]
17. Krans EE, Cochran G, Bogen DL. Caring for Opioid-dependent Pregnant Women: Prenatal and Postpartum Care Considerations. *Clin Obstet Gynecol.* 2015 6;58(2):370–9. [PubMed: 25775440]
18. Schiff DM, Nielsen T, Terplan M, Hood M, Bernson D, Diop H, et al. Fatal and Nonfatal Overdose Among Pregnant and Postpartum Women in Massachusetts. *Obstet Gynecol.* 2018 8;132(2):466–74. [PubMed: 29995730]
19. *Estelle v. Gamble.* Vol. 429 U.S. 97. 1976.
20. Nunn A, Zaller N, Dickman S, Trimbur C, Nijhawan A, Rich JD. Methadone and buprenorphine prescribing and referral practices in US prison systems: Results from a nationwide survey. *Drug Alcohol Depend.* 2009 11 1;105(1–2):83–8. [PubMed: 19625142]

21. Kelsey CM, Medel N, Mullins C, Dallaire D, Forestell C. An Examination of Care Practices of Pregnant Women Incarcerated in Jail Facilities in the United States. *Matern Child Health J.* 2017 6; 21(6):1260–1266. [PubMed: 28236159]
22. Carson EA. Prisoners in 2016. Washington, DC: Bureau of Justice Statistics; 2018 Report No.: NCJ 251149.
23. Zeng Z Jail Inmates in 2016. Washington, DC: Bureau of Justice Statistics; 2018 Report No.: NCJ 251210.
24. Substance Abuse and Mental Health Services Administration. Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants HHS Publication No. (SMA) 18–5054. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2018.
25. Zaller N, Donadeo BA, Coffey J. Screening for Opioid Use Disorder in the Largest Jail in Arkansas: A Brief Report. *Jnl Corr Health Care.* 2019; 25(3): 214–218. 10.1177/1078345819852133
26. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009 4;42(2):377–81. [PubMed: 18929686]
27. Emergency Narcotic Addiction Treatment [Internet]. [cited 2019 Jul 9]. Available from: https://www.deadiversion.usdoj.gov/pubs/advisories/emerg_treat.htm
28. Metz TD, Rovner P, Hoffman MC, Allshouse AA, Beckwith KM, Binswanger IA. Maternal Deaths From Suicide and Overdose in Colorado, 2004–2012. *Obstet Gynecol.* 2016;128(6):1233–40. [PubMed: 27824771]
29. Smid MC, Stone NM, Baksh L, Debbink MP, Einerson BD, Varner MW, et al. Pregnancy-Associated Death in Utah: Contribution of Drug-Induced Deaths. *Obstet Gynecol.* 2019 6;133(6):1131–40. [PubMed: 31135726]
30. Alex B, Weiss DB, Kaba F, Rosner Z, Lee D, Lim S, et al. Death After Jail Release. *J Correct Health Care.* 2017 1; 23(1): 83–87. [PubMed: 28040993]
31. Green TC, Clarke J, Brinkley-Rubinstein L, Marshall BDL, Alexander-Scott N, Boss R, et al. Postincarceration Fatal Overdoses After Implementing Medications for Addiction Treatment in a Statewide Correctional System. *JAMA Psychiatry.* 2018 4 1;75(4):405–7. [PubMed: 29450443]
32. Fiscella K, Wakeman SE, Beletsky L. Implementing Opioid Agonist Treatment in Correctional Facilities. *JAMA Intern Med.* 2018; 178(9): 1153–1154. doi: 10.1001/jamainternmed.2018.3504. [PubMed: 30073242]
33. Sharma A, O’Grady KE, Kelly SM, Gryczynski J, Mitchell SG, Schwartz RP. Pharmacotherapy for opioid dependence in jails and prisons: research review update and future directions. *Subst Abuse Rehabil.* 2016 4 27;7:27–40. doi: 10.2147/SAR.S81602. [PubMed: 27217808]
34. Bi-Mohammed Z, Wright NM, Hearty P, King N, Gavin H. Prescription opioid abuse in prison settings: A systematic review of prevalence, practice and treatment responses. *Drug Alcohol Depend.* 2017 2 1;171:122–31. [PubMed: 28086177]
35. American Correctional Association. Performance-Based Expected Practices for Adult Correctional Institutions. Fifth Alexandria, VA: American Correctional Association; 2018.
36. Milloy M-J, Wood E. Withdrawal from methadone in US prisons: cruel and unusual? *Lancet Lond Engl.* 2015 7 25;386(9991):316–8.
37. United States Commission on Civil Rights. Sharing the Dream: Is the ADA Accommodating All? 2000 Available at <https://www.usccr.gov/pubs/ada/ch4.htm>. Accessed November 21, 2019.
38. Mass. prisons start offering medication to treat addiction - The Boston Globe [Internet]. [cited 2019 Jul 9]. Available from: <https://www.bostonglobe.com/metro/2019/04/02/mass-prisons-start-offering-medication-treat-addiction/o0Fslv3clpO9Ne0PUiO77N/story.html>
39. Damon W, Small W, Anderson S, Maher L, Wood E, Kerr T, et al. “Crisis” and “everyday” initiators: A qualitative study of coercion and agency in the context of methadone maintenance treatment initiation. *Drug Alcohol Rev.* 2017(2):253–269. [PubMed: 27126765]
40. Iowa Department of Corrections. Policy and Procedures: Health Services – Medication Assisted Treatment for Opioid Use Disorder [Internet]. 2017 [cited 2019 Jul 24]. Available from: <https://>

doc.iowa.gov/sites/default/files/hsp-615_medication_assisted_treatment_for_opioid_use_disorder.pdf

41. Oklahoma Department of Corrections. Care of the Actively Chemical Dependent Offender [Internet]. 2018 [cited 2019 Jul 24]. Available from: <http://doc.ok.gov/Websites/doc/images/Documents/MSRMs/140117.02.pdf>
42. Frazer Z, McConnell K, Jansson LM. Treatment for substance use disorders in pregnant women: Motivators and barriers. *Drug and Alcohol Dependence*. 2019 205(1): 107652 10.1016/j.drugalcdep.2019.107652 [PubMed: 31704383]
43. Rich JD, Boutwell AE, Shield DC, Key RG, McKenzie M, Clarke JG, et al. Attitudes and practices regarding the use of methadone in US state and federal prisons. *J Urban Health Bull N Y Acad Med*. 2005 9;82(3):411–9.
44. Matusow H, Dickman SL, Rich JD, Fong C, Dumont DM, Hardin C, et al. Medication assisted treatment in US drug courts: results from a nationwide survey of availability, barriers and attitudes. *J Subst Abuse Treat*. 2013 6;44(5):473–80. [PubMed: 23217610]
45. Dumont DM, Allen SA, Brockmann BW, Alexander NE, Rich JD. Incarceration, community health, and racial disparities. *J Health Care Poor Underserved*. 2013 2;24(1):78–88. [PubMed: 23377719]
46. Alexander M *The new Jim Crow: Mass incarceration in the age of colorblindness*. New York: New Press; 2010.
47. Netherland J, Hansen H. White Opioids: Pharmaceutical race and the war on drugs that wasn't. *Biosocieties*. 2017 6;12(2):217–238. doi: 10.1057/biosoc.2015.46. [PubMed: 28690668]
48. Lagisetty PA, Ross R, Bohnert A, Clay M, Maust DT. Buprenorphine Treatment Divide by Race/ Ethnicity and Payment. *JAMA Psychiatry*. 2019 5; 76(9):979–981. doi:10.1001/jamapsychiatry.2019.0876

Table 1.

Participating U.S. State Prisons and Jails

Participating state prison systems reporting policies (n=22) *	Alabama, Arizona, Colorado, Georgia, Illinois, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Ohio, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Vermont, Wisconsin
Participating jail systems reporting policies, county (n=6)	Cook County (Illinois), Dallas County (Texas), Hampden County (Massachusetts), Harris County (Texas), Los Angeles County (California), New York City (New York)
Prison systems that participated in PIPS but did not report monthly OUD in pregnancy outcomes (n=2)	Texas, Washington
Jail systems that participated in PIPS but did not report monthly OUD in pregnancy outcomes (n=2)	Los Angeles County (California), Dallas County (Texas)

* All states except Wisconsin reported state-level data; Wisconsin reported data for one of the two prisons in the state that housed pregnant people.

Table 2:

Characteristics and Policies of Managing Opioid Use Disorder in Pregnancy in U.S. State Prisons and Jails

	Prisons (n=22) N (%)	Jails (n=6) N (%)
Female census		
<500	3 (14)	1 (17)
501–1000	8 (36)	3 (50)
1001–2000	4 (18)	2 (33)
2001–5000	6 (27)	0
>5000	1 (5)	0
Healthcare Accreditation		
None	8 (36)	3 (50)
American Correctional Association *	11 (50)	1 (17)
National Commission on Correctional Healthcare *	5 (23)	3 (50)
Privately contracted health care	11 (50)	1 (17)
Pregnancy test routinely conducted at medical intake	14 (64)	5(83)
MOUD provided in pregnancy	18 (82)	4 (67)
MOUD Continuation	18 (100)	4 (100)
MOUD Initiation	4 (22)	2 (50)
Discontinue or taper MOUD after pregnancy ended	11 (61)	3 (75)
If MOUD provided, which medications were available		
Methadone only	10 (53)	0
Buprenorphine only	3 (16)	1 (25)
Either Methadone or Buprenorphine	5 (26)	3 (75)
Detoxification[∫] in pregnancy practices		
Detoxification only	4 (18)	1 (17)
Detoxification with methadone or buprenorphine for support only but not as maintenance	0	1 (17)
Detoxification or MOUD	4 (18)	1 (17)
MOUD available to non-pregnant people	4 (18)	1 (17)

* Four prison systems had dual accreditation by both American Correctional Association and National Commission on Correctional Health Care

[∫]“Detoxification” is classified as not providing maintenance treatment with methadone or buprenorphine in pregnancy.

MOUD=medications for opioid use disorder

Table 3.

Management of pregnant people with OUD admitted to prisons and jails

	Pregnant people with OUD admitted to prisons (n= 117) N (%)	Pregnant people with OUD admitted to jails (n= 50) N (%)[*]
Detoxification	36 (31)	16 (33)
Detoxification without medication [∫]	5 (14)	0
Detoxification with medication	31 (86)	16 (100)
MOUD (initiated in custody or continued from the community)	81 (69)	37 (73)
Methadone	63 (78)	30
Buprenorphine	18 (22)	7

^{*} Jails reported 50 pregnant women with OUD were admitted, but reported a total of 53 admitted women who went through detoxification or placed on MOUD. This discrepancy between diagnosis of OUD and interventions for OUD may be due to under-classification of OUD diagnosis.

[∫] Medication for detoxification included non-opioid medications or opioids that were not continued for maintenance.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript