Oregon Health & Science University
School of Medicine

Scholarly Projects Final Report

Title *(Must match poster title; include key words in the title to improve electronic search capabilities.)*

Improving Postpartum Discharge Planning for Oregonians with Opioid Use Disorder

Student Investigator's Name

Jessica Wallace

Date of Submission *(mm/dd/yyyy)*

03/17/2023

Graduation Year

2023

Project Course *(Indicate whether the project was conducted in the Scholarly Projects Curriculum; Physician Scientist Experience; Combined Degree Program [MD/MPH, MD/PhD]; or other course.)*

Scholarly Projects

Co-Investigators *(Names, departments; institution if not OHSU)*

Mentor's Name

Rachel Pilliod MD

Mentor's Department

OHSU Obstetrics and Gynecology, Oregon Perinatal Collaborative

Scholarly Project Final Report

Concentration Lead's Name

Alex Foster MD MPH

Project/Research Question

How can we improve postpartum discharge planning for Oregonians with opioid use disorder?

Type of Project *(Best description of your project; e.g., research study, quality improvement project, engineering project, etc.)*

Survey, beginning of quality improvement project

Key words *(4-10 words describing key aspects of your project)*

Opioid use disorder, pregnancy, postpartum, resources, Oregon

Meeting Presentations

If your project was presented at a meeting besides the OHSU Capstone, please provide the meeting(s) name, location, date, and presentation format below (poster vs. podium presentation or other).

n/a

Publications *(Abstract, article, other)*

If your project was published, please provide reference(s) below in JAMA style.

n/a

Submission to Archive

Final reports will be archived in a central library to benefit other students and colleagues. Describe any restrictions below (e.g., hold until publication of article on a specific date).

No restrictions

Scholarly Project Final Report

Next Steps

What are possible next steps that would build upon the results of this project? Could any data or tools resulting from the project have the potential to be used to answer new research questions by future medical students?

Increased outreach to Family Medicine providers and patients with OUD to better understand current care and barriers to practice. Original goal of project was to complete interviews with providers and patients for deeper discussion and we did not get to those. Also hoped to create toolkits for hospitals to implement more streamlined discharge protocols, so could complete a QI project after that implementation. The Oregon Perinatal Collaborative has a database of maternity and newborn providers across the state that could be useful for future students.

Please follow the link below and complete the archival process for your Project in addition to submitting your final report.

https://ohsu.ca1.qualtrics.com/jfe/form/SV_3ls2z8V0goKiHZP

Student's Signature/Date *(Electronic signatures on this form are acceptable.)*
This report describes work that I conducted in the Scholarly Projects Curriculum or alternative academic program at the OHSU School of Medicine. By typing my signature below, I attest to its authenticity and originality and agree to submit it to the Archive.

 Recoverable Signature

Mentor's Approval *(Signature/date)*

Scholarly Project Final Report

Introduction *(≥250 words)*

Untreated opioid use disorder (OUD) during pregnancy is associated with poor maternal and neonatal outcomes, including lack of prenatal care, fetal growth restriction, placental abruption, preterm labor, fetal demise, various mental health disorders, polysubstance use, and neonatal opioid withdrawal syndrome (NOWS).[1] Pregnant people with OUD face the stigma, shame, and barriers to access that they did before pregnancy, with often added fears of losing custody of their children or even criminal prosecution for drug use during pregnancy and after delivery.[2-5]

Reducing maternal morbidity and mortality is a focus of concern for improving health in the United States, and drug overdose and self-harm (including suicide) contribute to increasing rates of maternal mortality.[6] The rate of pregnancy-associated deaths involving opioids doubled in the US between 2007 and 2016 and made up 10% of all pregnancy-associated deaths.[7] The immediate postpartum period is a particularly vulnerable time that increases risk of relapse and overdose; triggers include insurance loss, stresses of new parenthood, sleep deprivation, and threat of loss of custody.[1] Prior research has shown that participation in a Medication-Assisted Treatment (MAT) program in the month prior to delivery was not sufficient to prevent postpartum overdose.[8] This demonstrates a need for increased screening in the perinatal period, increased naloxone access, and more innovative and comprehensive support systems postpartum.

Rates of OUD during pregnancy in the United States have increased in the last few decades, especially in rural areas.[9] Oregon reported the highest rate of non-medical use of prescription pain medications in 2012; rates of all drug/alcohol use and abuse were higher in Oregon compared to the national average.[10] In 2016 there were 493 pregnancies complicated by opioid use and 279 newborns with neonatal abstinence syndrome in Oregon.[10,11]

In 2018, the Oregon Health Authority published a list of recommendations surrounding opioids and pregnancy with the goal to optimize maternal and neonatal outcomes. Much of the secondary prevention measures focused on MAT for women with OUD throughout their pregnancy episode. The only mention of postpartum discharge planning says "the discharge plan should include strategies for the mother to get support".[11] These vague recommendations regarding discharge planning were echoed in preliminary surveys completed in 2020 by this group. The survey results found no consensus for the postpartum period outside of continuing MAT and no formal discharge plan in many hospitals. It is incredibly important to encourage medication treatment postpartum and is recommended for OUD while breastfeeding, but other social supports and barriers specific to the postpartum period need to be addressed.

The goal of this project is to gather current practices and barriers to care from providers caring for dyads experiencing OUD during pregnancy and postpartum and from patients with lived experience. We hope to build off preliminary survey work collected in 2020 from providers across the state. The final goal is to be able to make recommendations to healthcare systems and policy makers to improve discharge planning and coordination for Oregonians impacted by OUD in pregnancy. Input from providers and patients across the state will lead to innovative solutions that can be tailored to the needs of specific communities.

Methods *(≥250 words)*

Before I joined the project, a preliminary survey was sent out in 2020 to all forty-seven birthing hospitals in Oregon and southwest Washington to gauge interest and need for quality improvement surrounding opioid use disorder treatment and support during pregnancy, postpartum, and for newborns. Most of the

hospitals (31/47) responded to the initial survey and almost all of them reported that they were interested in improving how they care for pregnant women and neonates dealing with OUD.

Preliminary survey questions specifically focused on the transition to postpartum and hospital discharge informed the drafting of our project survey. The draft was sent out to multiple stakeholders including representatives from the Oregon Perinatal Collaborative, Project Nurture, Oregon Health Authority, Comagine Health, and the Oregon Department of Human Services. We had multiple meetings as a group to refine the survey and ensure that answers could benefit each organization. We decided to create 4 separate surveys geared towards our desired provider types (maternity care, pediatrics, and social work/nursing) as well as patients.

Due to previously established contracts with Comagine Health, they inputted the survey into Survey Monkey. The survey was emailed out to the Oregon Perinatal Collaborative network of providers across the state in March of 2022. We created flyers with QR codes to hang in clinics for easier patient completion.

We received thirty-four full survey responses. One patient started the survey but completed <25% of the questions so was excluded from analysis. Quantitative survey data was mostly analyzed in Excel. SPSS was used to analyze hospital characteristics such as average number of monthly births and average number of patients effected by OUD. For nominal yes/no questions, we did not receive sufficient responses to find statistically significant differences between provider types. Qualitative survey responses were grouped by theme and key concepts for analysis. Future recommendations for this project were taken from these grouped responses and discussions between the authors.

Because this project was drafted as a state-wide quality improvement project, IRB approval was not required.

Results *(≥500 words)*

Thirty-four providers responded to the survey. The number of respondents were roughly split into thirds by provider type (Table 1). Maternity providers were split by general OB/GYN (n=4, 12% of total respondents), Maternal Fetal Medicine (n=2, 6%), and Certified Nurse Midwives (n=5, 15%). Pediatric providers were split by general pediatricians (n=3, 9%) and neonatologists (n=10, 29%). Social workers (n=7, 21%) and nurses (n=3, 9%) completed the group. Respondents were also split up by hospital type into academic hospitals (n=13, 38%) and community hospitals (n=15, 44%). Private practices (n=6, 18%) made up the remainder of the practice settings and were all general pediatricians.

Table 1. Provider type of survey respondents.

Provider type	N=34 (%)
General OB/GYN	4 (12%)
Maternal Fetal Medicine	2 (6%)
Midwife (CNM)	5 (15%)
General pediatrician	3 (9%)
Neonatologist	10 (29%)
Social worker	7 (21%)
Registered nurse	3 (9%)

To better characterize respondents' experience working with pregnant/postpartum people and infants impacted by opioid use disorder, respondents estimated overall monthly delivery volume and OUD patient

volume (Table 2). Deliveries per month per hospital ranged from 250 to 5000 with an average of 2402 (SD=974). Monthly pregnant patients with substance use disorders on Labor & Delivery ranged from 1 to 15 with an average of 5.92 (SD=5.125). Infants at risk of Neonatal Opioid Withdrawal Syndrome (NOWS) in the hospital per month ranged from 1 to 20 with an average of 6.625 (SD=6.076).

Table 2. Average number of patients per hospital per month potentially requiring OUD resources.
L&D = Labor & Delivery, NOWS = Neonatal Opioid Withdrawal Syndrome

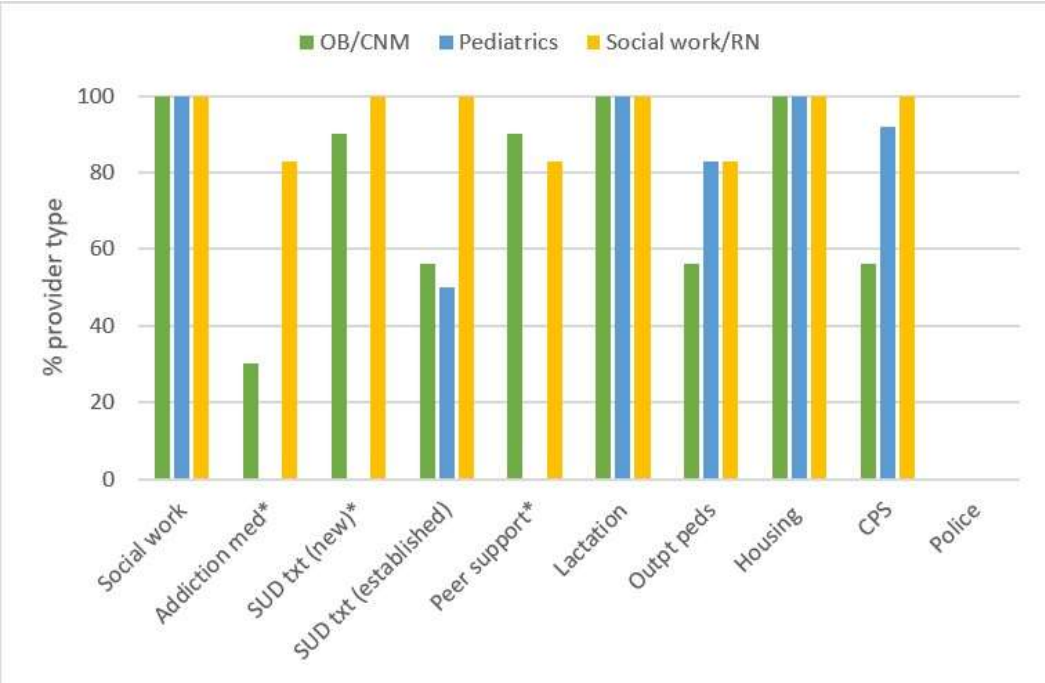
	Average (SD)
Deliveries	2402 (974)
Pregnant patients with OUD on L&D	5.92 (5.125)
Infants at risk of NOWS	6.625 (6.076)

The frequency of guideline-recommended practices for SUD in pregnancy was surveyed, including MAT for pregnant people with OUD and universal screening for substance use while pregnant. Only 2 out of 11 (18%) of maternity providers surveyed were X-waiver trained to prescribe buprenorphine, but neither of them prescribes to any patients. No providers prescribed other Medication Assisted Treatment (MAT) such as methadone or naltrexone. When asked about barriers to prescribing buprenorphine, common answers included other community organizations prescribe, lack of education and comfort around SUD, lack of partnerships with specialists or behavioral health, inpatient only work, and not enough patients with SUD in their practice. Maternity providers and social workers/nurses were asked if they or members of their team universally screen patients for substance use in pregnancy when they present to L&D. Seventy-two percent of maternity providers and seventy-seven percent of social workers/nurses screen all patients using a combination of urine drug screens, validated questionnaires such as SBIRT or 4Ps Plus, and/or ask patients directly about use. Those who do not screen universally reported that screening is done in prenatal clinics, they screen on a case-by-case basis, they worry about the impact of CPS involvement, and/or they do not have an established system to follow up with positive results.

In their current practice, different provider types use different referrals and resources during the birthing parent's delivery admission to labor and delivery through postpartum discharge (Figure 1). All respondents of all provider types answered "yes" when they asked if they refer the patient to social work and lactation support. All respondents also say they discuss housing options with housing insecure patients. None of the providers report patients to law enforcement once learning about the patient's drug use during pregnancy or their substance use disorder. Social workers and nurses had the greatest number of people report utilizing most of the resource and referral categories including referring to addiction medicine, referrals to start MAT either inpatient or outpatient, coordination with treatment programs the patient is already seeing, referral to pediatricians comfortable with families impacted by SUD, and coordination with CPS.

Figure 1. Resources and referrals used while inpatient on L&D, by percentage of provider type.
"Addiction med" means referrals to inpatient addiction medicine. "SUD txt new" refers to referrals to either inpatient or outpatient treatment centers to start MAT after discharge. "SUD txt established" refers to coordination between the inpatient provider and the outpatient treatment center already treating the patient. "Peer support" refers to SUD peer counseling programs either inpatient or outpatient to connect with the patient. "Lactation" refers to breastfeeding discussions or referral to formal lactation consultants. "Outpt peds" signifies connections with pediatricians with experience caring for newborns/families impacted by SUD. "Housing" refers to discissions about housing resources with housing-insecure families.

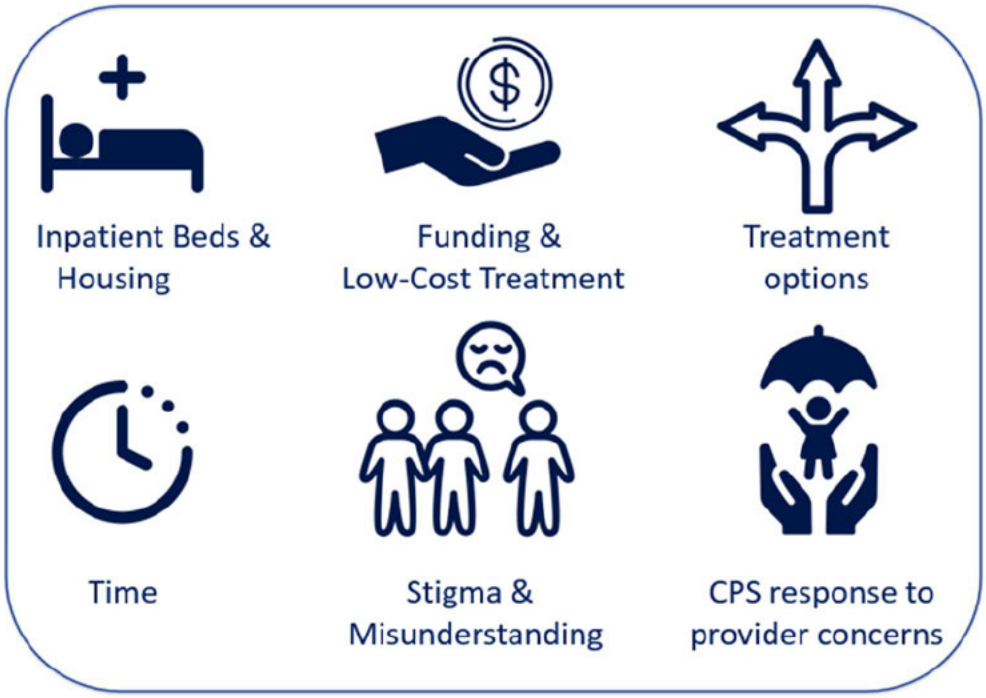
*Questions not asked in the pediatric survey, since services focused primarily on adults.



Timing of discharge after delivery and postpartum follow-up of dyads impacted by SUD were assessed. Two-thirds of maternity providers, one-half of pediatricians, and one-third of social workers/nurses reported changing the timing of discharge and recommendations for follow-up. Some respondents reported extended length of stay for NOWS infants, extending maternal inpatient stay through the weekend to facilitate Monday methadone initiation, and quicker/more frequent follow-up visits for the dyad. Other respondents reported that patients cannot stay longer than medically necessary at their institution to facilitate referrals to outpatient SUD treatment or while waiting for inpatient treatment bed availability. Reasons for these inconsistencies between hospitals were not clearly identified in the survey.

Multiple barriers to treatment and gaps in care for this population were identified by survey respondents and were grouped by overall theme (Figure 2). They reported a lack of inpatient treatment beds available when patients were being discharged and no inpatient options for keep the parent and infant together. Housing insecurity was another related issue that was a barrier to quality outpatient care and dyad wellbeing. Respondents mentioned time constraints and financial concerns including not enough funding for programs, inconsistent insurance access postpartum, and too few low-cost treatment options or treatment that would accept Medicaid. Respondents identified wanting more flexible options for treatment to accommodate new parents and diverse support networks (ex. Postpartum care managers, peer counselors, home health visits, MAT providers, etc.). Many echoed the stigma and misunderstanding patients face when trying to access treatment for OUD. Pediatricians and social workers/nurses reported inconsistent coordination with CPS and misunderstandings regarding clinician concerns about safety and family dynamics.

Figure 2. Common gaps and barriers to care identified in survey. Graphics from thenounproject.com, see full citation in references.



Discussion *(≥500 words)*

It is widely established that treating opioid use disorder and its comorbidities during pregnancy and postpartum is beneficial for the birthing parent and their baby.[12] Much of current research focuses on medication-assisted treatment (MAT) –most frequently with either methadone or buprenorphine (with or without naloxone). Less research has been published that focuses on other aspects of postpartum OUD care outside of medication.

Both the preliminary survey and this project survey demonstrated ongoing gaps in postpartum care for dyads impacted by OUD in Oregon, but also a strong desire among healthcare workers to find solutions to improve care. Not surprisingly, much of the inpatient care coordination is currently done by social work, but many provider types already refer patients to resources. However, there is still room to increase use of inpatient and outpatient resources outside of relying on social workers and nurses. All provider types surveyed report facilitating breastfeeding and finding stable housing for patients, and most providers utilize a multitude of available inpatient resources and referrals to facilitate treatment and a smoother postpartum transition. Many providers refer to community resources or know of them, but still report lack of coordination as a barrier to care overall.

Many providers across fields are currently practicing care according to most recent guidelines and laws, but there is still room for increased education and compliance. ACOG recommends universal screening with validated questionnaires for all pregnant patients, and recommends against universal urine drug screens.[1] Most providers are either screening on L&D or report screening happening in prenatal clinics. They also highly recommend breastfeeding for patients on MAT and those not currently using illicit substances, and all survey respondents discuss lactation with their patients. Many groups argue for public health over punitive approaches to drug use in pregnancy, and Oregon law does not require reporting to law enforcement for substance use in pregnancy.[13,14] The Comprehensive Addiction and Recovery Act requires

notification to CPS when practitioners identify an infant with prenatal substance exposure, even in situations when no safety concerns exist. There were inconsistencies between provider types on who followed or understood these policies. This confusion potentially correlates with overall dissatisfaction with CPS interactions and inconsistencies with reporting patterns. Other providers also admitted to wanting to reduce the risk of state involvement and lower the risk of child removal and the trauma associated with that. Oregon Health Authority recommended considering sooner and more frequent postpartum follow-up, and some of the respondents reported trying to facilitate this for patients but many were met with institutional or financial roadblocks.[11]

Based off reported barriers and gaps in care, the authors brainstormed potential solutions and the target audience to implement change (Table 3). More solutions will come from wider distribution of the survey and more diverse provider and patient involvement. In addition, recent changes to national and state laws should ideally reduce some of the challenges of providing care to pregnant people with OUD. In May of 2022 (after this survey was completed), the state of Oregon increased postpartum Medicaid coverage to 1 year for all health services including substance use treatment (not just prenatal/postpartum care).[15] Nationwide, X-waiver training is no longer required for providers to prescribe buprenorphine for OUD. Hopefully more maternity providers will consider adding MAT to their practice now that this training is not a barrier. In 2020 Oregon passed the Drug Addiction Treatment and Recovery Act[16] which should increase funding for treatment programs and other resources used by people with SUD, and hopefully will be allotted to resources specific to the postpartum population.

Table 3. Potential areas of improvement, from survey and authors.

Problem	Audience	Solution
Insurance access postpartum	Providers, patients	Education on OHP expansion
Inpatient beds	City government, hospital systems	Provide housing as bridge to inpatient, advocate for dyad treatment centers
Resources to address OUD	Hospital systems, community organizations	Increase personnel, paid CME for OUD
CPS coordination	Providers, CPS	Policy education, role clarification

A significant limitation of the survey data comes from a small number of overall respondents and a lack of surveys submitted by key groups including Family Medicine and general inpatient pediatric providers. Family Medicine provides much of the substance use treatment statewide both in and out of pregnancy and especially in more rural areas across the state. Most of the pediatric respondents are neonatologists, but many term NOWS infants who are otherwise healthy don't require NICU admission; ideally more general pediatricians who care for term newborns can be surveyed. The survey did not include information on geography of respondents, so rural and urban trends could not be analyzed.

Most lacking were patient perspectives from those impacted by OUD during pregnancy. We had created flyers to distribute at clinics and were hoping to connect with providers across the state for them to recommend potential patients to us to contact. Outreach efforts from the authors and partner organizations were not as effective as planned. Another likely barrier for patients taking the survey was lack of funding for patient compensation and requiring access to technology to take the online survey. Placek et al[17] include recommendations for recruiting patients in the context of COVID-19 that could be implemented in the future. As described in this project and in the general literature, this patient population face significant barriers to care across their pregnancy and many do not receive adequate prenatal care so would not come into contact with our surveys if they are only placed in clinics. Ideally we could also partner

with community organizations working on harm reduction, MAT, houselessness, or other resources that more frequently interface with pregnant people with OUD.

For next steps, ideally we would be able to edit the survey for easier flow and add questions about geography to answer questions more easily and precisely. We also need to expand outreach efforts to more patients and providers statewide to get a better sense of community-specific and universal barriers to care. Project Nurture is family medicine-based and has satellite sites in multiple counties so could be an important partner for this networking. The Project Nurture expansion was passed in 2019 and provides funding for coordinated pregnancy and SUD care in 4 other counties and the data from this pilot should prove valuable moving forward.[18] Eventually, the goal of the Oregon Perinatal Collaborative is to create evidence-based recommendations and guidelines based off of this survey data and other states' successful OUD quality improvement work to educate maternity providers in the state and improve overall care for this population.[19,20]

Conclusions *(2-3 summary sentences)*

There are still significant barriers to care in Oregon for pregnant and postpartum patients with opioid use disorders and their infants as well as inconsistencies in discharge planning and resource coordination across hospitals. Inpatient providers play an important role in safely discharging postpartum dyads affected by opioid use disorder, but creative solutions should come from inside and outside the healthcare system to best care for patients. Further work and final recommendations should prioritize patient perspectives and family-centered needs, especially from underserved communities, to improve the quality of care and work towards decreasing maternal opioid-related morbidity and mortality.

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