



February 2022  
Volume 12 • Issue 1

# PRAMS Brief

Oklahoma Pregnancy Risk Assessment Monitoring System

## OKLAHOMA FAST FACTS

### Mothers who used prescription opioids were more likely to have:

- **Graduated high school** (but not have higher education)
- Identified as **Non-Hispanic Black or Non-Hispanic Other**
- An annual household income of **less than \$24,001**
- **Experienced certain health conditions** such as kidney and bladder infections, severe nausea, and going into preterm labor

*I have endometriosis & was prescribed pain killers. I have been in a pain killer dependence program. When I found out I was pregnant, I wanted off but was told it wasn't an option. These drugs were prescribed & not off the street.*

-PRAMS mom



## PROFILE OF OKLAHOMA MOTHERS WHO USED PRESCRIPTION OPIOIDS DURING PREGNANCY: 2016-2019

In 2017, the U.S. Department of Health and Human Services (HHS) declared a public health emergency because the use of prescription opioids was epidemic.<sup>1</sup> However, people can obtain opioids in ways other than prescribed. The use of illicit opioids is also increasing.

Prescription opioids can be prescribed by doctors to treat moderate to severe pain, but can also have serious risks and side effects. These include medicines such as oxycodone, codeine, and morphine. Opioids also consist of illegal drugs such as heroin and synthetic opioids.<sup>2</sup> All opioids, whether prescribed or illicit, can become addictive.

Opioid use disorder (OUD) is a DSM-5 (Diagnostic and Statistical Manual of Mental Disorders) diagnosis defined as “a problematic pattern of opioid use leading to clinically significant impairment or distress.”<sup>3</sup> OUD during pregnancy is linked to preterm birth, low birthweight, breathing and feeding problems in newborns, and maternal mortality.<sup>4,5</sup> However, there does not have to be misuse, addiction, or an OUD diagnosis for opioid use during pregnancy to be problematic.

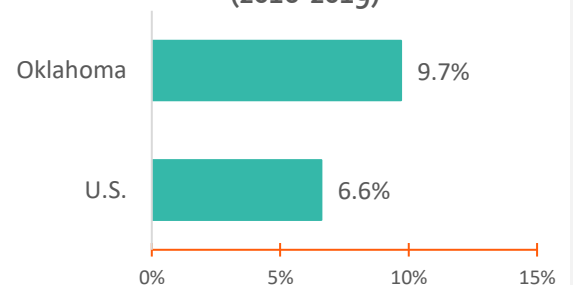
Even if a woman takes opioids as prescribed during pregnancy, there are still associated risks. These include prematurity and the infant experiencing drug withdrawal, known as neonatal abstinence syndrome (NAS).<sup>4</sup> A recent national HHS study showed that between 2010-2017, mothers with opioid-related diagnoses documented at delivery increased by 131%. During the same timeframe, babies born with NAS increased by 82%.<sup>6</sup>

This report looks at the profile of Oklahoma mothers who used prescription opioids during pregnancy. The analysis used Oklahoma PRAMS data from 2016-2019. The PRAMS sampling frame includes a subset of birth certificate data; it provides estimates of maternal behaviors and experiences before, during, and shortly after pregnancy.

Of the 11,410 mothers surveyed, 6,182 responded, which yielded a weighted response rate of 56.1%. Mothers responded to the question “During your most recent pregnancy, did you take or use any of the following pain relievers for any reason: prescription pain relievers such as hydrocodone (Vicodin®), oxycodone (Percocet®), or codeine.” PRAMS also asks about over-the-counter pain relievers (such as Tylenol®), but those responses are not included in this analysis.

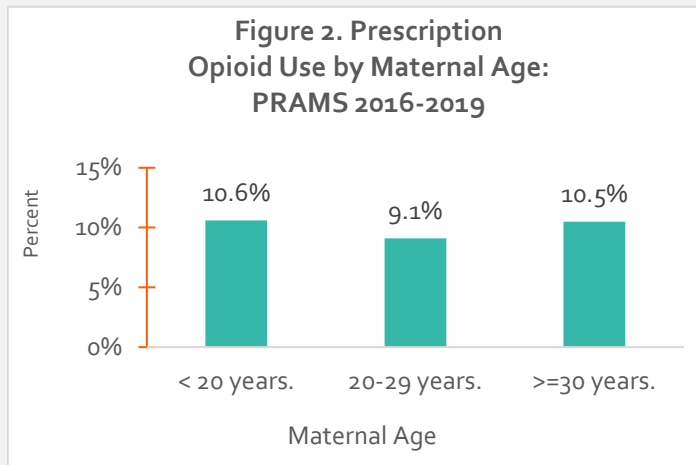
Oklahoma had significantly higher prescription opioid use among mothers than the overall U.S. Figure 1 shows that Oklahoma use (2016-2019) was 9.7% compared to the U.S. (2019) at 6.6%.<sup>7</sup>

Figure 1. Prescription Opioid Use among Mothers During Pregnancy in the U.S. (2019) and Oklahoma (2016-2019)



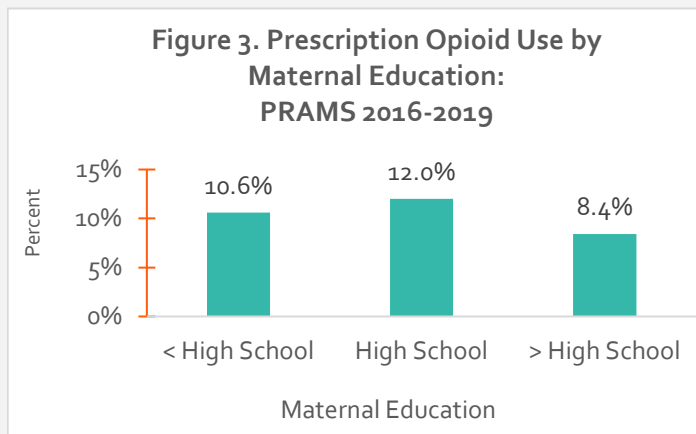
## Age

There was no difference in the prevalence of prescription opioid use among the different maternal age groups (Figure 2).



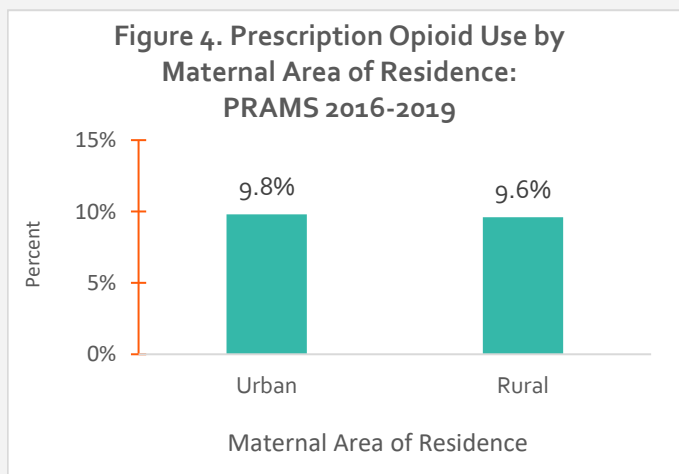
## Educational attainment

Mothers with more than a high school education had the lowest prevalence of prescription opioid use among educational groups at 8.4% (Figure 3).



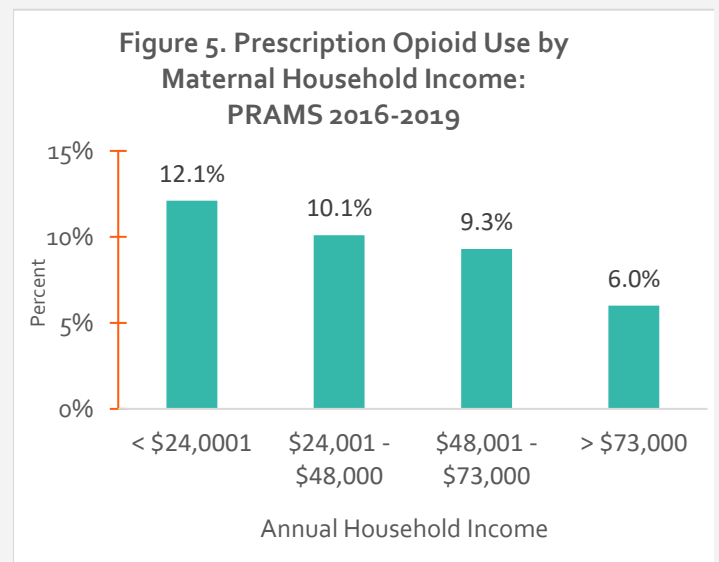
## Area of residence

There was no difference in the prevalence of prescription opioid use between mothers living in urban areas and those living in rural areas (Figure 4).



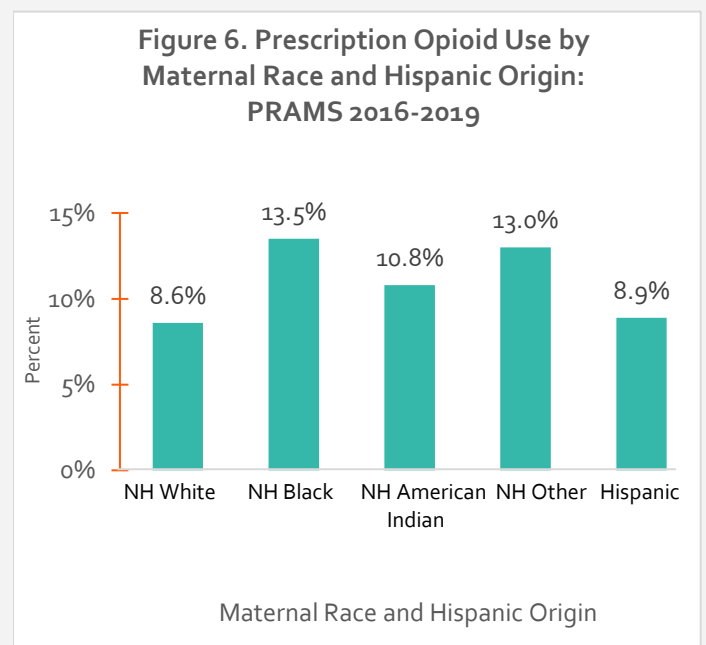
## Socioeconomic status

There were differences in the prevalence of prescription opioid use between mothers who received Medicaid (11.4%) and mothers who had another type of insurance (8.6%; data not shown). Other insurance included private pay through work, parents, health exchange, Tricare, and Indian Health Service. There were also differences across household income: mothers with lower household income reported the highest prescription opioid use (12.1%, Figure 5).



## Race and Hispanic Origin

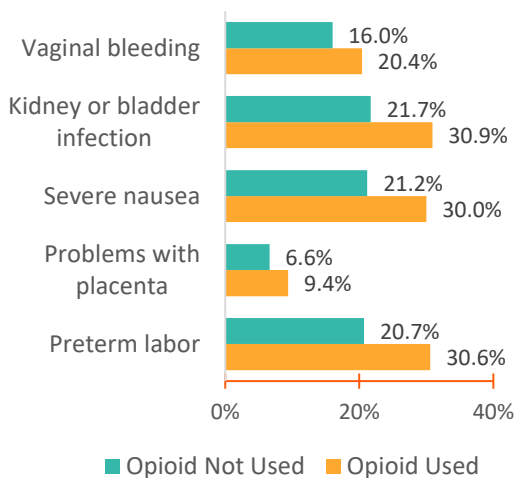
Non-Hispanic (NH) white mothers reported the lowest prevalence of prescription opioid use (8.6%). NH-Black mothers had significantly higher prevalence than NH white mothers at 13.5% (Figure 6).



## Health problems

Mothers who used prescription opioids were more likely than mothers who did not use to experience certain health issues during pregnancy. Having a kidney or bladder infection (30.9%), experiencing severe nausea (30.0%), and going into preterm labor (30.6%) were higher for mothers who used prescription opioids than those who did not. There was no difference in prevalence between the two groups related to vaginal bleeding or problems with the placenta (Figure 7). Opioids can induce nausea<sup>8</sup> and have been linked to problems during pregnancy, such as preterm births.<sup>4,5</sup>

**Figure 7. Health Problems during Pregnancy by Maternal Prescription Opioid Use: PRAMS 2016-2019**



This study had limitations. Data were self-reported, which is subject to recall and desirability bias. The survey only asked about prescription pain relievers and did not account for opioids obtained in other ways. The question is not specific enough to determine if the opioids used by respondents were their prescription or obtained through diversion (using someone else's prescribed medication). Moreover, the single question asked in the survey cannot identify opioid misuse. Additionally, the period was limited and does not account for any pre- or post-pregnancy use of prescription opioids.

This analysis shows significant differences across demographic groups related to using prescription opioids during pregnancy among Oklahoma mothers. Yet, there are available interventions. Oklahoma recently became the first state to cover additional treatments for opioid addiction under Medicaid Expansion.<sup>9</sup> Additionally, Oklahoma passed legislation in 2013 to authorize the dispensing of naloxone (an opioid antagonist to reverse an overdose) to trained family members and first responders.<sup>10</sup>

In 2018, the Opioid Prescribing Guidelines for Oklahoma Workgroup and the Oklahoma Perinatal Quality Improvement Collaborative's (OPQIC) Oklahoma Mothers and Newborns affected by Opioids (OMNO) Project formed the Opioid Prescribing and Pregnancy Workgroup. This sub-workgroup "aims to address the use of opioids for pain management in pregnant patients and the treatment of pregnant patients with opioid use disorder to improve patient outcomes."<sup>11</sup> In 2019, Oklahoma released opioid prescribing guidelines specific to treating pregnant patients with OUD and a document outlining the risks of opioids in pregnancy.

The American Academy of Pediatrics released a policy statement in 2017 that focused on the need for a public health response to opioid use in pregnancy and the increase in opioid-exposed infants. The statement lists several recommendations and has the support of The American College of Obstetrics and Gynecologists.<sup>12</sup>

The use of prescription opioids during pregnancy is a pressing intersectional issue. More research is needed to understand how opioid exposure during pregnancy affects maternal and infant outcomes.

PRAMS is a population-based surveillance system about maternal behaviors & experiences before, during, & after pregnancy. Approximately 250 mothers are selected to participate in Oklahoma each month. Mothers are sent up to three mail questionnaires in English or Spanish seeking their participation, with follow-up phone interviews for non-respondents.

Information included in the birth registry is used to develop analysis weights that adjust for probability of selection & non-response. Prevalence rates were calculated using SAS callable SUDAAN. PRAMS 2016-2019 had a response rate of 56.1%.

Special assistance for this Brief was provided by Ayesha Lampkins, MPH; Tracy Wendling, DPH; Binita Kunnel, MS; & the OSDH Injury Prevention Service.

Funding was made possible by PRAMS, grant number U01DP006591, & by the Maternal & Child Health Bureau, Department of Health & Human Services, Maternal & Child Health Services Title V Block Grant.

This publication was issued by the Oklahoma State Department of Health (OSDH), an equal opportunity employer & provider. A digital file has been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries. Copies have not been printed but are available for download at [www.health.ok.gov](http://www.health.ok.gov) | Issued February 2022

## REFERENCES

1. U.S. Department of Health and Human Services. (2021, October 27). *What is the U.S. opioid epidemic?* <https://www.hhs.gov/opioids/about-the-epidemic/index.html>
2. U.S. Department of Health and Human Services. (2020, August 30). *What are opioids?* <https://www.hhs.gov/opioids/prevention/index.html>
3. Centers for Disease Control and Prevention. (n.d.). *Module 5: Assessing and addressing opioid use disorder (OUD)*. <https://www.cdc.gov/drugoverdose/training/oud/accessible/index.html>
4. March of Dimes. (2021). *Prescription opioids during pregnancy*. <https://www.marchofdimes.org/pregnancy/prescription-opioids-during-pregnancy.aspx#>
5. Centers for Disease Control and Prevention. (2021, July 20). *About opioid use during pregnancy*. <https://www.cdc.gov/pregnancy/opioids/basics.html>
6. U.S. Department of Health and Human Services. (2021, January 12). *Nationwide study shows continued rise in opioid affected births*. <https://www.hhs.gov/about/news/2021/01/12/nationwide-study-shows-continued-rise-in-opioid-affected-births.html>
7. Ko J. Y., D'Angelo D. V., Haight S. C., et al. (2020, July 17) *Vital Signs: Prescription opioid pain reliever use during pregnancy — 34 U.S. jurisdictions, 2019*. *MMWR Report*, 69:897–903. doi: [10.15585/mmwr.mm6928a1](https://doi.org/10.15585/mmwr.mm6928a1)
8. National Institute on Drug Abuse. (2021). *Prescription opioids drug facts*. <https://www.drugabuse.gov/publications/drugfacts/prescription-opioids>
9. Kaiser Health News. (2021, March 17). *Oklahoma is first state to cover opioid treatment under Medicaid*. <https://khn.org/morning-breakout/oklahoma-is-first-state-to-cover-opioid-treatment-under-medicaid/>
10. Oklahoma State Department of Health. (n.d.). *Naloxone*. Injury Prevention Service. <https://oklahoma.gov/health/prevention-and-preparedness/injury-prevention-service/drug-overdose/naloxone.html>
11. Injury Prevention Service. (2019). *Opioid prescribing guidelines*. Oklahoma State Department of Health. <https://oklahoma.gov/health/prevention-and-preparedness/injury-prevention-service/drug-overdose/opioid-prescribing-guidelines.html>
12. Patrick, S. W. et al. (2017, March 1). *A public health response to opioid use in pregnancy*. *Pediatrics*, 139(3). doi.org/10.1542/peds.2016-4070

### Information

Visit [PRAMS.health.ok.gov](http://PRAMS.health.ok.gov)

To Receive Future PRAMS Briefs

[Sign-up here](#)