

Clinical Review: Management of Acute Postpartum Pain

May 2, 2023



Learning Objectives

- Understand the potential consequences of uncontrolled postpartum pain.
- Summarize recommendations from the American College of Obstetricians and Gynecologists (ACOG) regarding pharmacological management of acute perineal, uterine, and incisional pain in the postpartum period.
- Describe racial and ethnic disparities in maternal health care.

Key Points

- Racial and ethnic disparities are prevalent in maternal care, and improving health equity has been identified as a priority focus for the Medi-Cal program.
- ACOG recommends shared decision-making using a stepwise, multimodal approach that includes acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs) as first-line analgesics, especially for individuals who are breastfeeding.
- If first-line options do not provide adequate pain control, ACOG recommends a low-dose, low-potency, and short-acting oral opioid, with appropriate options including codeine, hydrocodone, oxycodone, tramadol, and morphine. Codeine and tramadol should be avoided when breastfeeding.
- The most important factor in the management of acute postpartum pain is the mode of delivery. After years of consistent decline, the rate of cesarean deliveries within the Medi-Cal MCP population has increased each year since 2019, going from 17.3% of deliveries in 2019 to 31.9% in 2022. Planning for pain management must begin during pregnancy and aim to avoid marginally-indicated cesarean delivery.

Background

Providing healthcare coverage for greater than 50% of all births in California, the Medi-Cal program is uniquely positioned to make a significant impact on maternal health outcomes across the state.^{1,2} Although California has made notable improvements in pregnancy-related mortality, continued efforts to improve maternity care are needed.³ The coronavirus disease 2019 (COVID-19) pandemic resulted in a decline in utilization of prenatal and postpartum services, further exacerbating poor health outcomes in this population.⁴ As described in the [Final Draft - 2022 Comprehensive Quality Strategy](#), improving maternity outcomes by screening for depression and reducing maternity care disparities have been identified by DHCS as Medi-Cal priorities.¹ Several DHCS initiatives focused on perinatal and postpartum care have recently launched, including the introduction of the doula benefit to improve culturally competent birth care and the extension of Medi-Cal eligibility during the postpartum coverage period from 60 days to 12 months.

The California Department of Public Health (CPDH) shared in their most recent [Maternal and Infant Health Assessment \(MIHA\)](#) that one in five Californians who are pregnant or postpartum will experience perinatal depression, and people who are Black, Hispanic, or have low income are disproportionately affected by prenatal and postpartum depression.² The COVID-19 pandemic also significantly impacted maternal mental health, resulting in a surge of clinically relevant anxiety and depression.⁴ Left undetected and untreated, perinatal mood and anxiety disorders are associated with negative health outcomes, both for postpartum individuals and their infants.^{5,6}

Treating postpartum pain is an essential component of maternal mental health, as pain can interfere with individuals' ability to care for themselves and their infants. Untreated pain can impede recovery after delivery and increase risk of greater opioid use, persistent pain, and postpartum depression.⁷ However, disparities do exist in the treatment of postpartum pain. Recent national studies have shown that despite reporting higher postpartum pain scores, Black and Hispanic individuals are less likely to receive postpartum opioid pain medications while hospitalized and are significantly less likely to be prescribed an opioid as an outpatient after delivery.⁸⁻¹⁰

Management of Acute Postpartum Pain

The [Pharmacologic Stepwise Multimodal Approach for Postpartum Pain Management](#) published by ACOG in 2021 provides detailed recommendations for treatment of acute perineal, uterine, and incisional pain in the postpartum period.¹¹ In general, non-opioid analgesics are recommended as first-line options for pain control, and opioids can be considered as needed. Non-opioid analgesics include acetaminophen, non-steroidal anti-inflammatory drugs (NSAIDs), and neuraxial analgesics in the case of cesarean delivery.¹¹

To limit risk of continued opioid use after delivery, providers should limit the duration of opioids prescribed at discharge to the shortest course that will provide adequate acute pain control. Certain risk factors have been associated with new persistent opioid use after delivery and differ between vaginal and cesarean births.¹² Risk factors for new persistent opioid use after vaginal birth include filling an opioid prescription before delivery or receiving a prescription equal to or more than 225 morphine milligram equivalents (MME) per day.¹² Risk factors for new persistent opioid use after cesarean delivery include a hysterectomy following delivery or a current diagnosis of a major mental illness, chronic pain condition, current tobacco use, or history of substance use.¹²

Both opioid and non-opioid pain medications are available through Medi-Cal as a pharmacy benefit. For current information on covered medications, including those medications that are available over-the-counter (OTC) with a valid prescription, check the [Medi-Cal Rx Contract Drugs List](#) page on the Department of Health Care Services (DHCS) Medi-Cal Rx website.

Vaginal Delivery

Pain after vaginal birth is commonly due to perineal lacerations, uterine contractions, and breast engorgement.^{7,11} To lower risk of persistent opioid use after postpartum exposure and to achieve adequate pain control, ACOG recommends that clinicians follow a stepwise, multimodal approach to control pain after vaginal birth.¹¹ Analgesic regimens should start with an NSAID and acetaminophen on a set schedule.¹¹ If NSAIDs and acetaminophen do not provide adequate pain control, the addition of a low-dose, low-potency, and short-acting opioid can be considered.¹¹ Examples of recommended opioids include hydrocodone, oxycodone, codeine, tramadol, and morphine.¹¹ Stronger opioids, such as hydromorphone and fentanyl, should only be used when pain control is not achieved after first-line options.¹¹

To reduce the risk of unintended acetaminophen toxicity and unnecessary opioid exposure, ACOG recommends that opioids, acetaminophen, and NSAIDs are administered as separate products instead of using opioid-acetaminophen or opioid-NSAID combination products.¹¹

Incorporation of adjunctive nonpharmacologic strategies can improve management of postpartum pain.⁷ Topical agents, anesthetics, and ice packs are commonly used to relieve perineal pain, and heating pads can be used for uterine cramping after birth.¹³ For postpartum hemorrhoid symptoms a variety of topical treatments can be used, including astringent, steroid, or anesthetic creams.¹³

Cesarean Delivery

Similarly to management of pain after vaginal birth, ACOG recommends a stepwise multimodal approach for postoperative cesarean pain that includes acetaminophen, NSAIDs, and opioids.¹¹ For cesarean delivery, the addition of neuraxial opioids and IV acetaminophen can be used to augment oral pain regimens.¹¹ Individuals experiencing recurrent breakthrough pain after administration of these agents may benefit from patient-controlled analgesia in the immediate postpartum period.¹¹ Nonpharmacologic interventions, such as abdominal binders, can be a helpful addition to pharmacologic therapy following cesarean delivery.¹⁴

Considerations for Breastfeeding

For individuals who are breastfeeding, acetaminophen and ibuprofen are recommended as first line treatment for postpartum pain as both are excreted in breast milk in low concentrations.¹⁵ Opioids readily transfer into breast milk, and certain opioids should be avoided when breastfeeding.¹⁵ In 2017, the U.S. Food and Drug Administration (FDA) recommended against use of codeine and tramadol during breastfeeding due to cases of excess sleepiness and respiratory depression in breastfed infants.¹⁶ Individuals who are ultra-rapid metabolizers of codeine and tramadol are at increased risk for adverse effects.¹⁶ Providers should counsel patients prescribed any opioid while breastfeeding to monitor for sedation and respiratory depression in both the parent and infant.^{15,16}

Management of Acute Postpartum Pain in the Medi-Cal Population

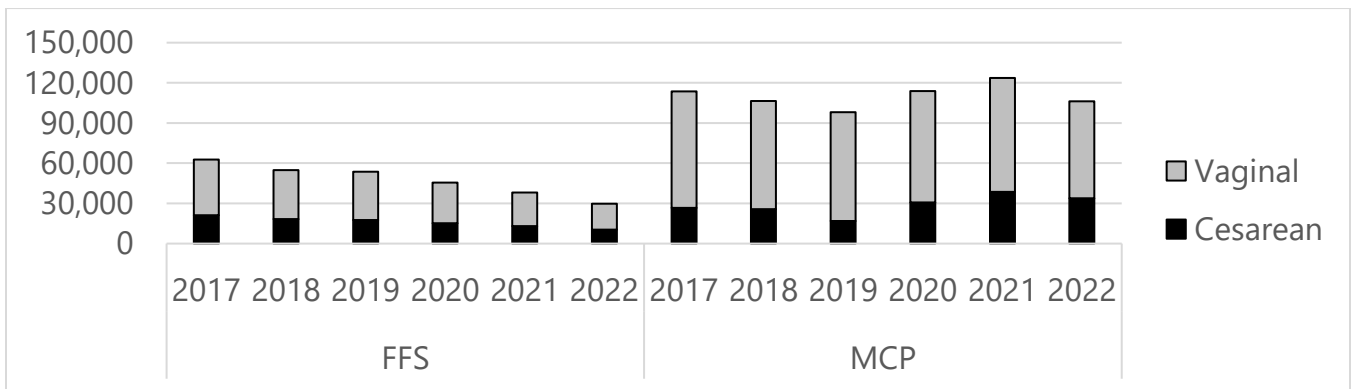
A retrospective administrative claims analysis was conducted to evaluate the utilization of pain medications for the management of acute postpartum pain in the Medi-Cal population. All paid medical and pharmacy claims were reviewed for eligible Medi-Cal beneficiaries with a date of service between January 1, 2017, and December 31, 2022. Current Procedure Terminology (CPT) codes were used to determine whether the delivery was vaginal (CPT codes 59400, 59409, and 59410) or cesarean (CPT codes 59510, 59514, and 59515). In order to ensure age limitations on certain opioid medications were not a confounding factor, beneficiaries were excluded from the analysis if they were less than 18 years of age on the date of delivery. Pain medications were considered as postpartum pain management if the date of service was within seven days before or after date of delivery (a 15-day window).

To assess potential prescribing differences in the Medi-Cal population, beneficiaries were stratified based on their plan enrollment at the date of delivery as being enrolled in either Medi-Cal Fee-for-Service (FFS) or a Medi-Cal managed care plan (MCP). In addition, an analysis was conducted to determine if there were any racial or ethnic disparities observed among the paid claims for postpartum pain medications in the Medi-Cal population during calendar year 2022. Patients were excluded from this analysis if race or ethnicity was either missing or if it was indicated that the patient refused to provide these data.

Results

As shown in Figure 1, between 2017 and 2022, there was a 50.9% decrease in the total number of deliveries in the Medi-Cal FFS population, including a 50.9% decrease in cesarean births and a 53.2% decrease in vaginal births. Overall, the rate of cesarean deliveries for those enrolled in the Medi-Cal FFS program remained relatively constant during this period population, ranging from a low of 32.7% in 2019 to a high of 34.3% in 2022. Within the Medi-Cal MCP population, however, the total number of deliveries fluctuated only slightly during this time. Between 2017 and 2022, there was a 6.5% decrease in the total number of deliveries in the Medi-Cal MCP population, however during this same time period there was a 26.6% increase in cesarean deliveries and a 16.7% decrease in vaginal deliveries. Also, within the Medi-Cal MCP population, the rate of cesarean deliveries has increased each year since 2019, going from 17.3% of deliveries in 2019 to 31.9% in 2022.

Figure 1. Total Deliveries in the Medi-Cal Population between 2017 – 2022, by Enrollment



In order to account for potential co-morbid medical conditions or perinatal complications, the analysis of postpartum pain medications was limited to the top five most common pain medications by total paid pharmacy claims observed within the 15-day window. For opioid analgesics, this included hydrocodone/acetaminophen, oxycodone/acetaminophen, and oxycodone, which accounted for 93% of paid claims for opioids. For non-opioid analgesics, this included ibuprofen and acetaminophen, which accounted for 97% of paid claims for non-opioid medications. Deliveries that included only paid claims for tramadol and codeine-containing medications, which are contraindicated for breastfeeding, represented less than 1% (combined) of opioid pain medications prescribed within the 15-day window. As the ACOG pain management guidelines differ slightly by vaginal and cesarean deliveries, utilization of postpartum pain medications is stratified by both delivery type and enrollment status.

In Figure 2, a decrease in opioid use for pain management can be observed over time for both Medi-Cal FFS and MCP enrollees, with a corresponding increase in non-opioid analgesics. In fact, in 2022 the highest utilization rate of non-opioid pain medications was observed, with 70.0% of FFS enrollees and 74.1% of MCP enrollees having at least one paid claim for non-opioid pain medication within the 15-day window.

Figure 2. Utilization of Medications for Acute Postpartum Pain following Vaginal Delivery between 2017 – 2022, by Enrollment

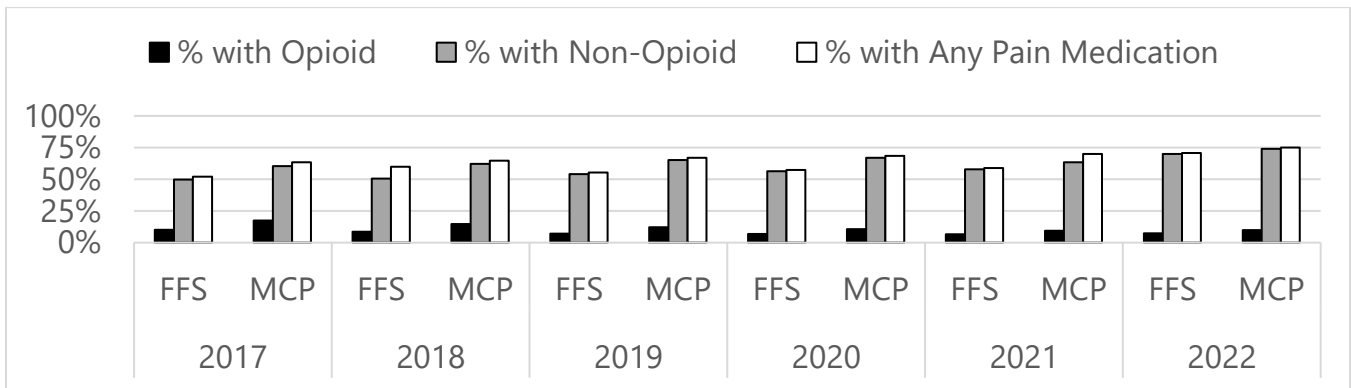
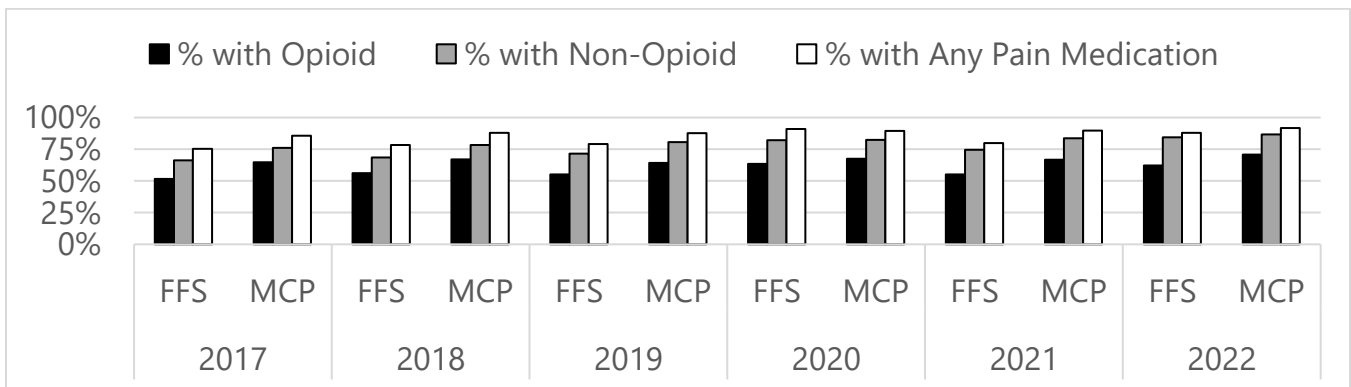


Figure 3 shows a similar trend with increasing use of non-opioid analgesics for cesarean deliveries, with 84.3% of FFS enrollees and 86.8% of MCP enrollees having at least one paid claim for a non-opioid pain medication within the 15-day window. During this same time period, use of opioid medications also increased within both FFS and MCP populations. However, a comparison of paid opioid medications within the 15-day window between 2017 and 2021 showed significant decreases in total days’ supply, total quantity, and average MME/day. This indicates an improvement in adherence to ACOG guidelines recommending low-dose, low-potency, and short-acting opioids to help with breakthrough pain with the duration of opioid use limited to the shortest reasonable course expected.

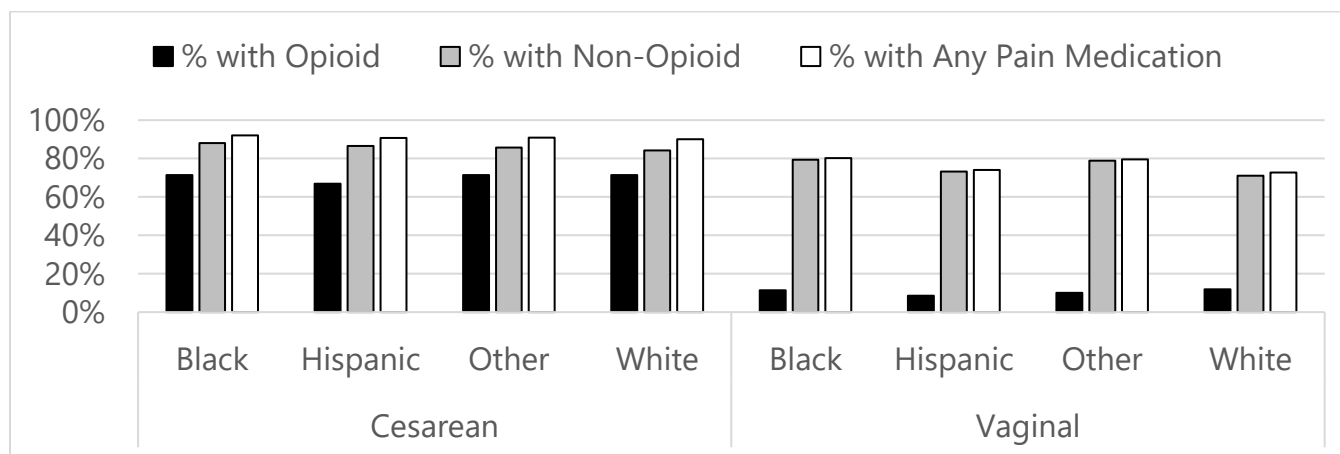
Figure 3. Utilization of Medications for Acute Postpartum Pain following Cesarean Delivery between 2017 – 2022, by Enrollment



Finally, as shown in Figure 4, there were differences observed by race/ethnicity in the management of postpartum pain in the Medi-Cal population during 2022. Based only on outpatient pharmacy claim data, Hispanics were less likely to receive postpartum opioid pain

medication, both for vaginal (8.6% vs. 10.1%) and cesarean (66.9% vs. 71.4%) deliveries. As Hispanics represented 62.1% of all deliveries in 2022, interpretation of the data in Figures 2 and 3 is skewed towards less opioid use as a result. No differences by race/ethnicity were seen in paid claims of non-opioid medications during the 15-day window. Intention to breastfeed after delivery was unknown and may account for difference in opioid use.

Figure 4. Utilization of Medications for Acute Postpartum Pain, by Race/Ethnicity



Conclusion/Discussion

Recommendations from ACOG urge clinicians to approach postpartum pain with a shared decision-making model that incorporates stewardship of opioid prescribing and ensures patients receive adequate, equitable, treatment of pain. While concerning after years of decline, the increasing rate of cesarean deliveries in the Medi-Cal MCP population seems to be consistent with national reports that showed the cesarean delivery rate generally declined from 2009 to 2019, reaching 31.7% in 2019 before increasing in 2020 (31.8%) and 2021 (32.1%).¹⁷ Given postpartum pain management for cesarean deliveries is significantly more likely to include breakthrough pain and opioid medications for acute pain management, it is worth continuing to review strategies for the improvement of perinatal and postpartum care as California strives to meet its bold goals and improve maternity outcomes.

Clinical Recommendations

- Providers should engage in shared decision making with individuals regarding pain management after hospital discharge.
- Combination therapy with scheduled acetaminophen and an NSAID is the first-line option for acute postpartum pain. A fixed dosing schedule of NSAIDs and acetaminophen is recommended rather than as-needed administration.
- Opioids can be added when needed to limit opioid exposure without compromising pain control. If an opioid is prescribed, a low-dose, low-potency, and short-acting oral option is preferred, with appropriate options including codeine, hydrocodone, oxycodone, tramadol, and morphine. Stronger opioids should only be given in instances of refractory or recurrent breakthrough pain.
- Duration of opioid use should be limited to the shortest reasonable course expected for treating acute postpartum pain.
- Acetaminophen and ibuprofen are first-line analgesics for individuals who are breastfeeding.
- Counsel individuals who are prescribed opioid analgesics during the breastfeeding period about the risk of central nervous system depression in the individual and in the breastfed infant.
- Codeine and tramadol are not recommended while breastfeeding due to increased risk of adverse effects. If a codeine-containing medication is selected for postpartum pain management, patients and their families should be informed of maternal and neonatal signs of toxicity.

References

1. California Department of Health Care Services (DHCS). [Final Draft – 2022 Comprehensive Quality Strategy Report](#). 2022. Accessed: April 14, 2023.
2. California Department of Public Health. [Maternal and Infant Health Assessment \(MIHA\) Data Snapshot, Total Live Births, 2013-2015](#). 2018. Accessed: April 14, 2023.
3. California Department of Public Health, Maternal, Child, and Adolescent Health Division. [CA-PMSS Surveillance Report: Pregnancy-Related Deaths in California, 2008-2016](#). 2021. Accessed: April 14, 2023.
4. Kotlar B, Gerson EM, Petrillo S, et al. The impact of the COVID-19 pandemic on maternal and perinatal health: a scoping review. *Reprod Health*. 2021;18(1):10. <https://doi.org/10.1186/s12978-021-01070-6>. Accessed: April 14, 2023.
5. Brito APA, Caldeira CF, Salvetti M de G. Prevalence, characteristics, and impact of pain during the postpartum period. *Rev esc enferm USP*. 2021;55:e03691. <https://doi.org/10.1590/s1980-220x2019023303691>. Accessed: April 14, 2023.
6. California Department of Public Health, Maternal, Child, and Adolescent Health Division. [Symptoms of Depression During and After Pregnancy - Maternal and Infant Health Assessment \(MIHA\) Data Brief](#). 2018. Accessed: April 14, 2023.
7. California Health Care Foundation. [Improving Maternal Mental Health Care](#). May 23, 2022. Accessed: April 14, 2023.
8. Pharmacologic Stepwise Multimodal Approach for Postpartum Pain Management: ACOG Clinical Consensus No. 1. *Obstetrics & Gynecology*. 2021;138(3):507-517. <https://doi.org/10.1097/AOG.0000000000004517>. Accessed: April 14, 2023.
9. Peahl AF, Dalton VK, Montgomery JR, Lai YL, Hu HM, Waljee JF. Rates of New Persistent Opioid Use After Vaginal or Cesarean Birth Among US Women. *JAMA Netw Open*. 2019;2(7):e197863. <https://doi.org/10.1001/jamanetworkopen.2019.7863>. Accessed: April 14, 2023.
10. Hedayati H, Parsons J, Crowther CA. Topically applied anaesthetics for treating perineal pain after childbirth. Cochrane Pregnancy and Childbirth Group, ed. *Cochrane Database of Systematic Reviews*. Published online April 20, 2005. <https://doi.org/10.1002/14651858.CD004223.pub2>. Accessed: April 14, 2023.

11. Ghana S, Hakimi S, Mirghafourvand M, Abbasalizadeh F, Behnampour N. Randomized controlled trial of abdominal binders for postoperative pain, distress, and blood loss after cesarean delivery. *Int J Gynecol Obstet*. 2017;137(3):271-276. <https://doi.org/10.1002/ijgo.12134>. Accessed: April 14, 2023.
12. Hendrickson RG, McKeown NJ. Is maternal opioid use hazardous to breast-fed infants? *Clinical Toxicology*. 2012;50(1):1-14. <https://doi.org/10.3109/15563650.2011.635147>. Accessed: April 14, 2023.
13. U.S. Food and Drug Administration. [Use of Codeine and Tramadol Products in Breastfeeding Women - Questions and Answers](#). August 1, 2019. Accessed: April 14, 2023.
14. Badreldin N, Grobman WA, Yee LM. Racial Disparities in Postpartum Pain Management. *Obstetrics & Gynecology*. 2019;134(6):1147-1153. <https://doi.org/10.1097/AOG.0000000000003561>. Accessed: April 14, 2023.
15. Tangel V, White RS, Nachamie AS, Pick JS. Racial and Ethnic Disparities in Maternal Outcomes and the Disadvantage of Peripartum Black Women: A Multistate Analysis, 2007–2014. *Amer J Perinatol*. 2019;36(08):835-848. <https://doi.org/10.1055/s-0038-1675207>. Accessed: April 14, 2023.
16. Johnson JD, Asiodu IV, McKenzie CP, et al. Racial and Ethnic Inequities in Postpartum Pain Evaluation and Management. *Obstetrics & Gynecology*. 2019;134(6):1155-1162. <https://doi.org/10.1097/AOG.0000000000003505>. Accessed: April 14, 2023.
17. Osterman MJK. Changes in primary and repeat cesarean delivery: United States, 2016–2021. Vital Statistics Rapid Release; no 21. Hyattsville, MD: National Center for Health Statistics. July 2022. <https://www.cdc.gov/nchs/data/vsrr/vsrr021.pdf>. Accessed: April 14, 2023.