

# Post-Discharge Opioid Prescriptions for New Mothers Down 43% Since 2017

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## Key Findings

- The rate of opioid prescriptions at discharge after childbirth declined by 43% between 2017 and 2024, falling from 502 per 1,000 mothers to 285 per 1,000 mothers.
- Patients with an opioid prescription in the 30 days prior to delivery were significantly more likely to receive opioids across all stages of the delivery admission compared to those without a recent prescription.

Effective pain management during childbirth is essential for maternal comfort and recovery, yet the use of opioids for this purpose has raised clinical concerns regarding dependency and safety.<sup>1</sup> The American College of Obstetricians and Gynecologists encourages cautious opioid prescribing in obstetric care to reduce misuse and neonatal complications.<sup>2</sup>

To understand pain medication patterns around the time of delivery, we studied more than 7 million deliveries that occurred between 2017 and 2024. We analyzed how discharge prescriptions for opioids have changed over time. We found that there has been a substantial decline during the studied period in the proportion of women who received an opioid prescription upon discharge, as seen in Figure 1. In 2017, more than half of all patients were prescribed an opioid upon discharge. By 2024, that figure had dropped to roughly a quarter of deliveries, representing a 43% decrease.

## Annual Rate of Opioid Prescriptions Upon Discharge

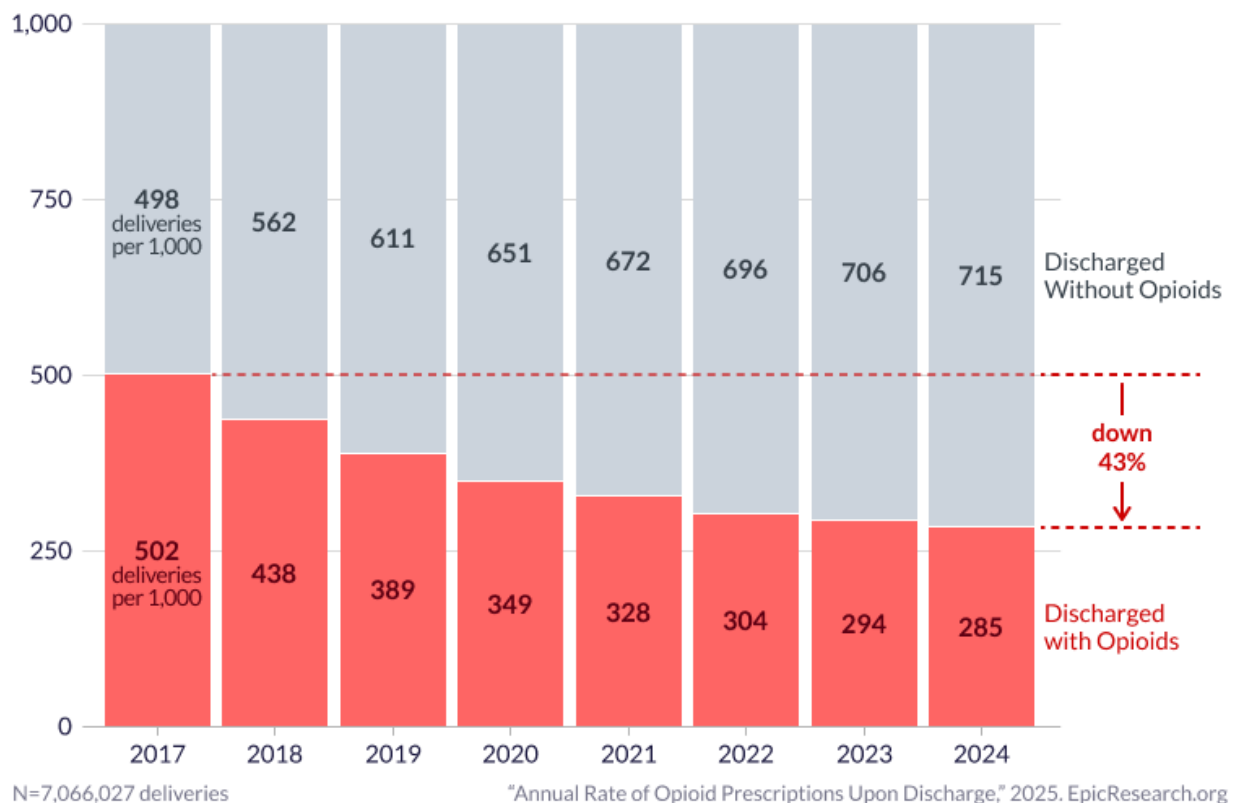
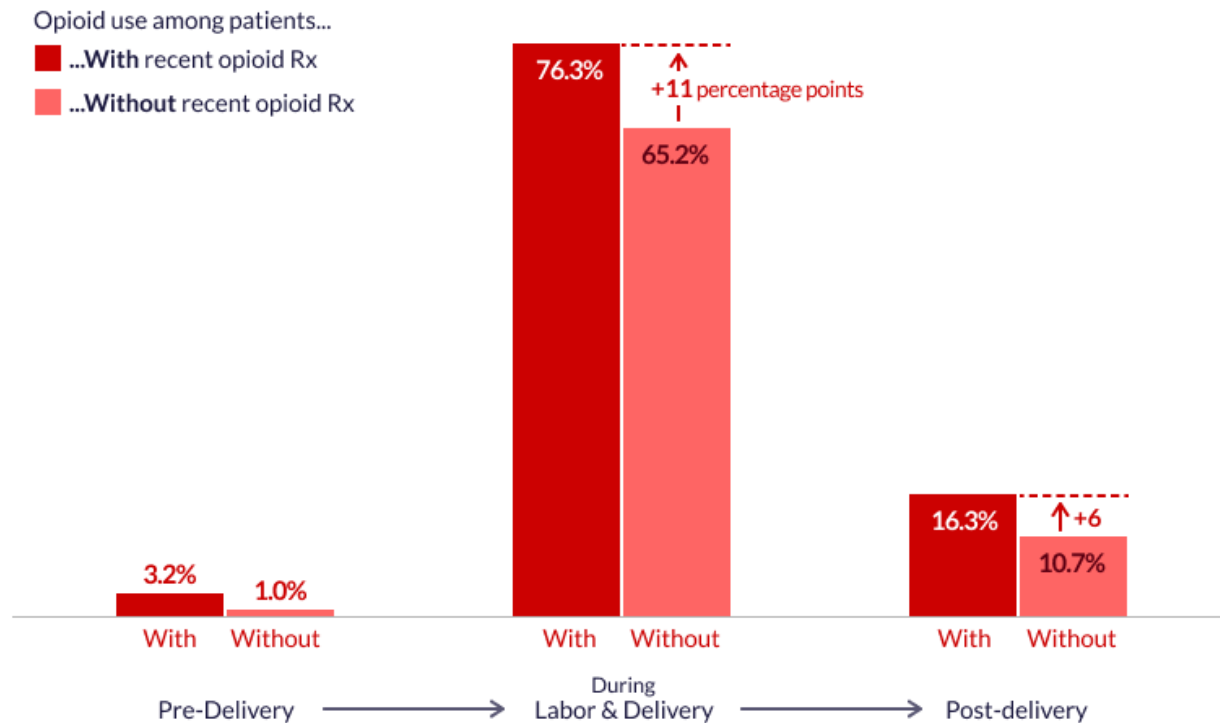


Figure 1. The annual rate of opioids being prescribed for mothers upon discharge after delivery by year.

We also analyzed how the use of pain medications varies throughout the delivery admission. We categorized the stages as pre-labor (in hospital), labor and delivery, and post-delivery (in hospital). Opioid medications included those administered orally, intravenously, intramuscularly, subcutaneously, sublingually, transdermally, or epidurally. Data on patient-controlled analgesics (PCAs), which are used during labor and delivery in some situations,<sup>1</sup> were not available for analysis.

Opioid use varied by whether the mother had an opioid prescription in the 30 days prior. 76% of women with a recent opioid prescription received an opioid during labor compared to 65% of those without such a history, as seen in Figure 2. This trend was similar for before and after labor as well.

## Opioid Administration Rate by Recent Opioid Prescription



N=7,066,027 deliveries

"Opioid Administration Rate by Recent Opioid Prescription," 2025. EpicResearch.org

Figure 2. The rate of opioids being administered by delivery stage by whether the patient had a prescription for an opioid in the 30 days before the admission.

These data come from Cosmos, a dataset created in collaboration with a community of Epic health systems representing more than 300 million patient records from 1,700 hospitals and more than 40,000 clinics from all 50 U.S. states, Lebanon, and Saudi Arabia. This study was completed by two teams that worked independently, each composed of a clinician and research scientists. The two teams came to similar conclusions. Graphics by Brian Olson.

## References

1. Reale S. Pharmacologic management of pain during labor and delivery. UpToDate. February 26, 2024. <https://www.uptodate.com/contents/pharmacologic-management-of-pain-during-labor-and-delivery>. Accessed May 5, 2025.
2. Committee Opinion No. 711: Opioid Use and Opioid Use Disorder in Pregnancy. Obstet Gynecol. 2017;130(2):e81-e94. doi:10.1097/AOG.0000000000002235

## Data Definitions

| Term                    | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Study period</b>     | Births occurring between 2017 and 2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Study population</b> | Deliveries of singletons that occurred during an admission where: <ul style="list-style-type: none"> <li>• The pregnancy start date is known</li> <li>• The birth date is known</li> <li>• The admission's start and end dates are known</li> <li>• At least one medication was administered during the admission</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Exposures</b>        | Pre-admission: 30 days before admission<br>Pre-delivery: Admission start through one day before delivery<br>Labor: One day before day of birth through day of birth<br>Post-delivery: One day after birth through day before discharge day<br>Upon discharge: Day of discharge through one week after discharge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Pain medication</b>  | <b>Acetaminophen, NSAIDs, opioids, or neuropathic medications</b><br><br><b>Pre-admission and post-discharge</b> pain medications were prescriptions.<br><b>Pre-delivery through post-delivery</b> pain medications were administrations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Limitations</b>      | Patient-controlled analgesics were not included.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Acetaminophen</b>    | A medication with a simple generic name containing "acetaminophen" AND with a pharmaceutical class of "ANALGESIC, NON-SALICYLATE AND BARBITURATE COMBINAT"; "ANALGESIC/ANTIPYRETICS, SALICYLATES"; "ANALGESIC/ANTIPYRETICS, NON-SALICYLATE"; "ANALGESICS, SALICYLATE AND NON-SALICYLATE COMB."; "NSAID ANALGESIC AND NON-SALICYLATE ANALGESIC COMB"; "SKELETAL MUSCLE RELAXANT-NON-SALICYLATE ANALGESICS"; or "SKELETAL MUSCLE RELAXANTS"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>NSAIDs</b>           | A medication with pharmaceutical class of "ANALGESIC/ANTIPYRETICS, SALICYLATES"; "ANALGESICS, SALICYLATE AND NON-SALICYLATE COMB."; "LOCAL ANESTHETICS"; "NSAID ANALGESIC AND NON-SALICYLATE ANALGESIC COMB"; "NSAID AND HISTAMINE H2 RECEPTOR ANTAGONIST COMB."; "NSAID, COX INHIBITOR-TYPE AND PROTON-PUMP INHIBITOR"; "NSAIDS (COX NON-SPEC. INHIBITOR) AND GLUCOCORTICOID"; "NSAIDS (SYSTEMIC)-TOPICAL LOCAL ANESTHETIC COMBO"; "NSAIDS (COX NON-SPEC. INH) AND SKELETAL MUSCLE RELAX"; "NSAIDS (COX NON-SPEC. INHIB) AND PROSTAGLANDIN ANALOG"; "NSAIDS, CYCLOOXYGENASE INHIBITOR TYPE ANALGESICS"; "SKELETAL MUSCLE RELAXANT, SALICYLATE, OPIOID ANALGESIC"; "SKELETAL MUSCLE RELAXANT-NON-SALICYLATE ANALGESICS"; "SKELETAL MUSCLE RELAXANTS"; or "SKELETAL MUSCLE, OTHERS" AND a simple generic name containing "Aspirin," "Diclofenac," "Diflunisal," "Etodolac," "Fenoprofen," "Flurbiprofen," "Ibuprofen," "Indomethacin," "Ketoprofen," "Ketorolac," "Meclofenamate," "Mefenamic Acid," "Meloxicam," "Nabumetone," "Naproxen," "Oxaprozin," "Piroxicam," "Sulindac," "Tenoxicam," "Tiaprofenic Acid," or "Tolmetin" |
| <b>Opioids</b>          | A medication with a pharmaceutical class of "ANALGESIC/ANTIPYRETICS, SALICYLATES"; "ANALGESIC/ANTIPYRETICS, NON-SALICYLATE"; "OPIOID ANALGESIC AND NON-SALICYLATE ANALGESICS"; "OPIOID ANALGESIC AND NSAID COMBINATION"; "OPIOID ANALGESIC AND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

SALICYLATE ANALGESIC COMB"; "OPIOID ANALGESIC, ANESTHETIC  
 ADJUNCT AGENTS"; "OPIOID ANALGESIC, SALICYLATE, AND  
 XANTHINE COMB."; "OPIOID ANALGESIC, NON-SALICYLATE, XANTHINE  
 COMB"; or "OPIOID ANALGESICS" AND a simple generic name of  
 "acetaminophen/codeine/caffeine"; "butorphanol tartrate";  
 "cod/ASA/salicylmd/acetamin/caf"; "codeine phos/aspirin/caffeine";  
 "codeine phosphate"; "codeine phosphate/ASA/buffers"; "codeine sulfate";  
 "codeine/ASA/caff/meprobamate"; "codeine/aspirin/phenobarbital";  
 "codeine/chlorzoxazone/acetamin"; "codeine/codeine sulfate";  
 "codeine/methocarbamol/acetamin"; "codeine/methocarbamol/aspirin";  
 "dezocine"; "dihydrocodeine bitartrate"; "fentanyl"; "fentanyl  
 citrat/dextrose 5%/PF"; "fentanyl citrate"; "fentanyl citrate/PF"; "fentanyl  
 citrate-0.9 % NaCl/PF"; "fentanyl HCl"; "fentanyl/bupivacaine/0.9% NaCl";  
 "fentanyl/bupivacaine/NS/PF"; "fentanyl/ropivacaine/NS/PF";  
 "fentanyl/ropivacaine/sod Cl/PF"; "hydrocodone bitartrate";  
 "hydrocodone/acetaminophen"; "hydromorphone HCl"; "hydromorphone  
 HCl in 0.9% NaCl"; "hydromorphone HCl in D5W/PF"; "hydromorphone  
 HCl in water/PF"; "hydromorphone HCl/0.9% NaCl/PF"; "hydromorphone  
 HCl/PF"; "hydromorphone/bupivac/0.9NaCl/PF";  
 "hydromorphone/bupivac/0.9%NaCl"; "hydromorphone/ropivac/sod chl/PF";  
 "hydromorphone/sod chlor,iso/PF"; "levomethadyl acetate HCl";  
 "levorphanol tartrate"; "meperidine HCl"; "meperidine HCl in 0.9 % NaCl";  
 "meperidine HCl in 0.9% NaCl/PF"; "meperidine HCl/atropine";  
 "meperidine HCl/PF"; "meperidine HCl/prometh HCl"; "methadone HCl"  
 "methadone in 0.9 % sod.chlorid"; "morphine HCl"; "morphine HCl/PF";  
 "morphine in iso sod chlorid/PF"; "morphine sulfate"; "morphine sulfate in  
 0.9 % NaCl"; "morphine sulfate liposomal/PF"; "morphine sulfate/0.9%  
 NaCl/PF"; "morphine sulfate/D5W"; "morphine sulfate/D5W/PF";  
 "morphine sulfate/naltrexone"; "morphine sulfate/PF"; "morphine tartrate";  
 "nalbuphine HCl"; "oliceidine fumarate"; "opium/belladonna alkaloids";  
 "oxycodone HCl"; "oxycodone HCl/naloxone HCl"; "oxycodone  
 HCl/naltrexone HCl"; "oxycodone myristate"; "oxycodone pectinate";  
 "oxymorphone HCl"; "pentazocine HCl"; "pentazocine  
 HCl/acetaminophen"; "pentazocine HCl/aspirin"; "pentazocine  
 HCl/naloxone HCl"; "pentazocine lactate"; "propoxyphene HCl";  
 "propoxyphene HCl/acetaminophen"; "propoxyphene nap/acetaminophen";  
 "propoxyphene napsylate"; "propoxyphene/aspirin/caffeine"; "remifentanyl  
 in 0.9 % NaCl/PF"; "sufentanil citrate"; "sufentanil/bupivacaine/NS/PF";  
 "tapentadol HCl"; "tramadol HCl"; "acetaminophen with codeine";  
 "acetaminophen/caff/dihydrocod"; "alfentanil HCl";  
 "aspirin/caff/dihydrocodeine"; "aspirin/caffeine/dihydrocodein";  
 "aspirin/codeine phosphate"; "benzhydrocodone/acetaminophen";  
 "dihydrocodeine bit/acetaminoph"; "hydrocodone bitartrate/aspirin";  
 "hydrocodone/ibuprofen"; "ibuprofen/codeine phosphate";  
 "ibuprofen/oxycodone HCl"; "methadone in sod chlor,iso-osm";  
 "oxycodone HCl,terephth/aspirin"; "oxycodone HCl/acetaminophen";  
 "oxycodone HCl/aspirin"; "oxycodone/aspirin"; "remifentanyl HCl";  
 "sufentanil citrate/PF"; "tramadol HCl/acetaminophen"; or "tramadol

|                                |                                                                                                                                                              |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | HCl/celecoxib" with a route of oral, intravenous, intramuscular, subcutaneous, sublingual, transdermal, or epidural                                          |
| <b>Neuropathic medications</b> | A medication with a simple generic name containing "gabapentin" or "pregabalin" AND with a pharmaceutical class of "ANTICONVULSANTS" or "NEUROPATHIC AGENTS" |

**Table 1. Annual Rate of Opioid Prescriptions Upon Discharge**

| Birth Year | Patients with Rx | Total Patients | Percent with Prescription |
|------------|------------------|----------------|---------------------------|
| 2017       | 302,326          | 601,715        | 50.24%                    |
| 2018       | 310,513          | 708,761        | 43.81%                    |
| 2019       | 300,592          | 771,883        | 38.94%                    |
| 2020       | 287,812          | 824,288        | 34.92%                    |
| 2021       | 299,845          | 915,366        | 32.76%                    |
| 2022       | 302,763          | 996,561        | 30.38%                    |
| 2023       | 313,875          | 1,068,824      | 29.37%                    |
| 2024       | 335,394          | 1,178,629      | 28.46%                    |

**Table 2. Opioid Administration Rate by Recent Opioid Prescription**

| L&D Period           | Opioid in last 30 days | Count with Opioids Administered | Count of Total Births | Percent with Opioid Administration |
|----------------------|------------------------|---------------------------------|-----------------------|------------------------------------|
| <b>Pre-delivery</b>  | Yes                    | 5,614                           | 175,752               | 3.19%                              |
|                      | No                     | 67,894                          | 6,890,275             | 0.99%                              |
| <b>Labor</b>         | Yes                    | 134,141                         | 175,752               | 76.32%                             |
|                      | No                     | 4,493,177                       | 6,890,275             | 65.21%                             |
| <b>Post-delivery</b> | Yes                    | 28,707                          | 175,752               | 16.33%                             |
|                      | No                     | 736,857                         | 6,890,275             | 10.69%                             |