



Measuring What Matters: Colorado Perinatal Outcomes

2025 REPORT

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Executive Summary of Key Findings

In this inaugural report that fulfills a requirement of Senate Bill 24-175, codified at C.R.S. § 25-52-106.5, the Colorado Perinatal Care Quality Collaborative (CPCQC) examines 2025 hospital claims data to create a baseline understanding of important measures of perinatal health and hospital-based birth outcomes. The data in this report tell a consistent story: Colorado has made meaningful progress on several measures of perinatal health, yet the burden of preventable complications continues to fall heaviest on specific groups—Black and Native American Coloradans, rural residents, and those covered by Medicaid—and is compounded by where and how care is delivered. Five findings stand out:

- ① **Differences persist despite access to care.** Although Black patients attend more prenatal visits on average than white patients, this pattern may partly reflect higher rates of pregnancy-related complications requiring additional monitoring.¹ Despite substantial engagement with prenatal care, Black patients continue to experience disproportionately high rates of severe maternal morbidity (SMM), cardiovascular conditions, hypertension, and preterm birth. These findings suggest that access and visit volume alone are insufficient; quality, responsiveness, and patient experience also influence outcomes.
- ② **Geography shapes risk.** Adverse outcomes cluster among mothers who live in southeastern Colorado, where obstetric capacity continues to shrink. Larimer County and the rural central mountain region that includes Chaffee, Custer, Fremont and Lake counties also consistently fared worse than other regions across a number of indicators examined in this report. Nearly 40% of Colorado counties are designated maternity care deserts.² Where a patient lives continues to influence what care they can reach and how quickly they can reach it when complications arise.
- ③ **Cesarean (C-section) delivery is a consequential inflection point.** Patients delivering by C-section experience a rate of severe maternal morbidity that is five times higher than those who deliver vaginally (408 vs. 81 per 10,000 births). Infants delivered via C-section have a rate of unexpected newborn complications that is 2.4 times higher than those who were delivered vaginally. These findings underscore both the lifesaving value of C-sections when clinically indicated and the downstream cost of those performed without clear benefit.
- ④ **Mental health conditions and substance use disorder are likely underidentified in these data.** Differences in diagnosis rates across populations may reflect variation in screening practices, documentation, and stigma, in addition to differences in the true prevalence of these conditions. Meanwhile, suicide and accidental overdose remain leading causes of maternal mortality in Colorado.³ What this report captures about perinatal behavioral health is a floor, not a ceiling.
- ⑤ **Medicaid is a critical safety net for higher-risk births.** Medicaid covers a substantial share of Colorado births, and these patients show elevated rates across nearly every indicator examined, including severe maternal morbidity, readmissions, and cardiovascular conditions. These rates may partially reflect the greater social and economic risk carried by the population Medicaid serves, not the coverage itself—which is exactly why stable, comprehensive coverage matters. Continuous insurance across the full perinatal period, including 12 months postpartum care, doula support, mental health, and lactation services, is a precondition for closing the gaps this report documents.

Executive Summary of Key Findings

Taken together, these findings point to the strategies detailed in later sections that explore how clinical quality improvement (QI) can be paired with changes in policy, infrastructure, and community partnerships to ensure every Coloradan can reach high-quality, respectful perinatal care, wherever they live.

This report identifies five areas where opportunities for improvement exist.

✔ This icon denotes recommendations on which CPCQC work is already under way.

① Clinical and facility-level improvements:

- ✔ Continue efforts to reduce avoidable first-time C-sections, and strengthen perioperative and postoperative monitoring for patients who had a C-section delivery.
- ✔ Implement universal screening protocols for perinatal mental health conditions and substance use disorders during birth hospitalization, paired with warm handoffs to community-based treatment.
- ✔ Embed respectful, compassionate maternal care into perinatal education and interactions at every level.
- ✔ Bolster obstetric emergency readiness across the full care continuum—not only labor and delivery, but also emergency departments and pre- and post-hospital settings.
- Improve consistent adherence to Alliance for Innovation on Maternal Health (AIM) hemorrhage and severe hypertension patient safety bundles (PSBs). Pair these efforts with maternal warning-signs education for patients, families, and care teams, including ensuring that concerns raised by patients or support people are not dismissed.
- Standardize aspirin prophylaxis for preeclampsia prevention.

② Healthcare system and access:

- Explore the establishment of a Levels of Maternal Care framework in Colorado.
- Extend specialty perinatal care into rural and low-resource settings through tele-maternal-fetal-medicine (tele-MFM), remote consultation, and regional hub-and-spoke models.
- Align state practice with updated American College of Obstetrics & Gynecology (ACOG) prenatal care guidelines.
- ✔ Support early and consistent postpartum follow-up by scheduling visits before hospital discharge, offering telehealth or remote monitoring when appropriate, providing universal home visiting, and addressing barriers such as transportation and childcare.
- ✔ Expand provider-to-provider teleconsultation for perinatal behavioral health, including Colorado's PROSPER program.
- Develop perinatal-specific crisis response pathways, including training for 988 call centers and mobile crisis teams.
- ✔ Prevent further obstetric unit closures and protect existing rural capacity.

Executive Summary of Key Findings

3 Policy and financing:

- ✔ Protect the 12-month postpartum coverage offered via Colorado's Medicaid plan, HealthFirst Colorado, including doula support and lactation services.
- ✔ Fund rural obstetric infrastructure through targeted financial incentives, clinician loan repayment, and sustainable reimbursement for low-volume obstetric units to prevent further closures and maintain a viable rural maternity care workforce.
 - Stabilize reimbursement for services that reduce perinatal morbidity but remain chronically underfunded, including integrated behavioral health in obstetric settings, perinatal home visiting, doula and lactation care, and community-based postpartum follow-up.
- ✔ Reduce policy and administrative barriers that discourage pregnant and postpartum people from seeking substance use treatment, including clarifying CPS reporting requirements, supporting the use of Plans of Safe Care, and reviewing reporting practices that may lead to child welfare involvement when individuals seek treatment.

4 Public health infrastructure:

- ✔ Strengthen Colorado's **Maternal Health Dashboard** and continue data linkages between vital records, hospital claims, and the All-Payer Claims Database. Align claims-based surveillance with complementary datasets, including the Baby and You survey and APCD outpatient claims, to capture the full scope of perinatal mental health and substance use burden.
- ✔ Pair severe maternal morbidity surveillance with Maternal Mortality Review Committee (MMRC) findings to identify preventable factors and inform statewide prevention strategies.
 - Strengthen data systems to monitor geographic shifts in where people give birth to ensure resource allocation can adapt to changing community needs.

5 Community-based approaches:

- ✔ Partner with community-based organizations and people with lived experience in quality improvement (QI) design and implementation.
 - Expand access to perinatal care providers who reflect and understand the communities they serve, including birth professionals, doulas, community health workers, lactation consultants, and peer navigators.
 - Build sustainable workforce pipelines for doulas, midwives, and lactation professionals through scholarships, stipends, paid practicum placements, mentorship models, and sustainable reimbursement.
- ✔ Invest in community-based behavioral health infrastructure.
- ✔ Integrate social needs screening, including food insecurity, housing instability, and transportation, into prenatal, delivery, and postpartum workflows.

Setting the Context: Perinatal Health in Colorado

Ensuring Colorado families have a strong start begins with supporting them during the perinatal period. Pregnancy, birth, and the first year of a baby's life are formative experiences for families, and they present an important opportunity to promote the health and well-being of the next generation of Coloradans.

Colorado has seen considerable progress in some areas of perinatal health: the state's infant mortality rate has fallen by nearly 25% during the past two decades, and the low-risk C-section rate is improving.^{4,5} However, concerning trends have emerged in other areas. The state has seen little reduction in indicators including preterm birth rates and maternal mortality. Maternal mortality rates are particularly high for Black and American Indian/Alaska Native people, people insured by Medicaid, and those in the most sparsely populated parts of the state—underscoring the need to look beneath state-level data when examining perinatal health outcomes.

Mothers giving birth across Colorado deserve access to safe, respectful, and high-quality care—regardless of who they are or where they live. As the setting for 96% of live births in Colorado, hospitals are essential and committed partners in advancing this vision. With the passage of Senate Bill 24-175, codified at C.R.S. § 25-52-106.5, every Colorado birthing hospital is now required to participate in at least one perinatal clinical QI effort with CPCQC. Tracking perinatal health outcomes in a hospital setting is vital to assessing progress in the years ahead. C.R.S. § 25-52-106.5 also requires every Colorado birthing hospital to annually submit a minimum data set of key perinatal outcomes to CPCQC, including specific outcome measures. The Colorado Hospital Association provides these data to CPCQC on hospitals' behalf. This report summarizes Colorado hospitals' performance on the key outcomes specified by the legislation. In future years, this report may address additional outcome measures relevant to advancing maternal-infant health in Colorado.

Although birth can be a monumental moment for families, it is only one small window of time during the journey to becoming a parent. Improving perinatal health outcomes will require collaboration among partners who work outside of hospital walls, including clinical providers, community-based organizations, and families themselves. Together, we can build a perinatal system that supports all Coloradans in starting strong.





How to Use This Report

Produced via a unique partnership between CPCQC, the Colorado Department of Public Health and Environment (CDPHE), and the Colorado Hospital Association (CHA), this inaugural annual report highlights data on key indicators of perinatal health outcomes that take place in Colorado's birthing hospitals. It is designed to make data on perinatal health outcomes in the hospital setting more accessible and actionable—ensuring policymakers, state leaders, healthcare workers, community-based organizations, and advocates have the information they need to shape efforts to make Colorado a healthier place to give birth.

The data in this year's report provide a snapshot of hospital-based perinatal health outcomes in 2025, based on aggregated, statewide inpatient hospital claims for the full calendar year. Future reports will track progress on these important issues, increasing understanding of how QI efforts are making a difference for Colorado families.

Limitations of Hospital Claims Data

Hospital claims data are valuable for statewide analysis in Colorado because they are available for nearly all hospital births and can be analyzed using standardized coding across facilities. This report relies primarily on hospital claims data in part due to this accessibility. It is important to note that the data in this report are limited to hospital births and do not include births that occur in other settings. While hospitals have an important role to play in ensuring safe, high-quality care for all births, hospitals are one care setting within the continuum of care across an entire perinatal period from pregnancy, through birth, and postpartum, including birth centers, community births, outpatient clinics and community-based organizations. There are many factors related to hospitalization that are outside of the control of hospitals, including factors such as preexisting medical conditions at the time of delivery, access to high-quality prenatal care, social drivers of health across the lifespan, and conditions that present spontaneously during pregnancy or labor and delivery.

Nevertheless, while the following sections sometimes include clinical context and possible explanations for variation in perinatal outcomes in hospitals, these interpretations are not intended to excuse or normalize the overall high rate of maternal morbidity and mortality in the U.S. The elevated rates of mortality and morbidity compared with peer countries warrant continued scrutiny, systems-level improvement, and accountability across all levels of care.

Remembering the People Behind the Numbers

As you read, please remember that the outcomes described in this report are more than statistics. Each outcome represents a real mother or infant in Colorado, and adverse outcomes affect not only these individuals but their families and communities. We honor the often challenging experiences that these numbers represent, and commit to using these learnings to build a Colorado where every birth experience is supported with respect, dignity, and the highest quality of care.

A Note on Differences in Perinatal Health Outcomes

Meaningfully improving perinatal health requires examining differences in maternal and infant health outcomes that currently exist along racial, socioeconomic, and geographic lines. To inform efforts to improve care for all Coloradans, data for each topic in this report are presented at the statewide level, as well as by race/ethnicity, payor (for example, Medicaid or commercial insurance), age, and hospital and patient region. Examining the data through these lenses allows Colorado leaders to identify gaps in perinatal health outcomes and prioritize resources where they are most needed.

Differences in access to maternity care across the state influence regional differences in perinatal health outcomes. Nearly 40% of Colorado counties are considered “maternity care deserts,” where there are no hospitals or birth centers offering obstetric care and no obstetric providers, including obstetricians, family physicians providing obstetric care, or certified nurse midwives.⁷

This report examines outcomes by both patient region of residence and by the region in which hospitals are located, using CDPHE’s Health Statistics Regions (HSRs). Examining patient outcomes by patient residence highlights factors such as access to care, while examining them by hospital region reflects patient acuity and referral patterns. Both perspectives are essential for understanding and addressing variations in birth outcomes across Colorado.

Colorado’s elevation is a risk factor for several outcomes documented in this report. Populations residing and delivering above approximately 8,000 feet experience higher rates of preeclampsia, fetal growth restriction, and preterm birth than those at lower elevations, even after adjusting for maternal characteristics.⁸ Readers comparing Colorado rates to national benchmarks, as well as QI teams at high-elevation hospitals, should account for elevation as a modifier when interpreting regional variation.

By using data to illuminate differences in perinatal health outcomes, Colorado can take meaningful steps to ensure that all people have the care and support they need for healthy pregnancies and births.

Key Definitions

Maternal Mortality Review Committee (MMRC): The Colorado Maternal Mortality Review Committee (MMRC) is a multidisciplinary group that convenes monthly to comprehensively review the deaths of all Colorado residents that occur during or within one year of the end of pregnancy. MMRCs are the gold standard for maternal death review and exist across the country. The Colorado MMRC is convened by the Maternal Mortality Prevention Program at the Colorado Department of Public Health and Environment (CDPHE). The MMRC comprises a group of healthcare providers, public health professionals, and people with lived experience.

Medicaid: The Medicaid category in this report includes women covered by Medicaid (HealthFirst Colorado) or the Child Health Plan *Plus* (CHP+). Medicaid and CHP+ are publicly funded insurance programs. Pregnant women in Colorado are eligible for Medicaid if their household income does not exceed 195% of the federal poverty level, or approximately \$64,350 per year for a family of four. They are eligible for CHP+ if their income exceeds the Medicaid income eligibility limit but is below 260% of the federal poverty level, or approximately \$85,800 per year for a family of four.

Payor: A payor is the entity that pays for services provided by a healthcare professional, also known as an insurer. In this report, data disaggregated by payor show patterns in perinatal health outcomes by type of health coverage, including commercial insurance and publicly funded insurance such as Medicaid and Medicare. Data are also provided for patients who are uninsured, as well as for a category that includes people with other types of insurance that do not map to one of the other payor categories.

Severe maternal morbidity: Severe maternal morbidity refers to unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a person’s health.

Maternal and Infant Health Metrics

Severe Maternal Morbidity

Severe maternal morbidity (SMM) occurs when a person experiences unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to their health.⁹ SMM encompasses complications such as hemorrhage, kidney failure, and hysterectomy. Severe maternal morbidity is far more common than maternal mortality. Nationally, there are approximately 650 to 750 maternal deaths each year, while between 50,000 and 60,000 people experience severe maternal morbidity—roughly 75 to 90 times as many cases.¹⁰

People who experience severe maternal morbidity have an elevated risk of adverse physical and mental health outcomes, including readmission to the hospital after being discharged and being diagnosed with a mental health condition or substance use disorder during the first year postpartum.^{11,12} CPCQC’s statewide severe maternal morbidity brief provides additional context for SMM, including definitions and limitations of the severe maternal morbidity measure.*

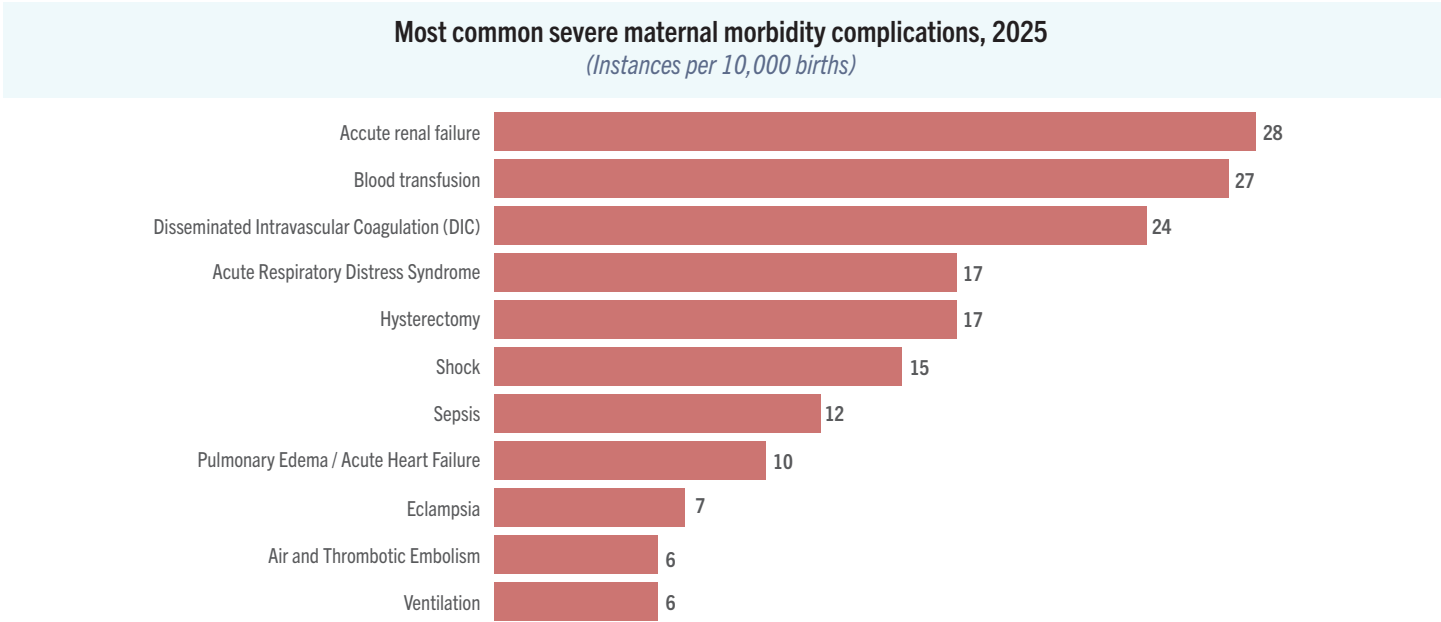
Overall

There were approximately
179 instances
of severe maternal morbidity
per 10,000 births in 2025.

Although there is no directly comparable national rate of SMM, a recent analysis found that the SMM rate for the U.S. in 2021 was 180 instances per 10,000 births.¹³

By Cause

Acute renal failure was the **most common severe maternal morbidity complication** among Colorado hospital births in 2025.



*Reported SMM rates vary depending on whether blood transfusion-only cases are included. Blood transfusion is the most common single SMM indicator and, when included, can account for roughly half of all SMM events nationally. This report excludes transfusion-only cases of SMM. It includes transfusions only when they occurred with a second indicator of SMM. When comparing Colorado rates to other state or national estimates, audiences should confirm whether the comparison uses the definition encompassing or excluding transfusion-only events.

Maternal and Infant Health Metrics

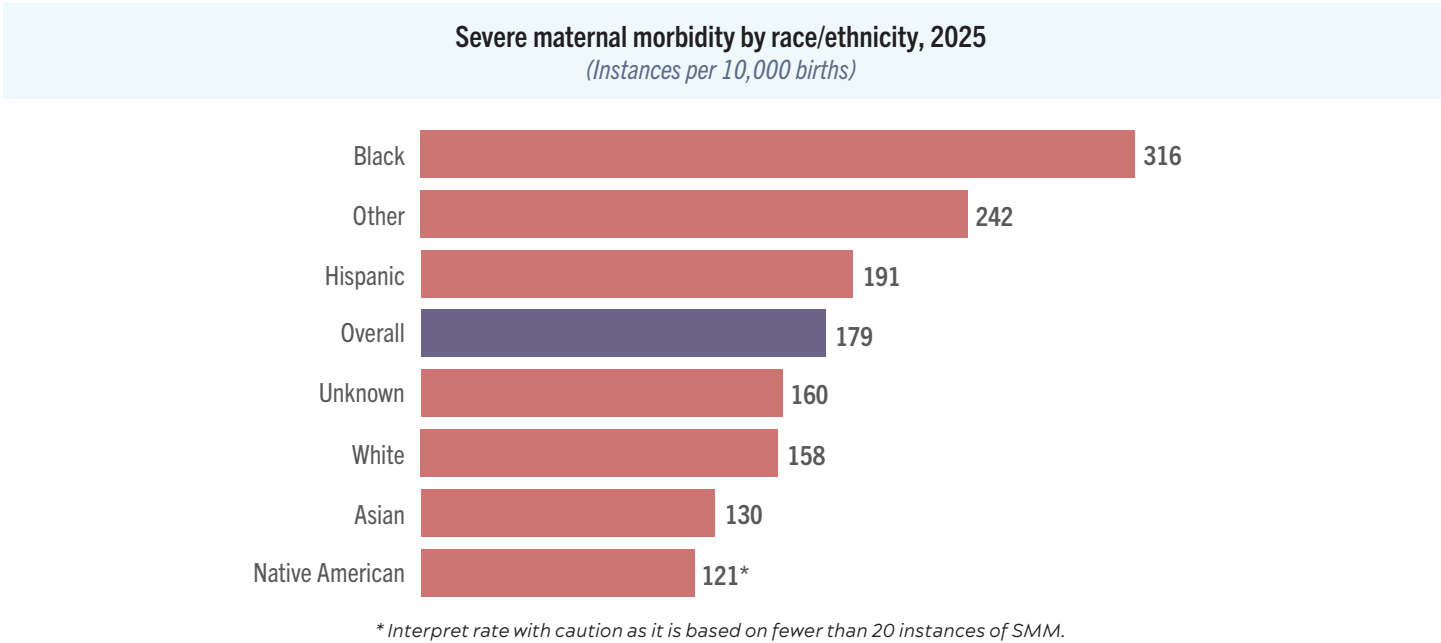
Severe Maternal Morbidity

By Delivery Type

The severe maternal morbidity rate was **significantly higher for C-section deliveries than for vaginal deliveries (408 per 10,000 births vs. 81 per 10,000 births, respectively)**. This difference may reflect both the inherent risks of a surgical procedure and the clinical circumstances that often necessitate C-sections. C-sections, like any surgery, carry postoperative risks such as infection, hemorrhage requiring transfusion, thromboembolic events and anesthetic complications. Additionally, C-sections are frequently performed for underlying complications that independently increase the likelihood of SMM such as hypertensive disorders, abnormal placentation, or fetal intolerance of labor.

By Race/Ethnicity

Severe maternal morbidity was most common among **Black patients**, mirroring racial patterns in maternal mortality. Black patients were **1.8 times more likely** to experience SMM than the overall population who gave birth. Those whose race was indicated as “Other” were **1.4 times more likely**.[†]



[†] For Colorado Hospital Association claims, race is reported by hospitals using CHA race codes. The “Other” category reflects how hospitals map their race data at submission. “Other” can include a mix of races that don’t align with CHA codes, multiracial responses, or cases where race wasn’t disclosed, making it a heterogeneous group. High use of the “Other” race category limits the ability to identify and interpret differences across populations. Future efforts should focus on improving the completeness and specificity of patient-reported race and ethnicity data to support more meaningful analysis and quality improvement.

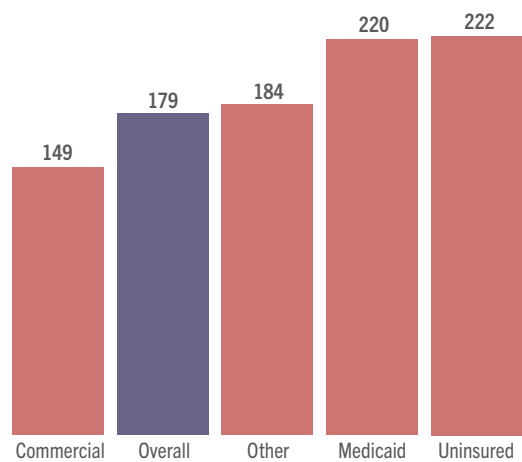
Maternal and Infant Health Metrics

Severe Maternal Morbidity

By Payor

People who were uninsured and those covered by Medicaid were 1.2 times more likely to experience severe maternal morbidity than the overall population who gave birth.

Severe maternal morbidity by primary payor, 2025*
(Instances per 10,000 births)

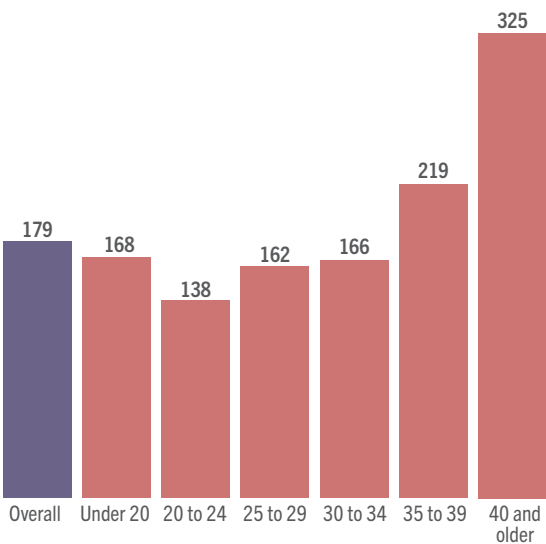


* People for whom the primary payor was Medicare had the highest rate of severe maternal morbidity at 490 instances of SMM per 10,000 births. However, this rate should be interpreted with caution as it is based on fewer than 20 SMM instances. Mothers in this group likely have complex medical needs—facing serious comorbidities or disabling conditions that increase the risk of severe maternal morbidity.

By Age

Severe maternal morbidity generally becomes more common with age. People who are 40 and older are 1.8 times more likely to experience severe maternal morbidity than the overall population who gave birth.

Severe maternal morbidity by age group, 2025*
(Instances per 10,000 births)



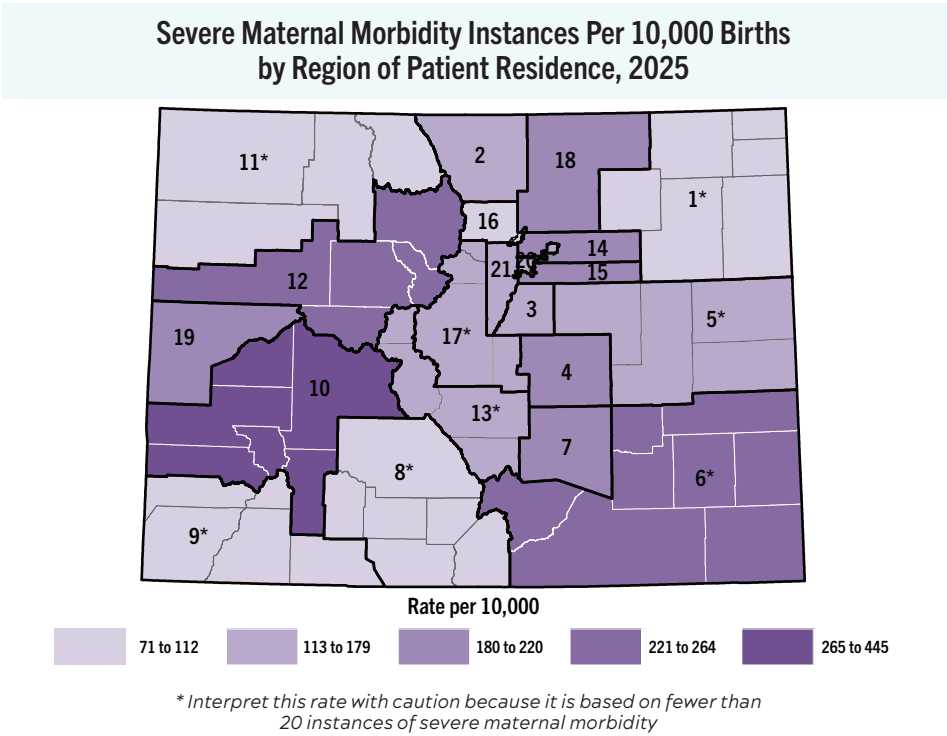
* Age-related variation in SMM rates may reflect differences in obstetric management patterns across age groups, underlying health status, and obstetric risk factors. Older populations are more likely to have preexisting conditions such as hypertension, cardiovascular disease and previous obstetric complications. Older patients also have a higher rate of cesarean delivery, which may contribute to increased incidence of surgical risks such as hysterectomy. Variation across age groups likely also reflect clinical decision-making, such as more conservative uterine-sparing approaches with younger patients.

Maternal and Infant Health Metrics

Severe Maternal Morbidity

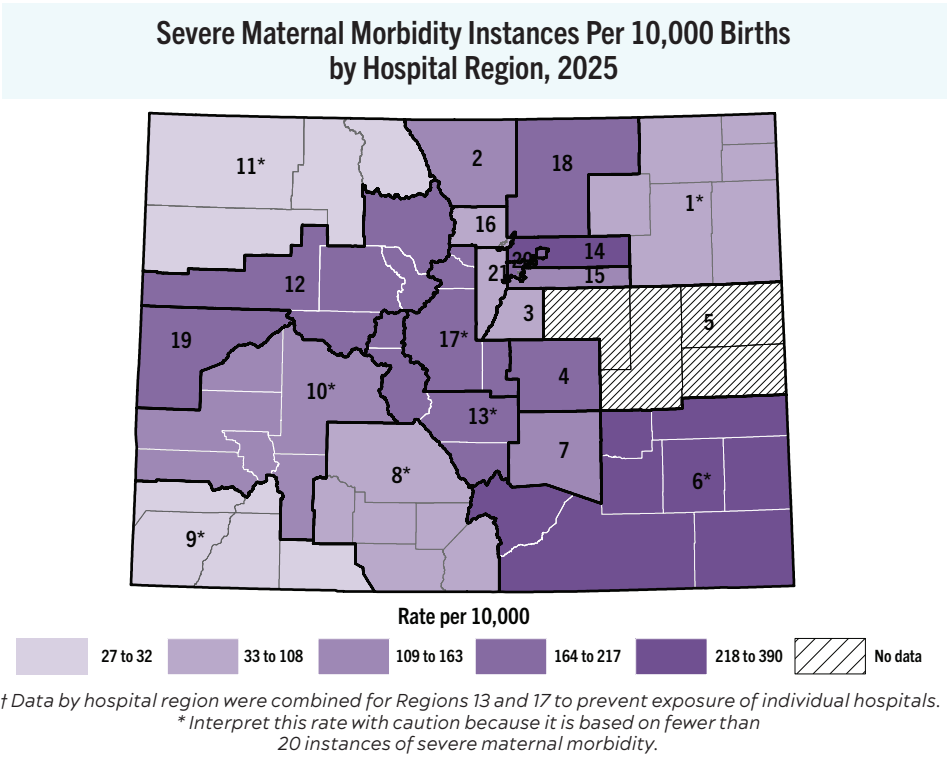
By Patient Region of Residence

Patients who lived in two **rural mountain regions** (Regions 10 and 12) and the **southeastern region of the state** (Region 6) experienced the highest rates of severe maternal morbidity in 2025.



By Hospital Region†

Severe maternal morbidity occurred most often at hospitals in the **southeastern region of the state** (Region 6) and in **Adams County** (Region 14).



Maternal and Infant Health Metrics

Unexpected Newborn Complications

Unexpected newborn complications are complications among full-term newborns with no preexisting conditions. They can include neonatal death, transfer to another hospital for a higher level of care, severe birth injuries or infections, among other complications.¹⁴

Overall

There were approximately **970 instances of unexpected newborn complications per 10,000 births** in 2025. Approximately **three-quarters** were considered moderate, while one-quarter were considered **severe**.

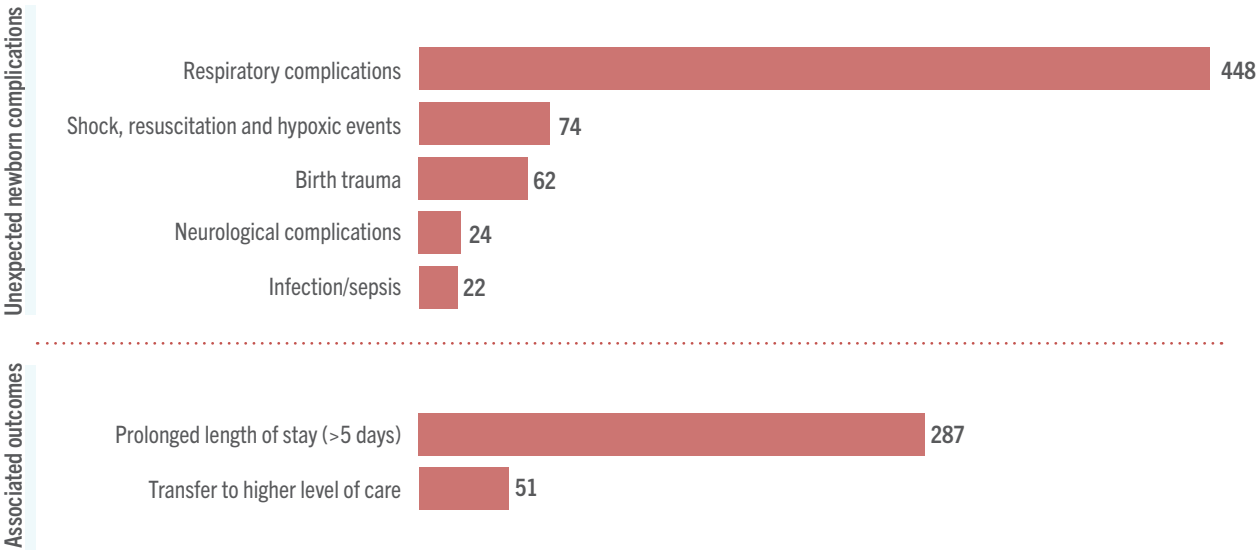
The rate of unexpected newborn complications is much higher than the severe maternal morbidity rate because the unexpected newborn complications rate is not limited only to severe events. This section uses the Joint Commission’s PC-06 measure definition of unexpected newborn complications. National benchmarks for this measure are limited. While it was adopted by the Joint Commission in 2019, there is no publicly reported national average, and the measure does not risk-adjust for maternal characteristics such as hypertensive disorders or diabetes, which substantially affect newborn outcomes (Glazer et al., 2024).¹⁵ These nuances make direct cross-state comparisons difficult to interpret.

By Cause

Respiratory complications were the **most common unexpected newborn complication** among Colorado hospital births in 2025.

Some unexpected newborn complications are identified through clinical diagnoses (e.g., respiratory complications or infection), while others reflect care outcomes such as prolonged hospitalization or transfer to a higher level of care. Neonatal deaths (n=11) occurred infrequently and are not displayed separately.

Unexpected newborn complications and associated outcomes, 2025
(Instances per 10,000 births)



Maternal and Infant Health Metrics

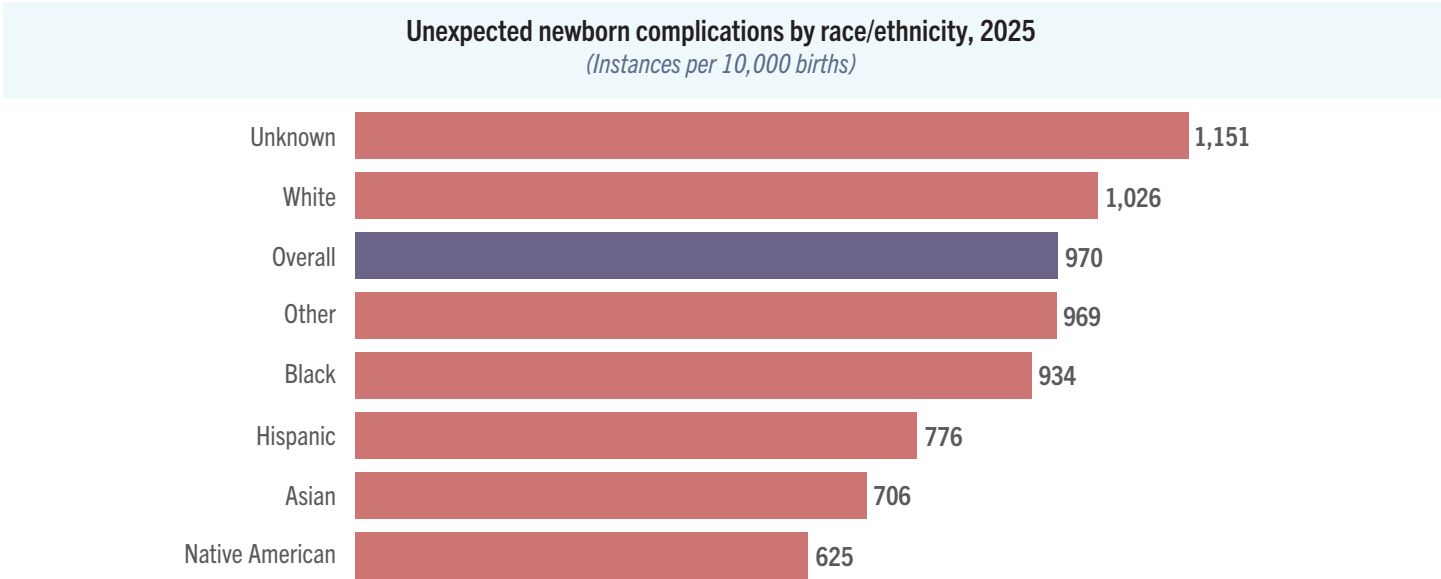
Unexpected Newborn Complications

By Delivery Type

The rate of unexpected newborn complications for infants delivered via C-section was 2.4 times higher than the rate for those delivered vaginally (**1,687 per 10,000 births** vs. **707 per 10,000 births**, respectively). This difference may reflect the clinical circumstances that often necessitate C-section delivery. C-sections are frequently performed for underlying complications that independently increase the likelihood of neonatal morbidity. In addition, respiratory morbidity is increased in newborns after C-section in part due to the differences in newborn physiology affected by mode of delivery.

By Race/Ethnicity

Unexpected newborn complications were most common among **infants whose race was unknown**. These newborns were **1.2 times more likely to experience unexpected complications** than the overall newborn population.



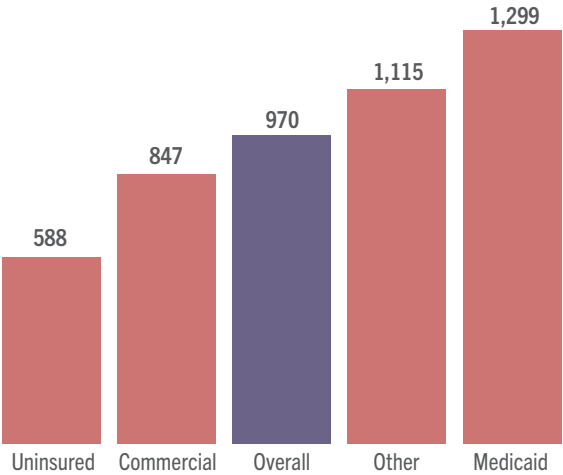
Maternal and Infant Health Metrics

Unexpected Newborn Complications

By Payor

Unexpected newborn complications were **1.3 times more common** among **infants covered by Medicaid** than among the overall population of infants.

Unexpected newborn complications by primary payor, 2025*
(Instances per 10,000 births)



* Infants for whom the primary payor was Medicare had an unexpected newborn complications rate of 1,176 instances per 10,000 births. However, this rate should be interpreted with caution as it is based on fewer than 20 instances.

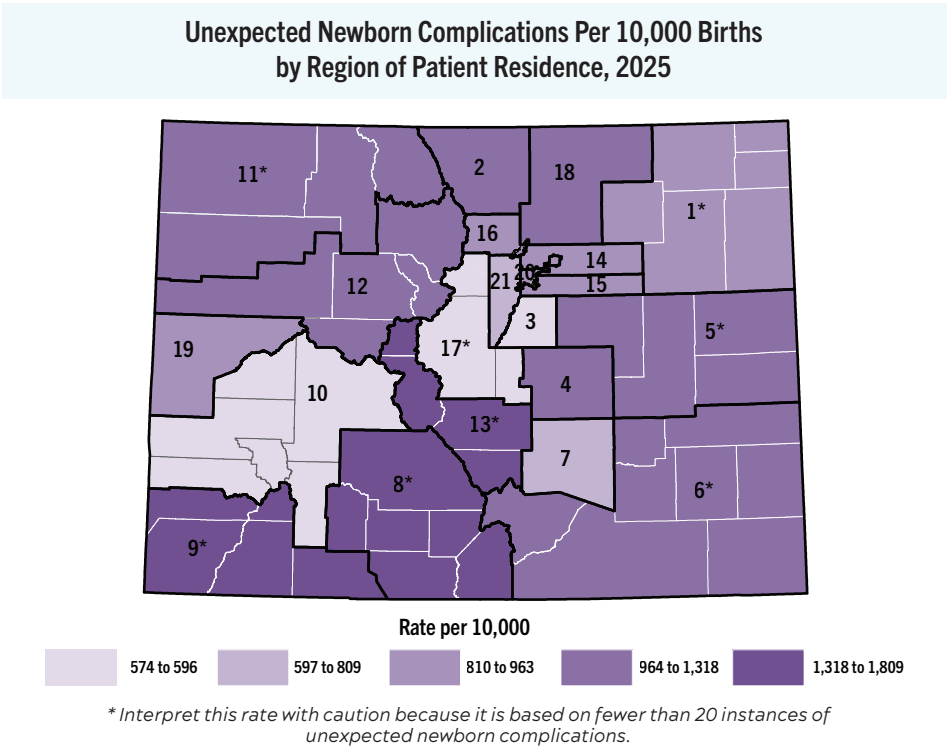


Maternal and Infant Health Metrics

Unexpected Newborn Complications

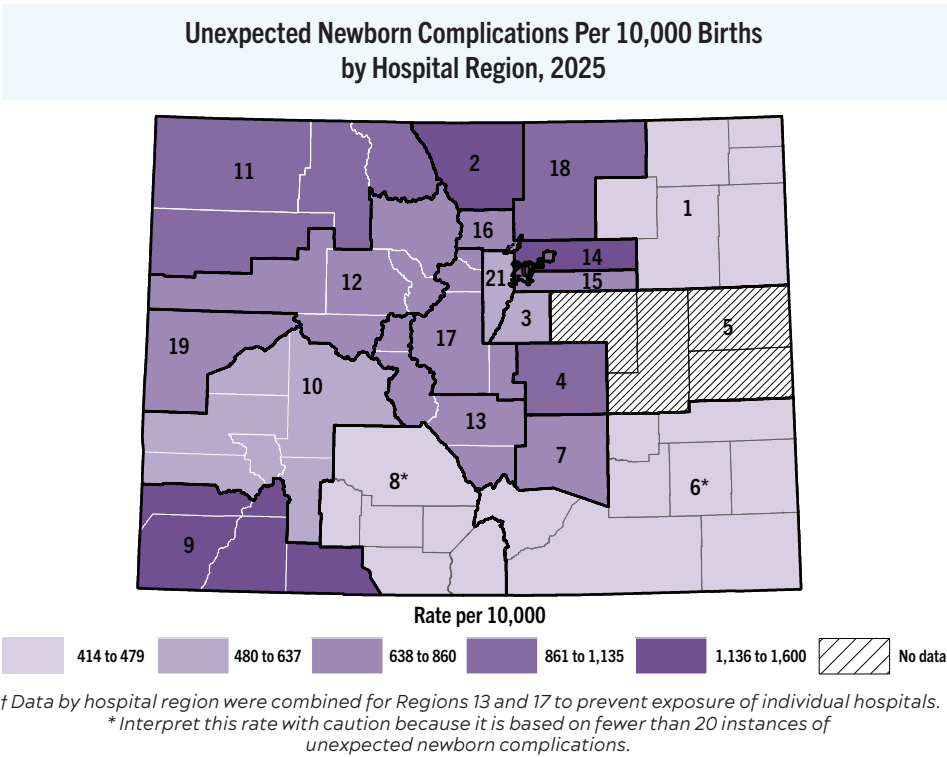
By Patient Region of Residence

Newborns from **southwestern and central mountain regions** (Regions 9 and 13) and the **San Luis Valley** (Region 8) were most likely to experience unexpected complications in 2025.



By Hospital Region†

Unexpected newborn complications were most common among patients who delivered at hospitals in the **southwestern region of the state** (Region 9), **Adams County** (Region 14) and **Larimer County** (Region 2).



Hospital Readmissions

Maternal Readmissions

Maternal readmissions are defined as readmissions to the hospital within 30 days of being discharged after giving birth. They are often a reflection of severe maternal morbidity, including complications such as sepsis, severe hypertension, or infection. Readmissions can be difficult for the patient and their family and costly for the healthcare system.

The American College of Obstetricians and Gynecologists (ACOG) has reframed the postpartum period as the “fourth trimester”—a distinct clinical phase requiring its own model of care rather than a single visit at six weeks postpartum.¹⁶ The leading diagnoses driving postpartum readmission in national data are new-onset or worsening postpartum hypertension, infection (endometritis, wound infection, mastitis), hemorrhage, venous thromboembolism (VTE), and mental health conditions. Hypertensive readmissions frequently occur within the first one to two weeks postpartum. Infection, hemorrhage, and VTE-related readmissions occur throughout the early postpartum period. This timing pattern is the clinical rationale for scheduling the first postpartum visit before hospital discharge and educating patients and families about early warning signs. Mental health-related readmissions, however, may occur across the postpartum year.

Overall

In 2025, **2.2% of people** (1,367 mothers) discharged from Colorado hospitals after giving birth **were readmitted within 30 days.**

Colorado’s readmission rate of 2.2% is broadly consistent with national estimates, which range from approximately 1.7% to 2.2% depending on follow-up window, payor mix, and geography. It is worth noting that postpartum readmission has limited utility as a hospital-level performance metric. The Society for Maternal-Fetal Medicine (SMFM) has cautioned that most between-hospital variation reflects differences in patient populations rather than care quality.^{17, 18} However, it remains a valuable population-level lens. Examining the leading causes of readmission, who is being readmitted, and where readmissions are most common reveals system-level opportunities for improvement.



Hospital Readmissions

Maternal Readmissions

By Cause

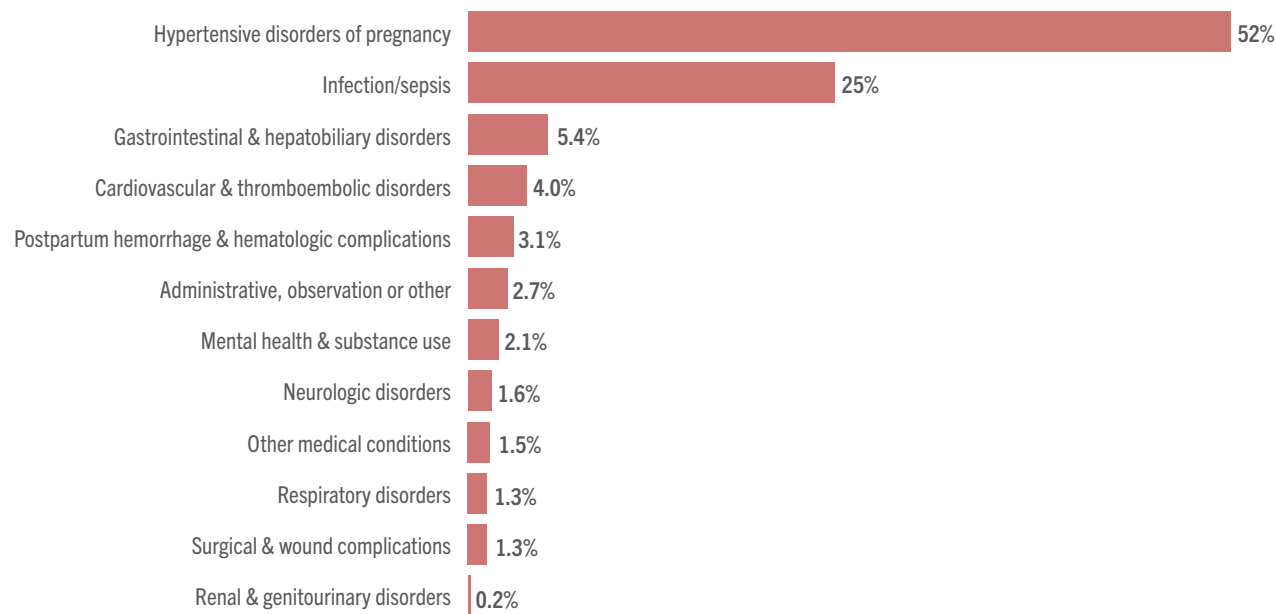
Hypertensive disorders of pregnancy (HDP) were the most common reason for postpartum readmissions—accounting for more than half of all readmissions in 2025.

HDP is a clinical continuum that includes severe preeclampsia, eclampsia, preeclampsia superimposed on chronic hypertension, and gestational hypertension. While these conditions are coded separately in claims data, they share overlapping pathophysiology and postpartum management, and clinicians typically consider them as a group. Severe preeclampsia alone accounted for more than one-third of all readmissions. Infections were the next most common drivers.

These conditions share common features: delayed or unpredictable onset, rapid progression, and a need for monitoring or intervention that is difficult to provide outside the hospital. HDP may not resolve at delivery, and blood pressure often peaks several days postpartum, after many patients have been discharged. Infections such as endometritis and surgical wound infections may begin with mild or nonspecific symptoms before progressing to sepsis. Delayed postpartum hemorrhage, often due to retained tissue or incomplete uterine involution, can develop days to weeks after delivery and escalate quickly.

Gaps in early postpartum follow-up, challenges in patient recognition of warning signs, and barriers to accessing outpatient care can all contribute to readmission when these conditions develop at home.

Reasons for maternal readmission as a percent of all readmissions, 2025



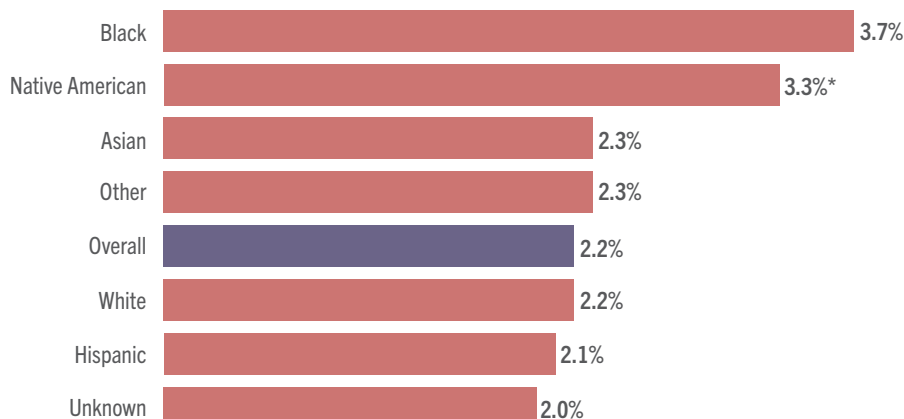
Hospital Readmissions

Maternal Readmissions

By Race/Ethnicity

Black patients were **1.6 times more likely** to be readmitted than the overall population who gave birth, while **Native American** patients were **1.5 times more likely**.

Maternal readmission rate by race/ethnicity, 2025

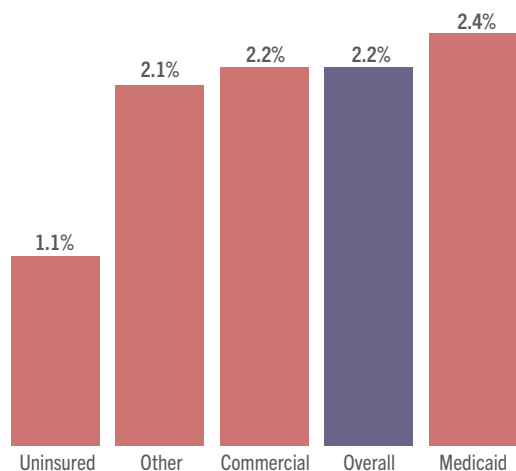


* Interpret rate with caution as it is based on fewer than 20 readmissions.

By Payor

Readmission rates were **highest** among **patients covered by Medicaid** and **lowest** among **uninsured patients**.

Maternal readmission rate by primary payor, 2025*

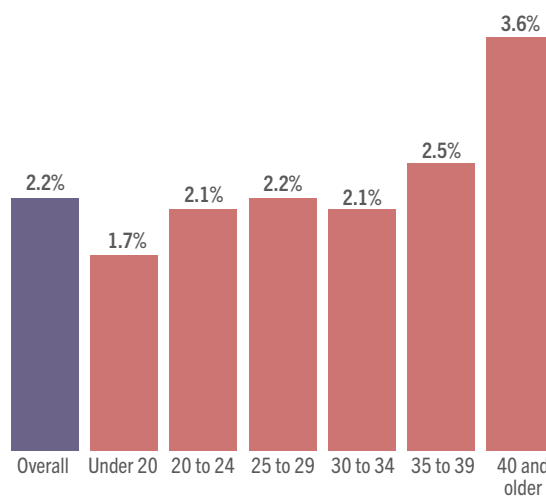


* Patients for whom the primary payor was Medicare had a readmission rate of 5.1%. However, this rate should be interpreted with caution as it is based on fewer than 20 instances and because mothers in this group likely have complex medical needs—facing serious comorbidities or disabling conditions that increase the risk of complications.

By Age

Patients **ages 40 and older** had the **highest** readmission rates in 2025, while those **under 20 years old** had the **lowest rates**. Those 40 and older were **1.6 times more likely** to be readmitted than the overall population.

Maternal readmission rate by age group, 2025



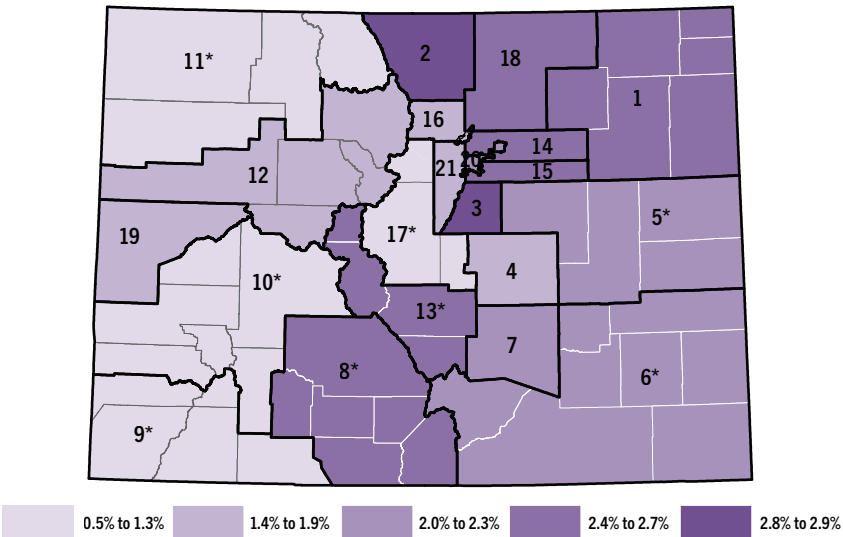
Hospital Readmissions

Maternal Readmissions

By Patient Region of Residence

Maternal readmission rates were highest among patients who lived in **Larimer** and **Douglas** counties (Regions 2 and 3).

Maternal Readmission Rates by Region of Patient Residence, 2025

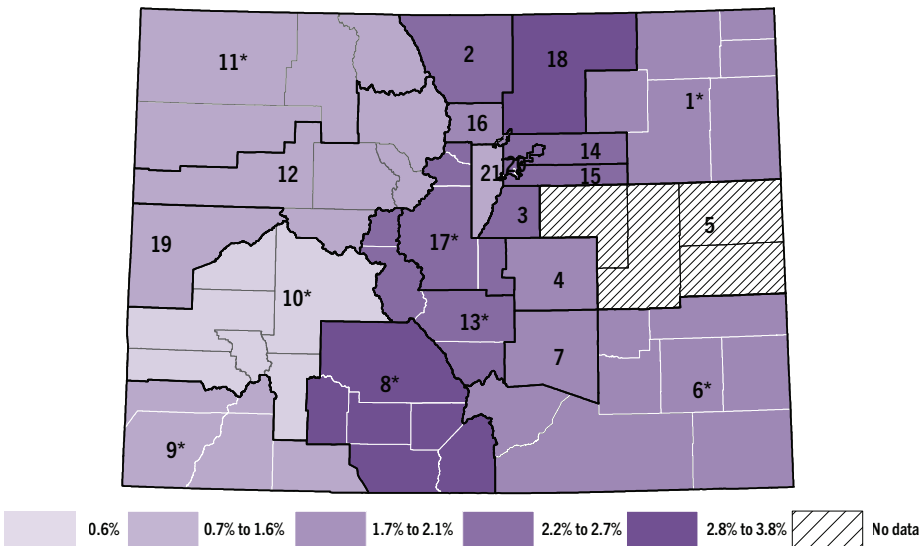


* Interpret this rate with caution because it is based on fewer than 20 instances of readmission.

By Hospital Region†

Patients who delivered at hospitals in **Weld County** (Region 18) and the **San Luis Valley** (Region 8) had the highest maternal readmission rates in 2025.

Maternal Readmission Rates by Hospital Region, 2025



† Data by hospital region were combined for Regions 13 and 17 to prevent exposure of individual hospitals.
* Interpret this rate with caution because it is based on fewer than 20 instances of readmission.

Hospital Readmissions

Neonatal Readmissions

Neonatal readmissions are defined as readmissions of an infant to a hospital within 30 days of being discharged after birth.

Overall

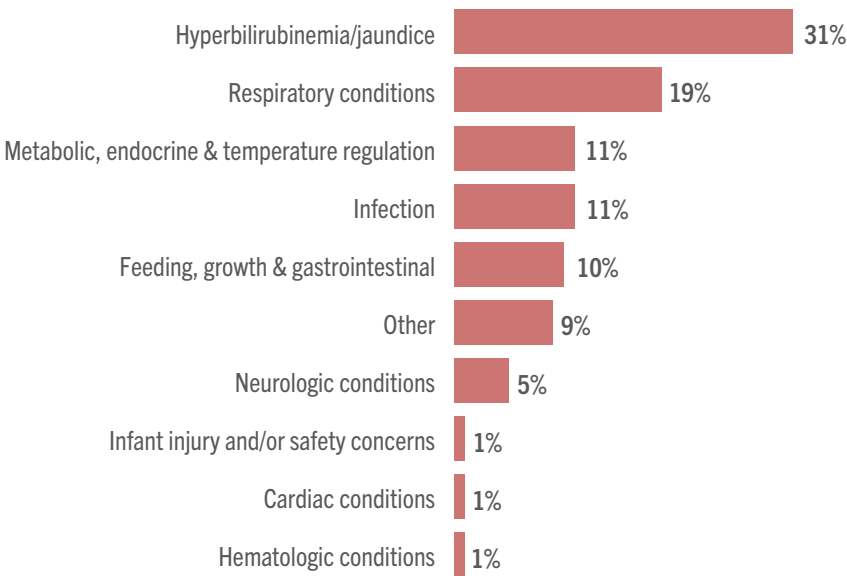
In 2025, approximately **2.8% of infants** (1,667 infants) were readmitted within 30 days **of discharge following their birth.**

Although not directly comparable, Colorado’s rate is consistent with published national and international estimates, which generally fall between roughly 2% and 4%, depending on mode of delivery and population.

By Cause

The most common reasons for neonatal readmission after birth were **neonatal jaundice, respiratory conditions, and metabolic, endocrine and temperature regulation issues.** Together, these reasons accounted for more than half of all neonatal readmissions.

Reasons for neonatal readmission as a percent of all readmissions, 2025

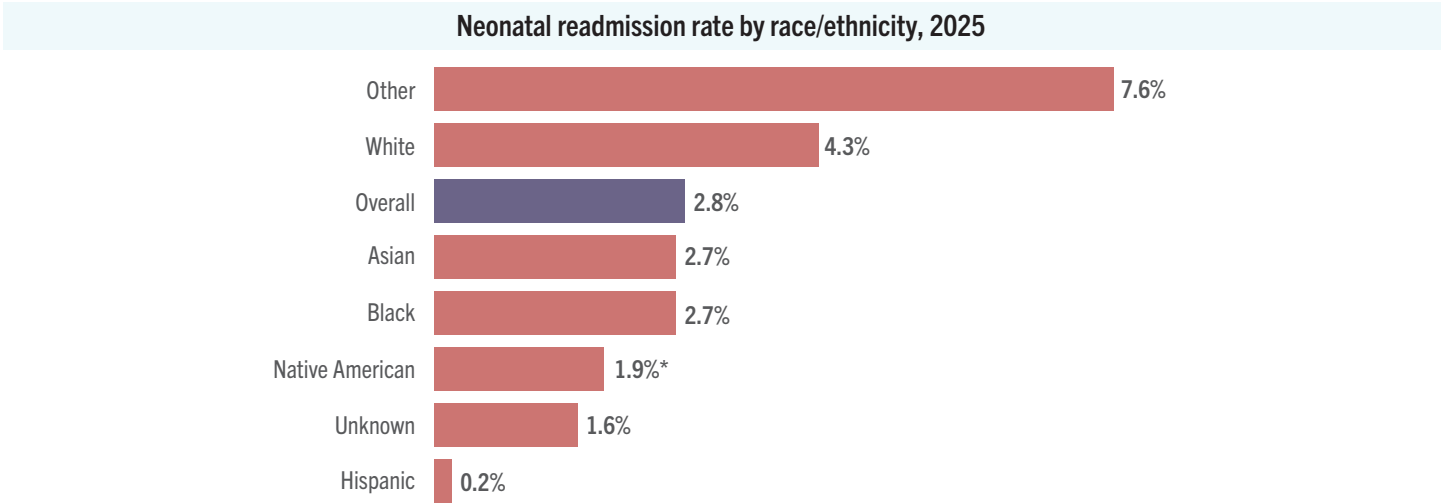


Hospital Readmissions

Neonatal Readmissions

By Race/Ethnicity

Infants whose **race was indicated as “Other”[†]** were **2.7 times more likely** to be readmitted than the overall population of infants.

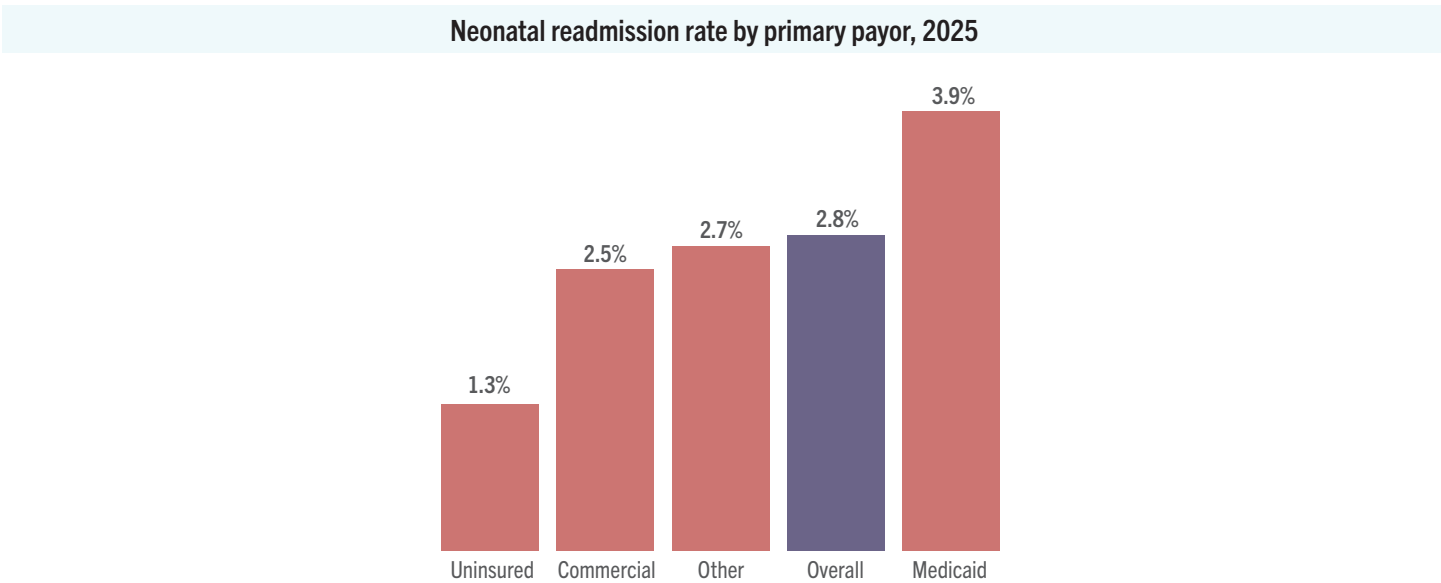


[†] For CHA claims, race is reported by hospitals using CHA race codes. The “Other” category reflects how hospitals map their race data at submission. “Other” can include a mix of races that don’t align with CHA codes, multiracial responses, or cases where race wasn’t disclosed, making it a heterogeneous group.

* Interpret this rate with caution as it is based on fewer than 20 readmissions.

By Payor

Infants whose birth was **covered by Medicaid** were **1.4 times more likely** to be readmitted to the hospital than the overall population of infants.



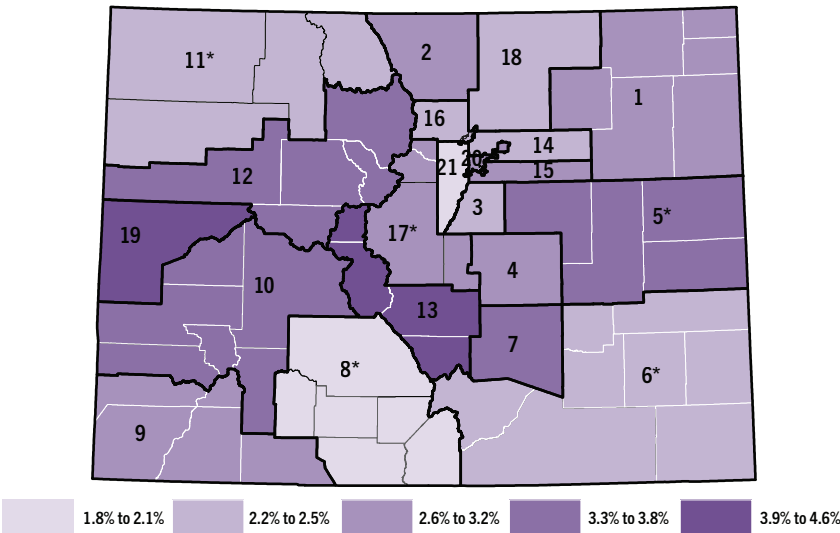
Hospital Readmissions

Neonatal Readmissions

By Patient Region of Residence

Newborns from **Mesa County** (Region 19) and the **central mountain region** (Region 13) were most likely to be readmitted within 30 days of discharge.

Neonatal Readmission Rates by Region of Patient Residence, 2025

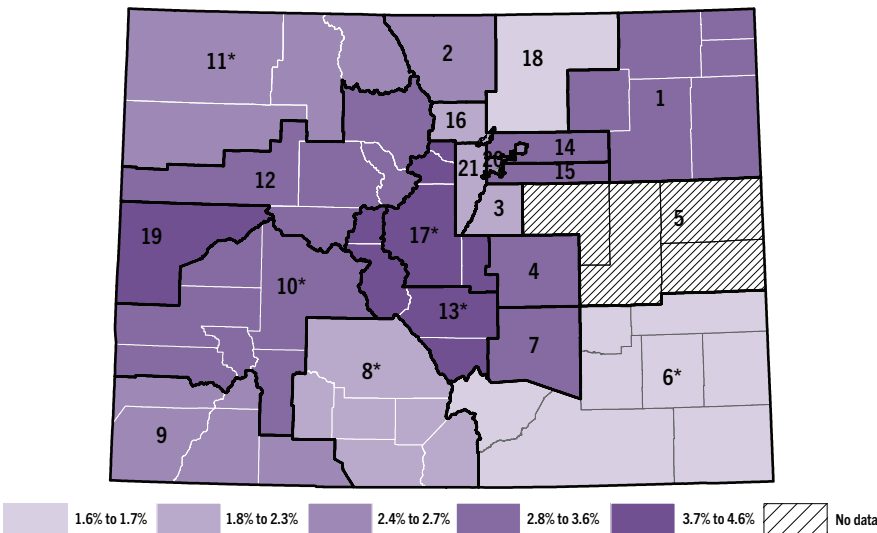


* Interpret this rate with caution because it is based on fewer than 20 instances of readmission.

By Hospital Region†

Neonatal readmission rates were highest among hospitals in the **central mountain regions** (Regions 13 and 17) and in **Mesa County** (Region 19).

Neonatal Readmission Rates by Hospital Region, 2025



† Data by hospital region were combined for Regions 13 and 17 to prevent exposure of individual hospitals.
* Interpret this rate with caution because it is based on fewer than 20 instances of readmission.

Cesarean Sections (C-sections)

C-section births, while lifesaving when medically necessary, carry increased risks of complications—especially with repeat procedures. In Colorado, C-section rates vary significantly across hospitals, with wide gaps by race, ethnicity, and payor. Reducing first-time C-section deliveries is a critical strategy for improving maternal and neonatal outcomes and curbing rising healthcare costs.

This section focuses on a nationally endorsed measure known as the Nulliparous, Term, Singleton, Vertex (NTSV) C-section birth rate, referring to C-sections for mothers with first-time pregnancies (nulliparous) that have reached at least 37 weeks of gestation (term) and have a single baby (singleton) in the head-down position (vertex). This measure exclusively examines the population least likely to need a C-section, offering a standardized way to compare rates. * Healthy People 2030 sets a NTSV C-section rate goal of no higher than 23.6% of NTSV births.

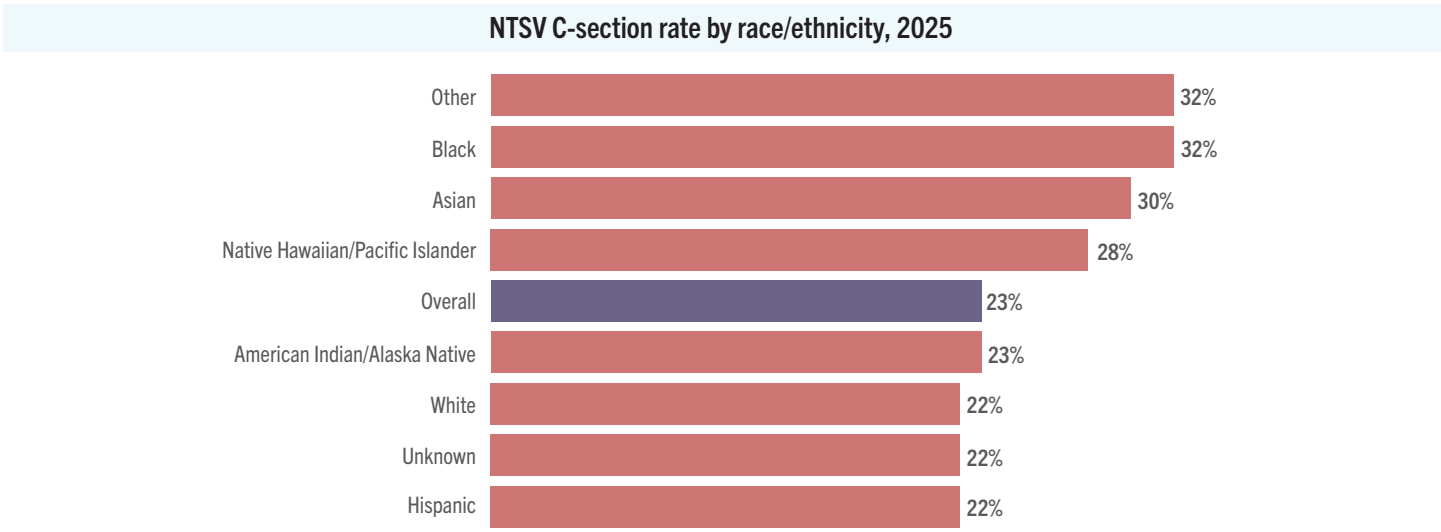
Overall

Colorado’s NTSV C-section rate for 2025 was **23.0%**, below the Healthy People 2030 goal of no more than 23.6% and the national rate of 25.3%.¹⁹

NTSV C-section rates vary from hospital to hospital, in part due to factors such as the patient population and number of births. From April 2024 to April 2025, Colorado hospitals’ NTSV C-section rates ranged from 5.4% to 34.3%, with a median of 20.9%.²⁰

By Race/Ethnicity

NTSV C-section rates were **highest among patients whose race was indicated as “Other” and among Black patients.**



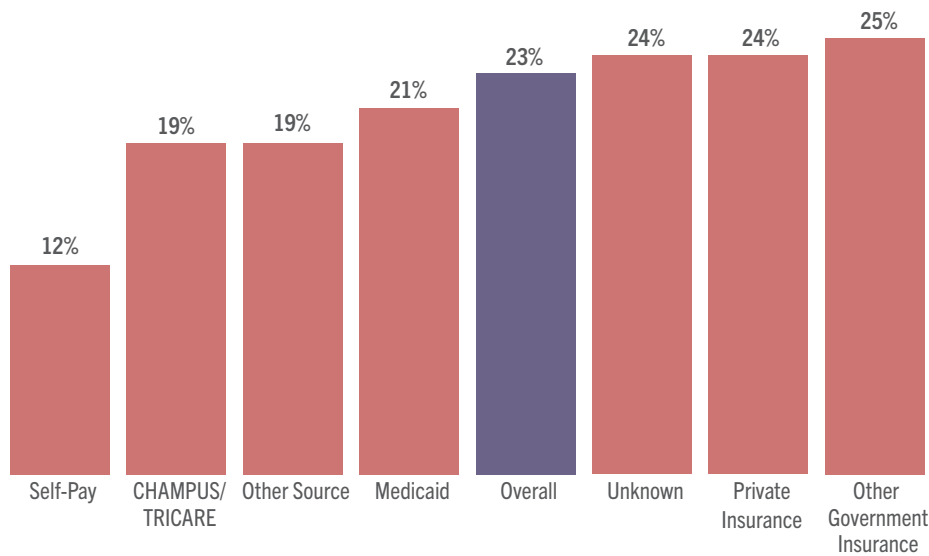
** While all other statistics in this report are derived from inpatient hospital claims data, the data in this section are derived from Colorado Department of Public Health and Environment Vital Statistics records, which come from birth certificates. This is because the criteria that indicate an “NTSV” delivery are captured fully on birth certificates, but not in hospital claims data. As a result, racial and ethnic categories and payor categories used in reporting for this indicator differ slightly from those used for hospital claims data.*

Cesarean Sections (C-sections)

By Payor

Self-pay patients had the **lowest NTSV C-section rates**.

NTSV C-section rates by primary payor, 2025*

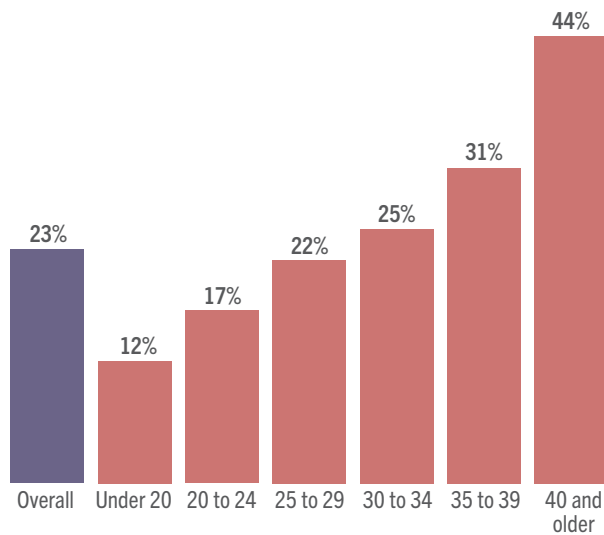


** Payor categories used in reporting for this indicator differ slightly from those used for hospital claims data.*

By Age

NTSV C-sections become more common with age, with C-sections accounting for **nearly half** of all NTSV births among **patients ages 40 and older**.

NTSV C-section rates by age group, 2025

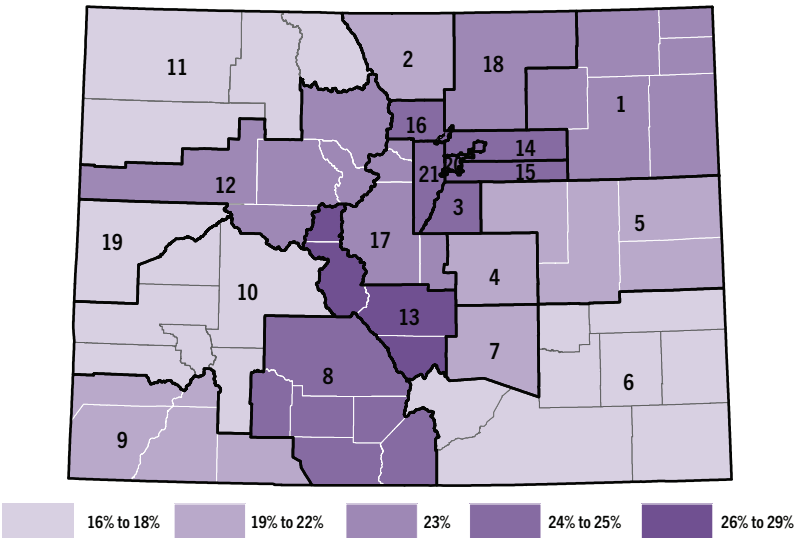


Cesarean Sections (C-sections)

By Patient Region of Residence

Patients who lived in the **central mountain region** (Region 13) had the highest NTSV C-section rates in 2025.

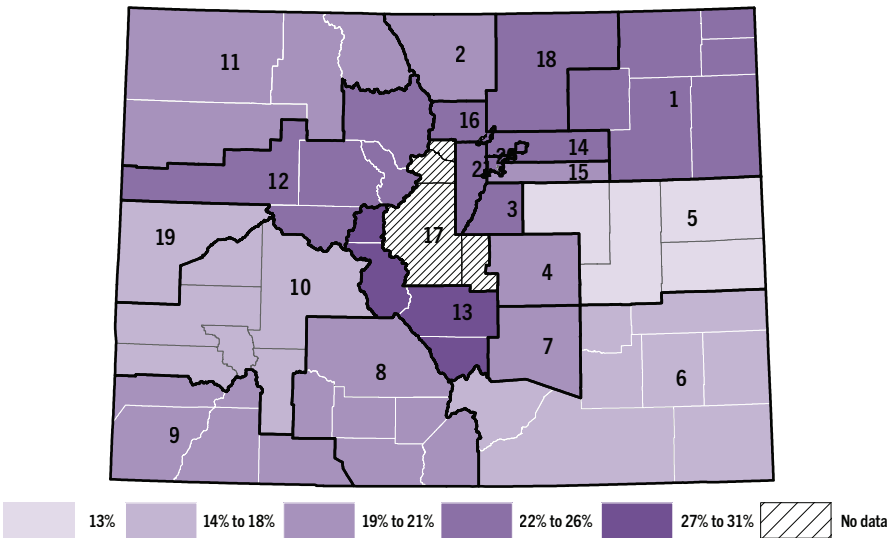
NTSV C-section Rates by Region of Patient Residence, 2025



By Hospital Region

Patients who delivered at a hospital in the **central mountain region** (Region 13) had the highest NTSV C-section rates in 2025.

NTSV C-section Rates by Hospital Region, 2025



** Interpret this rate with caution as it is based on fewer than 10 NTSV C-sections.*

Other Risk Factors

The following section covers additional common obstetric complications. While severe maternal morbidity (covered earlier) captures the most acute complications of pregnancy—those associated with risk of in-hospital mortality—the conditions that follow are far more common and still meaningfully affect patient health and well-being.

Cardiovascular Conditions

Cardiovascular conditions are responsible for a significant and increasing share of all maternal deaths in the U.S.²¹ Cardiovascular conditions that can affect people during the perinatal period include arrhythmias, heart failure or coronary artery disease, among others. These conditions are often unmasked or exacerbated in the setting of pregnancy due to the physiologic changes the heart undergoes in order to support a pregnancy, which can place a strain on the cardiovascular system.

Overall

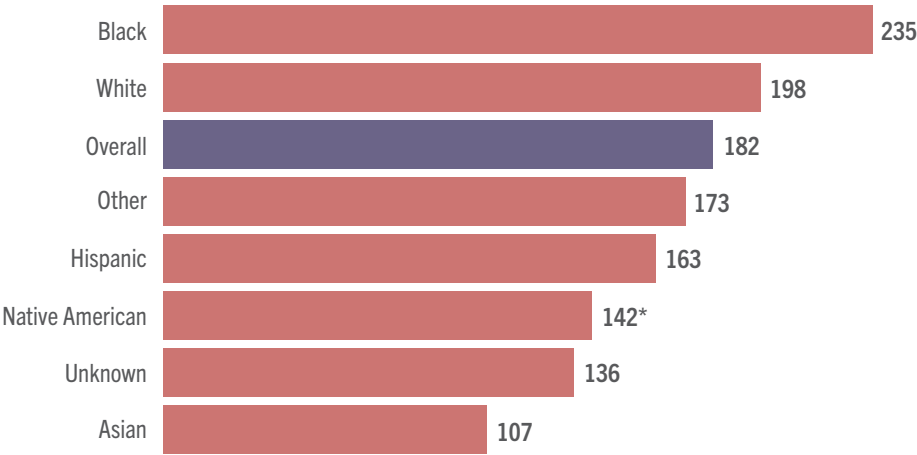
There were approximately
182 instances
of cardiovascular conditions
per 10,000 births in Colorado in 2025.

National comparison rates for cardiovascular conditions during delivery hospitalization are difficult to interpret because different studies use substantially different definitions. Published estimates range widely depending on which cardiac conditions are included.

By Race/Ethnicity

Cardiovascular conditions were **most prevalent** among **Black patients** and **white patients** who gave birth and **least prevalent** among **Asian patients**.

Cardiovascular conditions by race/ethnicity, 2025



* Interpret rate with caution as it is based on fewer than 20 instances of cardiovascular conditions.

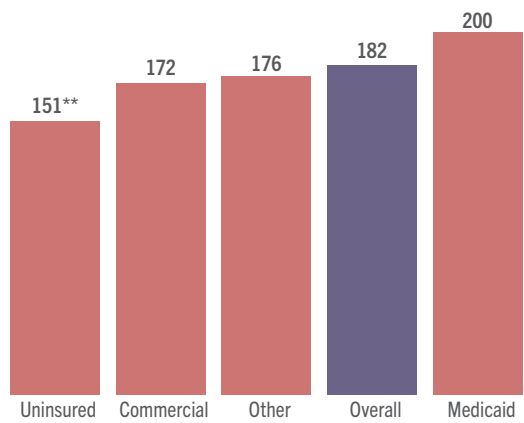
Other Risk Factors

Cardiovascular Conditions

By Payor

People giving birth who **were covered by Medicaid** were more likely to experience cardiovascular conditions than the overall population who gave birth.

Cardiovascular conditions by primary payor, 2025*
(Instances per 10,000 births)



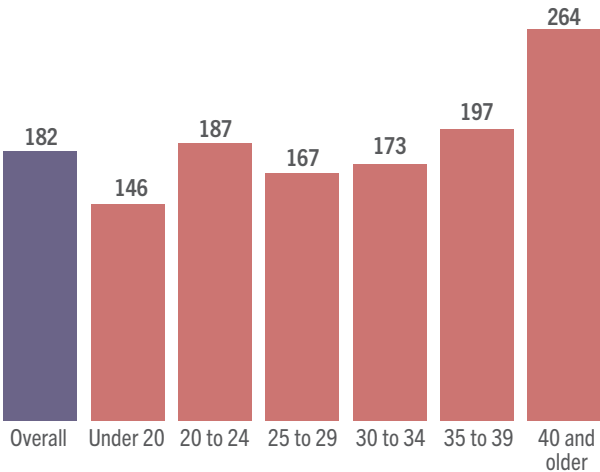
* People for whom the primary payor was Medicare experienced the highest rate of cardiovascular conditions at 588 instances per 10,000 births. However, this rate should be interpreted with caution as it is based on fewer than 20 instances. Mothers in this group likely have complex medical needs—facing serious comorbidities or disabling conditions that increase the risk of adverse outcomes.

** Interpret this rate with caution as it is based on fewer than 20 instances of cardiovascular conditions.

By Age

The prevalence of cardiovascular conditions generally rises with age, with **patients who gave birth at age 40 and older** having the highest rate.

Cardiovascular conditions by age group, 2025
(Instances per 10,000 births)



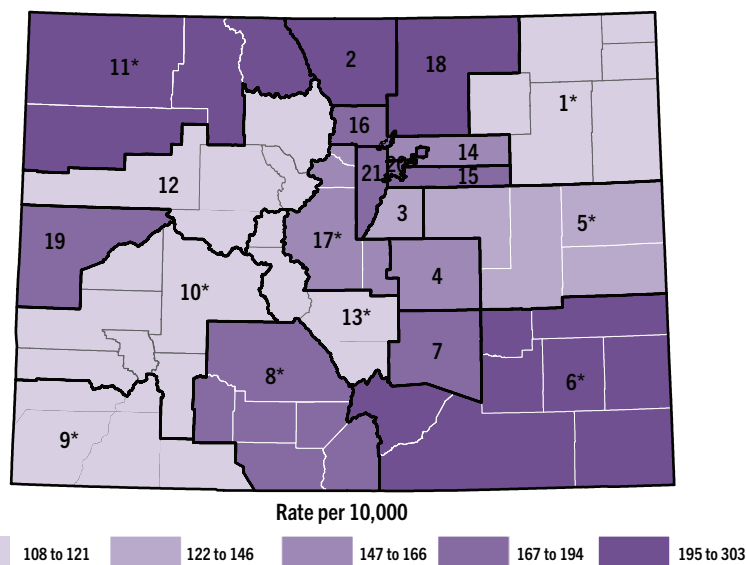
Other Risk Factors

Cardiovascular Conditions

By Patient Region of Residence

Patients who lived in **Larimer County** (Region 2), **the rural northwestern and southeastern regions of the state** (Regions 11 and 6), and **Weld County** (Region 18) had the highest rates of cardiovascular conditions at birth.

Cardiovascular Conditions Per 10,000 Births by Region of Patient Residence, 2025

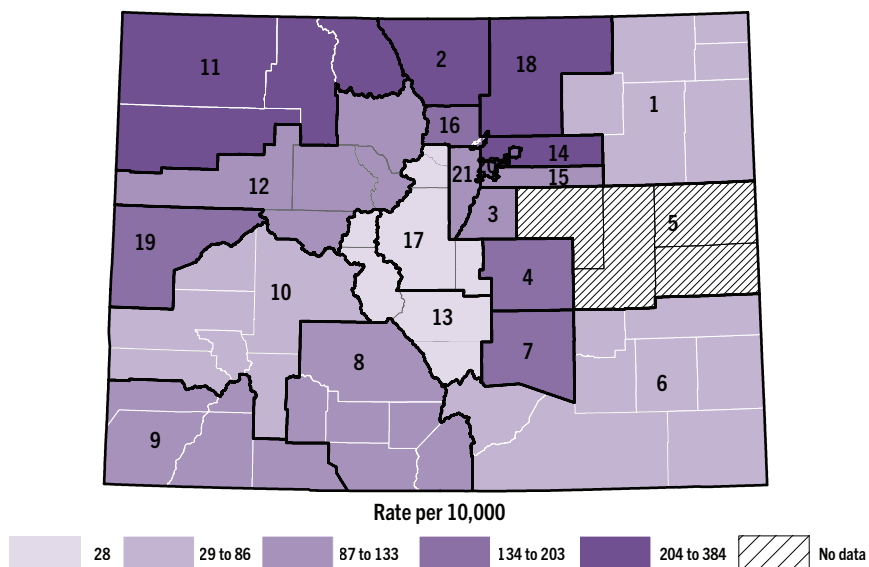


* Interpret rate with caution as it is based on fewer than 20 instances of cardiovascular conditions.

By Hospital Region[†]

Cardiovascular conditions were most common among patients who gave birth at hospitals in **Adams County** (Region 14), **Larimer County** (Region 2), **the northwest mountain region** (Region 11), and **Weld County** (Region 18).

Cardiovascular Conditions Per 10,000 Births by Hospital Region, 2025



[†] Data by hospital region were combined for Regions 13 and 17 to prevent exposure of individual hospitals.

Other Risk Factors

Hemorrhage

Postpartum hemorrhage refers to excessive blood loss after delivery. Hemorrhage can occur immediately following delivery or up to 12 weeks postpartum. Without prompt intervention, it can lead to respiratory distress, shock, kidney failure or death, among other complications.²²

Overall

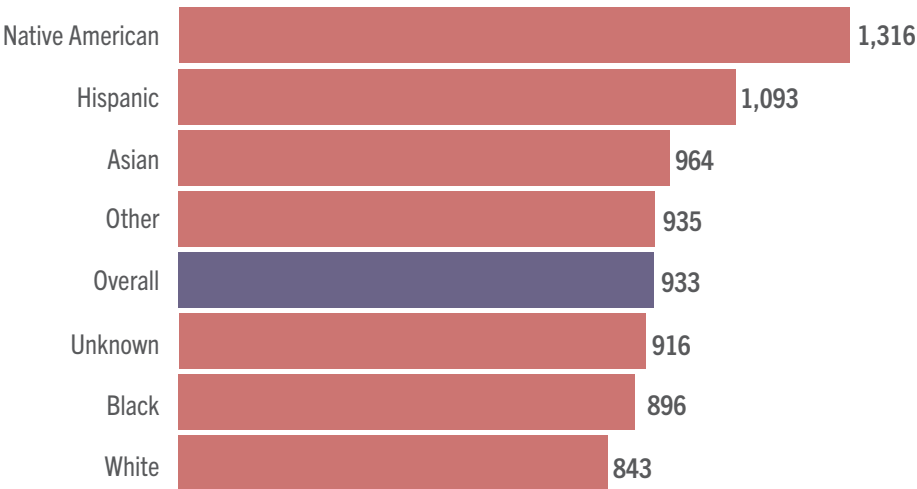
There were approximately
933 instances
of hemorrhage per 10,000 births
in Colorado in 2025
(9.33% of hospital births).

Published national estimates of postpartum hemorrhage vary significantly by data source and definition. Claims-based analyses of the National Inpatient Sample report rates of approximately 3% to 5% of delivery hospitalizations,²³ while recent analyses of electronic health record data, which better capture clinically documented bleeding, report rates closer to 10%.²⁴ Colorado’s rate of 9.33% is higher than older claims-based estimates but broadly consistent with contemporary clinical measurement, likely reflecting widespread adoption of quantitative blood loss measurement and the 2017 ACOG definition update.

By Race/Ethnicity

Hemorrhage was **most** prevalent among **Native American** and **Hispanic** patients and **least** prevalent among **white** patients.

Hemorrhage by race/ethnicity, 2025
(Instances per 10,000 births)



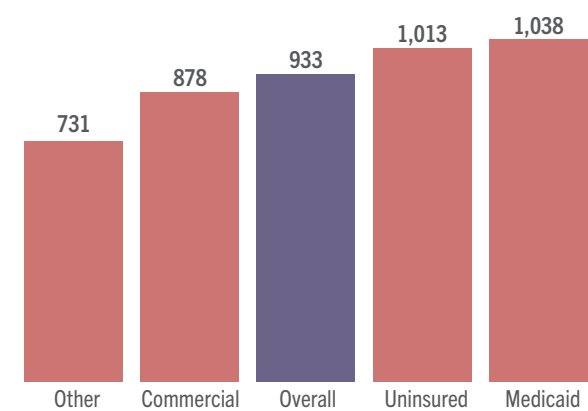
Other Risk Factors

Hemorrhage

By Payor

Hemorrhage occurred most often among patients covered by **Medicaid** and **those who were uninsured**.

Hemorrhage by primary payor, 2025*
(Instances per 10,000 births)

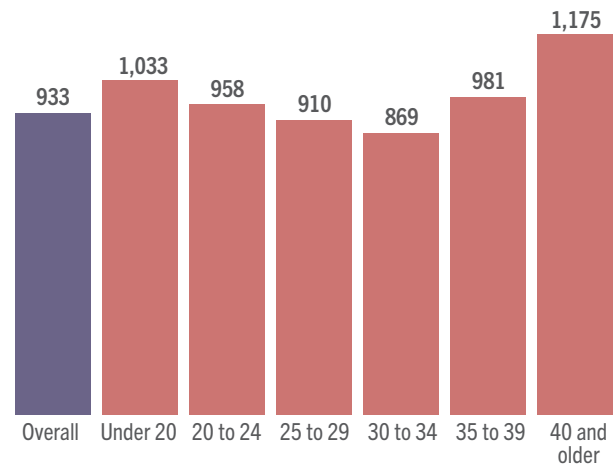


* The hemorrhage rate for people covered by Medicare was 1,569 per 10,000 births. However, this rate should be interpreted with caution as it is based on fewer than 20 instances of hemorrhage. Mothers in this group likely have complex medical needs—facing serious comorbidities or disabling conditions that increase the risk of adverse outcomes.

By Age

Hemorrhage was most common among patients ages **40 and older**. People in this age group were **1.3 times more likely** to experience hemorrhage than the overall population who gave birth.

Hemorrhage by age group, 2025
(Instances per 10,000 births)



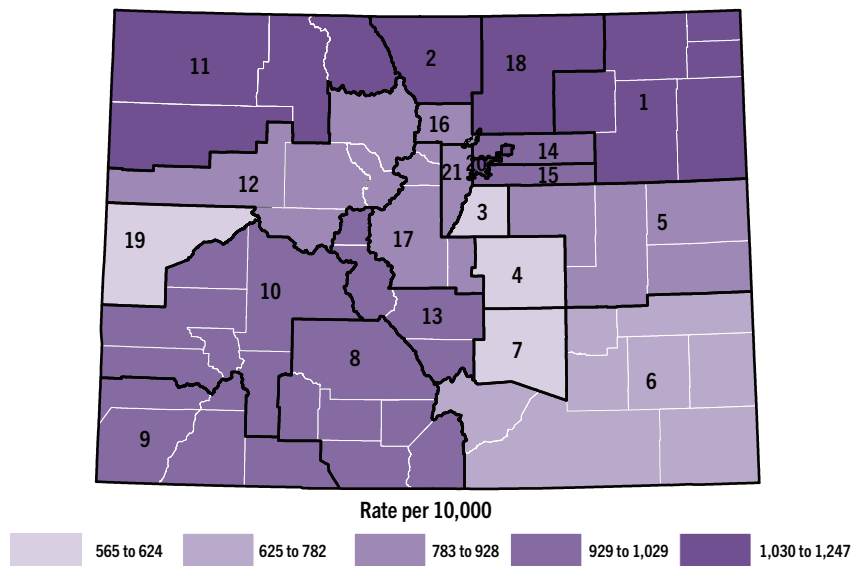
Other Risk Factors

Hemorrhage

By Patient Region of Residence

Patients who lived in **Larimer County** (Region 2), **Denver County** (Region 20), the **northwest mountain region** (Region 11), the **rural northeast region** (Region 1), and **Weld County** (Region 18) had the highest rates of hemorrhage in 2025.

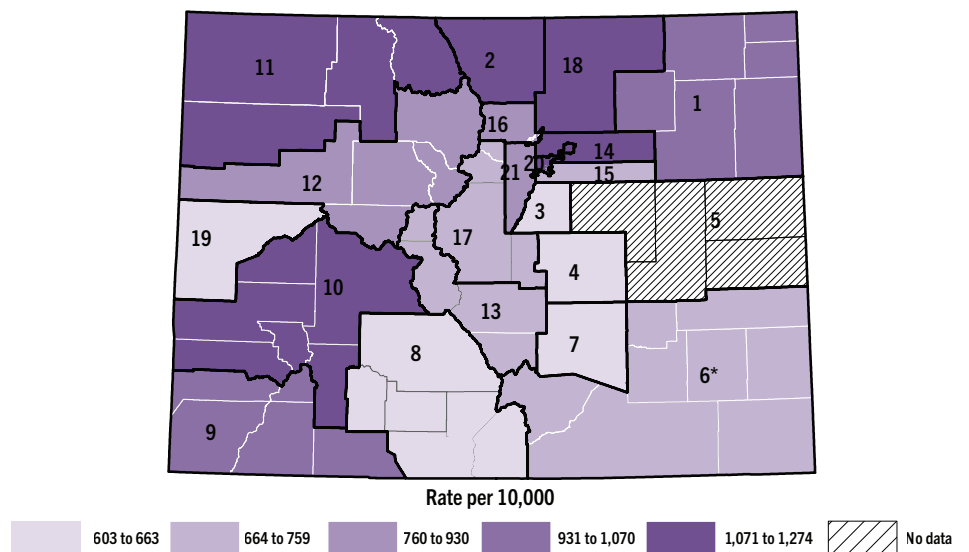
Hemorrhages Per 10,000 Births by Region of Patient Residence, 2025



By Hospital Region[†]

Patients who gave birth at hospitals in **Weld County** (Region 18), **Larimer County** (Region 2), **Adams County** (Region 14), the **northwest mountain region** (Region 11), **Denver County** (Region 20) and **some western slope mountain communities** (Region 10) had the highest rates of hemorrhage.

Hemorrhages Per 10,000 Births by Hospital Region, 2025



[†] Data by hospital region were combined for Regions 13 and 17 to prevent exposure of individual hospitals.

* Interpret this rate with caution because it is based on fewer than 20 instances of hemorrhage.

Other Risk Factors

Hypertension

Hypertension—or high blood pressure—during pregnancy can lead to numerous complications, most notably pre-eclampsia (a serious pregnancy-related condition marked by high blood pressure and signs of organ damage). Pre-eclampsia can progress to seizures, stroke, kidney failure, or blood clotting problems. It can also affect the baby, putting them at an elevated risk of low birthweight, premature birth, and stillbirth.²⁵

Two evidence-based clinical levers drive hypertensive-disorder outcomes. First, low-dose aspirin prophylaxis beginning between weeks 12 and 28 of pregnancy reduces preeclampsia incidence by approximately 15% to 20% among patients at moderate-to-high risk and is recommended by ACOG and the USPSTF.^{26,27} Uptake remains uneven nationally, and tracking prophylaxis rates is a meaningful process measure for Colorado hospitals. Second, once severe-range hypertension develops, time-to-first-antihypertensive-treatment is the central process measure of the AIM Severe Hypertension in Pregnancy Patient Safety Bundle and a strong determinant of whether hypertensive morbidity progresses to severe maternal morbidity or maternal stroke.²⁸

Overall

There were approximately
562 instances
of hypertension per 10,000 births
in Colorado in 2025.
(5.62% of hospital births).

For context, the Centers for Disease Control and Prevention reports that hypertensive disorders of pregnancy (HDP) affect approximately 15% of delivery hospitalizations nationally.²⁹ This figure uses a broader definition than the one applied here, encompassing chronic hypertension, gestational hypertension, preeclampsia, eclampsia, and unspecified maternal hypertension. The rate reported above reflects a narrower subset (preeclampsia, eclampsia, and chronic hypertension with superimposed preeclampsia) and should be interpreted as capturing the more severe end of the spectrum rather than HDP overall.



Other Risk Factors

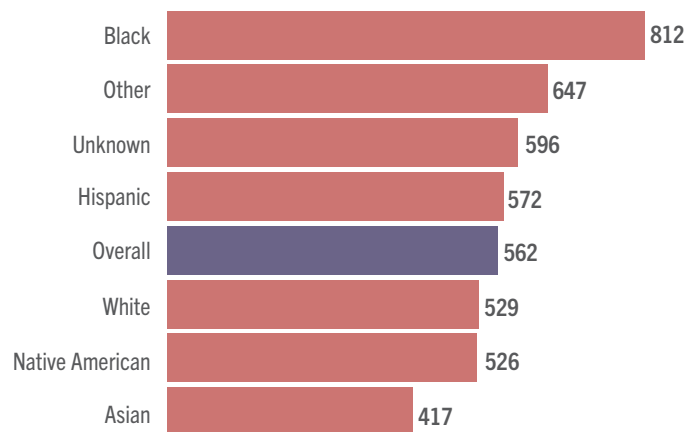
Hypertension

By Race/Ethnicity

Hypertension was most prevalent among **Black** patients. These patients were **1.4 times more likely** to experience hypertension than the overall population who gave birth.

Hypertension by race/ethnicity, 2025

(Instances per 10,000 births)

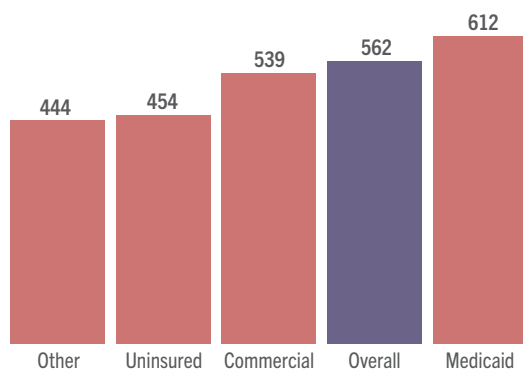


By Payor

Patients covered by **Medicaid** had the highest rate of hypertension.

Hypertension by primary payor, 2025*

(Instances per 10,000 births)



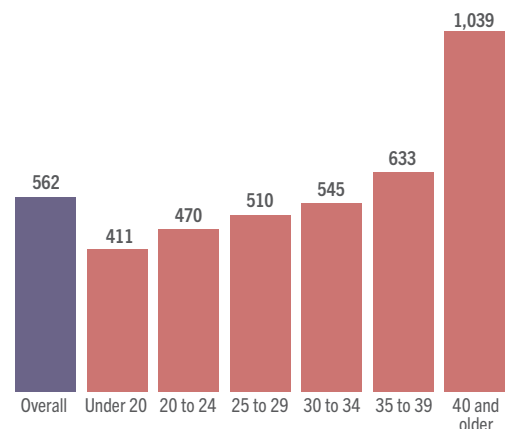
* People covered by Medicare had a high rate of hypertension, at 1,471 per 10,000 births. However, this rate should be interpreted with caution as it is based on fewer than 20 instances of hypertension. Mothers in this group likely have complex medical needs—facing serious comorbidities or disabling conditions that increase the risk of adverse birth outcomes.

By Age

Hypertension was nearly **twice as common** among patients **ages 40 and older** as among the overall population who gave birth.

Hypertension by age group, 2025*

(Instances per 10,000 births)



* Hypertensive disorders of pregnancy are common among older patients. This is impacted by age-related physiologic changes in the cardiovascular system and the higher prevalence of preexisting hypertension in this population. Older maternal age is also associated with increased risk of comorbidities such as diabetes and obesity, which also increase hypertension risk.

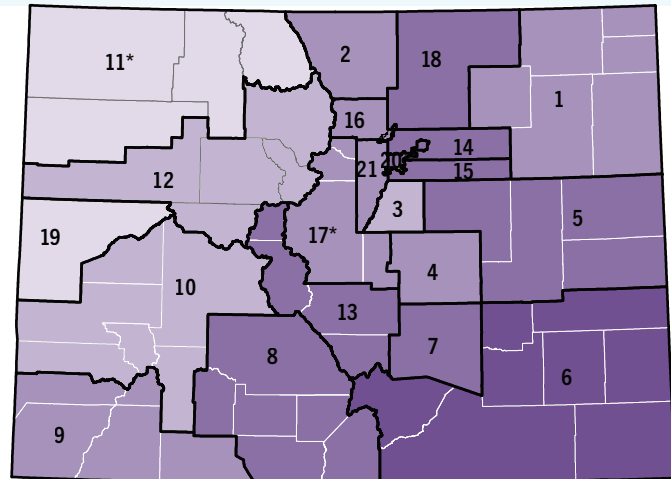
Other Risk Factors

Hypertension

By Patient Region of Residence

Hypertension rates were highest among patients who lived in the **rural southeastern region of the state** (Region 6).

Hypertension Instances Per 10,000 Births
by Region of Patient Residence, 2025



Rate per 10,000

295 to 343

345 to 459

460 to 555

565 to 691

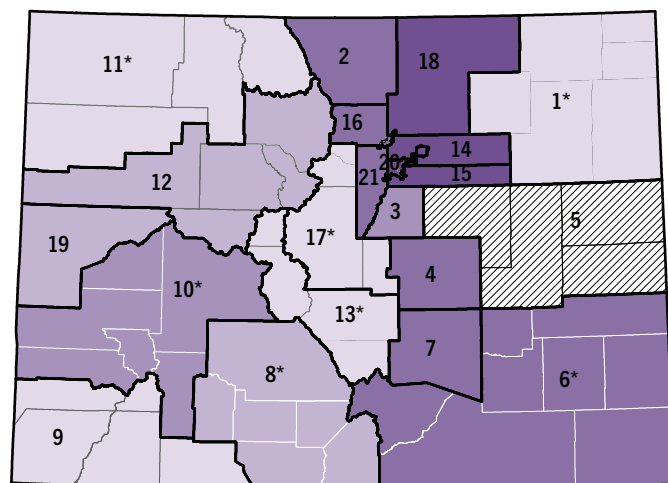
692 to 877

* Interpret this rate with caution because it is based on fewer than 20 instances of hypertension.

By Hospital Region[†]

Patients who gave birth at hospitals in **Weld County** (Region 18), **Adams County** (Region 14), **Denver County** (Region 20), and **Arapahoe County** (Region 15) had the highest rates of hypertension at birth.

Hypertension Instances Per 10,000 Births by Hospital Region, 2025



Rate per 10,000

192 to 256

257 to 376

377 to 458

459 to 587

588 to 697

No data

[†] Data by hospital region were combined for Regions 13 and 17 to prevent exposure of individual hospitals.

* Interpret this rate with caution because it is based on fewer than 20 instances of hypertension.

Other Risk Factors

Preterm Deliveries

Preterm deliveries are births that occur prior to 37 weeks gestation. Preterm birth is associated with a number of short-term risks for infants, including respiratory distress, sepsis or intraventricular hemorrhage—as well as long-term implications such as chronic lung disease, visual impairment, or impaired language development in addition to other neurodevelopmental disorders.³⁰

Preterm births fall into two broad categories with different etiologies and prevention strategies. Spontaneous preterm birth—preterm labor or preterm premature rupture of membranes—accounts for roughly two-thirds of preterm deliveries nationally and is addressed through progesterone supplementation for patients with prior spontaneous preterm birth, cervical length screening, and attention to short interpregnancy intervals.³¹ Medically indicated preterm birth, or delivery earlier than 37 weeks because of maternal conditions (most commonly hypertensive disorders) or fetal indications, accounts for the remainder and is prevented primarily through optimization of maternal chronic conditions before and during pregnancy. Chronic stress and pre-pregnancy health contribute to higher rates of preterm birth among some groups, pointing to the need for interventions beyond the healthcare system.³²

Overall

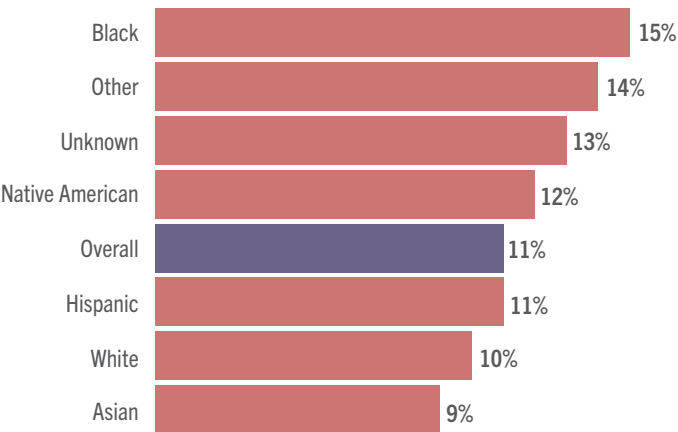
Nearly **11%** of hospital-based births in Colorado were **preterm** in 2025.

Although not directly comparable, the provisional 2025 preterm birth rate for the U.S. was 10.4%.³³

By Race/Ethnicity

Black patients in Colorado were **1.4 times more likely** to experience a preterm delivery than the overall population who gave birth.

Preterm deliveries by race/ethnicity, 2025
(Percent of births)



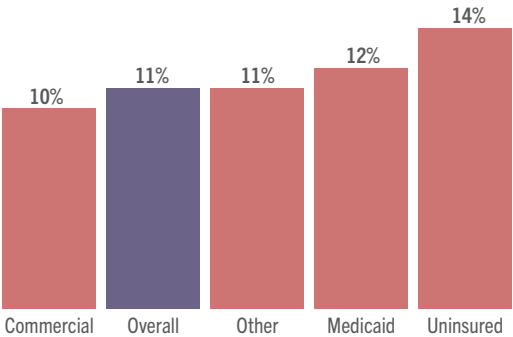
Other Risk Factors

Preterm Deliveries

By Payor

Patients **without health insurance** were **1.3 times more likely** to experience a preterm delivery than those with health coverage.

Preterm deliveries by primary payor, 2025*
(Percent of births)

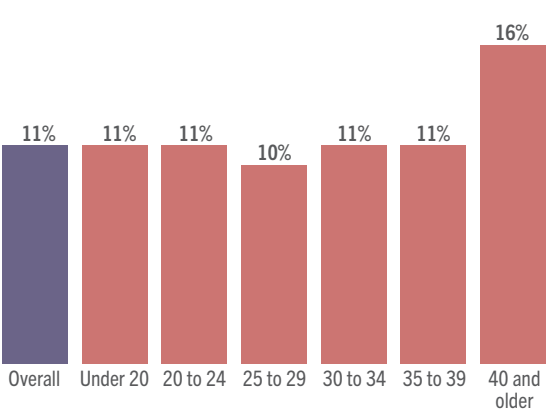


* People covered by Medicare had the highest preterm delivery rate at 26%. However, this rate should be interpreted with caution as mothers in this group likely have complex medical needs—facing serious comorbidities or disabling conditions that increase the risk of adverse birth outcomes.

By Age

Patients who gave birth at age **40 and older** were nearly **1.5 times more likely** to have a preterm delivery than the overall population who gave birth.

Preterm deliveries by age group, 2025*
(Percent of births)



* Advanced maternal age (≥40) is associated with higher rates of preterm birth, both spontaneous and medically indicated, due to higher rates of chronic conditions, increased risk of obstetric complications such as preeclampsia, and higher rates of C-section delivery. Fertility treatments, which are more common in this age group, can also contribute to multiple gestation and preterm birth.

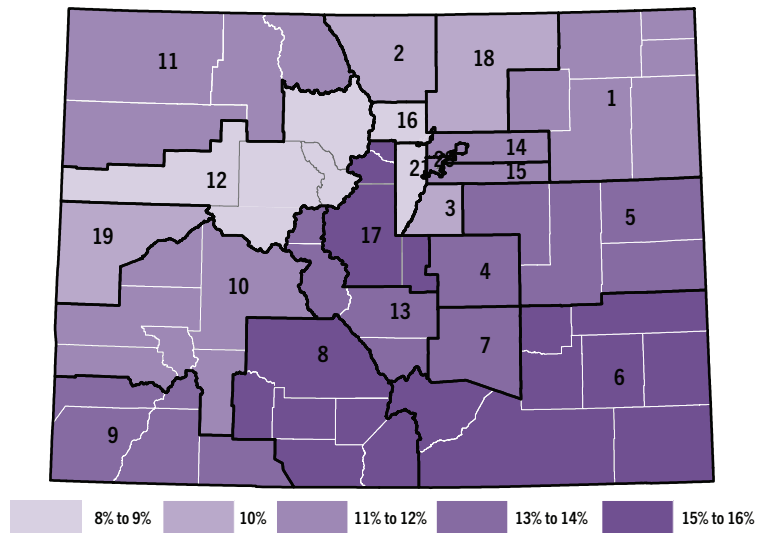
Other Risk Factors

Preterm Deliveries

By Patient Region of Residence

Preterm births were most common among patients who lived in the **rural southeastern region of the state** (Region 6), the **San Luis Valley** (Region 8), and a **central mountain region** (Region 17).

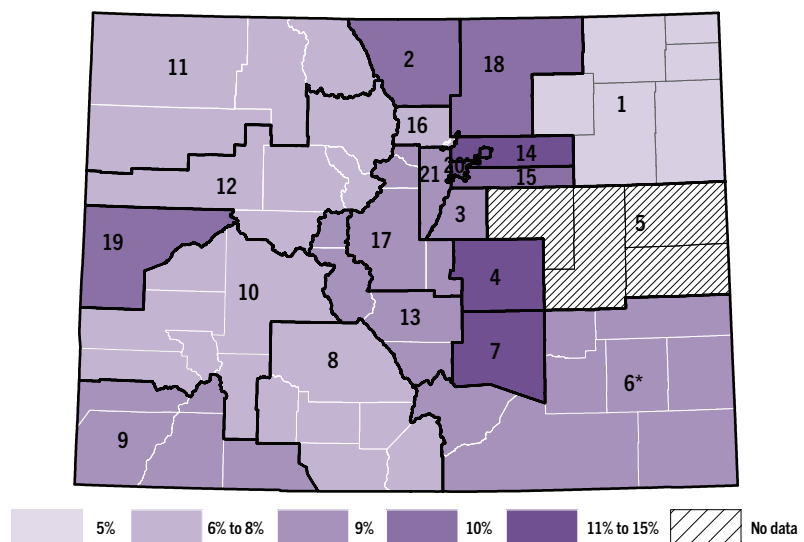
Preterm Birth Rates by Region of Patient Residence, 2025



By Hospital Region[†]

Patients who delivered at hospitals in **Adams County** (Region 14), **El Paso County** (Region 4), **Pueblo County** (Region 7) and **Denver County** (Region 20) had the highest preterm birth rates in 2025.

Preterm Birth Rates by Hospital Region, 2025



[†] Data by hospital region were combined for Regions 13 and 17 to prevent exposure of individual hospitals.
* Interpret this rate with caution because it is based on fewer than 20 preterm births.

Other Risk Factors

Mental Health Conditions

Mental health conditions are the most common complication during pregnancy and the postpartum period. Although hospital claims data can reveal important information about the prevalence of diagnosed mental health conditions present at birth, the birth admission is one small window of time during a person's journey through pregnancy and postpartum. Therefore, claims data alone are insufficient to demonstrate the true prevalence of mental health struggles during the perinatal period. Inpatient claims data reveal only what was documented in the patient chart at the time of hospital delivery. Postpartum diagnoses are not captured in inpatient claims data; likewise, pre-existing mental health conditions or those diagnosed during the prenatal period are likely to be undercounted, as they may not appear in the inpatient claim.

A recent claims analysis conducted via a partnership between CPCQC and the Center for Improving Value in Healthcare (CIVHC) analyzed more than 170,000 deliveries that occurred in Colorado between 2019–2023—about half of all births in the state—using the Colorado All-Payer Claims Database. The study examined patterns of mental health diagnoses and perinatal mental healthcare use from pregnancy through 12 months after delivery. This analysis indicates that one in three Colorado births involved a mother with a diagnosed mental health condition, most commonly depression or anxiety. Further, two in three postpartum mothers with a mental health diagnosis did not receive any mental health services during or after pregnancy, and only 8% of those with a diagnosed mental health condition completed five or more mental health visits, far below recommended treatment levels. A second analysis delved into this topic area further, revealing that about one in five people accessed at least one mental health visit during the perinatal period. The volume of mental health visits grew rapidly and continued to rise throughout the postpartum period, highlighting the limitation of using only inpatient claims captured at the delivery hospitalization to understand prevalence of mental health conditions.

Other data sources, such as the CDPHE's Baby and You survey, capture people's experience with mental health challenges throughout the postpartum period. The most recent data indicate that nearly one-third of mothers had a possible anxiety disorder at three months postpartum, and approximately 10% had a possible depressive disorder.³⁴ At 12 months postpartum, 10% had a possible anxiety disorder, and 7% had a possible depressive disorder.³⁵

Even where perinatal mental health conditions are identified, the larger gap is not diagnosis but treatment: national estimates suggest fewer than one in five patients with a perinatal mental health diagnosis receives adequate treatment, and the gap is wider for Black, Native American, and rural populations.^{36, 37, 38}

Colorado-specific data echo this pattern: the Colorado analysis cited above found that Hispanic and Latino mothers accounted for 33% of deliveries but only 28% of perinatal mental health claims, while non-Hispanic white mothers accounted for 30% of deliveries and 45% of claims, suggesting that mental healthcare reaches some populations far more readily than others.

Other Risk Factors

Mental Health Conditions

Overall

Nearly **18%** of Colorado patients **had a diagnosed mental health condition** when they were admitted to give birth in 2025—more than one in six people.

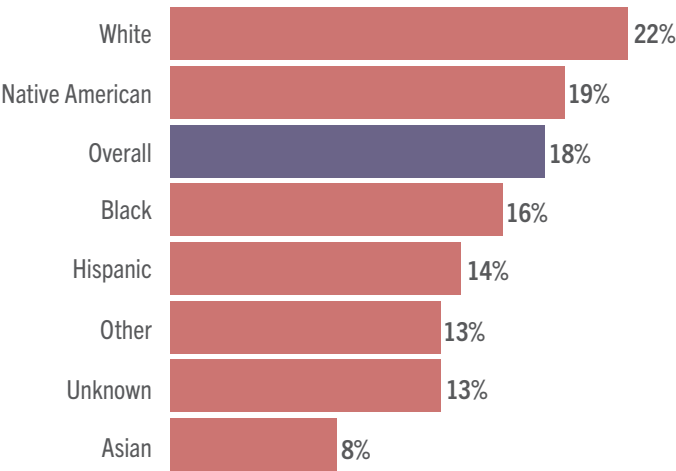
Important Context for Interpreting Differences in Mental Health Diagnosis Rates

Receiving a mental health diagnosis requires seeking out—and being able to access—medical care. Norms around accessing mental health treatment differ widely, and some groups also face steeper obstacles to medical care than others. The differences in mental health diagnoses across groups likely reflect variation in underlying risk and significant differences in screening, diagnosis, and documentation practices. Barriers to identification can include lack of standardized processes for screening, stigma, lack of responsive care, and communication challenges related to language or health literacy. Higher rates among some patient groups may reflect more interaction with the healthcare system or better documentation with certain payor systems. Overall, these findings should be interpreted as an indicator of system-level opportunities that indicate underrecognition of mental health conditions rather than true differences in prevalence.

By Race/Ethnicity

Mental health diagnoses **were most common among white mothers** in Colorado, which could be an indicator of better access to healthcare or differences in norms around seeking care, rather than higher prevalence of mental health conditions.

Mental health diagnoses by race/ethnicity, 2025
(Percent of births)



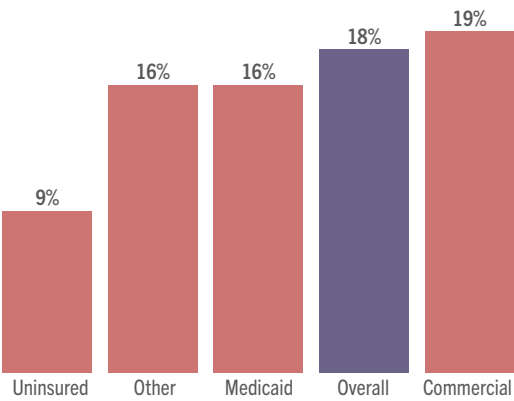
Other Risk Factors

Mental Health Conditions

By Payor

Patients with **commercial health insurance** were **more than twice as likely** to have a mental health diagnosis as those without any health coverage.

Mental health diagnoses by primary payor, 2025*
(Percent of births)

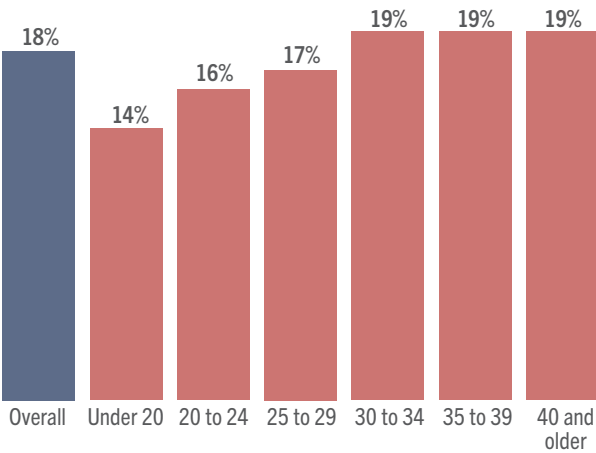


* Mental health diagnoses were most prevalent among people whose primary payor was Medicare, with 43% having a mental health diagnosis. Mothers in this group likely have complex medical needs—facing serious comorbidities or disabling conditions that increase the risk of adverse birth outcomes.

By Age

The prevalence of mental health diagnoses was **higher among older patients.**

Mental health diagnoses by age group, 2025
(Percent of births)



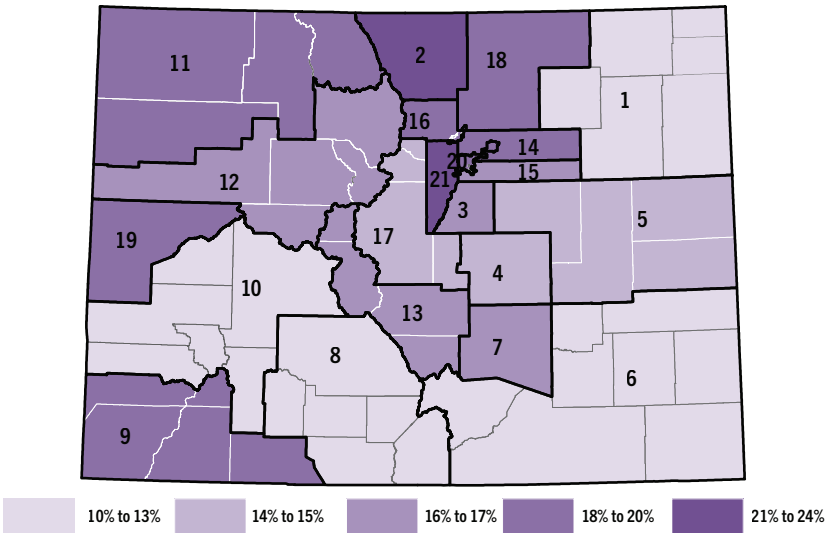
Other Risk Factors

Mental Health Conditions

By Patient Region of Residence

Patients who lived in **Larimer County** (Region 2) and **Jefferson County** (Region 21) were most likely to have a mental health diagnosis when they were admitted to give birth.

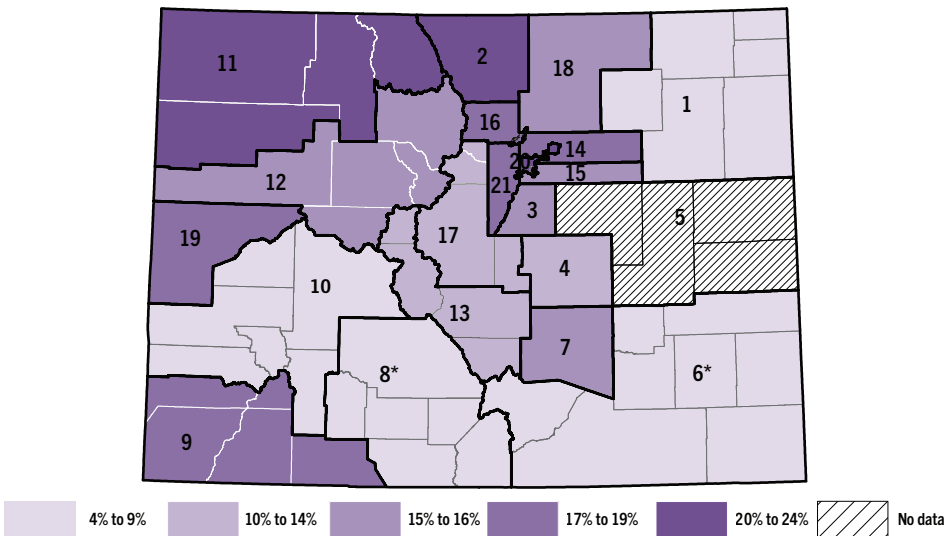
Mental Health Diagnoses Present During Birth Admission per 10,000 Births by Region of Patient Residence, 2025



By Hospital Region†

Mental health diagnoses were most common among patients who gave birth at hospitals in **Larimer County** (Region 2), **Denver County** (Region 20) and the **rural northwestern region** (Region 11).

Mental Health Diagnoses Present During Birth Admission per 10,000 Births by Hospital Region, 2025



† Data by hospital region were combined for Regions 13 and 17 to prevent exposure of individual hospitals.
* Interpret this rate with caution because it is based on fewer than 20 diagnoses.

Other Risk Factors

Substance Use Disorder

Substance use during pregnancy is associated with several adverse outcomes for the person giving birth and their baby, including preterm birth, low birthweight and an elevated risk of illness or death. The stigma associated with substance use during pregnancy, in particular, can prevent some people from accessing the care they need. Similar to data on mental health diagnoses, hospital claims data on substance use disorder (SUD) diagnoses likely underestimate the prevalence of substance use challenges during the perinatal period, and likely reflect factors such as access to care or differences in screening, diagnosis and documentation practices.

Colorado's perinatal substance use picture reflects the state's broader overdose landscape: fentanyl has displaced heroin as the dominant opioid, and stimulant co-use (methamphetamine, cocaine) has risen sharply, complicating both screening and treatment. Polysubstance exposure, rather than a single substance, is now the norm among perinatal patients with substance use disorder, and the care pathway must reflect that complexity.

For opioid use disorder specifically, medication for opioid use disorder (MOUD) is the evidence-based standard of care in pregnancy and is associated with substantially improved maternal and neonatal outcomes compared with medically supervised withdrawal.³⁹ Neonatal care for infants with prenatal opioid exposure has similarly shifted toward Eat-Sleep-Console (ESC), a function-based assessment that reduces length of stay and pharmacologic treatment compared with Finnegan scoring.⁴⁰ These clinical realities reinforce a key premise: perinatal substance use is a treatable medical condition, and the care delivered at the hospital bedside should reflect that.

Overall

Approximately **75 out of every 10,000 patients had a diagnosis of substance use disorder (SUD)** at the time they were admitted to give birth in 2025.

For context, national analyses of delivery hospitalizations report SUD prevalence ranging from under 1% (opioid use disorder specifically)⁴¹ to approximately 7% (any SUD including tobacco)⁴² depending on which substances are included. Colorado's rate is not directly comparable to these figures given differences in how SUD is defined across sources.

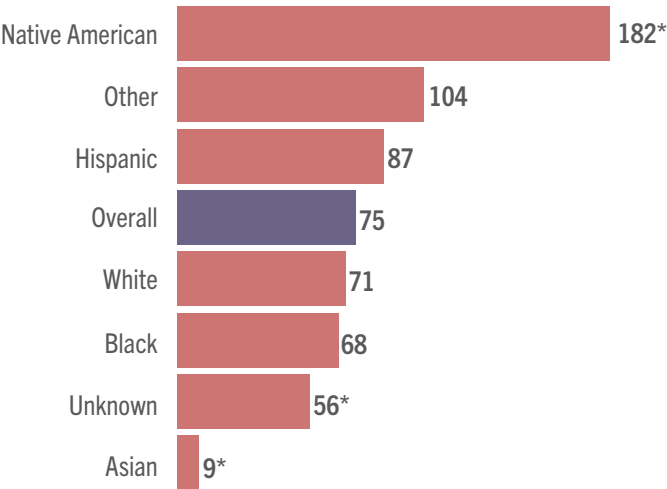
Other Risk Factors

Substance Use Disorder

By Race/Ethnicity

Native American patients in Colorado were more than **twice as likely** to have a substance use disorder diagnosis as the overall population who gave birth.

Substance use disorder diagnoses by race/ethnicity, 2025
(Instances per 10,000 births)



** Interpret this rate with caution as it is based on fewer than 20 diagnoses of substance use disorder.*

Rates of substance use disorder diagnoses among American Indian and Alaska Native people must be understood in the context of the conditions that produced rates much higher than the general population. The Indian Health Service, the primary federal health program serving citizens of federally recognized tribal nations, has historically been funded at less than half the per-capita level of Medicare or Medicaid. Generations of AI/AN patients have had restricted access to treatment, including many Coloradans and their immediate and extended families here and in reservation communities in other states.⁴³

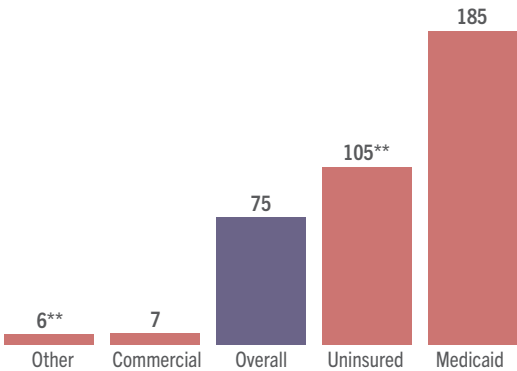
Other Risk Factors

Substance Use Disorder

By Payor

Substance use disorder diagnoses were more common among patients covered by **Medicaid** and those who were **uninsured**.

Substance use disorder diagnoses by primary payor, 2025*
(Instances per 10,000 births)



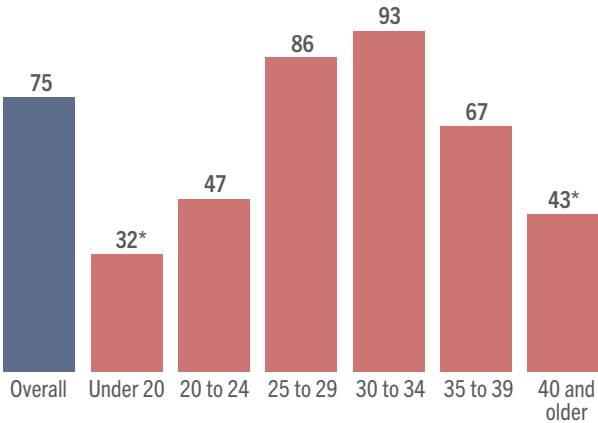
* People covered by Medicare had a substance use disorder diagnosis rate of 588 per 10,000 births. However, this rate should be interpreted with caution as it is based on fewer than 20 diagnoses. Mothers in this group likely have complex medical needs—facing serious comorbidities or disabling conditions that increase the risk of adverse birth outcomes.

** Interpret this rate with caution as it is based on fewer than 20 diagnoses of substance use disorder.

By Age

Patients who gave birth between the ages of **30 and 34** had the highest rate of **substance use disorder diagnoses**.

Substance use disorder diagnoses by age group, 2025
(Instances per 10,000 births)



* Interpret this rate with caution as it is based on fewer than 20 diagnoses of substance use disorder.

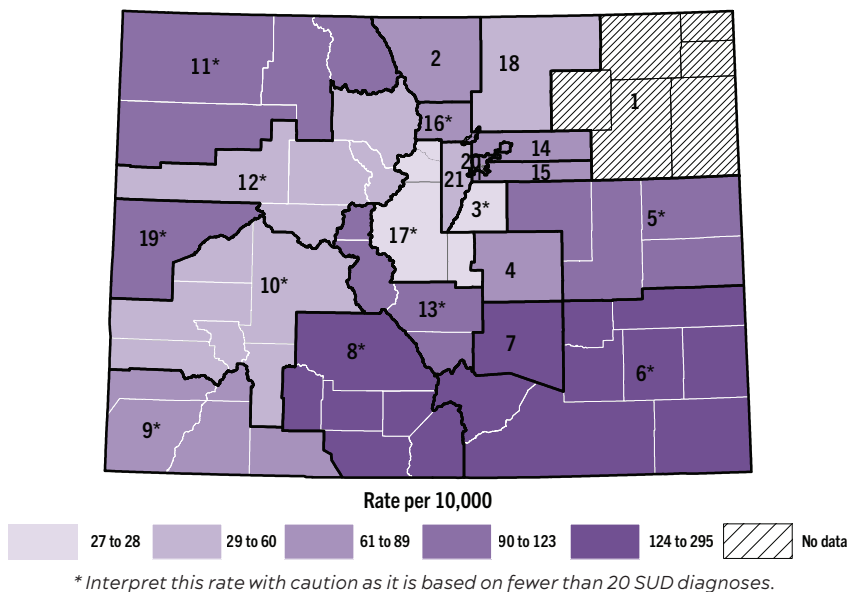
Other Risk Factors

Substance Use Disorder

By Patient Region of Residence

Patients who lived in **Pueblo County** (Region 7), the **rural southeastern region** (Region 6), and the **San Luis Valley** (Region 8) were most likely to have a substance use disorder diagnosis when they were admitted to give birth.

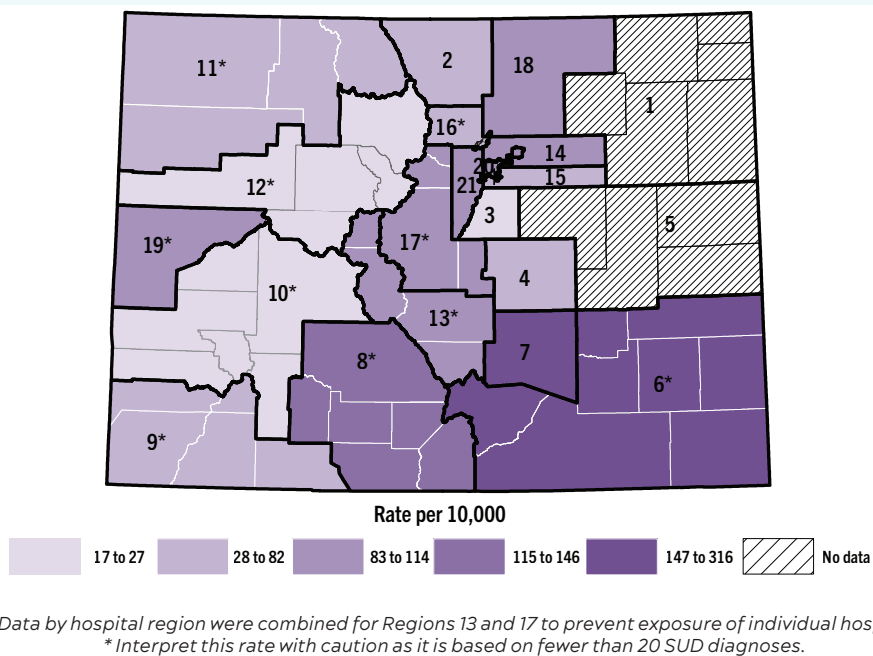
Substance Use Disorder Diagnoses Present During Birth Admission per 10,000 Births by Region of Patient Residence, 2025



By Hospital Region[†]

Patients who gave birth at hospitals located in the **southeastern region of the state** (Region 6) and **Pueblo County** (Region 7) had the highest substance use disorder diagnosis rate.

Substance Use Disorder Diagnoses Present During Birth Admission per 10,000 Births by Hospital Region, 2025



How CPCQC is Addressing Perinatal Health Outcomes through Clinical Quality Improvement Efforts

CPCQC leads implementation of four clinical QI efforts in Colorado's birthing hospitals. QI initiatives are based on the Alliance for Maternal Health Innovation (AIM) Patient Safety Bundles and were tailored for Colorado's perinatal health landscape. For more detail about each of these initiatives, please reference our companion report, *Stronger Systems, Safer Births*, which provides an overview of each QI initiative implemented by CPCQC; highlights recent progress related to implementation; reports on state-wide hospital engagement; includes data for key metrics associated with each Patient Safety Bundle; and highlights opportunities for improvement in CPCQC's QI initiative outcomes and engagement.

The four hospital-based clinical QI initiatives currently being implemented in Colorado are:



- **SOAR (Supporting vAginal delivery for low-Risk mothers):** The SOAR initiative supports birthing hospitals to reduce the variation in C-section delivery rates for low-risk births. It accomplishes this goal by using a structured QI and collaborative learning framework through the implementation of a clinical care checklist on the unit. SOAR is based on the AIM bundle for safe reduction of primary C-section birth.



- **Turning the Tide (formerly known as Colorado AIM:SUD):** Turning the Tide improves care for substance use during the perinatal period. Based on the AIM Patient Safety Bundle for perinatal substance use disorder, this initiative focuses on the implementation of universal screening, intervention, and referral to treatment during hospital birth admission.



- **SPARK (Supporting Postpartum Access, Recovery, and Knowledge):** The SPARK initiative, based on the AIM Postpartum Discharge Transition Bundle, is focused on ensuring continuity of care between the inpatient labor and delivery unit and the home to reduce preventable maternal mortality in the postpartum period. Elements include patient and provider education on how to recognize early maternal warning signs and postpartum complications, including those related to perinatal mental health conditions.



- **NEST (Newborn Evidence-based Sleep Teaching)** is CPCQC's first infant-facing QI initiative since 2020. Following a statewide scoping analysis and hospital engagement process, CPCQC launched NEST in 2026 in response to largely preventable sleep-related infant deaths that occur early in infancy, disproportionately affect infants of color and families in low-access regions, and have been increasing in recent years. Modeled after the AIM Patient Safety Bundle format, NEST focuses on standardizing hospital-based safe sleep education, strengthening discharge processes, and promoting family-centered communication to strengthen safe sleep practices and reduce sleep-related infant deaths statewide.

In addition, CPCQC leads clinical QI outside of the hospital setting, most notably through the **Improving Perinatal Access, Coordination, and Treatment for Behavioral Health program (IMPACT BH)**. The IMPACT BH program is a clinical and community quality improvement initiative strengthening perinatal behavioral health identification and response across rural Colorado communities. Through technical assistance, training, data support, grant funding, and peer learning, IMPACT BH helps clinical and community partners improve identification of and connection to care for perinatal mental health, substance use, intimate partner violence, and health-related social needs.

Opportunities for Improvement

The patterns documented throughout this report point to concrete opportunities for action. Elevated rates of severe maternal morbidity, hypertension, hemorrhage, and preterm birth concentrated among Black, American Indian/Alaska Native, rural, and Medicaid-covered Coloradans; geographic clustering of adverse outcomes in rural and southeastern regions; and systematically under-captured mental health and substance use burden all indicate where change is needed. Reducing preventable perinatal morbidity requires coordinated effort across clinical care, healthcare systems, policy, public health infrastructure, and community partnerships. The strategies below are grouped by the level at which they operate, though most require cross-sector collaboration to implement.

☑ This icon denotes recommendations on which CPCQC work is already under way.

Clinical and facility-level improvements

Each of the CPCQC hospital QI initiatives described in the preceding section—SOAR, SPARK, Turning the Tide, and NEST—targets specific drivers of the outcomes documented in this report. Under C.R.S. § 25-52-106.5, all Colorado birthing hospitals are required to participate annually in at least one QI initiative.

Additional clinical and facility-level opportunities include:

- ☑ **Continue efforts through SOAR to reduce avoidable first-time C-sections, and strengthen perioperative and postoperative monitoring for patients who had a C-section delivery.** In the data reviewed in this report, the severe maternal morbidity rate for patients delivering via C-section was five times higher than the rate for vaginal delivery, while unexpected newborn complications were 2.4 times higher. These findings underscore both the importance of C-section when clinically indicated and the cost of those performed without clear benefit.
- ☑ **Implement universal screening protocols for perinatal mental health conditions and substance use disorders during birth hospitalization, paired with warm handoffs to community-based treatment.** This is the focus of several CPCQC initiatives, including Turning the Tide and SPARK in the inpatient setting, and IMPACT BH in the outpatient setting.
- ☑ **Embed respectful maternal care into perinatal education at every level.** CPCQC integrates Respectful Maternal Care content across all Patient Safety Bundle initiatives (SOAR, Turning the Tide, SPARK, NEST); facilitates a Breaking Stigma: Perinatal Substance Use training featuring lived-experience experts; and has developed maternal-focused simulation scenarios currently offered onsite at the University of Colorado School of Medicine's Center for Advancing Professional Excellence and the Community-Focused Health Initiative, with a hospital mobile pilot underway and expansion planned. Colorado's Maternal Mortality Review Committee identified discrimination as a contributing factor in nearly 60% of Colorado pregnancy-related deaths between 2017-2020, grounding this work squarely in clinical quality.⁴⁴
- ☑ **Bolster obstetric emergency readiness across the full care continuum, not only labor and delivery, but also emergency departments and pre- and post-hospital settings, which often encounter pregnancy and postpartum complications first.** CPCQC's Maternal Quality & Safety Toolkit for Rural and Frontier Hospitals in Colorado equips outpatient clinics, labor and delivery units, and emergency departments with readiness and capacity assessment tools, curated resources, and patient/provider quick-reference materials. Building on this, CPCQC is partnering with the Texas A&M Rural and Community Health Institute to develop an Obstetric Emergencies training for emergency departments and first responders. Readiness is a core determinant of outcomes across the leading causes of SMM in Colorado, which progress rapidly and depend on early recognition and rapid response.

Opportunities for Improvement

- **Improve consistent adherence to AIM hemorrhage and severe hypertension bundles, paired with maternal warning-signs education for patients, families, and care teams**, including ensuring that concerns raised by patients or support people are not dismissed. CPCQC's Colorado Quick Care Card and its Implementation Toolkit, which combine patient- and clinician-facing tools for recognizing and responding to maternal warning signs across pregnancy and postpartum, support this work alongside SPARK's postpartum discharge education.
- **Strengthen aspirin prophylaxis for preeclampsia prevention**. The American College of Obstetrics and Gynecology (ACOG) and the U.S. Prevention Services Task Force (USPSTF) recommend low-dose aspirin (81 mg) starting between weeks 12 and 28 of pregnancy for patients at moderate-to-high risk for preeclampsia, a regimen that reduces preeclampsia incidence by approximately 15% to 20%. National uptake remains uneven. Hospitals and their affiliated prenatal practices can track aspirin prophylaxis rates among eligible patients as a process measure and align risk-assessment workflows with the USPSTF risk criteria.

Healthcare system and access

- **Levels of Maternal Care (LoMC) define a standardized framework for categorizing hospitals based on their capacity to care for pregnant and postpartum patients with varying levels of risk, from low-risk to highly complex conditions**. This approach helps ensure that patients receive care in facilities equipped with the appropriate staff, resources, and clinical capabilities. Through June 2026, CPCQC is leading a scoping analysis to examine national trends, state-level implementation, and Colorado-specific needs related to LoMC. CPCQC will use findings from this scoping report to inform discussions with state partners and stakeholders on the value and approach for Colorado if a maternal levels of care framework were established. Using a shared framework would support risk-appropriate care and strengthen referral and transfer networks, an especially critical need for rural facilities with limited on-site specialty capacity.
- **Extend specialty perinatal care into rural and low-resource settings through tele-maternal-fetal-medicine (tele-MFM), remote consultation, and regional hub-and-spoke models**. These approaches are especially important for people with chronic conditions such as hypertension and diabetes (leading contributors to preterm birth), hypertensive disorders of pregnancy, and severe maternal morbidity, who may live far from on-site specialty expertise.
- **Align state practice with updated ACOG prenatal care guidelines**. The 2025 recommendations emphasize individualized care based on medical, social, and structural determinants rather than a one-size-fits-all visit schedule.⁴⁵ Focus on quality, not only quantity, of prenatal visits: Colorado All Payer Claims Database (APCD) data show that Black mothers attend more prenatal visits on average than white mothers, yet continue to experience disproportionately high morbidity and mortality.
- ☞ **Support early and consistent postpartum follow-up by scheduling visits before discharge, offering telehealth or remote monitoring when appropriate, providing universal home visiting, and addressing barriers such as transportation and childcare**.
- ☞ **Expand provider-to-provider teleconsultation for perinatal behavioral health**, including Colorado's PROSPER program, which offers real-time psychiatry consultation and referral support to clinicians statewide, particularly important in rural and frontier settings where on-site behavioral health capacity is limited.

Opportunities for Improvement

- **Develop perinatal-specific crisis response pathways, including training for 988 call centers and mobile crisis teams**, given that suicide and accidental overdose are leading causes of maternal mortality in Colorado.
- ☞ **Prevent further obstetric unit closures and protect existing rural capacity**. Six labor and delivery units closed in Colorado between 2018 and 2025, and nearly 40% of Colorado counties are already designated as maternity care deserts.⁴⁷

Policy and financing

- ☞ **Protect the 12-month postpartum coverage offered via Colorado’s Medicaid plan, HealthFirst Colorado, including doula and lactation services**. Medicaid covers a substantial share of Colorado births, and the data in this report show that people covered by Medicaid experience elevated rates of SMM, hypertension, hemorrhage, preterm birth, and neonatal readmission—conditions where stable, continuous coverage directly enables chronic disease management, mental health treatment, and timely postpartum follow-up.
- ☞ **Fund rural obstetric infrastructure through targeted financial incentives, clinician loan repayment, and sustainable reimbursement for low-volume obstetric units** to prevent further closures and maintain a viable rural maternity care workforce. CPCQC published a [case study](#) examining the sustainability, closure, and persistence of labor and delivery services in rural, low-volume settings.
- **Stabilize reimbursement for services that reduce perinatal morbidity but remain chronically underfunded**, including integrated behavioral health in obstetric settings, perinatal home visiting, doula and lactation care, and community-based postpartum follow-up.
- ☞ **Reduce policy and administrative barriers that deter pregnant and postpartum people from seeking substance use care**, including reviewing reporting thresholds and practices that can make treatment-seeking itself a trigger for child welfare involvement. CPCQC’s Turning the Tide initiative, its [Field Guide to Addressing Perinatal Substance Use in Colorado](#), and Breaking Stigma: Perinatal Substance Use training reinforce facility-level efforts to meet substance use with evidence-based care rather than penalty.

Public health infrastructure

- ☞ **Strengthen Colorado’s [Maternal Health Dashboard](#) and continue data linkages between vital records, hospital claims, and the All-Payer Claims Database**. Integrated surveillance is essential for understanding outcomes beyond delivery, including out-of-hospital births, postpartum complications treated outside the hospital, and births to uninsured mothers. Align claims-based surveillance with complementary datasets, including the Baby and You survey and APCD outpatient claims, to capture the full scope of perinatal mental health and substance use burden.
- **Pair state-level severe maternal morbidity (SMM) surveillance with facility-level review using ePC-07 (Severe Obstetric Complications), which incorporates risk adjustment**. The CDC SMM definition is well suited for state-level surveillance, while ePC-07 is better suited for hospital-level case review and internal improvement allowing the two measures to reinforce rather than compete with one another.
- ☞ **Pair SMM surveillance with [Maternal Mortality Review Committee \(MMRC\) findings](#) to identify preventable factors and inform statewide prevention strategies**, with attention to how MMRC recommendations create actionable feedback loops into clinical practice and policy. CPCQC will release periodic reports, at a minimum every three years (between three-year MMRC report cycles) to provide updates on implementation of MMRC recommendations.

Opportunities for Improvement

- **Strengthen data systems** to monitor geographic shifts in where people give birth, integrating Medicaid enrollment, prenatal care initiation, and housing data so that resource allocation can adapt to changing community needs. Disaggregate outcomes in ZIP-code-level analysis to surface within-region patterns that statewide averages obscure and help identify both areas of greatest need and bright spots where communities are achieving strong results.

Community-based approaches

- **Partner with community-based organizations and people with lived experience in quality improvement design and implementation.** CPCQC's Family Integration to Restore Trust (FIRST) program offers one Colorado model. Develop formal mechanisms for doulas and community health workers to safely report observed patterns, near misses, or barriers so that their input informs quality improvement and institutional policy.
- **Expand access to perinatal care providers who reflect and understand the communities they serve,** including birth professionals, doulas, community health workers, lactation consultants, and peer navigators. Prioritize outreach and service expansion in communities experiencing rapid growth in Black births, including Commerce City, Englewood, Littleton, Parker, Brighton, Greeley, Fort Collins, and Grand Junction, while maintaining resources in Aurora, Denver, and Colorado Springs, which continue to serve the largest numbers of Black mothers giving birth.⁴⁸
- **Build sustainable workforce pipelines for doulas, midwives, and lactation professionals** through scholarships, stipends, paid practicum placements, mentorship models, and sustainable reimbursement. Provide reflective supervision and peer support to sustain the workforce through the emotional demands of this work.
- **Invest in community-based behavioral health infrastructure** through programs such as CPCQC's IMPACT BH program, which strengthens and integrates local perinatal behavioral health systems across Colorado.
- **Integrate social needs screening, including food insecurity, housing instability, transportation, and intimate partner violence, into prenatal, delivery, and postpartum workflows,** pairing positive screens with warm referrals to existing Colorado resources. SPARK offers one hospital entry point by embedding this work into standardized postpartum discharge processes.

Appendix A: Reporting and Methodology

The findings in this brief are based on claims data provided by the Colorado Hospital Association (CHA). These data reflect the calendar year 2025 and include all births which occurred in Colorado hospitals. Because they come from administrative hospital claims, they represent the diagnoses and procedures billed during delivery hospitalization, or readmission after delivery hospitalization.

Conditions highlighted in this report are those specifically cited in C.R.S. § 25-52-106.5 as part of hospitals' required annual submission of a minimum data set of key perinatal outcomes to CPCQC. The key outcomes specified by the legislation were chosen due to their contributions to maternal mortality and morbidity, standardized uses and definitions in healthcare, or relation to existing AIM patient safety bundles. In future years, this report may address other outcome measures relevant to advancing maternal-infant health in Colorado.

Appendix B: Data Notes

Below are important notes and definitions regarding terms used throughout this report.

Racial and ethnic categories: For CHA claims, race is reported by hospitals using CHA race codes, and the “Other” category reflects how hospitals map their local race data at submission. “Other” can include a mix of races that don’t align with CHA codes, multiracial responses, or cases where race wasn’t disclosed, making it a very heterogeneous group. For NTSV C-section data from the Colorado Department of Public Health and Environment, race and ethnicity are reported using CDPHE’s standard categories.

Payor categories: When examining data by payor, the category “Other” is used when a claim is submitted to an insurance carrier that does not fit into the standard classifications (e.g., Medicare, Medicaid, Commercial, etc.). If a patient’s insurance status does not map to a CHA-defined insurance, it is mapped as “Other.”

Medicare: While Medicare covers a small number of births in Colorado, patients of reproductive age are eligible for Medicare due to their medical complexity. We typically note any relevant Medicare data points beneath payor charts. This choice was made because despite the very small number of births covered by Medicare, across nearly all indicators the rates of adverse outcomes for Medicare-insured patients were significantly higher than rates for those with other types of coverage; including these data therefore obscured differences across other coverage types. Additionally, because people covered by Medicare when they give birth have co-morbidities that qualify them for this coverage, their experiences differ from those with other types of coverage.

Leading causes: The authors of this report consulted with a board-certified obstetrician and gynecologist (OB/GYN), neonatologist, and certified nurse-midwife, respectively, to assist in consolidating varied ICD-10 diagnoses into clinically meaningful categories for visualization and reporting. For example, several different diagnoses related to hypertension were consolidated into a broader category of hypertensive disorders of pregnancy.

Severe maternal morbidity: This analysis identified delivery hospitalizations with severe maternal morbidity (SMM) using the Centers for Disease Control and Prevention (CDC) standardized methodology, which relies on administrative hospital discharge data and ICD codes across 21 established indicators (16 diagnoses and five procedures) associated with in-hospital mortality. [Click here](#) to see the full list of ICD codes used to identify instances of SMM using the CDC definition. In line with established conventions for SMM analysis, cases where blood transfusion was the only SMM indicator were excluded from the analyses in this brief.

Disaggregation by age: Where possible, this report disaggregates maternal outcomes by maternal age. However, it does not disaggregate by maternal age for infant measures because CPCQC has access only to the infant claim, unlinked and distinct from the maternal claim which contains the maternal age. Linking maternal-infant dyads in administrative or vital records data is currently beyond the scope of this report.

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- ¹² Wolfson, C.L., Angelson, J.T., & Creanga, A.A. (2025). Is severe maternal morbidity a risk factor for postpartum hospitalization with mental health or substance use disorder diagnoses? Findings from a retrospective cohort study in Maryland: 2016–2019. *Maternal Health, Neonatology and Perinatology* 11.
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