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COLORADO'S RANKING ON MATERNAL HEALTHCARE: COSTS AND OPTIONS

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ABOUT COMMON SENSE INSTITUTE

Common Sense Institute is a non-partisan research organization dedicated to the protection and promotion of Colorado's economy. CSI is at the forefront of important discussions concerning the future of free enterprise and aims to have an impact on the issues that matter most to Coloradans. CSI's mission is to examine the fiscal impacts of policies, initiatives, and proposed laws so that Coloradans are educated and informed on issues impacting their lives. CSI employs rigorous research techniques and dynamic modeling to evaluate the potential impact of these measures on the economy and individual opportunity.

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CSI is committed to independent, in-depth research that examines the impacts of policies, initiatives, and proposed laws so that Coloradans are educated and informed on issues impacting their lives. CSI's commitment to institutional independence is rooted in the individual independence of our researchers, economists, and fellows. At the core of CSI's mission is a belief in the power of the free enterprise system. Our work explores ideas that protect and promote jobs and the economy, and the CSI team and fellows take part in this pursuit with academic freedom. Our team's work is informed by data-driven research and evidence. The views and opinions of fellows do not reflect the institutional views of CSI. CSI operates independently of any political party and does not take positions.

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INTRODUCTION

Maternal healthcare, mortality, and morbidity are crucial metrics for the overall performance of a state's healthcare system. While negative outcomes will always exist, it's vital to examine Colorado's maternal health results to determine deficiencies and understand how health services can better support women before, during, and after pregnancy to ensure positive outcomes for mother, child, and the economy.

Despite Colorado boasting a number of positive maternal health outcomes, the state also lags behind the nation in vital areas resulting in harmful outcomes that could otherwise be avoided with proper resource allocation and application. The state is also undergoing several medical transformations that could worsen outcomes, including the ongoing disenrollment from Medicaid and the piecemeal curtailment of OBGYN services from rural areas. Leaders should carefully consider outcomes and their causes in order to proactively stave off a dip in performance, both for the sake of human lives and costs to the broader community.

Maternal Mortality

Number of deaths related to or aggravated by pregnancy (excluding accidental or incidental causes) occurring within 42 days of the end of a pregnancy per 100,000 live births.

Severe Maternal Morbidity

Number of significant life-threatening maternal complications during delivery per 10,000 delivery hospitalizations.

KEY FINDINGS

- Between 2016-20, 174 women in Colorado died from a pregnancy associated cause. The tragic human loss also carries an economic impact. The average loss of life over these 4 years equates to $574 million per year, and $2.3 billion in total. UCHealth reported over a half a billion dollars in uncompensated care in fiscal year 2023.
- In 2019, the total medical and societal cost of preterm births covered by Colorado Medicaid exceeded $235 million. In 2021, Colorado hospitals provided $264 million in charity care.[i]
  - This includes an estimated $190 million in medical costs alone.
- CSI examined 13 maternity outcomes and indicators. Colorado outperforms other U.S. states in six, is in line with the average in four, and underperforms in three.
- Between 2019-22, Colorado had the 9th highest rate of low weight births in the U.S, and the 8th lowest rate of mothers receiving adequate prenatal care. These poor results lead to negative outcomes for both mother and child while also harming Colorado's economy.
- Colorado does excel in certain maternal healthcare rankings including infant mortality, health risks during pregnancy, and food sufficiency for children aged 0-5.

ECONOMIC COSTS OF MATERNAL OUTCOMES

Between 2016-20, 174 Coloradan women died from pregnancy-associated causes.[ii] Beyond the human tragedy of maternal mortality, there is also a significant economic impact. To help quantify the outcomes of certain legislative items, the U.S Department of Transportation determines the value of a statistical life (VSL) which is updated yearly.[iii] In 2023, the Department of Transportation found a statistical life to be equal to $13.2 million meaning that the untimely passing of these women resulted in an average annual VSL loss of $574 million dollars and a total loss of $2.3 billion.

However, the cost of maternal mortality and morbidity runs much deeper. Maternal morbidity, adverse health effects as a result of pregnancy, impacts an untold number of women and has been shown to cost billions in societal and medical costs. Parsing out this cost in Colorado is difficult as many morbidity statistics are not disaggregated by cause or type. A maternity report by the Colorado Department of Health Care Policy and Financing does offer some insight into these questions, specifically around the potential cost of hypertension among mothers resulting in preterm babies.

In 2019 there were 26,907 births covered by Colorado Medicaid. Of these mothers, 7% had previously been diagnosed with hypertension, which is a risk factor for preterm birth. Hypertension contributed to 22% of these women giving birth to preterm babies.[iv] Additionally, 9.6% of women gave birth to a preterm baby without a hypertension diagnosis. Using estimates for the cost of a preterm baby from the March of Dimes, Colorado's total medical costs exceeded $190 million[v] while the total societal costs (which includes medical costs) was $236 million.[vi]

FIGURE 1

Total Medical & Societal Cost of Hypertension Related Preterm Birth Covered by Colorado Medicaid in 2019				
Total Births Covered by Co. Medicaid	26,907		Medical Cost per Preterm Birth	$63,498
Those with Preexisting Hypertension that had a Preterm Baby	416		Societal Cost per Preterm Birth	$78,611
Number of Preterm Babies from Those Without a Preexisting Hypertension Diagnosis	2,583		Total Medical Cost of 2019 Preterm Births	$190,452,224
Total Preterm Births in 2019 Covered by Co. Medicaid	2,999		Total Societal Cost of 2019 Preterm Births	$235,781,223

COLORADO'S MATERNAL HEALTH IN COMPARISON TO U.S.

Colorado's mothers in general have some of the nation's best pregnancy outcomes. However, it is average in others and has some of the nation's worst outcomes in three key metrics. The less positive outcomes, regardless of the metric, are typically experienced by mothers who have lower education levels, mothers who have lower incomes, and mothers of color.

GOOD OUTCOMES AND INDICATORS

Colorado also has some of the nation's best maternity-related healthcare outcomes. Among U.S. states, its rates of maternal mortality, maternity care deserts, health risks during pregnancy, poverty, and infant mortality are all in the bottom quartile.

Colorado's rate of maternal mortality between 2017 and 2021 ranked the nation's seventh-best, not counting states in which data was not available. The rate of maternal mortality is defined as the number of deaths related to or aggravated by pregnancy (excluding accidental or incidental causes) occurring within 42 days of the end of a pregnancy per 100,000 live births.

In 2021 and 2022, 1.6% of Colorado females between 18 and 44 lived in a maternity care desert, the 12th best rate in the U.S. A maternity care desert is any county without a hospital or birth center offering obstetric care and without any obstetricians, family physicians who reported delivering babies, certified nurse midwives, and nurse midwives. This metric will likely change as providers continue to drop or pare back maternity care in these counties.

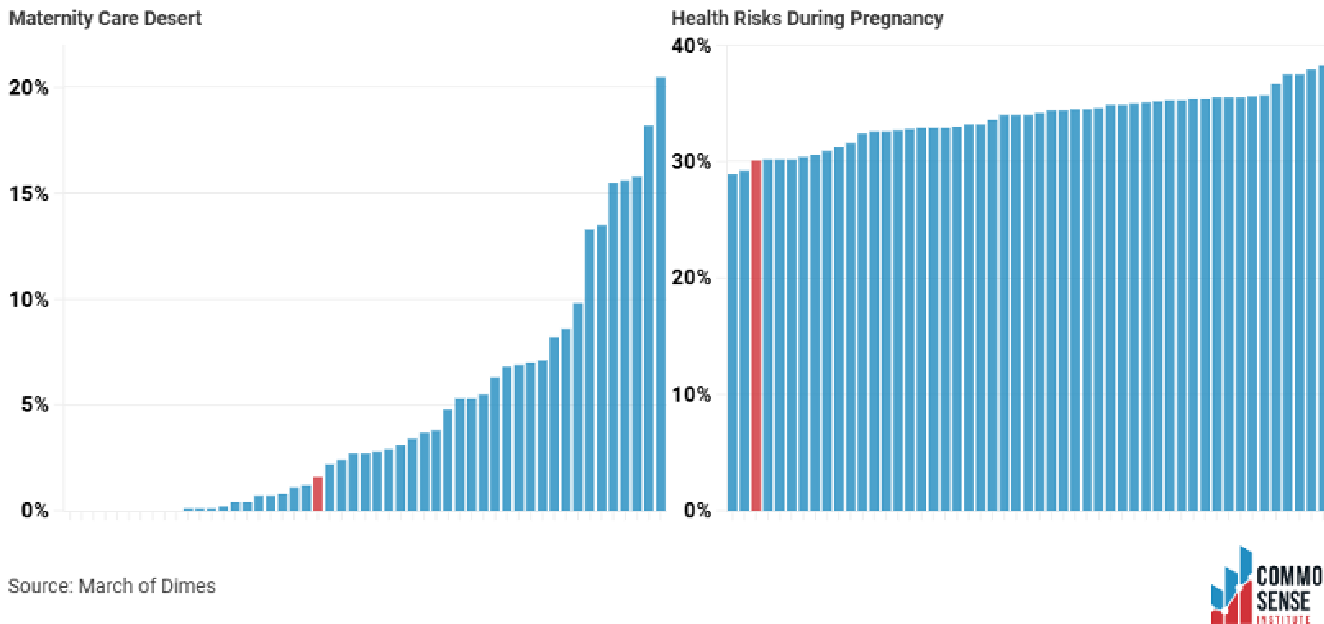
Data collected between 2018-22 revealed that Colorado mother's rate of health risks during pregnancy was 30.1%, the nation's 3rd lowest. This is defined as the percentage of births for which a mother had one or more health risk factors. Risk factors include: pre-pregnancy diabetes, gestational diabetes, pre-pregnancy hypertension, gestational hypertension, eclampsia, previous preterm birth, infertility treatment used, fertility enhancing drugs used, assistive reproductive technology used, and previous cesarean delivery.

The state also had one of the lower rates of infant mortality over 2018-21, with the nation's 12th lowest rate. This is defined as the number of infant deaths (before age 1) per 1,000 live births. Colorado also had the nation's 7th lowest rate of maternal poverty, defined as the percentage of females between 18 and 44 who live below the poverty level. Between 2018-22, 12.1% of these women were classified as living in poverty.

In 2021-22 Colorado had the nation's 4th highest rate of maternal food sufficiency, defined as the percentage of children ages 0-5 whose household could always afford to eat nutritious meals in the past 12 months.

Colorado also had the 11th highest score for maternity practices in 2022. The Maternity Practices in Infant and Nutrition Care (mPINC) survey score based on seven birth facility policies and practices, with higher scores denoting better maternity care policies and practices.

FIGURE 2



Source: March of Dimes

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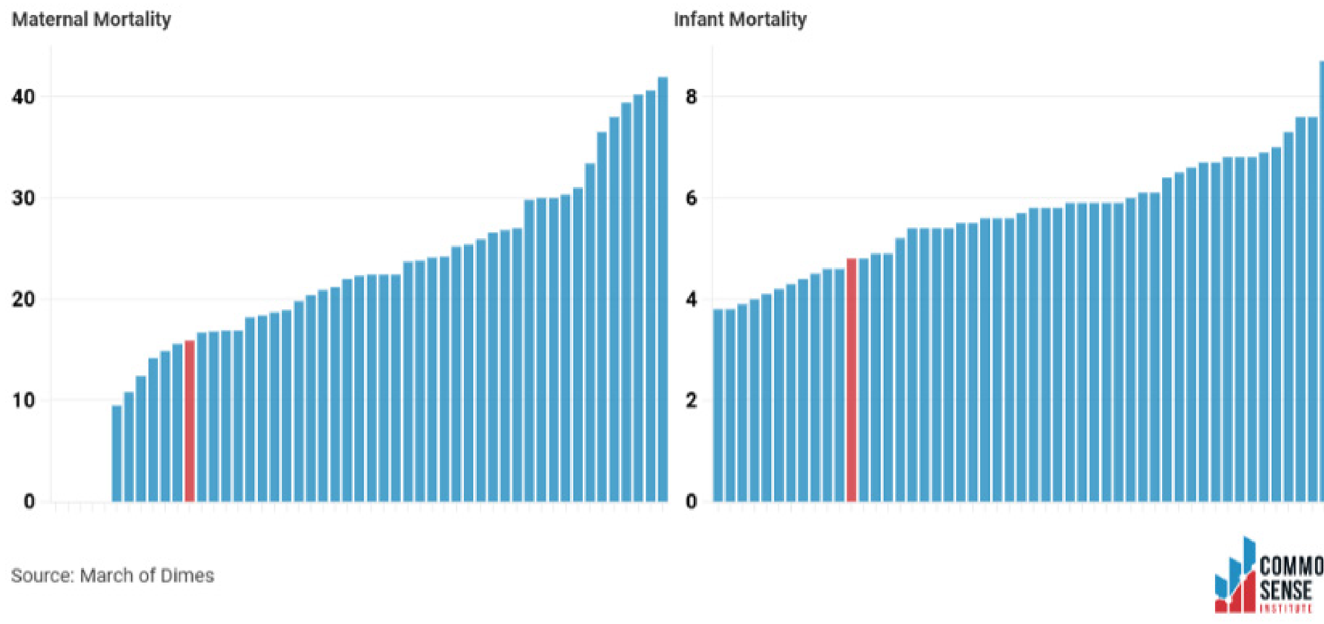
FIGURE 3



Source: March of Dimes

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FIGURE 4

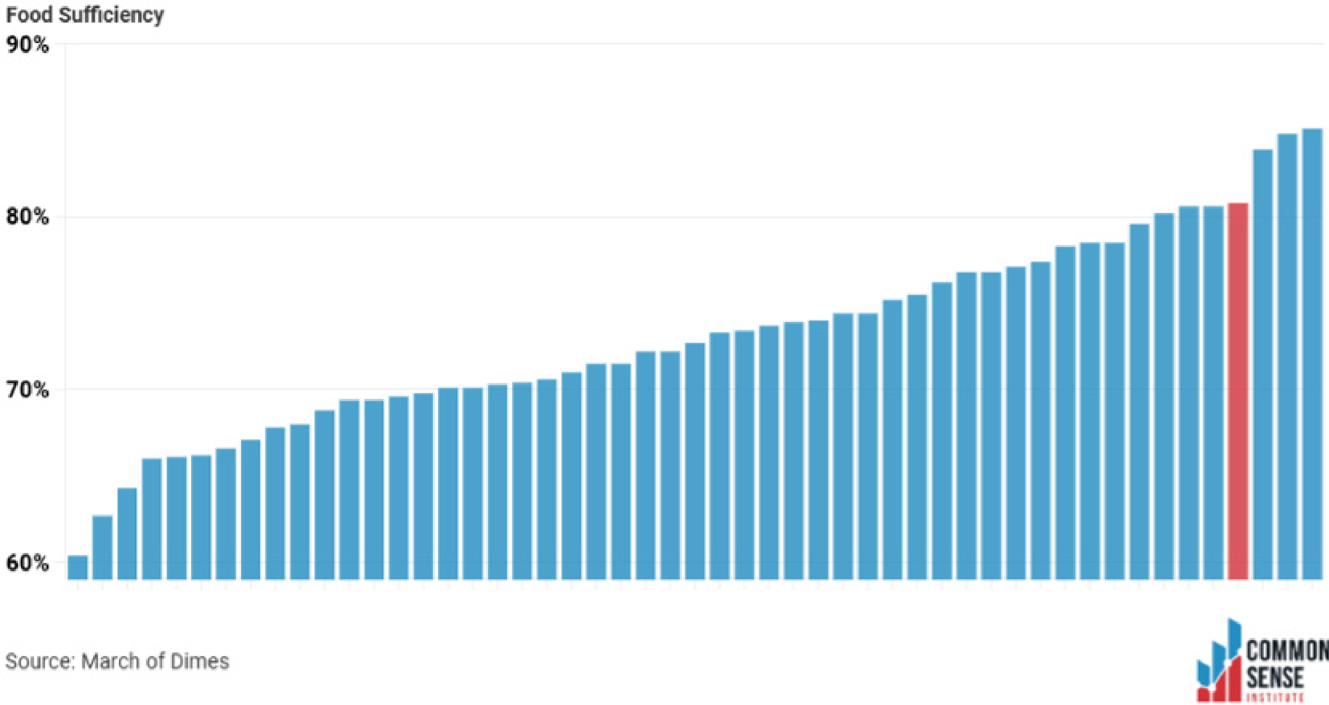
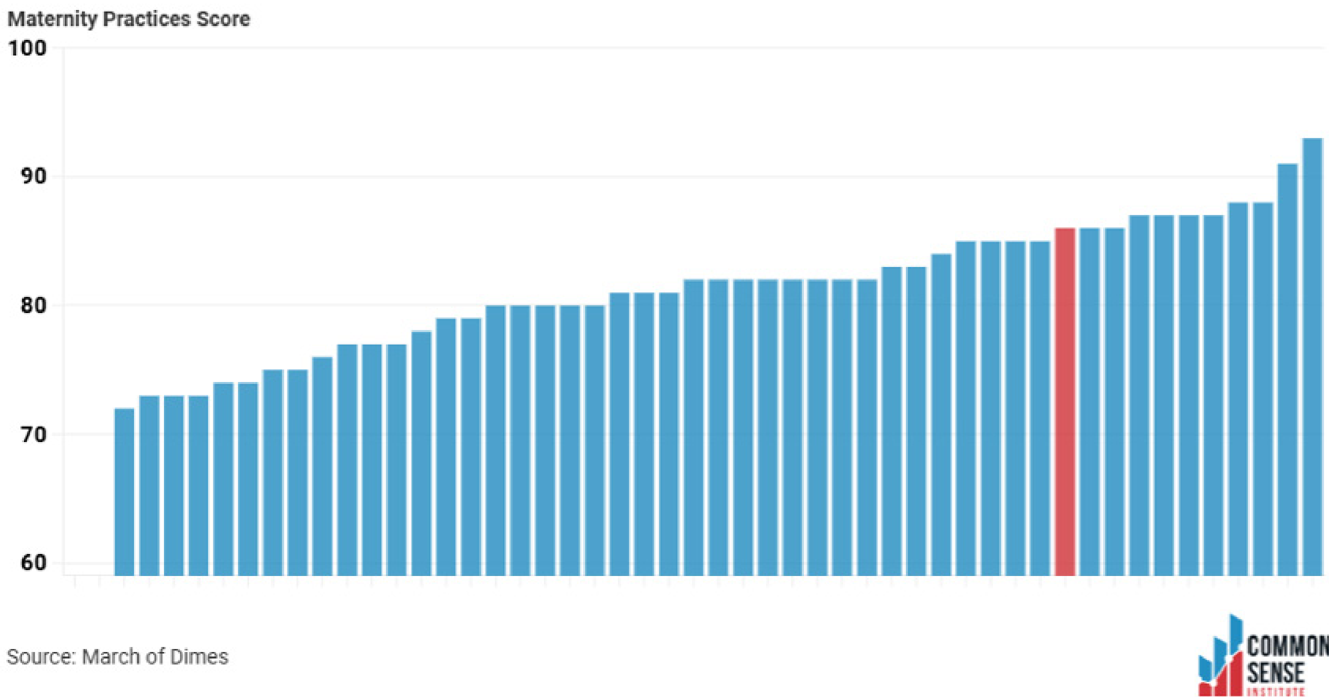


FIGURE 5



AVERAGE OUTCOMES AND INDICATORS

While the state's positive outcomes are promising, Colorado also has a range of maternal health related indicators and outcomes that have room for improvement, ranking in the middle quartiles of U.S. states.

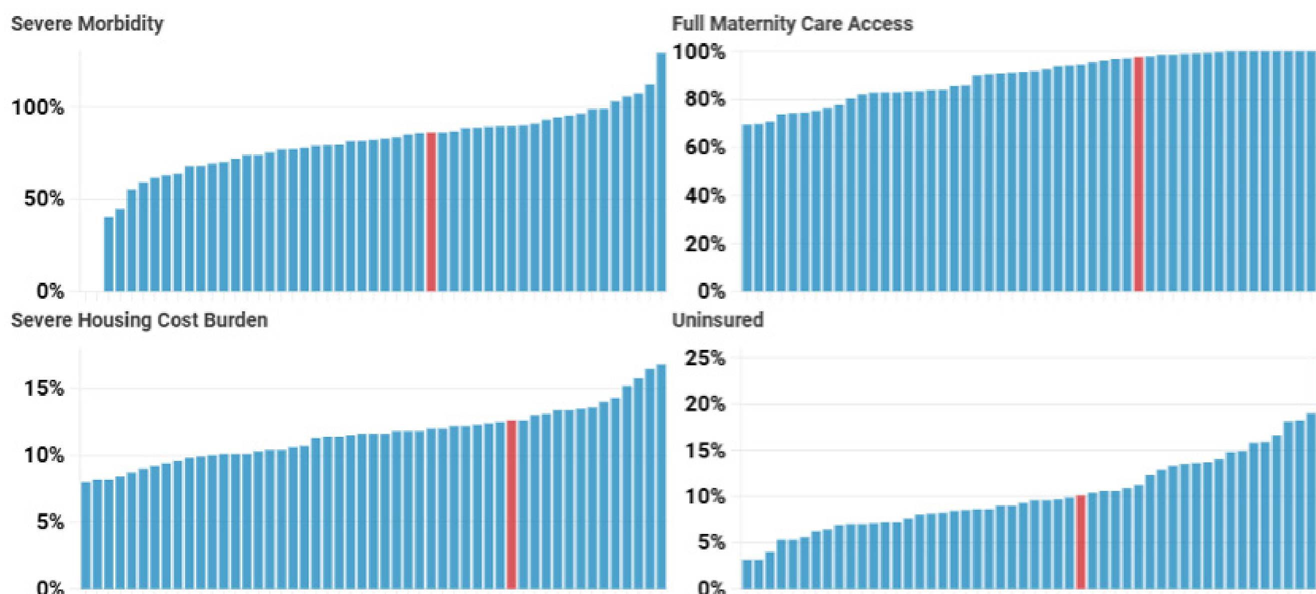
Data from 2020 revealed Colorado ranked 21st in the nation for its rate of severe maternal morbidity, or the number of significant life-threatening maternal complications during delivery per 10,000 delivery hospitalizations. These mothers must be transported to care facilities, incurring additional expenses on top of the care necessary to address their condition. Early identification of these conditions addresses this.

It ranked 17th over 2021-22 for its full maternity care access, which is the availability of two or more hospitals or birth centers providing obstetric care in a given county or the availability of at least 60 providers offering obstetric care.

Colorado's housing market plays a factor in maternal health, as well. It had the 14th highest rate of severe housing cost burden. This is the percentage of females ages 18-44 living in households for which housing costs are more than 50% of household income with Colorado's rank coming from data gathered between 2018-22.

Colorado had the nation's 22nd highest rate of uninsured maternity between 2018-22, with 10.1% of females ages 18-44 lacking health insurance coverage.

FIGURE 6



POOR OUTCOMES AND INDICATORS

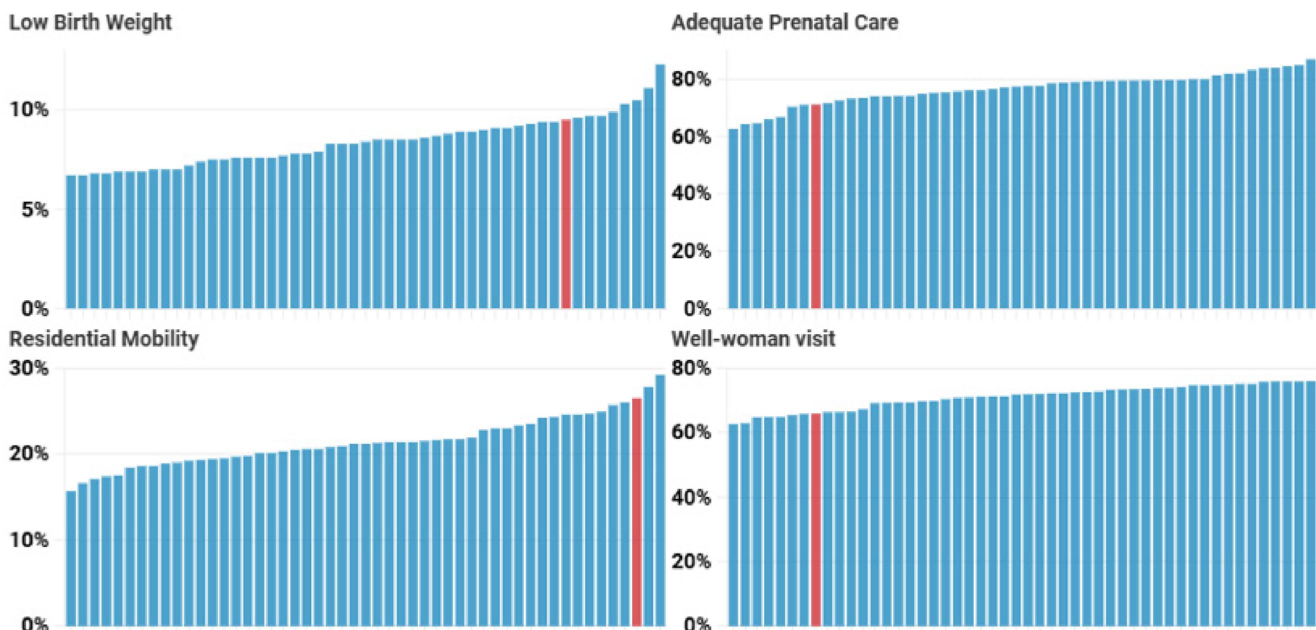
Colorado does have a share of maternity metrics that are less promising,

Colorado had the nation's 9th highest rate of low birth weight, which is the percentage of infants weighing less than 2,500 grams (5 pounds, 8 ounces) at birth. Mobility seems to present a problem, as well. It had the 3rd highest rate of residential mobility between 2018-22, reflecting the percentage of females ages 18-44 who have lived in their current residence for less than one year.

Colorado's mothers are less likely to receive prenatal care. In 2021 and 2022 the state had the nation's 8th lowest rate of adequate prenatal care. Nearly 29% of live births happen without the mother receiving prenatal care beginning in the first four months of pregnancy with the appropriate number of visits for the infant's gestational age.

This dearth of preventative care affects women generally. Colorado also ranked 8th lowest for well-woman visits, with 30.5% of women ages 18-44 not having a preventive medical visit in the past year between 2019 and 2022.

FIGURE 7

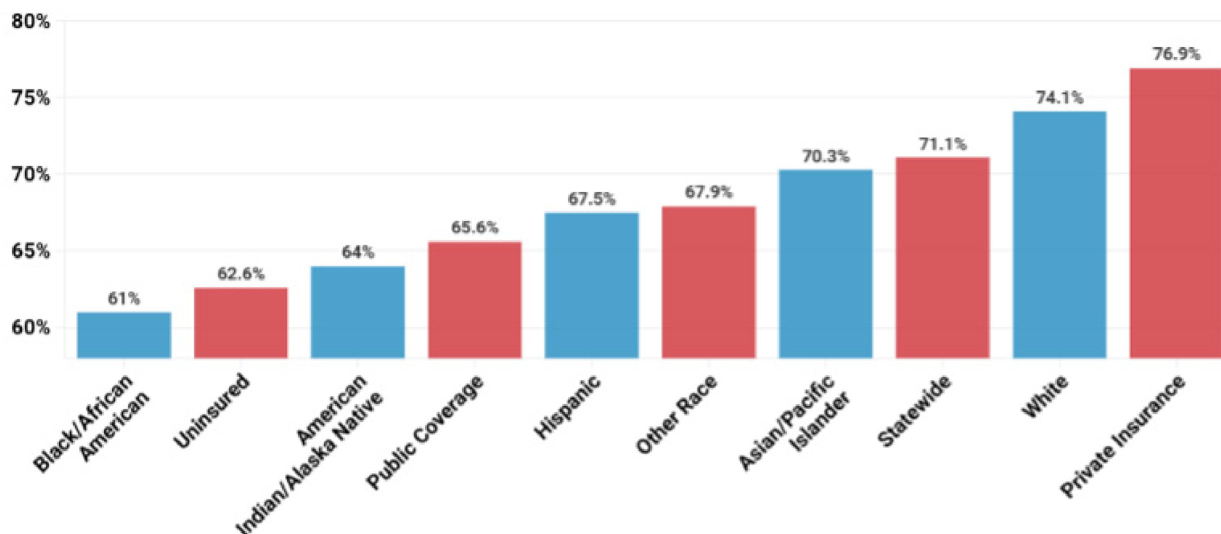


GROUPS OF CONCERN

The negative outcomes above share trends regarding the women who experience them most or least, as the case may be. Negative outcomes have higher incidence among women of color, the uninsured, the less educated, and those in lower income ranges.

In Colorado, 71.1% of births saw the mother receive adequate prenatal care, defined as at least one prenatal care visit in the first 4 months of pregnancy, with appropriate follow up visits during pregnancy. That rate drops to 67.5% for Hispanic women, 65.6% for those with public health insurance, 64% for American Indian/Alaska Native women, and 62.6% for uninsured women. Black/African American women have the lowest rate of any subgroup, with 61%.

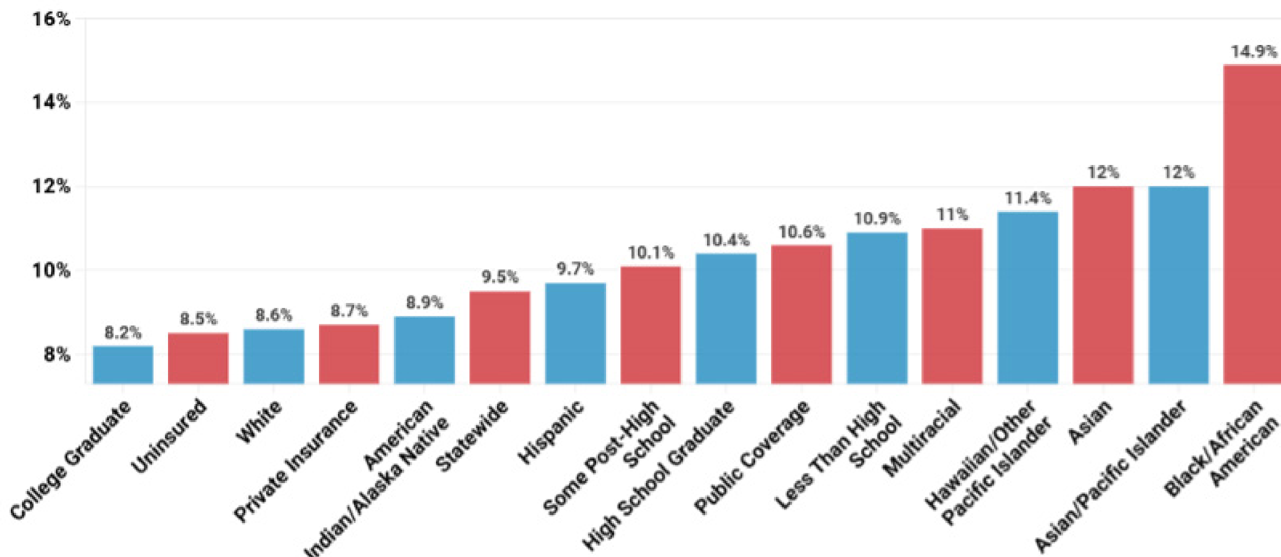
FIGURE 8



Source: March of Dimes

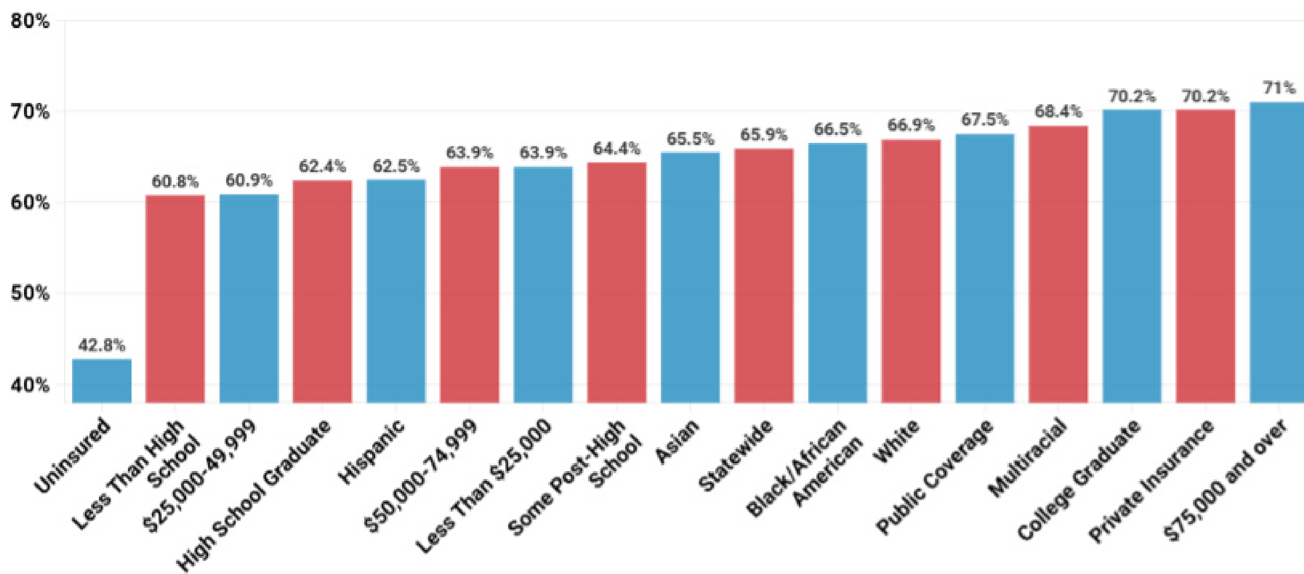
Low birth weights are similarly concentrated in certain subgroups. While 9.5% of Colorado live births are classified as low birth weight, that increases to 9.7% for Hispanic mothers, between 10% and 11% for mothers without college degrees, and 10.6% for mothers with public insurance. Again, Black/African-American mothers have the highest incidence, with 14.9% of live births of low weight.

FIGURE 9



Preventative care is experienced less by the same groups. While 65.9% of all Colorado birthing age women had a preventative care visit in the last year, that share drops to 62.5% for Hispanic mothers, between 64.4% and 60.8% for mothers without a college degree, between 63.9% and 60.9% for mothers in households with income less than $75,000, and 42.8% for uninsured mothers. In this metric, Black/African-American mothers actually outperform the state rate, with 66.5% of Black women having a preventative visit in the last year.

FIGURE 10



Source: March of Dimes

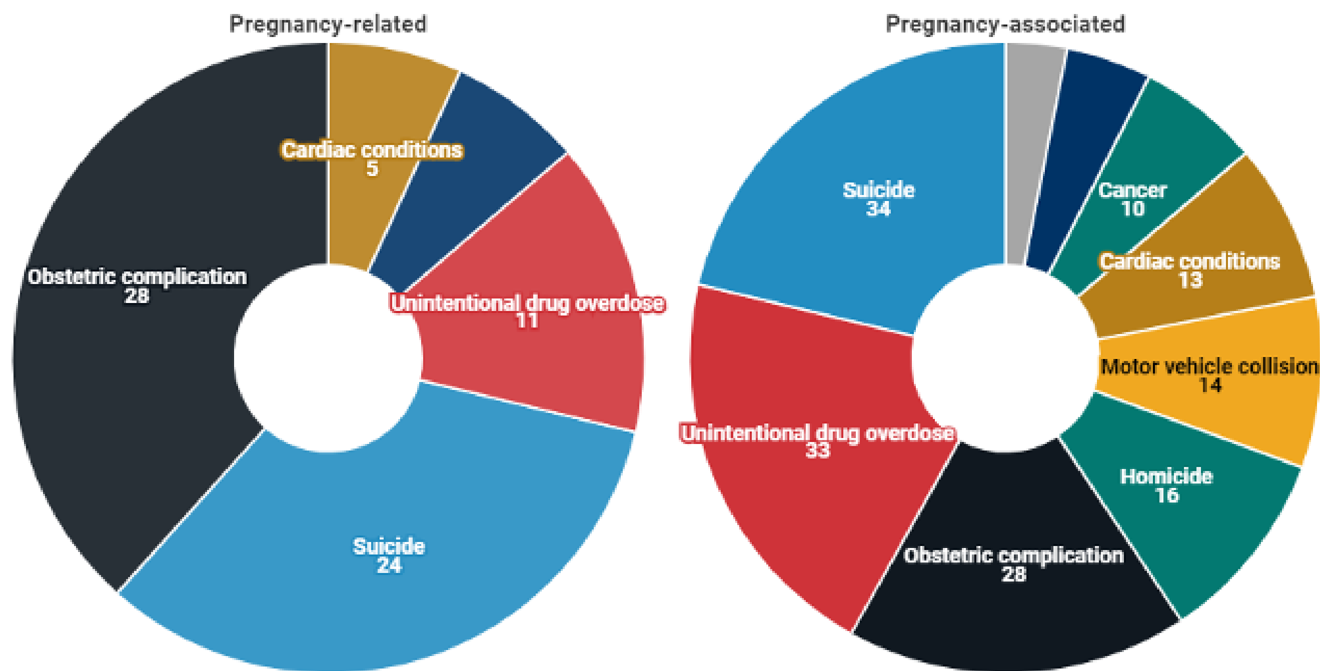
CAUSES

Both clinical and mental health outcomes have heavy influence on Colorado's maternal mortality.

Causes of maternal mortality range from obstetric complication to car collision. Between 2016-20, 174 Coloradan women died from pregnancy-associated causes, which are all deaths during pregnancy or within a year birth, regardless of cause. Pregnancy-related deaths may be the result of a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition impacted by the physiologic effects of pregnancy.

For pregnancy-related deaths, the largest single cause of death is obstetric complications, followed by suicide and unintentional drug overdose. For pregnancy-associated deaths, suicide is the single largest cause of death, followed by unintentional drug overdoses, and obstetric complications.

FIGURE 11



Source: Colorado Department of Public Health and Environment
*There were fewer than 5 pregnancy-related homicide and cancer deaths

COLORADO'S MEDICAL HORIZON

Colorado's medical landscape could present hurdles for mothers as more become uninsured and fewer full-service OBGYN units operate.

Insurance issues could intensify these negative outcomes in the coming years, as there are more mothers without insurance than there were. Low birth weights, inadequate prenatal care, and low well-woman visit rates are each lowest among the uninsured than any other insurance subgroup of mothers.

Colorado's ongoing disenrollment from the COVID pandemic's Medicaid expansion could exacerbate the issue in coming years. Colorado had the nation's 7th-highest disenrollment rate in the nation, with 48% of Medicaid recipients disenrolling since COVID policies ended. Colorado had the 9th-highest number of people disenrolling, over 776,000 in total.

As reported in previous CSI findings, hospitals in Colorado are facing financial headwinds as inflation and labor costs make profits more difficult. The financial problems affecting Colorado's healthcare sector are already impacting quality and access, as recent service closures at some hospitals suggest. In the past half decade, many metro-area hospitals have cut services that are no longer financially sustainable. Obstetrics, pediatrics, and mental health services are often among the first to go.

This affects mothers in rural areas in particular, where rates of maternal mortality are already higher. 54% of rural Colorado counties lack obstetrics services. Among Colorado's counties, 24 are considered maternal care deserts, mainly in the Eastern Plains and Southwest Colorado.[vii]

MODELS OF CARE AND RECOMMENDATIONS

- The Colorado Department of Healthcare Policy and Financing has an obligation to proactively educate mothers about insurance options in the wake of Medicaid disenrollment. It should endeavor targeted outreach and streamlined enrollment procedures, considering that having insurance plays a large role in improving maternity outcomes.
- Given Colorado's worst maternal outcomes are associated with prenatal care and general women's health, obstetrics programs, particularly in larger hospitals, should consider more nimble means of outreach, education, and care, particularly for rural areas. These could include prenatal telehealth check-ins and telehealth clinics as well as travel check-ins and outreach clinics. Similar programs could be adapted to metro area maternity care providers to reach urban populations.
- Midwives do not deal with high-risk pregnancies, so a good midwife program is associated with an obstetrician(s) as well as a hospital in case those services are needed. These kinds of programs are located in metro areas and are not exportable to rural areas without OBGYN providers.
- Social determinants play an outsized role in determining maternal and child health, including poor nutrition, lack of information, poverty, lack of transportation, and lack of mental health support or substance abuse services. Insurance providers, hospital systems, and communities should target women of childbearing age both pre- and post-delivery to boost poor maternal outcomes.
- Pre- and post-delivery community involvement could steer mothers to adequate prenatal care and offer lifelines for post-partum problems that contribute to suicide and substance abuse. Non-profit and community organizations should have outreach options for mothers.
- Personalized experiences of childbirth that allow for emotional and mental support have shown to impact outcomes. An alternative to traditional care with an obstetrician or MD for pregnant women is the certified nurse midwife (CNM). These providers specialize in not just low risk pregnancies but in comprehensive women's care. There are several good midwife programs in Colorado, including Denver's St. Joseph's Hospital. They offer personalized experiences, and the midwives are generally present throughout the entire pregnancy journey including labor, delivery, and after birth care.

- A great deal of negative maternal outcomes occur post-delivery, particularly substance abuse and suicide. It is generally the case that women are just seen at birth and then 6 weeks postpartum. Some practices now do a 1-2 week postpartum check in addition Obstetrics programs could ameliorate these with regular post-delivery visits by nurse practitioners via telehealth or outreach clinics.
- Hospitals that lose obstetrics programs due to financial considerations should assemble playbooks of procedures to properly care for mothers in delivery and to refer pre-delivery mothers to full-care obstetrics programs.

BOTTOM LINE

Colorado has some of the best outcomes in the nation for maternal health. However, the ongoing problems of Medicaid disenrollment and departure of rural OBGYN facilities should prompt leaders to stave off problems before they arise and address trouble spots.

Colorado ranks poorly for early maternal care, including the prenatal care and general wellness checks critical to identifying maternity issues early. As with maternal mortality generally, these problems worsen for mothers of color, mothers of low income, and mothers of low education. Suicide, drug overdose, and obstetric complications cause the majority of deaths, each of which requires a range of pre- and post-pregnancy care models to fight.

Costs to human life and welfare are tragic, as are economic outcomes. Colorado's loss from maternal mortality is north of half a billion dollars annually. Medical costs for preterm babies in Colorado cleared $190 million in 2019 and when adding the societal costs for these preterm babies born under Medicaid, the amount rises to $236 million.

Colorado's leaders in medicine and the state should consider carefully how to adapt care models to personalize experiences and offer support to mothers both before and after pregnancy. Where applicable, models could include midwives attached to full-service obstetrics programs. Other offerings could include education, check-ins, and clinics offered in telehealth or travel settings to maximize reach.

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