# Division Of Iowa Medicaid

## Birth Certificate Link to Paid Claims Report

Selected health indicators to monitor maternal and newborn health among Iowa resident births by Medicaid status, 2019 through 2023.

December 2024

**Suggested Citation:**
Iowa Department of Health and Human Services, Division of Public Health. *Selected indicators to monitor maternal and newborn health among Iowa resident births by Medicaid status, 2019 through 2023.* Des Moines: Iowa Department of Health and Human Services, 2024.

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**Acknowledgements:**
The Iowa Department of Health and Human Services acknowledges the Maternal and Child Health Epidemiology Program, Field Support Branch, Division of Reproductive Health, National Center for Chronic Disease Prevention and Public Health Promotion, Centers for Disease Control and Prevention for analytic support and preparation of this data report.

The Iowa Department of Health and Human Services also acknowledges feedback and input from Brandy Benedict, Mary Greene, Lindsey Jones, Jill Lange, Marcus Johnson-Miller, Bridget Konz, Sylvia Navin, Nicole Newman, Nafla Poff-Dainty, Tina Palmer, Daniela Rochez, Adam Shanks, Michaela Schnetter, Sommer Trower, and Stephanie Trusty.

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# Introduction

**Report purpose:** The purpose of this report is to highlight key health indicators to monitor maternal and newborn health among Iowa resident births by Medicaid reimbursement for delivery compared to mothers whose delivery costs were not reimbursed by Medicaid. This report meets the requirements set forth by Senate File 538, 1989 Iowa General Assembly[1].

**Background**: Medicaid is a state/federal program that provides health insurance for groups of low-income people, including pregnant women. The Iowa Department of Health and Human Services (hereafter referred to as the Department) administers Iowa Medicaid. In Iowa, pregnant women are eligible for Medicaid if their family income is at or below 375% of the federal poverty. Pregnant women with Medicaid coverage were covered for 60 days after their baby is born in 2023.

**Data Sources**: We used several data sources to complete this report. The report's primary data source was the linked file of the Iowa Certificate of Live Birth and Medicaid-paid claims for calendar years 2019 through 2023. The data linkage is pursuant to Senate File 538, 1989 Iowa General Assembly. Medicaid status was based on paid claims for a delivery-relevant diagnostic-related group.

We used birth certificate data to determine maternal demographic characteristics (age, race, and ethnicity), health conditions, cigarette smoking during pregnancy, prenatal care adequacy, and infant birth outcomes. We used Iowa's Inpatient Hospital Discharge Data to calculate the severe maternal morbidity (SMM) rate and for the demographics by which SMM was disaggregated. We used census data and birth certificate data to calculate teen birth rates.

See Appendix A for an explanation of how race and ethnicity are categorized for this report.

**Data Access and Use:** Access to the data used to complete this report are authorized pursuant to Contract Number MED-17-006 (Maternal and Child and Adolescent Health Omnibus), as amended, between Legacy Iowa Department of Public Health (IDPH) and legacy Iowa Department of Human Services and Data Sharing Agreement number 588DSA2021-06 with the legacy IDPH Bureau of Health Statistics. The Iowa Hospital Association collects Iowa hospital discharge data on behalf of legacy IDPH in accordance with Iowa Code section 135.166. IDPH may use hospital discharge data to conduct public health surveillance and evaluate public health surveillance programs.

**Report Structure:** This report is organized around key maternal and newborn health indicators developed by Healthy People (HP) 2030[2]. Healthy People 2030 provides measurable data-driven objectives as well as evidence-based strategies to take actions that address maternal and newborn health outcomes.

For each indicator (as is possible), we present the national baseline result, the most recent national data, the indicator's target rate and desired direction, and a summary and rationale for the indicator. We then present Iowa-specific results overall and disaggregated by maternal racial groups, ethnicity, and age among women with Medicaid-reimbursed births. To conclude each indicator's report, we discuss strategies that the Department is conducting to address the indicator.

## Medicaid reimbursed births calendar years 2019 – 2023[a]

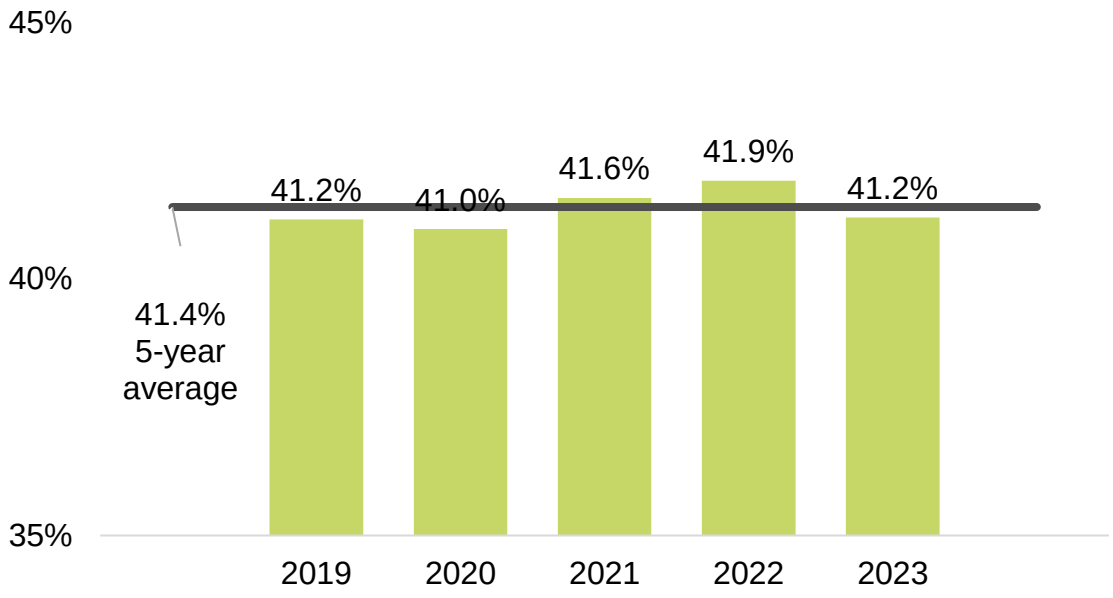
Table 1. Number and percent of Medicaid and non-Medicaid reimbursed births, and State total births, 2019 - 2023, Iowa resident births

| Year | Medicaid[3] | | Non-Medicaid[4] | State Total[5] |
|---|---|---|---|---|
| | Number | *%* | Number | Number |
| **2023** | 14,067 | *41.2* | 20,081 | 34,148 |
| **2022** | 14,483 | *41.9* | 20,075 | 34,558 |
| **2021** | 14,495 | *41.6* | 20,369 | 34,864 |
| **2020** | 13,997 | *41.0* | 20,169 | 34,166 |
| **2019** | 14,654 | *41.2* | 20,948 | 36,602 |

[a] Beginning with the 2022 birth certificate file, births to Iowa residents that occurred outside of Iowa are not available at the row level. For that reason, this report is limited to births to residents that occurred in Iowa. Past year's metrics (2018-2021) have been adjusted to reflect this change. On average, (calendar years 2017-2021) births to residents that occur outside of Iowa account for about 5.3% (n=~1,952) of total births and of these births on average 29.5% (n=~577) were reimbursed by Medicaid.

Medicaid is an important reimbursement source for maternal and newborn care in Iowa. The average percentage of Medicaid-reimbursed births was 41.4% from 2019 through 2023 (Figure 1). In 2023, 41.2 % (n=14,067) of births to Iowa residents that occurred in Iowa were reimbursed by Medicaid (Table 1).

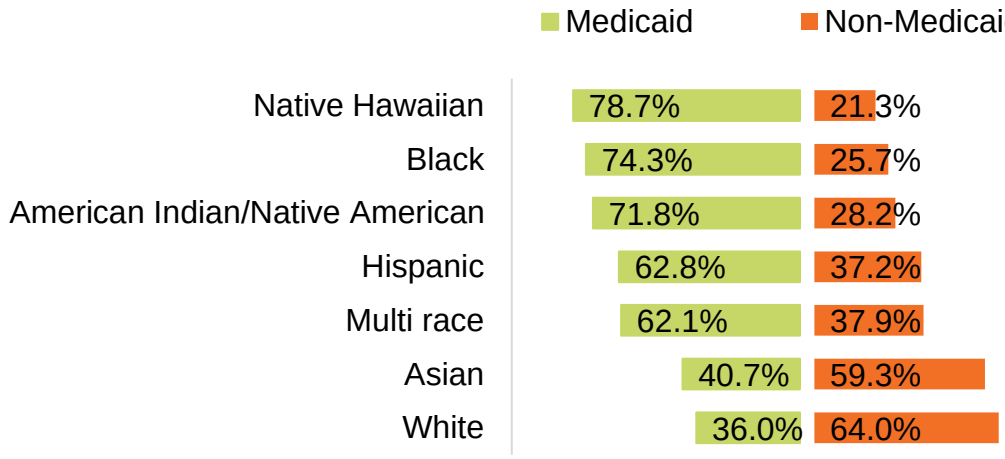
Figure 1. The percent of Medicaid reimbursed births did not significantly change from 2022 to 2023



## Medicaid reimbursed births by selected demographics – resident births – calendar year 2023

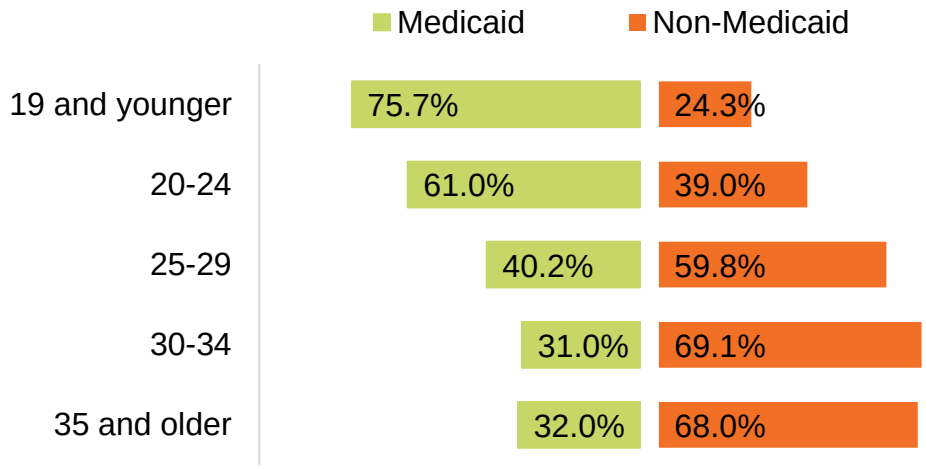
### Figure 2. Maternal race and ethnicity by Medicaid reimbursement status

In calendar year 2023, Medicaid reimbursed a higher proportion of births among women who self-identified as Native Hawaiian, Black, American Indian/Native American, Hispanic, or multi race compared to women who self-identified as Asian or White.




### Figure 3. Maternal age by Medicaid reimbursement status

In calendar year 2023, the percent of Medicaid reimbursed births was inversely related to maternal age among births to Iowa residents.



# MATERNAL ACCESS TO PRENATAL CARE AND HEALTH OUTCOMES

## Healthy People 2030 - Increase the proportion of pregnant women who receive early and adequate prenatal care — MICH[b]-08

**National Baseline:** 76.4% of pregnant women received early and adequate prenatal care (2018)[6]

**Most recent national-level data:** 74.9% of pregnant women received early and adequate prenatal care (2022)[7]

**Most recent Iowa data:** 83.6 % of pregnant women received early and adequate prenatal care (2023)

**Target:** 80.5 %

**Desired Direction:** Increase

**State Level Data Source:** Iowa Certificate of Live Birth linked to Medicaid paid claims

**Summary and Rationale:** Women who obtain early and adequate prenatal care can be screened for, and obtain treatment for, chronic conditions that if undetected may lead to adverse pregnancy outcomes and birth complications[8]. These conditions include sexually transmitted infections, diabetes, thyroid disease, cardiac disease, high blood pressure, mental health conditions including substance use disorders, and other chronic diseases. Early prenatal care also provides pregnant women with the opportunity for education and counseling to address modifiable risk factors for adverse outcomes such as smoking cessation, alcohol abstinence, taking certain medication, and supporting healthy weight gain during pregnancy. Prenatal care also provides pregnant women with educational opportunities to learn about self-care and monitoring during pregnancy as well as newborn care. Early and adequate access to prenatal care is a Title V Maternal and Child Health Block Grant National Outcome Measure as well as a part of the Core Set of Maternal and Perinatal Health Measures for Medicaid, Children's Health insurance Program, and the National Committee for Quality Assurance's Healthcare Effectiveness Data and Information Set.

**Iowa proportion of pregnant women who received early and adequate prenatal care:** In 2023, Iowan pregnant women surpassed the Healthy People 2030 target for early and adequate prenatal care, at 83.6% (Figure 4 & Table 2). However, disparities in early and adequate prenatal care are evident among pregnant women with Medicaid reimbursed births (86.9% vs. 78.9%) overall, by race and ethnicity (Figure 5), and by age (Figure 6).

[b] MICH – Maternal Infant Child Health

**Strategies to support pregnant women's access to early and adequate prenatal care in Iowa:** The Department uses several strategies to support pregnant women's access to early and adequate prenatal care. Iowa Medicaid offers presumptive eligibility (PE) Insurance. PE provides temporary Medicaid coverage that assists pregnant women to obtain prenatal care while they wait to find out if they have been approved for ongoing Medicaid coverage. The Department began a pilot Doula Project that serves Black identifying women in four Iowa counties. The pilot project is completing its third year. Doulas work with their clients to access and obtain timely prenatal care. The Department also provides funding to Title V Maternal Health agencies. These agencies provide support and referrals for pregnant women to access prenatal care. The Iowa Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) sites provide support and referrals to pregnant women. WIC clinics, often co-located with Title V Maternal Health collaborate to ensure pregnant women obtain early and adequate prenatal care.

Figure 4. Percent of pregnant women who obtained adequate or adequate plus prenatal care overall and by Medicaid status, 2019 - 2023, births to Iowa residents that occurred in Iowa

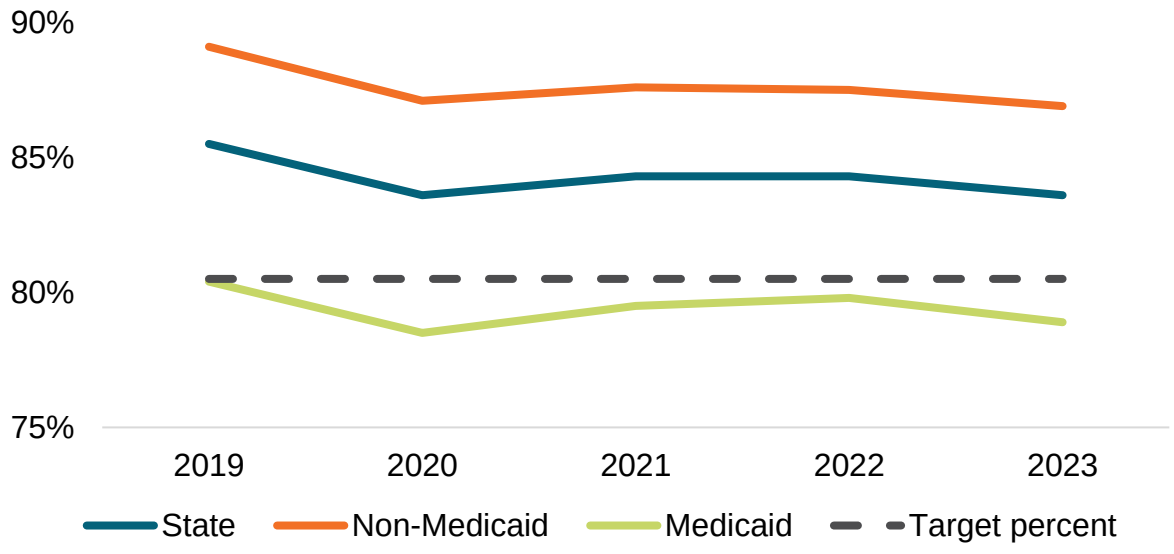
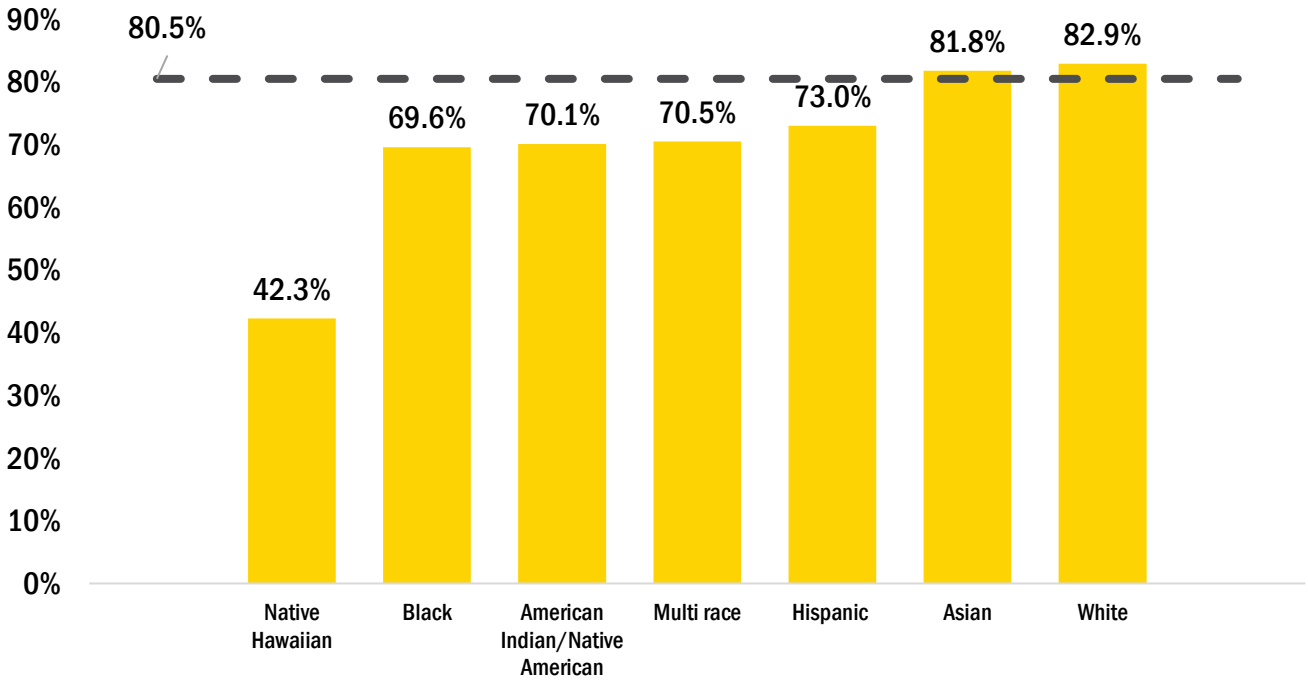


Table 2. Number and percent of women who obtained adequate or adequate plus prenatal care by Medicaid status and State Total, 2019 - 2023, Iowa resident births[9]

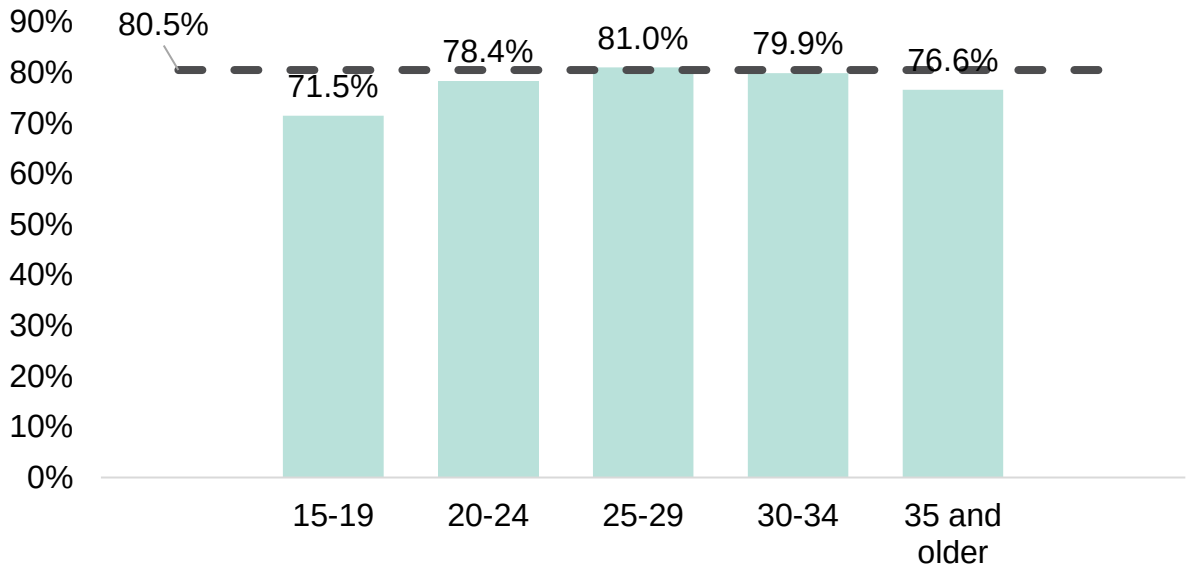
| Year | Medicaid | | Non-Medicaid | | State Total | |
|---|---|---|---|---|---|---|
| | Number | *%* | Number | *%* | Number | *%* |
| **2023** | 11,041 | *78.9* | 17,377 | *86.9* | 28,418 | *83.6* |
| **2022** | 12,433 | *79.4* | 17,782 | *89.3* | 30,215 | *84.9* |
| **2021** | 11,740 | *80.4* | 18,600 | *89.1* | 30,340 | *85.5* |
| **2020** | 10,945 | *78.5* | 17,499 | *87.1* | 28,444 | *83.6* |
| **2019** | 11,507 | *79.5* | 17,811 | *87.6* | 29,318 | *84.3* |

Figure 5. In calendar year 2023, among pregnant women with a Medicaid reimbursed birth, the percent of pregnant women who obtained early and adequate prenatal care varied by race and ethnicity




Except for White and Asian pregnant women, women of all other reported races and those of Hispanic heritage did not reach the Healthy People 2030 target goal of 80.5%. Native Hawaiian women obtained early and adequate care at the lowest percent, nearly 40% lower than White pregnant women.

Figure 6. In calendar year 2023, the percent of pregnant women with a Medicaid reimbursed birth who obtained early, and adequate prenatal care varied by maternal age




Except for pregnant women ages 25 to 29 years, no other age group achieved the Healthy People 2030 target of 80.5% for early and adequate prenatal care. At the same time, the age differences are much less disparate than the percentages by race and ethnicity.

## Healthy People 2030 - Reduce cesarean births among low-risk women with no prior births — MICH-06

**National Baseline:** 25.9% (2018)[10]

**Most recent national-level data:** 26.3% (2022)

**Most recent Iowa data:** 24.5% (2023)

**Target:** 23.6%

**Desired Direction:** Decrease

**State Level Data Source:** Iowa Certificate of Live Birth linked to Medicaid paid claims

**Summary and Rationale:** The rate of Cesarean delivery among low-risk mothers has become a key maternal quality indicator. Referred to as the NTSV Cesarean Delivery Rate, it measures the percent of live infants born to women giving birth to their first baby (Nulliparous) after 37 weeks gestation (Term), whose infants are Singleton (not twins or beyond) and are in the Vertex position (head down, not breech or transverse position). There are many maternal and newborn indications for Cesarean deliveries. However, Cesarean deliveries may put women at increased risk for infections, blood clots, and other serious adverse health outcomes (e.g., placenta accreta and placenta previa, uterine rupture, hemorrhage, adhesions, and hysterectomy).

Appropriately used Cesarean deliveries can save the lives of women and newborns. Unnecessary Cesarean deliveries are believed to be a driver for increasing rates of maternal morbidity and mortality. Unnecessary Cesarean deliveries can affect subsequent birth outcomes. Prevention of unnecessary first Cesarean deliveries has been identified as an improvement strategy because the method of delivery for a woman's first birth establishes the trajectory for future births. Following a first vaginal delivery, most of a woman's subsequent deliveries will be vaginal. Following a first Cesarean delivery, many subsequent deliveries will be Cesareans. Women's risk for adverse health outcomes increases with the number of Cesarean deliveries they experience. Cesarean deliveries increase healthcare costs. DeJoy and colleagues report that payers save up to $6,000 per primary Cesarean avoided and over $4,000 in reduced costs for subsequent deliveries[11].

While some women may be able to deliver subsequent pregnancies vaginally, a vaginal birth after a cesarean delivery (VBAC)[12] may not be possible. Safety concerns regarding the risk for uterine rupture during a VBAC have led to the recommendation that VBACs be limited to facilities with the ability to immediately perform a Cesarean and resuscitate a newborn. This recommendation may limit women's VBAC access to mostly higher volume facilities. In 2023, 2.3% (n=855) of deliveries were VBAC deliveries.

**Iowa NTSV rates:** Iowa's NTSV rate has fluctuated over the past five years. The state NTSV rate increased from 22.9% in 2022 to 24.5% in 2023; a 7% increase. Likewise, the NTSV rate increased by 7.8% among women with Medicaid-reimbursed births from 2022 to 2023 (Figure 7). Iowa's NTSV rate is higher than the Healthy People 2030 target rate of 23.6% overall and by a woman's Medicaid reimbursement status. Among women with Medicaid-reimbursed births, the NTSV rate varies by race and ethnicity (Figure 8). Additionally, the NTSV rate increases with age (Figure 9).

**Strategies to address NTSV rates:** The Department enrolled in the Alliance for Innovation on Maternal Health[13] (AIM) in October 2020. The program launched its first quality improvement initiative, Safe Reduction of Primary Cesarean Births, in May of 2021 and concluded the initiative in July of 2022. Forty-three of 56 Iowa birthing hospitals participated in the initiative. Department and University of Iowa AIM coaches continue to work with participating birthing hospitals to sustain the progress in meeting the Healthy People 2023 goal in 2022 through the AIM bundle implementation. In 2025, hospital coaches plan to explore hospital-level NTSV c-section rates and work with those facilities that have experienced an increase in their NTSV c-section rates.

Figure 7. Iowa's NTSV rate has increased overall and by a woman's Medicaid reimbursement status. The rate is now greater than the Healthy People 2030 target rate.

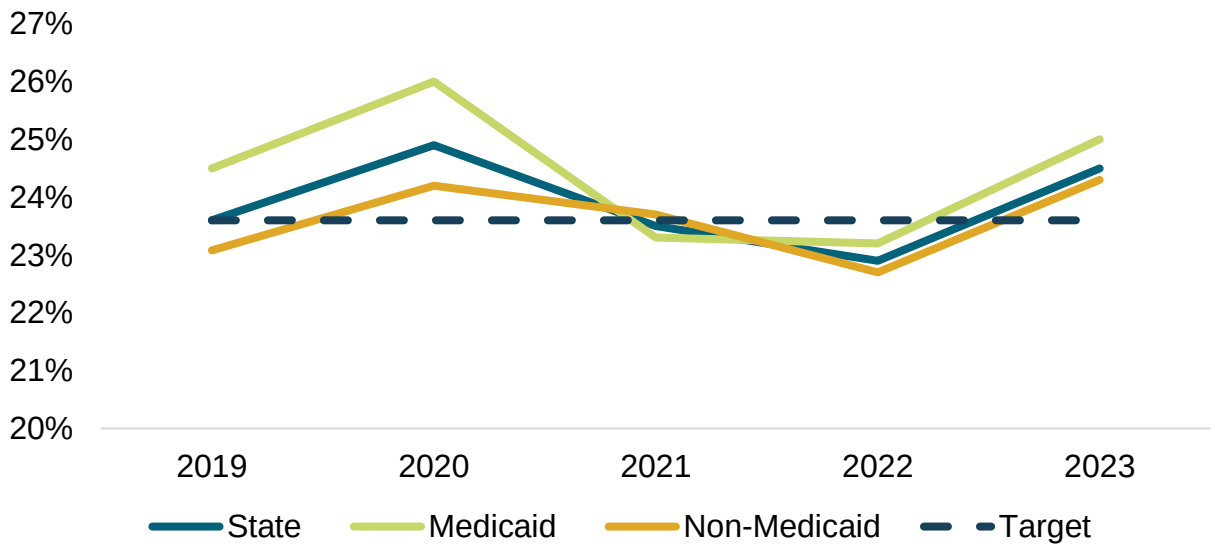


Table 3. Number and percent of NTSV cesarean deliveries by Medicaid status, 2019-2023, Iowa resident births that occurred in Iowa

| Year | Medicaid | | Non-Medicaid | | State Total | |
|---|---|---|---|---|---|---|
| | Number | *%* | Number | *%* | Number | *%* |
| **2023** | 984 | *25.0* | 1,656 | *24.3* | 2,640 | *24.5* |
| **2022** | 926 | *23.2* | 1,519 | *22.7* | 2,445 | *22.9* |
| **2021** | 911 | *23.3* | 1,575 | *23.7* | 2,486 | *23.5* |
| **2020** | 1,000 | *26.0* | 1,594 | *24.2* | 2,594 | *24.9* |
| **2019** | 961 | *24.5* | 1,570 | *23.1* | 2,531 | *23.6* |

Figure 8. In the calendar year 2023, among women with Medicaid-reimbursed births, Asian women are the only group of women to have reached the Healthy People 2030 target for NTSV cesarean deliveries

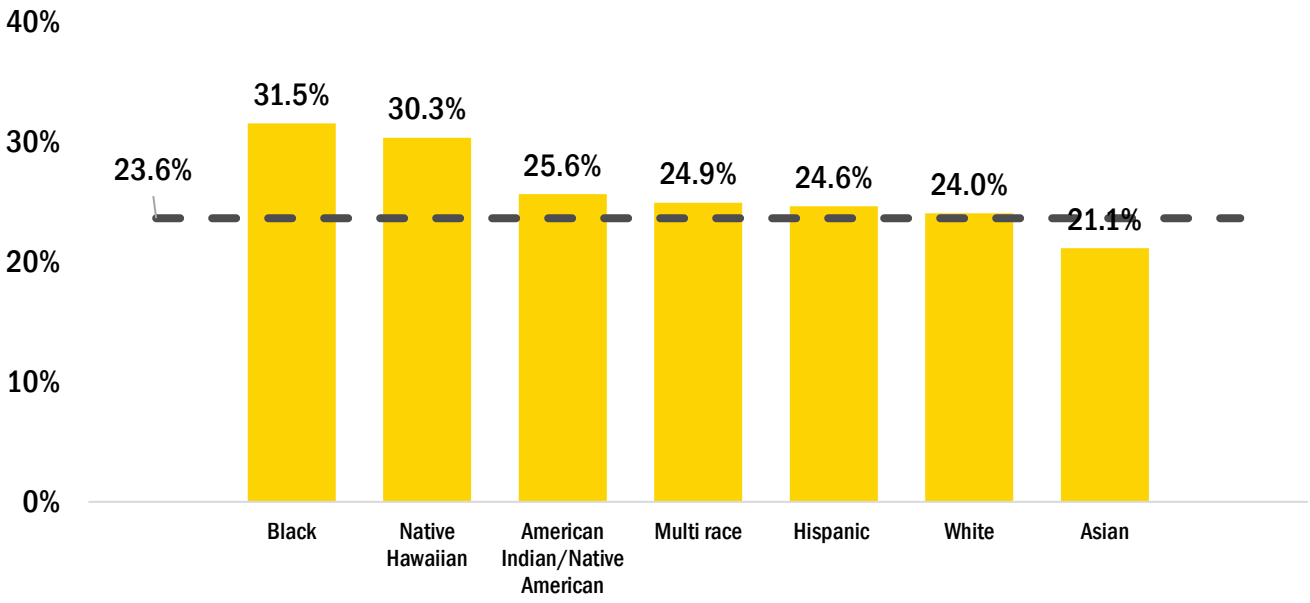
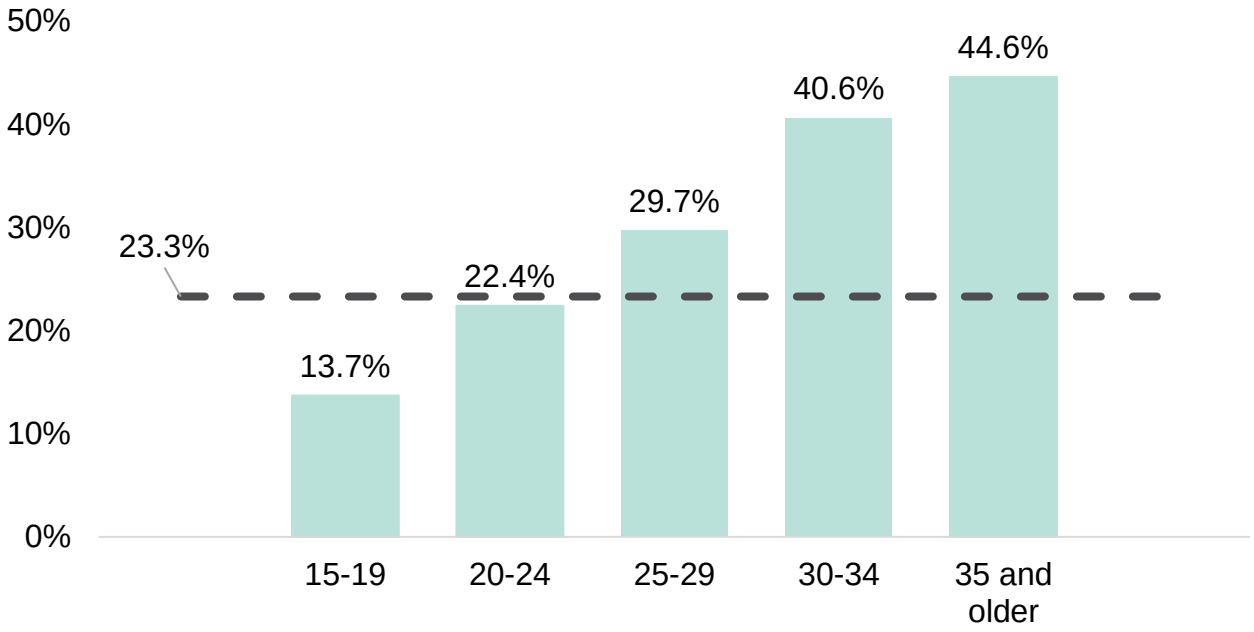


Figure 9. In calendar year 2023, among women with Medicaid reimbursed births, women ages 25 and older experienced NTSV cesarean deliveries at a higher percentage than younger women.



## Healthy People 2030 - Reduce severe maternal complications identified during delivery hospitalizations — MICH-05

**National Baseline:** 71.5 per 10,000 delivery hospitalizations (2017)[14]

**Most recent national-level data:** 88.2 per 10,000 delivery hospitalizations (2020)

**Most recent Iowa data:** 66.1 per 10,000 delivery hospitalizations (2021-2023)

**Target:** 64.4 per 10,000 delivery hospitalizations

**Desired Direction:** Decrease

**State-Level Data Source:** Iowa Hospital Discharge Date[15]

**Summary and Rationale:** Severe maternal morbidity (SMM) includes unexpected labor and delivery outcomes that can cause significant short- and long-term consequences to a woman's health[16], including kidney problems and stroke. The SMM definition includes but is not limited to conditions such as acute renal failure, disseminated intravascular coagulation, eclampsia, and pulmonary edema[17]. The SMM rate has been increasing nationally and in Iowa. The reasons behind this increase are not clear. Some researchers have suggested that overall population health factors[18] such as increasing maternal age, pre-existing chronic conditions, pre-pregnancy obesity, and Cesarean deliveries may be contributing factors.

There are significant disparities in SMM by race and ethnicity[19]. Women with publicly reimbursed health care (i.e., Medicaid) also experience a higher SMM rate compared to women with privately reimbursed health care. Ensuring that all women have access to timely and high-quality health care before, during, and after pregnancy can reduce the SMM rate. SMM is also a Title V MCH Services Block Grant National Outcome Measure.

**Strategies to address SMM in Iowa:** The Department enrolled in the Alliance for Innovation on Maternal Health[20] (AIM) in October 2020. The program launched its first initiative, Safe Reduction of Primary Cesarean Births, in May of 2021 and concluded the initiative in July of 2022. Provisional results suggest that the initiative was successful in reducing the rate of low-risk cesarean delivery overall and among mothers with Medicaid-reimbursed births. Cesarean deliveries place mothers and newborns at risk for adverse outcomes such as SMM. Iowa's second AIM safety bundle, OB Hemorrhage, began in October of 2022 and moved from implementation mode to sustainability mode in July of 2023. Obstetrical hemorrhage is a key contributor to maternal morbidity. All 56 of Iowa's birthing facilities participated in the Obstetric Hemorrhage initiative. Near-miss events of SMM from hemorrhage have declined significantly during the Iowa AIM OB Hemorrhage Collaborative. In September 2023, the Iowa AIM team began a 12-month

quality improvement initiative to eliminate preventable maternal deaths from hypertensive disorders of pregnancy.

Maternal obesity is associated with SMM[21], as is gestational diabetes, preeclampsia, and postpartum hemorrhage. Iowa's pre-pregnancy obesity rate has been increasing among pregnant women (See MATERNAL HEALTH BEHAVIORS BEFORE AND DURING PREGNANCY in this report). This may be a factor contributing to Iowa's increasing SMM rate.

Figure 10. Iowa's SMM rate (deliveries per 10,000 delivery hospitalizations) has increased by over 25% from 2017-2019 to 2021-2023

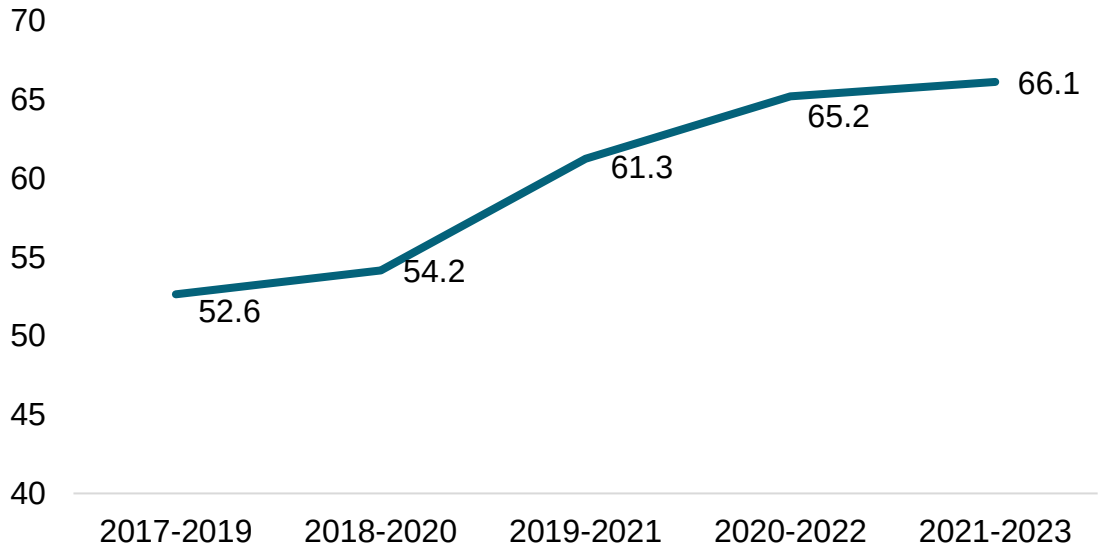
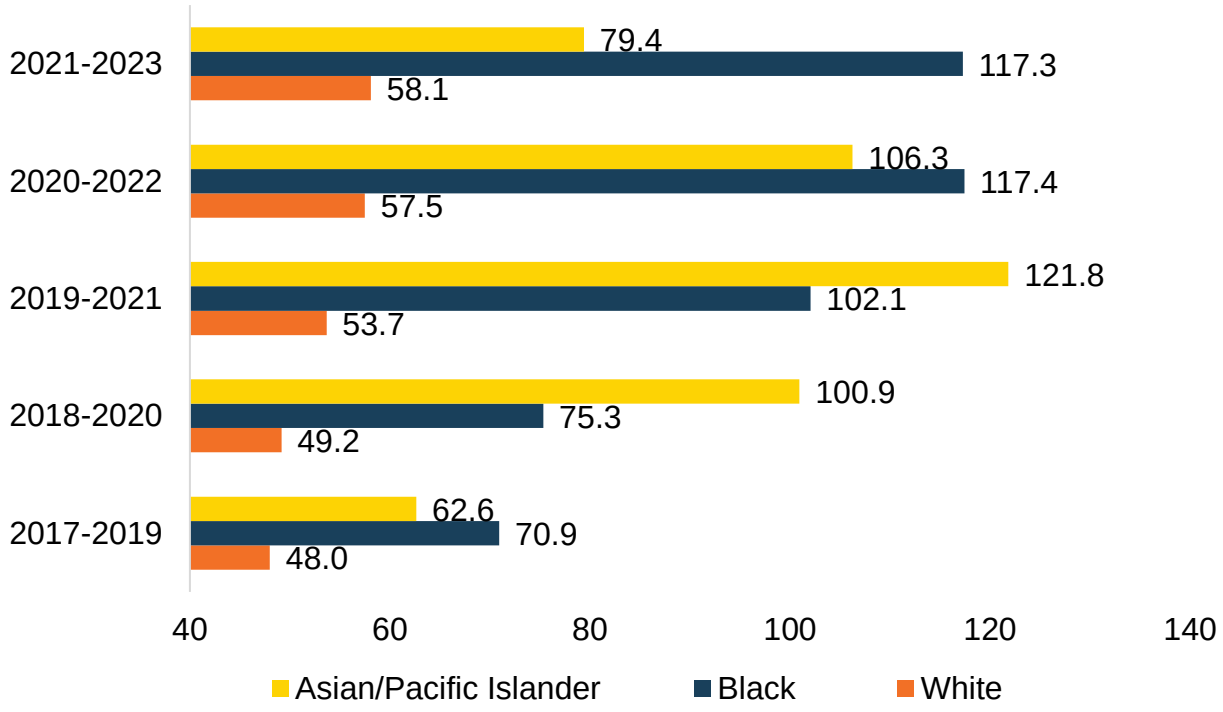
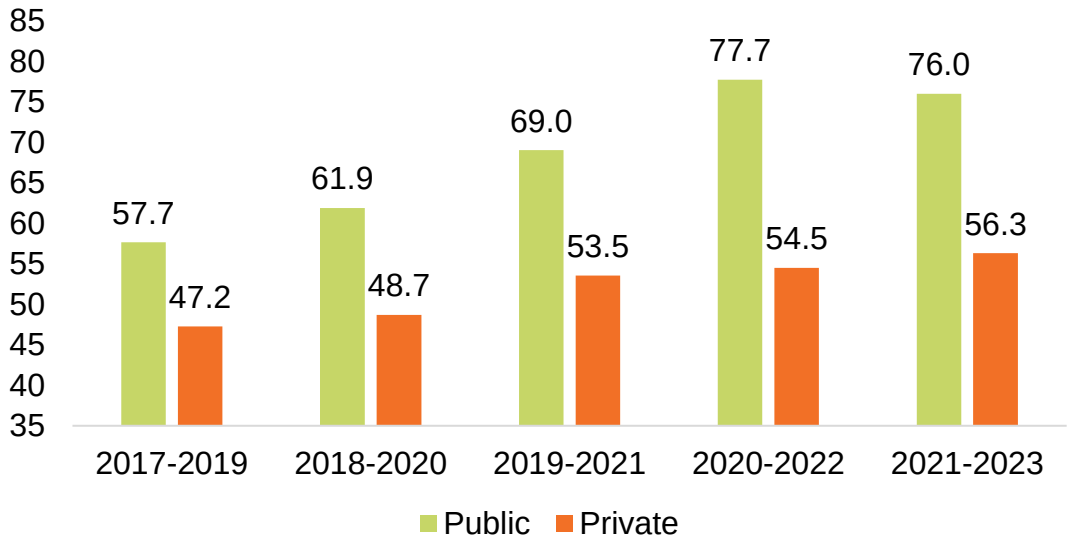


Figure 11. The SMM rate (deliveries per 10,000 delivery hospitalizations) has remained stable among Black women from 2020-2022 to 2021-2023. However, the rate is consistently higher than that of White women from 2017-2019 to 2021-2023




The SMM rate among Asian women has decreased by over 25% (106.3 to 79.4) from 2020-2022 to 2021-2023 (Figure 11). The rate does remain greater than that of White women from 2017-2022 to 2021-2023.

Figure 12. Iowa's SMM rate (deliveries per 10,000 delivery hospitalizations) was consistently higher among women with publicly reimbursed deliveries compared to those with privately reimbursed deliveries from 2017-2019 to 2021-2023



# MATERNAL HEALTH BEHAVIORS BEFORE AND DURING PREGNANCY

## Healthy People 2030 - Increase the proportion of women who had a healthy weight before pregnancy — MICH-13

**National Baseline:** 42.1% of women delivering a live birth in 2018 had a healthy weight prior to pregnancy[22]

**Most recent national-level data:** 38.2% of women delivering a live birth in 2022 had a healthy weight prior to pregnancy

**Most recent Iowa data:** 39.1% of women delivering a live birth in 2023 had a healthy weight prior to pregnancy

**Target:** 47.1%

**Desired Direction:** Increase

**State Level Data Source:** Iowa Certificate of Live Birth linked to Medicaid paid claims

**Summary and Rationale:** Women who are overweight or obese before pregnancy are at increased risk for adverse health conditions such as preeclampsia, gestational diabetes, Cesarean delivery, and hypertension[23,24]. Infants born to obese women are less likely to be breastfed and are at increased risk for being diagnosed with attention deficit disorder, autism or developmental delays, and depression or anxiety. Infants born to obese women may also become obese or overweight in childhood[25].

**Iowa proportion of women with a healthy weight before pregnancy:** In 2023, overall, 39.1% of women had a healthy weight before pregnancy. Among women with Medicaid-reimbursed births, the percentage of women with a healthy weight before pregnancy remained stable from 2022 (35.9%) to 2023 (35.7%). Meanwhile, the percentage of women without Medicaid-reimbursed births decreased by 2.8%, from 42.7% in 2022 to 41.5% in 2023. The desired direction for this metric is to increase the proportion of women at a healthy weight before pregnancy. This is the opposite of the desired direction (Figure 13 & Table 4). Women with Medicaid-reimbursed births report a consistently lower percentage of being at a healthy pre-pregnancy weight compared to women with births reimbursed by private or other sources.

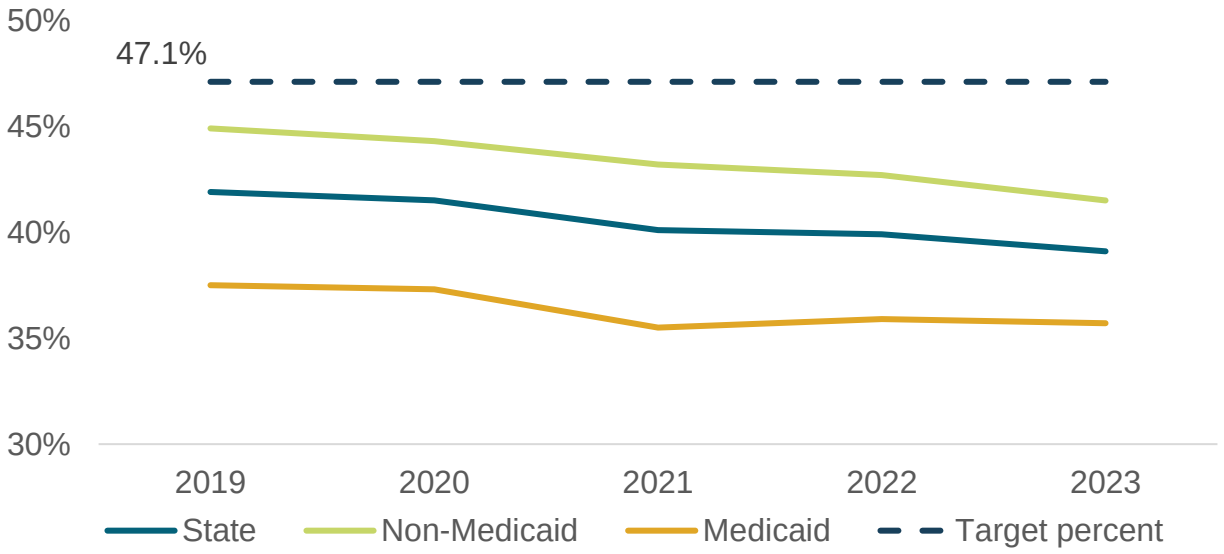
Among women with Medicaid-reimbursed births in 2023, the percentage of women with a healthy weight before pregnancy varied by race and ethnicity (Figure 14). Asian women reported the highest proportion of having healthy pre-pregnancy weight and Native Hawaiian women reported the lowest proportion of having healthy pre-pregnancy weight. Adolescent girls between the ages of 15 to 19 reported the highest proportion of having a healthy weight before pregnancy (Figure 15), and surpassed the HP 2030 goal.

**Strategies to increase the proportion of women who have a healthy pre-pregnancy weight:** The Department provides leadership and community funding to support the 5-2-1-0 Healthy Choices Count initiative[26]. The 5-2-1-0 Healthy Choices Count initiative is an evidence-based prevention framework to promote healthy living habits. The most recent 5-2-1-0 report states that 77 of Iowa's 99 counties have made a commitment to increase physical activity and healthy eating through policy, systems, and environmental change. Locations making these changes include schools, out-of-school programs, early care sites, workplaces, and health care clinics.

Iowa WIC[27] provides nutritional information and education as well as supplemental food to pregnant women to support healthy weight and pregnancy weight gain. WIC provides supplemental food designed to meet the nutritional needs of pregnant, postpartum, and breastfeeding women. WIC also promotes and supports mothers to breastfeed their infants. Breastfeeding Peer Counseling and certified breastfeeding experts with extended training and credentials provide breastfeeding support to mothers at WIC clinics.

The Supplemental Nutrition Assistance Program Education (SNAP-Ed) teaches people using or eligible for SNAP about good nutrition, how to make their food dollars stretch further and understand the importance of being physically active. The Iowa SNAP-Ed programs help improve the health of women through evidence-based approaches to educate individuals and families as well as work with communities to enhance and establish policies, systems and environmental changes that support healthy eating and active living.

Figure 13. Percent of women at a healthy weight before pregnancy by Medicaid status and by the State percent Iowa resident births 2019-2023




Regardless of Medicaid status, the trend for women with a healthy weight before pregnancy is moving mostly down rather than in the desired direction of up. There continues to be a gap between Medicaid and non-Medicaid women with healthy weight before pregnancy. The target is 47.1%.

Table 4. Number and percent of women who had a healthy weight before pregnancy, by Medicaid status and State Total, 2019-2023, Iowa resident births

| Year | Medicaid | | Non-Medicaid | | State Total | |
|---|---|---|---|---|---|---|
| | Number | *%* | Number | *%* | Number | *%* |
| **2023** | 5,505 | *35.7* | 8,310 | *41.5* | 13,325 | *39.1* |
| **2022** | 5,177 | *35.9* | 8,552 | *42.7* | 13,729 | *39.9* |
| **2020** | 5,133 | *35.5* | 8,845 | *43.5* | 13,978 | *40.2* |
| **2021** | 5,240 | *37.5* | 8,944 | *44.4* | 14,184 | *41.6* |
| **2019** | 5,509 | *37.7* | 9,403 | *45.0* | 14,912 | *42.0* |

Figure 14. Among women with Medicaid-reimbursed births in 2023, Asian women had the highest percentage of being at a healthy weight before pregnancy, and they surpassed the Healthy People 2030 goal of 47.1%

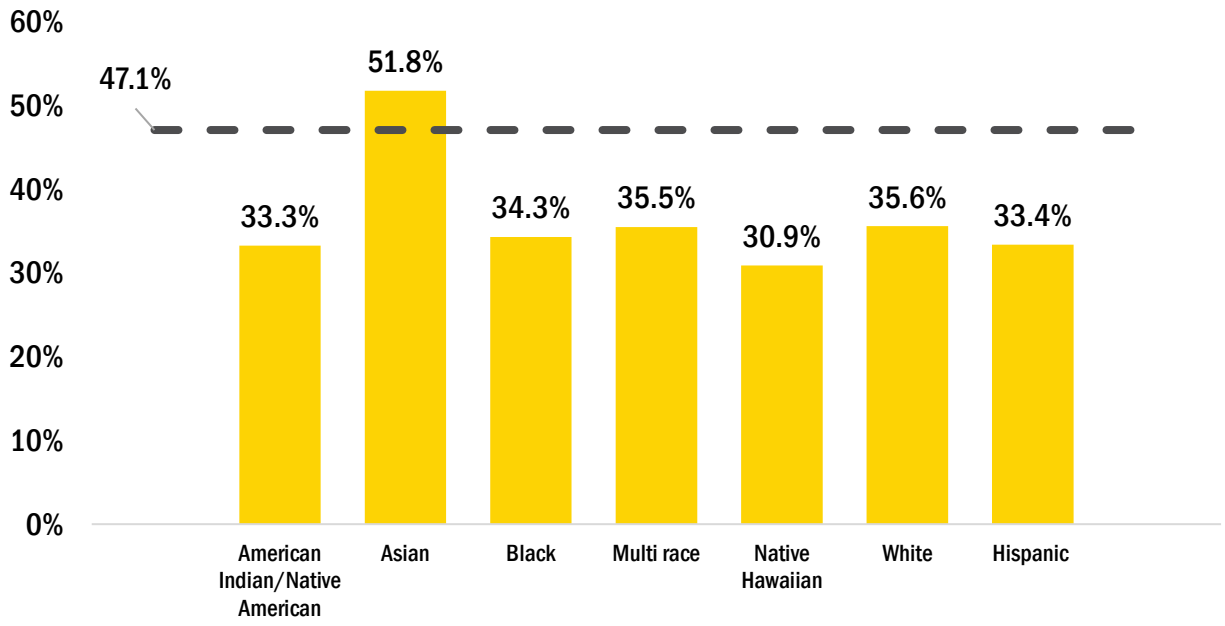
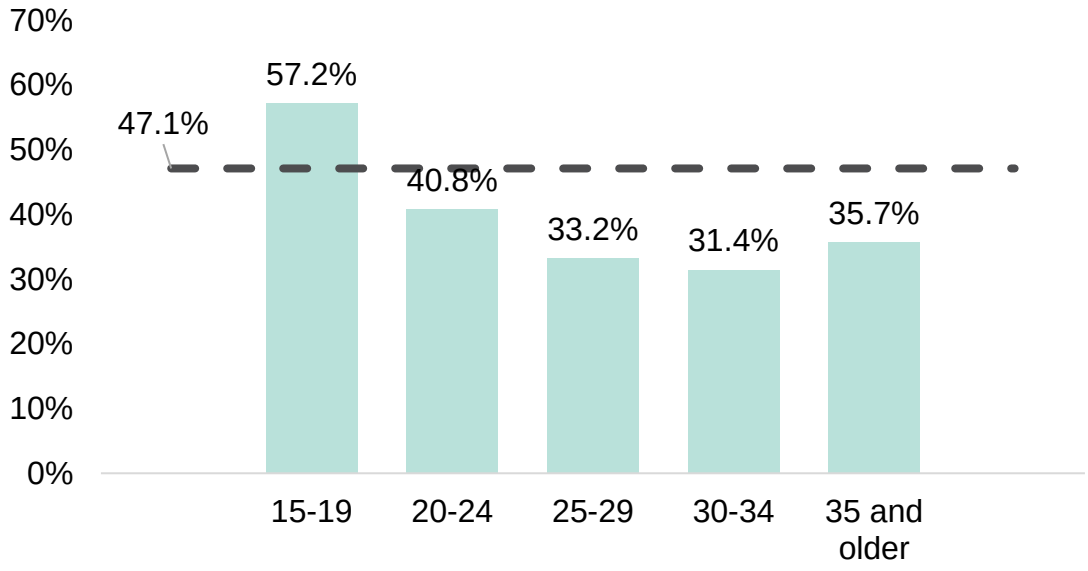



Figure 15. Among women with a Medicaid reimbursed birth in 2023, adolescents between the ages of 15 and 19 had the highest percentage of having a healthy weight before pregnancy, and they surpassed the Healthy People 2030 target goal



## Healthy People 2030 - Increase abstinence from cigarette smoking among pregnant women — MICH-10

**National Baseline:** 93.5% of women abstained from cigarette smoking during their most recent pregnancy (2018)[28]

**Most recent national level data:** 96.3% of women abstained from cigarette smoking during their most recent pregnancy (2022)

**Most recent Iowa data:** Overall, 94.3% of women abstained from cigarette smoking during their most recent pregnancy (2023)

**Target:** 95.7%

**Desired Direction:** Increase

**State Level Data Source:** Iowa Certificate of Live Birth linked to Medicaid paid claims

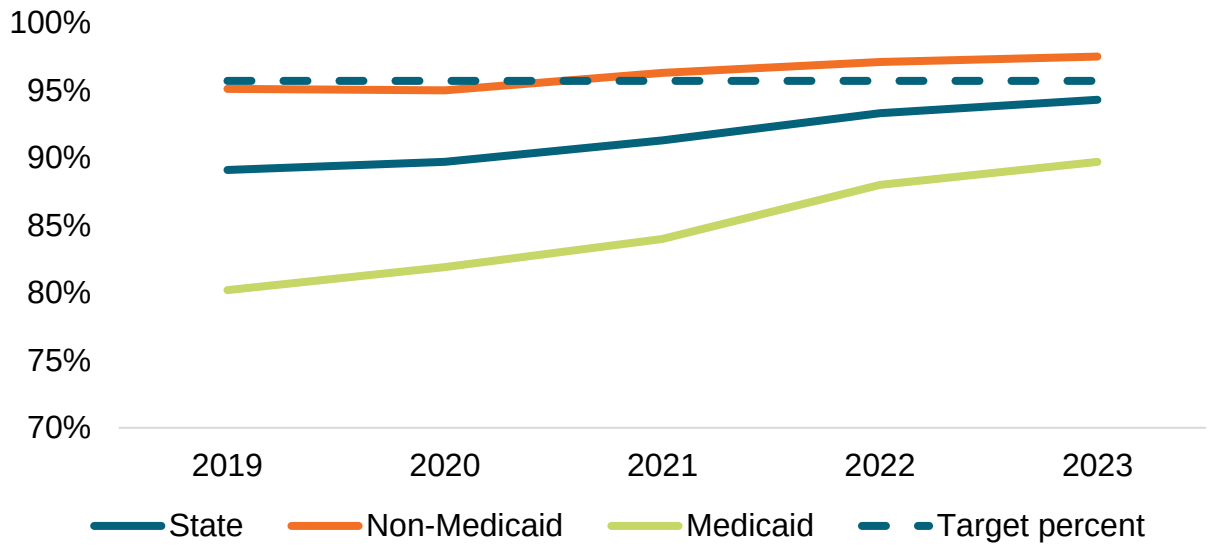
**Summary and Rationale:** Women who smoke cigarettes during pregnancy are more likely to have abnormal bleeding in pregnancy and during delivery. Additionally, infants born of women who smoke during pregnancy are more likely to be premature and underweight and have a higher risk of brain and lung damage, birth defects like cleft lip and cleft palate, and are at higher risk of SIDS[29].

**Iowa proportion of women who abstained from smoking cigarettes during their most recent pregnancy:** In the past 5 years, the percentage of women who abstained from smoking cigarettes during their most recent pregnancy has increased by nearly 6% (5.8%) (Figure 16 & Table 5). During the same period, the percentage of women with Medicaid-reimbursed births who abstained from smoking cigarettes during their most recent pregnancy increased by 11.8%. Despite this increase, women with Medicaid reimbursed births lag behind women with non-Medicaid reimbursed births for the percent who abstained from smoking cigarettes during their most recent pregnancy.

In calendar year 2023, women with Medicaid reimbursed births who self-identified as American Indian/Native American, Asian, or Black reported the lowest percentages of having abstained from cigarette smoking during their most recent pregnancy (Figure 17). Among women with Medicaid reimbursed births during calendar year 2023 women ages 25 to 34 reported the lowest percentages of having abstained from cigarette smoking during their most recent pregnancy (Figure 18).

**Strategies that support women to abstain from smoking cigarettes during pregnancy[c]:** Over the past year, the Department enhanced work on a statewide level to link pregnant women with resources for smoking cessation assistance and prevention education through a multifaceted approach. Department maternal health staff worked closely with the Division of Tobacco Use Prevention and Control to develop a collaborative approach to support pregnant women who use tobacco products. Title V Maternal Health agencies received training about resources available from the Quitline Iowa program. The Tobacco Prevention and Control Program expanded the Quitline Iowa incentive program for pregnant women to include monetary compensation for those completing the entire program and offering clients extended support through the postpartum period. Each client has a dedicated female coach who offers 5 prenatal and 4 postpartum coaching sessions. WIC also makes referrals to Quitline Iowa in addition to providing education to their clients about the dangers of smoking during pregnancy.

Figure 16. Regardless of Medicaid status, the percent of women who abstained from smoking cigarettes during pregnancy is trending upward, the desired direction from 2019-2023



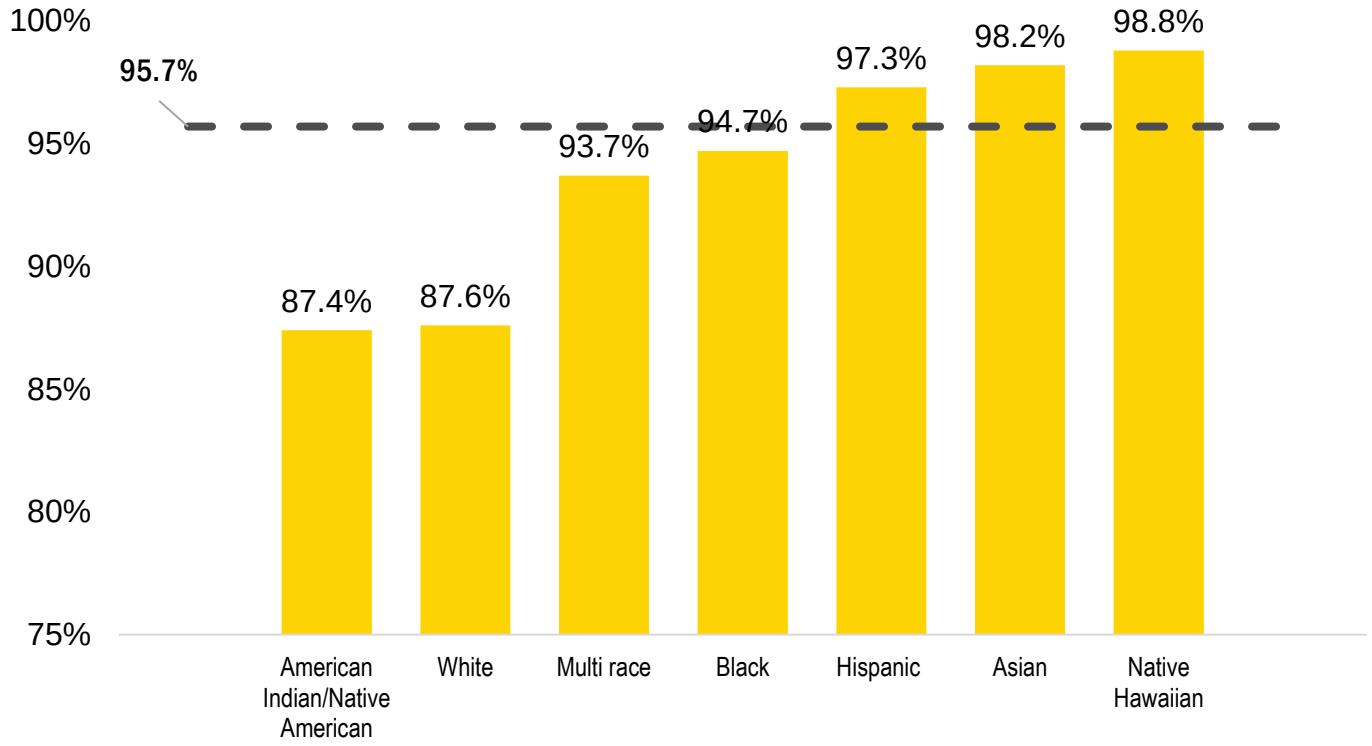

At the same time, the percent of women with Medicaid reimbursed births who abstained from smoking during their most recent pregnancy consistently lags below the percent of women with births not reimbursed by Medicaid.

[c] We recognize that women may use other tobacco and/or nicotine delivery systems. To address this data gap, we have added questions about e-cigarettes and other tobacco and/or nicotine delivery systems to Iowa's Prenatal Care Survey.

Table 5. Number and percent of women who abstained from smoking during their most recent pregnancy by Medicaid status, 2019-2023, Iowa resident births

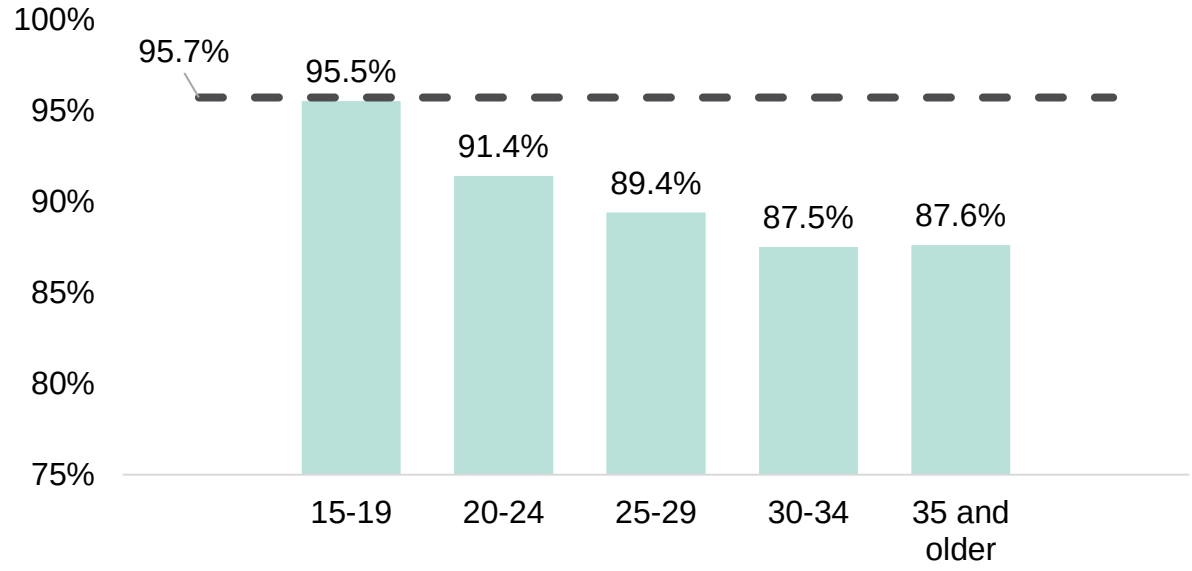
| Year | Medicaid | | Non-Medicaid | | State Total | |
|---|---|---|---|---|---|---|
| | Number | *%* | Number | *%* | Number | *%* |
| **2023** | 12,603 | *89.7* | 19,557 | *97.5* | 34,112 | *94.3* |
| **2022** | 12,731 | *88.0* | 19,484 | *97.1* | 32,215 | *93.3* |
| **2021** | 12,183 | *84.4* | 19,610 | *96.3* | 31,793 | *91.3* |
| **2020** | 11,464 | *82.0* | 19,144 | *95.0* | 30,608 | *89.7* |
| **2019** | 11,747 | *80.2* | 19,896 | *95.1* | 31,643 | *89.0* |

Figure 17. In calendar year 2023, among those with Medicaid reimbursed births, Hispanic women, Asian women, and Native Hawaiian have achieved the Healthy People 2023 target of 95.7% for abstinence from cigarette smoking during their most recent pregnancy




American Indian/Native American women and White women with Medicaid reimbursed births report the lowest percentages of abstinence from cigarette smoking during their most recent pregnancy compared to Hispanic women and women of all other races.

Figure 18. In calendar year 2023, among those with Medicaid reimbursed births, mothers ages 15 to 19 reported the highest percentage of having abstained from cigarette smoking during their most recent pregnancy




Mothers ages 15-19 are within 2 decimal points of reaching the Healthy People 2030 target.

# INFANT OUTCOMES

## Healthy People 2030 – reduce preterm births - MICH-07

**National Baseline:** 10.0% of live births were preterm in 2018[30]

**Most recent national-level data:** 10.4% of live births were preterm in 2022

**Most recent Iowa data:** Overall, 9.7% of live births were preterm in 2023

**Target:** 9.4%

**Desired Direction:** Decrease

**State Level Data Source:** Iowa Certificate of Live Birth linked to Medicaid paid claims

**Summary and Rationale:** Infants born before 37 weeks of gestation face an increased risk for infections, developmental delays, and breathing problems[31]. Gupta and Froeb[32] suggest both individual and systems-level approaches are needed to address the problem of preterm birth. At the individual level, mother's health history, nutritional status, and health behaviors as well as maternal chronic conditions are related to preterm birth. At a systems level, early and equitable access to prenatal care is of critical importance. Addressing social determinants of health may also influence the rate of infants born before 37 weeks gestation.

**Iowa percent of live births that were born preterm:** The percent of infants born preterm has been increasing in Iowa since 2020 (Figure 19 & Table 6). The percentage of infants born preterm is significantly higher among mothers with Medicaid-reimbursed births compared to mothers without Medicaid-reimbursed births. Mothers without Medicaid-reimbursed births have achieved the Healthy People 2030 target goal of 9.4% (Table 6).

Among women with Medicaid-reimbursed births, the percentage of infants born preterm by race and ethnicity has not achieved the Healthy People goal of 9.4%. The highest percentage of infants born preterm were among Black mothers, followed by Native Hawaiian, multi-race, Asian, and Hispanic mothers. Regardless of age, mothers with Medicaid-reimbursed births did not achieve the Health People 2023 target (9.4%).

**Strategies to support women's healthy pregnancies and decrease the proportion of infants born prior to 37 weeks gestation:** The Department funds 14 local Healthy Pregnancy Programs (HPPs) that cover all of Iowa's 99 counties. The HPPs provide nurse-based enhanced services to pregnant and postpartum women on Medicaid with a focus on health education and strategies to address social determinants of health. HPPs also implement community and individual-level strategies to reduce preterm birth,

such as assisting pregnant women in finding and accessing early prenatal care, promoting adequate nutrition through referrals to WIC and other food supports, providing tobacco cessation support, and providing education and referrals to ensure chronic conditions such as hypertension and diabetes are well managed. Another important service provided by HPPs is assisting pregnant women to obtain presumptive eligibility (PE) for Medicaid. Women with PE can begin to obtain prenatal care while her Medicaid eligibility is under review.

Figure 19. Regardless of Medicaid status, the percent of infant born preterm has been slowly increasing since 2020, the opposite of the desired direction

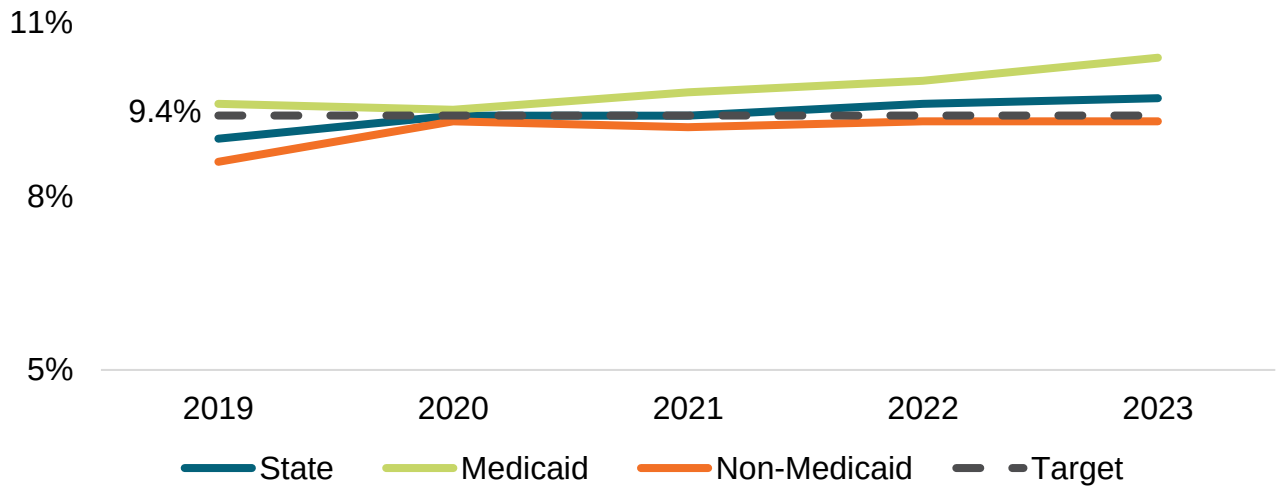


Table 6. The number and percent of live births born preterm by Medicaid status, 2019-2023, Iowa resident births

| Year | Medicaid | | Non-Medicaid | | State Total | |
|---|---|---|---|---|---|---|
| | Number | % | Number | % | Number | % |
| **2023** | 1,457 | *10.4* | 1,457 | 9.3 | 3,321 | *9.7* |
| **2022** | 1,450 | *10.0* | 1,865 | 9.3 | 3,315 | *9.6* |
| **2021** | 1,419 | *9.8* | 1,866 | 9.2 | 3,285 | *9.4* |
| **2020** | 1,327 | *9.5* | 1,878 | 9.3 | 3,205 | *9.4* |
| **2019** | 1,403 | *9.6* | 1,805 | 8.6 | 3,208 | *9.0* |

Figure 20. In calendar year 2023, the percent of infants born preterm among mothers with a Medicaid reimbursed birth by race and ethnicity has not yet achieved the Health People 2030 target of 9.4%

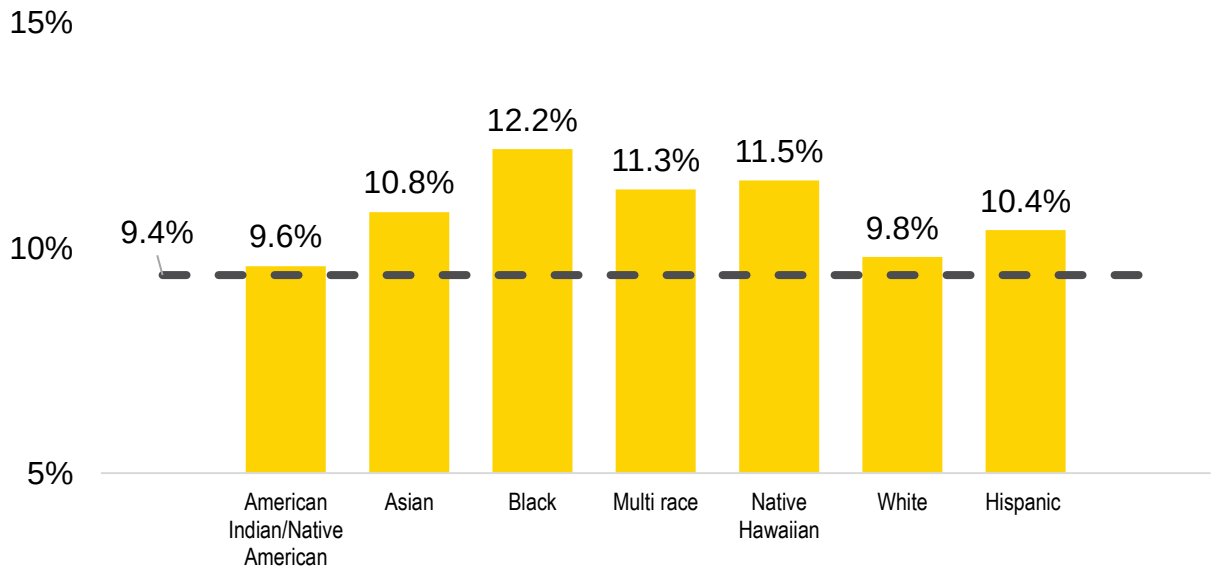
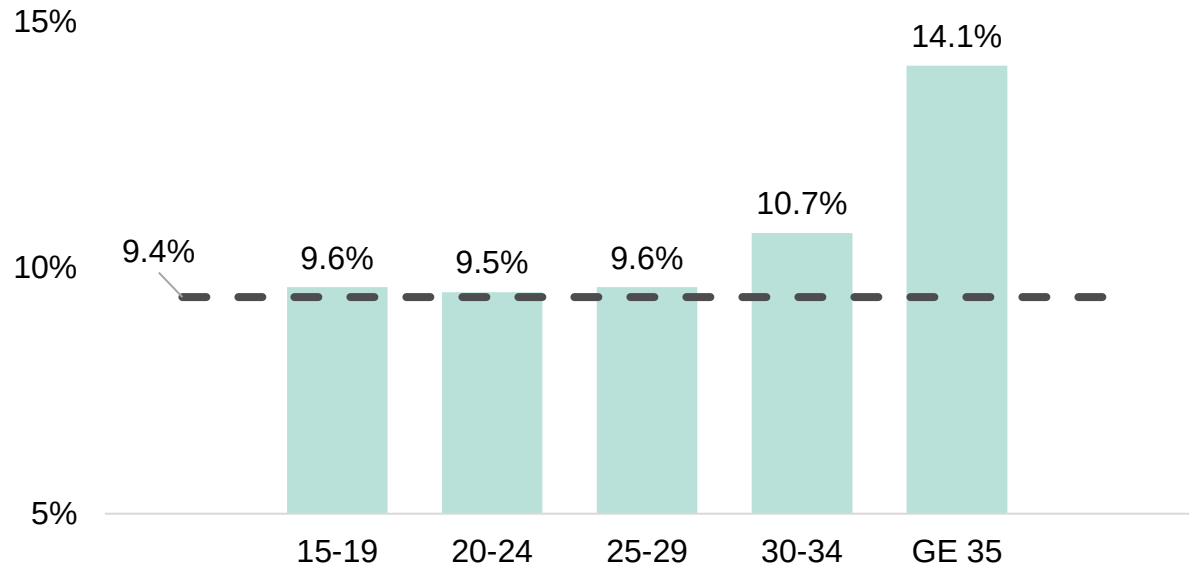


Figure 21. In calendar year 2023, the percent of infants born preterm among mothers with a Medicaid reimbursed birth increased with maternal age.




Regardless of age, mothers with Medicaid reimbursed births did not achieve the Health People 2030 target (9.4%).

# FAMILY PLANNING

## Healthy People 2030 – Reduce the proportion of pregnancies conceived within 18 months of a previous live birth – FP - 02[33]

Healthy People 2030 uses the National Survey for Family Growth (NSFG)[34] to calculate the proportion of pregnancies that were conceived within 18 months of a previous live birth. NSFG data are not available at a state level, and the NSFG data set does not include insurance coverage during pregnancy. Because we do not use the NSFG estimate, we do not report a baseline, national rate, or target goal. This metric can also be calculated using birth certificate data and is preferable for this state-level report. The Healthy People 2030 goal is to decrease the proportion of pregnancies conceived within 18 months of a previous live birth.

**Most recent Iowa data:** 39.1% of Iowa pregnancies are conceived within 18 months of a previous live birth (2023)

**Desired Direction:** Decrease

**State Level Data Source:** Iowa Certificate of Live Birth linked to Medicaid paid claims

**Summary and Rationale:** The inter-pregnancy interval is defined as the number of months between a live birth and the conception of the next live birth[35]**.** The American College of Obstetricians and Gynecologists (ACOG) recommend that women avoid inter-pregnancy intervals of less than 18 months[36]. Women with short inter-pregnancy intervals are at increased risk to give birth to a preterm infant[37]. ACOG advises that mothers obtain inter-pregnancy care as a continuum of post-partum care. The inter-pregnancy interval is an important time to address maternal condition such as diabetes, hypertension and other chronic conditions to improve her health for her next pregnancy. It is also a time to address health behaviors and nutritional needs that may influence a women's future health during pregnancy and birth outcomes. Strategies that support healthy inter-pregnancy intervals include access to comprehensive family planning services, access to preconception care, and well-woman care.

**Iowa proportion of mothers who conceived pregnancies within 18 months of their previous live birth:** The proportion of mothers who conceived a pregnancy within 18 months of a previous live birth has increased again in 2023 compared to the 5-year state average overall and among mothers whose births were not reimbursed by Medicaid (Figure 25 & Table 8). Between 2019 and 2023, the proportion of mothers with inter-pregnancy intervals of less than 18 months has increased by 3.2% among mothers with Medicaid-reimbursed births and by 4.8% among mothers whose birth was not reimbursed by Medicaid (Table 8). By race, among mothers with Medicaid-reimbursed births in 2023, the proportion of mothers with inter-pregnancy intervals of less than 18 months was highest among American Indian, Black, and Native Hawaiian mothers, and

those who reported themselves to be of multiple races (Figure 26). Among mothers with Medicaid-reimbursed births in 2022, the proportion of mothers with inter-pregnancy intervals of less than 18 months decreased with age (Figure 27). The highest proportion of mothers with inter-pregnancy intervals of less than 18 months was among adolescent mothers ages 15 to 19 and mothers ages 20 to 24.

**Strategies to support healthy inter-pregnancy intervals:** The Title V Healthy Pregnancy Program provides postpartum follow-up to all clients during which client contraceptive needs are addressed. Clients are referred to Title X family planning services or their primary care provider to support optimal pregnancy spacing. The Title X program uses the Power to Decide[38] - One Key Question® to guide clients' reproductive life planning goals and provides a framework for the clinician to provide client-centered education and support around the clients' birth spacing goals.
The Department's Title X Family Planning Program provides access to family planning services for men and women of reproductive age who are seeking voluntary reproductive health services in the state.

The Title X Family Planning Program has added a focus on preconception health and screening for health issues that can affect sexual and reproductive health, such as hypertension, healthy weight, mental health, and substance use disorders. Clients with identified needs are referred to appropriate providers. Designated Title X sites also serve as enrollment points for the state Family Planning Program. Mothers who were enrolled in Medicaid during their pregnancy are automatically eligible to obtain contraceptive service reimbursement from the state Family Planning Program for up to one year postpartum (thereafter, an annual enrollment is required).

Figure 22. Between 2019 and 2023, the state-level proportion of mothers with inter-pregnancy intervals of less than 18 months increased by 8.9%, opposite of the desired direction

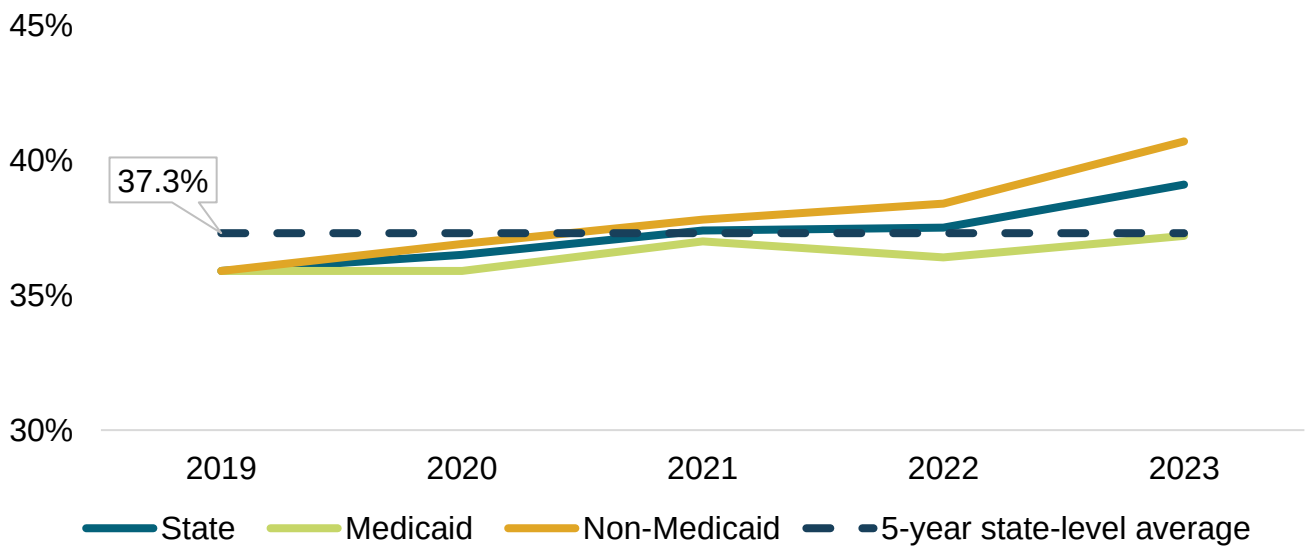


Table 7. From 2019 to 2023, the proportion of mothers with inter-pregnancy of intervals less than 18 months has increased 3.2% among mothers with Medicaid-reimbursed births and by 13.4% among mothers whose birth was not reimbursed by Medicaid

| Year | Medicaid | | Non-Medicaid | | State Total | |
|---|---|---|---|---|---|---|
| | Number | *%* | Number | *%* | Number | *%* |
| **2023** | 2,978 | *37.2* | 3,979 | *40.7* | 6,957 | *39.1* |
| **2022** | 3,019 | *36.4* | 3,784 | *38.4* | 6,803 | *37.5* |
| **2021** | 3,121 | *37.0* | 3,905 | *37.8* | 7,026 | *37.4* |
| **2020** | 2,887 | *35.9* | 3,749 | *35.9* | 6,636 | *36.5* |
| **2019** | 3,005 | *35.9* | 3,850 | *35.9* | 6,855 | *35.9* |

Figure 23. In 2023, among mothers with Medicaid-reimbursed births, the proportion of mothers with inter-pregnancy intervals of less than 18 months varied by maternal race and ethnicity

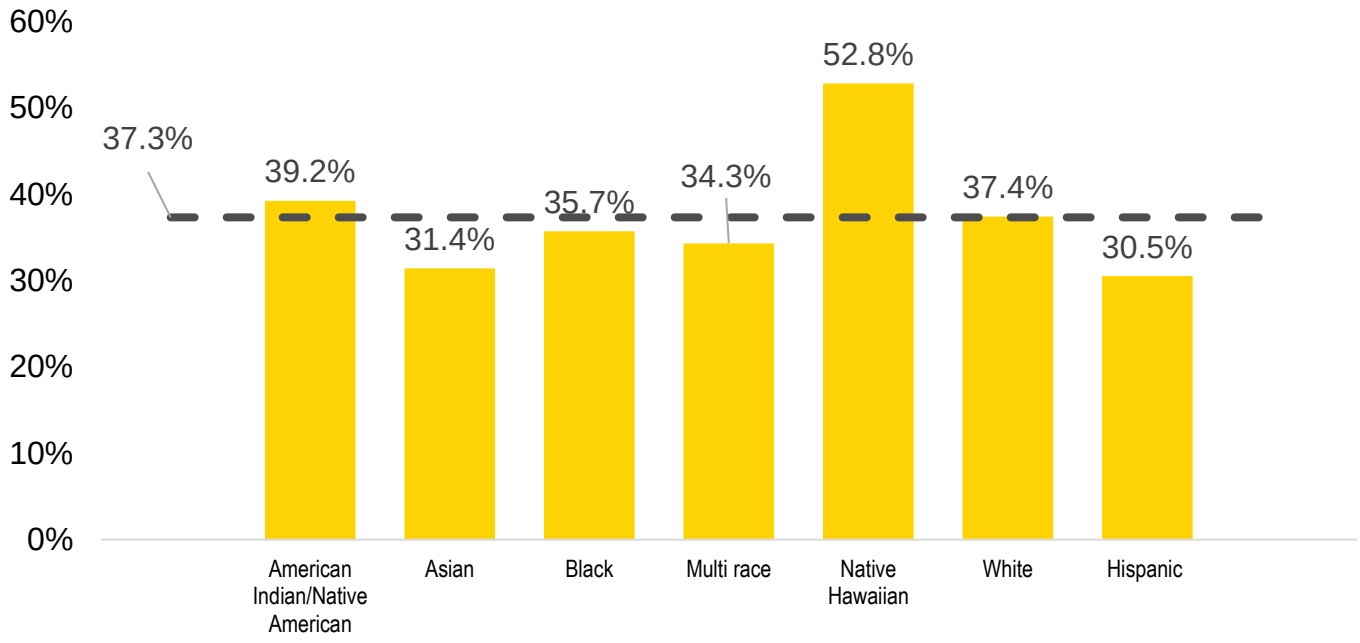
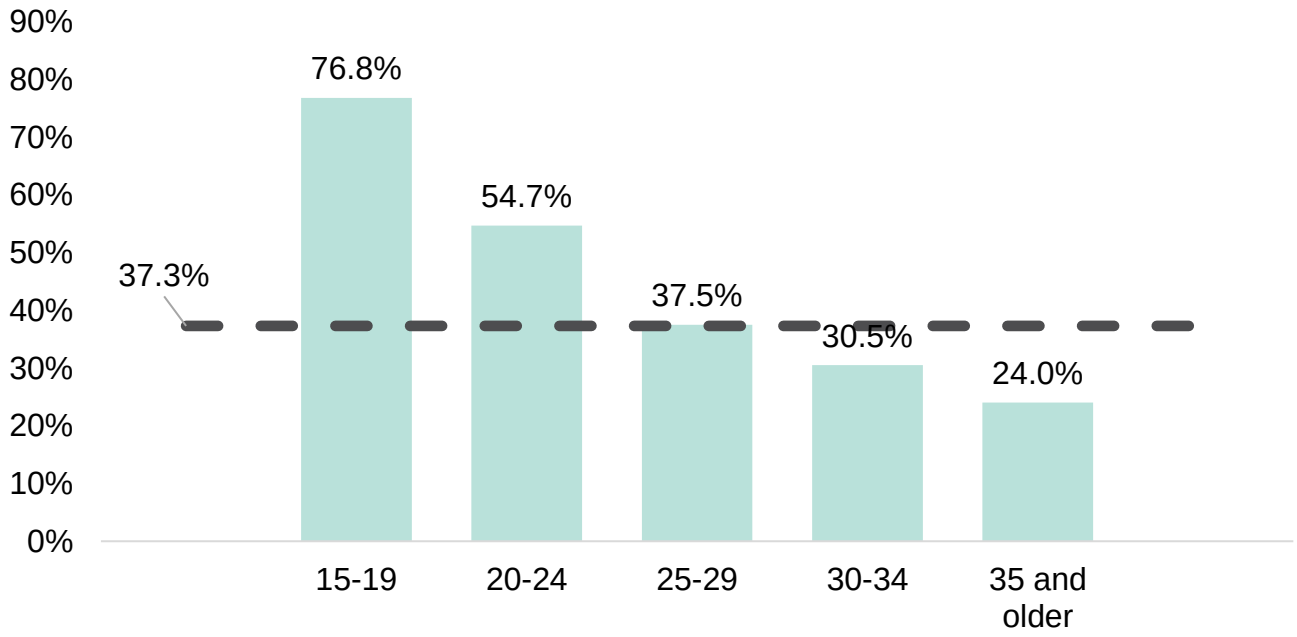


Figure 24. In 2023, among mothers with Medicaid reimbursed births, the proportion of mothers with inter-pregnancy intervals of less than 18 months decreased with maternal age



## Healthy People 2030 – Teen births - Reduce the pregnancies among adolescents – FP - 03[39]

We are not able to replicate the Healthy People 2030 method to calculate pregnancies among adolescents. Health People 2030 staff use several data sources to calculate this metric. Because we cannot replicate the Healthy People 2030 estimate, we do not report a baseline, national rate, or target goal. Rather, we report the teen birth rate as a proxy measure for the Healthy People 2030 metric. In 2022[40], the national level teen birth rate was 13.6 births for every 1,000 females ages 15-19.

**Most recent Iowa state-level data:** 11.8 births for every 1,000 females ages 15-19 (2021-2023)

**Desired Direction:** Decrease

**State Level Data Source:** Iowa certificate of live births and census data[d]

**Summary and Rationale:** Childbearing by adolescents can have short and long-term social and economic implications for the teen and her children[41]. Teens who give birth during high school are less likely to obtain a high school diploma compared to teens who do not give birth during high school[42]. Because of not obtaining a high school diploma, teens who give birth during high school may face economic hardship as an adult.

**Iowa teen birth rate**: The state level birth rate among adolescent girls ages 15 to 19 decreased by 21.3% (Figure 28 & Table 9) from 2017-2019 to 2021-2023. During the same time, the birth rate among adolescent girls ages 15 to 19 has increased by 33.2% among American Indian adolescents and by 19.0% among Asian/Pacific Islander adolescents (Table 9). From 2017-2019 to 2021-2023, the birth rate among adolescent girls ages 15 to 19, has decreased by 25% among White adolescents, by 17.3% among Black adolescents, and by 13.6% among Hispanic adolescents (Table 9).

**Strategies to reduce pregnancies among adolescents:** The Department receives funding for and manages three adolescent pregnancy prevention programs. The programs are:

- Community Adolescent Pregnancy Prevention grant program (State funding)
- Personal Responsibility Education Program grant (Federal funding)
- Title V State Sexual Risk Avoidance Education grant program (Federal funding)

The Department uses evidence-based approaches that promote optimal healthy behaviors. State projects are implemented through partnerships with community-based organizations and school districts using a Positive Youth Development (PYD) framework to help adolescents develop healthy life skills, increase individual protective

[d] We combined three years of data to produce stable rates for this metric

factors that reduce risks, make healthy decisions, engage in healthy relationships, and set goals that lead to self-sufficiency. The Community Adolescent Pregnancy Prevention (CAPP) program includes a component to provide support services to pregnant and parenting adolescents to reduce the likelihood of subsequent pregnancies.

Linking program participants to services provided by local community partners that support the safety and well-being of youth is a key component of focusing on the whole person. Focusing on the whole person means addressing the physical, behavioral, social, and environmental aspects of an adolescent's life, rather than a focus on individual risk behaviors. This approach considers interconnected factors that affect an adolescent's well-being including physical, mental, intellectual, emotional, sexual, and social factors.

The Department provides funding for Multi-Generational Home Visiting Services, which is an optional component of the CAPP program, to provide a multi-generational home visiting program to expectant or parenting adolescents and their families focusing on the needs of the family including delay of future pregnancies, parenting skills, healthy relationships, and child development using evidence-based, evidence-Informed, or promising practices materials.

Title X Family Planning Programs offer quality, confidential and voluntary health care for all individuals of reproductive age living in Iowa who need access to family planning methods and services. This includes access to contraceptive methods and uses the One Key Question to provide reproductive life planning. Title X Family Planning clinics are required to prioritize services and outreach to adolescents, including allowing for same day appointments when possible and making modifications to clinics and policies that make the clinics more adolescent-friendly. In 2024, the Title X Family Planning Program plans to implement in-home contraceptive consultation and contraception quick start to ease the burden of transportation and to shorten the time for initiation of certain contraceptive methods.

Figure 25. From 2017-2019 to 2021-2023, the state level birth rate among adolescent girls ages 15 to 19 decreased by 18.4%

The teen birth rate is calculated by the number of births to teens for every 1,000 females ages 15-19

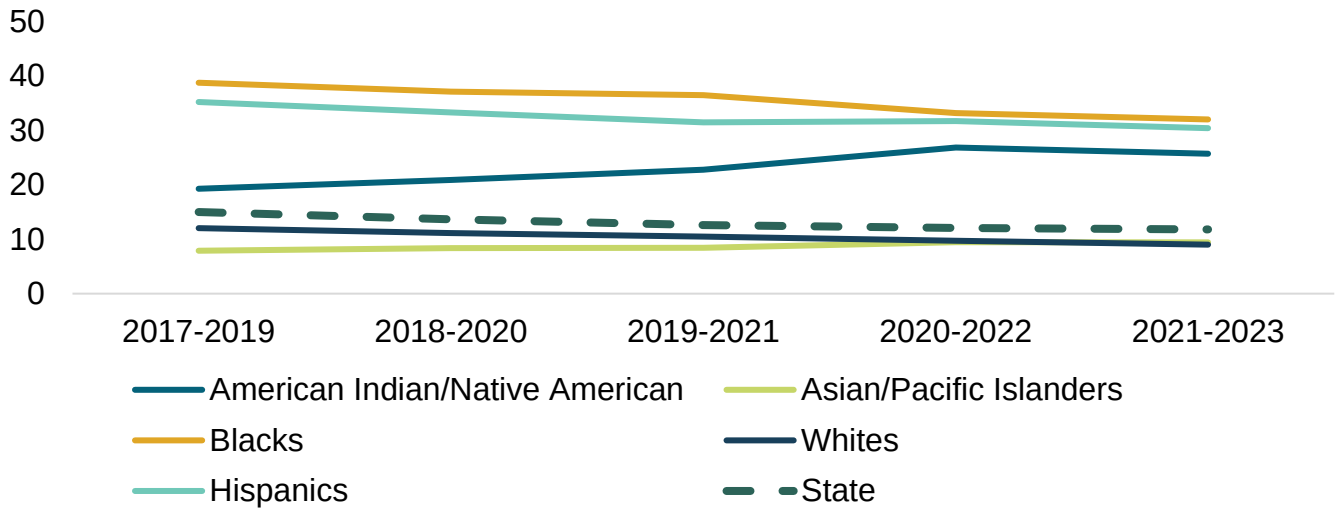



Table 8. From 2017-2019 to 2021-2023, the birth rate among adolescent girls ages 15-19 varied by race and ethnicity

The teen birth rate is calculated by the number of births to teens for every 1,000 females ages 15-19

| Year | American Indian/Native American | Asian/Pacific Islanders | Blacks | Whites | Hispanics | State |
|---|---|---|---|---|---|---|
| **2021-2023** | 25.7 | 9.4 | 32.0 | 9.0 | 30.4 | 11.8 |
| **2020-2022** | 26.8 | 9.5 | 33.1 | 9.7 | 31.7 | 12.4 |
| **2019-2021** | 22.8 | 8.4 | 36.5 | 10.5 | 31.5 | 13.1 |
| **2018-2020** | 20.9 | 8.4 | 37.1 | 11.1 | 33.3 | 14.0 |
| **2017-2019** | 19.3 | 7.9 | 38.7 | 12.0 | 35.2 | 15.2 |

## Appendix A – Race and ethnicity categorizations for this report

The United States Census Bureau no longer reports a combined race and ethnicity metric. For Census 2020, the Census Bureau used two separate questions (one asking about Hispanic or Latino origin and one asking about race). This change provides more accurate information about respondents' self-identification of race and Hispanic heritage[43]. This report follows the US Census Bureau recommendation and categorization strategy.

This report uses the Iowa's Certificate of Live Birth to describe the mother's self-reported race and ethnicity. Race and ethnicity information are collected on the Official Worksheet to Establish Legal Certification of Live Birth – Birth Mother's Worksheet. Mothers self-report their race and ethnicity on the worksheet shortly after giving birth.

**Ethnicity:** For ethnicity, the mother is asked the following: Is the birth mother of Spanish/Hispanic/Latina origin? (Check Yes or No. If yes, *specify*). The response options are as follows: No, not Spanish/Hispanic/Latina or Yes, with the option to select Mexican, Mexican American, Chicana, or Puerto Rican or Cuban, or other (*specify*). Ethnicity is then re-coded into two categories – Hispanic or non-Hispanic.

**Race:** For race, the mother is asked the following (she may select more than one race): Race that birth mother considers herself to be. The response options are as follows: White, Black or African American, American Indian or Alaska Native (*Specify*), Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian (*Specify*), Native Hawaiian, Guamanian or Chamorro, Samoan, Other Pacific Islander (*Specify*) or Other (*Specify*).

Race is grouped as follows when reported in six categories:

1. American Indian/Native American
2. Asian (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian)
3. Black or African American
4. Multi race (American Indian/Native American, Asian or Pacific Islander, Black, or White)
5. Native Hawaiian (Native Hawaiian, Guamanian or Chamorro, Samoan, Other Pacific Islander)
6. White
7. Other/Unknown

The race category of "Other/Unknown" accounted for 1.2% (n=399) of births during calendar year 2023.

## Endnotes

[1] Pursuant to Senate File 538, 1989 Iowa General Assembly, the parties have entered into this Contract to provide for the transfer of funds to the Contractor (legacy IDPH) for the development and implementation of linked data files of vital records and Medicaid claim records. The linked data files will be analyzed to evaluate health outcomes related to Medicaid services provided to pregnant women and children. The analysis will provide the Agency (legacy Iowa Medicaid) with important information on maternal characteristics and birth outcomes. This information will be available for use by the Agency in policy development and program planning.
[2] https://odphp.health.gov/healthypeople (Accesses 11.18.24).
[3] Medicaid status was determined by a linkage between Medicaid paid claims and the Iowa certificate of live birth.
[4] Non-Medicaid status includes private insurance, self-pay, and other governmental payment sources.
[5] State total refers to the combined total of Medicaid reimbursed births plus those births reimbursed by another source.
[6] https://health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy-and-childbirth/increase-proportion-pregnant-women-who-receive-early-and-adequate-prenatal-care-mich-08 (Accessed 10.24.24).
[7] Adequate prenatal care is based on the Adequacy of Prenatal Care Utilization Index (APNCU). The APNCU is calculated using two parts: the month in which prenatal care is initiated and the number of prenatal visits from prenatal care initiation until delivery and then categorized into four outcome measures. “Inadequate” care is defined as either starting prenatal care after the 4th month of pregnancy or receiving less than 50% of expected visits based on the schedule of prenatal care visits recommended by American College of Obstetricians and Gynecologists (ACOG). “Intermediate” care is care begun by month 4 and with 50–79% of expected visits received; “adequate” care is that begun by month 4 and with 80–109% of expected visits received; “adequate plus” care is begun by month 4 and with 110% or more of expected visits received. In this report, adequate and adequate plus were combined for one measure.
[8] National Institute of Child Health and Human Development. What is prenatal care and why is it important? 2017 January 31. https://www.nichd.nih.gov/health/topics/pregnancy/conditioninfo/prenatal-care (Accessed 10.24.24).
[9] Prenatal care is not consistently reported for Iowa residents who deliver outside of Iowa. For that reason, this calculation excludes births to residents that occurred outside of Iowa.
[10] https://health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy-and-childbirth/reduce-cesarean-births-among-low-risk-women-no-prior-births-mich-06 (Accessed 10.24.24).
[11] DeJoy, S.A., Bohl, M.G., Mahoney, K., & Blake, C. (2020). Estimating the Financial Impact of Reducing Primary Cesareans. Journal of midwifery & women’s health, 65(1), 56-63.
[12] https://www.marchofdimes.org/find-support/topics/birth/vaginal-birth-after-cesarean#:~:text=have%20your%20baby.-

,If%20you've%20already%20had%20a%20cesarean%20birth%20(also%20called,in%20your%20belly%20and%20uterus. (Accessed 10.24.24).
[13] https://www.acog.org/practice-management/patient-safety-and-quality/partnerships/alliance-for-innovation-on-maternal-health-aim (Accessed 10.25.24).
[14] https://odphp.health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy-and-childbirth/reduce-severe-maternal-complications-identified-during-delivery-hospitalizations-mich-05 (Accessed 10.27.24).
[15] We combined three years of data to produce stable rates relative to the low (~200) number of annual events.
[16] https://www.cdc.gov/maternal-infant-health/php/severe-maternal-morbidity/?CDC_AAref_Val=https://www.cdc.gov/reproductivehealth/maternalinfanthealth/severematernalmorbidity.html (Accessed 10.24.24).
[17] For a complete list of the conditions used to define delivery hospitalizations with SMM, see https://www.cdc.gov/maternal-infant-health/php/severe-maternal-morbidity/icd.html?CDC_AAref_Val=https://www.cdc.gov/reproductivehealth/maternalinfanthealth/smm/severe-morbidity-ICD.htm (Accessed 10.25.24).
[18] Fink, D. A., Kilday, D., Cao, Z., Larson, K., Smith, A., Lipkin, C., ... & Rosenthal, N. (2023). Trends in maternal mortality and severe maternal morbidity during delivery-related hospitalizations in the United States, 2008 to 2021. JAMA Network Open, 6(6), e2317641-e2317641 (Accessed 11.18.24).
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