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RACIAL AND ETHNIC DISPARITIES IN MATERNAL HEALTH

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INTRODUCTION

Pregnancy and childbirth complications in the United States have increased among all women¹ by about 9% between 2018-2020. Moreover, racial and ethnic disparities in those complications persist. Black, Latina and Asian² women all continue to fare worse than White women when it comes to the likelihood of complications.

Most striking, this trend holds true for all women in this study, suggesting that increases in childbirth complications are rising, regardless of whether a woman has commercial health insurance or Medicaid.³

This report analyzes the latest trends in severe maternal morbidity (SMM). It examines nearly 11 million births⁴ to women with either

commercial insurance or Medicaid.⁵ Data cover the years 2018 to 2021 for women with commercial insurance and 2016 to 2020 for women with Medicaid.⁶ Studying births to women with both kinds of insurance provides a comprehensive picture of trends in maternal health across the United States.

The SMM rates in this report are a measure of unexpected outcomes at the time of hospital deliveries through six weeks postpartum. These complications can cause serious short- or long-term health consequences. SMM is made up of 21 adverse events known as indicators.⁷ A woman who experiences one or more of the 21 indicators is considered to have experienced an SMM event.

Note: The SMM rate presented here differs somewhat from that used by the Centers for Disease Control and Prevention (CDC). The CDC's SMM rate includes only complications occurring during the delivery experience, while the mother is in the hospital. The SMM rates considered in this report include complications through the first six weeks after discharge because a third of SMM events occur during this time.

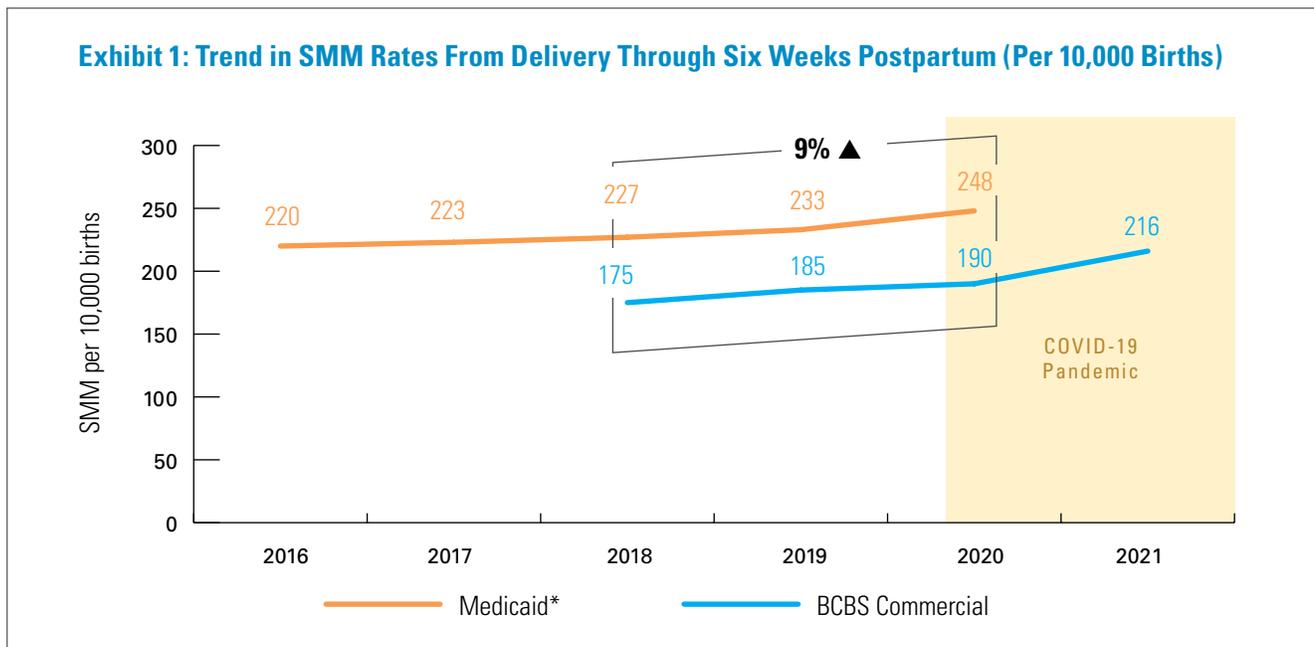
KEY FINDINGS

1. SMM rates have risen about 9% for all racial and ethnic groups in both the BCBS commercially insured and Medicaid populations between 2018 and 2020.
2. Early evidence among commercially insured women indicates the pandemic has likely worsened this trend.
3. SMM rates are consistently higher among Black, Latina and Asian women compared to White women, regardless of age or type of insurance.
4. While SMM rates for all women rise with age, Black women ages 35-44, especially those with chronic conditions, have a 66% higher risk of experiencing an SMM event than White women.
5. Black, Latina and Asian women have higher rates of many risk factors (such as asthma, diabetes or high blood pressure) for SMM than White women.

RESEARCH FINDINGS

SMM Rates Rising Among Women with Commercial Insurance and Medicaid

Between 2018 and 2020, SMM rates have increased by about 9% for women with either commercial insurance or Medicaid. This rising trend in SMM rates holds for all groups of women in this study. However, rate increases are slightly larger for Black women (+11% and +11%); Latina women (+11% and +13%) and Asian women (+16% and +17%) with commercial insurance and Medicaid, respectively. The increase in SMM rates for White women are +9% and +3% for those with commercial insurance and Medicaid, respectively. Commercial insurance claims data available through 2021 show a marked increase in rates during the COVID-19 pandemic (Exhibit 1).



*Medicaid includes all payers. Commercial includes only BCBS members.



Understanding Rising SMM Rates

SMM rates are rising, in part, because an **increasing number of women are entering pregnancy with chronic conditions.**⁸

“Preexisting chronic conditions, such as hypertension and diabetes, strongly correlate with higher SMM and worse pregnancy outcomes. To achieve better outcomes, we need to make sure care before pregnancy is easily accessible and equitable for all women, in addition to robust prenatal care, and ongoing postpartum care to ensure the safety of future pregnancies.”

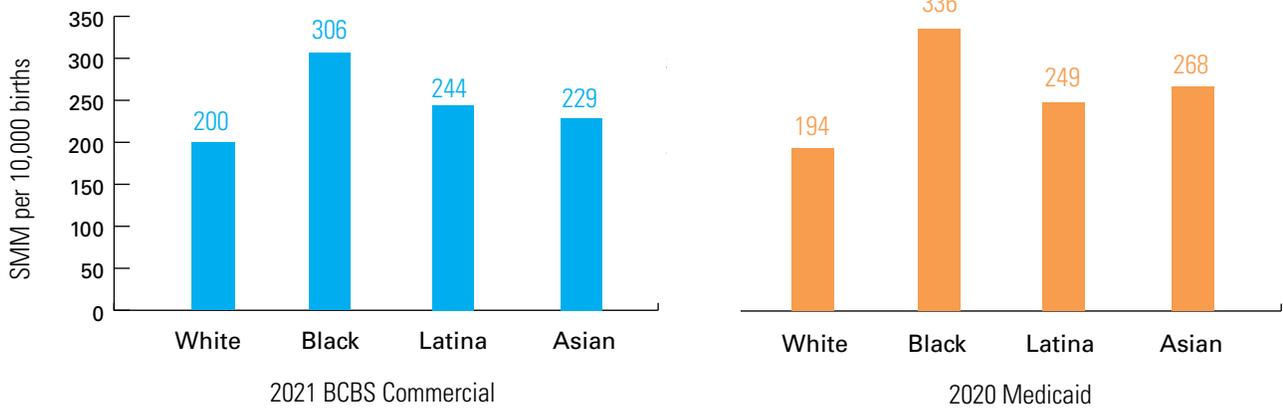
– Adam L. Myers, MD, MHCM, FACHE, Chief Clinical Transformation Officer, Blue Cross Blue Shield Association

SMM Rates Are Substantially Higher for Black, Latina and Asian Women

For Black women with commercial insurance, SMM rates were 53% higher, and with Medicaid, 73% higher than SMM rates for White women. Rates were also higher among Latina and Asian women. Latina women with commercial insurance had 22% higher rates and with Medicaid, 28% higher rates of SMM than White women. Asian women with commercial insurance had 15% higher rates and, with Medicaid, 38% higher rates of SMM than White women (Exhibit 2).



Exhibit 2: Commercially Insured vs. Medicaid SMM Rates by Race and Ethnicity During Delivery Through Six Weeks Postpartum (Per 10,000 Births)



Why Are There Disparities in SMM Rates?

Health disparities are the result of a complex fabric of social, racial and economic injustice.

Recent studies are shedding light on the influence of systemic racism⁹ on health disparities.



SMM Rates Are Higher Among Women of Color, Regardless of Age

Across all populations, women ages 35-44 were more likely to have an SMM event than younger women (Exhibits 3a and 3b). However, Black women with either commercial insurance or Medicaid in this age range have 66% higher rates of SMM compared to White women.



Exhibit 3a: Commercially Insured SMM Rates by Race, Ethnicity and Age During Delivery Through Six Weeks Postpartum (Per 10,000 Births) (Averaged between 2018-2021)

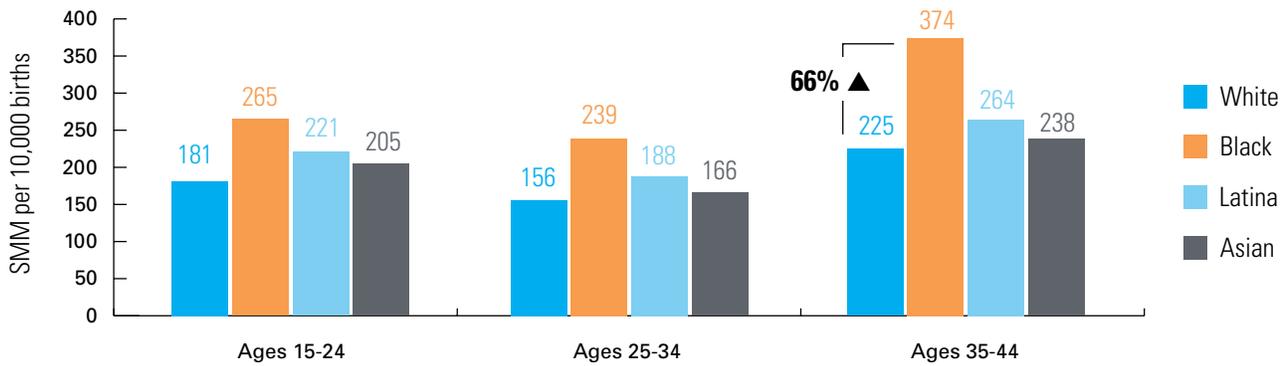
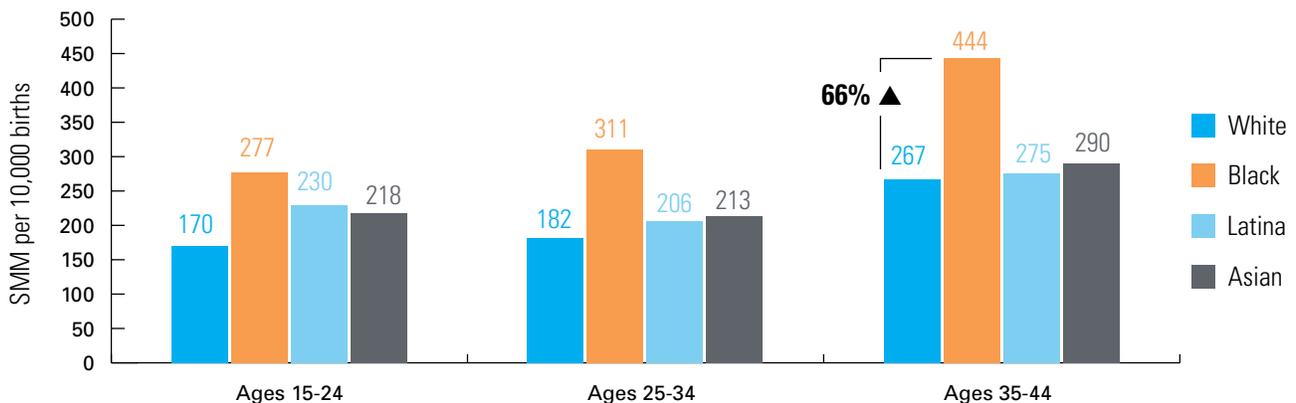


Exhibit 3b: Medicaid SMM Rates by Race, Ethnicity and Age During Delivery Through Six Weeks Postpartum (Per 10,000 Births) (Averaged between 2016 to 2020)



RISK FACTORS FOR SMM

Having certain health conditions before and during pregnancy can increase a woman’s risk for SMM.¹⁰ They include chronic conditions such as diabetes, a high body mass index (BMI) or asthma going into delivery. Some of these conditions may have a stronger link to SMM events than others. A list of the risk factors for commercially insured women is included in the Appendix and shows the estimated level of risk (in terms of risk ratio) each contributes to the likelihood of an SMM event.

Disparities in Risk Factors Among Women with Commercial Insurance

Among women with commercial insurance, the prevalence rate of each of these risk factors is higher for at least one, and sometimes all three, racial and ethnic groups than it is for White women. Prevalence rates are highest among Black women compared to other groups for all risk factors except for those older than 36.

Exhibit 4: Risk Factors by Race and Ethnicity for Commercial Population

Risk Factor	Prevalence Rate (per 100)				Percent Difference		
	White	Black	Latina	Asian	Black vs. White	Latina vs. White	Asian vs. White
Preeclampsia w/Severe Features	3.5	5.7	3.9	2.6	61%	12%	-26%
Placental Abruption	0.9	1.2	1.0	1.1	34%	10%	30%
Current Birth Preterm	8.6	11.6	9.6	8.0	36%	12%	-6%
Asthma	5.5	7.1	6.2	3.6	28%	12%	-34%
Preexisting Diabetes	1.2	1.9	1.8	1.5	53%	44%	22%
Chronic Hypertension	3.4	6.1	4.3	2.0	78%	26%	-42%
Anemia	10.4	17.6	11.1	12.2	70%	7%	18%
Delivery BMI >40	0.8	1.3	0.8	0.3	61%	3%	-66%
Age >35 at Delivery	23.9	24.7	28.8	38.7	3%	21%	62%

Disparities in Risk Factors Among Women with Medicaid

For women with Medicaid, a similar pattern in prevalence rates exists, although the disparities between Black and White women are even greater.

Exhibit 5: Prevalence of Risk Factors by Race and Ethnicity for Medicaid Population

Risk Factor	Prevalence Rate (per 100)				Percent Difference		
	White	Black	Latina	Asian	Black vs. White	Latina vs. White	Asian vs. White
Preeclampsia w/Severe Features	2.9	5.7	3.4	2.5	96%	17%	-15%
Placental Abruption	1.3	1.6	1.1	1.1	25%	-16%	-14%
Current Birth Preterm	9.2	12.6	9.4	8.3	36%	1%	-10%
Asthma	5.5	7.9	3.6	2.6	43%	-36%	-54%
Preexisting Diabetes	1.3	1.8	1.8	1.6	40%	37%	26%
Chronic Hypertension	3.0	6.1	2.3	1.9	104%	-23%	-35%
Anemia	11.6	24.4	14.5	13.2	110%	25%	13%
Delivery BMI >40	2.8	3.9	2.5	0.9	43%	-8%	-67%
Age >35 at Delivery	10.4	10.7	13.4	18.9	3%	29%	82%



Disparity in the Number of Risk Factors by Race and Ethnicity

Comparing the number of risk factors among women of color to White women of the same age provides deeper insight into the scope of these disparities. For example, 40% of Black women ages 35-44 have one or more risk factors for SMM, **which is 60% higher** than White women. Fourteen percent have two or more risk factors, **about 180% higher** than White women.

Exhibit 6: Number of Risk Factors by Race/Ethnicity* Among Commercial Women

Percentage of Risk Factors by Race/Ethnicity	White	Black	Latina	Asian
Ages 35-44 with one or more risk factors	25%	40%	32%	27%
Ages 35-44 with two or more risk factors	5%	14%	9%	6%

*Data for women with commercial insurance only, 2018-2021.

REDUCING THE RISK OF SMM

The data are clear: we must take immediate steps to reverse the trend in rising SMM rates and reduce the disparities in those rates. This work is urgent for women with either commercial insurance or Medicaid, especially for Black women ages 35-44 with one or more risk factors. Health care providers and health plans can take immediate action to:

- Design treatment plans and programs that **are tailored for women at high risk for SMM**, an approach that is especially urgent for Black women over the age of 35 with chronic conditions.
- **Offer culturally appropriate health care** and provide implicit bias training.
- Prioritize the **management of chronic conditions** preconception, during pregnancy and postpartum.
- **Make prenatal care easily accessible**, reducing barriers such as a lack of transportation or scheduling options.
- Measure providers and facilities on **the quality of care they deliver**. For example, [Blue Cross Blue Shield's Blue Distinction Centers for Maternity Care](#) are hospitals that meet specific, nationally recognized standards for quality, expertise and patient experience.



Who Is At Highest Risk for SMM?

Black women ages 35-44 with multiple risk factors are at the highest risk. In this age range, Black women have a higher prevalence of risk factors than women of other races and ethnicities. Research¹¹ has shown these risk factors, such as chronic conditions, may be linked to the cumulative effects of systemic racism.

TAKING ACTION TO IMPROVE MATERNAL HEALTH



The trends in maternal health disparities are unacceptable. Reversing the trajectory of those trends, like the rates of SMM highlighted in this report, cannot rest on the shoulders of women and health care providers alone. It will take the collective efforts of the health care system, including providers, insurers, policymakers and the nonprofit and private sectors.

Guided by efforts already underway at BCBS companies, we have identified 10 tangible steps to address the health disparities highlighted in this report:

TOP 10 MATERNAL HEALTH EQUITY ACTIONS

- 1** Engage maternal voices and community stakeholders to craft, build and sustain a holistic maternal health program. Form public and private partnerships to address root causes of disparities, inequalities and social determinants of health (SDOH).
- 2** Provide access to cultural humility and unconscious bias training for everyone in the maternal care continuum.
- 3** Include nurse-midwives and birthing centers in provider networks and design programs to increase education and awareness for health plan members.
- 4** Facilitate access to doulas and community health workers for maternal support services.
- 5** Implement facilitated self-management or peer prenatal care models such as CenteringPregnancy.™
- 6** Expand benefit coverage to ensure postpartum care including behavioral health care to one year postpartum.
- 7** Align quality measurement with national standards-setting organizations and tie back to provider quality programs.
- 8** Join and participate in a Perinatal Quality Collaborative.¹²
- 9** Implement value-based contracts specific to maternal health.
- 10** Amplify programs of special significance such as vaccination programs with a focus on COVID-19 and influenza.

We call on leaders in the public and private sectors to support these 10 actions as well as to advocate for policies that will make a meaningful difference in maternal health:

Congress should pass the [Congressional Black Maternal Health Caucus’ Momnibus package](#),

which outlines steps to improve health outcomes for pregnant women and mothers of color, their babies and their families.

States should adopt the [American Rescue Plan Act](#) provision that gives states the option to extend Medicaid coverage from 60 days to a full year postpartum. Forty-three percent of all births in the United States are to women covered by Medicaid.

One organization alone cannot undertake all of these actions, all at once, to reduce the impact of health inequities women of color face today. However, we must act now to make incremental progress together, with critical roles for health insurers, providers, communities, policymakers, patients and allies. Learning from this data and acting, together, is the path toward safer pregnancies, deliveries and postpartum experiences for all women.

METHODOLOGY

The claims-based measure of maternal morbidity used in this report leverages the Severe Maternal Morbidity (SMM) methodology established by the Centers for Disease Control and Prevention.¹³ For the commercial population, 3.1 million hospital deliveries were identified from January 1, 2018 to December 31, 2021 through BCBS claims. For the Medicaid population, 7.8 million hospital deliveries were identified from January 1, 2016 to December 31, 2020 by the National Opinion Research Center through claims from the Transformed Medicaid Statistical Information System (T-MSIS).¹⁴ The rate of SMM is the presence of one or more of the CDC’s defined 21 indicators present for a given delivery and scaled on a per 10,000 delivery basis. An indicator is identified for a woman experiencing one or more events during a delivery hospitalization *and* up to six weeks after delivery. This merges the CDC SMM measures during delivery hospitalization with SMM measures occurring after delivery discharge and therefore increases the likelihood of capturing some SMM indicators that could occur in the postpartum period.

Risk factors for SMM were identified using the California Maternal Quality Care Collaborative’s (CMQCC) risk adjustment system.¹⁵ These risk factors were identified as present on admission for delivery. The risk ratio for a given factor is the SMM rate for women with the risk factor present on admission divided by the SMM rate for women without the risk factor present on admission.

Race and ethnicity identifiers for the commercial population were obtained from AnalyticsIQ (AIQ) using U.S. Census data, geo-credit data and econometrics data. Where available, individual level race and ethnicity is recorded and then used as a basis for multi-level modeling to impute race and ethnicity values for those individuals where it is not available. Monthly surveying is used to validate this imputation process. BCBS members must have sufficient identifying information to be accurately matched to AIQ’s race and ethnicity values at either the individual or household levels. When there is not sufficient information for matching, race and ethnicity values are not used for that member. Approximately 58% of the members in the BCBS commercial claims data could be matched to AIQ race and ethnicity values.

Race and ethnicity identifiers in T-MSIS are typically self-reported by individuals and ultimately submitted by the states; however, states may not collect or submit complete data each year. Overall race and ethnic subgroups from Medicaid represent all mothers who meet study inclusion criteria and have a listed race and/or ethnicity. National-level results include race and ethnicity identifier information from all 50 states and the District of Columbia. For state-level subgroup analyses provided in the Appendix, only states with sufficiently high data quality (per the Mathematica Data Quality Atlas) are included. Data quality from states varied in terms of completeness of claims and eligibility information; enrollees and claims data were assessed on a per-record basis for study inclusion.

The report was also developed with the support of The National Opinion Research Center (NORC) at the University of Chicago Analysis to identify births, complications, and risk factors in the Medicaid population was performed by and includes data from NORC.

ENDNOTES

1. In this report, the words “woman” or “women” refer to people designated female at birth. A birthing person’s gender identity may differ from this terminology.
2. A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent.
3. Commercial data comes from the Blue Cross Blue Shield (BCBS) national claims database, BCBS Axis. Medicaid data comes from claims data submitted to the Centers for Medicare and Medicaid.
4. This study examines more than 3.1 million births covered by Blue Cross Blue Shield commercially insured women and more than 7.8 million births covered by all Medicaid plans.
5. Commercial data comes from the Blue Cross Blue Shield (BCBS) national claims database, BCBS Axis. Medicaid data comes from claims data submitted to the Centers for Medicare and Medicaid.
6. Medicaid data is currently only available through 2020, while BCBS Axis data is available through 2021.
7. Severe Maternal Morbidity in the United States, Centers for Disease Control and Prevention.
8. [Trends in Pregnancy and Childbirth Complications in the U.S.](#)
9. Wang, Eileen BA; Glazer, Kimberly B. PhD, MPH; Howell, Elizabeth A. MD, MPP; Janevic, Teresa M. PhD, MPH. Social Determinants of Pregnancy-Related Mortality and Morbidity in the United States: A Systematic Review. *Obstetrics & Gynecology*: April 2020 - Volume 135 - Issue 4 - p 896-915 doi: 10.1097/AOG.0000000000003762.
10. The risk factors in this report come from the California Maternal Quality Care Collaborative.
11. Geronimus et al., “Weathering” and Age Patterns of Allostatic Load Scores Among Blacks and Whites in the United States.” May 2006. *American Journal of Public Health*.
12. Perinatal Quality Collaboratives, the Centers for Disease Control and Prevention.
13. Severe Maternal Morbidity in the United States, Centers for Disease Control and Prevention.
14. Delivery inclusions based on Diagnosis Related Group (DRG) codes for cesarean and vaginal deliveries.
15. Severe Maternal Morbidity Obstetric Comorbidity Scoring System.



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APPENDIX

Quantifying SMM Risk Factors Through Risk Ratios

Risk ratios measure how often an SMM event occurs among those with that risk factor versus those without it. For example, women with diabetes are three times more likely to have an SMM event than women without. That amounts to a risk ratio of 3.0.

These are a select number of the most common risk factors, present in at least one out of every 100 commercial deliveries, and their corresponding risk ratios. Each may increase the likelihood of experiencing an SMM event by at least 70%.

Risk Factors	Risk Ratio
Preeclampsia with Severe Features	7.5
Placental Abruption	7.2
Current Birth Preterm	5.7
Asthma	4.5
Preexisting Diabetes	3.0
Chronic Hypertension	3.0
Anemia	2.7
Delivery BMI > 40	1.9
Age >35 at Delivery	1.7