



South Carolina Department of Health and Environmental Control

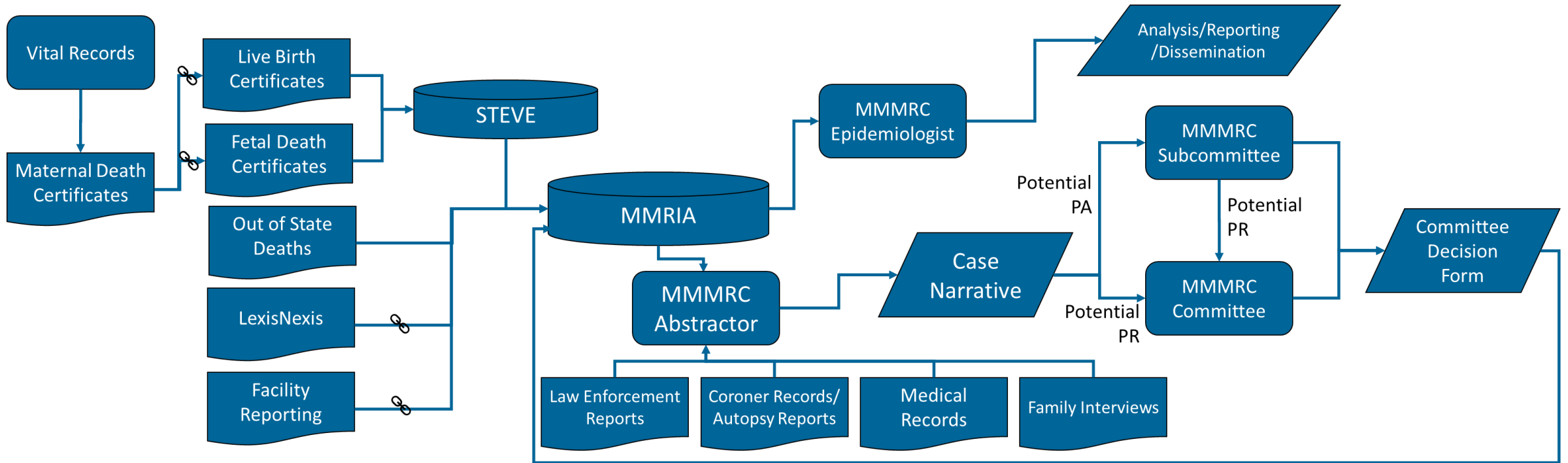
2024 SC MMMRC Legislative Brief

Dr. Joshua Sellner

Overview

- 8th SC Maternal Morbidity and Mortality Review Committee (SC MMMRC) Legislative Brief
- Submitted by March 1 each year
- Complete data collection since 2018
- This year includes data from 2018-2020

SCMMMRC Process



Legislative Brief Through the Years

South Carolina Maternal Morbidity and Mortality Review Committee

Legislative Brief March 2018

The South Carolina Maternal Morbidity and Mortality Review Committee, established by state law in 2016, investigates the death of mothers associated with pregnancy to determine which could be prevented. A pregnancy-related death occurs when a woman dies while pregnant or within 1 year after the pregnancy. The cause must be related to a medical cause by her pregnancy or its management. This does not include accidental or incidental causes.

Across the United States, approximately 700 women die each year from the result of pregnancy or delivery complications. Some groups of women in South Carolina experience this tragic event at a much higher rate than in other groups.

During 2015-2017, the rate of pregnancy-related death in South Carolina was 34.3 deaths per 100,000 live births, a rate that is much higher than the Healthy People 2020 goal of 24.4 deaths per 100,000 live births.

Compared to the previous year period, the rate of pregnancy-related death increased among minority populations and South Carolina overall.

Goals of the South Carolina MMRM Committee

- Determine the annual number of pregnancy-associated deaths that are pregnancy-related.
- Identify trends and risk factors among preventable pregnancy-related deaths in South Carolina.
- Develop actionable strategies for prevention and intervention.

2018 MMRM Committee Accomplishments

The Maternal Mortality Review Information Application (MMRIA), a standardized platform for case abstraction, was deployed. The dataset strengthens surveillance and performance monitoring, and research of maternal mortality.

South Carolina contributed significant efforts for the 2018 report from the Maternal Mortality Review Committee and has also contributed to the upcoming 2019 report.

South Carolina Maternal Morbidity and Mortality Review Committee

Legislative Brief March 2020

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VISION: To eliminate preventable maternal deaths, reduce maternal morbidity, and improve population health for people of reproductive age in South Carolina.

Across the United States, roughly 700 women die each year from the result of pregnancy or delivery complications. Some groups of women experience this tragic event at a much higher rate than other groups.

Between 2016 and 2018, 75 South Carolina women died within one week of giving birth, a rate of 21.6 deaths per 100,000 live births. The maternal mortality rate was 3.4 times higher for Black and Other women versus White women (42.3 vs. 12.4 maternal deaths per 100,000 live births, respectively).

GOALS

- Determine the annual number of pregnancy-associated deaths that are pregnancy-related.
- Identify trends and risk factors among preventable pregnancy-related deaths in SC.
- Develop actionable strategies for prevention and intervention.

Scope of Case Review for the South Carolina Maternal Morbidity and Mortality Review Committee

Primary Focus: preventable pregnancy-related deaths

South Carolina Maternal Morbidity and Mortality Review Committee

Legislative Brief March 2022

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Across the United States, roughly 700 women die each year from the result of pregnancy or delivery complications. Some groups of women experience this tragic event at a much higher rate than other groups.

There are many reasons that the SC MMRM Committee reviews for each maternal death reviewed. These decisions increase understanding of the medical and non-medical factors behind maternal death and provide interventions that effectively reduce their occurrence.

The SC MMRM Committee recently established a subcommittee to review pregnancy-associated deaths or deaths previously considered non-preventable which were potentially avoidable with the pregnancy or its management and should be reviewed by the full committee beginning in 2021. The subcommittee qualified the number of maternal deaths investigated by COVID-19.

In 2021, the SC MMRM Committee completed the review of PR deaths occurring in 2020 which included the first report of the South Carolina Pregnancy-Related Mortality Rate (PRMR) (20.3 pregnancy-related deaths per 100,000 live births in 2020, although higher than the SC goal of 17.3). The SC MMRM Committee is actively working through its current and additional efforts to address the health care needs of women and partnering resources to support continued education and ongoing maternal and newborn care.

GOALS

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South Carolina Maternal Morbidity and Mortality Review Committee

2024 LEGISLATIVE BRIEF

South Carolina Maternal Morbidity and Mortality Review Committee (SCMMMR) reviews all maternal deaths that occur during pregnancy and up to 365 days following the end of the pregnancy regardless of the cause of death. Each death is reviewed using a standardized approach that includes investigating underlying causes of death, pregnancy-relatedness, preventability, circumstances and contributing factors surrounding the death.

Goals

- Determine the annual number of pregnancy-associated deaths that are pregnancy-related.
- Identify trends and risk factors among preventable pregnancy-related deaths in SC.
- Develop actionable recommendations for prevention and intervention.

Pregnancy-Related Mortality Rate, by Year

Year	Rate (per 100,000 live births)
2018	35.3
2019	38.6
2020	22.3

Pregnancy-Related Mortality Rate, by Race

Year	Rate (per 100,000 live births)
2018	34.3
2019	61.9
2020	69.1

There are several factors that lead to delays in reviews of maternal death records, such as receiving records in a timely manner. In 2023, the SCMMMR completed the review of 79 deaths occurring in 2020. 18 of the deaths were determined to be Pregnancy-Related (PR). A PR death occurs when a person dies from a pregnancy complication, a chain of events initiated by the pregnancy, or a condition made worse by the pregnancy. In 2020, the SC Pregnancy-Related Mortality Rate (PRMR) was 32.3 PR deaths per 100,000 live births, a 16.3% decrease from 38.6 in 2019. In 2020, Black women were 4.2 times more likely to die than White women. SC ranks 8th highest for maternal mortality when compared to other states.

2017 2018 2019 2020 2021 2022 2023 2024

South Carolina Maternal Mortality and Morbidity Review Committee

Legislative Brief March 2017

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2016-2017 MMRM Committee Accomplishments

Established the Committee. Best Practices. Members include stakeholders from multiple disciplines. Trained members on the vision, goals, best practices, and data structure. Identified cases through voluntary hospital reporting, clinician and reviewed data on deaths.

South Carolina Maternal Morbidity and Mortality Review Committee

Legislative Brief March 2021

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Scope of Case Review for the South Carolina Maternal Morbidity and Mortality Review Committee

Primary Focus: preventable pregnancy-related deaths

South Carolina Maternal Morbidity and Mortality Review Committee

Legislative Brief March 2023

The South Carolina Maternal Morbidity and Mortality Review Committee (SCMMMR), established by state law in 2016, investigates maternal deaths associated with pregnancy. Data are reported through vital records, maternal reporting, and OIC notification. A pregnancy-related (PR) death occurs when a person dies while pregnant or within one year of pregnancy from a pregnancy complication, a chain of events initiated by the pregnancy, or a condition made worse by the pregnancy.

VISION: To eliminate preventable maternal deaths, reduce maternal morbidity, and improve population health for people of reproductive age in South Carolina.

BACKGROUND

The goals of the SCMMMR are: 1) determine the annual number of pregnancy-associated (PA) deaths that are PR; 2) identify trends and risk factors among preventable PR deaths in SC; and 3) develop actionable recommendations for prevention and intervention. SCMMMR reviews all maternal deaths that occur during pregnancy and up to 365 days following the end of the pregnancy regardless of the cause of death. Each death is reviewed using a standardized approach that includes investigating underlying causes of death, pregnancy-relatedness, preventability, circumstances and contributing factors surrounding the death. In 2023, the SCMMMR completed the review of 84 deaths from 2021. 22 of these deaths determined to be PR (26%). Although all deaths are tragic, the focus of the SCMMMR is PR deaths. In 2023 the SC Pregnancy-Related Mortality Rate (PRMR) was 38.6 PR deaths per 100,000 live births, a 9.3% increase from 35.3 in 2021.

COVID-19 UPDATE

- All COVID-19 deaths through 2021 were investigated.
- 13 Pregnancy-associated deaths through 2021 were investigated by the SCMMMR.
 - 38 deaths determined as PR
 - 80% Preventable
 - 100% Unaccounted
 - 100% Post-Partum Period
 - 70% Obese
 - Advanced maternal age

RECOMMENDATIONS

- The SCMMMR committee supports and recommends COVID-19 vaccination for all pregnant or post-partum women.
- Provides caring for pregnant or post-partum women should address, prevent, and create the benefits of COVID-19 vaccination.
- Pregnant women should not delay receiving the COVID-19 vaccination.
- COVID-19 medical interventions that include medical care should not be withheld due to pregnancy.

WINS

- Extended post-partum Medicaid coverage to 12 months.
- Hired social worker to conduct family interviews.
- Added pathology and forensic pathologist committee members.
- Completed prohibited Covid-19 death reviews for 2020 and 2021.

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South Carolina Maternal Morbidity and Mortality Review Committee

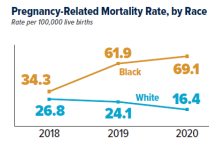
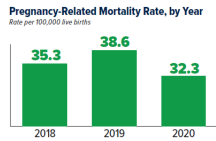


2024 LEGISLATIVE BRIEF

South Carolina Maternal Morbidity and Mortality Review Committee (SCMMMRC) reviews all maternal deaths that occur during pregnancy and up to 365 days following the end of the pregnancy regardless of the cause of death. Each death is reviewed using a standardized approach that includes investigating underlying causes of death, pregnancy-relatedness, preventability, circumstances and contributing factors surrounding the death.

Goals

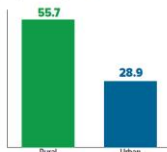
- Determine the annual number of pregnancy-associated deaths that are pregnancy-related.
- Identify trends and risk factors among preventable pregnancy-related deaths in SC.
- Develop actionable recommendations for prevention and intervention.



There are several factors that lead to delays in reviews of maternal death records, such as receiving records in a timely manner. In 2023, the SCMMMRC completed the review of 79 deaths occurring in 2020; 18 of the deaths were determined to be Pregnancy-Related (PR). A PR death occurs when a person dies from a pregnancy complication, a chain of events initiated by the pregnancy, or a condition made worse by the pregnancy. In 2020, the SC Pregnancy-Related Mortality Rate (PRMR) was 32.3 PR deaths per 100,000 live births, a 16.3% decrease from 38.6 in 2019. In 2020, Black women were 4.2 times more likely to die than White women. SC ranks 8th highest for maternal mortality when compared to other states.

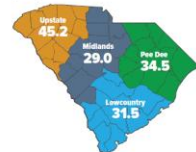
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Pregnancy-Related Mortality Rate, by Rurality
Rate per 100,000 live births, 2018-2021

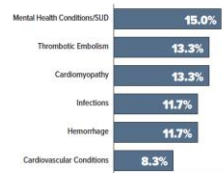


The Upstate region saw the highest rate of pregnancy-related deaths. Additionally, PRMRs in rural counties were nearly twice as high as those in urban counties.

Pregnancy-Related Mortality Rate, by Region
Rate per 100,000 live births, 2018-2020



Leading Causes of Pregnancy-Related Deaths
Percent of pregnancy-related deaths, 2018-2020

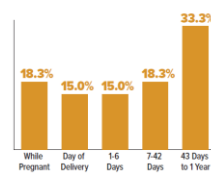


Pregnancy-Related Deaths in 2020

- Mental Health Conditions/ Substance Use Disorder (SUD) continue to be a leading cause of death.
- Cardiomyopathy, the leading cause of death in 2019, declined in 2020.
- Thrombotic Embolism became a leading cause of death in 2020.

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Timing of Pregnancy-Related Deaths
Percent of pregnancy-related deaths, 2018-2020

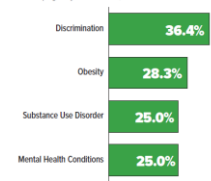


Among pregnancy-related deaths, 51.6% occurred between 7-365 days postpartum. The causes of death most likely to occur during this period were: mental health conditions, cardiomyopathy, and thrombotic embolism.

A death is considered preventable if the committee determines that there was at least some chance of the death being averted by one or more reasonable changes. These changes may occur at the patient, family, provider, facility, system, or community level and may be associated with various contributing factors.¹

The causes of death determined most likely to be preventable were mental health conditions/substance use disorder (100%) and thrombotic embolism (88%).

Circumstances of Pregnancy-Related Deaths
Percent of pregnancy-related deaths, 2018-2020

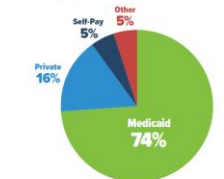


Discrimination

The possibility of discrimination is described as treating someone less or more favorably based on the group, class, or category they belong to resulting from biases, prejudices, and stereotyping. It can manifest as differences in care, clinical communication, and shared decision-making.² Discrimination was recognized as a contributing factor in more than one third of the pregnancy-related deaths reviewed.

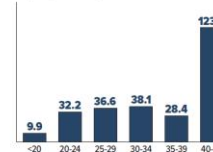
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Pregnancy-Related Deaths, by Payer Source
Percent of pregnancy-related deaths, 2018-2020



During the time of this data collection, through 2020, Medicaid coverage ended at 60 days post-partum. With over 50% of PR deaths occurring in the post-partum period, we expect the 2022 extension of Medicaid until 365 days post-partum to enhance coverage for these women.

Pregnancy-Related Mortality Rate, by Age
Rate per 100,000 live births, 2018-2020



Key Takeaways

- Pregnancy-related deaths declined
- Racial disparities widened
- Majority of pregnancy-related deaths occurred in the post-partum period

Summary

In 2020, South Carolina saw a 16.3% decrease in the overall pregnancy-related mortality ratio, however the gap in racial disparities widened with Black women dying 4 times more than White women. The SCMMMRC is committed to improving maternal health outcomes and eliminating preventable deaths. The recommendations above will help achieve this goal. The 2022 SC extension of Medicaid coverage provides continued insurance coverage for mothers beyond the standard 6-week Ob/Gyn visit. This is an opportunity to establish a primary care provider and address health care needs like obesity, hypertension, mental health conditions, and substance use disorder.

5

Recommendations from the SCMMMRC are strategies to improve maternal outcomes.

Access: Improve to obstetrical care should be improved in rural areas/counties. 11 out of the 31 rural counties do not have an OB provider.

Care Coordination: Providers should collaborate with behavioral health specialists when caring for pregnant/postpartum women with mental health/substance use disorders.

Clinical Assessment: All Obstetric and Emergency Department providers and staff and family practitioners should receive regular training and frequent updates on recognition and treatment of thrombotic embolism, cardiomyopathy, cardiovascular conditions, mental health conditions, hemorrhage, and substance use disorder in the setting of the obstetrical and post-partum patient.

Knowledge: Providers and facilities should provide education to pregnant and postpartum women, and their families about the urgent maternal warning signs and when to seek medical attention.

Policy and Procedure and Adherence: Providers and facilities should ensure that women have a scheduled post-partum follow up appointment within 13 weeks to assess for chronic and mental health conditions. Women should be strongly encouraged to attend their post-partum appointments.

Discrimination: SC Hospitals and Providers should mandate cultural competency training for providers and staff.

Policy and Procedure: All facilities are expected to have a DVT prevention protocol which includes DVT assessment and treatment in the pregnant and postpartum patient.

Referral: If a pregnant or postpartum patient does not have a primary care provider, a referral should be placed. Primary care providers can address chronic diseases such as obesity and hypertension that are associated with negative maternal health outcomes.

Coroner Recommendation: Autopsies should be ordered in compliance with the Ann Purdue Act of 2009-2010.

Citation:
1. Pregnancy Related Death: Data from Maternal Mortality Review Committees in 36 States, 2017-2019. Retrieved from <https://reviewofaction.org/tools/ssaoscccenter>
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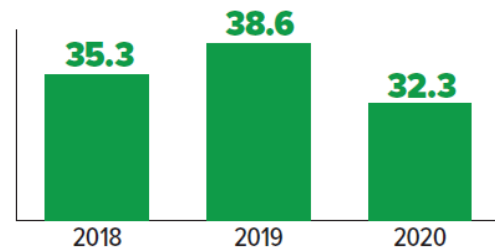
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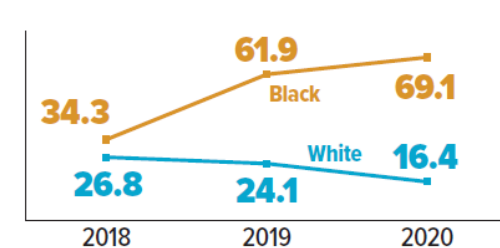
Pregnancy-Related Mortality Rate, by Year

Rate per 100,000 live births



Pregnancy-Related Mortality Rate, by Race

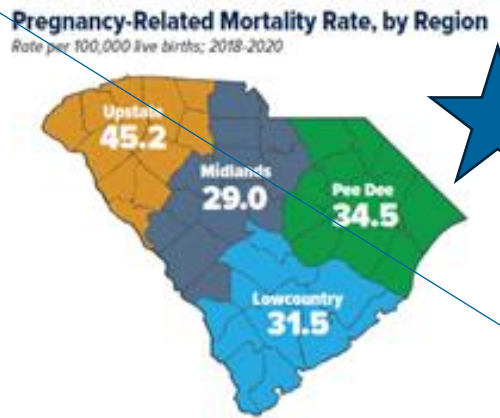
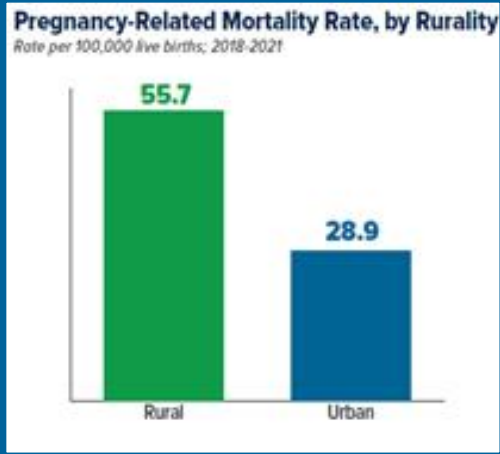
Rate per 100,000 live births



2020 Data Note

Cases Reviewed	79
Pregnancy-Related Deaths	18
Live Births	55,713
PRMR	$\left(\frac{18}{55,713} \right) \times 100,000$

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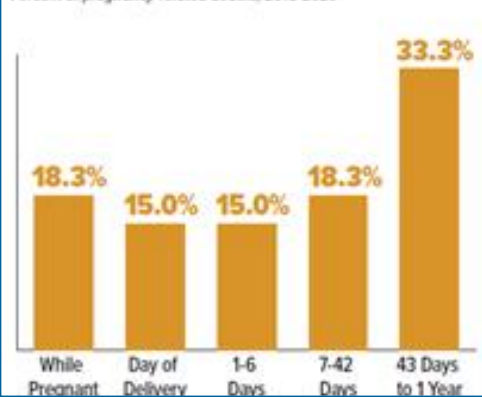
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- ▲ Cardiomyopathy, the leading cause of death in 2019, declined in 2020.
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The impact of rurality on pregnancy-related deaths have increased from 70% to 92% higher among rural counties.

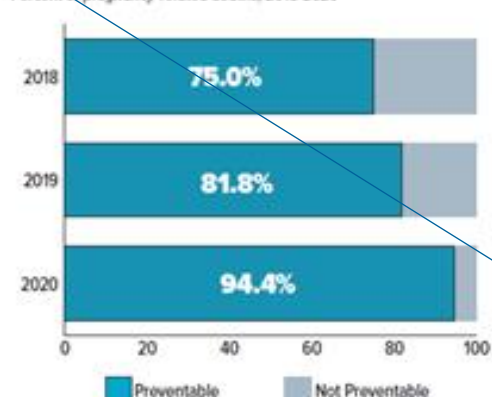
Timing of Pregnancy-Related Deaths

Percent of pregnancy-related deaths; 2018-2020



Preventability of Pregnancy-Related Deaths

Percent of pregnancy-related deaths; 2018-2020



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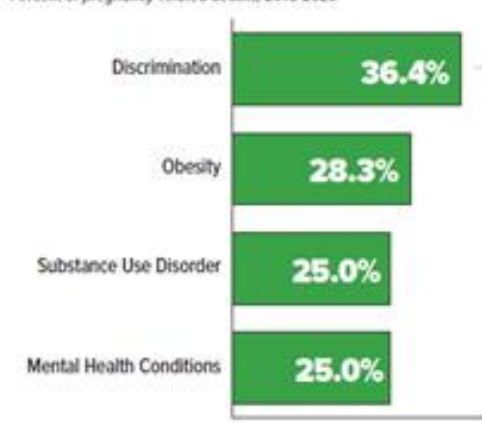
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The majority of pregnancy-related deaths occur during the post-partum period.

Circumstances of Pregnancy-Related Deaths

Percent of pregnancy-related deaths; 2018-2020

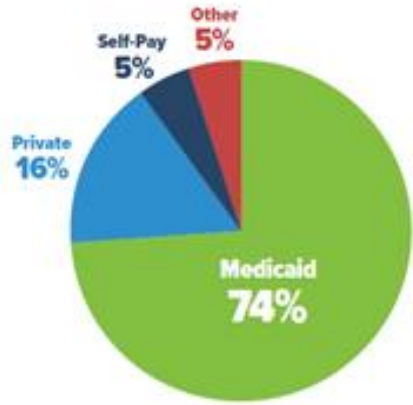


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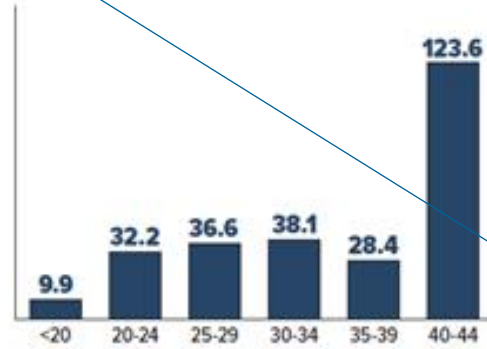
Pregnancy-Related Deaths, by Payor Source

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Deliveries paid for by Medicaid account for the majority of pregnancy-related deaths.

Summary

In 2020, South Carolina saw a **16.3% decrease** in the overall pregnancy related mortality ratio, however the gap in racial disparities widened with **Black women dying 4 times more than White women**. The SCMMRC is committed to improving maternal health outcomes and eliminating preventable deaths. The recommendations above will help achieve this goal. The 2022 SC extension of Medicaid coverage provides continued insurance coverage for mothers beyond the standard 6-week Ob/Gyn visit. This is an opportunity to establish a primary care provider and address health care needs like obesity, hypertension, mental health conditions, and substance use disorder.

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Citations:

1. Pregnancy Related Death: Data from Maternal Mortality Review Committees in 36 States, 2017-2019. Retrieved from <https://reviewtoaction.org/tools/resourcecenter>
2. Smedley et al, 2003 and Dr. Rachel Hardeman

New Items

- DHEC Region Map, PRMR
- Disaggregated timing of deaths
 - 2023 – 3 levels
 - 2024 – 5 levels
- Changes in pregnancy-related deaths over time

Highlights

- In 2020, South Carolina saw a 16.3% decrease in the overall pregnancy related mortality ratio
- Racial disparities widened with Black women dying 4 times more than White women
- Majority of pregnancy-related deaths occurred in the postpartum period

Next Steps

- Two workgroups were developed to focus on mental health and racial disparities.
- Apply for funding to increase sustainability.
- Develop actionable recommendations.

CONTACT US

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