LOUISIANA DEPARTMENT OF HEALTH

PARTNERS FOR FAMILY HEALTH LOUISIANA

Louisiana Pregnancy-Associated Mortality Review

2020-2022 Report

By:

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Acknowledgements:
This report was compiled and written by the Louisiana Department of Health, Office of Public Health, Bureau of Family Health staff, responsible for the Louisiana Pregnancy-Associated Mortality Review. Amy Zapata, MPH, is the director of the Bureau of Family Health, and Veronica Gillispie-Bell, MD, MAS, FACOG, is the medical director for the Louisiana Perinatal Quality Collaborative and Pregnancy-Associated Mortality Review. Key Office of Public Health contributors include Anjell DeGruy, BSN, RN, Pregnancy-Associated Mortality Review Coordinator; LeJeune Johnson, LCSW, Informant Interviewer; Imani Evans, MPH, Carli Harvey, MPH, and Wen Dai, MPH Maternal Morbidity and Mortality Epidemiologists; Lauren Dyer, MPH, Mortality and Morbidity Epidemiology Manager; and Tri Tran, MD, MPH, Senior Epidemiologist.

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We honor the women whose experiences we have attempted to understand and learn from, as well as their partners, children, families, and communities. We hope that the lessons learned from their deaths will help to create new pathways to prevention, health, and patient-centered care.

Pregnancy-Associated Mortality Review is an authorized activity of the Louisiana Commission on Perinatal Care and Prevention of Infant Mortality (Louisiana Perinatal Commission). This report is supported by the Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling $570,000 per year, with 100 percent funded by CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, CDC/HHS or the U.S. Government.

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Introduction

Introduction

The Louisiana Department of Health, Office of Public Health, Bureau of Family Health, is responsible for the Louisiana Pregnancy-Associated Mortality Review. Established in 2010 as a special initiative, and now a core public health monitoring system, the Louisiana Pregnancy-Associated Mortality Review serves as a source of vital information to understand and address maternal mortality in our state. Overall, the Office of Public Health works to promote the health of Louisiana families throughout their lifetime through programs and initiatives to improve the health of pregnant women, babies, children, teens, adults, and youth with special healthcare needs.

Our vision is for Louisiana to be a state where all people are valued to reach their full potential, from birth through the next generation. Our mission is to elevate the strengths and voices of individuals, families, and communities to catalyze transformational change to improve population health. The Louisiana Pregnancy-Associated Mortality Review and this report are some of the ways the Office of Public Health works to advance maternal and child health outcomes in the state.

Maternal Mortality in the United States

Maternal mortality continues to be a complex issue in the United States. Despite spending more on healthcare, the U.S. has the highest maternal mortality rate among high-income countries.[1,2] Most concerning are the significant racial disparities that exist. Too many women in the U.S. are losing their lives during a time that demands access to strong medical care and community support. These tragedies happen during pregnancy, childbirth, or within the first year postpartum – medically vulnerable stages – with many of those deaths being preventable with appropriate interventions. To effectively address and reduce maternal mortality, we must first understand why these deaths are happening. This requires a comprehensive approach, listening to the voices of affected families, analyzing health data, and identifying systemic gaps in care.

There are varying definitions of maternal mortality for surveillance purposes (see Appendix A for a comparison of systems of maternal mortality surveillance in the United States). Because of this, collecting, analyzing, and comparing maternal mortality data both nationally and locally has been challenging. Louisiana analyzes and reports on all pregnancy-associated deaths, which are defined by the U.S. Centers for Disease Control and Prevention (CDC) as a death that occurs during pregnancy or within one year of the end of pregnancy, regardless of the cause. This term encompasses pregnancy-related deaths; pregnancy-associated, but not related, deaths; and pregnancy-associated, but unable to determine relatedness, deaths.

[1] (Wager, McGough, Rakshit, & Cox, 2025)
[2] (Gunja, Gumas, Masitha, & Zephyrin, 2024)

Introduction

While surveillance using vital statistics can capture general trends, it is widely recognized that local maternal mortality review committees – multidisciplinary committees that convene at the state or local level to comprehensively review maternal deaths – are best positioned to comprehensively assess maternal deaths and identify what interventions will have the greatest impact on preventing future deaths. Maternal mortality review committees have access to records beyond vital statistics, such as medical records, including physician and nurses' notes, behavioral health records, autopsy and police reports, and informant interviews, allowing them to construct a robust picture of the circumstances surrounding each death and identify contributing factors that may not be included in traditional data sources. The CDC provides support to 46 states, including Louisiana, and six U.S. territories and freely associated states through the Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) program. This funding directly supports agencies and organizations that coordinate and manage maternal mortality review committees (MMRCs) to identify, review, and characterize maternal deaths, identify prevention opportunities,[3] and support a data system that provides common data language for the maternal mortality review committees.

Louisiana Pregnancy-Associated Mortality Review

Specific challenges in Louisiana contribute to the rate of pregnancy-associated deaths in our state. In 2018, the Louisiana Pregnancy-Associated Mortality Review initiated an enhanced multidisciplinary review process to be in full alignment with national best practices promoted by the CDC. The Louisiana Pregnancy-Associated Mortality Review Committee is essential in identifying trends in maternal mortality, as well as opportunities for prevention of future maternal deaths. The Louisiana Pregnancy-Associated Mortality Review Committee reviews all pregnancy-associated deaths of Louisiana residents, regardless of the cause of death. The case review process was enhanced by expanding the Committee to ensure representation from a variety of geographic regions and fields of expertise, including substance use and mental health. Today, the Committee consists of both clinical and nonclinical experts and prides itself on the varied perspectives of the members. To ensure that the Committee's work is informed by individuals who know and understand the context of Louisiana, the Office of Public Health continues recruitment efforts in disproportionately impacted communities statewide (see Appendix B for a full list of committee members).

The Louisiana Pregnancy-Associated Mortality Review is an authorized activity of the Louisiana Commission on Perinatal Care and Prevention of Infant Mortality (Louisiana Perinatal Commission). Its mission is to protect and promote the health of women and families in Louisiana through surveillance, multidisciplinary case review, timely reports, and provision of actionable recommendations. Through epidemiologic surveillance and multidisciplinary case review, the Louisiana Pregnancy-Associated Mortality Review works to quantify and understand pregnancy-associated deaths in order to create actionable, comprehensive recommendations to prevent future deaths. The work of the Louisiana Pregnancy-Associated Mortality Review supports the prevention of pregnancy-associated deaths, as well as transformation and innovation in individuals, providers, birthing facilities, health systems, and communities.

For information on the Louisiana Pregnancy-Associated Mortality Review process, visit PartnersForFamilyHealth.org/MaternalMortality.

[3] (Enhancing Reviews and Surveillance to Eliminate Maternal Mortality, 2024)

Key Definitions

The following terms are used throughout the report. All definitions come from the CDC, in collaboration with key partners in maternal mortality prevention. The use of terminology and language is reflective of current research and advocacy work to reduce overall maternal mortality and morbidity, as well as racial and ethnic health disparities in pregnancy and birth outcomes. (See Appendix C, Maternal Mortality Review Information Application Committee Decisions Form, for more information.)

<table>
<tr><th colspan="3">Pregnancy-Associated Deaths</th></tr>
<tr><td colspan="3">A death that occurs during or within one year of pregnancy, regardless of the cause.

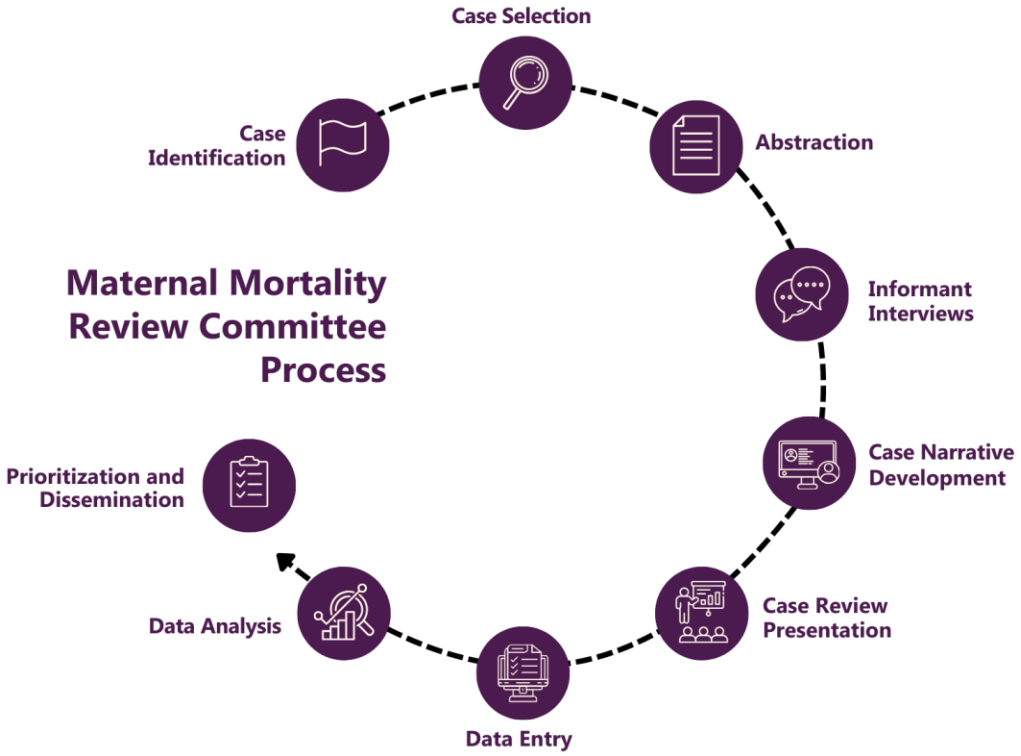
This is an umbrella term that includes pregnancy-related deaths; pregnancy-associated, but not related, deaths; and pregnancy-associated, but unable to determine relatedness, deaths, as defined below.</td></tr>
<tr><th>Pregnancy-Related</th><th>Pregnancy-Associated, but Not Related</th><th>Pregnancy-Associated, but Unable to Determine Relatedness</th></tr>
<tr><td>A death during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by the pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.</td><td>A death during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy.</td><td>A pregnancy-associated death where the cause of death is unable to be determined as “pregnancy-related” or “pregnancy-associated, but not related.”</td></tr>
<tr><td>Example Cause of Death^</td><td>Example Cause of Death^</td><td>Example Cause of Death^</td></tr>
<tr><td>Eclampsia</td><td>Motor vehicle collision (unintentional)</td><td>Suicide</td></tr>
</table>

Preventability: A death is considered preventable if the Louisiana Pregnancy-Associated Mortality Review Committee determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system, and/or community factors.

^ Further case-specific details, beyond the cause of death, are necessary to determine how the pregnancy-associated death will be classified within the three subcategories. The example causes provided here are not exclusive to the categories with which they are paired above.

Louisiana's Pregnancy-Associated Mortality Review Process

Committee Review Process



Case Identification, Confirmation, and Selection

In Louisiana, maternal deaths are identified through a combination of data linkages between death and birth certificates, the pregnancy checkbox on death certificates, and obstetric code (O-code) causes of death. Due to data limitations, the use of vital records death data and data linkages alone is not enough to identify true pregnancy-associated deaths. Potential pregnancy-associated deaths identified using these methods require validation by the Bureau of Family Health's maternal and child health coordinators using medical records and/or coroner reports. This validation process reduces or eliminates "false positive" identifications of pregnancy-associated deaths that could result from the pregnancy box being checked in error, errors in ICD-10 codes, or when a birth and death record are incorrectly identified as a match. A death is considered "confirmed," and is selected for review, if the maternal and child health coordinator confirms a pregnancy within one year of death based on the available records.

Case Abstraction, Informant Interviews, and Case Narrative Development

Once a case is confirmed as a pregnancy-associated death, the regional maternal and child health coordinators abstract data from various sources including, but not limited to, records from prenatal/postpartum care, hospitals, behavioral health providers, coroners, emergency medical services, and law enforcement agencies. Additionally, the informant interviewer contacts potential participants, including loved ones and close friends of the decedent, to arrange a conversation aimed at collecting valuable insights into the decedent's life that may not be fully captured from medical records alone. Using information obtained during the abstraction process and informant interviews, the maternal and child health coordinators develop a de-identified case narrative that details the decedent's life from preconception through death, including both medical and social information.

Committee Review Process

Committee Review

During case review meetings, the Louisiana Pregnancy-Associated Mortality Review Committee conducts an in-depth review of each case to answer the following questions:

1. **Was the death pregnancy-related?**
2. **What was the underlying cause of death?**
3. **Was the death preventable?**
4. **What factors contributed to the death?**
5. **If there was at least some chance that the death could have been prevented, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?**

The Louisiana Pregnancy-Associated Mortality Review Committee uses the answers to these questions to create specific, feasible recommendations for prevention. Recommendations are made for each level of care, including but not limited to, healthcare providers, healthcare systems, hospitals and birthing facilities, insurance payors, government and public health agencies, policymakers, and local social and community organizations.

Throughout case discussions, objectivity is maintained by asking any committee member with personal knowledge about a particular case to recuse himself or herself. This is to ensure no specific details or anecdotal information about the case are shared beyond what is presented in the case narrative.

Amplifying the Voices of Family and Loved Ones

The Use of Informant Interviews in the Mortality Review Process

Research shows that lived experience adds critical value to the mortality review process, and informant interviews serve as a form of qualitative data collection that captures the voices of family members and loved ones—those who knew the decedent best. A 2025 study found that the inclusion of family interviews led to a 2.6-fold increase in the number of stressors identified, particularly related to medical service gaps and socioeconomic barriers, and a 40% increase in the number of actionable recommendations.[4] By serving as a proxy for the decedent's voice, interviews with loved ones aim to deepen understanding of the case and "complete the picture" by shedding light on the emotional, interpersonal, and structural realities the decedent faced in the time leading to their death—realities that are often missing from clinical records. Incorporating these narratives enhances the quality of recommendations, particularly those tied to provider communication and bereavement support. They also enrich committee deliberations and deepen members' understanding of the lived experiences behind the data. This evidence underscores the essential role of community voices in identifying root causes and driving people-centered solutions in maternal mortality review. Feedback from committee members about the use of informant interviews showed that this tool was transformative in reviewing these cases.

"I feel that the inclusion of informant interviews help to humanize our case review process and through that lens we are able to look beyond numbers and statistics. With this new approach (informant interviews), we are able to be more empathetic and compassionate in making systemic recommendations/changes to tackle the issues that contribute to maternal death or pregnancy-related deaths."

Family input should be the gold standard as we work toward improving equity and areas of prevention."

I feel that with the incorporation of informant interviews we are able to make more informed and in-depth recommendations that speak to addressing social determinants, preventability and discrimination and bias."

[4] (Kothari, et al., 2025)

Amplifying the Voices of Family and Loved Ones

Informant Interview Implementation

In 2024, the Louisiana Pregnancy-Associated Mortality Review initiated the use of informant interviews as part of its 2022 case review process. The groundwork to establish a robust infrastructure took five months, during which time outreach letters, consent forms, case identification protocols, workflow procedures, and interviewer training were finalized. Informant interviews began taking place in May 2024 as part of the review process for the remaining 2022 cases.

Current guidance for the implementation of informant interviews in this context suggests that cases be prioritized to reflect the nuances of the setting.[5] Based on this guidance, motor vehicle accidents are generally excluded from informant interviews, unless circumstances suggested additional information would be beneficial, because they have historically been classified as pregnancy-associated, but not related. As a result, 28 pregnancy-associated deaths in Louisiana in 2022 were deemed eligible for informant interviews. Of the 28 eligible cases, 21 (75%) had at least one interview completed, with a total of 24 informant interviews for committee review. These interviews provided valuable supplemental information for various causes of death, including nine medical causes, seven overdoses, two suicides, two homicides, and one motor vehicle collision.

Using records available for eligible cases, the informant interviewer identified potential participants, including the decedent's family members or loved ones, to schedule a discussion focused on gathering important perspectives on the decedent's life beyond what medical records reveal. If a family member or loved one agreed to participate, the interviewer had a detailed conversation with them, exploring the decedent's social and behavioral health history and discussing social determinants that may have impacted their most recent pregnancy. These conversations offered valuable context about the circumstances leading to the decedent's death, providing a more complete picture of their lived experience. Informant interviews were conducted with a diverse group of family members, including 15 mothers, four sisters, two daughters, two fathers, and one husband.

The integration of informant interviews, as qualitative data, in the case review process provided a powerful tool for incorporating more context and collaboration. Consistently, throughout the process, family members who participated expressed deep appreciation for the opportunity to share their loved one's story. The stories uncovered important details like chronic stressors, gaps in care, stigma, and systemic barriers not included in the clinical records. The insights shared by families were critical to better understanding how preventability, discrimination, bias, and social determinants of health impacted each death. The insights also helped ensure that the committee's recommendations were not solely clinical but reflected real-world barriers and opportunities for systemic change.

One mother expressed that she was "happy to share my daughter's story if it means being able to provide support for other mothers struggling with substance use."

One mother expressed gratitude that the informant interviewer reached out to her and shared that it was the first time anyone had reached out to her about her daughter's death since it occurred.

[5] (CDC and the CDC Foundation, 2020)

Implementing the Utah Tool

In 2020 and 2021, drug overdose deaths, particularly deaths involving synthetic opioids like fentanyl, reached record highs in the United States.[6] Among pregnant and postpartum women, drug overdose mortality increased approximately 81% from 2017 to 2020. Increases in drug overdose mortality were most pronounced in 2020. From the Louisiana Pregnancy-Associated Mortality Review 2017 to 2019 Report, accidental drug overdoses were the leading cause of pregnancy-associated deaths in Louisiana, and this continues to be the trend across the state for the deaths that occurred from 2020 to 2022.[7]

Across the country, maternal mortality review committees have found it difficult to categorize accidental overdoses and suicides as pregnancy-related or pregnancy-associated, but not related, when posed with the following questions: "Was the death pregnancy-related? If this person was not pregnant, would they have died?" To address this question, in 2021, the Louisiana Pregnancy-Associated Mortality Review began using the Utah Tool.

The Utah Tool, developed by the Utah Maternal Mortality Review Committee, is a structured decision-making aid designed to assist maternal mortality review committees in determining whether or not suicide or overdose deaths are pregnancy-related. The tool incorporates a series of guiding questions and evidence-based considerations – such as the timing of pregnancy, documented perinatal mental health conditions, changes in substance use, and relevant psychosocial stressors – to support a more consistent and clear classification process. Because of this, there has been a decrease in the number of cases that were classified as pregnancy-associated, but unable to determine relatedness. (See Appendix D for the Utah Tool.)

[6] (Bruzelius & Martins, 2022)
[7] (Gillispie-Bell, Evans, & Hyde, Louisiana Pregnancy-Associated Mortality Review 2017-2019 Report, 2022)

There is a growing recognition that discrimination contributes to adverse maternal health outcomes. To acknowledge these disparities and the importance of this issue, the CDC added a discrimination checkbox, which includes discrimination and interpersonal and systemic barriers to the Maternal Mortality Review Committee Decisions Form (see Appendix C) in 2020. The intent was to design a consistent approach to measuring and documenting discrimination as a contributing factor to maternal deaths.

The Louisiana Bias or Racism and Social Determinants of Health (LABoRS Tool)

The disparity in maternal mortality is a complex issue due to many factors including, but not limited to, systemic barriers and inequities impacting access and quality of care (see Appendix E for definitions and examples). For Maternal Mortality Review Committees, it can be difficult to determine racism, bias, or discrimination as a contributing factor in a pregnancy-associated death with the information available in medical records. To review each death holistically and determine all contributing factors, the leadership of the Louisiana Pregnancy-Associated Mortality Review Committee developed a tool.

The Louisiana Bias or Racism and Social Determinants of Health (LABoRS) tool was developed to help the Louisiana Pregnancy-Associated Mortality Review Committee answer the question, “Did discrimination contribute to the death?” The tool provides a standardized process to guide targeted discussions to evaluate each case and build consensus around whether bias, discrimination, racism, and/or social determinants of health contributed to the death. The goal of the tool is to support the broader identification of contributing factors and to develop actionable recommendations that address factors related to social determinants of health, including those related to bias, discrimination, and/or racism.

The LABoRS tool is comprised of four sections: demographics, social determinants of health and social/emotional stress, community vital signs dashboard, and the case findings checklist. The maternal and child health coordinators are trained to identify information on social determinants of health and evidence of potential bias, discrimination, and/or racism in the records they review. This tool does not prove if bias, discrimination, racism, and/or social determinants of health were or were not contributing factors. Rather, it assists abstractors and committee members in identifying potential evidence of these factors in order for the Louisiana Pregnancy-Associated Mortality Review Committee to make informed recommendations around these issues if they are present. (See Appendix E for the LABoRS Tool.)

Results of the Review

Identified and Confirmed Deaths

From 2020-2022, 329 potential pregnancy-associated deaths were identified using Vital Records data alone. The Office of Public Health, Bureau of Family Health regional maternal and child health coordinators verified that 222 of the 329 identified deaths had a documented pregnancy at the time of or within one year of death. The remaining 107 deaths were classified as false cases and not considered eligible for review. The committee used the CDC's Maternal Mortality Review Committee Decisions Form to classify each case (see Appendix C).

329 Identified Deaths

Identified deaths met the following criteria:

- Louisiana resident at the time of death, even if death occurred out of state
- Between the ages of 10 and 55 years at the time of death
- Identified as having been pregnant at the time of death or within one year of death by linkage of the death certificate to a corresponding live birth or fetal death certificate or inpatient hospital discharge record, indication of pregnancy status on the death certificate through the pregnancy checkbox, or cause of death had an ICD-10 code of A34, O00-O99 (causes related to pregnancy, childbirth, or complications during the postpartum period)

Cases Reviewed by Regional Maternal Child Health Coordinators

107 False Cases

- Maternal and child health coordinators found evidence that the decedent was not pregnant at the time of death or within the year prior to death, through medical records, coroner reports, obituaries, and/or media, or was not a Louisiana resident at the time of death

Cases **did not move forward** for abstraction and review

222 Confirmed Pregnancy-Associated Deaths

- Maternal and child health coordinators found documentation of a pregnancy at the time of death or within one year of death in medical records, coroner reports, obituaries, and/or media

Cases **moved forward** for abstraction and review

Summary of Key Findings

This is a summary of the key findings of the case reviews by the Louisiana Pregnancy-Associated Mortality Review Committee for pregnancy-associated deaths that occurred between 2020 and 2022. Please refer to the key definitions on page 8 to understand the difference between the types of pregnancy-associated deaths.

1. **The Louisiana Pregnancy-Associated Mortality Review Committee reviewed 222 confirmed pregnancy-associated deaths of Louisiana residents that occurred between 2020 and 2022.**
    - 51 deaths were determined to be pregnancy-related. The top causes of death in this category were COVID-19, cardiomyopathy, and cardiovascular conditions.
    - 153 deaths were determined to be pregnancy-associated, but not related. The top causes of death in this category were drug overdose, motor vehicle collision (MVC), and homicide.
    - 18 deaths were determined to be pregnancy-associated, but unable to determine relatedness. The top cause of death in this category was drug overdose and unknown cause of death.
2. **The overall ratio of pregnancy-associated deaths was 129.8 per 100,000 births.**
    - The ratio of pregnancy-related deaths was 29.8 per 100,000 births.
    - The ratio of pregnancy-associated, but not related, deaths was 89.5 per 100,000 births.
    - The ratio of pregnancy-associated, but unable to determine relatedness, deaths was 10.5 per 100,000 live births.*
3. **Louisiana Department of Health administrative regions 1, 2, and 7 had the highest number of pregnancy-associated deaths. (See Appendix F for the Louisiana regional map)**
4. **For pregnancy-associated deaths, Black women in Louisiana were more than twice as likely (2.2 times) to die compared to white women.**
    - This disparity is more prominent in pregnancy-related deaths. Most (71%) pregnancy-related deaths in Louisiana were among Black women.
    - In pregnancy-associated, but not related, deaths, Black women in Louisiana were almost twice as likely (1.7 times) to die as white women.
5. **Seventy-seven percent of women who experienced a pregnancy-associated death had health insurance through Medicaid. Women with a high school diploma or less accounted for 69% of all pregnancy-associated deaths.**
6. **Most (77%) pregnancy-associated deaths occurred after delivery up to one year after pregnancy.**
    - Eighty-two percent of pregnancy-related deaths occurred after delivery up to one year after pregnancy.
    - Seventy-six percent of pregnancy-associated, but not related, deaths occurred after delivery up to one year after pregnancy.
7. **Most (84%) pregnancy-associated deaths were determined to be preventable.**
    - Eighty-eight percent of pregnancy-related deaths were determined to be preventable.
    - Eighty-five percent of pregnancy-associated, but not related deaths were determined to be preventable.
    - Sixty-one percent of pregnancy-associated, but unable to determine relatedness, deaths were determined to be preventable.
8. **Obesity was determined to be a contributing factor in 41% of pregnancy-related deaths, and substance use disorder was determined to be a contributing factor in 40% of pregnancy-associated, but not related, deaths.**

Note on Interpreting Data
Ratios and percentages based on counts fewer than 20 are considered unstable and should be interpreted with caution, as these numbers, percentages, or ratios may change in the future with the addition or loss of a small number of cases. Unstable rates, ratios, and percentages have been noted with an asterisk (*).

Snapshot of Pregnancy-Associated Deaths

From 2020-2022, there were 222 confirmed pregnancy-associated deaths. This represents a pregnancy-associated mortality ratio of 129.8 deaths per 100,000 live births.

Breakdown of Pregnancy-Relatedness

Of the 222 pregnancy-associated deaths reviewed, the Louisiana Pregnancy-Associated Mortality Review Committee determined:

- Fifty-one (23%) deaths were pregnancy-related.
- One hundred and fifty-three (69%) deaths were pregnancy-associated, but not related.
- Eighteen (8%) deaths were pregnancy-associated, but unable to determine relatedness.

Breakdown of Pregnancy-Associated Deaths

Pregnancy-associated, but not related is a death during pregnancy or within one year of the end of pregnancy from a cause that is NOT related to pregnancy.

Pregnancy-related is a death during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by the pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

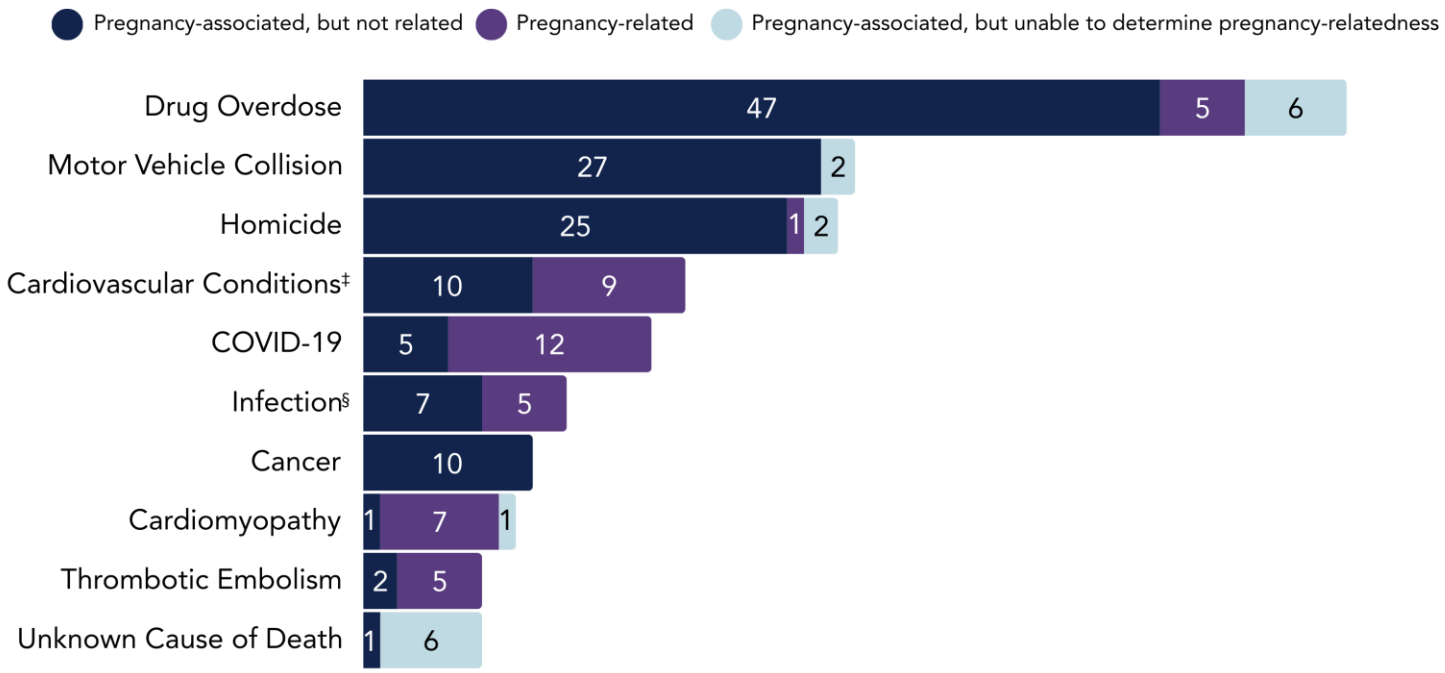
Pregnancy-associated, but unable to determine pregnancy-relatedness is a pregnancy-associated death where the cause of death is unable to be determined as "pregnancy related" or "pregnancy associated, but not related."

Key Points

- Nearly one in four (23%) deaths were determined to be pregnancy-related.
- The majority (69%) of deaths were determined to be pregnancy-associated, but not related.

Causes of Pregnancy-Associated Deaths

Pregnancy-Associated Deaths by Relatedness and Cause of Death as Determined by the Committee, 2020-2022



‡Cardiovascular Conditions includes PMSS Codes 90.1-90.9
§ Infection includes PMSS Codes 20.1-20.7 and 20.9-20.11
See Appendix C for a list of specific causes of death included.

Additional Causes of Deaths

Pregnancy-associated, but not related: Cerebrovascular Accident not Secondary to Hypertensive Disorders of Pregnancy (3), Diabetes Mellitus (3), Suicide (2), Drowning (2), Gastrointestinal Disorders (2), Carbon Monoxide Poisoning (2), Collagen Vascular Disease (1), Asthma (1), Asphyxia (1), Seizure Disorder (1)

Pregnancy-related: Suicide (3), Cerebrovascular Accident not Secondary to Hypertensive Disorders of Pregnancy (1), Collagen Vascular Disease (1), Hemorrhage (1), Amniotic Fluid Embolism (1)

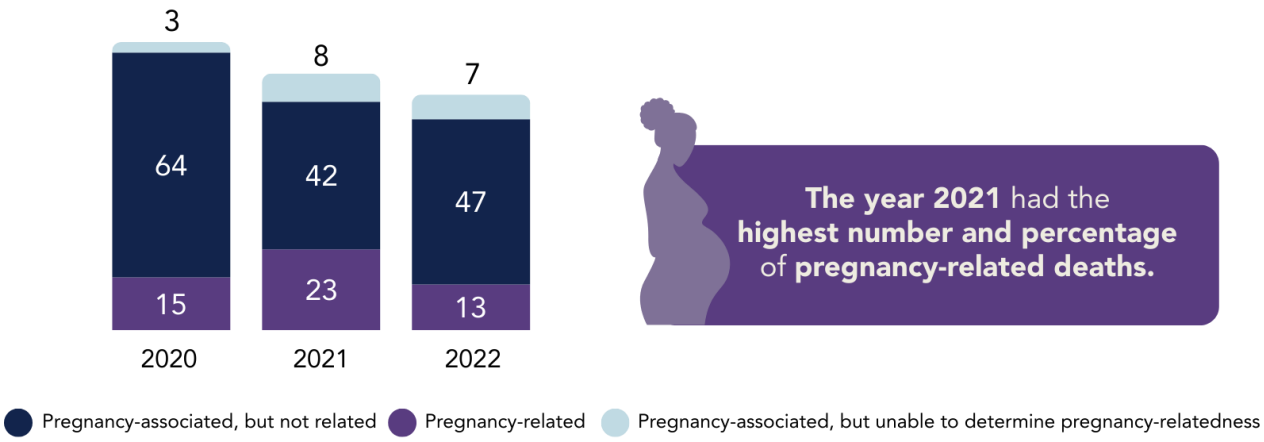
Pregnancy-associated, but unable to determine pregnancy-relatedness: Drowning (1)

Key Points

- The leading causes of pregnancy-related deaths were COVID-19, cardiovascular conditions, and cardiomyopathy.
- The leading causes of pregnancy-associated, but not related, deaths were drug overdose, motor vehicle collisions, homicide, and cardiovascular conditions.
- The leading causes of pregnancy-associated, but unable to determine relatedness, deaths were drug overdose and unknown causes.

Trends in Pregnancy-Associated Deaths

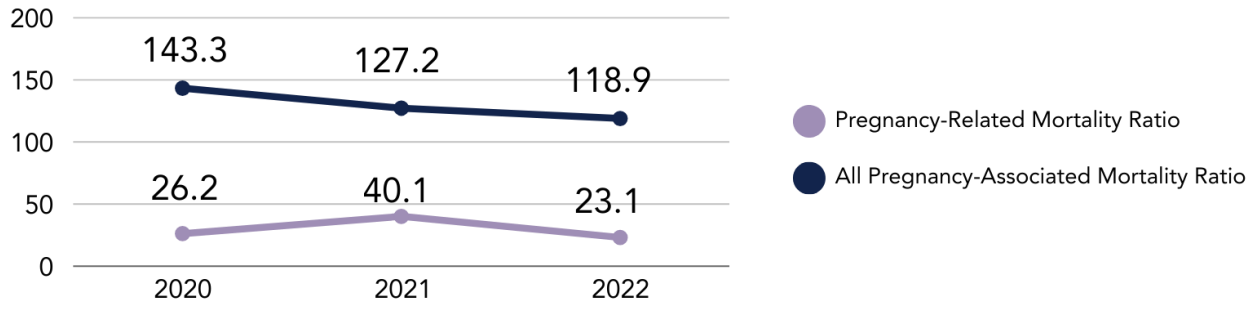
Pregnancy-Relatedness by Year



The year 2021 had the **highest number and percentage** of **pregnancy-related deaths.**

Pregnancy-Associated Mortality Ratio Over Time

Since 2020, Louisiana's overall pregnancy-associated mortality ratio has decreased by 17%.



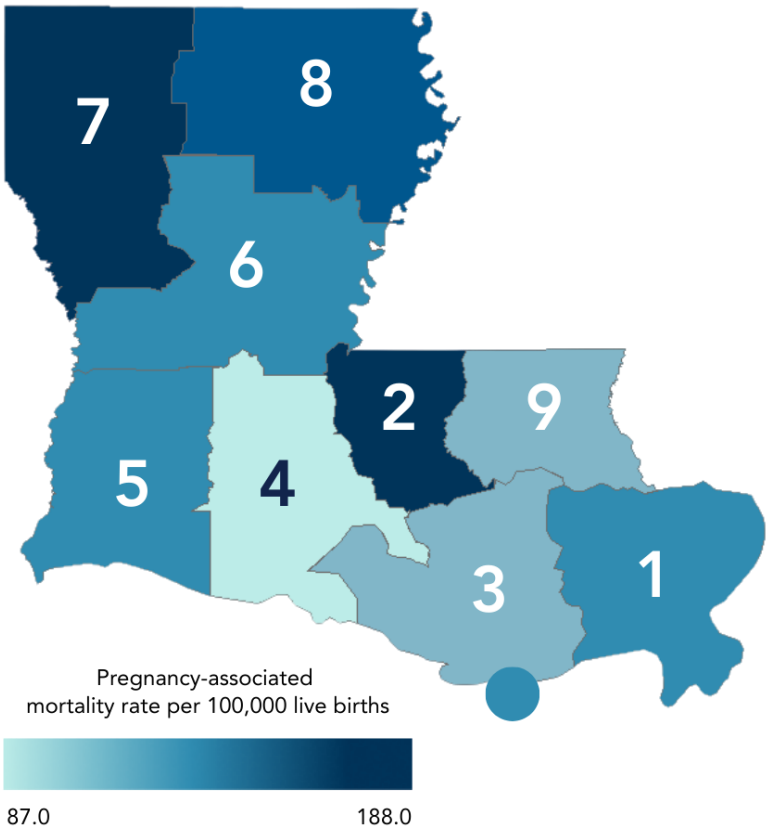
From 2020 to 2021, the pregnancy-related mortality **increased** by
53.1%
then, from 2021 to 2022, it **decreased** by
42.4%

Key Points

- The year 2021 had the highest number and percentage of pregnancy-related deaths. This is attributed to the pregnancy-related deaths related to COVID-19.
- From 2020-2022, Louisiana's pregnancy-associated mortality ratio was 129.8 per 100,000 live births, the pregnancy-related mortality ratio was 29.8 per 100,000 live births, and the pregnancy-associated, but not related mortality ratio was 89.5 per 100,000 live births.

Regional Data

Pregnancy-Associated Mortality by Region of Residence



Region	Number of Deaths	Pregnancy-associated mortality ratio per 100,000 live births
1	37	118.9
2	48	187.9
3	13	94.6*
4	21	87.4
5	13	112.5*
6	15	130.9*
7	35	184.8
8	19	155*
9	21	94.1

Ratios and percentages based on counts fewer than 20 are considered unstable and should be interpreted with caution, as these numbers, percentages, or ratios may change in the future with the addition or loss of a small number of cases. Unstable rates, ratios, and percentages have been noted with an asterisk (*).

Region	1	2	3	4	5	6	7	8	9
Area	New Orleans	Baton Rouge	Houma	Lafayette	Lake Charles	Alexandria	Shreveport	Monroe	Hammond/ Slidell

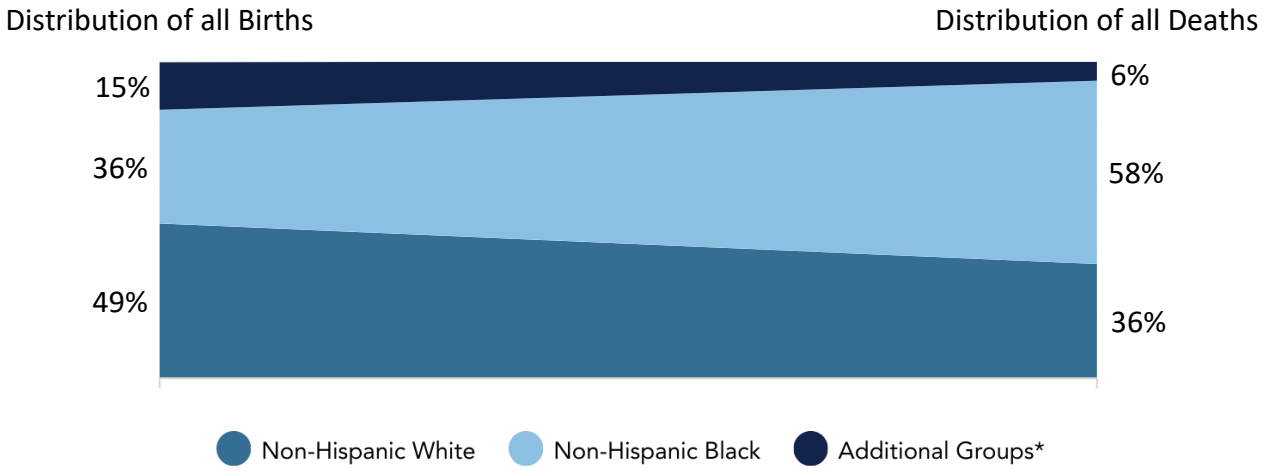
Key Points

- The pregnancy-associated mortality ratio varied across regions of residence, as shown by the map.
- Regions 4, 9, and 3 had the lowest pregnancy-associated mortality ratios, while Regions 7, 2, and 8 had the highest ratios. (See Appendix F for the Louisiana regional map)

Racial Disparities in Pregnancy-Associated Deaths

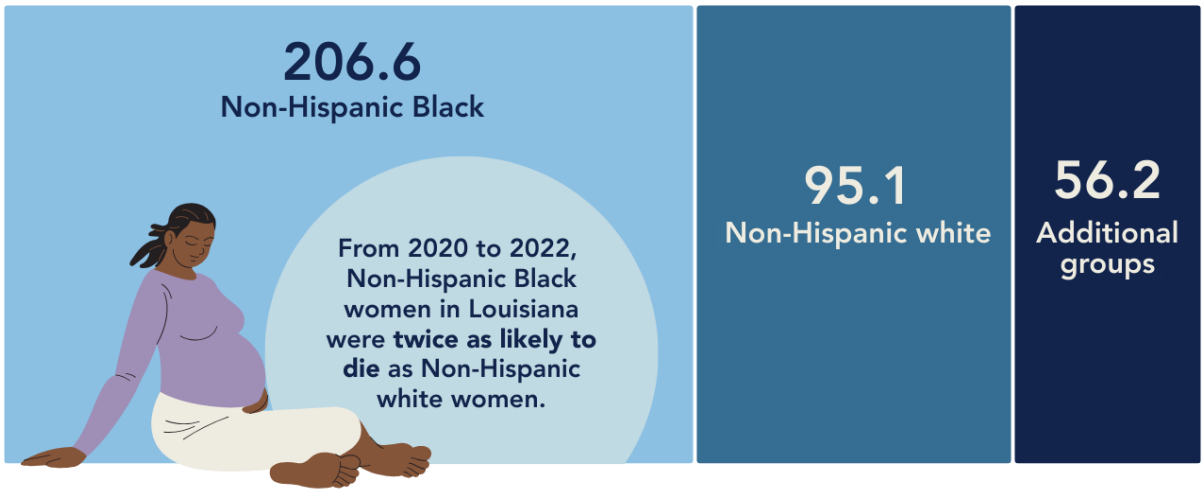
From 2020 to 2022, 36% of all births in Louisiana were to non-Hispanic Black women. However, non-Hispanic Black women accounted for 58% of all pregnancy-associated deaths during the same three-year period.

Distribution of Births and Pregnancy-Associated Deaths by Race



*The Additional Groups race category is made of groups with counts too small to protect patient privacy. This category could include women in Hispanic, Native American or Alaskan Native, Asian or Pacific Islander, and multi-race categories.

Pregnancy-Associated Mortality Ratio by Race

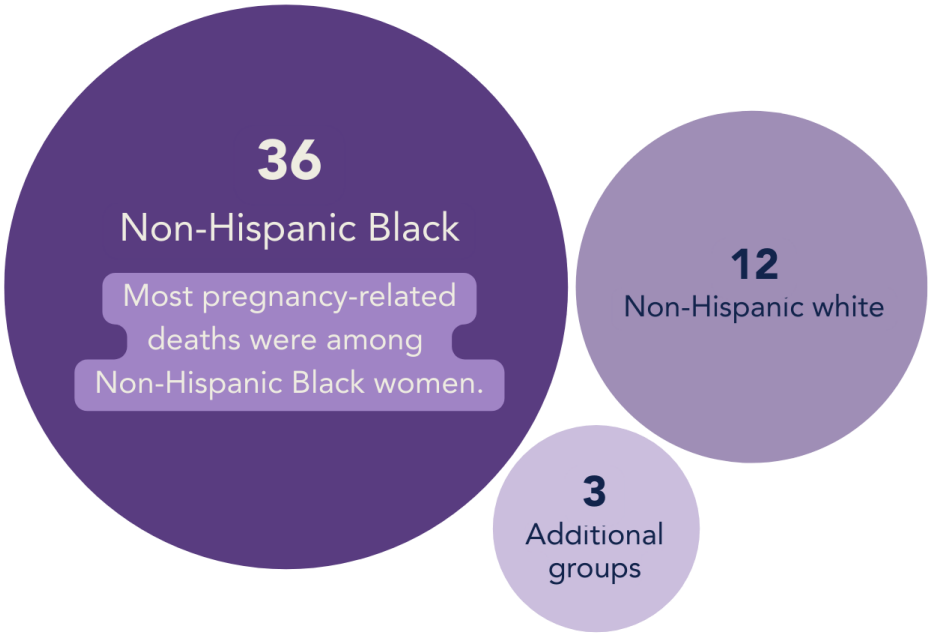


Key Points

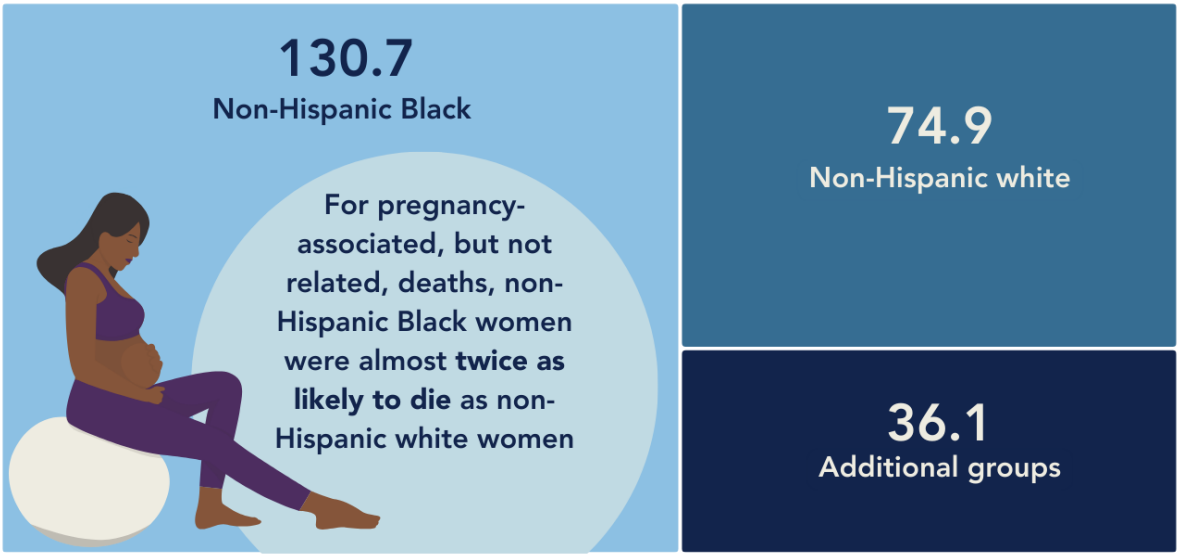
- Non-Hispanic Black women represent a disproportionate number of pregnancy-associated deaths in Louisiana.
- Fifty-eight percent of pregnancy-associated deaths from 2020 to 2022 were to non-Hispanic Black women.
- The pregnancy-associated mortality ratio for non-Hispanic Black women was 206.6 per 100,000 live births, compared to a ratio of 95.1 per 100,000 live births for non-Hispanic white women.

Racial Disparities in Pregnancy-Related and Pregnancy-Associated, but Not Related, Deaths

Number of Pregnancy-Related Deaths by Race



Pregnancy-Associated, but Not Related, Mortality Ratio by Race

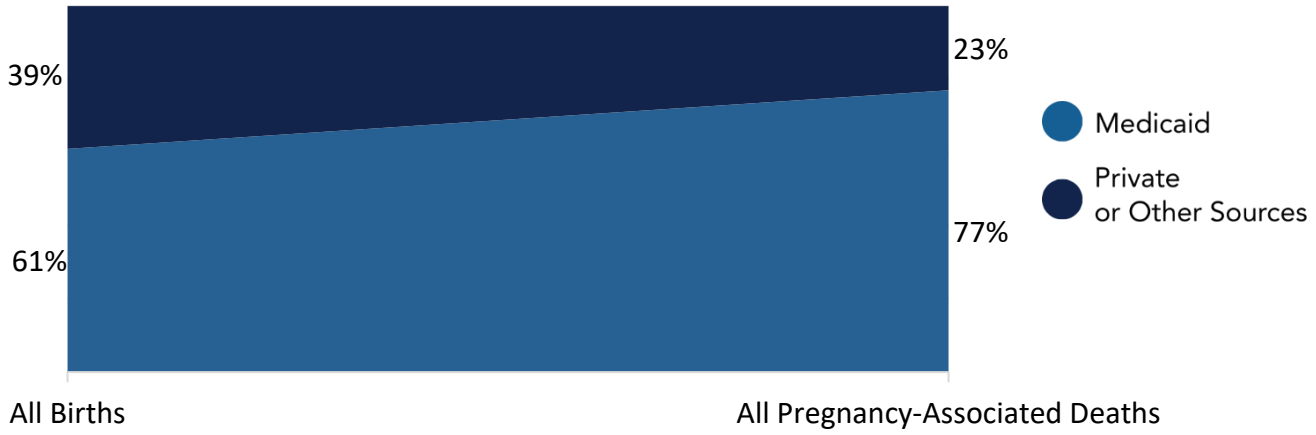


Key Points

- While racial disparities exist among all pregnancy-associated deaths, these disparities are more prominent in pregnancy-related deaths.
- Thirty-six out of 51 (71%) pregnancy-related deaths were among non-Hispanic Black women.
- For pregnancy-associated, but not related, deaths, non-Hispanic Black women died at almost twice (1.7 times) the rate of non-Hispanic white women.

Socioeconomic Disparities

Births and Pregnancy-Associated Deaths by Insurance Type



Although Medicaid covered 61% of the births in Louisiana from 2020-2022, **more than three in four (77%) women who experienced a pregnancy-associated death were insured through Medicaid.**

Births and Pregnancy-Associated Deaths by Education Level

While only **47%** of Louisiana women who gave birth from 2020 to 2022 had a high school diploma/GED or less, women with a high school diploma/GED or less accounted for **69%** of all pregnancy-associated deaths.

Key Points

- There are disparities in pregnancy-associated deaths based on insurance coverage. This highlights that Medicaid can play a critical role and has the opportunity to strengthen and increase services covered to ensure high quality healthcare before, during, and after pregnancy.
- There are disparities in pregnancy-associated deaths based on education level. This highlights the importance of investing in education and strengthening pathways to high school completion.

Understanding Pregnancy-Related Deaths

Causes

The top underlying causes of pregnancy-related deaths were:

- COVID-19: 12 Deaths
- Cardiovascular conditions: 9 deaths
- Cardiomyopathy: 7 deaths

Preventability

88% of pregnancy-related deaths were preventable

Timing of Pregnancy-Related Deaths

18%
During pregnancy

Deaths occurring due to pregnancy were most frequently due to cardiovascular conditions

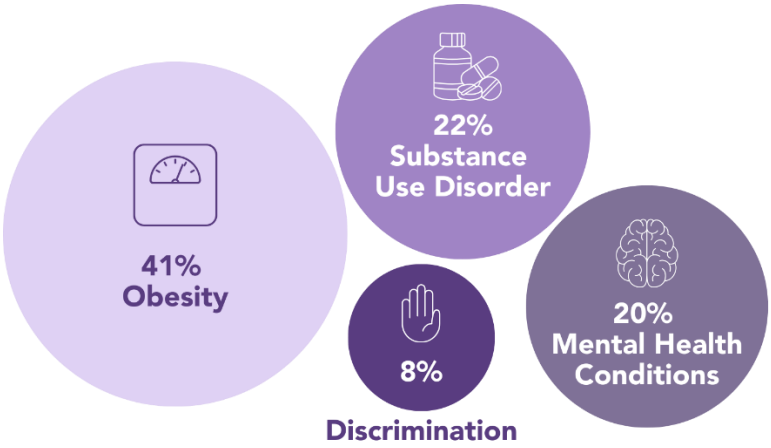
51%
0 to 42 days after pregnancy

Deaths occurring within 42 days after pregnancy were most frequently due to COVID-19

31%
43 days to 1 year after pregnancy

Deaths occurring 43 days to 1 year after pregnancy were most frequently due to drug overdose and cardiomyopathy

Factors Contributing to Pregnancy-Related Deaths



Key Points

- The **leading cause** of pregnancy-related deaths was **COVID-19**.
- The **majority** of pregnancy-related deaths **were determined to be preventable**.
- There were 51 pregnancy-related deaths and about **half (51%) occurred within 42 days of pregnancy**.
- **Obesity** contributed to **over one-third** of the pregnancy-related deaths.

Note: For each death, the Louisiana Pregnancy-Associated Mortality Review Committee determined whether obesity, mental health disorders, substance use disorder, or discrimination,[†] as defined by the Maternal Mortality Review Information Application Committee Decisions Form (see Appendix C) contributed to each death.

[†] The Louisiana Pregnancy-Associated Mortality Review Committee uses the Louisiana Bias or Racism and Social Determinants of Health Tool (LABoRS) (see Appendix E) to guide discussions about racism, bias, and discrimination as contributors to each death. In some cases, discrimination was present, but was not identified as a direct contributor to the death.

Understanding Pregnancy-Associated, but Not Related, Deaths

Causes

The top underlying causes of pregnancy-associated, but not related, deaths were:

- **Drug Overdose** 47 Deaths
- **Motor Vehicle Collisions** 27 deaths
- **Homicide** 25 deaths

Preventability

85% of pregnancy-associated, but not related, deaths were preventable

Timing of Pregnancy-Associated, but Not Related, Deaths

24%
During pregnancy

Deaths occurring during pregnancy were most frequently due to drug overdose, homicide, and motor vehicle collision

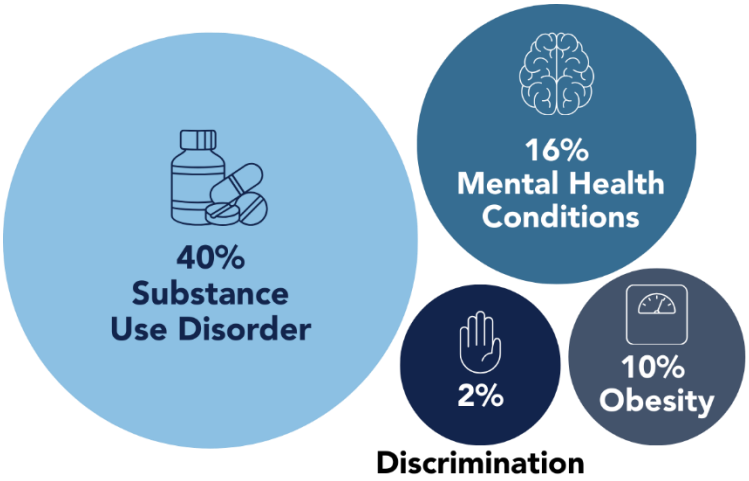
9%
0 to 42 days after pregnancy

Deaths occurring within 42 days after pregnancy were most frequently due to motor vehicle collision and cardiovascular conditions

67%
43 days to 1 year after pregnancy

Deaths occurring 43 days to 1 year after pregnancy were most frequently due to drug overdose, homicide, and motor vehicle collision

Factors Pregnancy-Associated, but Not Related, Deaths



Note: For each death, the Louisiana Pregnancy-Associated Mortality Review Committee determined whether obesity, mental health disorders, substance use disorder, or discrimination,[†] as defined by the Maternal Mortality Review Information Application Committee Decisions Form (see Appendix C) contributed to each death.

Key Points

- The **leading cause** of pregnancy-associated, but not related, deaths was **drug overdose**.
- The **majority** of pregnancy-associated, but not related, deaths were **determined to be preventable**.
- There were 153 pregnancy-associated, but not related, deaths, and **two-thirds (67%) occurred 43 days to one year after pregnancy**.
- **Substance use disorder** contributed to **over one-third** of the pregnancy-associated, but not related, deaths.

[†] The Louisiana Pregnancy-Associated Mortality Review Committee uses the Louisiana Bias or Racism and Social Determinants of Health Tool (LABoRS) (see Appendix E) to guide discussions about racism, bias, and discrimination as contributors to each death. In some cases, discrimination was present, but was not identified as a direct contributor to the death.

Understanding Pregnancy-Associated, but Unable to Determine Relatedness, Deaths

Causes

The top underlying causes of pregnancy-associated, but not related, deaths were:

Drug Overdose
6 Deaths

Unknown
6 deaths

Preventability

61% of pregnancy-associated, but unable to determine relatedness, deaths were preventable

Timing of Pregnancy-Associated, but Unable to Determine Relatedness, Deaths

28%
During pregnancy

Deaths occurring during pregnancy were due to drug overdose, homicide, and unknown causes

22%
0 to 42 days after pregnancy

Deaths occurring within 42 days after pregnancy were due to motor vehicle collision, drug overdose, and unknown causes

50%
43 days to 1 year after pregnancy

Deaths occurring 43 days to 1 year after pregnancy were most frequently due to drug overdose and unknown causes

Factors Contributing to Pregnancy-Associated, but Unable to Determine Relatedness, Deaths

33%
Mental Health Conditions

33%
Substance Use Disorder

Note: For each death, the Louisiana Pregnancy-Associated Mortality Review Committee determined whether obesity, mental health disorders, substance use disorder, or discrimination,[†] as defined by the Maternal Mortality Review Information Application Committee Decisions Form (see Appendix C) contributed to each death.

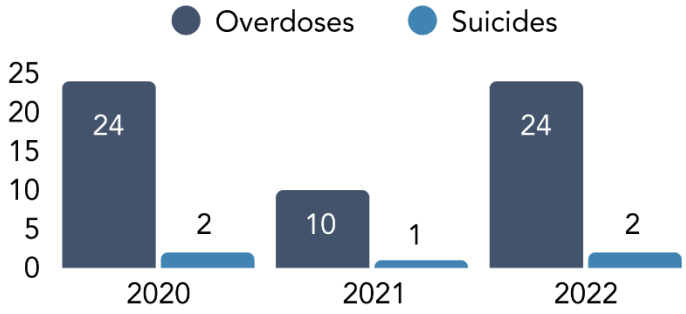
Key Points

- The **leading cause** of pregnancy-associated, but not related, deaths was **drug overdose**.
- The **majority** of pregnancy-associated, but not related, deaths **were determined to be preventable.**
- There were 18 pregnancy-associated, but unable to determine relatedness, deaths, and **half occurred 43 days to one year after pregnancy.**
- **Substance use disorder** contributed to **one-third** of the pregnancy-associated, but not related, deaths.

[†] The Louisiana Pregnancy-Associated Mortality Review Committee uses the Louisiana Bias or Racism and Social Determinants of Health Tool (LABoRS) (see Appendix E) to guide discussions about racism, bias, and discrimination as contributors to each death. In some cases, discrimination was present, but was not identified as a direct contributor to the death.

Understanding Drug Overdoses and Suicides

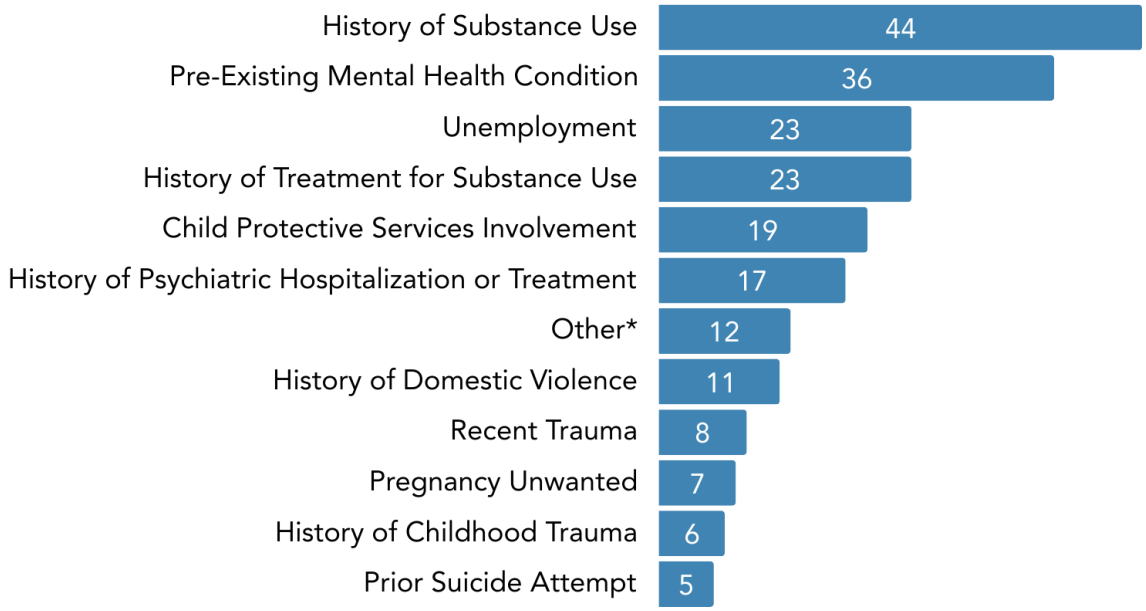
Drug Overdoses and Suicides Over Time



The number of drug overdoses **decreased** from 2020 to 2021, but then **increased** again from 2021 to 2022.

Psychosocial Risk Factors

From 2020 to 2022, there were 63 pregnancy-associated deaths due to drug overdose and suicide. The graph below shows the number of deaths with a documented history of psychosocial stressors in medical records or other reports. Because these individuals may have experienced multiple stressors, a single death may have been counted in more than one category.



Key Points

- A history of substance use was documented in 70% of pregnancy-associated suicides and drug overdose deaths.
- Over two-thirds (68%) of the women whose pregnancy-associated death was due to suicide or drug overdose had two or more documented stressors.
- Over half (57%) of the women whose pregnancy-associated death was due to drug overdose had a pre-existing mental health condition.

From Data to Action

Overview of Committee Recommendations

The U.S. Centers for Disease Control and Prevention's Maternal Mortality Review Committee Decisions Form (see Appendix C) guides all committee reviews. This form asks the Louisiana Pregnancy-Associated Mortality Review Committee members to use their expertise to answer the question, "If there was at least some chance that the death could have been prevented, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?"

The development of these recommendations was informed by both the findings of the Louisiana Pregnancy-Associated Mortality Review Committee and by national expertise in maternal health policy and quality improvement, ensuring they align with current national guidance. The recommendations address the unique needs of families and pregnant women in Louisiana, although they may not reflect existing policies of the Louisiana Department of Health or federal funders.

The recommendations in this report are intended to be aspirational and grounded in the belief that nearly all maternal deaths are preventable. These recommendations were developed not only to address the specific circumstances identified through our review process but also to guide systemic change that will improve outcomes for pregnant women and families in Louisiana. These recommendations are rooted in evidence-based practices, coordinated systems, and patient-centered care.

Recommendations alone do not save lives – they require committed, coordinated action. The Office of Public Health works with the Louisiana Pregnancy-Associated Mortality Review Committee to distribute the report and recommendations to the audiences that can put them into action. Recommendations are organized based on who can implement them: healthcare professionals, healthcare systems, including hospitals and birthing facilities, social and local community organizations, policy makers, insurance payors, and government and public health agencies. These recommendations become a guide for programmatic and policy change within the Louisiana Department of Health and a source for developing relationships with healthcare professionals, healthcare systems, social and local community organizations, and payors to collaboratively address maternal health. Specific recommendations for action are listed on the following pages.

Priority Areas for Prevention

By looking at the contributing factors identified and recommendations for prevention developed during the review of pregnancy-associated deaths from 2020-2022, five overarching themes were identified.

These broad themes highlight key areas of opportunity for prevention and addressing the drivers of pregnancy-associated mortality.

1. **Reduce the number of pregnancy-associated deaths from drug overdose and suicide by improving screening for substance use disorders and perinatal mood and anxiety disorders, implementing evidence-based treatments, and expanding access to overdose prevention strategies.**

2. **Improve screening for and address social determinants of health, including community and social well-being, and design solutions that improve care coordination and access to care, especially in the fourth trimester.**

3. **Implement strategies and programs to reduce harm by decreasing interpersonal and community-level violence and improving vehicular safety.**

4. **Implement strategies to ensure patient-centered care for all women who are pregnant and/or giving birth.**

5. **Improve clinical quality of care by increasing provider knowledge on the leading conditions impacting maternal morbidity and mortality.**

Reducing the Number of Pregnancy-Associated Deaths from Drug Overdoses and Suicides

Priority Area of Prevention:

Reduce the number of pregnancy-associated deaths from drug overdose and suicide by improving screening for substance use disorder and perinatal mood and anxiety disorders, implementing evidence-based treatments, and expanding access to overdose prevention strategies.

Background

Drug overdose has been the leading cause of pregnancy-associated deaths in Louisiana since 2018. Between 2020 and 2022, there were 58 deaths from overdose and five deaths from suicide. In review of those deaths, mental health conditions were commonly noted in the decedent's medical history. Of all pregnancy-associated deaths, the Louisiana Pregnancy-Associated Mortality Review Committee found 35% of deaths had substance use disorder as a contributing factor and 18% had mental health conditions as a contributing factor. Among deaths by overdose and suicide specifically, 70% of women had a documented history of substance use and 57% of women had at least one documented pre-existing mental health condition. By improving screening and implementing evidence-based practices to address substance use disorder and perinatal mood and anxiety disorders, including overdose prevention, we can reduce the leading cause of pregnancy-associated deaths in Louisiana.

Screening

In the review of pregnancy-associated deaths between 2020 and 2022, failure to screen, including screening for substance use disorder and mental health conditions, and inadequate assessment of risk were identified as an area of opportunity for improvement. Implementing universal screening for substance use disorder and mental health conditions not only identifies patients impacted by these conditions, but also reduces stigma and bias associated with these issues.

In review of pregnancy-associated deaths from overdose between 2020 and 2022, 78% of women had at least one prenatal visit with an obstetric healthcare provider, representing a missed opportunity for screening. According to the American College of Obstetricians and Gynecologists, screening for substance use disorder should be performed at the first prenatal visit using a validated verbal screening tool.[8] To codify this recommendation, Act 437, which provides for screening for substance use disorder in the prenatal period,[9] was passed in the 2025 Regular Session of the Louisiana Legislature. However, mandated screening alone is not enough. Punitive policies regarding substance use during pregnancy can instill fear, discouraging patients from being open about their substance use and seeking the help they need. These policies may lead to delays in or avoidance of essential prenatal care,[10] and have been shown to be ineffective in improving rates of substance use disorder in pregnancy.[11] Therefore, legislative action is also needed to reduce criminalization of substance use in pregnancy to ensure screening efforts are effective and do not inadvertently discourage engagement in care.

[8] (Committee Opinion No. 711: Opioid Use and Opioid Use Disorder in Pregnancy, 2017)
[9] (Act No. 437)
[10] (Volkow, 2023)
[11] (American College of Obstetricians and Gynecologist, 2020)

In addition to screening for substance use disorders, the American College of Obstetricians and Gynecologists recommends obstetric care providers screen for perinatal mood and anxiety disorders at the first prenatal visit, throughout the pregnancy, and during the postpartum visit.[12] However, the responsibility to screen for perinatal mood and anxiety disorders should not solely rest on the shoulders of obstetric care providers. According to the American Academy of Pediatrics Bright Futures guidelines, regular interactions with families allow providers to identify a need for mental health support for adult family members. According to Bright Futures recommendations, pediatricians should screen caregivers for postpartum depression during well-child visits at one-month, two-months, four-months, and six-months.[13]

The American College of Obstetricians and Gynecologists also recommends obstetricians and gynecologists universally screen for current trauma or a history of trauma.[14] A history of trauma can cause a number of negative physical and mental health outcomes, including the risk of substance use.[15] In the review of pregnancy-associated deaths between 2020 and 2022, one in four (24%) women who died of a drug overdose during pregnancy or the postpartum period had a documented history of childhood or recent trauma. Awareness of a patient's history of trauma should guide how providers approach sensitive exams and inform their understanding of an individual's increased risk for substance use disorder. To provide trauma-informed care, healthcare professionals should follow the four key assumptions outlined by the Substance Abuse and Mental Health Services Administration: **realize** the widespread effect of trauma and understand potential paths for recovery; **recognize** the signs and symptoms of trauma in clients, families, staff, and others involved with the system; **respond** by fully integrating knowledge about trauma into policies, procedures, and practices; and seek to actively **resist re-traumatization.**[16]

Treatment

For patients with substance use disorder from use of opioids, medications for opioid use disorder or medication-assisted therapy are the recommended evidence-based best practice for treatment.[17] However, in review of pregnancy-associated deaths impacted by substance use disorder, missed opportunities to prescribe medications for opioid use disorder or medication-assisted therapy were identified, suggesting that more education about and access to treatment options for patients with substance use disorder may be needed. The White House Blueprint for Addressing the Maternal Health Crisis,[18] introduced in 2022, also identified the need to strengthen support of and access to substance use disorder treatment during the perinatal period. To address this need, the Louisiana Perinatal Quality Collaborative began working with birthing facilities in 2022 through its Improving Care to the Substance Exposed Dyad initiative to improve screening and treatment by implementing the Alliance for Innovation on Maternal Health's evidence-based patient safety bundle, Care for Pregnant and Postpartum People with Substance Use Disorder, to improve readiness, recognition and prevention, and response.[19] Using evidence-based practices reduces variations in practice, enhances quality of care, and improves patient outcomes.[20]

[12] (Screening and Diagnosis of Mental Health Conditions During Pregnancy and Postpartum: ACOG Clinical Practice Guideline No. 4, 2023)
[13] (Lamere & Golova, 2022)
[14] (Caring for Patients Who Have Experienced Trauma: ACOG Committee Opinion, Number 825, 2021)
[15] (Gould, et al., 2021)
[16] (Substance Abuse and Mental Health Services Administration, 2026)
[17] (Committee Opinion No. 711: Opioid Use and Opioid Use Disorder in Pregnancy, 2017)
[18] (White House Blueprint for Addressing the Maternal Health Crisis, 2022)
[19] (Alliance for Innovation on Maternal Health, 2022)
[20] (Connor, et al., 2023)

Reducing the Number of Pregnancy-Associated Deaths from Drug Overdoses and Suicides

Data from the Maternal Mental Health Leadership Alliance's 2025 Louisiana State Fact Sheet, reflecting the maternal mental health landscape in 2022, underscores an urgent need to strengthen and expand the state's maternal mental health system. According to the fact sheet, an estimated 7,173 pregnant and postpartum women in Louisiana were affected by postpartum depression in 2022. This issue carries both significant human and economic costs with approximately 75% of these women going untreated and an estimated $172 million being spent on untreated maternal mental health conditions.[21] While policies like Medicaid expansion and postpartum coverage extension have been positive steps in the right direction, gaps remain – particularly in access to outpatient mental healthcare and the low reimbursement rates for depression screening. According to the Policy Center for Maternal Mental Health's Louisiana 2025 Report Card, Louisiana has a grade C for Providers and Programs due to the insufficient ratio of non-prescriber maternal mental health providers to perinatal population (less than 5 providers per 1,000 births) and a grade D for Screening and Screening Reimbursement, as Medicaid does not require Managed Care Organizations to report "postpartum depression screening" as a quality measure.[22]

Failure to screen for substance use disorder and perinatal mood and anxiety disorders may be due to lack of awareness of resources for treatment. The Provider-to-Provider Consultation Line is a complimentary service through the Louisiana Department of Health that is available statewide and allows perinatal healthcare providers to connect with a mental health or addiction provider to receive education and consultation to address their patient's substance use and/or mental health needs. This is currently an underutilized service.

Patients with substance use disorder and/or mental health conditions often face many barriers to accessing treatment. Based on data from 2017 and 2018, about 55% of pregnant women with opioid use disorder in the U.S. received medications for opioid use disorder.[23] In Louisiana, the rate is lower at 42%. For those who do undergo treatment, discontinuation rates range from 0-33% with the highest rate of discontinuation occurring in the postpartum period.[24] Having substance use disorder navigators has been associated with increased engagement and compliance with outpatient treatment.[25] For patients who require inpatient treatment, accessing care can be even more difficult. In the U.S., there is a scarcity of treatment facilities that offer care to pregnant and postpartum patients.[26] Additionally, many healthcare providers who are trained in substance use disorder and/or mental health treatment are not adequately trained in perinatal substance use disorder and/or mental health treatment.[27]

The American College of Obstetricians and Gynecologists recommends against discontinuing medications for mental health disorders in pregnancy or in the postpartum period only because of pregnancy or lactation.[28] In review of the pregnancy-associated deaths involving mental health conditions, many patients were advised by a healthcare provider to stop taking their medications for mental health disorders, or patients self-discontinued prior to seeking medical care. However, many obstetric providers and mental health providers may be unaware of the recommendation to continue psychiatric medications during pregnancy, which highlights the need for continued education on evidence-based perinatal mental health management.

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[21] (Louisiana Maternal Mental Health State Fact Sheet, 2025)
[22] (Louisiana 2025 Report Card, 2025)
[23] (Roberts, Frederiksen, Saunders, & Salganicoff, 2023)
[24] (Wilder, Lewis, & Winhusen, 2015)
[25] (Anderson, et al., 2023)
[26] (Meinhofer, Hinde, & Ali, 2020)
[27] (Policy Center for Maternal Mental Health, 2025)
[28] (Treatment and Management of Mental Health Conditions During Pregnancy and Postpartum: ACOG Clinical Practice Guideline No. 5, 2023)

Reducing the Number of Pregnancy-Associated Deaths from Drug Overdoses and Suicides

Overdose and Suicide Prevention

For patients with substance use disorder, overdose prevention is an evidence-based strategy to provide life-saving tools. One crucial overdose prevention strategy is ensuring the availability of naloxone, a medication that can reverse an opioid overdose. The Louisiana Department of Health's Overdose Prevention and Response Hub provides statewide distribution sites with training, educational materials, and overdose prevention materials to be distributed to the general public. Through December 2025, the Overdose Prevention and Response Hub distributed 225,878 naloxone kits and 197,448 fentanyl testing strips to the public.[29] Emergency departments provide additional opportunities to implement overdose prevention strategies. Based on the review of maternal deaths from 2020-2022, 40% of women who died of a pregnancy-associated overdose were seen in the emergency department at least once during pregnancy or the postpartum period. Many emergency departments across the U.S. have implemented processes to distribute naloxone to patients at risk for overdose that are discharged from the emergency department.[30]

As one in five women in the U.S. may be impacted by perinatal mental health conditions,[31] healthcare providers should have a heightened awareness of and screen for these conditions, including suicide. Circumstances associated with the pregnancy, including pregnancy loss and grief, can contribute to perinatal mood and anxiety disorders.[32] The U.S. Centers for Disease Control and Prevention has outlined seven strategies to be employed by providers, policymakers, public health professionals, and communities to reduce suicide, including creating protective environments and teaching coping and problem-solving skills to patients.[33]

[29] (Louisiana Department of Health's Overdose Prevention and Response Hub, 2025)
[30] (Gunn, et al., 2018)
[31] (Gavin, et al., 2005)
[32] (Nynas, Narang, Kolikonda, & Lippmann, 2015)
[33] (Suicide Prevention Resource for Action, 2024)

Recommendations for Reducing the Number of Pregnancy-Associated Deaths from Drug Overdoses and Suicides

Screening

For Healthcare Professionals

- According to the American College of Obstetricians and Gynecologists, there are a number of screenings that should be performed by healthcare providers during prenatal and postpartum visits. These screenings include, but are not limited to, universal screening for substance use disorder using a validated verbal screening tool; screening for perinatal depression and anxiety at the first prenatal visit, throughout the pregnancy, and during the postpartum visit using a validated tool; and universal screening for current trauma and a history of trauma. Integrating the screening tools into the electronic health record can facilitate screening. Positive screens should always be followed by brief intervention and referral to treatment through a warm-handoff.
- In addition to obstetric care and pediatric care providers, providers in the neonatal intensive care unit (NICU) should perform perinatal mental health screenings for caregivers. If a screening is positive, caregivers should be referred to obstetricians, primary care providers, or mental health providers.

For Policy Makers

- Legal safeguards are essential to creating a safe environment for honest disclosure and timely intervention. To improve the accuracy of universal screening and encourage patients to disclose substance use, policymakers should enact legislation that protects pregnant and postpartum women from criminal penalties when they screen positive for substance use.
- Policymakers should increase Medicaid reimbursement rates for maternal depression screening to incentivize early detection and intervention.

For Government and Public Health Agencies

- The Bureau of Nutrition Services (a section within the Louisiana Department of Health) should train WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) staff to not only screen for substance use disorder, intimate partner violence, and social determinants of health, but also to refer to appropriate services through a warm handoff when screening is positive.

Treatment

For Healthcare Professionals

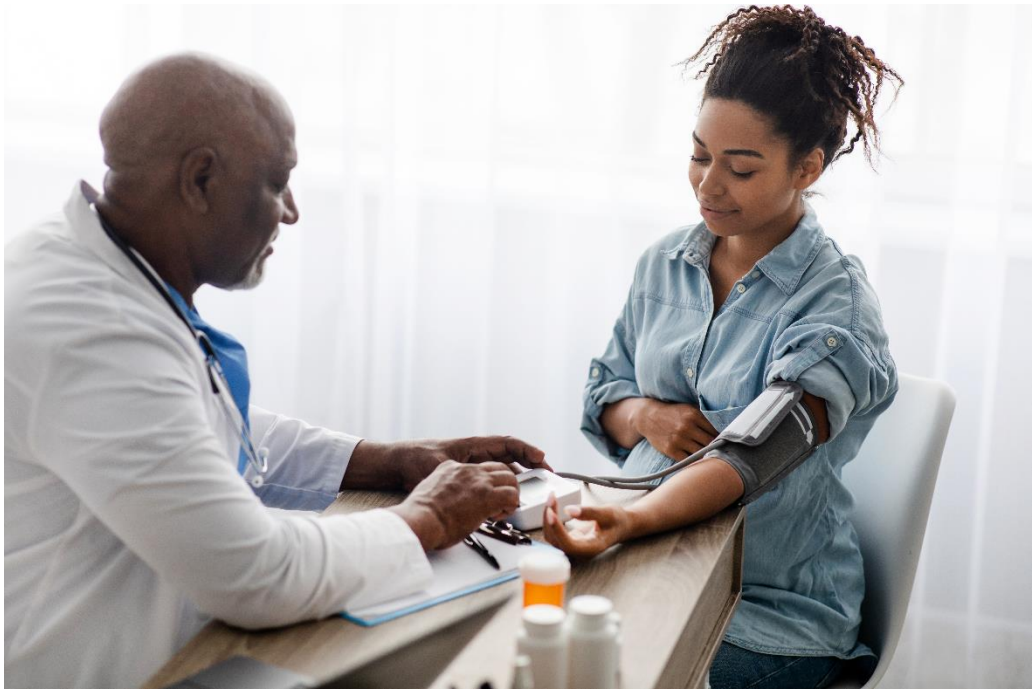
- Using medications for opioid use disorder (MOUD) during pregnancy is an evidence-based recommendation and healthcare providers should offer MOUD directly to their patients or refer them for treatment. Because of the increased risk of relapse in the postpartum period, healthcare providers prescribing MOUD should prescribe treatment for at least one year postpartum, provide naloxone, and collaborate with social workers to ensure patients are connected to a peer support navigator.
- Over-prescribing narcotics has greatly contributed to the opioid epidemic in America.[34] Healthcare providers, including obstetric and emergency care providers, can reduce the risk of opioid dependency by implementing patient-centered prescribing of opioids, ensuring that opioids are being prescribed appropriately, as well as simultaneously prescribing naloxone. Though narcotics should be prescribed when indicated, alternative medications, such as multimodal analgesia, should be prescribed first to reduce the need for narcotic use and reduce the risk of addiction.
- When patients screen positive for substance use disorder at any point in pregnancy or postpartum care, social workers should be consulted to help connect these patients through a warm hand-off to mental healthcare and addiction resources, including inpatient and outpatient rehabilitation programs. Additionally, healthcare providers should enroll these patients in home visiting programs.
- In Louisiana, disasters such as hurricane evacuations and displacement can be a barrier for pregnant and postpartum women receiving MOUD. As part of disaster planning, patients who are on MOUD should be prescribed dosing to allow them to continue care during evacuation and/or displacement.
- Using plain language that is culturally appropriate, healthcare providers should educate patients and their families on the increased risk of severe maternal morbidity and mortality during pregnancy and the postpartum period for women with substance use disorder or mental health conditions.
- Healthcare providers prescribing medications for mental health conditions should educate patients on the importance of adhering to their treatment regimen before, during, and after pregnancy, emphasizing the need to continue medications even if symptoms improve.
- When patients are seen in the emergency department after a nonfatal accidental overdose, in addition to providing naloxone, emergency department providers should coordinate care with addiction specialists via warm handoff, while substance use navigators should assist in ensuring follow-up to care.

[34] (Opioid Facts and Statistics, n.d.)

Recommendations for Reducing the Number of Pregnancy-Associated Deaths from Drug Overdoses and Suicides

For Healthcare Systems

- To facilitate care for pregnant women with mental health conditions, healthcare systems should co-locate perinatal mental health providers in obstetric offices.
- A sober living facility is a home for people in recovery that provides support and some supervision while still allowing them to live independently. Some sober living facilities are not allowed to provide MOUD. As such, patients admitted to sober living facilities who prefer to continue using MOUD should be referred to care for treatment through a warm handoff. When these patients are discharged from treatment or voluntarily leave the sober living facility, they should be discharged with MOUD and naloxone for overdose prevention. Additionally, due to the frequent co-occurrence of mental health conditions and substance use disorder, providers should perform mental health screenings in sober living facilities. When screening is positive, providers should connect patients to care via a warm handoff.
- To facilitate access to prenatal and postpartum care services while receiving inpatient treatment for substance use disorder, treatment facilities that accept pregnant and postpartum women should have an obstetric healthcare provider available for consultation services.
- Having substance use navigators in the emergency department offers care coordination that is personalized and has been associated with increased engagement and compliance with outpatient treatment. As such, healthcare systems should embed substance use navigators in the emergency department to facilitate linkages to and coordination of care with outpatient services.



Recommendations for Reducing the Number of Pregnancy-Associated Deaths from Drug Overdoses and Suicides

For Government and Public Health Agencies

- Public health agencies should fund programs such as Family Focused Recovery, which offers integrated behavioral healthcare for perinatal substance use and mood disorders, to expand the reach and availability across the state.
- To improve knowledge of state-based resources, such as the Provider-to-Provider Consultation Line, the Office of Public Health should partner with the Louisiana Hospital Association, the Louisiana State Medical Society, the Louisiana State Board of Medical Examiners, and the Louisiana State Board of Nursing to increase awareness of this resource.
- State and national accrediting bodies for providers who care for pregnant and postpartum women should require continuing education related to the signs and symptoms of perinatal mood and anxiety disorders. They should also require education on appropriate antipsychotic and antidepressant medications that are safe for use during pregnancy in lieu of weaning off medications. To ensure future providers are educated on these recommendations, the American College of Graduate Medical Education and schools of nursing and allied health professions should require that all students and residents receive training on the care of mental health conditions and substance use during pregnancy, as well as trauma-informed care techniques.
- As part of continuing medical education and annual licensure requirements, the Louisiana State Board of Medical Examiners should require obstetricians, primary care physicians, emergency department physicians, and family medicine physicians to undergo annual education regarding best practices for prescribing narcotics, the risks of substance use disorder, medications for opioid use disorder as the evidence-based treatment for substance use disorder, and overdose prevention strategies to share with patients.
- Public health agencies should ensure pregnant patients have access to transportation for medical appointments, prioritizing those patients with health conditions that increase their risk for maternal morbidity and mortality, such as those with substance use disorder.
- To facilitate placement of pregnant and postpartum patients with substance use disorder and/or mental health conditions into available inpatient care settings, the LDH Office of Behavioral Health should create a centralized transfer center.
- Pregnant women with substance use disorder require collaborative care to address both the pregnancy and substance use disorder. The Department of Corrections should ensure access to both evidence-based substance use treatment and mental health care services, both pre-and post-conviction. This access should be extended to girls in juvenile detention centers. Upon release, correctional facilities should connect these women to substance use disorder treatment providers through a warm handoff, as well as provide naloxone and harm-reduction education.

Cross-Cutting Collaboration

- Public health agencies, maternal health advocates, and correctional healthcare providers should collaborate to ensure access to obstetric healthcare during periods of incarceration for pregnant women. This may involve implementing strategies such as establishing telehealth options for pregnant women in correctional facilities, coordinating with community healthcare providers to ensure seamless transitions of care upon release from incarceration, and advocating for policy changes to improve access to healthcare for pregnant women involved in the criminal justice system.

Recommendations for Reducing the Number of Pregnancy-Associated Deaths from Drug Overdoses and Suicides

Overdose Prevention

For Healthcare Professionals

- When patients have a history of substance use disorder, healthcare providers, including primary care, obstetric, and emergency department providers, should educate the patient and their support system on overdose prevention strategies.
- For patients with a history of mental health disorders or self-harm, suicidal ideation, or documented suicide attempts, healthcare providers should work collaboratively with the patients and their support system to create a personalized self-harm prevention plan that outlines specific coping strategies, identifies a trusted family member or support person who can assist in a crisis, access to maternal mental health crisis hotlines such as 1-833-TLC-MAMA, and includes steps to limit or remove access to firearms or other lethal means to ensure the patient's safety.
- When pregnant or postpartum patients describe changes in mood during medical appointments, healthcare providers should educate them on overdose prevention, assist in creating a support plan, and schedule a follow-up visit to assess their mood rather than leaving the responsibility with the patient to follow-up with the providers.

For Healthcare Systems

- Healthcare systems should develop protocols to guide healthcare providers in consulting psychiatry services for high-risk patients, including those with a history of mental illness and substance use, to ensure a comprehensive evaluation of their mental health status.
- Healthcare systems should improve access to mental health resources by hosting support groups where family members and caregivers can share their experiences, seek advice, and find emotional support from others in similar situations.
- Healthcare systems should provide a substance use navigator to ensure a warm handoff, closed loop referral for mental health care and treatment of substance use disorder, and follow-up when a patient does not receive recommended care.

Recommendations for Reducing the Number of Pregnancy-Associated Deaths from Drug Overdoses and Suicides

For Government and Public Health Agencies

- Public health agencies should conduct public messaging campaigns to educate the public on recognizing the signs of relapse in substance use and provide guidance on how to intervene when relapse is identified in friends or family members. These campaigns should include information on crisis hotlines and available resources specific to addiction and substance use disorder, bystander awareness, signs of drug overdose, and appropriate intervention when overdose occurs.
- The Louisiana Bureau of Family Health's Louisiana Childhood Adversity Resilience Education Network (CARE) should conduct a public messaging campaign to create awareness about the availability of adverse childhood experiences and trauma-informed care training to community members, organizations, educators, and healthcare providers to raise awareness about the impact of generational abuse, violence, and substance use, and the importance of breaking these cycles.
- State public health agencies should maintain a searchable database for resources for pregnant women with substance use disorder, mental health conditions, and social determinants of health needs.
- More licensed behavioral health providers certified in perinatal mood and anxiety disorders are needed to treat these disorders. Public health agencies should develop programs to incentivize and recruit perinatal behavioral/mental health providers, including subsidizing the cost for certification for providers who agree to practice in underserved areas.

For Cross-Cutting Collaboration

- To support postpartum mothers and prevent suicide, public health agencies, in collaboration with community-based organizations, should create public messaging campaigns on normalizing mental health conditions to decrease stigma and bias, educate on specific perinatal mental health conditions, and increase awareness of resources such as the 988 Suicide and Crisis Lifeline, Louisiana 211, and the National Maternal Mental Health Hotline (1-833-TLC-MAMA).
- Education, criminal justice, and public health officials should collaborate with community organizations to adequately fund and support the implementation of evidence-based best practices that reduce the initiation of substance use among adolescents.
- In collaboration with community-based organizations, public health agencies should increase the identification of and provision of resources for children experiencing adverse childhood events that are known to contribute to adverse health events later in life, such as substance use. The resources offered through Whole Health Louisiana are one example of this.

Improving Screening For and Addressing Social Determinants of Health

Priority Area for Prevention:

Improve screening for and address social determinants of health (SDoH), including community and social well-being, and design solutions that remove barriers to accessing care, especially in the fourth trimester.

Background

Social determinants of health are defined by the U.S. Department of Health and Human Services as "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks".[35] Eighty percent of clinical outcomes are influenced by social factors,[36] and even when provider recommendations are consistent with evidence-based guidelines, social determinants of health can make it difficult for some patients to follow through with recommended care. To ensure social barriers to care are addressed, healthcare providers should screen for social determinants of health as part of routine care as recommended by several professional health organizations such as the American Academy of Family Physicians,[37] the American College of Obstetrics and Gynecology,[38] and the American Academy of Pediatricians.[39] In order for screening to be meaningful, identification of social and community barriers to health must lead to referrals to appropriate services. However, a lack of familiarity with resources remains a significant barrier to screening. While many providers may feel they lack the tools to address social factors that may be impacting a patient's ability to access care, healthcare providers and healthcare systems can be the gateway to accessing social support.

The postpartum period is a time of vulnerability for women with an increased risk of maternal morbidity and mortality. In review of pregnancy-associated deaths in Louisiana from 2020-2022, the majority of deaths (77.5%) occurred after delivery up to one-year postpartum – highlighting the need to continue care beyond delivery. Traditionally, postpartum mothers receive one visit after delivery. However, depending on risk factors, some mothers may need multiple visits during the initial six-weeks following delivery, or visits beyond the six-weeks. The fourth trimester, the time period of 12-weeks following the end of pregnancy, is a time for healthcare providers to address medical issues that developed during pregnancy, address family planning, and transition women from obstetric care to well-woman care.[40] The American College of Obstetricians and Gynecologists recommends that the initial postpartum visit occur within the first three weeks after delivery. This assessment can be accomplished via multiple types of care models: an in-person visit, telehealth visit, or postpartum home visit, which has been shown to improve maternal outcomes – especially in the postpartum period.[41]

[35] (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, n.d.)
[36] (Greer, Garza, Sample, & Bhattacharyya, 2023)
[37] (Magoon, 2022)
[38] (Addressing Social and Structural Determinants of Health in the Delivery of Reproductive Health Care: ACOG Committee Statement No. 11, 2024)
[39] (Coker, Gottschlich, Burr, & Lipkin, 2024)
[40] (ACOG Committee Opinion No. 736: Optimizing Postpartum Care, 2018)
[41] (Dodge K. A., et al., 2022)

While increased surveillance and care in the fourth trimester is recommended by the American College of Obstetricians and Gynecologists, legislative and insurance reform is needed to ensure these services are reimbursed. According to the World Health Organization Conceptual Framework for Action on the Social Determinants of Health, social determinants of health are largely shaped by governance and public policy,[42] which means policymakers, public health agencies, and insurance payors have a large role to play in addressing social determinants of health and improving access to care during this critical time. To improve maternal health outcomes, policymakers and insurance payors, and public health agencies must work to address key social barriers to care, including limited childcare options, unreliable transportation, and the lack of guaranteed paid maternal leave. Lack of childcare support not only serves as a barrier to accessing care, but can also impact maternal and infant wellbeing. For mothers with a lack of access to childcare, there is an increased loss of sleep, increasing the risk of postpartum depression.[43] Yet 50% of Americans live in a childcare desert, a geographic area with a shortage of licensed child care practitioners compared to the number of young children needing care.[44] In Louisiana, 42% of residents live in a childcare desert, with the rates being higher than the national average in rural areas (52%).[45] Unreliable or inconsistent transportation can be a significant barrier for pregnant and postpartum women, often resulting in missed or delayed appointments, which can lead to poor maternal health outcomes. Both the availability and length of maternity leave influence a woman's ability to attend medical appointments during the postpartum period. Longer periods of maternity leave can reduce barriers to accessing care,[46] but for many mothers, the lack of guaranteed paid family leave in the U.S. is a barrier to attending postpartum visits.[47]

The U.S. is the only high-income country that does not guarantee at least one home visit in the postpartum period,[48] and although home visiting is not universal in the U.S., there are several home visiting programs in Louisiana. The Office of Public Health, Maternal, Infant, and Early Childhood Home Visiting program allows eligible mothers to receive home visits by a nurse through the Nurse Family Partnership and the Parents as Teachers models during pregnancy and the postpartum period. Family Connects International, only offered in Orleans Parish is an evidence-based universal home visiting model that provides one to three home visits with a registered nurse to parents of newborns up to 12 weeks old at no cost to the family. Since providing support to families through Family Connects International, there has been an increase in six-week postpartum visit attendance, an increase in connection to community resources, a decrease in the rate of postpartum depression and anxiety, and a lower rate of child protective services investigations.[49] Home visiting programs are especially important for patients at risk for severe maternal morbidity and mortality, patients who have conditions that need frequent monitoring, patients who live in maternity care deserts, and patients who may have barriers to accessing care. While these home visiting programs are beneficial, their reach is limited. Another model of care is bringing care and support to women in underserved communities through mobile units, such as the March of Dimes Mom & Baby Mobile Health Center. Through their mobile health centers in funded communities, March of Dimes provides preconception, pregnancy, postpartum, and newborn care to families within their service area.[50] Currently, mobile units are available in Columbus, New York, Phoenix, Tucson, and Washington, DC.

[42] (Solar & Irwin, 2010)
[43] (Armstrong, et al., 2022)
[44] (Malik, et al., 2018)
[45] (Do you live in a child care desert?, n.d.)
[46] (Keefe-Oates, Janiak, Gottlieb, & Chen, 2024)
[47] (International Labour Organization. Conditions of Work and Employment Programme., 2012)
[48] (Tikkanen, Gunja, FitzGerald, & Zephyrin, 2020)
[49] (Dodge K. A., Goodman, Bai, O'Donnell, & Murphy, 2019)
[50] (Mobile Health Centers, 2025)

Recommendations for Improving Screening For and Addressing Social Determinants of Health

For Healthcare Professionals

- Many patients that access the emergency department for non-emergent issues do so because of barriers to accessing outpatient care. When patients receive treatment in the emergency department for multiple non-emergency visits, healthcare providers should screen patients to determine if there are social barriers to accessing care and refer to home visiting programs, if appropriate.
- Healthcare providers should screen for social determinants of health using a validated screening tool at the initial prenatal visit and at least once in the second and third trimester. When patients screen positive, especially for economic distress and housing instability, providers should make referrals to social workers or case managers to connect patients with social support through warm handoffs.
- Because social determinants of health can be a barrier to accessing care, when patients frequently miss appointments, including postpartum visits, healthcare providers should not dismiss them from care, but instead should consult social workers for assistance in identifying barriers to accessing care and connecting patients to appropriate resources.
- For patients who experience grief or a pregnancy loss, healthcare providers should refer to mental health services and grief counseling through a warm handoff.

For Healthcare Systems

- Healthcare systems should develop and incorporate support discharge plans, including pathways to ensure referral to primary care providers through a warm handoff before discharge from the hospital. These care pathway plans should begin with screening for social determinants of health to identify and address barriers to care that might prevent patients from attending appointments, such as lack of transportation and childcare.
- Healthcare systems should develop a streamlined, user-friendly referral process within electronic health record (EHR) systems to facilitate quick and efficient referrals to primary care providers. This process should also ensure that referral status and follow-ups are tracked and communicated to all relevant healthcare providers.

For Government and Public Health Agencies

- Public health agencies should identify, and test models of care that co-locate social workers in obstetric offices to assist in screening and connecting to resources for social determinants of health.
- Public health agencies should collaborate with businesses that offer grocery delivery to offer these services for free or at a discounted rate for pregnant and postpartum women who have food insecurity or do not have access to transportation.
- The Department of Children and Family Services should collaborate with pregnant and postpartum mothers with open cases to support them in maintaining access to their baby/children by providing tailored assistance with housing, employment, and other essential resources, thereby fostering a stable environment that promotes the well-being of both mother and child.

Recommendations for Improving Screening For and Addressing Social Determinants of Health

For Policy Makers

- Federal, state, and local governments should develop a range of policies that support affordable childcare options.
- The federal government should raise the minimum wage to promote economic stability and create programs to allow for paid family medical leave.
- Federal policy makers should ensure insurance coverage for home visiting in the postpartum period.

For Insurance Payors

- Insurance payors should provide patient navigators to ensure patients have the resources they need during pregnancy and the postpartum period, such as childcare and transportation. Those patient navigators should also ensure closed loop referrals to agencies that can provide patients with the resources they need.

Cross-Cutting Collaboration

- Healthcare systems should work with community-based organizations to establish housing for families whose infants require neonatal intensive care in a city outside of their home community, leaving them temporarily displaced.
- To address positive screens for social determinants of health, healthcare systems, in collaboration with community-based organizations, should develop resource maps that identify local resources and can easily be used by all providers, including nursing and case management, to connect patients to care for social needs, substance use, and mental health issues.

Cross-Cutting Collaboration

- Federal and state public health agencies, in partnership with community-based organizations, should increase funding to provide social support services, like establishing housing assistance to ensure housing stability, giving priority to pregnant and postpartum families. For pregnant and recently postpartum women living in homeless shelters, homeless shelter leadership should partner with healthcare systems to create a system of care to facilitate those patients receiving medical and mental health services through a warm handoff.
- Public health agencies, community-based organizations, and state education leaders should partner to address social factors that impact high school graduation including factors related to the individual student, family, school, and community and work to improve post-secondary education and training that leads to gainful employment to improve socioeconomic factors.
- During times of displacement, such as a hurricane evacuation, large health systems should coordinate with public health agencies to identify and provide obstetric care services, including perinatal mental health services, to displaced pregnant and postpartum women.
- To ensure continuity of care, healthcare systems should partner with local, state, and federal government, public health agencies, and community-based organizations to ensure all patients are scheduled for a home visit in the postpartum period. These appointments should be scheduled prior to discharge from the hospital.

Recommendations for Improving Screening For and Addressing Social Determinants of Health

Cross-Cutting Collaboration

- To improve attendance at postpartum visits, especially for patients with multiple comorbidities who are at high-risk for severe maternal morbidity and mortality, healthcare providers and healthcare systems should employ various methods for achieving the visit, including telehealth, home visiting, or community health workers to ensure follow-up as soon as one-week after discharge from the birthing facility.

Cross-Cutting Collaboration

- Policy makers and public health agencies in Louisiana should invest in mobile health services, like the one offered by the March of Dimes in other states, to improve access to care in maternity care deserts. Those mobile units should partner with local community organizations to increase trust among the community.

Decreasing Interpersonal and Community-Level Violence and Improving Vehicular Safety

Priority Area for Prevention:

Implement strategies and programs to reduce harm by decreasing interpersonal and community-level violence and improving vehicular safety. Homicide and motor vehicle collisions (MVCs) were significant causes of pregnancy-associated deaths in Louisiana from 2020-2022.

Background

Interpersonal and Community-Level Violence

In review of pregnancy-associated deaths from 2020-2022, 28 of the 222 deaths were due to homicide. In 2020 and 2021, Louisiana ranked second in the homicide death rate (19.9 per 100,000 total population in 2020; 21.3 per 100,000 total population in 2021) and ranked third in the homicide rate in 2022 (19.8 per 100,000).[51] Though slightly lower than the general population, the homicide death rate among pregnant and postpartum women was still high (17.5 per 100,000 live births in 2020; 17.4 per 100,000 live births in 2021; and 14.2 per 100,000 live births in 2022.) Strategies designed to reduce violent crimes, including homicide, should include targeted initiatives that address the unique needs of the pregnant and postpartum population.

Of the pregnancy-associated homicide victims, 26 (93%) were killed with firearms. Additionally, among the five suicides in 2020-2022, three involved firearms. Currently, 21 states, including Florida and Virginia, have adopted extreme risk laws or "red flag laws" to ensure those who are at risk to themselves or others are limited in their ability to access firearms.[52] Four states have shown that implementation of these laws has reduced firearm related suicides.[53] In addition to restricting access for those who are most at risk for harm with use of firearms, improved firearm safety measures can reduce homicides.[54] Community-level interventions are also needed to address violence. Specific communities were disproportionately impacted by pregnancy-associated homicide in 2020-2022, with 89% of victims being Black women. In many of these cases, the women were victims of random acts of violence in which they were innocent bystanders. Implementing evidence-based protocols and programs to reduce community-level violence could decrease homicides in the maternal population.

Homicide from intimate partner violence (IPV) is also a contributor to pregnancy-associated deaths. In Louisiana from 2020-2022, 13 (46%) of all pregnancy-associated homicide victims were victims of violence at the hands of a partner or ex-partner. According to the American Academy of Nursing's Resolution on Intimate Partner Violence Against African American Women, multiple overlapping factors increase the risk of intimate partner violence and other forms of violence for Black women.[55] These include economic hardship, housing instability, and limited access to culturally appropriate services. Additional barriers such as reduced trust in law enforcement, healthcare, and social service systems– often influenced by historical and personal experiences – can delay or prevent women from seeking help. Social and cultural challenges, including stigma and fear of retaliation, may also discourage disclosure.

[51] (National Center for Health Statistics, 2025)
[52] (Which states have Extreme Risk laws?, 2025)
[53] (Swanson, et al., 2024)
[54] (Brunson, Wade, & Hitchens, 2022)
[55] (Finfgeld-Connett, 2015)

Decreasing Interpersonal and Community-Level Violence and Improving Vehicular Safety

Vehicular Safety

In 2021, the rate of fatal motor vehicle crashes in the U.S. was 12.9 deaths per 100,000 people in the total population. The rate in Louisiana was 21 deaths per 100,000, and the rate among pregnant and postpartum women was 17.4 per 100,000 live births. According to the National Highway Traffic Safety Administration, wearing a seatbelt can reduce the risk of fatal injury in a car accident by 45-60%.[56] However, the observed seat belt use in Louisiana in 2021 was only 85.7%. As with homicide prevention efforts, strategies aimed at preventing motor vehicle crashes and reducing injury severity should ensure pregnant women are considered, especially in education regarding seatbelt use.

In review of 2020-2022 pregnancy-associated deaths in Louisiana, several (25%) fatal motor vehicle crashes involved the decedent as a pedestrian. In the U.S., a pedestrian was killed every 70 minutes on average in 2022.[57] Poor lighting in residential areas may require drivers to use brighter lights, which can be blinding to pedestrians. Improving headlights on vehicles can improve the visibility of pedestrians and bicyclists at night. In 2022, the U.S. Department of Transportation's National Highway Traffic Safety Administration passed a rule that allows manufacturers to install adaptive driving beam headlights on new vehicles.[58]

Risk behaviors, such as driving under the influence of drugs and/or alcohol, speeding, and distracted driving, contribute to fatal motor vehicle crashes. In the U.S. in 2022, there was an average of one alcohol-impaired fatality every 39 minutes.[59] In addition to alcohol, other substances also contributed to pregnancy-associated deaths due to motor vehicle crashes. Enhancing vehicles with advanced safety features could further reduce the number of fatal crashes. In 2023, 3,275 people were killed due to distracted driving[60]. Distracted driving can lead to lane departures and according to the Federal Highway Administration, about half of all fatal motor vehicle crashes result from roadway departures.

[56] (National Center for Statistics and Analysis, 2021, December)
[57] (National Center for Statistics and Analysis, 2024, July)
[58] (National Highway Traffic Safety Administration, 2022)
[59] (National Center for Statistics and Analysis, 2024)
[60] (Distracted Driving, n.d.)

Recommendations for Decreasing Interpersonal and Community-Level Violence and Improving Vehicular Safety

For Healthcare Professionals

Interpersonal and Community-Level Violence

- Healthcare providers should screen for intimate partner violence at the first prenatal visit, during each trimester, and in the postpartum period using a validated screening tool. When screening for safety, screening should include inquiring, "Do you feel safe in your neighborhood?" and referring individuals who screen positive to social services. To create accountability, local and federal public health agencies should create a quality measure associated with intimate partner violence screening.

Vehicular Safety

- According to the National Highway Traffic Safety Administration, wearing a seatbelt can reduce the risk of fatal injury in a car accident by 45-60%.[61] As part of routine prenatal care, healthcare providers should educate on the importance of wearing a seatbelt and how to properly wear a seatbelt during pregnancy to reduce the risk of death during a motor vehicle collision.

For Government and Public Health Agencies

Interpersonal and Community-Level Violence

- Public health analysts should conduct analyses using geocoding to develop targeted interventions, outreach programs, and launching of community health workers to prevent violence in specific areas.
- Public health officials should create public messaging campaigns using communication best practices to address firearm safety, safe storage, and discouraging the use of firearms by underage individuals.

Vehicular Safety

- Using plain language, person-centered, and culturally appropriate messaging strategies, public health agencies, in partnership with the Louisiana Department of Transportation and Development, should continue to develop targeted messaging campaigns utilizing various platforms to educate the public about:
  - The different forms of distracted driving, mitigation techniques, and consequences
  - Substance use as a cause of impaired driving
  - Safe transportation practices and the risks of driving while impaired, with focus on the risks from any substance that could cause impaired driving, including, but not limited to, alcohol, drugs, and prescribed medications
  - The dangers of driving during wet conditions and the need to decrease speed
  - Safety guidelines for drivers and passengers when pulled over on the side of the road
  - Consequences of unsafe driving, including insurance and other legal consequences, similar to drinking and driving messaging
  - The importance of using vehicle safety features, including turn signals and seat belts
  - The importance of wearing a seat belt at all times, including during pregnancy
  - Pedestrian safety, such as the need to wear light colored clothing when walking on streets and roads and the dangers of wearing dark clothing, especially at night

[61] (Seat Belts, n.d.)

- The Louisiana Department of Transportation and Development should implement safety measures to reduce the number of motor vehicle collision fatalities, including:
  - stalling transverse and centerline rumble strips to alert drivers of upcoming stops and prevent roadway departures
  - Creating marked walking paths for pedestrians and cyclists and ensure proper lighting in residential areas and on rural roads
  - Adding tire inspection to brake tag inspection
- During license renewal, the Office of Motor Vehicles should require completion of education that addresses defensive driving training, safe driving around bicyclists and pedestrians, and the consequences of distracted driving.

For Policy Makers

Interpersonal and Community-Level Violence

- Due to racial residential segregation, minority neighborhoods are likely to be exposed to violence and higher rates of crime.[62] Policymakers should review lending practices that prevent integration of neighborhoods and fair distribution of resources.
- Policymakers should require completion of a firearm safety training for any individual purchasing a firearm. Training should include education around gun safety, responsible gun ownership, and risks of sharing guns with individuals with a history of violent behavior.
- Policymakers should adopt and protect "red flag laws" that require mandatory surrender of firearms for all persons who present as a danger to themselves or others, including people with a documented history of domestic abuse. Policymakers should also create legislation to limit the legal purchase of firearms for those with a history of psychiatric illnesses.
- Policymakers should ensure gun manufacturers implement advanced safety features in every firearm, including a location tracker and a mechanism that disables the weapon if it is reported stolen.

Vehicular Safety

- Policymakers should implement stricter restrictions on driving privileges for individuals involved in multiple motor vehicle accidents where the lives of others are compromised, especially when substance use is suspected or confirmed to have contributed to the accidents.
- To enhance vehicle safety, federal regulation should require that all new model vehicles be equipped with:
  - Mandatory vehicular safety checks, including breathalyzers and seat belt checks, before a vehicle can be started
  - Adaptive driving beam headlights
  - Carbon monoxide detectors

For Insurance Payors

Vehicular Safety:

- All motor vehicle insurance providers should provide opt-in discount programs for devices within the car that monitor safety risks, including speeding, braking, acceleration, and phone distraction.

[62] (Piatkowska, Santana, & Messner, 2024)

Recommendations for Decreasing Interpersonal and Community-Level Violence and Improving Vehicular Safety

For Cross-Cutting Collaboration

- In an effort to decrease both intimate partner violence and community violence, federal and local public health agencies, private and public school systems, and community-based organizations should partner to provide evidence-based education about healthy relationships, de-escalation techniques, crisis intervention, signs of intimate partner violence, and firearm safety. This education should include the increased risk of intimate partner violence for pregnant women and creation of public messaging documents that can be placed in bathrooms and other public locations educating on the signs and resources for intimate partner violence.
- Public health agencies should partner with domestic violence advocates, such as Family Justice Centers and Coalitions Against Family Violence, to provide pregnant women with information and support to navigate the legal system and obtain the necessary protections and resources to ensure their safety and that of their children.

Priority Area for Prevention:

Implement strategies to ensure patient-centered care for all women who are pregnant and/or giving birth.

Background

Patient-centered care is healthcare that centers the patient's goals and desires as the driving force in healthcare decisions. Patient-centered care requires respect for the patient's values, coordination and integration of care, information and education, physical comfort, emotional support, involvement of family and friends, continuity and transition of care, and access to care.[63] In the patient-centered care model, care providers meet patients where they are, and patients are allowed to guide their healthcare, which creates accountability. The lack of patient-centered care leads to poorer health outcomes, lack of adherence to care, and disparities in outcomes.

As acknowledged by W.E.B. DuBois in 1906, race is a social construct and not a biological condition,[64] yet we have significant racial disparities in maternal mortality in Louisiana. From 2020 to 2022, Black women accounted for 36% of the births in Louisiana, but 58% of the pregnancy-associated deaths. This disparity exists regardless of pregnancy-relatedness. Of the 51 pregnancy-related deaths, 36 (71%) were among Black women. Black women died at almost twice (1.7 times) the rate of white women. To improve these disparities, we must address the systemic barriers to care and inequities in quality of care that are impacting outcomes for Black mothers. The impact of systemic barriers is particularly evident in the Black population in Louisiana. According to the Maternal Vulnerability Index, women in Louisiana are more vulnerable to adverse maternal health outcomes compared to the average of women in the United States.[65] This is largely driven by socioeconomic factors, including access to education, poverty, social support, and food insecurity. We must dismantle systems that impact social determinants of health by creating public policies that lead to the distribution of resources based on need.

Inequities in the quality of care delivered at both the provider and healthcare system levels also contribute to the disparities we see. During the review of 2020-2022 deaths, the Louisiana Pregnancy-Associated Mortality Review Committee found that discrimination contributed to four of the pregnancy-related deaths and three of the pregnancy-associated, but not related, deaths, and likely contributed to two of the pregnancy-related deaths and one of the pregnancy-associated, but not related, deaths. Of note, though discrimination was found to contribute or possibly contribute to the death in the cases described above, there were many more cases where there was evidence of discrimination, though it may not have contributed to the death.

Confirmation bias can lead to misdiagnosis, especially in medical conditions with similar presentations. Confirmation bias occurs when we give greater weight to findings that confirm our bias, rather than considering all factors. For example, patients in respiratory distress often exhibit signs of anxiety and restlessness due to hypoxia. However, if a provider's biased belief is that individuals of a certain race or ethnicity are aggressive, blind spots may prevent them from recognizing the cause of the behavior.

[63] (O'Neill, 2022)
[64] (Gillispie-Bell, The Contrast of Color: Why the Black Community Continues to Suffer Health Disparities, 2021)
[65] (Maternal vulnerability in the US - A shameful problem for one of the world's wealthiest countries, n.d.)

Ensuring Patient-Centered Care

Understanding clinical guidance can also impact families' and patients' ability to follow provider recommendations. Among pregnancy-associated deaths from 2020-2022, lack of knowledge among patients and families was a contributing factor for pregnancy-associated deaths. Providing culturally appropriate education, in plain language can be key to ensuring patients' and families' understanding of clinical guidance.

Recommendations for Ensuring Patient-Centered Care

For Healthcare Professionals

- Healthcare professionals at every level (provider, facility, community, social services, and system) should receive training to recognize their implicit bias towards individuals with a known history of substance use in order to reduce stigma.
- Members of the healthcare team should use a culturally appropriate, plain language, family-centered approach during discharge planning to ensure family members are aware of urgent maternal warning signs that indicate when the patient should seek medical care and the risks of not following provider recommendations, including medication therapy. To ensure a full understanding of the disease process and treatment recommendations, providers should use the "Teach Back" method.[66]
- For patients who have difficulty following their treatment plan, healthcare providers should determine why and address any barriers to care. In hospital settings, faith-based providers, such as chaplains, should be involved in the care of patients who express the desire for religious considerations in care or who cite a religious concern as a reason for not following recommendations.
- Medical mistrust has created fear and anxiety around interacting with the healthcare system for many patients. Healthcare providers should use a patient-centered care approach that prioritizes the patient's concerns and experiences, including active listening and shared decision-making. When anxiety or fear is suspected, healthcare providers should consult social workers and/or mental health services to address the emotional stress related to the healthcare system and/or their health condition.

For Healthcare Systems

- Healthcare systems should identify opportunities and increase efforts to address bias in the presence of intersectional identities and experiences to ensure appropriate response to decrease the rate of confirmation bias.
- Emergency medical service (EMS) agencies and training coordinators should train personnel on best practices for interacting with patients and families in home settings, ensuring a compassionate and professional approach. Training should be completed during the initial onboarding process and regularly updated through ongoing professional development.

For Government and Public Health Agencies

- State licensing boards should require that healthcare providers be trained in compassionate care that is patient-centered and trauma-informed. Training should emphasize the importance of treating each patient as an individual with unique needs and circumstances, as well as the historic mistreatment of racial and ethnic minority communities and those with substance use and mental health conditions.

For Policy Makers

- City policy makers should partner with public and private schools, food pantries, and healthcare organizations to provide cooking and nutrition education. Teaching people how to make meals that are nutritious, accessible for their living conditions and relevant to their cultural background can create lasting healthy eating habits that contribute to improved health outcomes.

[66] (Agency for Healthcare Research and Quality, 2023)

Priority Area for Prevention:

Improve clinical quality of care by increasing provider knowledge on the leading conditions impacting maternal morbidity and mortality.

Background

While they are not the only piece in the puzzle, healthcare providers play a large role in reducing maternal mortality, especially in pregnancy-related deaths. Among pregnancy-related deaths, eighty-eight percent of all pregnancy-related deaths were deemed to be preventable. At the provider level, failure to screen or inadequate assessment of risk was the leading contributing factor. The leading causes of pregnancy-related deaths between 2020 and 2022 were COVID-19, cardiovascular conditions, cardiomyopathy, infection, thrombotic embolism, and drug overdose. Based on the review of these deaths, among other contributing factors, the implementation of evidence-based practices could improve these outcomes.

The impact of COVID-19 was devastating, and pregnant women did not avoid that devastation. Pregnant women who contracted COVID-19 were more likely to experience a severe maternal morbidity or mortality than their pregnant counterparts who did not contract the illness.[67] Between 2020 and 2022, there were 51 pregnancy-related deaths in Louisiana, 12 of which were attributed to COVID-19. In 2021, 10 pregnancy-related deaths were attributed to COVID-19, making it the leading cause of pregnancy-related deaths for that year and responsible for the increase in the pregnancy-related mortality ratio in 2021. In reviewing the maternal deaths related to COVID-19, the Louisiana Pregnancy-Associated Mortality Review Committee identified several opportunities to improve the rates of COVID-19 among the pregnant population, as well as for improving outcomes for those who contract COVID-19. Opportunities included providing pregnant women with treatment protocols according to evidence-based guidelines, such as being placed in prone positioned during hospitalization and having recommended treatments prescribed to them.[68]

Cardiomyopathy and cardiovascular conditions have been one of the leading causes of pregnancy-related deaths in Louisiana for the last six years (2017-2022). In general, the prevalence of cardiac disease in pregnancy has increased in the U.S.[69] Stratifying risk to improve goal-directed therapy can improve outcomes.[70] This includes recognizing the signs and symptoms of cardiac disease such as syncope, shortness of breath, and fatigue. While these are all common symptoms of pregnancy, they may also be an urgent warning sign for an acute cardiovascular condition. Some pregnant women, such as those with pre-gestational and gestational hypertension have an increased risk of cardiovascular disease, coronary heart disease, and cardiomyopathy.[71] As recommended by the American Heart Association, healthcare providers should be aware of the risk of cardiovascular disease for patients with hypertensive disorders of pregnancy and refer to a cardiologist within 12-weeks after delivery.[72]

[67] (Matuso et al., 2023)
[68] (Tolcher, et al., 2020)
[69] (Sharma, Khan, Das, Jethani, & Panda, 2022)
[70] (The European Society of Cardiology (ESC) Task Force on the Management of Cardiovascular Diseases During Pregnancy, 2011)
[71] (Lo, et al., 2020)
[72] (Lewey, et al., 2024)

In addition to cardiomyopathy and cardiovascular conditions, other medical conditions increase the risk for maternal mortality. During the review of pregnancy-related deaths in 2020-2022, venous thrombotic embolism (VTE) was also a leading cause of death. According to the American College of Obstetricians and Gynecologists, the risk of venous thrombotic embolism in pregnant and postpartum women is four to five times higher than that of non-pregnant women.[73] With an appropriate assessment of risk and initiation of preventative measures to reduce the risk of blood clots when indicated, pregnancy-related deaths from venous thrombotic embolism can be prevented. Although there is no agreed-upon tool for assessing venous thrombotic embolism risk in the pregnant population, healthcare providers should be aware of the factors that increase the risk of development of VTE during pregnancy. When patients are identified as being high-risk, providers should ensure appropriate prophylaxis.

Leveraging professional societies, such as the American College of Obstetricians and Gynecologists and the American Heart Association, would improve provider knowledge of screening and implementation of evidence-based best practices. Additionally, healthcare systems, in collaboration with the Louisiana Perinatal Quality Collaborative (LaPQC), should ensure implementation of those best practices, especially for those high-risk maternal conditions that increase the risk for mortality.

Although many individuals access care through the emergency department during the postpartum period, emergency department and urgent care facilities do not always have a system in place to identify patients who were recently pregnant. Emergency department providers and emergency medical service providers should create systems to identify pregnant and recently postpartum patients. Additionally, emergency care providers may not be aware of the urgent nature of some medical conditions when occurring in the postpartum period. This has led to the Louisiana Perinatal Quality Collaborative's Obstetric Readiness in Emergency Department (ORED) initiative. This is an effort to implement readiness, recognition and prevention, and response for obstetric clinical conditions seen in emergency departments, such as obstetric hypertension, obstetric sepsis, and care for pregnant and postpartum women with substance use disorder. The increasing prevalence of maternal comorbidities[74] highlights the increasing need for higher levels of maternal care and needs for coordinated care.

[73] (ACOG Practice Bulletin No. 196: Thromboembolism in Pregnancy, 2018)
[74] (Wetcher, Kirshenbaum, & Alvarez, 2023)

Recommendations for Improving Clinical Quality of Care

For Healthcare Professionals

- For patients at high risk of maternal morbidity and mortality, especially those with multiple co-morbidities and chronic diseases, obstetric providers should educate them on the importance of continuing care with their primary care and specialty providers throughout pregnancy and during the postpartum period.
- Healthcare providers should collaborate with expectant mothers to identify and connect with potential support persons, such as family members, friends, or patient advocates. These individuals should be engaged and prepared to assist in care plans for births that are high-risk for poor outcomes.
- During prenatal care, healthcare providers should have comprehensive discussions about contraception options and future pregnancy planning, including an assessment of risks associated with future pregnancies, to ensure access to contraception after delivery.
- For postpartum patients presenting to the emergency department, emergency care providers should consider the urgent maternal warning signs and possible diagnoses that increase the risk for maternal morbidity and mortality. To increase visibility and awareness, emergency departments should post the warning signs in patient care areas.
- Obstetric healthcare providers should assess a patient's risk for complications on entry to prenatal care. Patients who are risk-stratified as high should be cared for by an obstetrician and/or maternal fetal medicine physician. Additionally, when patients have medical conditions that put them at high-risk for severe maternal morbidity or maternal mortality, other non-obstetric providers, such as cardiologists should be consulted to ensure comprehensive, risk appropriate, coordinated care.
- When patients are seen in the emergency department with worsening medical conditions such as hyperglycemia, emergency department providers should arrange follow-up with a primary care physician prior to discharge from the emergency department through a warm handoff.
- For patients of reproductive age, optimizing control of medical conditions prior to pregnancy is critical for improving maternal outcomes. As part of preconception care, obstetric healthcare providers should collaborate with primary care physicians to ensure medical conditions are controlled prior to pregnancy.
- As part of medical clearance, healthcare providers should ensure medical conditions, such as hypertensive urgency, are controlled prior to admission to behavioral health facilities.
- As dental issues can contribute to poor maternal outcomes, dentists and dental practices should triage pregnant women to have immediate access for dental care.
- Healthcare providers should use the six-week postpartum visit to develop a postpartum care plan that transitions patients into ongoing well-woman care and address any medical conditions that developed or were exacerbated during pregnancy.

Recommendations for Improving Clinical Quality of Care

For Healthcare Systems

- To ensure patients are cared for based on their level of risk, facilities, including emergency departments and birthing facilities, should ensure assessment of risk is performed early and often, and have transfer agreements in place to facilitate timely transfers of high-risk patients to appropriate care.
- To ensure continuity of care for patients in situations where a primary healthcare provider is unavailable due to personal circumstances, such as illness or personal emergencies, healthcare systems should establish a collaborative care process where other qualified healthcare providers can step in to deliver care without compromising quality or patient safety.
- For patients who present to the emergency department with a viable pregnancy, healthcare systems and urgent care facilities should develop a process to ensure coordination of care between emergency department providers and obstetricians to ensure patients receive an obstetric consult and evaluation. This process could include triggers in the electronic health record when there is no documentation of prenatal care.
- Because the rate of maternal mortality is the highest in the postpartum period, hospitals should arrange for a "discharge phone call" and/or a telehealth visit the day after discharge to ensure there are no signs or symptoms of morbidity/mortality.
- Obstetric patients with hypertensive disorders of pregnancy are at increased risk of severe maternal morbidity, especially in the postpartum period. To remove barriers to accessing care in the postpartum period, healthcare systems should invest and partner with programs that address these barriers, such as Family Connects International and Connected Maternity Online Monitoring (MOM).
- For sustainable and equitable improvement in access to appropriate levels of maternal care across the state, health systems should work collaboratively to increase the number of facilities with the capacity to provide higher levels of care. With a limited number of higher-level facilities in Louisiana, lower-level facilities should work with higher-level facilities to implement basic procedures to stabilize patients until they are ready for transport.

For Government and Public Health Agencies

- Improving access to care requires a sufficient number of providers to meet the needs of the population. Collaborative Practice Agreements should be evaluated to ensure advanced practice providers and certified nurse midwives are able to practice at their full scope of practice, increasing the availability of physicians to manage patients at high risk factors for maternal morbidity and mortality across the state.
- During public health emergencies, the Federal Emergency Management Agency (FEMA) should ensure each location within the disaster area, including rural areas, has the necessary and appropriate equipment to provide care, such as refrigerators for vaccines.

Recommendations for Improving Clinical Quality of Care

For Policy Makers

- Because patients with multiple co-occurring health conditions often require specialty care from various providers, the federal government should establish a universal electronic medical record coordination system to facilitate information sharing across multiple systems to enhance the coordination of care for complex patients.
- As obesity is a strong contributing factor in pregnancy-associated deaths, policy makers should create provisions to allow reimbursement for licensed dietitians or licensed nutritionists to provide nutrition counseling services in the first trimester of the pregnancy. Nutrition counseling services should be available regardless of whether there is a diagnosis of gestational diabetes or any other chronic health condition.

For Insurance Payors

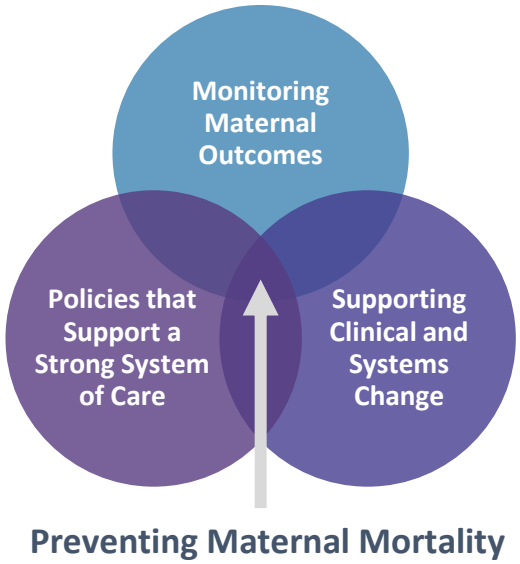
- To assist in coordination of care, insurance payors, including Medicaid, should assign a case coordinator to each pregnant patient at the beginning of pregnancy. This is especially important for patients at high-risk for maternal morbidity and/or mortality.
- To improve care coordination, insurance payors should provide patient navigators to ensure all postpartum women, including those with identified medical conditions such as class three obesity, receive ongoing primary care beyond six weeks postpartum.
- Because of the increased risk of hypertensive disorders of pregnancy and the mortality associated, especially in the postpartum period, insurance payors should provide all patients with blood pressure cuffs for self-blood pressure monitoring and education about the signs/symptoms of hypertensive disorders of pregnancy.

For Cross-Cutting Collaboration

- Public health agencies and community-based organizations should collaborate to create culturally appropriate public messaging campaigns available in multiple languages that educate the community on the importance of preconception health, beginning prenatal care in the first trimester, and attending routine prenatal visits and postpartum visits. Education efforts should emphasize the importance of managing chronic diseases like diabetes, hypertension, and obesity prevention before, during, and after pregnancy.
- During public health emergencies, public health agencies should partner with community-based organizations to educate patients on the emergency, as well as mitigation opportunities.
- During public health emergencies, government agencies should work with community-based organizations to ensure public messaging is culturally appropriate and available in multiple languages to educate the community on the importance of prevention, including vaccination, for communicable diseases.
- To combat the spread of misinformation during public health emergencies, public health agencies should work with community-based organizations to provide reliable and credible education resources that are available on social media.

State-Level Efforts to Reduce Maternal Mortality

The Office of Public Health, Bureau of Family Health acts as the hub for the Louisiana Department of Health's efforts to prevent maternal deaths. These efforts are linked to our state surveillance and are informed by the Pregnancy-Associated Mortality Review process, as well as national trends and the work from the Alliance for Innovation on Maternal Health (AIM) and the U.S. Centers for Disease Control and Prevention (CDC). Below are selected state-level activities to reduce maternal mortality and morbidity and not inclusive of all ongoing community-, facility- and systems-level efforts across the state.



The work within the Bureau of Family Health has focused on three interconnected areas:

- Ensuring effective public health systems to monitor maternal outcomes and system improvements
- Supporting change within clinical care and related systems
- Development and implementation of policies that enable or support a strong system of care

Monitoring Maternal Outcomes

- **The Louisiana Pregnancy-Associated Mortality Review is Louisiana's leading source of data and information to catalyze policy and change across systems** to prevent maternal deaths and severe life-threatening complications. For more information, visit partnersforfamilyhealth.org/maternalmortality.
- **Louisiana Pregnancy Risk Assessment Monitoring System (PRAMS)** is an ongoing, population-based surveillance system designed to describe maternal behaviors and experiences that occur before, during, and immediately following pregnancy. Information collected by the Louisiana Pregnancy Risk Assessment Monitoring System is used by health professionals, policy makers and researchers to develop and modify programs and policies designed to improve the health of mothers and infants. For more information, visit partnersforfamilyhealth.org/prams.
- **The Violence and Injury Prevention Program** works to prevent injuries and violence, which are the leading causes of death for Louisianans ages one to 44 years. The program collects information and data on the top causes of unintentional and intentional injuries across the state and uses that data to inform and guide program and policy initiatives intended to address these issues. Priority areas include traffic-related crashes, sexual and intimate partner violence, child abuse and neglect, traumatic brain injury, homicide, suicide, firearm, fire, drowning, older adult falls, and infant sleep-related injuries. For more information, visit partnersforfamilyhealth.org/injury.
- **The Louisiana Domestic Abuse Fatality Review (DAFR)** was established in 2021 per Louisiana Revised Statute 40:2024.1-2024.6 with the aim of identifying the causes of domestic abuse fatalities and methods for prevention. Through a comprehensive and multidisciplinary review of domestic abuse fatality cases at both the state and local levels, this review committee works to identify and characterize the scope and nature of domestic abuse fatalities, including those that are pregnancy-associated, in order to take action to prevent future fatalities. For more information, visit partnersforfamilyhealth.org/dafr.

Supporting Clinical and Systems Change

LaPQC
Louisiana Perinatal Quality Collaborative

- **The Louisiana Perinatal Quality Collaborative (LaPQC)** is a network of perinatal care providers, public health professionals, and patient and community advocates who use quality improvement methods to advance patient-centered care, improve outcomes, and change the culture of care in Louisiana so that every family experiences a safe, patient-centered, and dignified birth. The Louisiana Perinatal Quality Collaborative uses local and national data to inform the focus of initiatives. Through high-touch collaborative learning and improvement science coaching, the Louisiana Perinatal Quality Collaborative helps birthing facilities, emergency departments, and pediatric clinics implement changes centered on four drivers: reliable clinical processes; respectful patient partnership; effective peer teamwork; and engaged perinatal leadership. Currently, the Louisiana Perinatal Quality Collaborative has five initiatives:
    - **Safe Births Initiative (SBI)**: Started in 2021, the Safe Births Initiative is focused on strengthening processes to improve outcomes related to hemorrhage, hypertension, and obstetric sepsis; reducing first time, low-risk cesarean section births; postpartum transition; and substance use disorder.
    - **The Gift**: Started in 2006 and joining the Louisiana Perinatal Quality Collaborative in 2018, The Gift is focused on improving breastfeeding outcomes and infant feeding practices by implementing internationally recognized best practices.
    - **Caregiver Perinatal Depression Screening (CPDS)**: Started in 2022, the Caregiver Perinatal Depression Screening is focused on improving caregiver perinatal depression screening in pediatric practices and connecting caregivers who screen positive to appropriate resources.
    - **Community Birth Initiative**: Started in 2024, the Community Birth Initiative is focused on partnering with community birth providers to improve safety across birth settings through implementation of evidence-based best practices to improve readiness for maternal and newborn emergencies; improve hospital and community birth collaboration to ensure safe transfer from community birth settings to improve maternal and newborn outcomes; and improve collaborative care through multidisciplinary drill training and education.
    - **Obstetric Readiness in Emergency Departments (ORED):** Started in 2025, the Obstetric Readiness in Emergency Departments initiative is focused on implementing evidence-based standardized protocols, processes and structures that improve perinatal and neonatal outcomes.

For more information, visit lapqc.org.

PPCL
PROVIDER TO PROVIDER CONSULTATION LINE
Pediatric and Perinatal Mental Health Support

- **Louisiana's Provider-to-Provider Consultation Line (PPCL)** is a statewide mental health consultation and training system designed to help frontline perinatal and pediatric healthcare providers to recognize and respond to the mental and behavioral needs of their patients and clients. The Provider-to-Provider Consultation Line is staffed by licensed mental health professionals and psychiatrists who can provide guidance on screening, diagnosing, and treating mental and behavioral health conditions and, when needed, can assist providers in finding specialized mental health and other community resources for their patients. The Provider-to-Provider Consultation Line is available at no cost to any Louisiana healthcare provider caring for pregnant and postpartum women and children and youth ages birth to 21 years, including obstetrician-gynecologists, family physicians, pediatricians, nurse practitioners, nurses, doulas, psychiatrists, psychologists, licensed clinical social workers, counselors, and others. The consultation line is staffed Monday through Friday from 8 a.m. to 4:30 p.m. and can be accessed by calling (833) 721-2881. Healthcare providers can also visit the Provider-to-Provider Consultation Line website to register for the program, submit an online consult request, and to get information on the various trainings that the Provider-to-Provider Consultation Line offers, including information on the Perinatal Mental Health TeleECHO Series. For more information, visit ldh.la.gov/page/ppcl.
- **The Transforming Maternal Health Grant** was awarded to 15 states, including Louisiana, from the Centers for Medicare and Medicaid Services (CMS). Over the next 10 years, $17 million will be provided to grantees across the nation. This initiative aims to improve maternal and infant health outcomes, reduce disparities, and increase access to high-quality, coordinated care. Proposed activities for this grant funding include:
  - **Conducting an Environmental Scan:** The Louisiana Department of Health will begin with a comprehensive assessment of the maternal health landscape to identify gaps, understand community needs, and strategically prioritize resources.
  - **Data Infrastructure Enhancement:** Improve systems to better meet constituents' needs and address care gaps.
  - **Home Monitoring Expansion:** Increase access to home monitoring for diabetes and hypertension.
  - **Increased Mental Health and Substance Use Disorder Support:** Expand risk assessment, screening, referrals, and follow-up for perinatal depression, anxiety, substance use disorder, and health-related social needs.
  - **Support for Midwifery and Birth Centers:** Address regulatory barriers and foster a supportive environment through the Community Birth Initiative.

  During model years one through three, CMS will provide technical assistance to ensure that proposed activities align with the mission and objectives of the Transforming Maternal Health model. These efforts will lay the foundation for sustainable improvements in maternal health, ultimately ensuring that the women in Louisiana receive the care and support they need for healthy pregnancies and positive birth experiences.

- **The Maternal Health Innovation Grant** was awarded to the Bureau of Family Health from the Health Resources and Services Administration (HRSA) to enhance maternal health outcomes in Louisiana, focusing on the systemic issues leading to much higher maternal mortality rates compared to the national average. The state has seen significant improvements in recent years, including the establishment of the Louisiana Perinatal Quality Collaborative (LaPQC) and the Pregnancy-Associated Mortality Review (PAMR), but still face substantial challenges related to racial disparities, access to quality care, and social determinants of health. Funds from the grant will be utilized to implement a comprehensive strategic plan aimed at improving maternal health outcomes by:
  - Establishing key personnel, such as the maternal innovations strategy manager and maternal health evaluation manager, through contracts with universities and health organizations.
  - Establishing a state-focused maternal health task force to integrate multidisciplinary stakeholder input, ensuring representation from marginalized communities, and providing stipends for organizations contributing lived experiences.
  - Developing a maternal health strategic plan to guide policy recommendations and innovations, which will outline action steps to address identified gaps.
  - Enhancing data collection systems to better evaluate maternal health services across the state, ultimately enhancing timely and insightful reporting.
  - Innovating care delivery by developing and piloting survey tools for facilities that align with updated state standards.
  - Supporting innovations to access quality maternal care, particularly in rural areas, by enhancing service delivery within the context of social determinants of health affecting maternal outcomes.

  This comprehensive approach aims not only to reduce maternal mortality, but also to address the broader system inequalities affecting maternal health in Louisiana. By implementing these plans, Louisiana seeks to significantly improve maternal health outcomes in communities which experience significant disparities.

Supportive Services for Families

- **Louisiana Maternal, Infant and Early Childhood Home Visiting (LA MIECHV)** implements two evidence-based home visiting models, Nurse Family Partnership (NFP) and Parents as Teachers (PAT), to provide voluntary support to pregnant women and families throughout pregnancy and the postpartum period. These services pair families with registered nurses or parent educators who provide personalized education, support and coaching, and referrals to services to empower families to reach their goals. The Nurse Family Partnership serves families from pregnancy until the child's second birthday and is available for first time mothers who enroll before 29 weeks of pregnancy. Parents as Teachers provides services for up to three years for pregnant women or parenting families with children 36 months or younger at the time of enrollment. For both programs, families must live in a parish where services are offered and be eligible to receive Medicaid, Temporary Assistance for Needy Families (TANF), Social Security Income (SSI), Supplemental Nutrition Assistance Program (SNAP), and/or Women, Infants, and Children Program (WIC) benefits. For more information, visit partnersforfamilyhealth.org/miechv.
- **Reproductive Health Program (RHP)** is the state's sole grantee of the Title X Family Planning Services Grant (Title X). Title X is the only federal program dedicated to providing access to high-quality contraceptive services, supplies, and information to anyone who needs or wants them. The Reproductive Health Program administers this work through a network of statewide service sites, including over 60 parish health units and community health centers. All services are comprehensive and confidential, prioritizing patient autonomy, voluntary provision of services and patient-centered care. For more information, visit HealthyChoicesLA.org.

State-Level Efforts to Reduce Maternal Mortality

Policies that Enable or Support a Strong System of Care:

- **Act 122 (2024 Legislative Session)** requires all hospitals and birthing centers that provide labor and delivery services, prior to discharge following birth, provide the mother and her family members information about post-birth warning signs, including symptoms, and available resources.
- **Act 77 (2025 Legislative Session)** removes exceptions for certain hospitals to the requirement of maintaining in-house obstetric anesthesia personnel on a twenty-four hour basis.
- **Act 437 (2025 Legislative Session)** requires healthcare providers issuing routine prenatal care to screen for substance use disorder during the first prenatal visit using a validated verbal screening tool.
- **House Concurrent Resolution 113 (2024 Legislative Session)** creates a task force to study the implementation and impact of the Family Connects model of postpartum newborn nurse home visiting in Louisiana and other states, to develop policy and funding recommendations to implement the Family Connects model in this state, to provide for the composition and duties of the task force, and to report findings to the Louisiana Legislature.
- **Act 190 (2025 Legislative Session)** requires health coverage plans delivered or issued for delivery in Louisiana provide benefits for maternity services shall include coverage for voluntary home visiting services provided through a home visiting program.

Appendix

Appendix A: Systems of Maternal Mortality Surveillance in the United States

About the Information from Maternal Mortality Review Committees

Maternal Mortality Review Committees (MMRCs) identify specific factors contributing to pregnancy-related deaths and determine if the deaths were preventable. MMRCs look at pregnancy-related deaths at the local and state level.[1] There are two main systems of information on maternal mortality at the national level: the National Vital Statistics System (NVSS) and the Pregnancy Mortality Surveillance System (PMSS).

We cannot directly compare NVSS, PMSS, and MMRC information. While they are all trusted resources, they use different information to create their data, and they serve different purposes.[2,3]

NVSS and PMSS do not uncover the whole story of each death like MMRCs. NVSS solely uses information from death records to identify medical causes of death, which do not include enough detail to understand the circumstances of each death. PMSS uses death records, with additional detail from any birth or fetal death records that link to a death record, to identify medical factors linked to these deaths. PMSS does not provide enough detail to fully understand the circumstances of each death. MMRCs use medical and nonmedical sources to understand the range of factors that contributed to a death. From this information, MMRCs recommend actions that can make a difference.[2]

Because of the depth and breadth of the MMRC process, MMRCs are the gold standard for identifying and describing pregnancy-related deaths.

Maternal Mortality Information Systems at a Glance[2]

	NVSS	PMSS	MMRCs
Identifies causes of death during pregnancy and up to **42 days after**	✓	✓	✓
Identifies causes of death during pregnancy and **up to one year after**		✓	✓
Uses **death records**	✓	✓	✓
Uses **fetal death and birth records**		✓	✓
Uses **sources** such as medical records, social service records, autopsies, and informant interviews			✓
Determines if a death was **preventable**			✓
Provides information on maternal mortality at the **national level**	✓	✓	
Provides information on national **maternal mortality disparities**	✓	✓	
Provides information at the **state and local level**	✓		✓
Identifies **nonmedical contributing factors**			✓
Provides specific **recommendations for prevention**			✓

Appendix A: Systems of Maternal Mortality Surveillance in the United States

Comparison of Information Systems

Information System	Based on	Purpose
National Vital Statistics System (NVSS)[4, 5]	▸ Death records To assign International Classification of Diseases (ICD) codes, which identify maternal deaths among deaths that occurred **during pregnancy and up to 42 days after**	Provides information about national trends and characteristics of maternal deaths, including maternal mortality rates Cause of death coding that aligns with the World Health Organization definition of a maternal death
Pregnancy Mortality Surveillance System (PMSS)[6]	▸ Death records ▸ Any linked birth records or fetal death records To review and determine pregnancy relatedness among deaths **during pregnancy and up to one year after**	Provides information about national trends and characteristics of pregnancy-related deaths, including pregnancy-related mortality ratios
State and local Maternal Mortality Review Committees (MMRCs)[1]	▸ Death records ▸ Any linked birth records or fetal death records ▸ Medical records ▸ Social service records ▸ Autopsies ▸ Informant interviews To review deaths, determine pregnancy relatedness, and identify prevention recommendations within the state and local context among deaths **during pregnancy and up to one year after**	Provides information about pregnancy-related deaths at the state or local level, and can be combined across jurisdictions Pinpoints specific factors contributing to deaths Determines if deaths are preventable Provides tangible prevention recommendations

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[1] Centers for Disease Control and Prevention. Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM). Accessed April 30, 2024. https://www.cdc.gov/reproductivehealth/maternal-mortality/erase-mm/index.html

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[3] Trost SL, Beauregard J, Petersen EE, Cox S, Chandra G, St Pierre A, Rodriguez M, Goodman D. Identifying Deaths During and After Pregnancy: New Approaches to a Perennial Challenge. Public Health Rep. 2023 Jul-Aug;138(4):567-572. Epub 2022 Jul 23. PMID: 35872654; PMCID: PMC10291162.

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[5] Hoyert DL. Maternal mortality and related concepts. Vital Health Stat 3. 2007 Feb;(33):1-13. PMID: 17460868.

[6] Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. Accessed April 30, 2024. https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm

For more information on CDC's Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) initiative and MMRCs, visit **cdc.gov/ERASEMM**.

Appendix B: 2022-2024 Pregnancy-Associated Mortality Review Committee Members

Name	Role and Organization	Year(s) Served
Amanda Branch, MSN, APRN, CNM	Certified Nurse Midwife, Ochsner Medical Center Baton Rouge	2022-2024
Angela Bradley-Byers, MN, APRN, FNP-C	Family Nurse Practitioner, LSU Maternal Fetal Medicine	2022-2024
Bridget Gardner, RN	Director, Injury Prevention Program, University Medical Center	2022
Cheri Johnson, RNC-OB, MSN	CNO and Senior VP of Patient Care Services, Woman's Hospital	2022-2024
Colette Dominique, MD, FACOG, MBA	Section Head of OB Hospitalists, Ochsner Baptist Medical Center	2024
Constance "Shannon" Pfingstag, DNP, CNM, FACNM	Director, Nurse-Midwifery Program, LSU Health New Orleans	2024
Dan Godbee, MD, FACEP, NREMT-P, TP-C, FP-C, CCP-C	Medical Director, East Baton Rouge Parish Department of Emergency Services	2022-2024
Dawn Collins	Founder/Owner/Doula, Birth Matters Because Family Matters	2024
Deatrice Green, PhD, LPC-S, NCC	Assistant Professor of Counseling, Southeastern Louisiana University	2024
Deborah St. Germain, DNP, MS, BSN, RN, AFN-C, SANE-A	Sexual Assault Nurse Examiner, Jefferson Parish Coroner's Office	2022-2024
Demetrice Smith, FNP-C, CNM	Medical Director, Melanated Midwife Assistant Director, Nurse-Midwifery Program, LSU Health	2022-2024
Emily Bell, BSN, RNC	Nurse Home Visitor, Louisiana Department of Health-Office of Public Health-Bureau of Family Health MIECHV	2024
Emma Moscardini, MA	Graduate Student, Louisiana State University	2022

Appendix B: 2022-2024 Pregnancy-Associated Mortality Review Committee Members

Name	Role and Organization	Year(s) Served
Erica Turner, DrPH, MPH, CHES	Senior Manager and Associate Director for Evaluation, Louisiana Public Health Institute	2024
Erin O'Sullivan, MD	Forensic Pathologist, Orleans Parish Coroner's Office	2022-2024
Eva Lessinger, LMSW	Director, New Orleans Family Justice Center	2022
Floyd "Flip" Roberts, MD, FACP, FCCP	Vice President of Clinical Affairs, Louisiana Hospital Association	2022-2023
Gabriella Pridjian, MD	Maternal Fetal Medicine Physician, Tulane Hospital	2022-2024
Grace Lee, MD	Physician, Infectious Disease, Louisiana Department of Health	2022-2023
Hannah Hennigan, BSN, RNC-OB	Nurse Home Visitor, Louisiana Department of Health-Office of Public Health-Bureau of Family Health MIECHV	2024
Heather Olivier, PhD, LPC, PMH-C, CCTP, NCC	Certified Perinatal Mental Health Counselor, Olivier Counseling and Consulting, LLC	2022-2024
Helen Hurst, DNP, RNC-OB, APRN-CNM	Associate Dean of Nursing and Professor, Creighton University	2022-2024
Ivory Wilson, MA, LAC, CCDP-D, CCGC	Program Manager, Adult Best Practices, Louisiana Department of Health-Office of Behavioral Health	2022-2024
Jacquelyn Kellett, LCSW-BACS, LAC	Assistant Vice President of Integrated & Behavioral Health, Volunteers of America SELA	2024
Jane Martin, MD	Maternal and Fetal Medicine Physician, Ochsner Health System	2022-2024
Jennifer Avegno, MD	Director, New Orleans Health Department Emergency Physician, LSU Health	2022-2024

Appendix B: 2022-2024 Pregnancy-Associated Mortality Review Committee Members

Name	Role and Organization	Year(s) Served
Jody West, LCSW-BACS	Program Manager, Provider-to-Provider Consultation Line, Louisiana Department of Health-Office of Public Health-Bureau of Family Health	2024
Johnnay Benjamin, MPH	Patient Advocate Representative	2022-2024
Jon Brazzel	Unit Commander QA/CQI Officer, Baton Rouge Emergency Medical Services	2022
Jordan Ellis, PhD, RN	Registered Nurse	2024
Julia Buckner, MD	Director, LSU Anxiety and Addictive Behaviors Laboratory and Clinic	2022
Julie Fontenot, BSN, RNC-OB, CPPS	Quality Director, Rapides Regional Medical Center	2024
Karli Boggs, MD	OB/GYN, Our Lady of the Lake	2022-2024
Keith Carter	Area Manager, Airmethods	2022
Kenneth Brown, MD, MBA, FACOG, FACHE, CHCQM	Associate Professor of Obstetrics and Gynecology, LSU Health Senior VP of Risk Management and Patient Safety, LAMMICO	2023-2024
Kerrie Redmond, MSN, RNC-OB	Perinatal Improvement Advisor, Louisiana Perinatal Quality Collaborative, Louisiana Department of Health-Office of Public Health-Bureau of Family Health	2022-2024
Kim Franklin, LMSW	Social Worker, Our Lady of the Lake	2024
Laneceya Russ, MS	Executive Director, March for Moms	2024
LaTienda Pierre	Racial Justice Coordinator, YWCA of Northwest Louisiana Captain, Caddo Parish Sheriff's Office	2024

Appendix B: 2022-2024 Pregnancy-Associated Mortality Review Committee Members

Name	Role and Organization	Year(s) Served
Lisa Freeman, JD	Executive Director, Louisiana Highway Safety Commission Governor's Representative for Highway Safety for Louisiana	2022-2024
Mae Tempie Bernard, RN, MBA, MSN	MCO	2024
Mariah Wineski, MS	Executive Director, Louisiana Coalition Against Domestic Violence	2022, 2024
Marshall St. Amant, MD	Maternal Fetal Medicine, Woman's Hospital	2022
Mehnaz Rahman, MD	Director of Women's Heart Health, LSU Health	2024
Melissa Stainback, PhD	Region 5 Opioid Coordinator, Louisiana Department of Health - Office of Public Health	2022-2024
Michelle Harris-Turner, PharmD	Pharmacist Educator, Louisiana Department of Health - Office of Public Health	2024
Mike Costello	State Emergency Medical Services	2022
Mike Straney, MD	Emergency Medicine Physician, Terrebone General Medical Center	2022
Misty Wainwright, LPC, NBCC	Licensed Professional Counselor, Misty M Wainwright, MA, LPC, NCC, LLC	2024
Murtuza "Zee" Ali, MD	Cardiologist, LSU Health	2022-2024
Natasha Seals, PharmD	Opioid Pharmacist Coordinator, Office of Public Health, Louisiana Department of Health	2022
Nelson Hollings	North Shore Regional Safety Coalition Coordinator, The Regional Planning Commission	2022-2024
Nikki Greenaway, MSN, FNP-C, IBCLC	Founder/CEO, Bloom Maternal Health	2022-2024

Appendix B: 2022-2024 Pregnancy-Associated Mortality Review Committee Members

Name	Role and Organization	Year(s) Served
Nikolai Terebieniec, NREMT-P	Clinical QA/CQI Officer, East Baton Rouge Parish Department of Emergency Services	2022-2024
Pashion Norman, BSCJ MSCJ	Behavioral Health Liaison, Healthy Blue Louisiana	2024
Raymond Tucker, PhD	Clinical Psychology, Louisiana State University	2022
Robert Maupin, MD, FACOG	Section Head, Division of Maternal Fetal Medicine, LSU Health School of Medicine	2022-2024
Rodney Wise, MD	Medical Director, AmeriHealth Caritas	2022, 2023
Roneisha McClendon, MD, MS	Obstetric Anesthesiologist and Associate Director, Anesthesiology Residency Program, Ochsner Health System	2024
Scott Barrilleaux, MD	Maternal Fetal Medicine, Louisiana Commission on Perinatal Care and Prevention of Infant Mortality	2022
Shannon Alwood, MD	Director, Emergency Medicine Residency Program, LSU Health	2024
Stacie Williams, PhD, MBA	Director of Diversity, Social Responsibility and Community Relations, LCMC Health	2024
Stephen Norman, MD	Pathologist, Louisiana Pathology	2024
Susan Green, MSN, RN	Director of Emergency Services, Ochsner Medical Center - Baton Rouge and Iberville	2022-2024
Taeshaun Walters, MPH, CLC, CHT	Founder/CVO/Doula, Changing Generations	2024
Tamika Jones, BS	Community Management Professional, Humana Healthy Horizons	2024
Victoria Rodriguez, PhD, LPC, CCTP, NCC	Licensed Professional Counselor, Revive Counseling & Consulting, LLC	2022-2024

Appendix B: 2022-2024 Pregnancy-Associated Mortality Review Committee Members

Name	Role and Organization	Year(s) Served
Victoria Williams, DHA, LMSW, CBS	Doula and Advocacy Outreach Lead, Birthmark Doula Collective	2022-2024
Whitney Storey, MS, PLPC, CBE	Senior Instructor of Psychology, University of Louisiana at Lafayette Contract Licensed Perinatal Counselor, KDH Counseling	2022-2024
Zoe Larned, MD	Oncologist, Ochsner Medical Center	2022

Appendix C: Maternal Mortality Review Committee Decisions Form

Maternal Mortality Review Information Application (MMRIA) Committee Decisions Form – Page 1

MMRIA — MATERNAL MORTALITY REVIEW COMMITTEE DECISIONS FORM v24 — 1

REVIEW DATE (Month/Day/Year)

RECORD ID #

PREGNANCY-RELATEDNESS: SELECT ONE

- ☐ PREGNANCY-RELATED
  A death during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy
- ☐ PREGNANCY-ASSOCIATED, BUT NOT-RELATED
  A death during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy
- ☐ PREGNANCY-ASSOCIATED BUT UNABLE TO DETERMINE PREGNANCY-RELATEDNESS

ESTIMATE THE DEGREE OF RELEVANT INFORMATION (RECORDS) AVAILABLE FOR THIS CASE:
These fields are for internal jurisdiction use in order to evaluate opportunities to gain better access to information for reviews.

- ☐ COMPLETE — All records necessary for adequate review of the case were available
- ☐ SOMEWHAT COMPLETE — Major gaps (i.e., information that would have been crucial to the review of the case)
- ☐ MOSTLY COMPLETE — Minor gaps (i.e., information that would have been beneficial but was not essential to the review of the case)
- ☐ NOT COMPLETE — Minimal records available for review (i.e., death certificate and no additional records)

DOES THE COMMITTEE AGREE WITH THE UNDERLYING[1] CAUSE OF DEATH LISTED ON DEATH CERTIFICATE? ☐ YES ☐ NO
The underlying cause of death determination as documented by a multidisciplinary MMRC may be different from the underlying cause of death used by pathologists in the course of death certification documented in the Vital Statistics system.

COMMITTEE DETERMINATION OF CAUSE(S) OF DEATH

IF PREGNANCY-RELATED, COMMITTEE DETERMINATION OF UNDERLYING[1] CAUSE OF DEATH
Refer to Appendix A for PMSS-MM cause of death list.

If a death is pregnancy-associated, not related then an underlying cause of death entry is not necessary. Use optional box below.

TYPE	OPTIONAL: CAUSE (DESCRIPTIVE)
UNDERLYING[1,2]	
CONTRIBUTING[2,3]	
IMMEDIATE[2]	
OTHER SIGNIFICANT[2]	

COMMITTEE DETERMINATIONS ON CIRCUMSTANCES SURROUNDING DEATH[4]

DID **OBESITY** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **DISCRIMINATION**[5] CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **MENTAL HEALTH CONDITIONS** OTHER THAN SUBSTANCE USE DISORDER CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **SUBSTANCE USE DISORDER** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN

MANNER OF DEATH

WAS THIS DEATH A SUICIDE?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
WAS THIS DEATH A HOMICIDE?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN

IF ACCIDENTAL DEATH, HOMICIDE, OR SUICIDE, LIST THE **MEANS OF FATAL INJURY**

- ☐ FIREARM
- ☐ SHARP INSTRUMENT
- ☐ BLUNT INSTRUMENT
- ☐ POISONING/OVERDOSE
- ☐ HANGING/ STRANGULATION/ SUFFOCATION
- ☐ FALL
- ☐ PUNCHING/ KICKING/BEATING
- ☐ EXPLOSIVE
- ☐ DROWNING
- ☐ FIRE OR BURNS
- ☐ MOTOR VEHICLE
- ☐ INTENTIONAL NEGLECT
- ☐ OTHER, SPECIFY:
- ☐ UNKNOWN
- ☐ NOT APPLICABLE

IF HOMICIDE, WHAT WAS THE **RELATIONSHIP OF THE PERPETRATOR TO THE DECEDENT?**

- ☐ NO RELATIONSHIP
- ☐ PARTNER
- ☐ EX-PARTNER
- ☐ OTHER RELATIVE
- ☐ OTHER
- ☐ ACQUAINTANCE
- ☐ OTHER, SPECIFY:
- ☐ UNKNOWN
- ☐ NOT APPLICABLE

[1] Underlying cause refers to the disease or injury that initiated the chain of events leading to death or the circumstances of the accident or violence which produced the fatal injury.
[2] OPTIONAL field, CDC does not use this data.
[3] Add descriptions of contributors in the pathway between the immediate and underlying cause of death, as provided by the committee. Note that this is different from the contributing factors worksheet on page 2.
[4] If "Yes" or "Probably" is selected for preventable deaths, then an aligned contributing factor class and description would be expected in the grid on page 2.
[5] Encompasses Discrimination, Interpersonal Racism, and Structural Racism as described in Appendix B.

Appendix C: Maternal Mortality Review Committee Decisions Form

Maternal Mortality Review Information Application (MMRIA) Committee Decisions Form – Page 2

MMRIA — MATERNAL MORTALITY REVIEW COMMITTEE DECISIONS FORM v24 — 2

COMMITTEE DETERMINATION OF PREVENTABILITY

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 to patient, family, provider, facility, system and/or community factors.

WAS THIS DEATH PREVENTABLE?	☐ YES	☐ NO
CHANCE TO ALTER OUTCOME[6]	☐ GOOD CHANCE ☐ NO CHANCE	☐ SOME CHANCE ☐ UNABLE TO DETERMINE

CONTRIBUTING FACTORS AND RECOMMENDATIONS FOR ACTION (Entries may continue to grid on page 3)

CONTRIBUTING FACTORS WORKSHEET

What were the factors that contributed to this death? Multiple contributing factors may be present at each level: Choose one contributing factor per row until all contributing factors have been identified and described.

RECOMMENDATIONS OF THE COMMITTEE

If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events? Develop one recommendation per row until all contributing factors have been addressed.

DESCRIPTION OF ISSUE (enter a description for EACH contributing factor listed)	CONTRIBUTING FACTOR (enter one per row; repeat as needed if a contributor has more than one recommendation)	LEVEL	COMMITTEE RECOMMENDATION [Who?] should [do what?] [when?] Map recommendations to contributing factors; repeat as needed if a recommendation has more than one contributor.	LEVEL	PREVENTION TYPE (choose below)	EXPECTED IMPACT (choose below)

CONTRIBUTING FACTOR KEY (DESCRIPTIONS IN APPENDIX B)

- Access/financial
- Adherence
- Assessment
- Chronic disease
- Clinical skill/quality of care
- Communication
- Continuity of care/care coordination
- Cultural/religious
- Delay
- Discrimination
- Environmental
- Equipment/technology
- Interpersonal racism
- Knowledge
- Law Enforcement
- Legal
- Mental health conditions
- Outreach
- Policies/procedures
- Referral
- Social support/ isolation
- Structural racism
- Substance use disorder - alcohol, illicit/prescription drugs
- Tobacco use
- Trauma
- Unstable housing
- Violence
- Other

DEFINITION OF LEVELS

- PATIENT/FAMILY: An individual before, during or after a pregnancy, and their family, internal or external to the household, with influence on the individual
- PROVIDER: An individual with training and expertise who provides care, treatment, and/or advice
- FACILITY: A physical location where direct care is provided - ranges from small clinics and urgent care centers to hospitals with trauma centers
- SYSTEM: Interacting entities that support services before, during, or after a pregnancy - ranges from healthcare systems and payors to public services and programs
- COMMUNITY: A grouping based on a shared sense of place or identity - ranges from physical neighborhoods to a community based on common interests and shared circumstances

PREVENTION TYPE

- PRIMARY: Prevents the contributing factor before it ever occurs
- SECONDARY: Reduces the impact of the contributing factor once it has occurred (i.e., treatment)
- TERTIARY: Reduces the impact or progression of what has become an ongoing contributing factor (i.e., management of complications)

EXPECTED IMPACT

- SMALL: Education/counseling (community- and/or provider-based health promotion and education activities)
- MEDIUM: Clinical intervention and coordination of care across continuum of well-woman visits (protocols, prescriptions)
- LARGE: Long-lasting protective intervention (improve readiness, recognition and response to obstetric emergencies/LARC)
- EXTRA LARGE: Change in context (promote environments that support healthy living/ensure available and accessible services)
- GIANT: Address social drivers of health (poverty, inequality, etc.)

[6] If "Good Chance" or "Some Chance" are selected, then CDC considers this is a "Yes" in their analytic use of the preventability determination.

Appendix C: Maternal Mortality Review Committee Decisions Form

Maternal Mortality Review Information Application (MMRIA) Committee Decisions Form – Page 5

APPENDIX A. PMSS-MM CODES: IF PREGNANCY-RELATED,[7] COMMITTEE DETERMINATION OF UNDERLYING[1] CAUSE OF DEATH

Hemorrhage (Excludes Aneurysms or CVA)
10.1 - Hemorrhage – Uterine Rupture
10.2 - Placental Abruption
10.3 - Placenta Previa
10.4 - Ruptured Ectopic Pregnancy
10.5 - Hemorrhage – Uterine Atony/Postpartum Hemorrhage
10.6 - Placenta Accreta/Increta/Percreta
10.7 - Hemorrhage due to Retained Placenta
10.10 - Hemorrhage – Laceration/Intra-Abdominal Bleeding
10.9 - Other Hemorrhage/NOS

Infection
20.1 - Postpartum Genital Tract (e.g., of the Uterus/ Pelvis/Perineum/Necrotizing Fasciitis)
20.2 - Sepsis/Septic Shock
20.4 - Chorioamnionitis/Antepartum Infection
20.6 - Urinary Tract Infection
20.7 - Influenza
20.8 - COVID-19
20.10 - Pneumonia
20.11 - Other Non-Pelvic Infection (e.g., TB, Meningitis, HIV)
20.9 - Other Infection/NOS

Embolism (Excludes Cerebrovascular)
30.1 - Embolism – Thrombotic
30.9 - Other Embolism (Excludes Amniotic Fluid Embolism)/NOS

Amniotic Fluid Embolism
31.1 - Amniotic Fluid Embolism

Hypertensive Disorders of Pregnancy (HDP)
40.1 - Preeclampsia
50.1 - Eclampsia
60.1 - Chronic Hypertension with Superimposed Preeclampsia

Anesthesia Complications
70.1 - Anesthesia Complications

Cardiomyopathy
80.1 - Postpartum/Peripartum Cardiomyopathy
80.2 - Hypertrophic Cardiomyopathy
80.9 - Other Cardiomyopathy/NOS

Hematologic
82.1 - Sickle Cell Anemia
82.9 - Other Hematologic Conditions including Thrombophilias/TTP/HUS/NOS

Collagen Vascular/Autoimmune Diseases
83.1 - Systemic Lupus Erythematosus (SLE)
83.9 - Other Collagen Vascular Diseases/NOS

Conditions Unique to Pregnancy
85.1 - Conditions Unique to Pregnancy (e.g., Gestational Diabetes, Hyperemesis, Liver Disease of Pregnancy)

Injury
88.1 - Intentional (Homicide)
88.2 - Unintentional
88.9 - Unknown Intent/NOS

Cancer
89.1 - Gestational Trophoblastic Disease (GTD)
89.3 - Malignant Melanoma
89.9 - Other Malignancies/NOS

Other Cardiovascular Conditions (excluding cardiomyopathy, HDP, and CVA)
90.1 - Coronary Artery Disease/Myocardial Infarction (MI)/Atherosclerotic Cardiovascular Disease
90.2 - Pulmonary Hypertension
90.3 - Valvular Heart Disease Congenital and Acquired
90.4 - Vascular Aneurysm/Dissection (Non-Cerebral)
90.5 - Hypertensive Cardiovascular Disease
90.6 - Marfan Syndrome
90.7 - Conduction Defects/Arrhythmias
90.8 - Vascular Malformations Outside Head and Coronary Arteries
90.9 - Other Cardiovascular/NOS, including CHF, Cardiomegaly, Cardiac Hypertrophy, Cardiac Fibrosis, Non-Acute Myocarditis

Pulmonary Conditions (Excludes ARDS-Adult Respiratory Distress Syndrome)
91.1 - Chronic Lung Disease
91.2 - Cystic Fibrosis
91.3 - Asthma
91.9 - Other Pulmonary Disease/NOS

Neurologic/Neurovascular Conditions (Excluding CVA)
92.1 - Epilepsy/Seizure Disorder
92.9 - Other Neurologic Diseases/NOS

Renal Disease
93.1 - Chronic Renal Failure/End-Stage Renal Disease (ESRD)
93.9 - Other Renal Disease/NOS

Cerebrovascular Accident (CVA) not Secondary to HDP
95.1 - Cerebrovascular Accident (Hemorrhage/ Thrombosis/Aneurysm/Malformation) not Secondary to Hypertensive Disorders of Pregnancy

Metabolic/Endocrine
96.2 - Diabetes Mellitus
96.9 - Other Metabolic/Endocrine Disorders/NOS

Gastrointestinal Disorders
97.1 - Crohn's Disease/Ulcerative Colitis
97.2 - Liver Disease/Failure/Transplant
97.9 - Other Gastrointestinal Diseases/NOS

Mental Health Conditions
100.1 - Depressive Disorder
100.2 - Anxiety Disorder (including Post-Traumatic Stress Disorder)
100.3 - Bipolar Disorder
100.4 - Psychotic Disorder
100.5 - Substance Use Disorder
100.9 - Other Psychiatric Conditions/NOS

Unknown COD
999.1 - Unknown COD

[1] Underlying cause refers to the disease or injury that initiated the chain of events leading to death or the circumstances of the accident or violence which produced the fatal injury.
[7] Pregnancy-related death: death during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

Appendix C: Maternal Mortality Review Committee Decisions Form

Maternal Mortality Review Information Application (MMRIA) Committee Decisions Form – Page 6

MMRIA MATERNAL MORTALITY REVIEW COMMITTEE DECISIONS FORM v24 6

APPENDIX B. CONTRIBUTING FACTOR DESCRIPTIONS

LACK OF ACCESS/FINANCIAL RESOURCES
Systemic barriers, e.g., lack or loss of healthcare insurance or other financial duress, as opposed to noncompliance, impacted their ability to care for themself (e.g., did not seek services because unable to miss work or afford postpartum visits after insurance expired). Other barriers to accessing care: insurance non-eligibility, provider shortage in their geographical area, and lack of public transportation.

ADHERENCE TO MEDICAL RECOMMENDATIONS
The provider or patient did not follow protocol or failed to comply with standard procedures (i.e., non adherence to prescribed medications).

FAILURE TO SCREEN/INADEQUATE ASSESSMENT OF RISK
Factors placing the individual at risk for a poor clinical outcome recognized, and they were not transferred/transported to a provider able to give a higher level of care.

CHRONIC DISEASE
Occurrence of one or more significant pre-existing medical conditions (e.g., obesity, cardiovascular disease, or diabetes).

CLINICAL SKILL/QUALITY OF CARE (PROVIDER OR FACILITY PERSPECTIVE)
Personnel were not appropriately skilled for the situation or did not exercise clinical judgment consistent with standards of care (e.g., error in the preparation or administration of medication or unavailability of translation services).

POOR COMMUNICATION/LACK OF CASE COORDINATION OR MANAGEMENT/ LACK OF CONTINUITY OF CARE (SYSTEM PERSPECTIVE)
Care was fragmented (i.e., uncoordinated or not comprehensive) among or between healthcare facilities or units, (e.g., records not available between inpatient and outpatient or among units within the hospital, such as Emergency Department and Labor and Delivery).

LACK OF CONTINUITY OF CARE (PROVIDER OR FACILITY PERSPECTIVE)
Care providers did not have access to individual's complete records or did not communicate their status sufficiently. Lack of continuity can be between prenatal, labor and delivery, and postpartum providers.

CULTURAL/RELIGIOUS, OR LANGUAGE FACTORS
The provider or patient demonstrated that any of these factors was either a barrier to care due to lack of understanding or led to refusal of therapy due to beliefs (or belief systems).

DELAY
The provider or patient was delayed in referring or accessing care, treatment, or follow-up care/action.

DISCRIMINATION
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. (Hardeman, 2022)[8]

ENVIRONMENTAL FACTORS
Factors related to weather or social environment.

INADEQUATE OR UNAVAILABLE EQUIPMENT/TECHNOLOGY
Equipment was missing, unavailable, or not functional, (e.g., absence of blood tubing connector).

INTERPERSONAL RACISM
Discriminatory interactions between individuals based on differential assumptions about the abilities, motives, and intentions of others and resulting in differential actions toward others based on their race. It can be conscious as well as unconscious, and it includes acts of commission and acts of omission. It manifests as lack of respect, suspicion, devaluation, scapegoating, and dehumanization. (Hardeman, 2022)[8]

KNOWLEDGE - LACK OF KNOWLEDGE REGARDING IMPORTANCE OF EVENT OR OF TREATMENT OR FOLLOW-UP
The provider or patient did not receive adequate education or lacked knowledge or understanding regarding the significance of a health event (e.g., shortness of breath as a trigger to seek immediate care) or lacked understanding about the need for treatment/follow-up after evaluation for a health event (e.g., needed to keep appointment for psychiatric referral after an ED visit for exacerbation of depression).

INADEQUATE LAW ENFORCEMENT RESPONSE
Law enforcement response was not in a timely manner or was not appropriate or thorough in scope.

LEGAL
Legal considerations that impacted outcome.

MENTAL HEALTH CONDITIONS
The patient had a documented diagnosis of a psychiatric disorder. This includes postpartum depression. If a formal diagnosis is not available, refer to your review committee subject matter experts (e.g., psychiatrist, psychologist, licensed counselor) to determine whether the criteria for a diagnosis of substance use disorder or another mental health condition are met based on the available information.

INADEQUATE COMMUNITY OUTREACH/RESOURCES
Lack of coordination between healthcare system and other outside agencies/organizations in the geographic/cultural area that work with maternal health issues.

LACK OF STANDARDIZED POLICIES/PROCEDURES
The facility lacked basic policies or infrastructure germane to the individual's needs (e.g., response to high blood pressure, or a lack of or outdated policy or protocol).

LACK OF REFERRAL OR CONSULTATION
Specialists were not consulted or did not provide care; referrals to specialists were not made.

SOCIAL SUPPORT/ISOLATION - LACK OF FAMILY/ FRIEND OR SUPPORT SYSTEM
Social support from family, partner, or friends was lacking, inadequate, and/or dysfunctional.

STRUCTURAL RACISM
The systems of power based on historical injustices and contemporary social factors that systematically disadvantage people of color and advantage white people through inequities in housing, education, employment, earnings, benefits, credit, media, health care, criminal justice, etc. (Hardeman, 2022)[8]

SUBSTANCE USE DISORDER – ALCOHOL, ILLICIT/ PRESCRIPTION DRUGS
Substance use disorder is characterized by recurrent use of alcohol and/or drugs causing clinically and functionally significant impairment, such as health problems or disability. The committee may determine that substance use disorder contributed to the death when the disorder directly compromised their health status (e.g., acute methamphetamine intoxication exacerbated pregnancy- induced hypertension, or they were more vulnerable to infections or medical conditions).

TOBACCO USE
The patient's use of tobacco directly compromised the patient's health status (e.g., long-term smoking led to underlying chronic lung disease).

TRAUMA
The individual experienced trauma: i.e., loss of child (death or loss of custody), rape, molestation, or one or more of the following: sexual exploitation during childhood plus persuasion, inducement, or coercion of a child to engage in sexually explicit conduct; or other physical or emotional abuse other than that related to sexual abuse during childhood.

UNSTABLE HOUSING
Individual lived "on the street," in a homeless shelter, or in transitional or temporary circumstances with family or friends.

VIOLENCE AND INTIMATE PARTNER VIOLENCE (IPV)
Physical or emotional abuse perpetrated by current or former intimate partner, family member, friend, acquaintance, or stranger.

OTHER
Contributing factor not otherwise mentioned. Please provide description.

[8] Hardeman RR, et al. *Developing Tools to Report Racism in Maternal Health for the CDC Maternal Mortality Review Information Application (MMRIA): Findings from the MMRIA Racism & Discrimination Working Group.* Matern Child Health J. 2022.

Additional information about MMRIA can be found at reviewtoaction.org/implement/mmria#collapseThree-mmria.

Appendix D: Utah Tool

APPENDIX C. CONSENSUS PREGNANCY-RELATED CRITERIA FOR SUICIDE AND UNINTENTIONAL OVERDOSES[9, 10]

Present Y/N	Consensus pregnancy-related criteria for suicide and unintentional overdoses	Examples
	Pregnancy Complication	
	Increased pain directly attributable to pregnancy or postpartum events leading to self-harm or drug use that are implicated in suicide or unintentional drug-related death. *[consensus during pregnancy]*	Back pain, pelvic pain, kidney stones, cesarean incision, or perineal tear pain
	Traumatic event in pregnancy or postpartum (diagnosis of fetal anomaly, stillbirth, preterm delivery, neonatal or infant death, traumatic delivery experience, removal of children from custody) with a temporal relationship between the event leading to self-harm or increased drug use and subsequent death. *[consensus in all time periods]*	Stillbirth, preterm delivery, diagnosis of fetal anomaly, traumatic delivery experience, relationship destabilization due to pregnancy, removal of child(ren) from custody
	Pregnancy-related complication likely exacerbated by drug use leading to subsequent death. *[consensus in pregnancy – only time period considered]*	Placental abruption or preeclampsia in setting of drug use
	Chain of Events Initiated by Pregnancy	
	Cessation or attempted taper of medications for pregnancy-related concerns (neonatal/fetal exposure risk, fear of child protective service involvement) leading to maternal destabilization or drug use and subsequent death. Neonatal or fetal risk - *[consensus in all time periods]*. Child Protective Service involvement - *[consensus during pregnancy]*	Substance use pharmacotherapy (methadone or buprenorphine), psychiatric medications, pain medications
	Inability to access inpatient or outpatient addiction or mental health treatment due to pregnancy. *[consensus during and within 6 months of pregnancy]*	Health care professionals uncomfortable with treating pregnant women, facilities not available that accept pregnant women
	Perinatal psychiatric conditions resulting in maternal destabilization or drug use and subsequent death. *[consensus during and within 6 months of pregnancy]*	Depression diagnosed in pregnancy or postpartum resulting in suicide
	Recovery/stabilization of substance use disorder achieved during pregnancy or postpartum with clear statement in records that pregnancy was motivating factor with subsequent relapse and subsequent death. *[no consensus at any time period]*	Relapse leading to overdose due to decreased tolerance or polysubstance use
	Aggravation of Underlying Condition by Pregnancy	
	Worsening of underlying depression, anxiety or other psychiatric condition in pregnancy or postpartum period with documentation that mental illness led to drug use or self-harm and subsequent death. *[consensus during and within 6 months of pregnancy]*	Pre-existing depression exacerbated in the postpartum period leading to suicide
	Exacerbation, under-treatment or delayed treatment of pre-existing condition in pregnancy or postpartum leading to use of prescribed or illicit drugs resulting in death, or suicide. *[consensus during and within 6 months of pregnancy]*	Undertreatment of chronic pain leading to misuse of medications or use of illicit drugs, resulting in death
	Medical conditions secondary to drug use in setting of pregnancy or postpartum that may be attributable to pregnancy-related physiology and increased risk of complications leading to death. *[no consensus at any time period]*	Stroke or cardiovascular arrest due to stimulant use

[9] Smid MC et al, 2023. *Consensus pregnancy-related criteria for suicide and unintentional overdoses using a Delphi process.* Arch Womens Ment Health.

[10] The italicized text in brackets specify where the Delphi exercise with representatives from 48 MMRCs and eight experts in maternal mortality, substance use disorder, and maternal mental health reached consensus on the criterion. Lack of Delphi consensus as shown in brackets should not override committee consensus on a specific case. If "Yes" is chosen by the committee for at least one of the boxes under any of the three categories then that would constitute a pregnancy-related death.

Appendix E: Louisiana Bias or Racism and Social Determinants of Health (LABoRS) Tool

Demographics

Race, place of birth, citizenship/immigration status, preferred language, marital status, educational level, employment status, type of insurance, WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) utilization, and distance between place of birth/death from decedent's residence.

Social Determinants of Health

- **Barriers to healthcare**: child care, cultural norms, distance, financial, transportation, mobility
- **Barriers to communication:** hearing impaired, functional illiteracy, speech impaired, language differences, vision impaired, cultural differences
- **Social or emotional stress:** history of domestic violence, history of psychiatric hospitalizations or treatment, child protective services involvement, history of substance use, unemployment, pregnancy unwanted, recent trauma, prior suicide attempts, adverse childhood experiences, history of incarceration, housing instability, social support, chronic illness, short interpregnancy interval

Case Records Findings of Potential Bias, Discrimination, or Barriers to Care

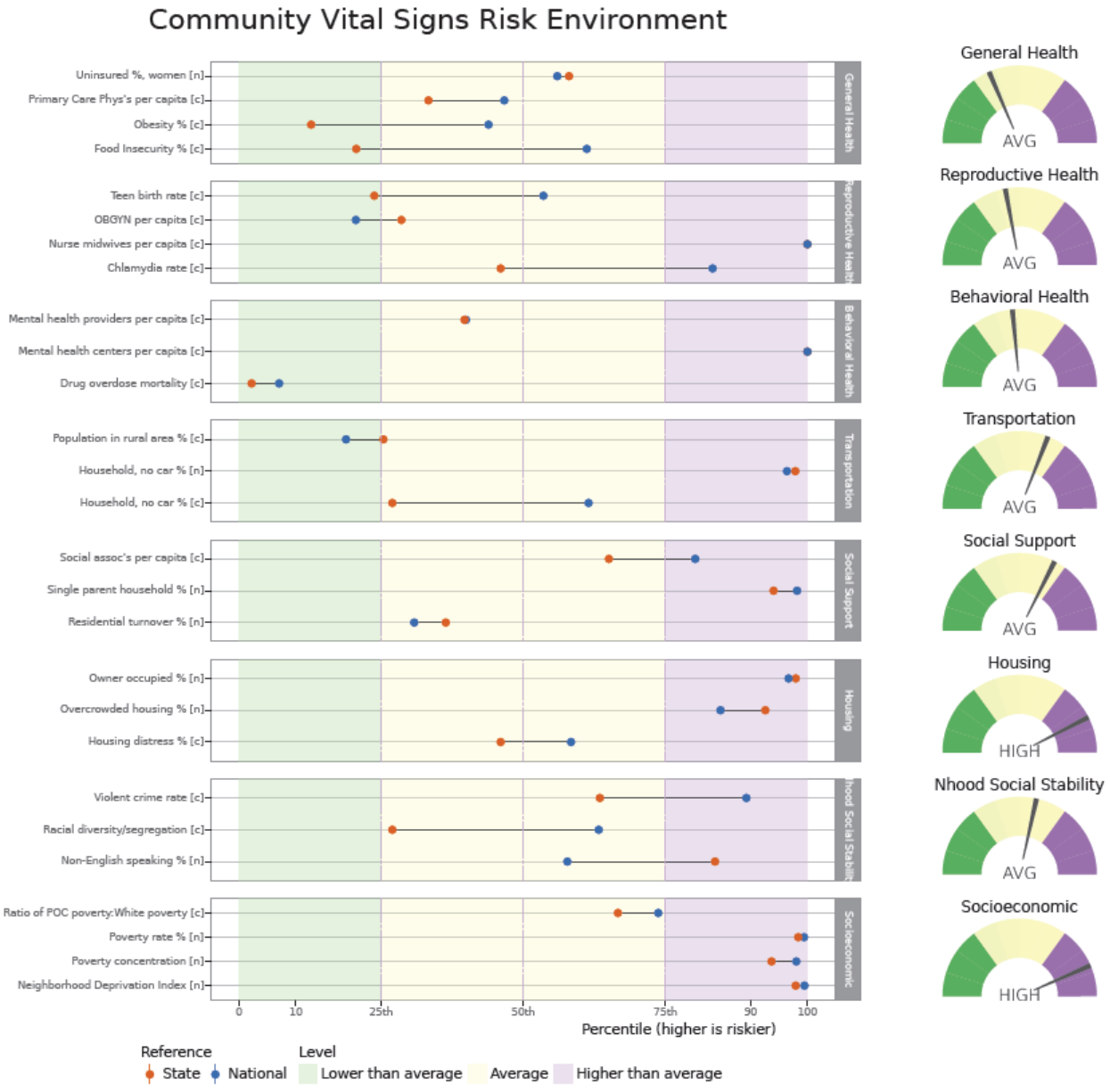
(Includes all records and reports received for abstraction and case review.)

- **Negative patient/provider/facility interaction**
  - **Examples:** Stigmatizing language, dismissing concerns, non-clinical patient-initiated transfers of care, case notes suggesting provider/facility conflict, blaming, casting doubt, etc.
- **Excessive gatekeeping**
  - **Examples:** Inability to reach provider, lack of/delay in notification to provider, unanswered messages, etc.
- **Diagnostic delays that appear to be inconsistent with best practice**
  - **Examples:** Lack of/delay in ordering imaging/labs, delay in consults or case management assessment, delay in transfer of care, etc.
- **Leaving against medical advice**
- **Repeated emergency department visits in a short time frame for urgent care concerns**
- **Cultural incompetence**
  - **Examples:** Lack of translator, lack of awareness of other cultures, etc.
- **Lack of access to healthcare before, during, and/or after pregnancy**
- **Treatment decisions and recommendations that appear to be inconsistent with best practice**
  - **Examples:** Over-treatment, under-treatment, delay in treatment, inadequate pain management, provider assumptions about patient's adherence to treatment, etc.
- **Other findings of potential bias, discrimination, or barriers to care not captured by the categories above**
  - **Example:** Multiple appointments for labs and clinical testing at the same location on separate days, requiring multiple visits in a single week

Appendix E: Louisiana Bias or Racism and Social Determinants of Health (LABoRS) Tool

Community Vital Signs Dashboard

A total of 27 socio-spatial indicators that measure the health of the community where the woman lived at the time of death. The indicators are grouped into domains that measure general health, reproductive health, behavioral health, transportation, social support, housing, neighborhood social stability, and socioeconomic risk. For each individual indicator, the dashboard compares the decedent's community to others in both the state and the nation. For each domain group, the decedent's community is classified as high-, low-, or average-risk compared to all communities in the state.



Appendix E: Louisiana Bias or Racism and Social Determinants of Health (LABoRS) Tool

Definitions of Socio-Spatial Indicators Used in the Community Vital Signs Dashboard

Indicator	How It's Measured/Calculated	What It Tells Us
Primary care physicians per capita (county level)	Active non-federal physicians (MDs and DOs) in primary care (residents and those 75+ in age are excluded) per 100,000 people	The supply of MDs and DOs in each county. It is important to note that in large counties, this value may not represent the accessibility to a physician in rural areas. There may appear to be a sufficient number of physicians per capita, but they may be geographically distant from rural portions of the county.
Percent of uninsured women (census tract level)	Percent of women <65 without health insurance (either private or public)	Higher proportions of uninsured women suggest potential barriers to accessing primary and specialty care.
Percent of obesity (county level)	Percent of adults 18+ with a Body Mass Index >30, estimated with statistical modeling from BRFSS	The county prevalence of obesity has been associated with socioeconomic insecurity, as well as lower food quality and physical activity environments and opportunities.
Percent of food insecure (county level)	Percent of population meeting USDA definition for food insecure, estimated with statistical modeling from state level CPS data	The prevalence of food insecurity may suggest the intersection of socioeconomic stress with an inadequate safety net to meet basic needs.
OB/GYNs per capita (county level)	Active non-federal OB/GYNs in patient care per 100,000 people	The supply of OB/GYNs in each county. As with physicians per capita (above), this value may not reflect accessibility to OB/GYNs in rural areas.
Nurse midwives per capita (county level)	Nurse midwives (Certified Nurse Midwives and Advanced Practice Nurse midwives) per 100,000 people	The supply of nurse midwives in each county. As noted with other provider-level indicators, this value may not reflect accessibility to nurse midwives in rural areas.
Chlamydia rate (county level)	Number of chlamydia cases per 100,000 people	Because chlamydia is preventable through education and access to barrier contraceptives, this indicator serves as a proxy for the reproductive health burden experienced by the population in a given county.
Teen birth rate (county level)	Live births per 1,000 females 15-19; estimates are pooled over several consecutive years	Teen birth rate reflects the intersection of availability and accessibility of sexual health education, family planning, and socioeconomic status. This indicator is included because a county with a high teen birth rate may also experience challenges with other aspects of sexual and reproductive health services.

Appendix E: Louisiana Bias or Racism and Social Determinants of Health (LABoRS) Tool

Indicator	How It's Measured/Calculated	What It Tells Us
Mental health providers per capita (county level)	Mental healthcare providers per 100,000 people	Barriers to the availability and accessibility of mental health services may be more severe than for general and reproductive medical care providers. As noted with other provider-level indicators, this value may not reflect accessibility to mental health providers in rural areas.
Mental health centers per capita (county level)	Community mental health centers per 100,000 people	Number of community mental health centers providing outpatient and emergency services for behavioral health.
Drug overdose mortality (county level)	Drug poisoning deaths per 100,000 people; estimates pooled over several consecutive years	County level drug overdose represents the intersection of substance use disorder, unmet substance use treatment services, and community education and support for substance use and for emergency overdose response.
Percent of households without car (both county and census tract level)	Percent of households with no vehicles available for use	Households may not have a car because they live in high-density urban areas served by high quality public transportation. But in many communities, public transit is not adequate. This indicator is measured specifically at the neighborhood or census tract level.
Percent of rural (county level)	Percent of the county population who live in rural areas using the census rural-urban schema	Counties with higher proportion of their population in rural areas may have increased burden with respect to transportation and access to health-related services including healthcare, healthy food, and employment and educational opportunities.
Social associations per capita (county level)	Number of member associations per 10,000 people	An alternative indicator of social capital is the ratio of social member associations per capita. These kinds of associations include civic, social, and religious organizations and may be important for social support, building social networks, and collective action to health and social challenges.
Percent of households with children, single parent (census tract level)	Percent of households with children under 18 headed by a single parent	Communities with a very high proportion of single parent headed households tend to have increased stress and reduced resilience in response to housing instability, health problems, or loss of employment.

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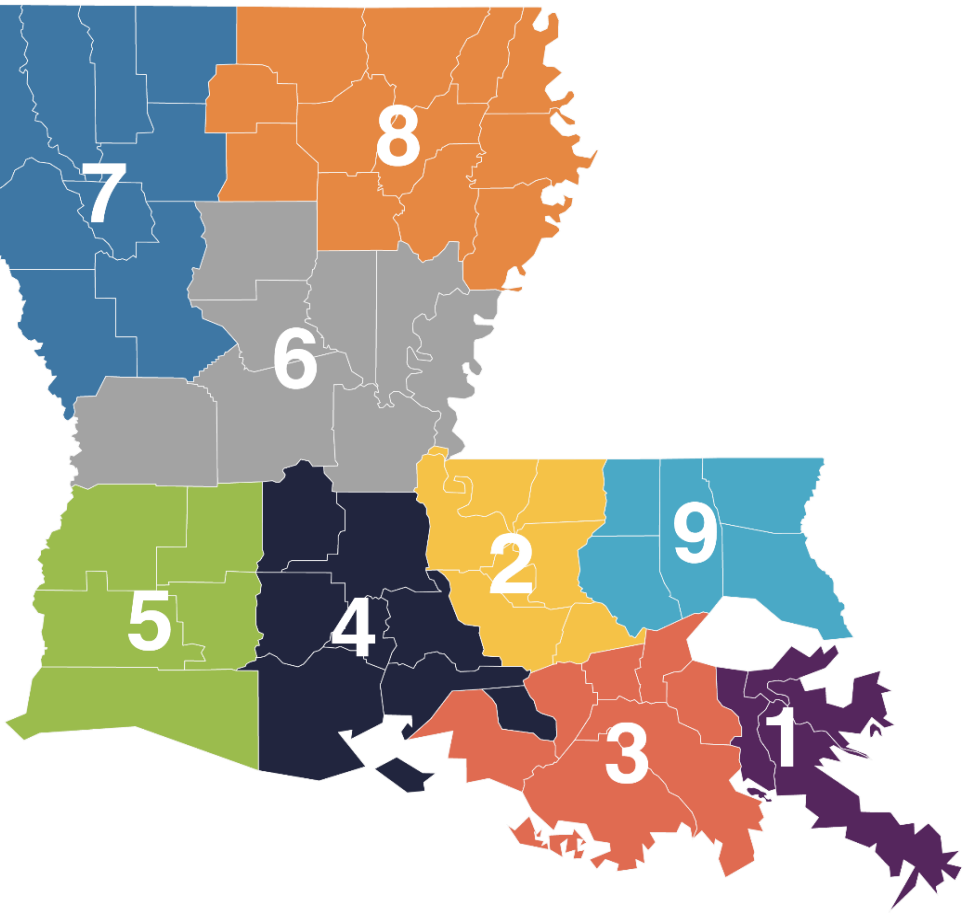
Indicator	How It's Measured/Calculated	What It Tells Us
Percent of residential turnover (census tract level)	Percent of households who moved to current residence within past year	Communities with stable residents may have enhanced networks and social ties that promote mutual aid and collective action. In contrast, communities with high proportions of residential turnover may have barriers to collective community support and action to address shared challenges.
Percent of owner occupied houses (census tract level)	Percent of households occupied by owners	Home ownership is the primary source of wealth and reflects an important buffer against health or economic stressors.
Percent of households with overcrowding (census tract level)	Percent of households with greater than one person per room	Communities with a high proportion of households classified as "overcrowded" may reflect housing instability.
Percent of housing distress (county level)	Percent of households with at least one of four severe housing problems; estimates are pooled over several consecutive years	Housing distress includes overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities. High prevalence of housing distress suggests discordance between housing stock and population resources and may be associated with environmental risk from household infrastructure as well as housing instability.
Violent crime rate (county level)	Number of reported violent crimes per 100,000 people; estimates are pooled together over several consecutive years	Place-based violent crime may represent a source of stress even to those not directly affected. High violent crime can undermine social stability and sense of safety.
Racial diversity/ segregation (count level)	Racial residential dissimilarity segregation index	High levels of racial segregation have been associated with a wide range of health outcomes in part because segregation itself produces patterns in neighborhood resources including education, economic opportunity, policing, and social and economic mobility.
Percent of non-English speakers (neighborhood level)	Percent of people who speak English "less than very well"	Neighborhoods with higher proportion of non-English speakers may indicate the need for adequate translation services in health and social service environments.
Percent of poverty rate (census tract level)	Percent of population with income below the federal poverty line	Places characterized by high poverty rates may also experience contextual stressors and barriers independent of individual level income.

Appendix E: Louisiana Bias or Racism and Social Determinants of Health (LABoRS) Tool

Indicator	How It's Measured/Calculated	What It Tells Us
Poverty concentration (census tract level)	Index of Concentration at Extremes highlighting the spatial concentration and separation of poor and affluent	Poverty concentration is measured with the Index of Concentration at the Extremes (ICE), which measures income segregation. Specifically it goes beyond simply describing the proportion of low-income households, instead focusing on the spatial concentration of affluent households on the one hand and poor households on the other.
Neighborhood Deprivation Index (census tract level)	Composite index of eight measures of material resources or wealth	Neighborhood deprivation is a composite index of measures that proxy economic resources. This index is more general than just the poverty rate or median household income, instead combining multiple other dimensions of socioeconomic resources.
POC Poverty: White Poverty	Poverty rate for Hispanic, Black and American Indian Alaska Native persons divided by the poverty rate in non-Hispanic white persons	This indicator has been used as a proxy for the consequences of systemic barriers. It is important to note that most counties in the U.S. have racial disparities in the poverty rate that reflect longstanding historical and ongoing contemporary inequalities in power and access to resources necessary for social mobility and transgenerational transfer of wealth. However, this indicator highlights places where the magnitude of the disparity is especially large, as compared to other places. Thus, a "low risk" value on this indicator does not mean there are no systemic barriers, but instead that it is less pronounced than it is in other places.

Appendix F: Regional Map of Louisiana



Region	Area	Parishes within Region
1	New Orleans	Jefferson, Orleans, Plaquemines, St. Bernard
2	Baton Rouge	Ascension, East Baton Rouge, East Feliciana, Iberville, Pointe Coupee, West Baton Rouge, West Feliciana
3	Houma	Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, Terrebonne
4	Lafayette	Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, Vermilion
5	Lake Charles	Allen, Beauregard, Calcasieu, Cameron, Jefferson Davis
6	Alexandria	Avoyelles, Catahoula, Concordia, Grant, La Salle, Rapides, Vernon, Winn
7	Shreveport	Bienville, Bossier, Caddo, Claiborne, DeSoto, Natchitoches, Red River, Sabine, Webster
8	Monroe	Caldwell, East Carroll, Franklin, Jackson, Lincoln, Madison, Morehouse, Ouachita, Richland, Tensas, Union, West Carroll
9	Hammond/Slidell	Livingston, St. Helena, St. Tammany, Tangipahoa, Washington

Appendix G: Regional Maternal and Child Health Coordinators and Bureau of Family Health Support Staff

Title	Staff
Region 1 MCH Coordinator	Kristy Ferguson, BSN, RN (2022) Stefanie Winters, ADN, RN, IBCLC (2023-2024)
Region 2 MCH Coordinator	Rachel Purgatorio, BSN, RN (2022) Kristen Falgoust, BSN, RN (2023-2024)
Region 3 MCH Coordinator	Danielle Mistretta, BSN, RN (2022-2024)
Region 4 MCH Coordinator	Debra Feller, BSN, RN (2022-2023) Nellelisa Ayo, BSN, RN (2024)
Region 5 MCH Coordinator	Jade Marler, AND, RN (2022-2024)
Region 6 MCH Coordinator	Kayla Livingston, BSN, RN (2022-2024)
Region 7 MCH Coordinator	Shelley Ryan-Gray, BSN, RN (2022-2024)
Region 8 MCH Coordinator	Sara Dickerson, BSN, RN (2022-2023) Tara Wilson-Haddox, BSN, RN (2024)
Region 9 MCH Coordinator	Martha Hennegan, BSN, RN (2022-2024)
CDC Assignee	Lyn Kieltyka, PhD (2022-2023)
Data to Action Team Lead	Jane Herwehe, MPH (2022) Dionka Pierce, MPH (2022-2023) Rebecca Majdoch, MPH (2023-2024)
Informant Interviewer	LeJeune Johnson, LCSW, PMH-C (2023-2024)
Maternal Morbidity and Mortality Epidemiologist	Imani Evans, MPH (2022-2023) Carli Harvey, MPH (2023-2024)
MHC Coordinator Supervisor	Sara Dickerson, BSN, RN (2023-2024)
PAMR Coordinator	Rachel Hyde, BSN, RN, MPH (2022) Anjell DeGruy, BSN, RN (2023-2024)
PAMR Medical Director	Veronica Gillispie-Bell, MD, MAS, FACOG (2022-2024)
Perinatal Projects Coordinator	Keshia Holmes, PhD (2022)
PAMR Program Manager	Dionka Pierce, MPH (2022-2024)

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