H.7(b)

Arkansas Maternal Mortality Review Committee (AMMRC)

Legislative Report
2018 – 2022 Data and Recommendations

December 2025

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Acknowledgments

This report was made possible through detailed reviews of maternal death cases by the volunteer Arkansas Maternal Mortality Review Committee (AMMRC) members. The Arkansas Department of Health (ADH) Family Health Branch, Women's Health Section is deeply grateful to the committee members for their insight, dedication, and generosity.

We would like to extend our appreciation to the ADH's Health Statistics Branch for their collaboration in providing the data used to identify cases of pregnancy-associated deaths, and to the Epidemiology Branch for their support with data analysis and technical review.

We are grateful to the health systems, health care providers, and coroners who provide the records that make meaningful review possible. We appreciate the lead sponsors and co-sponsors of the bill who recognized the need to preserve the lives of Arkansas mothers.

We also thank our national partners at the Centers for Disease Control and Prevention's Division of Reproductive Health and the *Building U.S. Capacity to Review and Prevent Maternal Deaths* project for providing technical assistance and support during the development of the AMMRC, and for their continued support through guidance, data management, and resources.

Dedication

This report is in remembrance of all the women who have lost their lives during or after pregnancy and childbirth, from any cause. It is with deepest sympathy and respect that we dedicate this report to their memory and to all their loved ones.

Through a joint effort, we aim to better understand the causes and factors contributing to maternal deaths, develop new ways to prevent them, and promote health and access to care for women in Arkansas.

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Executive Summary

The Arkansas Maternal Mortality Review Committee (AMMRC) reviews pregnancy-associated deaths that occur during pregnancy or within one year after the end of pregnancy. Through a process of ongoing surveillance, data collection, and comprehensive multidisciplinary review, the information gathered is used to develop evidence-based recommendations aimed at preventing future pregnancy-associated deaths. This report presents combined data from years 2018-2022, with recommendations based on deaths occurring in the year 2022.

The total number of live births in Arkansas in 2018-2022 was 179,800. Through the data linkage process, 218 potential pregnancy-associated deaths were identified. After applying the Committee's predetermined exclusion criteria, 48 cases were removed due to false positives or out-of-state residency. Out of the remaining 170 cases, 69 were determined to be pregnancy-related.

Representative Report Findings

- There were 69 cases determined to be pregnancy-related. The pregnancy-related mortality ratio (PRMR) for 2018-2022 was 38.4 deaths per 100,000 live births.
- From 2018-2022, Arkansas had 170 pregnancy-associated deaths, representing a pregnancy-associated mortality ratio (PAMR) of 94.5 deaths per 100,000 live births.
- Infections and cardiovascular disorders were the leading causes of pregnancy-related deaths. The most common underlying causes included infections, cardiomyopathy, other cardiovascular conditions, hypertensive disorders of pregnancy, hemorrhage, and mental health conditions.
- Black non-Hispanic women were 1.2 times as likely to die from pregnancy-related causes compared to White non-Hispanic women.
- Women ages 35 and older had the highest pregnancy-related mortality ratio, 4.9 times higher than that of women younger than 25.
- Ninety-four percent of pregnancy-related deaths were considered preventable.

Due to the specific focus of the review, the sample size is limited. It is important to exercise caution when interpreting these findings or comparing them with data from other jurisdictions, as varying exclusion and inclusion criteria may have been applied.

Representative Report Recommendations

The Committee's recommendations are tailored to various levels of engagement within the healthcare system. These suggestions are not one-size-fits-all but are designed to resonate with specific stakeholders, ensuring the greatest possible impact and relevance. While the executive summary offers a concise overview of the Committee's recommendations, it does not provide an exhaustive list. A more comprehensive set of recommendations presented later in the report targeting the diverse roles and responsibilities within the healthcare sector. Each recommendation should be interpreted with its intended audience in mind, whether it is patients and families, providers, facilities, systems, or communities. Recognizing these nuances ensures that changes are implemented effectively, reach their intended targets, and are best positioned for successful implementation.

Below is a sample of recommendations from the Committee. For the complete list, see the latter part of the report.

- Patients should adhere to follow-up appointments and medical treatment plans.
- Providers and patients should receive training on intimate partner violence risk factors.
- Facilities, delivering and non-delivering hospitals, should implement the Hypertension in Pregnancy bundle to ensure patients are rapidly diagnosed and treated properly.
- Systems should ensure case managers are present in clinics for patients with physical disabilities or chronic diseases to facilitate care coordination and follow-up.
- Systems should allow all facilities to implement sepsis in obstetric care bundles.
- Systems, facilities, and communities should raise awareness of early warning postpartum signs.

AMMRC Background

Act 829 of 2019 (Appendix 1) established the Arkansas Maternal Mortality Review Committee (AMMRC) which requires the formal review of maternal deaths in Arkansas and secures protection for the confidentiality of the process. The AMMRC was assembled within ADH's Family Health Branch, Women's Health Section. The AMMRC was developed with guidance from the Centers for Disease Control and Prevention's (CDC) *Building U.S. Capacity to Review and Prevent Maternal Deaths* and is modeled after well-established review committees in the United States.

The AMMRC uses a complex process to identify pregnancy-associated deaths, including data sharing agreements with various organizations and the use of multiple criteria. Information for abstraction is gathered from various sources and prepared by a trained abstractor for de-identified committee review. The AMMRC reviews each case and makes decisions based on the case narrative and abstracted data, examining the cause of death, circumstances surrounding the death, and preventability. The Committee then formulates findings and recommendations in accordance with CDC's Maternal Mortality Review Information Application (MMRIA) Committee Decisions Form (Appendix 2), using a multi-step approach to determine contributing factors at various levels of care and develop specific and actionable recommendations.

In 2022, the AMMRC was awarded funding from the CDC Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) program. A continuation of support was awarded in 2024 for 2024 – 2029.

Scope: The scope of cases for review in Arkansas includes all pregnancy-associated deaths, or any deaths of women during pregnancy or within 365 days following the end of pregnancy. At the July 2020 AMMRC meeting, members established exclusion criteria for abstraction (i.e., motor vehicle accidents and out-of-state residents).

Purpose: The purpose of the AMMRC is to identify and characterize pregnancy-associated deaths with the goal of identifying prevention opportunities.

Vision: To protect and improve the health and well-being of all Arkansans by eliminating preventable pregnancy-associated deaths in Arkansas.

Mission: Optimize health for all Arkansans to achieve maximum personal, economic, and social impact.

Goals:

- Perform thorough record abstraction to obtain details of events and issues leading up to a mother's death.
- Perform a multidisciplinary review of cases to gain a holistic understanding of the issues.
- Determine the annual number of pregnancy-associated deaths.
- Identify trends and risk factors among pregnancy-related death in Arkansas.

- Recommend improvements to care at the individual, provider, and system levels with the potential for reducing or preventing future events.
- Prioritize findings and recommendations to guide the development of effective preventive measures.
- Recommend actionable strategies for prevention and intervention.
- Disseminate the findings and recommendations to a broad array of individuals and organizations.
- Promote the translation of findings and recommendations into quality improvement actions at all levels.

Statutory Authority and Protections

Maternal mortality review is conducted pursuant to Ark. Code Ann. § 20-15-2301 - 2307. See Appendix 1 for full text of the public health laws that apply.

§20-15-2301 provides authority for the AMMRC to review pregnancy-associated deaths or deaths of women with indication of pregnancy up to 365 days after the end of pregnancy.

§20-15-2302 provides powers and duties to the AMMRC including identifying maternal death cases, reviewing medical records, contacting family members and other affected or involved persons to collect additional relevant data. All proceedings and activities of the committee are confidential and are not subject to the Freedom of Information Act of 1967.

§20-15-2303 provides access to all relevant medical records associated with a case under review by the committee.

Membership

The AMMRC is a multidisciplinary committee whose members represent the five ADH public health regions and various specialties, facilities, and systems that interact with and impact maternal health. Twenty-one inaugural members were appointed by the Arkansas Secretary of Health in late 2019. Membership consists of specialists in obstetrics and gynecology, maternal-fetal medicine, anesthesiology, nursing, psychiatry, mental/behavioral health, nurse midwifery, public health, hospital association, patient advocacy, and more. Recruitment of new AMMRC members may occur annually as needed unless a specific type of expertise is required during the year for a case review (Example: domestic violence). AMMRC members serve as volunteers without compensation, commit to a three-year term, and attend quarterly meetings.

Organizations Represented by Members:

- American Academy of Family Physicians, Arkansas Chapter
- American College of Cardiology, Arkansas Chapter
- American College of Nurse-Midwives, Arkansas Affiliate
- American College of Obstetricians & Gynecologists
- Arkansas Board of Health
- Arkansas Department of Health
- Arkansas Foundation for Medical Care
- Arkansas Hospital Association
- Arkansas Medical Society
- Arkansas Psychiatric Society
- Arkansas Society of Anesthesiologists
- Arkansas State Board of Nursing
- Arkansas State Crime Lab
- Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), Arkansas Chapter
- Society for Maternal-Fetal Medicine
- University of Arkansas for Medical Sciences

Case Review Process

The process of reviewing maternal mortality is ongoing. Detailed information is collected on each selected case to allow for a comprehensive review and analysis.

Case Identification

Identifying pregnancy-associated deaths is an intricate process, involving various strategies to pinpoint potential factors contributing to the deaths. AMMRC collaborates with multiple departments including the ADH Office of Health Information Technology (OHIT), ADH Health Statistics Branch, ADH Vital Statistics Section, ADH Hospital Discharge Data System, DHS/Division of Medical Services (Medicaid), ADH Epidemiology Branch, and the Prescription Drug Monitoring Program (PDMP). Additionally, an agreement has been established with the CDC for data sharing and use of the Maternal Mortality Review Information Application (MMRIA).

Arkansas female residents of reproductive age who die from pregnancy-associated causes are identified through one or more of the following criteria: 1) a death certificate for a woman linked with a matching live birth or a fetal death certificate; 2) a death certificate for a woman listing a cause of death related to pregnancy, childbirth, or the postpartum period; or 3) a death certificate for a woman with the pregnancy checkbox indicating that the death occurred during pregnancy or within one year of the end of pregnancy.

Case Abstraction

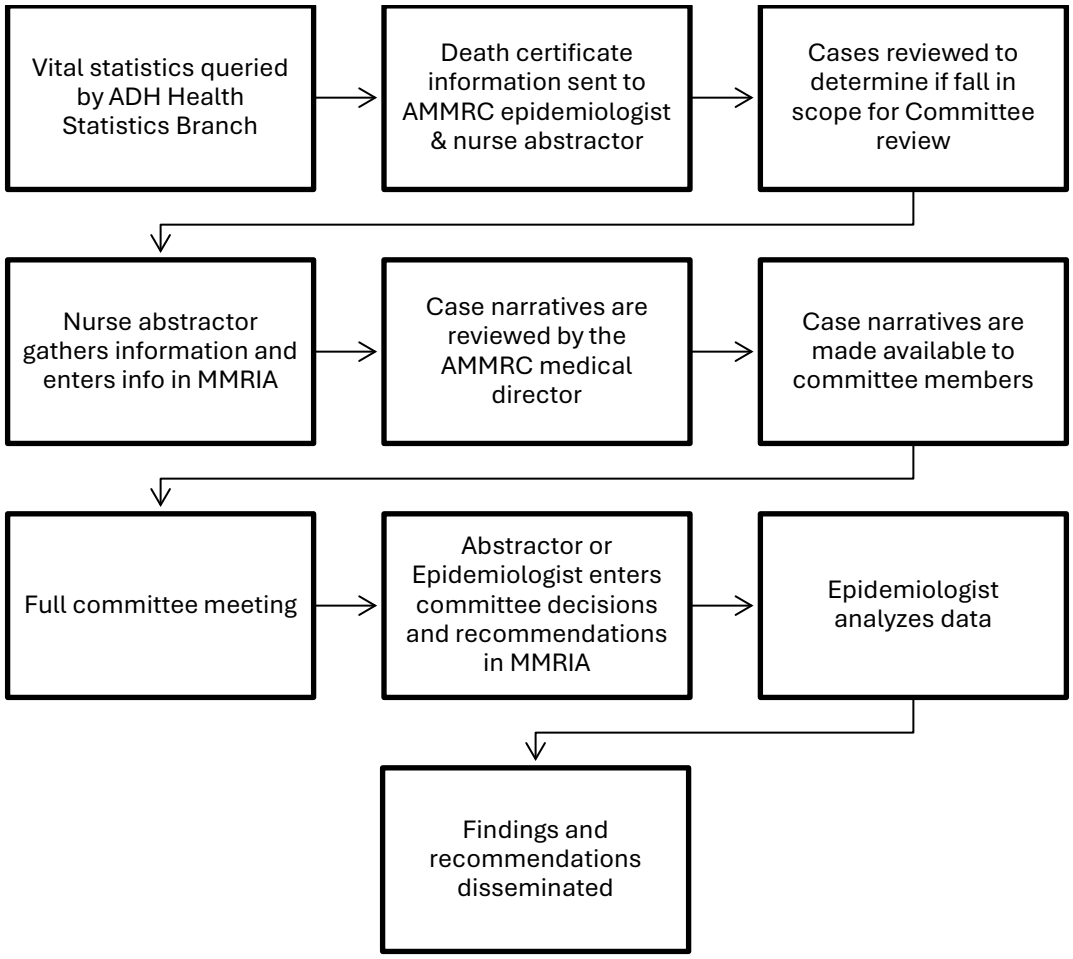
Information for abstraction is gathered from maternal and neonatal death certificates, neonatal birth certificates, medical records, and autopsy reports. Additional data sources include hospital and emergency department records, obituaries, police reports, social media, media and news reports, certifier confirmation, and more. Collected records are then abstracted by a trained abstractor, who prepares de-identified case narratives for Committee review.

Meeting Structure

The Committee reviews and makes decisions about each case based on the case narrative and abstracted data. The Committee examines the cause of death and contributing factors and determines the following:

1. Was the death pregnancy-related?
2. What was the underlying cause of death?
3. Was the death preventable?
4. What were the factors that contributed to the death?
5. What are the recommendations and actions that address those contributing factors?
6. What is the anticipated impact of those actions if implemented?

Flow Chart of the Case Review Process



Findings and recommendations are formulated in accordance with CDC's MMRIA Committee Decisions Form. MMRIA is a data system designed to facilitate MMRC functions through a common data language and is based on a multi-step approach for determining the contributing factors of death. Each factor is identified according to levels of care: patient/family, provider, facility, system, and community and contributing factors may be noted at more than one level. Each factor is identified with a concise description and assigned a contributing factor class from a list of options. The Committee develops one or more specific and actionable recommendations for each contributing factor identified, in the standardized format of "who should do what, when".

Key Definitions

The terms *pregnancy-associated death* and *pregnancy-related death* are used in maternal mortality review systems in which multidisciplinary committees perform comprehensive reviews of deaths among women during pregnancy or within one year of the end of pregnancy.

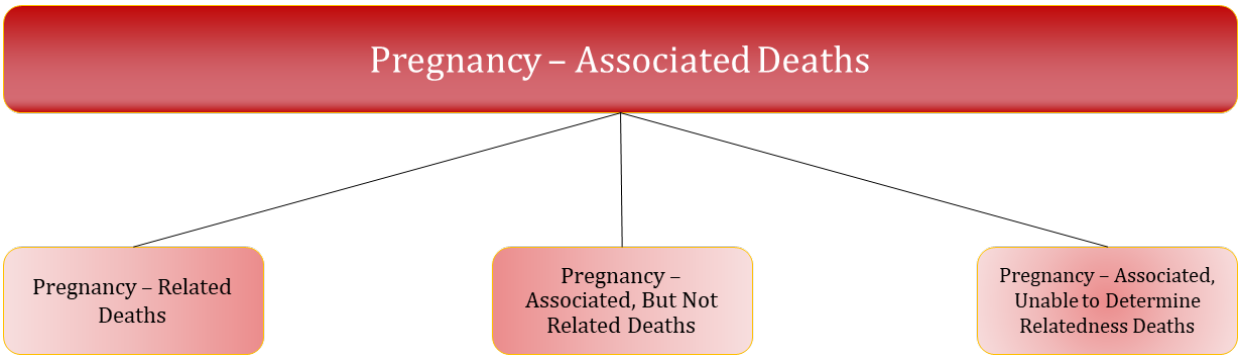
Pregnancy-associated death: the death of a woman during pregnancy or within one year of the end of pregnancy, regardless of the cause.

Pregnancy-related death: the death of a woman 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 death: a death during or within one year of the end of pregnancy from a cause that is not related to pregnancy.

Pregnancy-associated mortality ratio (PAMR): the number of pregnancy-associated deaths per 100,000 live births.

Pregnancy-related mortality ratio (PRMR): the number of pregnancy-related deaths per 100,000 live births.



Findings

This section presents findings from the Committee's review of pregnancy-associated deaths and analysis of statewide trends. These findings inform the Committee's recommendations described later in this report.

Note: Rates based on counts less than 20 are considered unstable and should be interpreted with caution. Numbers, percentages, ratios, and rates may change considerably from one time-period to another. Data presented in this report may not be comparable to pregnancy-associated mortality data from other jurisdictions due to differing case definitions and exclusion criteria.

Overview of 2018-2022 Cases

Between 2018 and 2022, the total number of live births in Arkansas was 179,800. Based on 2018-2022 death certificates, 218 potential pregnancy-associated deaths were identified. This number includes all deaths of women during pregnancy and within one year of the end of pregnancy from any cause.

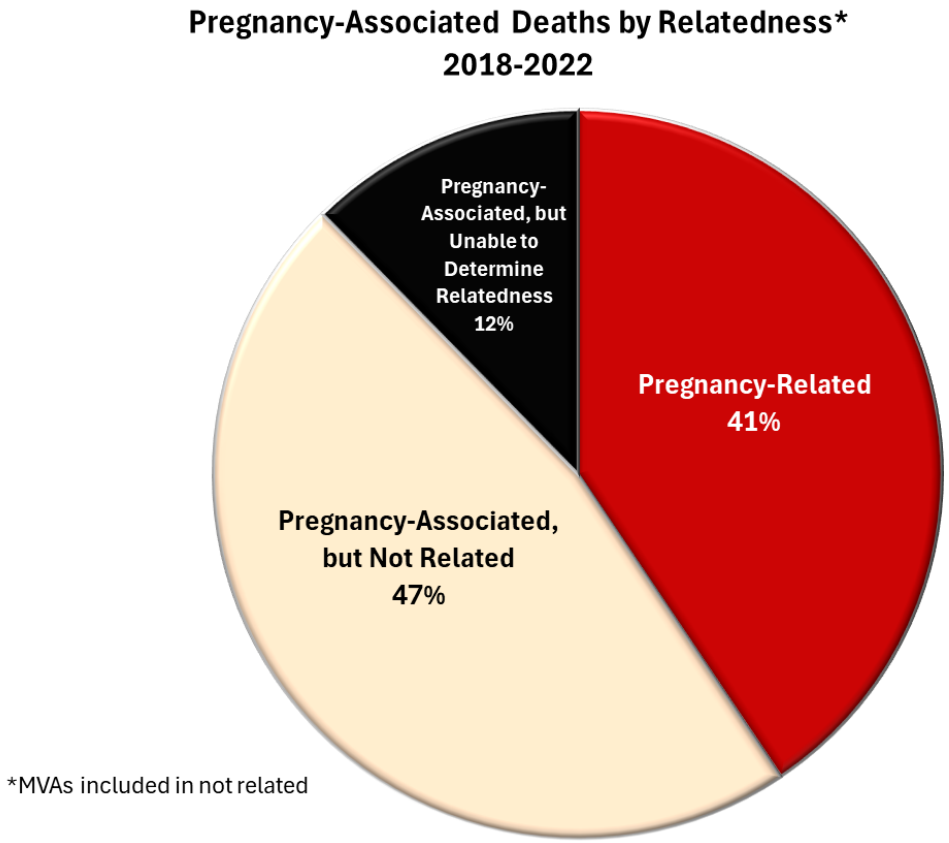
There were 41 deaths found to be not pregnant at the time of death or within one year of death (false positive) and seven deaths were non-Arkansas residents; these deaths were excluded from committee review. In total there were 170 pregnancy-associated deaths from 2018-2022. AMMRC made the decision to exclude 26 deaths due to motor vehicle accidents (MVA) and accident/trauma from full abstraction and group them with pregnancy-associated, but not related category. The remaining 144 cases were fully abstracted and reviewed. The table below shows the reasons for exclusion and the committee's final decisions on pregnancy-relatedness.

	2018-2022
Live Births	179,800
Initial pregnancy-associated deaths identified and reviewed by staff	218
False positive and non-resident deaths	48
Pregnancy-associated deaths	170
Pregnancy-related deaths	69
Pregnancy-associated, but not related deaths	80
Pregnancy-associated, but unable to determine relatedness deaths	21

From 2018 through 2022, Arkansas had 170 pregnancy-associated deaths. This represents a pregnancy-associated mortality ratio of 94.5 deaths per 100,000 live births.

MMRIA committee decision forms were completed and determined the following:

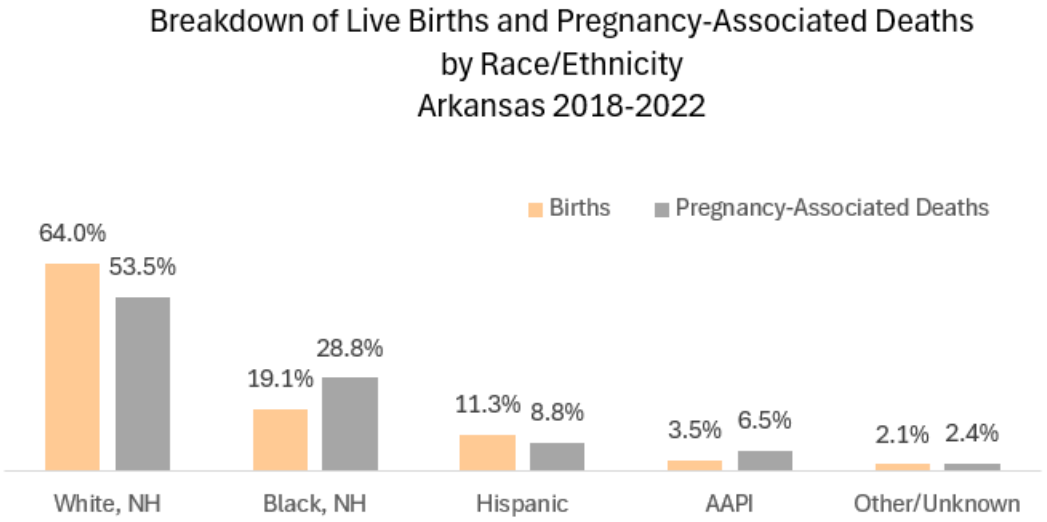
- 69 deaths (40.6%) were determined to be pregnancy-related
- 80 deaths (47.1%) were determined to be pregnancy-associated, but not related
- 21 deaths (12.4%) were determined to be pregnancy-associated, but the Committee was unable to determine relatedness



Pregnancy-Associated Deaths

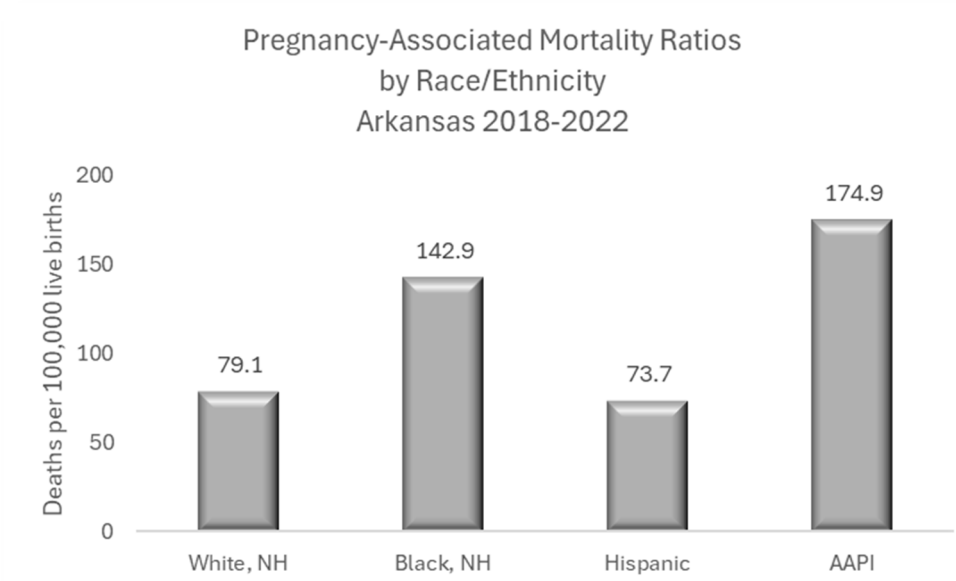
Pregnancy-Associated Deaths by Race/Ethnicity

Pregnancy-associated deaths can happen to women of any race. However, some groups are disproportionately affected.



NH = non-Hispanic; AAPI = Asian Americans and Pacific Islanders

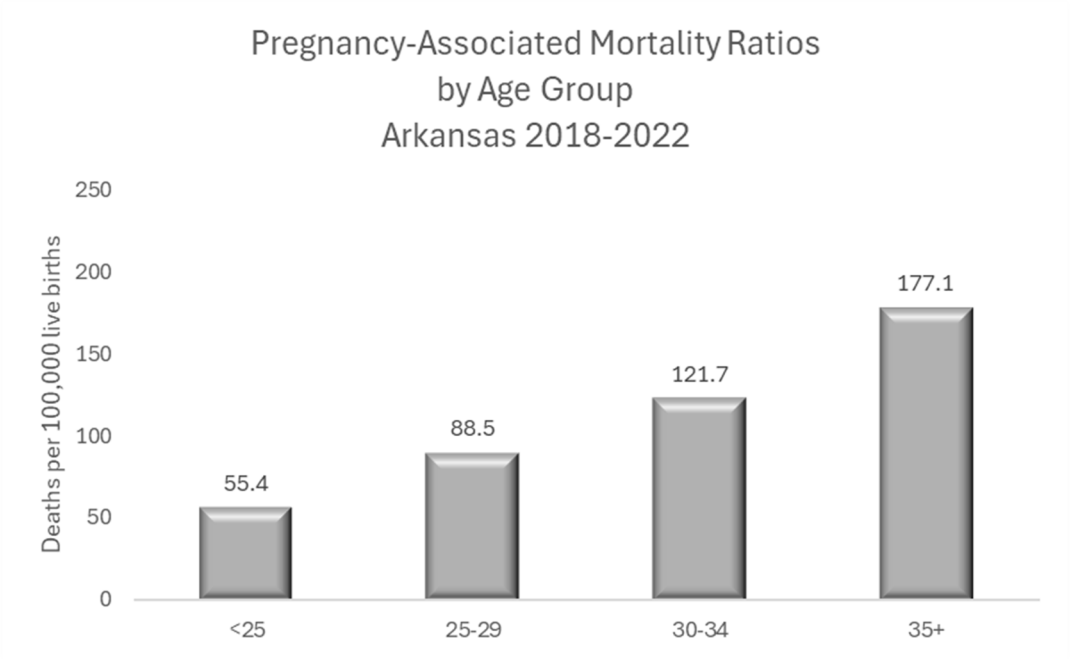
Nineteen percent (19.1%) of births are to Black, non-Hispanic women; however, they account for 28.8% of pregnancy-associated deaths. In addition, Asian Americans and Pacific Islander non-Hispanic (AAPI) mothers represent 3.5% of births in Arkansas, but account for 6.5% of pregnancy-associated deaths.



NH = non-Hispanic; AAPI = Asian Americans and Pacific Islanders

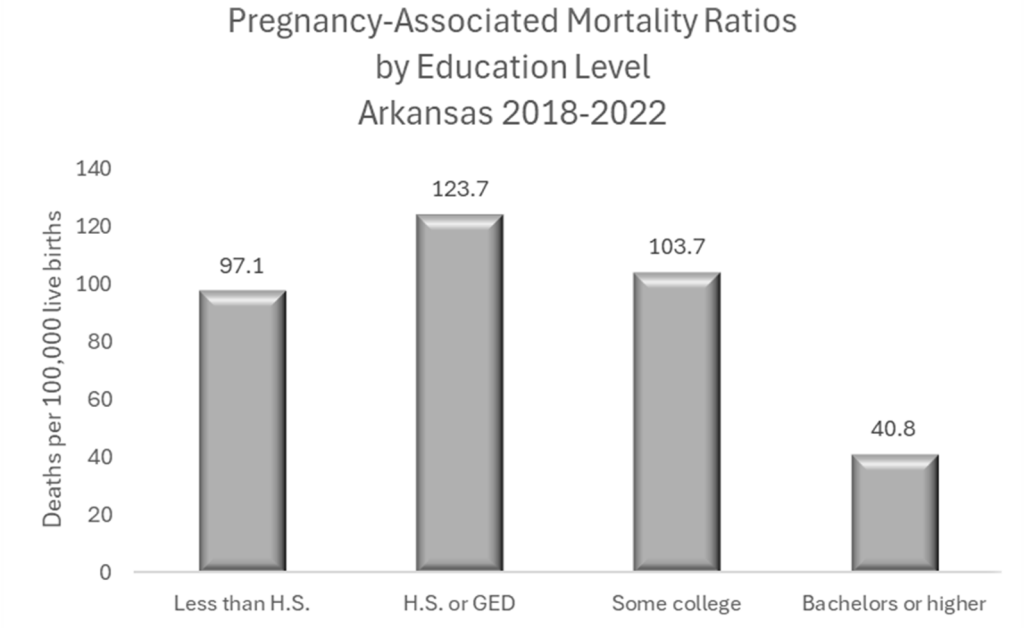
Pregnancy-Associated Deaths by Age

The risk of pregnancy-associated death increases with the age of the mother. Women aged 35 and older had the highest mortality ratio (177.1), more than three times the mortality ratio (55.4) of women younger than 25 years old.



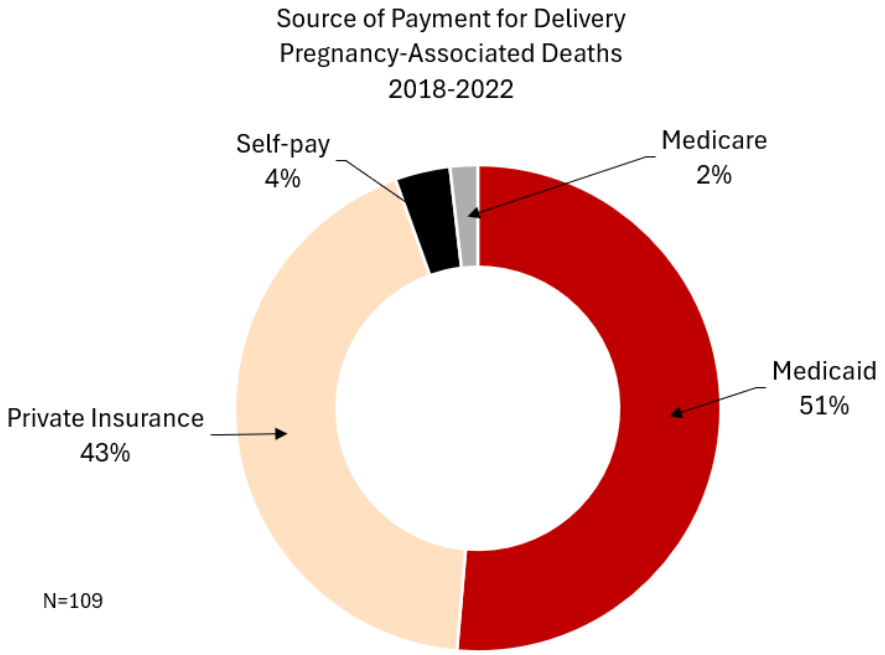
Pregnancy-Associated Deaths by Education

Those with a bachelor's or higher degree had the lowest mortality ratio.



Payor Source for Pregnancy-Associated Deaths

There were 109 pregnancy-associated deaths with a birth record that included the method of payment for delivery.



Timing of Death in Relation to Pregnancy for Pregnancy-Associated Deaths

2018-2022	During Pregnancy	Day of Delivery	1-6 Days Postpartum	7-42 Days Postpartum	43-365 Days Postpartum
Pregnancy-Associated	24.1%	4.8%	6.6%	12.7%	51.8%

Completeness of Records for Review

According to the MMRIA committee decision form, a chart is "mostly complete" if there are minor gaps; some beneficial information is missing but was not essential to the review of the case. Reviewing and understanding death cases requires information from multiple types of records, including those from medical/health systems, law enforcement, mental or behavioral health providers and systems, and government or social service agencies. Records can be difficult to obtain for the following reasons:

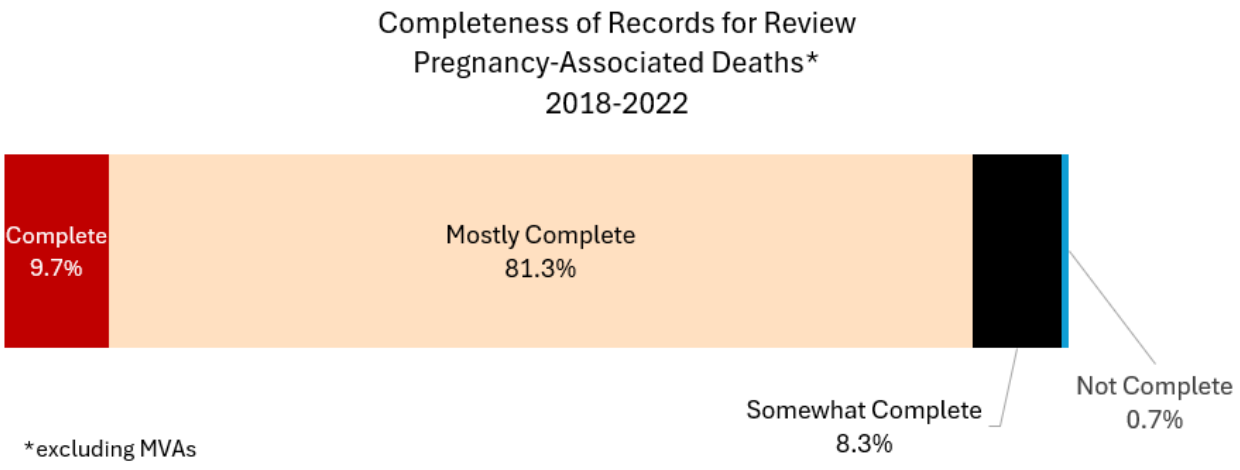
- Lack of information or data sharing agreements and processes in place across and within these systems. For example, medical record sharing across health networks is often limited.
- Legal restrictions and policies that regulate what information agencies can share. For example, it is difficult to obtain records related to a death that is part of an ongoing criminal investigation.
- Reluctance to share records obtained from external agencies.
- Staff turnover, which hinders collaboration and information sharing across agencies or systems.
- Limited access to records when care is received in another state.

Access to complete records is critical to determine factors that contributed to death and to determine their preventability. The Committee determined that 9.7% of cases had complete records for adequate review.

The majority of cases, 81.3%, were considered to have all records necessary for adequate review with only minor gaps (mostly complete) of information that would have been beneficial but not essential to the review of the case.

Another 8.3% of case records were identified as having somewhat complete records, meaning that information crucial to the review was not available to the Committee.

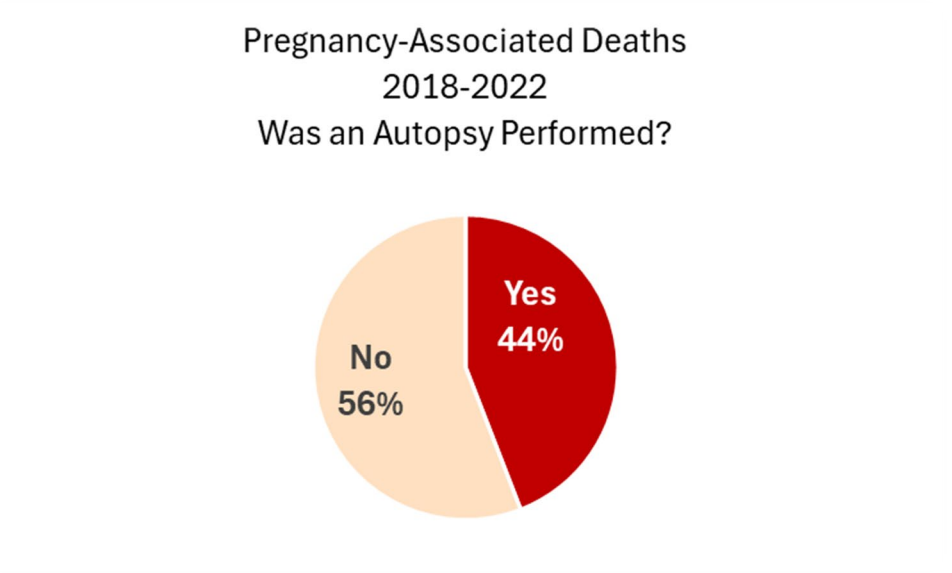
A small percentage,0.7%,of cases records were determined to be not complete, meaning the Committee had only the death certificate and no other information.



Autopsies

Arkansas enacted Act 553 of 2023 to make changes to the legislation pertaining to postmortem examinations, requiring that the state medical examiner conducts a postmortem examination in specific situations. These include the death of a pregnant woman or a woman who was pregnant within 365 days of her demise, provided that the death is potentially linked to pregnancy-related care, physiological factors, or the maintenance of the pregnancy. This requirement does not apply if the death resulted from a medical condition or injury unrelated to the pregnancy.

Autopsies were performed in 44% of cases for 2018-2022 pregnancy-associated deaths.

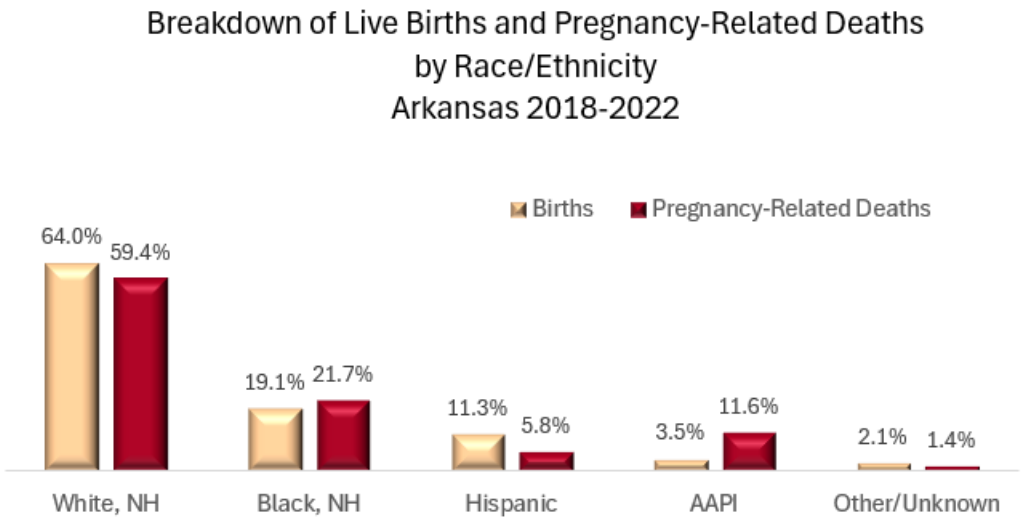


Pregnancy-Related Deaths

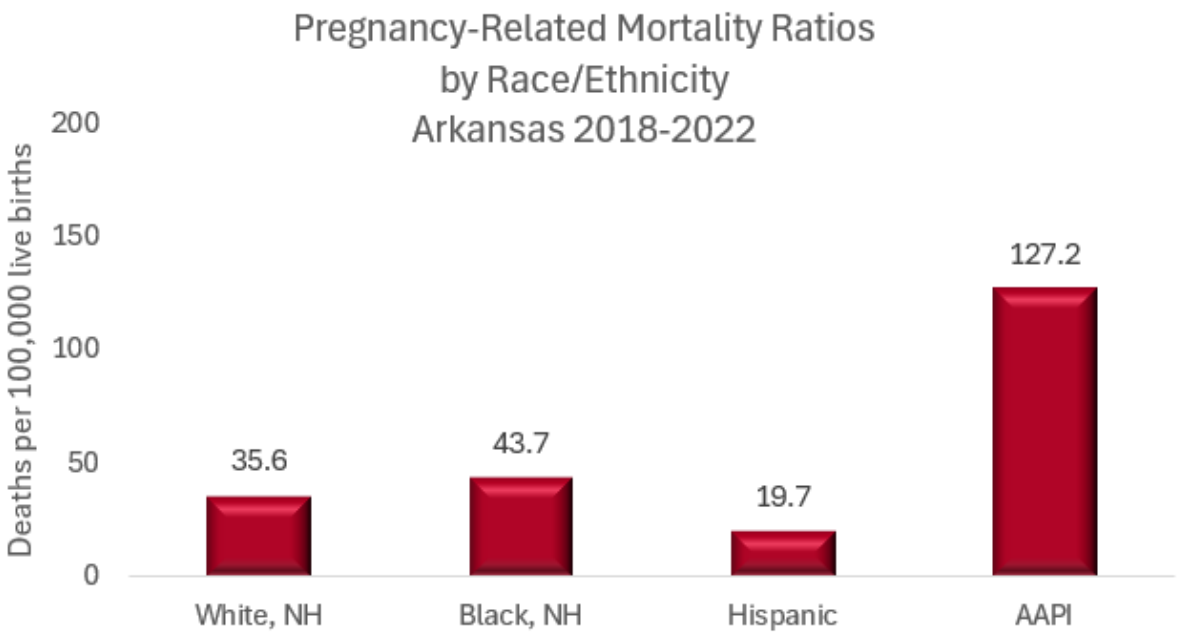
Between 2018-2022, Arkansas had 69 deaths that were determined to be pregnancy-related, 41 deaths per 100,000 live births.

Pregnancy-Related Deaths by Race/Ethnicity

Pregnancy-related deaths can happen to women of any race. However, some groups are disproportionately affected. Nineteen percent (19.1%) of births are to Black, non-Hispanic women; however, they represent 21.7% of pregnancy-related deaths.



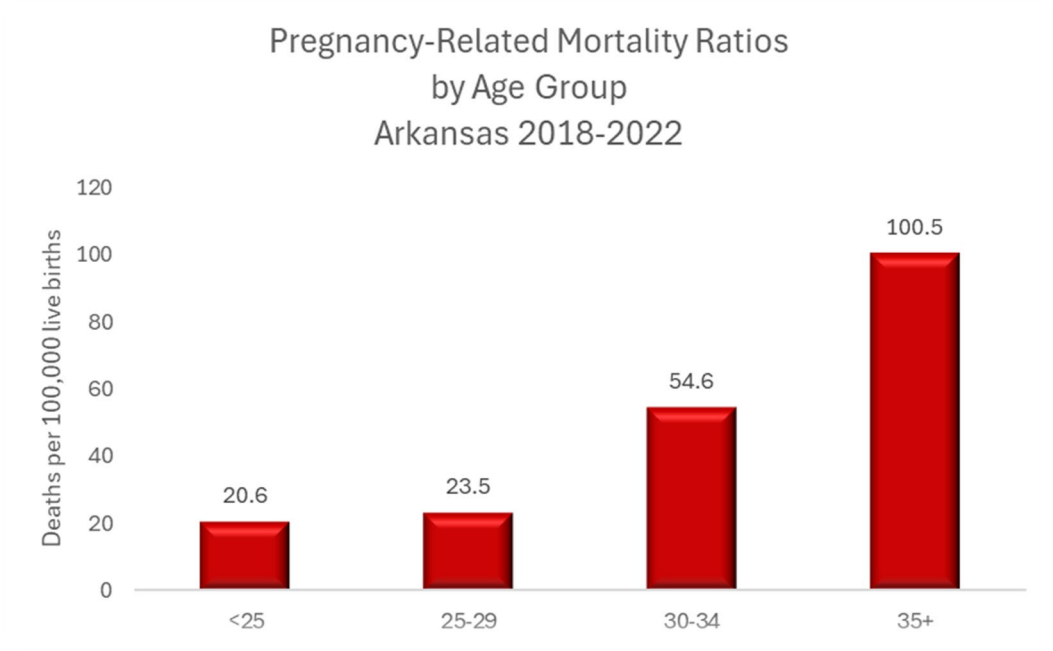
NH = non-Hispanic; AAPI = Asian Americans and Pacific Islanders



NH = non-Hispanic AAPI = Asian Americans and Pacific Islanders

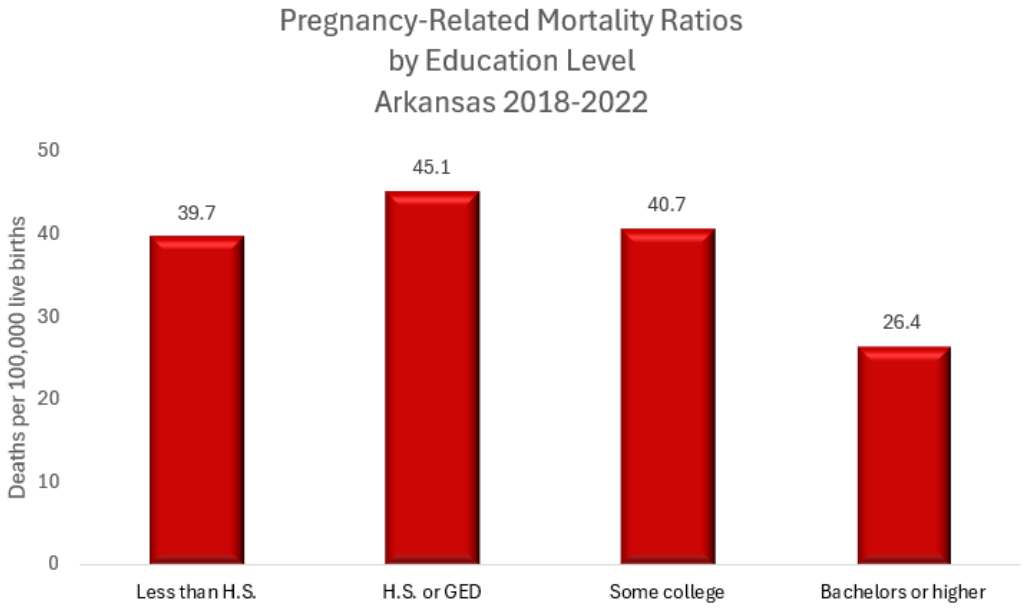
Pregnancy-Related Deaths by Age

The risk of pregnancy-related death increases with the age of the mother. Women aged 35 and older had the highest mortality ratio, 5 times the mortality ratio of women younger than 25 years old.



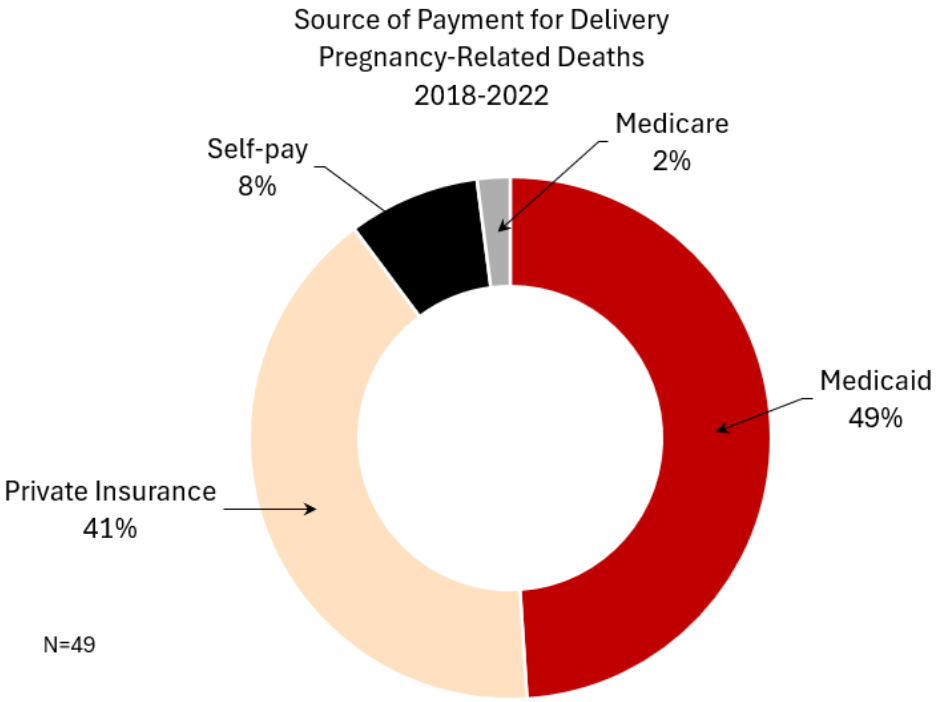
Pregnancy-Related Deaths by Education

Those with a bachelor's or higher degree had the lowest mortality ratio.



Payor Source for Pregnancy-Related Deaths

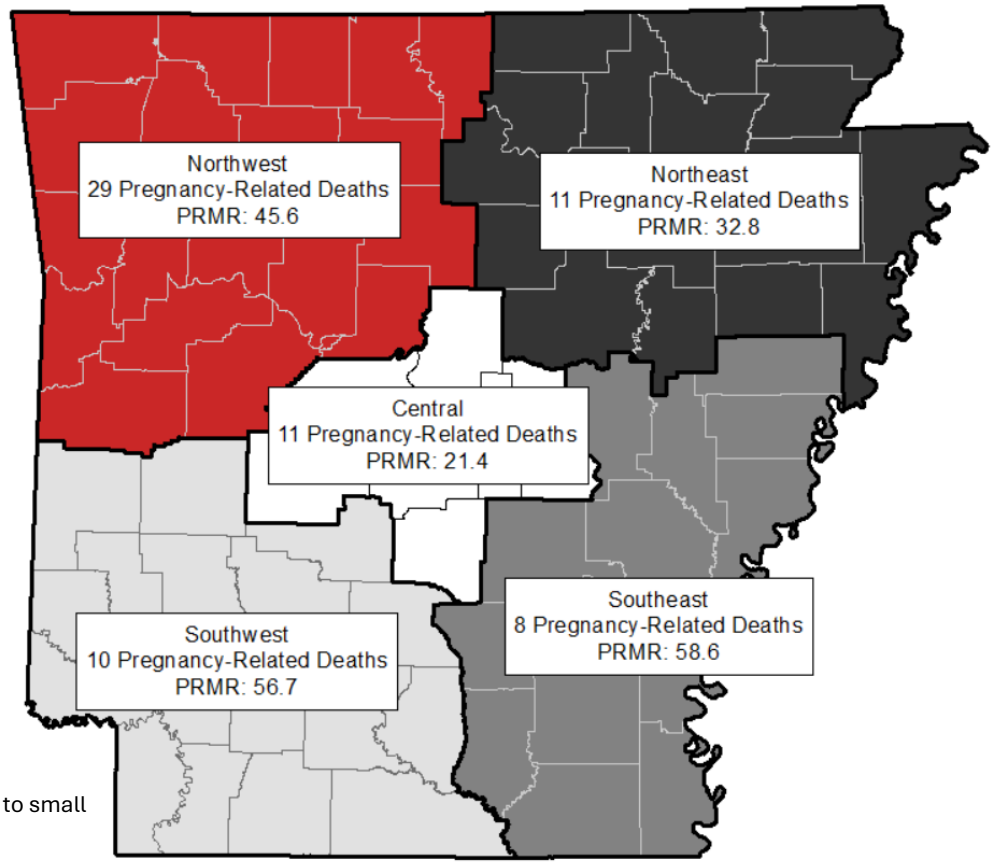
There were 49 pregnancy-related deaths with a birth record that included the method of payment for delivery.



Pregnancy-Related Deaths by Public Health Region

The map below shows the PRMR by Public Health Region. The Southwest Region was highest followed by the Southeast Region and Northwest Region.

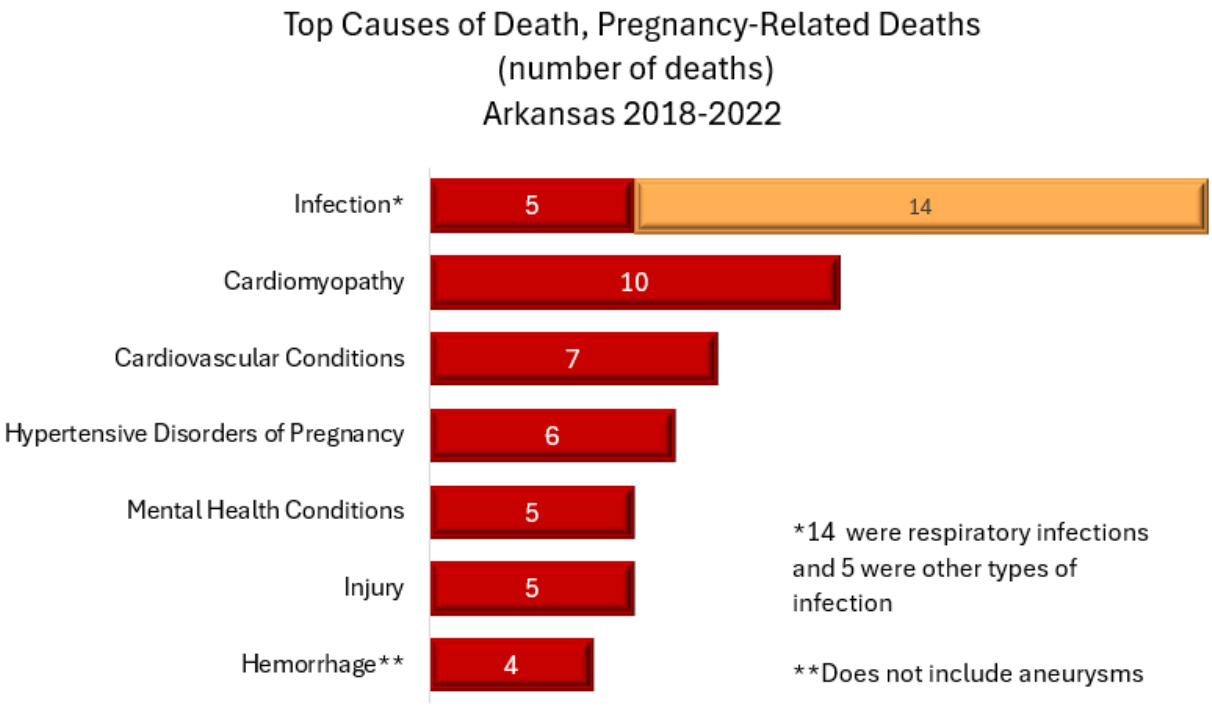
Pregnancy-Related Deaths and Mortality Ratio per 100,000 Live Births
by Public Health Region
Arkansas 2018-2022



*Use caution in interpreting due to small numerator

Pregnancy-Related Causes of Death

As determined by the Committee, the top underlying causes of pregnancy-related deaths were infection, cardiomyopathy, cardiovascular conditions, hypertensive disorders of pregnancy, mental health conditions, and hemorrhage.

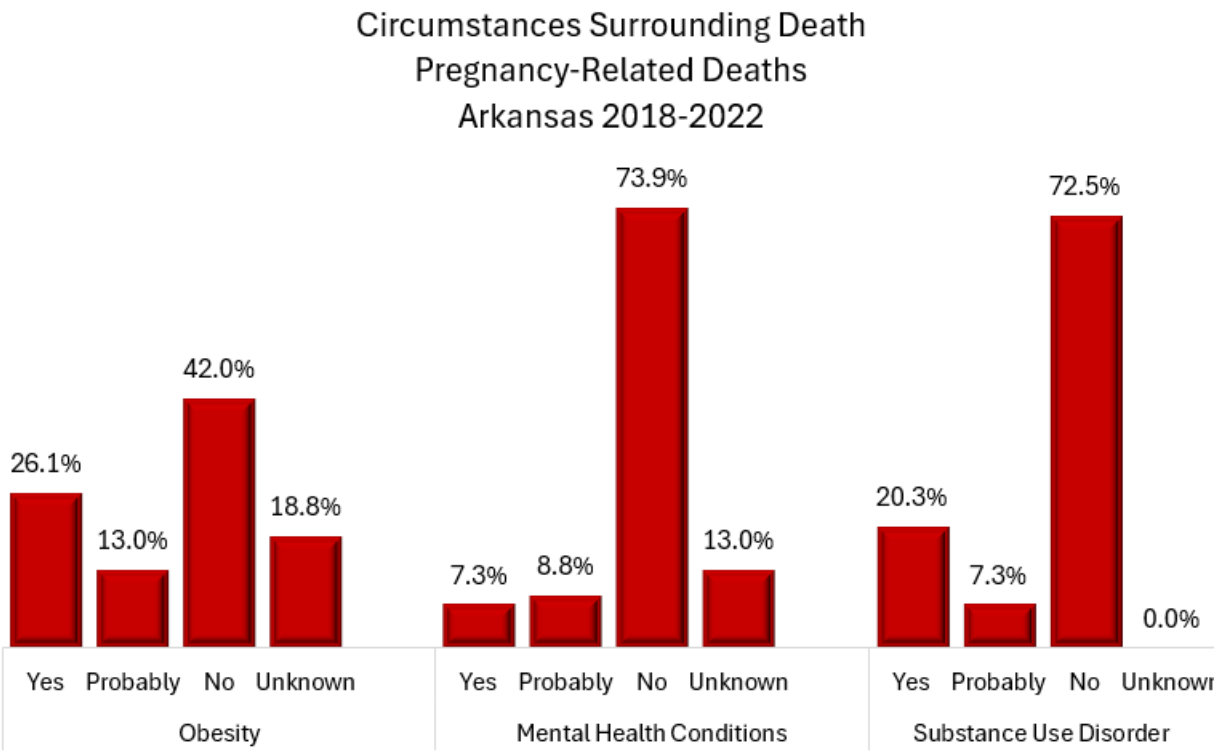


Preventability of Pregnancy-Related Deaths

From 2018 – 2022, the Committee determined that 94.2% of pregnancy-related deaths were preventable with at least "some chance" or a "good chance" that the outcome could have been altered through one or more reasonable changes to contributing factors.

Circumstances Surrounding Pregnancy-Related Deaths

The Committee also evaluates circumstances surrounding pregnancy-related deaths. The graph below shows the frequency with which obesity, mental health conditions (excluding substance use disorder), and substance use disorder (SUD) were identified.



Timing of Death in Relation to Pregnancy for Pregnancy-Related Deaths

2018-2022	During Pregnancy	Day of Delivery	1-6 Days Postpartum	7-42 Days Postpartum	43-365 Days Postpartum
Pregnancy-Related	18.8%	11.6%	14.5%	20.3%	34.8%

Recommendations

After analyzing the data and reviewing each case, members of the AMMRC developed the following set of recommendations designed to address patient/family, provider, facility, system, and community aspects. These different intervention levels collectively play a role in enhancing women's well-being and mitigating the rise in maternal mortality.

Level	Definition from the Committee Decision Form
Patient/Family	A woman before, during, or after a pregnancy, and her 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 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

Recommendations based on 2022 Pregnancy-Related Death Cases

Recommendations for Patients and Families

- Patients should ensure timely follow-up for (oncology) appointments throughout pregnancy.
- Patients and families should follow COVID-19 vaccine recommendations.
- Patients should adhere to follow-up appointments and medical treatment plans.

Recommendations for Providers

- Providers should give preconception counseling to all women of reproductive age; especially women with chronic disease.
- Providers should offer smoking cessation counseling and encourage patient adherence.
- Providers should include individualized smoking cessation plans related to pregnant women with asthma.
- Providers should develop a plan of action and provide education on asthma maintenance in pregnant women.
- Providers should obtain Continuing Medical Education credits (CMEs) for treatment of postpartum/peripartum mood and anxiety disorders. There are free online groups available for patients with no resources.
- Providers and patients should have knowledge that if strangulation has occurred in past episodes of intimate partner violence (IPV) then homicide is more likely in the future; receive training of IPV risk factors.

- Providers should make sure the IPV questions are asked to women without the partner in the room.

Recommendations for Facilities

- Facilities should implement systems for timely diagnoses and response to sepsis, specifically through implementation of the Alliance for Innovation on Maternal Health (AIM) sepsis bundle for all delivering hospitals.
- Facilities should have structured screening for physical disability or significant comorbidities.
- Facilities should have social work referrals for all patients that are unable to pay for medications that are prescribed during discharge from the hospital.
- Facilities should have a flag in medical charts to refer women to social work when having multiple Emergency Department visits and no evidence of a Primary Care Professional.
- Facilities should adapt the AIM Severe Hypertension in Pregnancy bundle for all antenatal clinics.
- Facilities that measure blood pressure should implement protocols to respond to hypertension with a system in place to expedite referral and follow up (e.g., L&D triage, family medicine clinic, emergency department, or other).
- Facilities, delivering and non-delivering hospitals, should implement the AIM Severe Hypertension in Pregnancy bundle to ensure that patients are rapidly diagnosed and treated properly.

Recommendations for Systems

- Systems should ensure complete follow up for a pregnant woman with personal history of breast cancer.
- Systems should ensure case managers are present in clinics for patients with physical disabilities or chronic disease to facilitate care coordination and follow up.
- Facilities should implement standards that women with twins or hypertensive disorder of pregnancy need early postpartum follow up (RN home visit, OB visit, etc.), ideally within 1 week.
- Systems should increase state funding to allow for universal home visiting for all deliveries (pilot program in Arkansas is Family Connects).
- Systems should promote community messaging about when to test for COVID-19, when to self-diagnose, and when to get treatment. Everyone needs rapid tests in their home, and messaging about high-risk population and pregnancy needs to be disseminated.
- Systems should allow for longer hospitalizations when clinically indicated for pregnant and postpartum women.
- Systems should promote education for providers about IPV and making sure they are making referrals to appropriate resources. If no social services are available, have resources or handouts available to give the patients and resources should be made available to providers.
- Systems should create pathways for providers to check for elevated creatine kinase levels and refer to surgery for fasciotomy or debridement, as each case deems necessary.

- Systems should allow all facilities to implement the AIM Sepsis in Obstetric Care Bundle.
- Systems should train all healthcare providers (including pediatricians) to perform IPV screening in the postpartum period.
- Systems should educate providers about motivational interviewing to help patients who initially decline care for substance use disorders (for all health care workers not just OB).
- Systems should provide education about presumptive language; always presenting treatment as the default language rather than framing treatment as an option that the patient can decline.
- Systems in medical & professional school/APRN/PA education programs should incorporate education in motivational interviewing.
- Systems should allow facilities to create clinics just to respond to hypertensive screening.

Recommendations for Communities

- Communities should promote education and awareness about the intersection between physical disability and risk for maternal morbidity and mortality, including the need for multidisciplinary coordination of care and intensive case management.
- Communities should support universal home visit programs to screen for health needs to prioritize distribution of resources and engage families to advocate.
- Communities should educate about the need for aggressive follow up and treatment of breast cancer in pregnancy.
- Communities should ensure that any consulting physician clearly recommends who should complete the recommended care for all women.
- Systems, facilities, and communities should raise awareness of early warning postpartum signs (e.g. shortness of breath).
- Community organizations should educate women of reproductive age the importance of establishing early prenatal care and early treatment of COVID-19.
- Communities should provide more shelters for women who are experiencing IPV.
- Communities should promote COVID-19 vaccination to reduce risk factors for complex postpartum infectious sequelae (e.g. necrotizing fasciitis).
- Communities should adopt safety bundles for antenatal care (Severe Hypertension in Pregnancy).

Recommendations based on 2022 Pregnancy-Associated Deaths Not Classified as Pregnancy-Related

Recommendations for Facilities

- Facilities should provide education to labor and delivery (L&D) providers about evidence-based care for alcoholism, naltrexone maintenance therapy, referrals and resources.
- Facilities should add social workers to L&D teams and community health workers to obstetric clinics to help women navigate Medicaid applications postpartum.
- Facilities should have standardized protocols for hospitals to manage Diabetic Ketoacidosis (DKA).
- Facilities should engage social workers, care management associates, and dietitians to uncover reasons and address root cause of DKA.
- Facilities should establish multidisciplinary complex care clinics to support patients with frequent hospitalizations and complex medical needs.

Recommendations for Systems

- Systems should implement standardized educational programs across healthcare systems to support self-management skill development in individuals with Type 1 Diabetes Mellitus (T1DM).
- Systems with primary care providers (PCPs), emergency departments (EDs), and obstetricians (OBs) should screen for significant allergies, refer patients to allergists, and provide epinephrine auto-injectors and education to women with severe allergies.

Recommendations for Communities

- Communities with medical, nursing, and physician assistant (PA) education programs—including APRN training—should incorporate motivational interviewing techniques into their curricula to better prepare future providers for effective patient communication and behavior change support.

Appendix 1: Act 829 of 2019

Stricken language would be deleted from and underlined language would be added to present law.
Act 829 of the Regular Session

State of Arkansas *As Engrossed: H2/18/19 H2/20/19*
92nd General Assembly **A Bill**
Regular Session, 2019 HOUSE BILL 1440

By: Representatives D. Ferguson, Bentley, Barker, Brown, Burch, Capp, Cavenaugh, Clowney, Crawford, Dalby, C. Fite, V. Flowers, D. Garner, Godfrey, M. Gray, Lundstrum, McCullough, Petty, Rushing, Scott, Speaks, Vaught, Della Rosa, *Eaves*
By: Senators Irvin, Bledsoe, J. English, Elliott, L. Chesterfield

For An Act To Be Entitled

AN ACT TO ESTABLISH THE MATERNAL MORTALITY REVIEW COMMITTEE; AND FOR OTHER PURPOSES.

Subtitle

TO ESTABLISH THE MATERNAL MORTALITY REVIEW COMMITTEE.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

SECTION 1. DO NOT CODIFY. Legislative findings and intent.

(a) The General Assembly finds that:

(1) Arkansas ranks forty-fourth in maternal mortality compared with other states according to the 2018 United Health Foundation report on the Health of Women and Children;

(2) Arkansas currently has thirty-five (35) maternal deaths per one hundred thousand (100,000) live births, compared with the national average of twenty (20) deaths per one hundred thousand (100,000) live births, according to the Centers for Disease Control and Prevention;

(3) Thirty-five (35) states in the nation either conduct or are preparing to conduct organized maternal mortality reviews that help prevent maternal death through data collection, data analysis, and implementation of recommendations; and

(4) With roughly half of pregnancy-related deaths being preventable, state maternal mortality review committees are vital to

understanding why women are dying during pregnancy, childbirth, and the year postpartum, and to achieving goals of improving maternal health and preventing future deaths.

(b) It is the intent of the General Assembly to establish a maternal mortality review committee in the State of Arkansas and to decrease the amount of maternal deaths in the state.

SECTION 2. Arkansas Code Title 20, Chapter 15, is amended to add an additional subchapter to read as follows:

Subchapter 23 — Maternal Mortality Review Committee

20-15-2301. Maternal Mortality Review Committee.

(a)(1) The Department of Health shall establish the Maternal Mortality Review Committee to review maternal deaths and to develop strategies for the prevention of maternal deaths.

(2) The committee shall be multidisciplinary and composed of members as deemed appropriate by the department.

(b) The department may contract with an external organization to assist in collecting, analyzing, and disseminating maternal mortality information, organizing and convening meetings of the committee, and other tasks as may be incident to these activities, including providing the necessary data, information, and resources to ensure successful completion of the ongoing review required by this section.

20-15-2302. Powers and duties.

The Maternal Mortality Review Committee shall:

(1) Review pregnancy-associated deaths or deaths of women with indication of pregnancy up to three hundred sixty-five (365) days after the *end* of pregnancy, regardless of cause, to identify the factors contributing to these deaths;

(2) Identify maternal death cases;

(3) Review medical records and other relevant data;

(4) Contact family members and other affected or involved persons to collect additional relevant data;

(5) Consult with relevant experts to evaluate the records and data;

(6) Make determinations regarding the preventability of maternal deaths;

(7) Develop recommendations for the prevention of maternal deaths, including public health and clinical interventions that may reduce these deaths and improve systems of care; and

(8) Disseminate findings and recommendations to policy makers, healthcare providers, healthcare facilities, and the general public.

20-15-2303. Access to records.

(a) Healthcare providers, healthcare facilities, and pharmacies shall provide reasonable access to the Maternal Mortality Review Committee to all relevant medical records associated with a case under review by the committee.

(b) A healthcare provider, healthcare facility, or pharmacy providing access to medical records as described by subdivision (a) of this section is not liable for civil damages or subject to any criminal or disciplinary action for good faith efforts in providing such records.

20-15-2304. Confidentiality.

(a)(1) Information, records, reports, statements, notes, memoranda, or other data collected under this subchapter are not admissible as evidence in any action of any kind in any court or before any other tribunal, board, agency, or person.

(2) Information, records, reports, statements, notes, memoranda, or other data collected under this subchapter shall not be exhibited or disclosed in any way, in whole or in part, by any officer or representative of the Department of Health or any other person, except as necessary for the purpose of furthering the review of the Maternal Mortality Review Committee of the case to which they relate.

(3) A person participating in a review shall not disclose, in any manner, the information so obtained except in strict conformity with such review project.

(b) All information, records of interviews, written reports, statements, notes, memoranda, or other data obtained by the department, the committee, and other persons, agencies, or organizations so authorized by the department under this subchapter are confidential.

(c)(1) All proceedings and activities of the committee under this subchapter, opinions of members of the committee formed as a result of such proceedings and activities, and records obtained, created, or maintained pursuant to this subchapter, including records of interviews, written reports, and statements procured by the department or any other person, agency, or organization acting jointly or under contract with the department in connection with the requirements of this subchapter, are confidential and are not subject to the Freedom of Information Act of 1967, §§ 25-19-101 et seq., relating to open meetings, subject to subpoena, discovery, or introduction into evidence in any civil or criminal proceeding.

(2) However, this subchapter does not limit or restrict the right to discover or use in any civil or criminal proceeding anything that is available from another source and entirely independent of the committee's proceedings.

(d)(1) Members of the committee shall not be questioned in any civil or criminal proceeding regarding the information presented in or opinions formed as a result of a meeting or communication of the committee.

(2) This subchapter does not prevent a member of the committee from testifying to information obtained independently of the committee or which is public information.

20-15-2305. Disclosure.

Disclosure of protected health information is allowed for public health, safety, and law enforcement purposes, and providing case information on maternal deaths for review by the Maternal Mortality Review Committee is not a violation of the Health Insurance Portability and Accountability Act of 1996.

20-15-2306. Immunity from liability.

State, local, or regional committee members are immune from civil and criminal liability in connection with their good-faith participation in the maternal death review and all activities related to a review with the Maternal Mortality Review Committee.

20-15-2307. Reporting.

(a) Beginning in 2020, the Maternal Mortality Review Committee shall

file a written report on the number and causes of maternal deaths and its recommendations on or before December 31 of each year to:

(1) The Senate Committee on Public Health, Welfare, and Labor;

(2) The House Committee on Public Health, Welfare, and Labor; and

(3) The Legislative Council.

(b) The report shall include:

(1) The findings and recommendations of the committee; and

(2) An analysis of factual information obtained from the review of the maternal death investigation reports and any local or regional review panels that do not violate the confidentiality provisions under this *subchapter.*

(c) The report shall include only aggregate data and shall not identify a particular facility or provider.

/s/D. Ferguson

APPROVED: 4/9/19

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?
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.
☐ YES ☐ NO

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.

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 3: List of Presentations and Activities

Date	Activity
August 2024	Arkansas Medical Society; **Improving Maternal Health in Arkansas**
November 2024	Arkansas Maternal Health Community of Practice; **Healthy Moms Healthy Babies Strategic Committee for Maternal Health**
February 2025	Arkansas Section of International Women's Forum; **Healthy Moms Healthy Babies Strategic Committee for Maternal Health**
April 2025	2025 Nursery Alliance Spring Summit; **Maternal and Neonatal Policy Updates**
April 2025	**My Baby 4 Me and Postpartum Warning Signs**
April 2025	2025 POWER/ARPQC Spring Workshop; **State of Arkansas Maternal Health Address**
May 2025	Panel Discussion at the Arkansas Medical Society Annual Meeting; **Maternal and Child Health**
June 2025	Panel Discussion at the Arkansas Dental, Medical, and Pharmaceutical Association (ADMPA) Annual Meeting; **From Bump to Birth, Advancing Maternal Health Access Across the State of Arkansas**
June 2025	Panel Discussion at the Arkansas Pharmacy Association Annual Convention; **Prescribing Power: Elevating Maternal Health Care Through Pharmacy Practice**
July 2025	West Little Rock Rotary Club; **Arkansas Maternal Health Update**
July 2025	**Cardiovascular Disease in Pregnancy**
August 2025	Nurse Family Partnership; **When Home Hurts: The Overlooked Link Between Intimate Partner Violence and Maternal Health**
August 2025	Panel Discussion at the MMRIA User Meeting 9 Conference; **Using MMRC Information to Build Partnerships and Inform Medicaid Program Initiatives**
October 2025	Baptist Health Symposium; **Maternal Morbidity and Mortality**

Appendix 4: Factsheets

ARKANSAS Maternal Mortality

2018 – 2022 Deaths

The **Arkansas Maternal Mortality Review Committee (AMMRC)** reviews deaths that occur during pregnancy or within one year of the end of pregnancy to determine causes of death, contributing factors, and to make recommendations for preventing future deaths in Arkansas.

Pregnancy-Associated Death: The death of a woman while pregnant or within one year of the end of pregnancy, regardless of the cause.

Pregnancy-Related Death: The death of a woman while pregnant or within one year of the end of pregnancy from any cause related to or aggravated by pregnancy or its management.

38

PREGNANCY-RELATED DEATHS PER 100,000 LIVE BIRTHS

94%

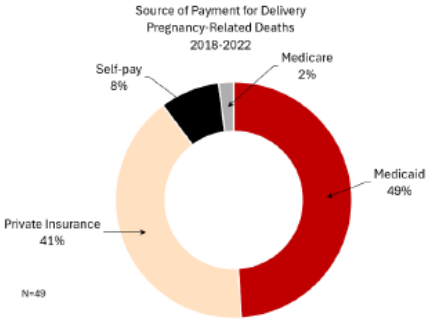
WERE PREVENTABLE

BLACK NON-HISPANIC WOMEN WERE

1.2x

AS LIKELY TO DIE AS WHITE NON-HISPANIC WOMEN

Payment source for pregnancy-related deaths occurring after delivery



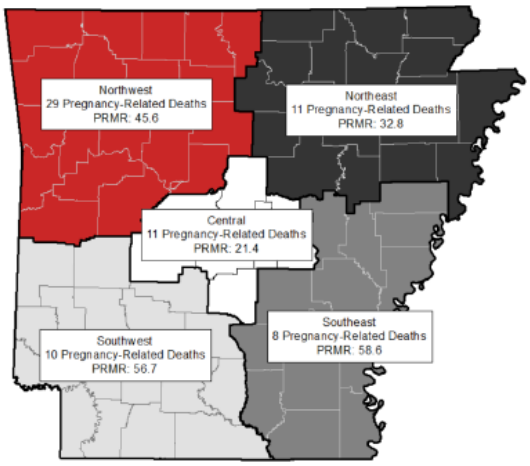
Pregnancy-associated deaths by timing of death

	During Pregnancy	Day of Delivery	1-6 Days Postpartum	7-42 Days Postpartum	43-365 Days Postpartum
Pregnancy-related	18.8%	11.6%	14.5%	20.3%	34.8%
Pregnancy-associated, but not related	31.2%	0%	0%	5.2%	63.6%
Pregnancy-associated, but unable to determine relatedness	15.0%	0%	5.0%	15.0%	65.0%

Leading causes of pregnancy-related deaths

- Infection
- Cardiomyopathy
- Cardiovascular conditions
- Hypertensive disorders of pregnancy
- Mental health conditions and Injury

Pregnancy-related deaths by Public Health Region (PRMR = per 100,000 live births)



2025 AMMRC Factsheet

Arkansas Maternal Mortality

2018 – 2022 By Year

The **Arkansas Maternal Mortality Review Committee (AMMRC)** reviews deaths that occur during pregnancy or within one year of the end of pregnancy to determine causes of death, contributing factors, and to make recommendations for preventing future deaths in Arkansas.

Pregnancy-Related Death: The death of a woman while pregnant or within one year of the end of pregnancy from any cause related to or aggravated by pregnancy or its management.

Pregnancy-Associated But Not Related Death: The death of a woman while pregnant or within one year of the end of pregnancy from a cause that is not related to pregnancy.

Pregnancy-Associated Death: The death of a woman while pregnant or within one year of the end of pregnancy, regardless of the cause. (Includes pregnancy-associated but not related and pregnancy-related, and unable to determine relatedness deaths.)

Leading causes of pregnancy-related deaths

- Infection
- Cardiomyopathy
- Cardiovascular conditions
- Hypertensive disorders of pregnancy
- Mental health conditions and Injury

	2018-2022
Live Births	179,800
Initial pregnancy-associated deaths identified and reviewed by staff	218
False positive and non-resident deaths	48
Pregnancy-associated deaths	170
Pregnancy-related deaths	69
Pregnancy-associated, but not related deaths	80
Pregnancy-associated, but unable to determine relatedness deaths	21

2018	2019	2020	2021	2022
Births: 36,896	Births: 36,438	Births: 35,183	Births: 35,888	Births: 35,395
Pregnancy-Related deaths: 12 (32.5 per 100,000 live births)	Pregnancy-Related deaths: 11 (30.2 per 100,000 live births)	Pregnancy-Related deaths: 15 (42.6 per 100,000 live births)	Pregnancy-Related deaths: 21 (58.5 per 100,000 live births)	Pregnancy-Related deaths: 10 (28.3 per 100,000 live births)
Pregnancy-Associated deaths: 33	Pregnancy-Associated deaths: 27	Pregnancy-Associated deaths: 40	Pregnancy-Associated deaths: 41	Pregnancy-Associated deaths: 29

AMMRC Brief Data Overview by Year