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<tr>
<td>Pam Brown, RN</td>
<td>Hospital Quality Improvement</td>
<td>Arkansas Hospital Association</td>
</tr>
<tr>
<td>Bernard Canzoneri, MD</td>
<td>Maternal Fetal Medicine</td>
<td>Northwest Region</td>
</tr>
<tr>
<td>Michael Cope, MD</td>
<td>Obstetrics/Gynecology</td>
<td>American College of Obstetricians &amp; Gynecologists, Arkansas Section Chair</td>
</tr>
<tr>
<td>Nafisa Dajani, MD</td>
<td>Maternal Fetal Medicine</td>
<td>Central Region</td>
</tr>
<tr>
<td>Nadir El Sharawi, MD</td>
<td>Obstetric Anesthesia</td>
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<tr>
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<td>Obstetrics/Gynecology</td>
<td>Northwest Region</td>
</tr>
<tr>
<td>Martha Garrett-Shaver, MD</td>
<td>Family Medicine</td>
<td>Southwest Region</td>
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<tr>
<td>William Greenfield, MD</td>
<td>Obstetrics/Gynecology</td>
<td>Arkansas Department of Health</td>
</tr>
<tr>
<td>Ken Lambert, MD</td>
<td>Obstetrics/Gynecology</td>
<td>Southeast Region</td>
</tr>
<tr>
<td>Curtis Lowery, MD</td>
<td>Maternal Fetal Medicine</td>
<td>Central Region</td>
</tr>
<tr>
<td>Nirvana Manning, MD</td>
<td>Obstetrics/Gynecology</td>
<td>UAMS, Obstetrics and Gynecology, Chair</td>
</tr>
<tr>
<td>Shannon McKinney, DNP, APRN</td>
<td>Obstetric/Neonatal Nursing</td>
<td>Public Health Association of Women’s Health, Obstetric and Neonatal Nurses</td>
</tr>
<tr>
<td>Jill Mhyre, MD</td>
<td>Obstetric Anesthesia</td>
<td>UAMS, Anesthesiology, Chair</td>
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<tr>
<td>Lauren Nolen, MD</td>
<td>Obstetrics/Gynecology</td>
<td>Central Region</td>
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<td>Shona Ray-Griffith, MD</td>
<td>Psychiatry</td>
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<tr>
<td>Carl Riddell, MD</td>
<td>Obstetrics/Gynecology</td>
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<tr>
<td>Chad Rogers, MD</td>
<td>Pediatrics</td>
<td>Arkansas Foundation for Medical Care, CMO</td>
</tr>
<tr>
<td>Faith Sharp</td>
<td>Community Education</td>
<td>Non-Profit Organization</td>
</tr>
<tr>
<td>Allison Shaw-Devine, MD</td>
<td>Cardiology</td>
<td>American College of Cardiology, Arkansas Chapter</td>
</tr>
<tr>
<td>Bruce Thompson, MD</td>
<td>Obstetrics/Gynecology</td>
<td>Northeast Region</td>
</tr>
<tr>
<td>Joni Yarnell, CNM, APRN</td>
<td>Midwifery</td>
<td>American College of Nurse-Midwives, Arkansas Affiliate</td>
</tr>
</tbody>
</table>
This report is produced in remembrance of all the women who have lost their lives during and after pregnancy and childbirth from any cause.

It is with deepest sympathy and respect that we dedicate this report to the memory of all Arkansas women who died while pregnant or within one year of pregnancy, and to their loved ones.

We hope collaborative efforts to further understand the causes and contributing factors of maternal mortality will help to create new pathways to prevention, health, and equity for Arkansas women.
The Arkansas Maternal Mortality Review Committee (AMMRC) began with the passage of Act 829 of 92nd General Assembly Regular Session, 2019. We appreciate the lead sponsors and co-sponsors of the Bill who recognized the need to preserve the life of Arkansas mothers.

This report was made possible through detailed review of maternal death cases by a volunteer review committee. We are deeply grateful to the members of this review committee for their insight, dedication, and generosity. We would like to acknowledge the Arkansas Department of Health – Health Statistics Branch for their collaboration in providing the data used to identify cases of maternal deaths. We thank the health systems, healthcare providers, and coroners who provide the records that allow meaningful review to occur.

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.
About the Arkansas Maternal Mortality Review Committee (AMMRC)

In order to improve maternal health outcomes, we must begin with understanding the factors that contribute to maternal mortality. Act 829 of 2019 called for the formation of the AMMRC. Through data collection and analysis of clinical factors, preventability, and social determinants, the AMMRC seeks to identify factors that lead to poor maternal health outcomes and to make recommendations that will decrease maternal mortality and morbidity.

About This Report

This report details the AMMRC activity since the passage of legislation, with maternal deaths from 2018 selected for review.

Summary of Report

The Arkansas Department of Health (ADH) Family Health Branch formed an internal workgroup to provide administrative support to the committee. In June 2019, the ADH applied for the CDC grant Preventing Maternal Deaths: Supporting Maternal Mortality Review Committees. Despite a favorable recommendation, funding was not awarded.

The ADH established inter- and intra-agency agreements to identify maternal deaths and to access records to facilitate committee review.

An interdisciplinary committee of 21 members representing the state’s five public health regions was formed. This diverse group assembled for the first official meeting in January 2020. Committee members were trained to conduct reviews and cases were selected for subsequent meetings. Due to COVID-19, the AMMRC meeting scheduled for March of 2020 was cancelled. Meetings were held in July and October of 2020. Social distancing requirements and recommended safety measures were established in an effort to ensure maximum safety for all participants.

This report does not contain a final review of all cases occurring in 2018. Due to limitations placed on the review process by the COVID-19 pandemic, only a portion of the total number of 2018 cases have been reviewed by the time of this report. A complete summary of findings and recommendations for 2018 will be held until review of all 2018 cases is complete, and will be included in the 2021 Annual Report.

Key Findings

In 2018, the total number of live births in Arkansas was 36,748. Overall, there were 40 maternal deaths. This included all deaths of women during pregnancy and within one year of the end of pregnancy from any cause.
At the July 2020 meeting, the committee members discussed limitations on the scope for abstraction and review based on the cases presented at the meeting.

Based on the exclusion criteria set forth by the committee members, 10 cases were excluded from the scope of review for Arkansas, and the remaining 30 cases were selected to be abstracted and reviewed. The cases determined to be outside the scope for review by the AMMRC included:

- Not pregnant within one year of death: 4
- Non-Arkansas resident: 3
- Motor vehicle accident: 2
- Accident/Trauma: 1
What is maternal mortality?

In understanding maternal mortality or deaths, several terms exist depending on what and who the term is being used for (i.e., surveillance and reporting, public education, grant applications, etc.). Below are a few common terms and definitions:

- **Maternal death**: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.
- **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 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.
- **Maternal mortality rate**: The number of maternal deaths per 100,000 live births.
- **Pregnancy-related mortality ratio**: The number of pregnancy-related deaths per 100,000 live births.

Who is affected by maternal mortality?


Source: 2019 Health of Women and Children Report, America's Health Rankings

America’s Health Rankings’ 2019 Health of Women and Children Report ranked Arkansas 46th out of 50 states (with 50 being the worst) in maternal mortality.
Between 2013 and 2017, Arkansas’ maternal mortality rate was 50% higher than the maternal mortality rate for the nation overall and more than twice the rate of the state with the lowest maternal mortality rate (Alaska, 12.4 deaths per 100,000 live births).

Maternal mortality affects groups of people differently and some women are at greater risk. Black women die of maternal mortality at almost two times the rate as white women.

The maternal mortality rate among older women is four to five times higher than the rate among younger women.
In a recent *Morbidity and Mortality Weekly Report*, the Centers for Disease Control & Prevention (CDC) states about three in five (60%) pregnancy-related deaths are preventable.

The **CDC’s Pregnancy Mortality Surveillance System (PMSS)** conducts national surveillance of pregnancy-related deaths by requesting death certificates from states for all women who died during pregnancy or within one year of pregnancy. These and other data are examined by medically trained epidemiologists to determine cause and time of death related to the pregnancy.

CDC PMSS reported that Arkansas had 48 maternal deaths and 55 pregnancy-related deaths between 2011 and 2015.

The CDC PMSS data show racial and ethnic disparities in maternal deaths and pregnancy-related deaths. The maternal mortality and pregnancy-related mortality ratios among black women was approximately three to four times greater than the ratios for white and Hispanic women.

### Arkansas Maternal Mortality Ratio* (MMR) 2011-2015
- All Race/Ethnicities: 25.0
- Non-Hispanic White: 18.6
- Non-Hispanic Black: 54.6
- Hispanic: 15.4

### Arkansas Pregnancy-Related Mortality Ratio** (PRMR) 2011-2015
- All Race/Ethnicities: 28.6
- Non-Hispanic White: 20.1
- Non-Hispanic Black: 65.5
- Hispanic: 15.4

*Number of maternal deaths per 100,000 live births
**Number of pregnancy-related deaths per 100,000 live births

Source: **CDC Pregnancy Mortality Surveillance System**
In 2019, Arkansas was one of several states that introduced legislation to establish a maternal mortality review committee. Arkansas House Bill 1440 was introduced and passed during the 92\textsuperscript{nd} General Assembly, Regular Session, 2019. Arkansas House Bill 1440 became Act 829 of 2019 (Appendix A) and established the AMMRC which requires the formal review of maternal deaths in Arkansas and secures protection for the confidentiality of the process. The AMMRC was developed with guidance from the Centers for Disease Control and Prevention (CDC) Building US Capacity to Review and Prevent Maternal Deaths and is modeled after well-established review committees in the United States (Appendix B).

Within the population of women of reproductive age, maternal mortality is an indicator that is monitored by ADH pursuant to Ark. Code Ann. § 20-15-2301. Maternal mortality is considered a sentinel event that warrants close scrutiny. An increasing national and state trend in maternal mortality indicates the need to conduct maternal mortality review in order to gain insight into the medical and social factors leading to these events and to prevent future occurrences of maternal mortality.

**ADH Internal Workgroup**

Development and facilitation of the AMMRC was delegated to the ADH Family Health Branch. The first year has been dedicated to development of infrastructure for the committee. An internal workgroup was established consisting of physicians, nurses, an epidemiologist, and administrative staff. This workgroup has met weekly for over a year focusing on maternal mortality review.

A guidance document was developed outlining the focus and goals of the committee, along with guidelines addressing confidentiality, conflict of interest, and the processes of the committee. Each committee member received formal orientation to the Arkansas Maternal Mortality Review Committee Guidance Document as well as the abstraction and review process. In addition, the workgroup has developed correspondence and other documents necessary to facilitate the activities of the committee. All documents were developed with close guidance from the CDC and modeled after long-standing review committees in other states.

**Data Sharing Agreements**

The ADH Family Health Branch has established data sharing agreements with the Office of Health Information Technology (OHIT), the ADH Health Statistics Branch, ADH Vital Statistics Section, and the ADH Hospital Discharge Data System. In addition, an agreement has been established with CDC for data sharing and use of the Maternal Mortality Review Information Application (MMRIA). Maternal mortality cases have been identified for the calendar year 2018 and the abstraction/review process has been initiated.
Scope

The scope of cases for Arkansas review is all pregnancy-associated deaths or any deaths of women during pregnancy or up to 365 days after pregnancy ends. At the July 2020 AMMRC meeting, the committee members set forth exclusion criteria for abstraction (i.e. motor vehicle accidents and out of state residents).

Deaths are identified from review of death certificates, based on cause of death, a pregnancy check box selection, or linkage of vital records by searching death certificates of women of reproductive age and matching them to birth or fetal death certificates in the year of or the year prior to the woman’s death.

Purpose

The purpose of the AMMRC is to identify and characterize maternal deaths with the goal of identifying prevention opportunities.

Vision

To protect and improve the health and well-being of all Arkansans by eliminating preventable maternal deaths in Arkansas.

Mission

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

Goals

The goals of the AMMRC are to:

- Perform thorough record abstraction in order 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 maternal deaths related to pregnancy (pregnancy-related mortality).
- 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 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 & Protections

The maternal mortality review is conducted pursuant to Ark. Code Ann.§ 20-15-2301 - 2307. See Appendix A 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 three hundred sixty-five (365) days after the end of pregnancy.

§ 20-15-2302 provides powers and duties to the AMMRC including identify maternal death cases, review medical records, contact 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.

Process

Arkansas resident pregnancy-associated deaths are identified through several criteria, including: death certificate for a woman with a matching live birth certificate or a fetal death certificate; death certificate for a woman with a cause of death related to pregnancy, childbirth, or postpartum period; or death certificate for a woman with the pregnancy box checked indicating death occurred during a pregnancy or within one year of a pregnancy.

Information for abstraction is gathered from maternal/neonatal death certificates, neonatal birth certificates, medical records, autopsy reports, and other pertinent resources. Records are then abstracted by a trained abstractor, who prepares de-identified case narratives for review by the committee.

Meeting Structure

The AMMRC 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:

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?
Membership

The AMMRC is a multidisciplinary committee whose members represent Arkansas Department of Health’s five public health regions (Appendix C) and various specialties, facilities, and systems that interact with and impact maternal health.

Twenty-one members have been appointed by the Arkansas Secretary of Health. 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).

All AMMRC members serve in a volunteer capacity and do not receive compensation for participation in the review process. AMMRC members have a term limit of up to three years for their volunteer stewardship.

Organizations Represented by Members

- American College of Cardiology, Arkansas Chapter
- American College of Nurse Midwives, Arkansas Affiliate
- American College of Obstetricians & Gynecologists
- Arkansas Department of Health
- University of Arkansas for Medical Sciences
- Arkansas Board of Health
- Arkansas Foundation for Medical Care
- Arkansas Hospital Association
- Arkansas Medical Society
- Arkansas Society of Anesthesiologists
- Arkansas Chapter Association of Women’s Health, Obstetric and Neonatal Nurses
- Arkansas Board of Nursing
- Arkansas Psychiatric Society
- March of Dimes
Appendix A

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
Regular Session, 2019

A Bill

By: Representatives D. Ferguson, Bentley, Barker, Brown, Burch, Capp, Cavenaugh, Clyne, Crawford,
Dalby, C. Fite, V. Flowers, D. Gamer, 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


(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.


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.

(a) Healthcare providers, healthcare facilities, and pharmacists 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.

(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.

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.

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.

(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
Appendix B

Map of Existing Maternal Mortality Review Committees

[Image of a map showing the United States with states colored to indicate the status of maternal mortality review committees, with legends indicating 'Existing Review / CDC ERASE MM Funded', 'Existing Review', and 'Planning a Review'.]

Updated 08/25/2020
The Arkansas Department of Health divides the state into five Public Health Regions: Northwest Region, Northeast Region, Central Region, Southwest Region, and Southeast Region. Each Public Health Region has its own regional administrative office and all 75 Arkansas counties have one or more local health units. To learn more about the ADH Public Health Regions or county health units, please visit the Arkansas Department of Health website at https://www.healthyarkansas.com/health-units.