Pregnancy-Related Death

This infographic stems from the Kansas Maternal Mortality Report.

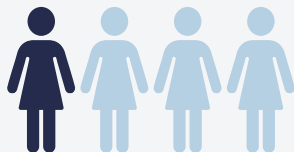
Kansas Department of Health and Environment

KANSAS MATERNAL & CHILD HEALTH

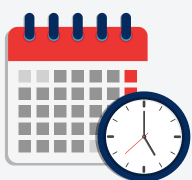
A pregnancy-related death refers to the death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy or the aggravation of an unrelated condition by the physiologic effects of pregnancy.[1]

The Kansas maternal mortality rate of 20.9 (2017-2021) is 33.1% higher than the Healthy People 2030 goal of 15.7 maternal deaths per 100,000 live births (follows the World Health Organization definition).[2] This highlights that more work is needed and the importance of conducting reviews on maternal mortality to gain insight into the medical and social factors leading to these events. Through this review, recommendations can be developed that aim to prevent future occurrences. In 2018 we, Kansas Department of Health and Environment (KDHE), established the Kansas Maternal Mortality Review Committee (KMMRC). At any given time, the committee consists of 25-40 geographically diverse members representing various specialties, facilities and systems that interact and affect maternal health. The KMMRC also strives to ensure racial and cultural perspectives are represented throughout the committee as well as the voices of those with lived experiences.

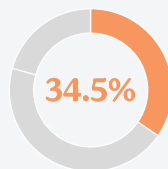
Within the population of women of reproductive age, maternal mortality is an indicator monitored by Kansas Department of Health and Environment pursuant to K.S.A. 65-177.



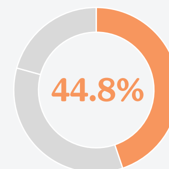
From 2016 to 2020, in Kansas, **one in four deaths of women during or within one year of pregnancy were determined to be pregnancy-related** (29 deaths, 27.6%). This represents to a pregnancy-related mortality ratio of 15 deaths per every 100,000 live births that occurred in Kansas.



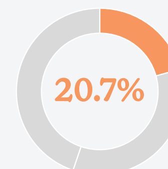
Timing of Death



10 deaths occurred during pregnancy.

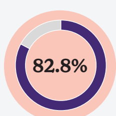


13 deaths occurred within 42 days of the end of pregnancy.



6 deaths occurred 43 days to one year after the end of pregnancy.

23 (**79.3%**) of the 29 deaths **were preventable** with 13 deaths (44.8%) showing a good chance of prevention and 10 deaths (34.5%) showing some chance.

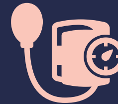


Most pregnancy-related deaths (24 deaths, 82.8%) occurred among persons between the **ages of 25 and 39 years**.

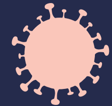
The Leading Causes of Death (in Order)

Cardiovascular conditions

Embolism



Hypertensive disorders



Infection

Inequalities in Pregnancy-Related Deaths

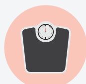
Racial and ethnic minorities were disproportionately affected. Approximately two-thirds (18 deaths, 62.1%) were among racial and ethnic minorities, while 11 deaths (37.9%) were among non-Hispanic White women.

More than half (16 deaths, 55.2%) had **either completed high school or general educational development (GED), or had less education than high school**.

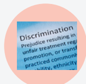
Just over a third (11 deaths, 37.9%) had private insurance, **while the other 62.1% had Medicaid (16 deaths, 55.2%), no insurance (1 death, 3.4%) or unknown insurance status (1 death, 3.4%).**

The distribution of underlying causes of death of pregnancy-related death varied by race and ethnicity; however, low numbers prevent strong conclusions. Pregnancy-related mortality ratios by race and ethnicity are not calculated because the number of deaths in most groups is very small. Eleven pregnancy-related deaths occurred in non-Hispanic White women (37.9%), nine non-Hispanic Black women (31.0%), five Hispanic women (17.2%), and four involved a non-Hispanic woman of other race (13.8%). **The proportion of deaths that occurred among non-Hispanic Black women (31.0%), Hispanic women (17.2%) and non-Hispanic women of other races (13.8%) far exceeded their representation among the population of women giving birth (7.1%, 16.7% and 6.8%, respectively) in Kansas**.

KMMRC Determinations on Circumstances Surrounding Death



Obesity contributed to two in three deaths (18 deaths, including one probably contributed, 62.1%).



Discrimination* contributed to about one in four deaths (four deaths, including all four probably contributed, 23.5%). *Discrimination assessed on all deaths reviewed after May 29, 2020.

Mental health conditions contributed to about one in six deaths (five deaths, 17.2%).

Substance use disorder contributed to one in four deaths (eight deaths, 27.6%).

References: **1.** Centers for Disease Control and Prevention. Division of Reproductive Health. Building U.S. Capacity to Review and Prevent Maternal Deaths Program. Maternal Mortality Review Committee Decisions Form v22. December, 2021. reviewtoaction.org/sites/default/files/2022-12/mmria-form-v22-fillable_Dec11.pdf. **2.** Maternal and Child Health Bureau. Federally Available Data (FAD) Resource Document. April 1, 2022; Rockville, MD: Health Resources and Services Administration. National Outcome Measure 3 - Maternal mortality rate per 100,000 live births. mchb.tvisdata.hrsa.gov.

Key KMMRC Recommendations for Action and Contributing Factors for Pregnancy-Related Deaths

The **key KMMRC recommendations** based on 23 preventable pregnancy-related deaths are as follows:

✓ **Screen, provide brief intervention, and referrals** for:

- Comorbidities and chronic illness
- Intimate partner violence
- Pregnancy intention
- Mental health conditions (including postpartum anxiety and depression)
- Substance use disorder

✓ **Increased communication and collaboration** between providers, including referrals

✓ **Patient education and empowerment**

A total of **103 contributing factors** related to the patient or family (23.3%), health care providers (26.2%), facilities/hospitals where the woman sought care (15.5%), the systems that influence the lifestyle, care and health services for the woman (26.2%) or community (8.7%) were identified by KMMRC as contributing to pregnancy-related deaths. While provider and systems of care level factors were the most common, **it is important to note that they were often dependent on patient or family, facility and community level factors.** (Figure 1)

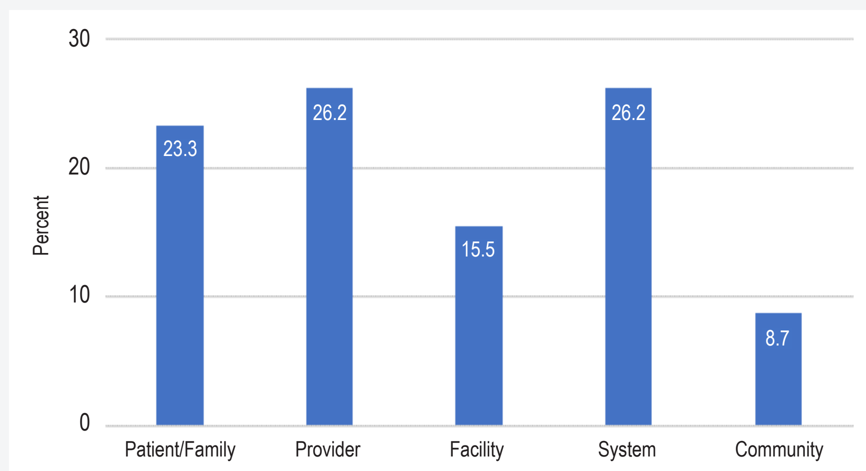


Figure 1

Chart Title: Distribution of levels of contributing factors among preventable pregnancy-related deaths, Kansas, 2016-2020
Source: Kansas Maternal Mortality Review Committee

Recommendations for Prevention and Expected Impact of Actions if Implemented for Pregnancy-Related Deaths

1. Most recommendations were identified as resulting in either primary (45.7%) or secondary (38.8%) prevention and 15.5% of recommendations were identified as resulting in tertiary prevention.

2. The level of **expected impact** if the recommendation was implemented was **estimated to be large, extra large or giant for 57.9% of recommendations.**

3. More consistent use of screening tools, providing brief intervention, referral to treatment, patient education and empowerment, communication and collaboration between health care providers, community engagement and education and family planning education would likely have a larger impact for prevention.

Pregnancy-Related Death
WHAT WE'RE DOING ABOUT IT

We, along with the KMMRC closely monitor emerging patterns through case reviews and actively work to address them.

Our programs make efforts to engage and educate the community, specifically communities most at risk of experiencing poor outcomes. Understanding the role that social determinants of health play in health outcomes, KDHE works to engage and collaborate across sectors to ensure a comprehensive approach to reducing maternal mortality.

State Perinatal Quality Collaboratives (PQCs) and MMRCs improve maternal and perinatal health; investing in the mother's health leads to healthier birth and pregnancy outcomes.

- PQCs: Focus on efforts during the maternal and perinatal periods intended to improve birth outcomes and strengthen perinatal systems of care for mothers and infants.
- MMRCs: Focus on reviewing pregnancy-associated deaths to identify gaps in health services and make recommendations to prevent future deaths, improving maternal and perinatal health.
- Lessons learned over time have resulted in the national Centers for Disease Control and Prevention (CDC) recommendation for states to intentionally and strategically align the efforts of the MMRCs and PQCs to create a culture of safety.

In October 2021, we enrolled in the Alliance for Innovation on Maternal Health (AIM) Postpartum Discharge Transition, in partnership with the Kansas Perinatal Quality Collaborative and KMMRC.

- AIM is a national data-driven maternal safety and Quality Improvement (QI) initiative for hospitals and partners with a focus on consistent obstetric practices.
- AIM is built around evidenced-based approaches that improve maternal safety and outcomes.
- AIM works with state teams and health systems to align national, state and hospital level QI efforts to improve maternal and perinatal health outcomes.
- Participation in AIM is open to any state, and includes access to:
  - Access to “Patient Safety Bundles”
  - Access to “Patient Safety Tools”
  - Access to “Education and Engagement Tools”
  - Access to the AIM Community of States

- **Fourth Trimester Initiative (Kansas AIM Bundle)**: The Fourth Trimester Initiative is a maternal quality improvement initiative focusing on the postpartum period. It focuses on universal screening; linkage and care coordination from the inpatient (birth facility) setting to the outpatient (public health and community agencies) setting. This includes linkage and connection to: primary care providers for those identified with chronic health conditions; perinatal behavioral health and substance use services; universal education on healthy relationships; and screening, referrals and care coordination around the social determinants of health.

- **12-month KanCare (Medicaid) Postpartum Extension**: Effective April 1, 2022, an individual (adult or minor) who is receiving Medicaid or CHIP coverage at the time of birth or end of the pregnancy is now continuously eligible through the last month of their 12-month postpartum period which begins the month following the end of the pregnancy. Use of KanCare Postpartum Extension is not contingent upon a live birth. Coverage remains in effect regardless of pregnancy outcome (stillbirth, miscarriage).
- **Kansas Birth Equity Network**: Birth Equity Curriculum and technical assistance is offered to all Fourth Trimester Initiative enrolled facilities through partnership with the Kansas Birth Equity Network.
- **The Well-Woman Toolkit**: Developed to support providers address barriers to care as well as provider bias. Current efforts are being focused on enhancing the toolkit to support providers on how to better engage and serve Hispanic and non-Hispanic Black Women in Kansas.
- **Maternal Warning Signs (MWS) Integration Toolkit**: Developed to raise awareness of potentially life-threatening warning signs during pregnancy and the postpartum period. This toolkit and its resources are designed to empower pregnant and postpartum women to speak up when something does not feel right and encourage partners, friends, family and health care providers to really listen and take action when women express concerns. Included is the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) POST BIRTH Warning Signs, the CDC's Hear Her campaign and resources on perinatal mental health. As an extension of the MWS initiative, the Perinatal Hypertension Guide was developed to educate patients on Hypertensive Disorders of Pregnancy (HDP), the associated risk factors of HDP, the warnings signs, how to properly self monitor blood pressure at home and the importance of communication with their provider.
- **Screening for Pregnancy Intention** using client centered tools provided by the Reproductive Health National Training Center (RHNTC) to initiate conversation about birth control, interconception and preconception health.
- **MAVIS (Maternal Anti-Violence Innovation and Sharing) Project**: Aims to reduce violent maternal deaths due to homicide, suicide, poisoning and overdose. We partnered with Kansas Coalition of Sexual and Domestic Violence, Kansas Perinatal Quality Collaborative, and Kansas Connecting Communities (KCC) to establish cross-training educational opportunities focusing on mental health, substance use and intimate partner violence. MAVIS activities also supported the establishment of the KMMRC Subcommittee to further examine these causes of maternal violent death, as well as reviews of social determinants of health and provides recommendations to address factors contributing to preventable maternal deaths.
- **Kansas Connecting Communities (KCC)**: Through federal grant funding, the KCC program established a Perinatal Provider Consultation Line for Behavioral Health in Kansas. Providers can access the Consultation Line for resource and referral support, case consultation with a peripartum psychiatrist or to request free training related to perinatal mental health and substance use.
- **Perinatal Mental Health Toolkit**: Developed to support providers to address the early identification of perinatal mood and anxiety disorders through universal screening practices. The toolkit includes patient and provider resources, policy templates, screening tools and workflow algorithms, guidance for screening administration and information for billing Medicaid for maternal depression screenings.
- **Perinatal Substance Use Toolkit**: Developed to support providers to address the early identification of perinatal substance use through universal screening practices. The toolkit includes patient and provider resources, policy templates, screening tools and workflow algorithms, guidance for screening administration and information for billing Medicaid for screening, brief intervention and referral to treatment (SBIRT) services related to substance use.