



Severe Maternal Morbidity

This infographic stems from the Kansas Maternal Mortality Report.

According to American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine:

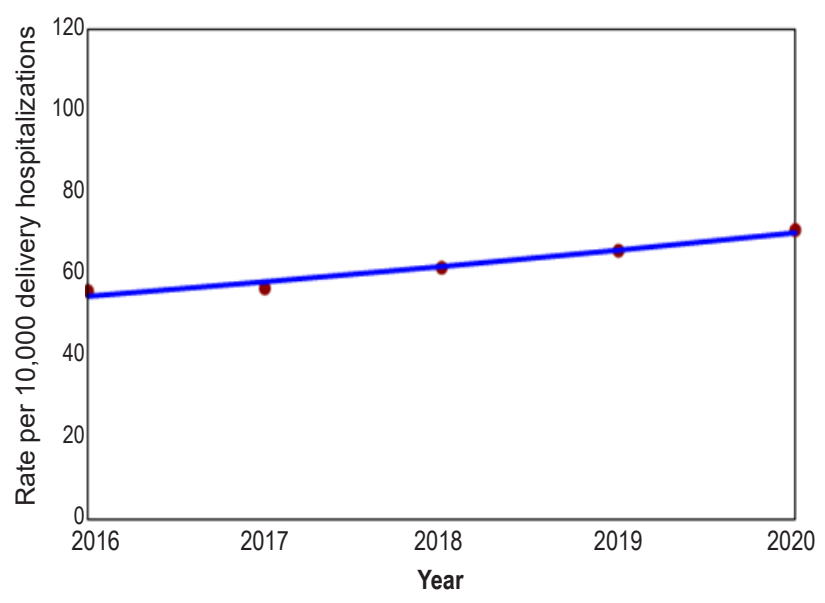
Severe maternal morbidity can be thought of as unintended outcomes of the process of labor and delivery that result in significant short-term or long-term consequences to a woman’s health. Severe maternal morbidity is associated with a high rate of preventability, similar to that of maternal mortality. It also can be considered a near miss for maternal mortality because without identification and treatment, in some cases, these conditions would lead to maternal death. Identifying severe morbidity is, therefore, important for preventing such injuries that lead to mortality and for highlighting opportunities to avoid repeat injuries.¹



Severe maternal morbidity (SMM) occurs **nearly 100 times more frequently than maternal death.** Because they are closely related, investigation of SMM can provide valuable insights into underlying and contributing causes of maternal death.²



From 2016 to 2020, of the **164,049 delivery hospitalizations of Kansas residents, 1,019 deliveries with one or more SMMs were identified.** This translates to approximately 1 in 161 women who delivered a baby experienced SMM.



● Observed
— 2016-2020 APC = 6.4*

Figure 1: Shows trends in SMM in Kansas from 2016 to 2020. **The SMM rate significantly increased, with an annual percent change of 6.4%.**

Chart Title: Trends in delivery hospitalizations involving severe maternal morbidity, Kansas, 2016-2020
Source: Kansas Department of Health and Environment, Kansas hospital discharge data (resident)

* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Per 10,000 delivery hospitalizations, the top five most common indicators of SMM were:

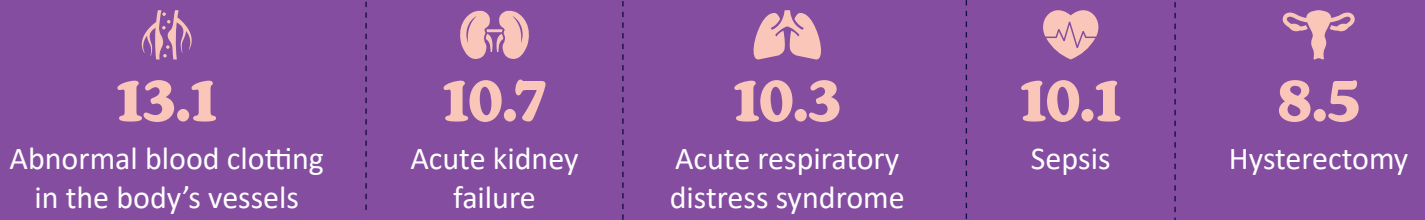
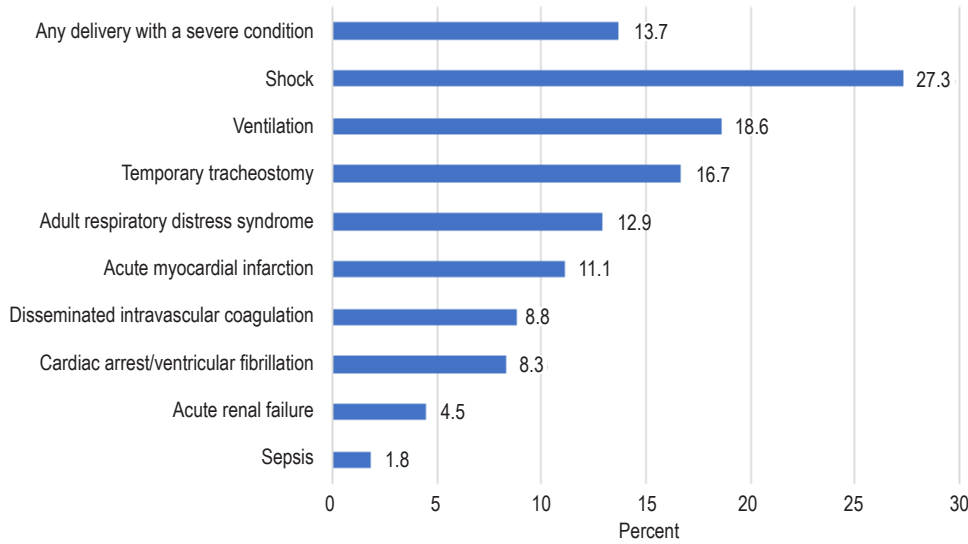


Figure 2:

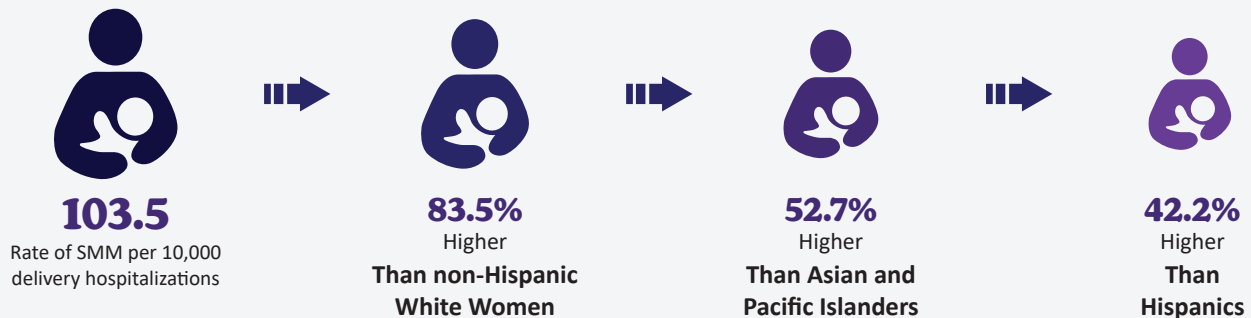
Some conditions often involved procedural intervention. Figure 2 shows more than a quarter (27.3%) of deliveries with shock had a hysterectomy in 2016-2020.

Chart Title: Percentage of deliveries involving hysterectomy among deliveries with a condition indicating severe maternal morbidity, Kansas 2016-2020
Source: Kansas Department of Health and Environment, Kansas hospital discharge data (resident)



SMM rate was highest among women aged 40 years and older and lowest for those aged 25-29 years (155.3 and 48.1 per 10,000 delivery hospitalizations).

Non-Hispanic Black Women



While SMM rates of non-Hispanic Black women from 2016 to 2020 have decreased over that time, the rate of SMM per 10,000 delivery hospitalizations for non-Hispanic Black women remains remarkably high at 103.5. That rate is 83.5% higher than the rate among non-Hispanic White women (56.4), 52.7% higher than the rate among Asian and Pacific Islanders (67.8) and 42.2% higher than the rate among Hispanics (72.8).

References: 1. American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine, Kilpatrick SK, Ecker JL. Severe maternal morbidity: screening and review. Am J Obstet Gynecol. 2016;215(3):B17-B22. doi:10.1016/j.ajog.2016.07.050. [acog.org/-/media/project/acog/acogorg/clinical/files/obstetric-care-consensus/articles/2016/09/severe-maternal-morbidity-screening-and-review.pdf](https://www.acog.org/-/media/project/acog/acogorg/clinical/files/obstetric-care-consensus/articles/2016/09/severe-maternal-morbidity-screening-and-review.pdf). 2. Ohio Department of Health. Severe Maternal Morbidity (SMM) Factsheet. odh.ohio.gov/wps/wcm/connect/gov/db0ab299-4e0d-411e-a107-2db1f555106a/SMM-Factsheet.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18M1HGGIK0N0J000Q09DDDDM3000-db0ab299-4e0d-411e-a107-2db1f555106a-mMBWu6k.

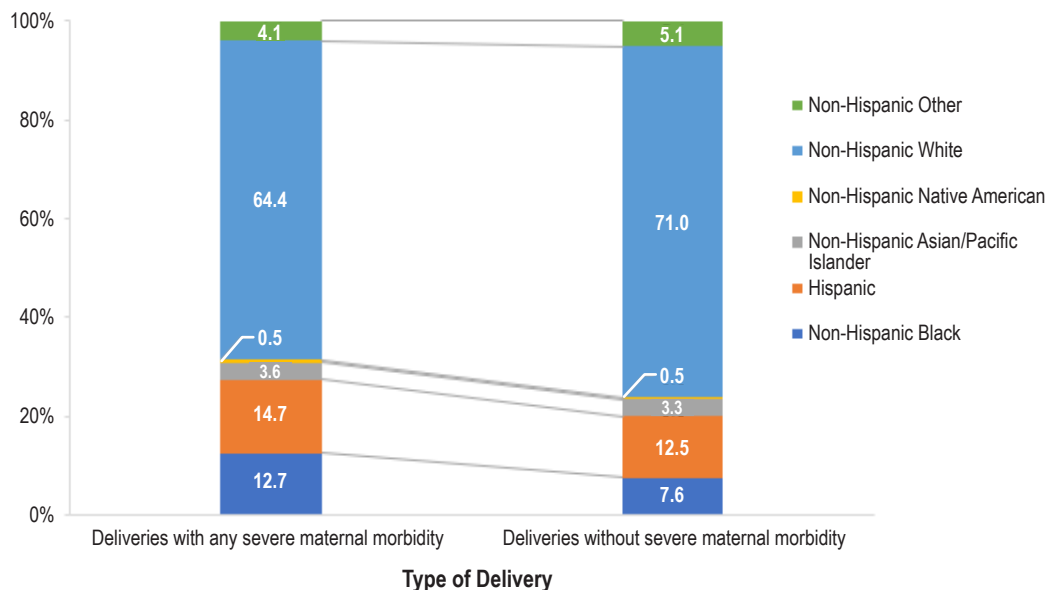


Figure 3: Racial and ethnic minorities made up a higher percentage of deliveries with SMM than other deliveries.

Chart Title: The distribution of maternal race/ethnicity among delivery hospitalizations, according to whether the delivery involved any severe maternal morbidity, Kansas, 2016-2020

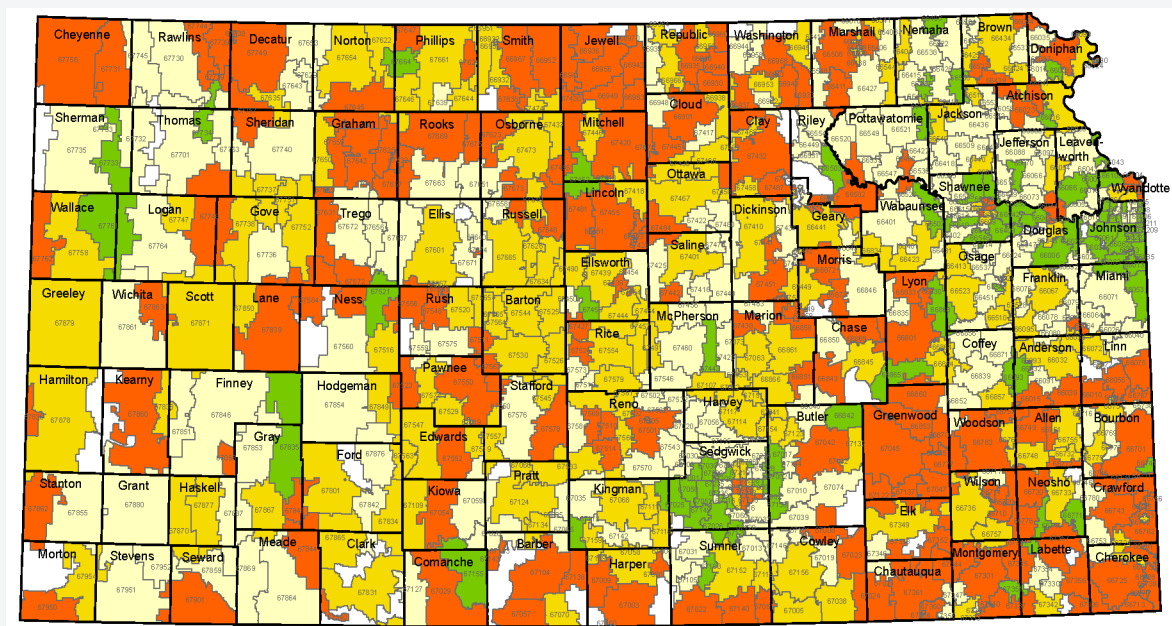
Source: Kansas Department of Health and Environment, Kansas hospital discharge data (resident)



Rates of SMM were significantly higher for women whose delivery was paid by Medicaid compared with private insurance (72.6 vs. 53.1 per 10,000 delivery hospitalization).

Figure 4:

Compared with other deliveries, as shown in Figure 4, women who resided in ZIP Codes in the lowest quartile of median household income were significantly more likely to experience SMM.



Median household income of Zip Code SMM Rate

Quartile 1 (Poorest) Rate: 76.6, 95% CI: 68.2, 84.9

Quartile 2 Rate: 56.4, 95% CI: 49.0, 63.8

CI: Confidence Interval

Quartile 3 Rate: 64.5, 95% CI: 56.7, 72.2

Quartile 4 (Wealthiest) Rate: 49.0, 95% CI: 42.2, 55.8

Chart Title: Severe maternal morbidity rates per 10,000 delivery hospitalizations, by median household income of the maternal ZIP Code of residence, Kansas 2016-2020
Source: Kansas Department of Health and Environment, Kansas hospital discharge data (resident); U.S. Census. American Community Survey



Severe Maternal Morbidity

WHAT WE'RE DOING ABOUT IT

We make intentional efforts to more effectively 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, we work to engage and collaborate across sectors to ensure a comprehensive approach to reducing maternal mortality.

- **[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).
- **[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.
- **[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.
- **[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.
- **[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.

- **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.



DID YOU KNOW?

Non-Hispanic Black women in Kansas experience Severe Maternal Morbidity (SMM) at approximately **2 times the rate** of non-Hispanic White women.

SMM is a physical or psychologic condition that either results from or is aggravated by pregnancy and has an adverse effect on a woman's health¹. It is measured by identifying women with at least **1 of 21 medical conditions** while hospitalized. SMM can be considered a NEAR MISS for maternal mortality, as without identification and treatment, in some cases, these conditions would lead to maternal death.

Despite decreasing SMM rates of non-Hispanic Black (NHB) women from 2016 to 2020, the rate of SMM per 10,000 delivery hospitalizations was 103.5: **83.5% higher** than the rate among non-Hispanic White women (56.4). **The SMM rate for NHB women were significantly higher than any other race and ethnicity.**

Risk Factors for SMM

- Increased maternal age
- Delivery paid for by Medicaid (KanCare)
- Low-income socioeconomic status
- Identify as a non-Hispanic Black woman

The FIVE MOST COMMON Maternal Morbidities During All Delivery Hospitalizations in Kansas:

1. [Disseminated intravascular coagulation](#)
2. [Acute renal failure](#)
3. [Adult/acute respiratory distress syndrome](#)
4. [Sepsis](#)
5. [Hysterectomy](#) (Some conditions involve procedural intervention, such as hysterectomy)

How providers can help decrease disparities in SMM:

- ✓ Establish a **"culture of equity"** to include implementing [Quality Improvement projects](#) that address disparities.
- ✓ **Collect** race, ethnicity, and language data; use that data to improve patient services.
- ✓ **Train** all staff on [unconscious bias](#) and racial disparities.
- ✓ **Engage** in [shared decision making](#) with patients and families.
- ✓ **Educate** and communicate about [disparities in your community](#).
- ✓ **Invest** in early post-partum care programs such as [Home Visiting](#).
- ✓ **Learn** about the [long term psychological toll of structural racism](#).
- ✓ **Strive** to create a [workforce](#) that reflects the community served.

Prevention of SMM:

Similar to maternal mortality, in some cases SMM can be prevented. Improving maternal health could play a role in prevention!

- ✓ **Ensure** women receive early and adequate prenatal care and have access to [prenatal education](#).
- ✓ **Screen** for and manage risk factors and health conditions (including chronic disease and behavioral health [\[substance use, mental health\]](#)).
- ✓ **Engage** women in [reproductive health planning](#) to include [pregnancy intention screening](#) and preconception care counseling.



1. Callaghan, W.M., Creanga A.A, Kuklina E.K. (2012). Severe maternal morbidity among delivery and postpartum hospitalizations in the United States. *Obstetrics and Gynecology*; 120:10291036.