



Severe Maternal Morbidity

This infographic was derived from the Kansas Maternal Mortality Report, which can be found [here](#).

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/critical insights into underlying/contributing causes of maternal death.²



During 2016-2019, of the **132,643 delivery hospitalizations of Kansas residents, 767 deliveries with one or more severe maternal morbidities were identified**, representing a rate of 57.8 per 10,000 delivery hospitalizations. This translates to about 1 in 173 women who delivered a baby experienced SMM.

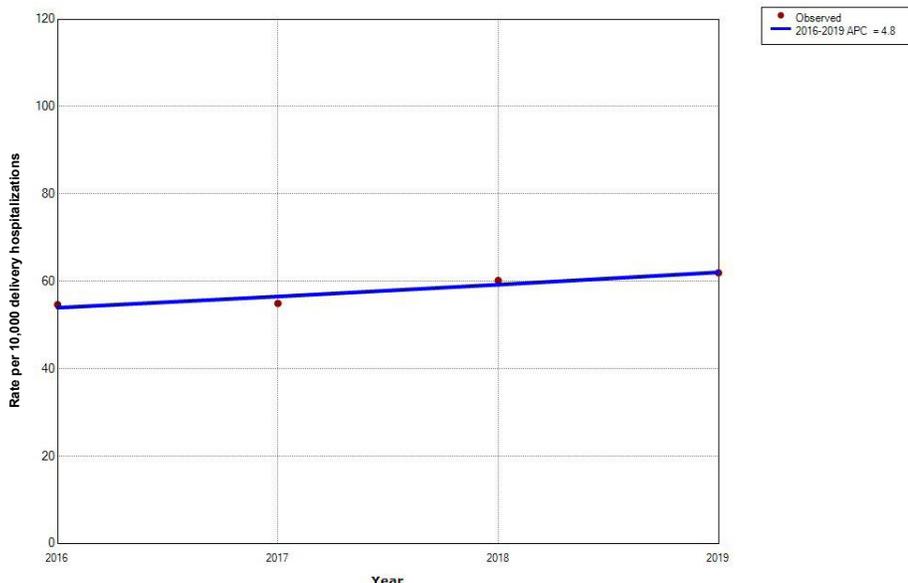


Figure 1:

Shows trends in SMM in Kansas between 2016 and 2019. **The SMM rate steadily increased by 4.8% per year** (95% confidence interval: 0.0%, 9.8%), although this increase was not statistically significant.

Chart Title: Trends in delivery hospitalizations involving severe maternal morbidity, Kansas, 2016-2019

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. Final Selected Model: 0 Joinpoints.

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

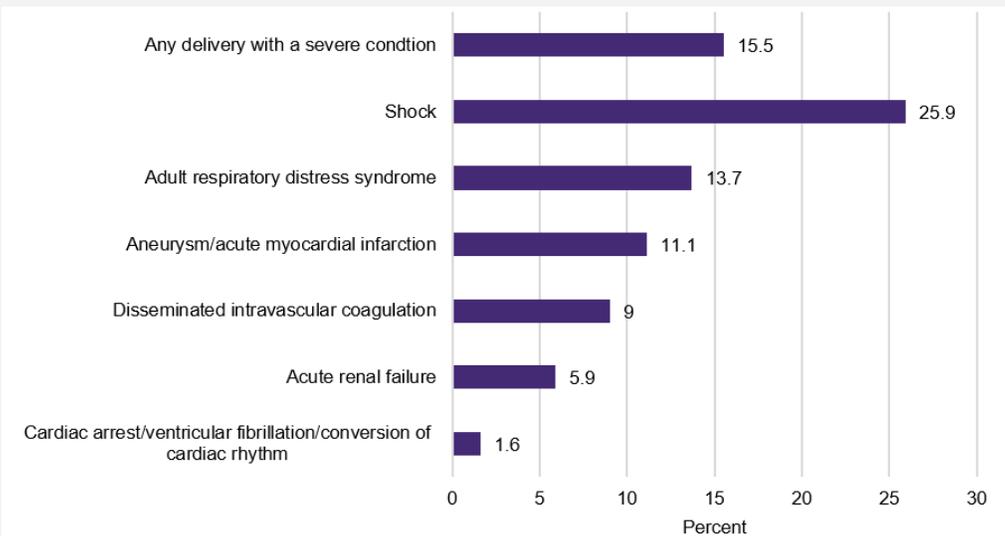


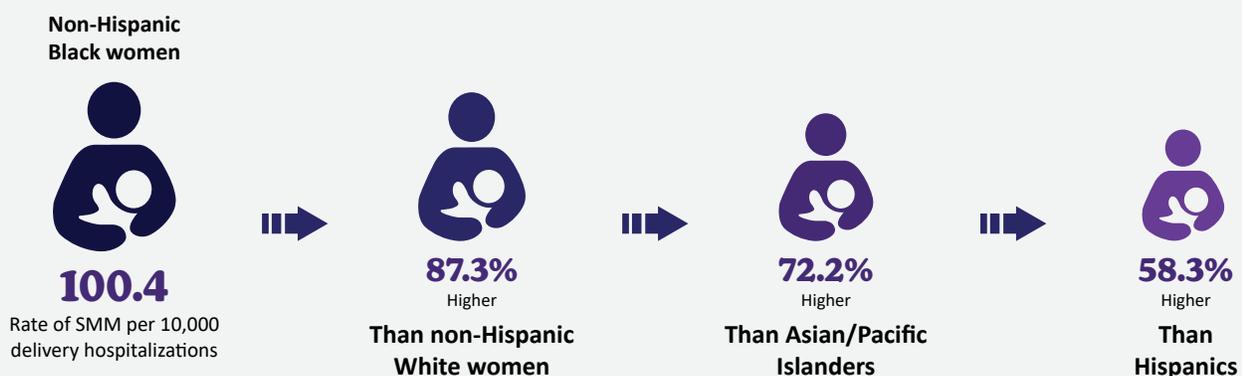
Figure 2:

Some conditions often involved procedural intervention. Figure 2 shows one-quarter (25.9%) of deliveries with shock had a hysterectomy in 2016-2019.

Chart Title: Percentage of deliveries involving hysterectomy among deliveries with a condition indicating severe maternal morbidity, Kansas 2016-2019
Source: Kansas Department of Health and Environment, Kansas hospital discharge data (resident)



SMM was highest among women aged 40+ years and lowest for those aged 25-29 years (150.6 and 44.6 per 10,000 delivery hospitalizations, respectively).



Despite the downward trend in the SMM rate of non-Hispanic Black women during 2016-2019, the rate of SMM per 10,000 delivery hospitalizations for non-Hispanic Black women was 100.4: 87.3% higher than the rate among non-Hispanic White women (53.6), 72.2% higher than the rate among Asian/Pacific Islanders (58.3), and 58.3% higher than the rate among Hispanics (63.7). **The SMM rate for non-Hispanic Black women was significantly higher than any other ethnic/racial group.**

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. <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. <https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/pregnancy-associated-mortality-review/smm>.

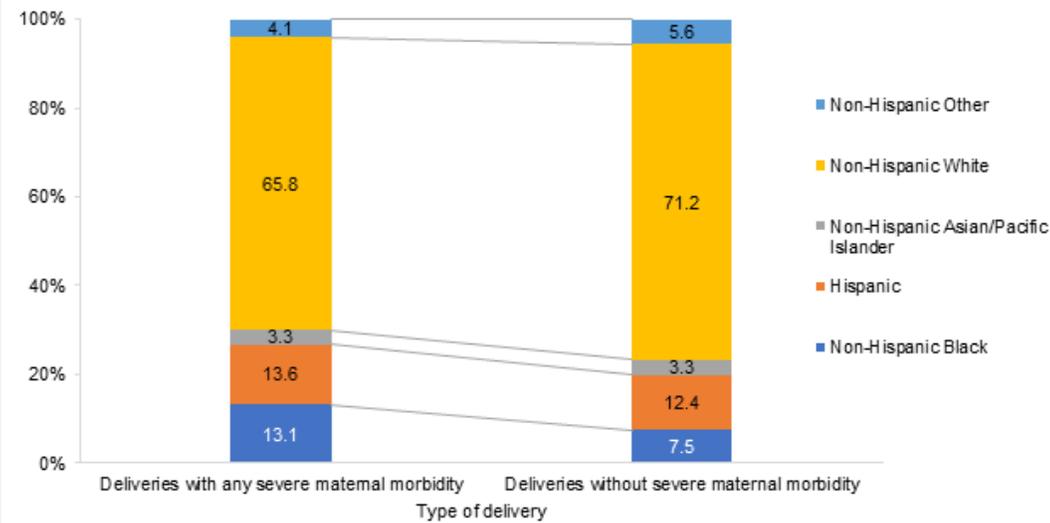


Figure 3:

Ethnic/racial minorities constituted 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, 2016-2019
Source: Kansas Department of Health and Environment, Kansas hospital discharge data (resident)



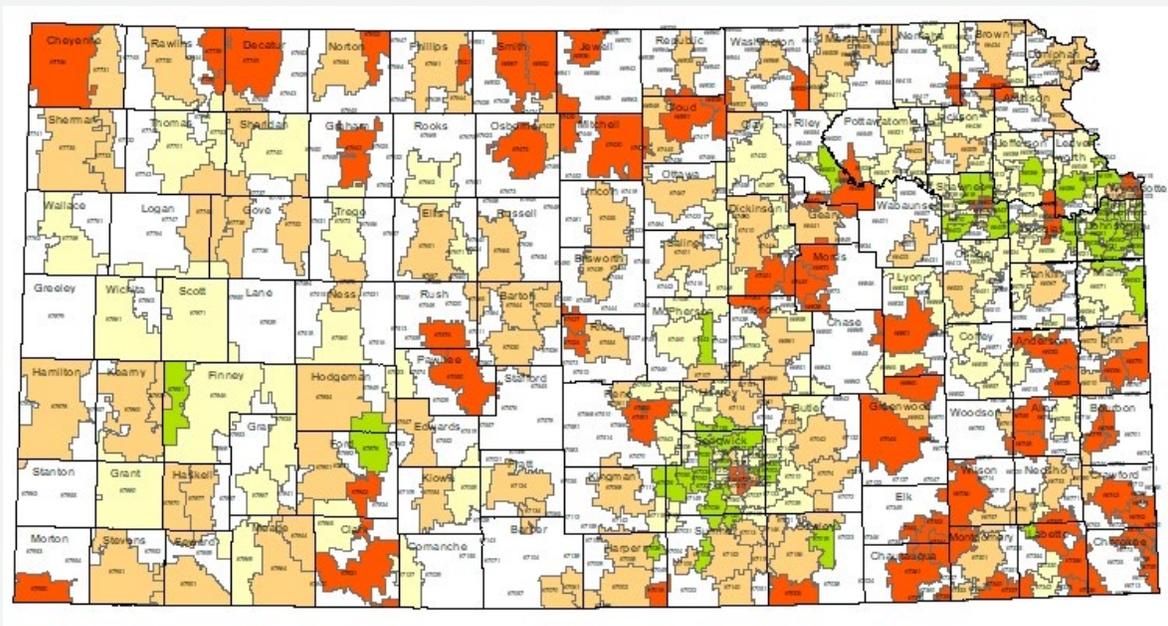
Rates of SMM were significantly higher for women whose delivery was paid by Medicaid compared with private insurance (68.8 vs. 48.4).

Figure 4:

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

Chart Title: Severe maternal morbidity rates per 10,000 delivery hospitalizations, by median household income of the maternal ZIP code of residence, Kansas 2016-2019

Source: Kansas Department of Health and Environment, Kansas hospital discharge data (resident); U.S. Census. American Community Survey



Median household income of Zip Code SMM Rate

- Quartile 4 (Wealthiest) Rate: 44.1, 95% CI: 36.9, 51.3
- Quartile 2 Rate: 54.8, 95% CI: 46.8, 62.8
- Quartile 3 Rate: 56.4, 95% CI: 48.4, 64.5
- Quartile 1 (Poorest) Rate: 73.9, 95% CI: 64.7, 83.0

CI: confidence interval



Severe Maternal Morbidity

WHAT WE'RE DOING ABOUT IT

- **Black maternal health week programming** (speaker panels, training, awareness)
- **Conducting focus groups across the state with Non-Hispanic Black mothers to learn their perspectives on:**
 - Views on importance of overall health and the functionality of the current healthcare system
 - Availability of healthcare services for them and their children
 - What services and support do they feel were lacking during the perinatal period III and neonatal periods related to physical health, emotional wellbeing and mental health
 - What are barriers were faced when seeking whole health services, including prenatal and postpartum care
 - What tools did they find helpful, or would find helpful, when navigating the healthcare system
 - What are their health priorities and biggest needs as mothers
- **Fourth Trimester Initiative** – [Kansas Perinatal Quality Collaborative \(KPQC\)](#) Initiative based on the [Kansas Maternal Mortality Review Committee \(KMMRC\)](#) findings and recommendations
- **The well-woman toolkit** – which addresses barriers to care, including provider bias. We are working on developing supplements for the toolkit that would focus specifically on how to reach and serve Hispanic and Non-Hispanic Black women in KS
- **Post-birth warning signs campaign and provider training with the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)** (and using the CDC's Hear Her materials)
- **Pregnancy intention training (One Key Question)** – which includes training on provider bias



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 during 2016-2019, the overall rate of SMM per 10,000 delivery hospitalizations was 100.4: **87.3% higher** than the rate among non-Hispanic white women (53.6). **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. [Acute renal failure](#)
2. [Disseminated intravascular coagulation](#)
3. [Sepsis](#)
4. [Hysterectomy](#) (Some conditions involve procedural intervention, such as hysterectomy)
5. [Adult/acute respiratory distress syndrome](#)

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.