

Kansas Maternal Morbidity and Mortality Data 2016-2020

Jill Nelson

KDHE Perinatal/Infant Health Consultant

2022 Data

Live Births: **34,389**

Stillbirths: 203

Total Births: **34,592**

Abortions: 3,844

37 Maternal Deaths (2017-2021)

MCHB Federally Available Data

Source: KDHE Office of Vital Statistics

Rapid Response: KS Data Update

Table 12. Number of Births Where Reported Medical Risk Factors by Population Group, Kansas, 2020*

Medical Risk Factors [†]	Population Group															
	White NH		Black NH		American Indian- Alaska Native NH		Asian-PI NH		Multi Race- Other NH		Hispanic- Any Race		n.s. [‡]		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Pre-pregnancy Diabetes	175	0.7	30	1.3	2	1.3	13	1.1	19	1.7	71	1.2	0	0.0	310	0.9
Gestational Diabetes	1,771	7.5	195	8.2	27	16.9	220	18.5	105	9.4	665	11.1	3	6.3	2,986	8.7
Pre-pregnancy Hypertension	666	2.8	91	3.8	7	4.4	19	1.6	30	2.7	118	2.0	1	2.1	932	2.7
Pre-eclampsia	2,020	8.6	234	9.9	14	8.8	56	4.7	97	8.7	412	6.9	3	6.3	2,836	8.3
Eclampsia	87	0.4	13	0.5	1	0.6	1	0.1	6	0.5	15	0.3	1	2.1	124	0.4
Previous Pre-term Birth	611	2.6	136	5.7	3	1.9	24	2.0	32	2.9	197	3.3	2	4.2	1,005	2.9
Previous Poor Pregnancy Outcome	697	3.0	85	3.6	11	6.9	21	1.8	45	4.0	168	2.8	2	4.2	1,029	3.0
Vaginal Bleeding	187	0.8	25	1.1	0	0.0	15	1.3	8	0.7	56	0.9	1	2.1	292	0.8
Previous C-Section	3,547	15.1	465	19.6	29	18.1	157	13.2	170	15.2	916	15.4	10	20.8	5,294	15.4
Infertility Treatment	492	2.1	14	0.6	3	1.9	41	3.5	15	1.3	40	0.7	0	0.0	605	1.8
Infections Contracted or Treated During Pregnancy [§]	865	3.7	189	8.0	7	4.4	39	3.3	79	7.0	267	4.5	3	6.3	1,449	4.2
Smoking During Pregnancy	2,219	9.4	214	9.0	31	19.4	17	1.4	143	12.8	172	2.9	2	4.2	2,798	8.1
Alcohol Use During Pregnancy	31	0.1	6	0.3	0	0.0	2	0.2	4	0.4	6	0.1	0	0.0	49	0.1
Total of Medical Risk Factors	13,368	n/a [¶]	1,697	n/a [¶]	135	n/a [¶]	625	n/a [¶]	753	n/a [¶]	3,103	n/a [¶]	28	n/a [¶]	19,709	n/a [¶]
Total Births	23,517		2,369		160		1,188.0		1,121.0		5,965.0		48		34,368	

* Residence data

[†] More than one medical risk factor may have been reported for a birth. Therefore, actual number of births may be lower than totals.

[‡] n.s. = not stated

[§] Infections include: Gonorrhea, Syphilis, Herpes Simplex Virus, Chlamydia, HIV, Hepatitis B & Hepatitis C

[¶] n/a: Not Applicable

58%

National Sources of Maternal Mortality Information

	CDC – National Center for Health Statistics (NCHS)	CDC – Pregnancy Mortality Surveillance System (PMSS)
Data Source	Death certificates	Death certificates linked to fetal death and birth certificates
Time Frame	During pregnancy – 42 days	During pregnancy – 365 days
Source of Classification	ICD-10 codes	Medical epidemiologists (PMSS-MM)
Purpose	Show national trends and provide a basis for international comparison	Analyze clinical factors associated with deaths, publish information that may lead to prevention strategies

Maternal Mortality Review Committees

Death certificates linked to fetal death and birth certificates, medical records, social service records, autopsy, informant interviews...

During pregnancy – 365 days

Multidisciplinary committees

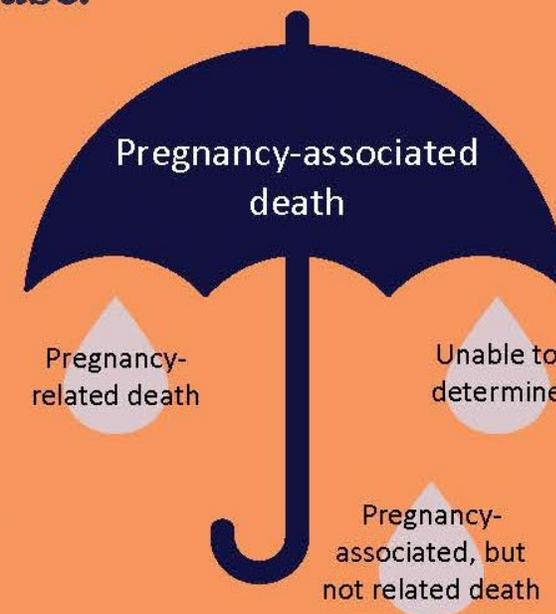
Understand medical and non-medical contributors to deaths, prioritize interventions that effectively reduce maternal deaths

Source: St. Pierre A; Zaharatos J; Goodman D; Callaghan WM. Jan 2018. Challenges and opportunities in identifying, reviewing, and preventing maternal deaths. *Obstetrics and Gynecology*. 131; 138-142.

Pregnancy Associated Death

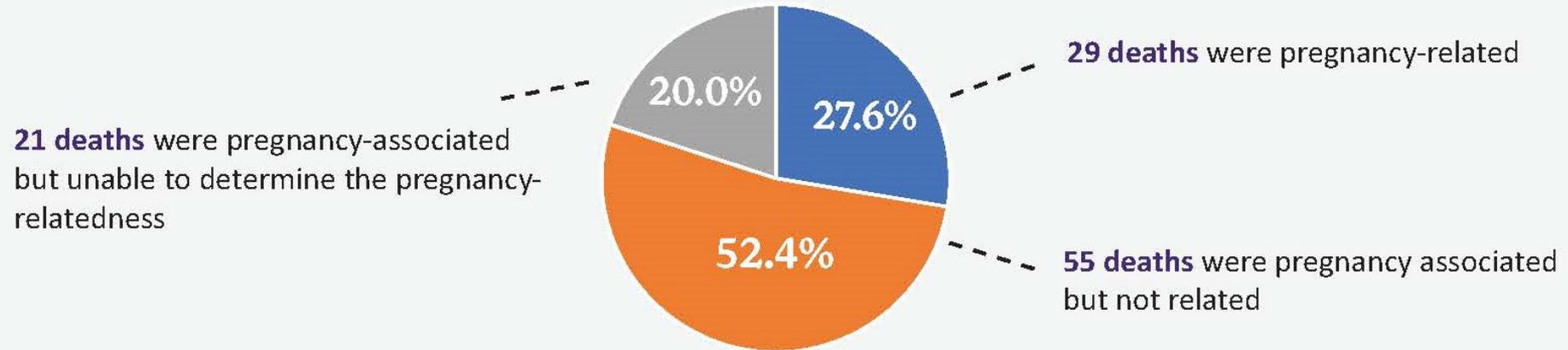
A pregnancy-associated death refers to the death of a woman while pregnant or anytime within one year of pregnancy regardless of cause.¹

- **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.** The death of a woman 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.** The death of a woman while pregnant or within one year of pregnancy, due to a cause that could not be determined to be pregnancy-related or not pregnancy-related.



Source: 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 v20. October 13, 2020. reviewtoaction.org/content/maternal-mortality-review-committee-decisions-form.

Pregnancy Associated Deaths



More than half (52.4%) of all pregnancy-associated deaths occurred after 42 days postpartum

Pregnancy Associated Deaths

Pregnancy-associated deaths can happen to women of any race and ethnicity. However, in Kansas from 2016 to 2020, most of racial and ethnic minority women were disproportionately affected (Figures 1). Figure 1 shows that the percent of deaths that occurred among **non-Hispanic Black women (18.1%)** and **women of other races (10.5%)** far exceed their representation among the population of women giving birth (7.1%, 6.8%, respectively) in Kansas.

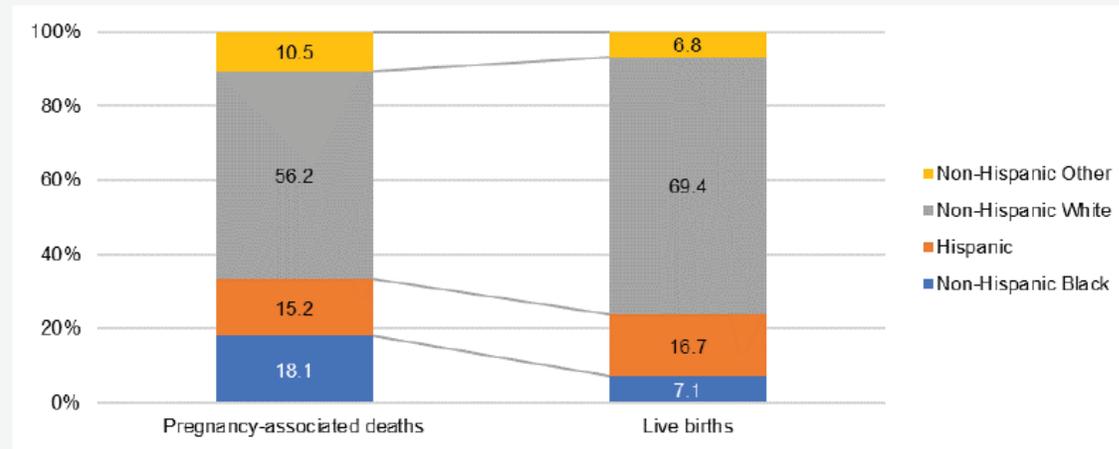


Figure 1

Chart Title: Percent of Pregnancy-associated deaths and live births by race and ethnicity, Kansas, 2016-2020

Source: Kansas Maternal Mortality Review Committee; Kansas Department of Health and Environment, birth data (occurrence)

Pregnancy Associated Deaths Kansas, 2016-2020

(Preliminary Data, Subject to Change)

**56 deaths per every
100,000
live births occurred in
Kansas.**

From 2016 to 2020, there were **105 pregnancy-associated deaths**, which translated to a pregnancy-associated mortality ratio (PAMR) of **56 deaths per every 100,000 live births occurred in Kansas.**

Most pregnancy-associated deaths occurred among:



Women with a **high school education or less** were **nearly three times** as likely to die within one year of pregnancy as women who had more than a high school education.



Women on **Medicaid during pregnancy or for delivery** were **nearly four times** as likely to die within one year of pregnancy as women with private insurance.



Unmarried women were **nearly four times** as likely to die within one year of pregnancy as married women.

Disparities in pregnancy-associated deaths:



Non-White minority women were **nearly twice** as likely to die within a year of pregnancy as non-Hispanic White women.



Women who did not enter prenatal care during the first trimester were **more than twice** as likely to die within one year of pregnancy as women who entered prenatal care during the first trimester.



Women who resided in ZIP Codes with the lowest median household income (quartile 1, poorest) were **more than twice** as likely to die within one year of pregnancy as women who lived in the highest median household income (quartile 4, wealthiest).

Pregnancy Associated Deaths

- **Nearly half (49 deaths, 46.7%) were related to medical causes of death, such as:**
 - **cardiovascular conditions**
 - **embolism-thrombotic (non-cerebral)**
 - **Infection**
 - **hypertensive disorders of pregnancy.**
- **Nearly one-third (29 deaths, 27.6%) were caused by:**
 - homicide
 - suicide
 - mental health conditions
 - unintentional poisoning/overdose
- **The remainder (27 deaths, 25.7%) were caused by:**
 - motor vehicle crash
 - fire or burn accidents
 - unknown

Pregnancy Associated Deaths

KMMRC determinations on circumstances surrounding death were:



Obesity
contributed to 23.8%



***Discrimination**
contributed to 7.4%

*All deaths reviewed after May 29, 2020



Mental Health Conditions
contributed to 22.9%



Substance Use Disorder
contributed to 26.7%

- Obesity contributed to about **one in four deaths** (25 deaths, 23.8%).
- Discrimination contributed to about **one in 14 deaths** (4 deaths, 7.4%).
- Mental Health Conditions contributed to about **one in four deaths** (24 deaths, 22.9%).
- Substance Use Disorder contributed to about **one in four deaths** (28 deaths, 26.7%).

Source: Contributing Factors, Kansas, 2016-2020, (Preliminary Data, Subject To Change)

Pregnancy Related Deaths

The leading causes of death were (in order):



Cardiovascular conditions



Hypertensive disorders



Embolism



Infection

KMMRC determinations on circumstances surrounding death were:



Obesity contributed to two in three deaths (18 deaths, including 1 probably contributed, 62.1%).



Discrimination* contributed to about one in four deaths (4 deaths, including all 4 probably contributed, 23.5%). *All deaths reviewed after May 29, 2020.



Mental health conditions contributed to about one in six deaths (5 deaths, 17.2%).



Substance use disorder contributed to one in four deaths (8 deaths, 27.6%).

Source: Contributing Factors, Kansas, 2016-2020, (Preliminary Data, Subject To Change)

Near Misses



Severe Maternal Morbidity

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



13.1

Disseminated intravascular
coagulation



10.7

Acute renal
failure



10.3

Adult/acute respiratory
distress syndrome



10.1

Sepsis



8.5

Hysterectomy

Source: Kansas, 2016-2020, (Preliminary Data, Subject To Change)

Severe Maternal **Morbidity**

- Severe maternal morbidity rate was highest among women aged *40+ years* and lowest for those aged 25-29 years.
- The rate of severe maternal morbidity was **83.5%** higher for non-Hispanic Blacks than for non-Hispanic Whites.
- Compared with other deliveries, *those involving severe maternal morbidity were more likely paid by Medicaid and from lower-income communities.*

Source: Kansas Department of Health and Environment, Kansas Hospital Discharge Data, Kansas, 2016-2020, (Preliminary Data, Subject To Change).

Key KMMRC Recommendations:

Based on 23 preventable pregnancy-related deaths, recommendations are as follows:

- **Patient education and empowerment**
- **Screen, brief intervention and referrals to treatment (SBIRT) for:**
 - **Comorbidities and chronic illness**
 - Intimate partner violence
 - Pregnancy intention
 - Mental health conditions (including postpartum anxiety and depression)
 - Substance use disorder - alcohol, illicit or prescription drugs
 - Social Determinants of Health
- **Better communication and multi-disciplinary collaboration** between providers, including referrals

Source: Kansas Maternal Mortality Review Committee Report, 2016-2020, (Preliminary Data, Subject To Change)