



Kansas Infant Mortality and Stillbirth Report, 2024

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Executive Summary

Infant mortality is a vital indicator of community health, influenced by various factors. These factors include economic development, living conditions, social well-being, access to essential resources, and the prevalence of health conditions such as diabetes and hypertension, as well as the overall quality of the environment. This report provides a comprehensive long-term evaluation of the progress made in reducing infant mortality rates, emphasizing both the advancements achieved and the ongoing challenges that still need to be addressed to promote healthier outcomes for infants.

Key Findings:

- The overall trend in the infant death rate in Kansas has significantly declined from 2005 to 2024 (p-value < 0.0001). However, in 2024, the rate increased compared to the previous year, rising from 5.3 to 5.8. It is important to note that in 2024, Kansas's infant mortality rate rose above the national average in the United States.
- In 2024, Kansas recorded an infant mortality rate of 5.8 deaths per 1,000 live births, which is higher than the Healthy People 2030 objective of no more than 5.0 deaths per 1,000 live births. Among Non-Hispanic White births, the rate stands at 4.9 deaths per 1,000 live births, remaining below the objective. However, the rate for Hispanic births increased to 5.6 deaths per 1,000 live births from last year's 7.1 deaths per 1,000 live births, and for Non-Hispanic Black births, the rate increased to 11.7 deaths per 1,000 live births, up from 10.6 deaths per 1,000 live births last year.
- Between 2005 and 2024, the infant mortality rate in Kansas showed a significant decline for Non-Hispanic White births (p-value < 0.0001) and Non-Hispanic Black births (p-value < 0.02). However, no statistically significant trend was observed for Hispanic births, with a p-value of 0.26. The infant mortality rate for Non-Hispanic Black infants in Kansas was at least twice as high as that for Non-Hispanic White infants from 2005 to 2024, although the gap has been narrowing over time.
- The rate of preterm-related mortality declined from 2005 to 2018, with a p-value of 0.06 indicating that the decline was not statistically significant. However, between 2018 and 2021, the rate declined significantly, with a p-value of 0.04. From 2021 to 2024, the infant mortality rate increased, but the p-value was 0.11, suggesting that this increase was also not significant. Between 2020 and 2024, there were 142.9 preterm-related infant deaths per 100,000 live births. Additionally, the preterm-related mortality rate among non-Hispanic Black births was higher than that among non-Hispanic White births or Hispanic births.
- The leading cause of stillbirths, with 1 in 3 stillbirths (30.9%), in 2020 - 2024, was attributed to an unspecified cause of death. The second leading cause of fetal death for all population groups was complications of the placenta, umbilical cord, and membranes (21.6%). The leading cause of stillbirths among Non-Hispanic White, Non-Hispanic Black, and Hispanic was

an unspecified cause of death.

- The perinatal mortality rate decreased from 7.1 deaths per 1,000 live births to 4.8 deaths (per 1,000 live births) between 2005 and 2024. This rate is calculated by summing the number of stillbirths (with a gestational age of at least 28 weeks) and hebdomadal deaths (occurring within the first seven days post-birth), expressed per 1,000 live births.

Introduction

An essential measure of a community's vitality is infant mortality, signifying the tragic loss of a newborn before their first birthday.^{4,5,7,20,27,37} The heartbreaking reality is that these infant deaths often arise from a tangled web of environmental, socioeconomic, biological, and lifestyle influences, each interweaving with the others to shape outcomes.^{25, 29, 39} These factors reflect the broader health landscape of the population, encompassing critical aspects such as the quality of living conditions, the richness of social connections, access to fundamental needs, the burden of chronic health issues, and the overall health of the environment. Each element plays a crucial role in nurturing or undermining the well-being of the youngest members of society, underlining the intricate and fragile nature of community health.^{38,39,40}

Known risk factors for infant morbidity and mortality include:

- Black, American Indian/Alaskan Native, Native Hawaiian, or other Pacific Islanders background^{25,38}
- Family history of birth defects or genetic disorders^{3,4}
- Use of alcohol, nicotine products, other substances, or certain medications during pregnancy^{8,21}
- Advanced maternal age³³
- Teen pregnancy¹²
- Pre-pregnancy underweight status or obesity²¹
- Chronic health conditions, such as diabetes mellitus or hypertension^{3,9}
- Short interval (less than 18 months) between pregnancies¹⁹
- Infections during pregnancy^{8,12}
- Infant exposure to secondhand smoke.¹⁸
- Certain infant sleep habits,^{13,32,35}
 - Sleeping on the side or stomach, rather than on the back.
 - Sleeping on a soft surface, such as an adult mattress or couch.
 - Sleeping with loose bedding, toys, or other clutter.
 - Sharing a bed with another person.
- Lack of access to quality health care^{3,12}
- Maternal mental conditions^{8,12,31}
- High levels of stress around the time of pregnancy^{10,30}

To help promote infant health and well-being, cross-sector collaboration is needed. Strategies include:

- Reduce systemic barriers that contribute to racial disparities in birth outcomes^{25,38}
- Increase access to timely health care services, including routine prenatal and postpartum visits, as well as oral health care, mental health care such as anxiety or depression, family planning visits, and prenatal education classes^{10, 30}
- Support and refer to tobacco cessation services^{18,21}
- Support families in following infant safe sleep recommendations from the American Academy of Pediatrics^{13,32,35}
- Encourage folic acid supplements, before, during and between pregnancies³

- Support families in achieving breastfeeding recommendations, which include breastfeeding infants exclusively for at least six months ^{1,23}
- Complete comprehensive screenings during health care visits.³³ Provide interventions and referral to care as needed ^{10,30}
- Avoid early delivery before 39 weeks of gestation, unless medically indicated ^{2,17}
- Assess clients' access to basic needs during healthcare visits, such as transportation, food, and shelter ³⁰
- Make referrals and connections to services ³⁰

Healthy People 2030 ³⁷ provides national objectives for improving the health of all Americans, including infants. The Healthy People 2030 target is no more than 5.0 deaths per 1,000 live births.³¹ In 2024, the Kansas rate was 5.8, while the nationwide infant mortality rate was 5.6 per 1,000 live births.¹⁷

The Kansas Department of Health and Environment (KDHE) Bureau of Epidemiology and Public Health Informatics (BEPHI) monitors infant mortality and supports programs that promote access to health services for mothers and infants. This report builds information in the KDHE Annual Summary of Vital Statistics, 2024 ³⁶, with multi-year statistics and emphasis on trends, geographic distribution and potential risk factors. Information on stillbirths is also presented since stillbirths ¹⁴ and infant deaths may share similar risk factors.

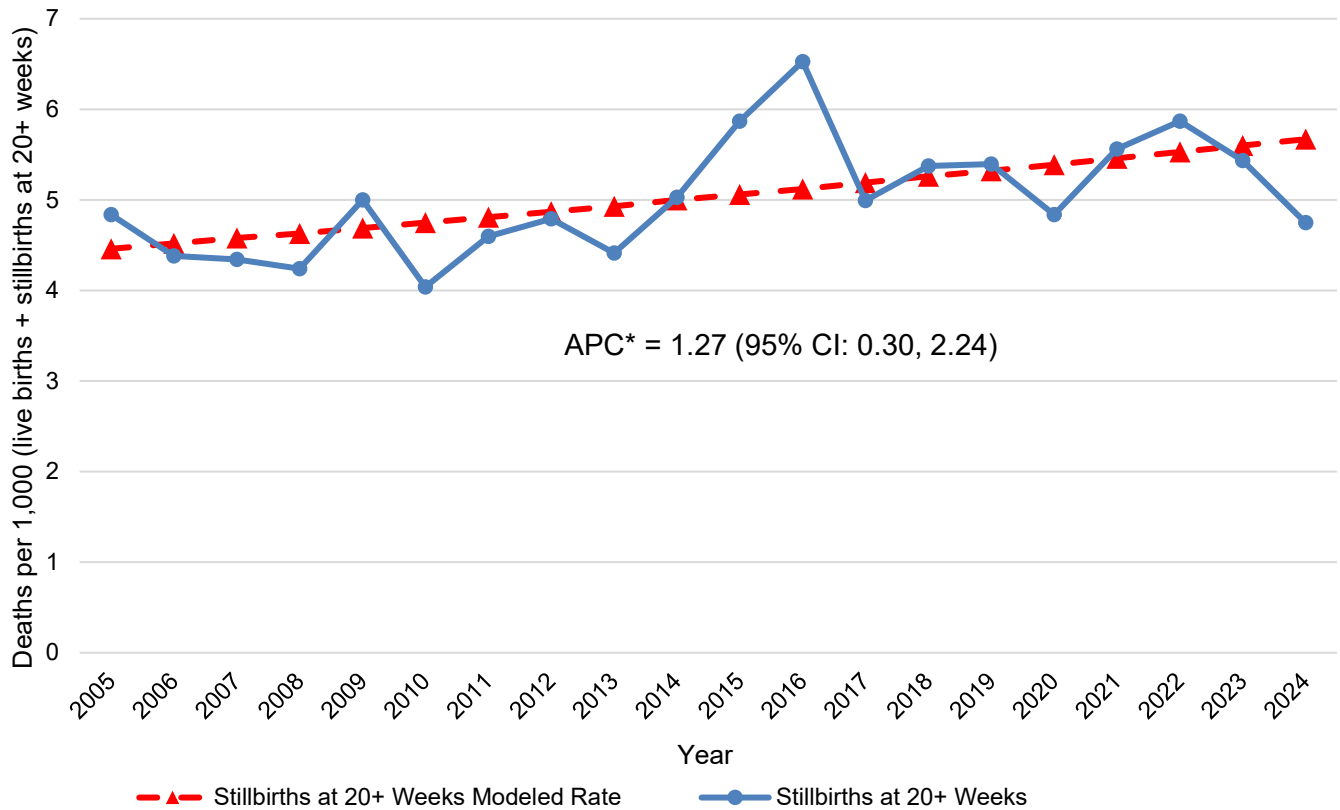
Infant mortality and stillbirth rates were calculated per year, a combination of years and for specific subpopulations. Due to the relatively small number of infant deaths and stillbirths each year, preselected intervals of years were combined to increase data reliability. The five most recent years of data were combined for characteristic analysis and intervals of 20 years and approximately 100 years were used for trend analysis. The long-term (~100 years) infant mortality numbers and rates may be underreported due to incomplete data collection in the early 1900s.

Fetal & Perinatal Mortality

A stillbirth refers to the death or loss of a baby before or during delivery, defined as the death of a fetus at or after 20 weeks of gestation. The stillbirth rate in Kansas has increased significantly (p-value = 0.01) from 2005 to 2024, as shown in Figure A and Table A2, with an estimated annual percent change (APC) of 1.3%.³⁵ Notably, the increase after 2013 may be partly attributed to changes in fetal death reporting requirements in Kansas, which were implemented in July 2014.²⁷ It's important to note that while the counts in this report are based on the 2014 definition, the numbers for prior years may be lower due to this change in methodology (see Technical Notes: Inclusion of Stillbirths).

There was a decline in stillbirths in 2020, with a rate of 4.8 per 1,000 live births¹⁶ However, the stillbirth rate rose in 2021 to 5.6 per 1,000 total deliveries and further increased to 5.9 per 1,000 total deliveries in 2022. In 2023, the rate decreased to 5.4 per 1,000 total deliveries and further dropped to 4.8 in 2024. Here, "total deliveries" includes both live births and stillbirths at 20 weeks of gestation or later.

Figure A. Stillbirth Rates at 20+ Weeks Gestation, Kansas, 2005-2024



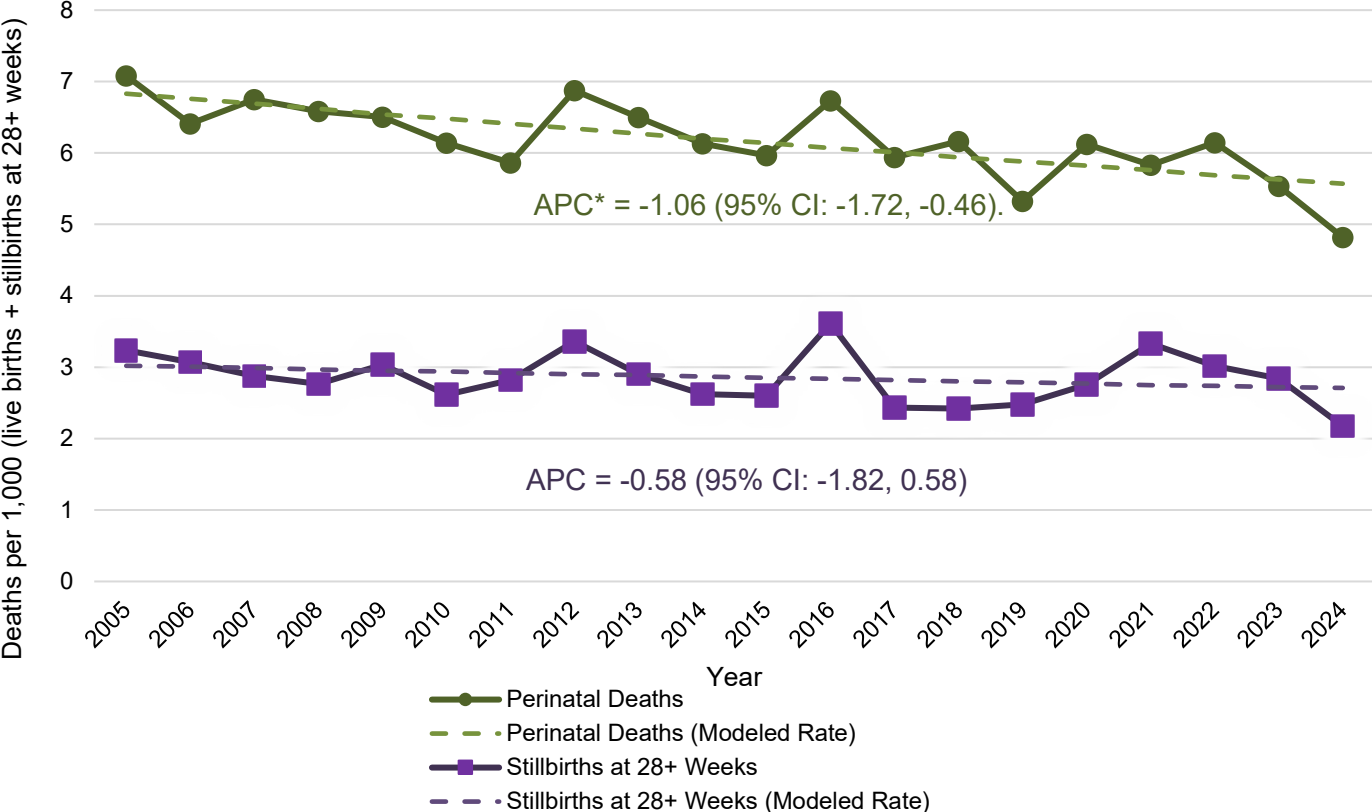
APC = Annual Percent Change

* Trend is statistically significant (p-value < 0.05).

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Among stillbirths that occurred in 2020 - 2024, 30.6% were attributed to unspecified cause (Table A7). The second leading cause of fetal death was complications of the placenta, cord, and membranes (21.6%), followed by maternal conditions that may be unrelated to the present pregnancy (17.5%). The rate of stillbirths occurring at 28 weeks or more (28+) of gestation did not change significantly (p-value = 0.29) over the 20 years (Table A2, Figure B).

Figure B. Perinatal Mortality Rates and Stillbirth Rates at 28+ Weeks of Gestation, Kansas, 2005-2024



APC = Annual Percent Change
 * Trend is statistically significant (p-value < 0.05).
 Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Perinatal deaths^{22,28,37} include stillbirths at 28+ weeks of gestation, as well as infant deaths in the first week after birth. Like the number of stillbirths at 20+ weeks (Figure A), the rate of perinatal deaths dropped significantly (p-value < 0.01 from 2005 to 2024 (Figure B)). In 2024, the perinatal mortality rate was 4.8 (Table 2, 95% CI: 4.1, 5.6) per 1000 deliveries, where deliveries include live birth plus stillbirths at 28+ weeks of gestation. The rate of stillbirths at 28 weeks or more of gestation was 2.2 (95% CI: 1.7, 2.7) per 1,000 deliveries in the same year.

During 2020 - 2024, the Kansas stillbirth rate varied by race and ethnicity. There were 110 stillbirths to Non-Hispanic Black mothers (Table A), corresponding to a rate of 9.9. stillbirths at 20+ weeks of gestation, per 1,000 deliveries (95% CI: 8.1, 11.8). This was more than twice the rate among Non-Hispanic White population (4.4; 95% CI: 4.0, 4.8; 513 stillbirths). Among the Hispanic deliveries, there were 6.3 stillbirths at 20 weeks or more of gestation per 1,000 live births plus stillbirths at 20+ weeks or more of gestation (95% CI: 5.5, 7.2; 203 stillbirths). More than one-third of Hispanic stillbirths and a quarter Non-Hispanic Black stillbirths were attributed to unspecified cause. For Non-Hispanic White stillbirths, complications of placenta, cord and membranes were the leading factor of stillbirths (Table A).

Table A. Stillbirths at 20+ Weeks Gestation among the Non-Hispanic White, Non-Hispanic Black, and Hispanic Populations, by Leading Causes of Fetal Death, Kansas, 2020- 2024

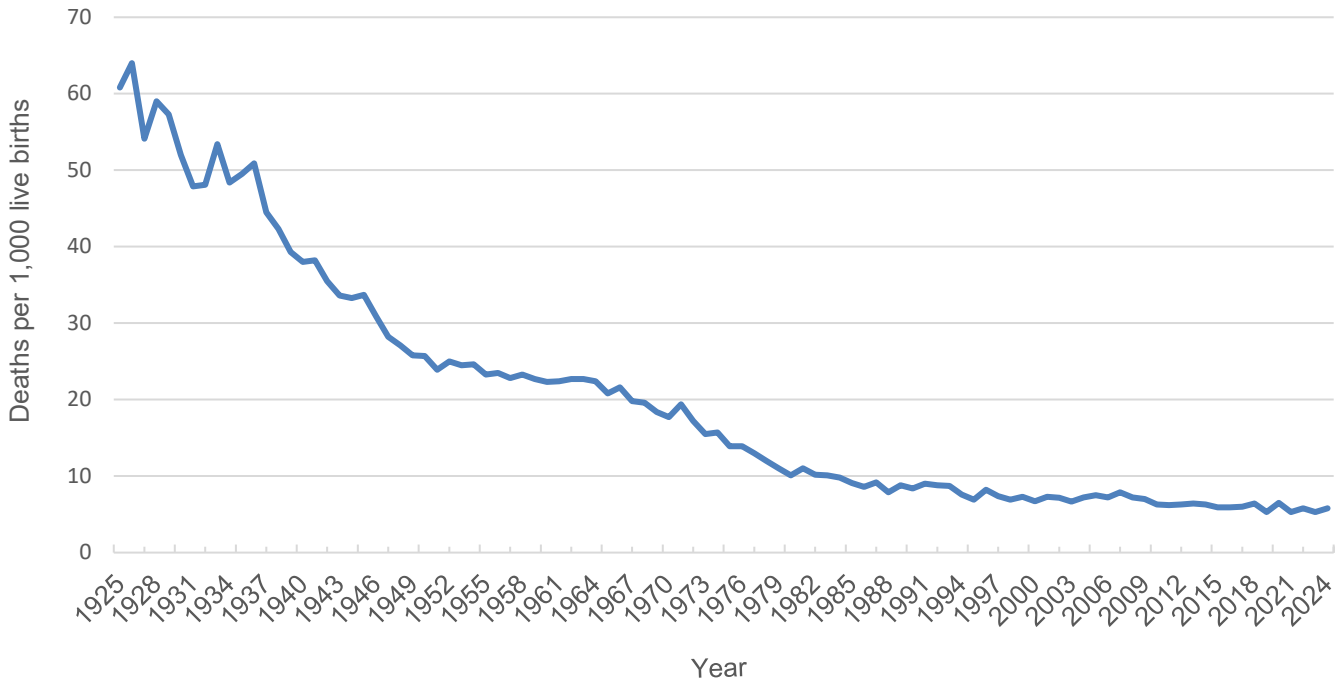
Cause of Fetal Death (ICD-10 Code) by Population Group	Number of Stillbirths	Percent of Stillbirths
Non-Hispanic White (n=516)		
P95. Fetal death of unspecified cause	140	27.13
P02. Fetus affected by complications of placenta, cord and membranes	125	24.22
P00. Fetus affected by maternal conditions that may be unrelated to present pregnancy	78	15.12
Non-Hispanic Black (n=110)		
P95. Fetal death of unspecified cause	29	26.36
P00. Fetus affected by maternal conditions that may be unrelated to present pregnancy	24	21.82
P02. Fetus affected by complications of placenta, cord and membranes	18	16.36
Hispanic, any race (n=203)		
P95. Fetal death of unspecified cause	86	42.36
P02. Fetus affected by complications of placenta, cord and membranes	34	16.75
Q00-Q99. Congenital malformations, deformations and chromosomal abnormalities	20	9.85

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Infant Mortality

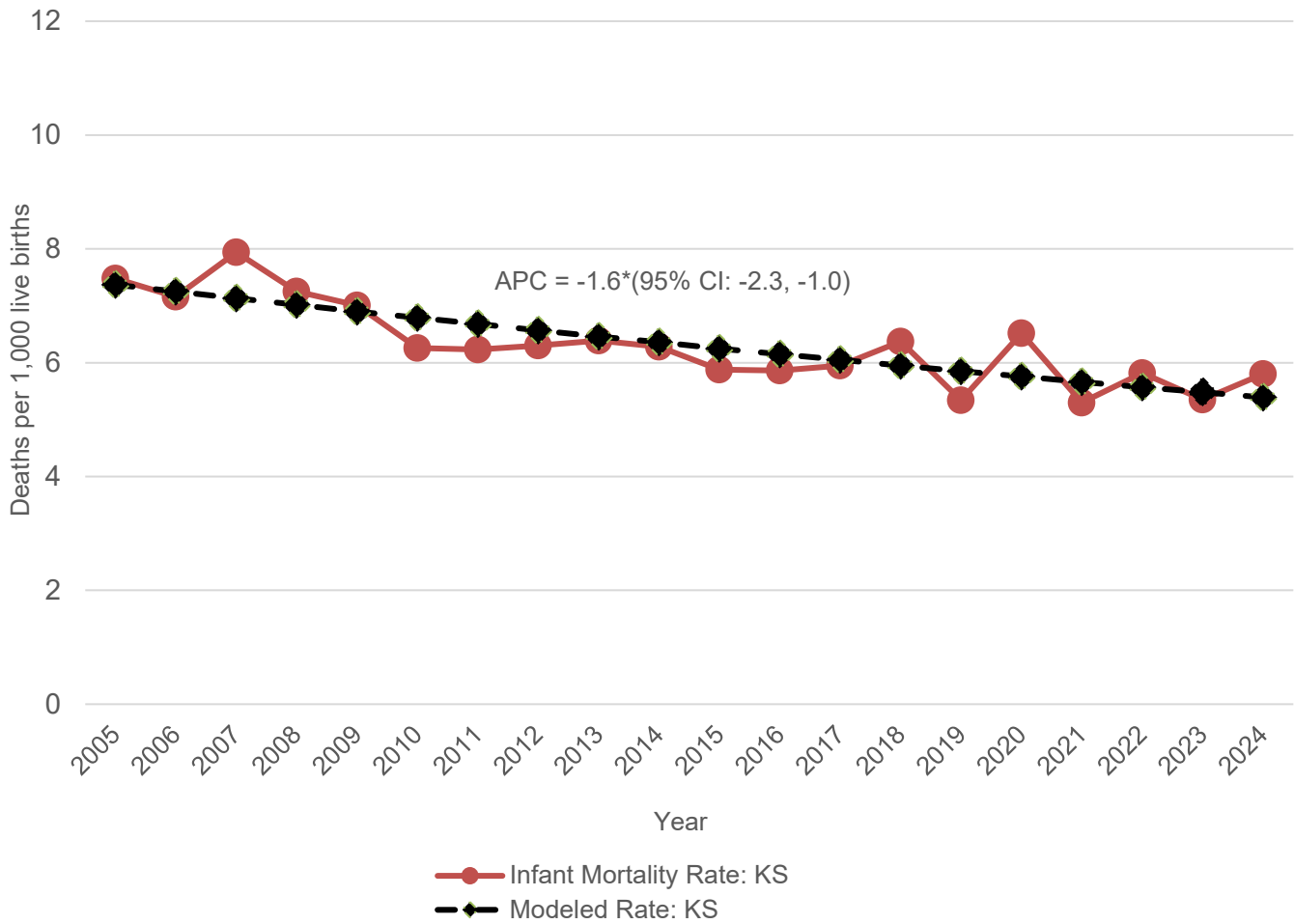
The rate of infant deaths dropped dramatically from the early to late 1900s (Figure C). From 2005 to 2024, infant mortality declined significantly (p-value < 0.0001) at an annual percent change of APC -1.6% (Figure D). In 2024, 197 infant deaths were reported (Table A1), corresponding to an infant mortality rate of 5.8 deaths per 1,000 live births (Table A2).

Figure C. Infant Mortality Rates, Kansas, 1925-2024



Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

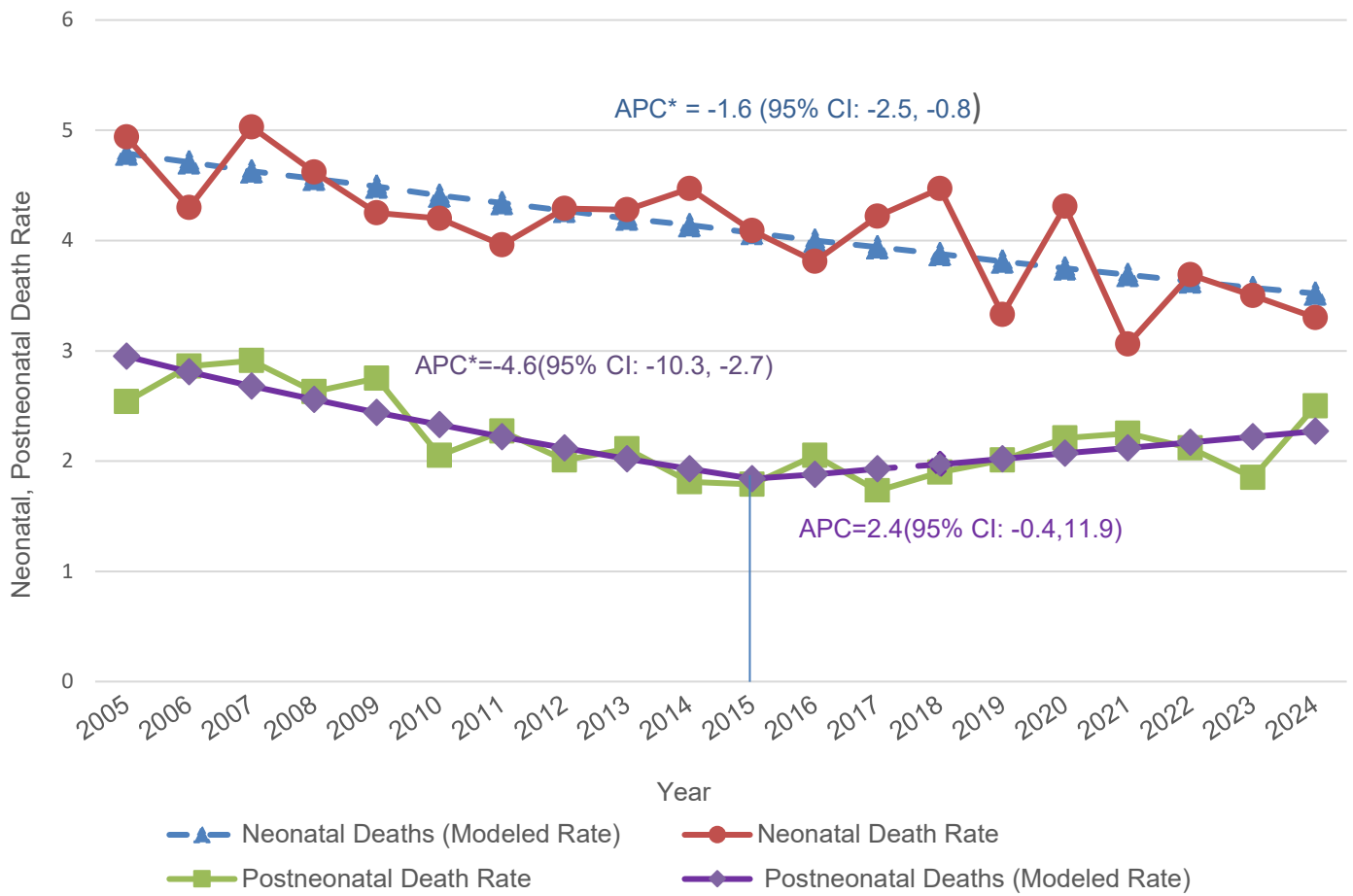
Figure D. Infant Mortality Rates, Kansas, 2005-2024



Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Most Kansas infant deaths were neonatal deaths, occurring before the infant reached 28 days of age. In 2024, there were 113 neonatal deaths (57.4% of infant deaths, or 3.3 deaths per 1,000 live births; 95% CI: 2.7, 3.9) and 84 post-neonatal deaths (42.6% of infant deaths, or 2.5 deaths per 1,000 live births; 95% CI: 2.0, 3.1) (Tables A1 and A2). From 2005 to 2024, the rate of neonatal deaths declined significantly (p-value < 0.0001), with APC of 1.6% (Figure E). Post neonatal mortality declined by 4.6% at a significant rate (p-value < 0.01) from 2005 to 2015, then increased insignificantly (p-value = 0.09) from 2015 to 2024, with an APC of 2.4%.

Figure E. Infant Mortality Rates, by Infant's Age, Kansas, 2005-2024



APC = Annual Percent Change

* Trend is statistically significant (p-value < 0.05).

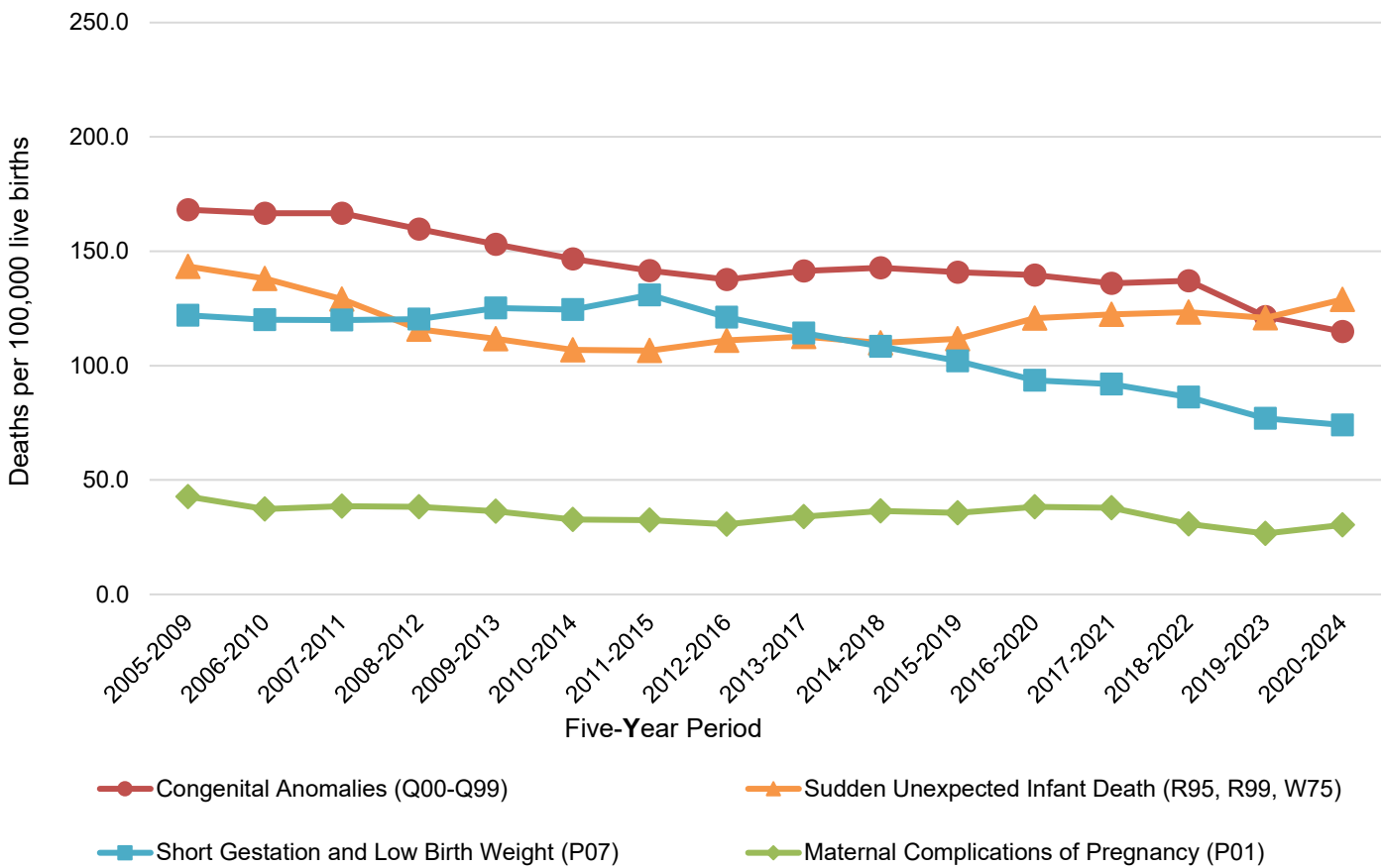
Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Leading Causes of Infant Mortality

Twenty-year trends in the four leading causes of infant death^{15,40} are shown in Figure F. The three leading causes include:

- Sudden Unexpected Infant Deaths or SUIDs (ICD-10 codes R95, R99, and W75).
- Congenital anomalies (ICD-10 codes Q00-Q99), also known as birth defects.
- Short gestation and low birth weight (ICD-10 code P07).

Figure F. Five-Year Rolling Averages of Infant Mortality Rates by Four Leading Causes of Infant Death, Kansas, 2005-2024



Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Since 2005, the leading cause of infant death for each rolling five-year period was congenital anomalies. However, the period of 2020 to 2024 saw a shift, with Sudden Unexpected Infant Death (SUID) becoming the leading cause of infant death, accounting for a rate of 128.9 infant deaths (Table B, 95% CI: 112.0, 145.8). This means that more than 1 in 5 infant deaths (22.4%, Figure G) were attributed to SUID. Notably, SUID was the leading cause of death among infants who had reached at least 28 days of age, accounting for 49% of deaths (see Table A5).

During the same period of 2020 to 2024, the second leading cause of infant death was congenital malformations, which represented 20.0% of all infant deaths—nearly one in five—and had a corresponding rate of 114.9 infant deaths per 100,000 live births (Figure G, 95% CI: 98.9, 130.9). The third leading cause of infant death during this period was short gestation and low birth weight, which contributed to 12.9% of infant deaths. Maternal complications of pregnancy ranked as the fourth leading cause, comprising 5.3% of infant deaths. Additional leading causes of infant deaths during 2020 to 2024 are detailed in Table B.

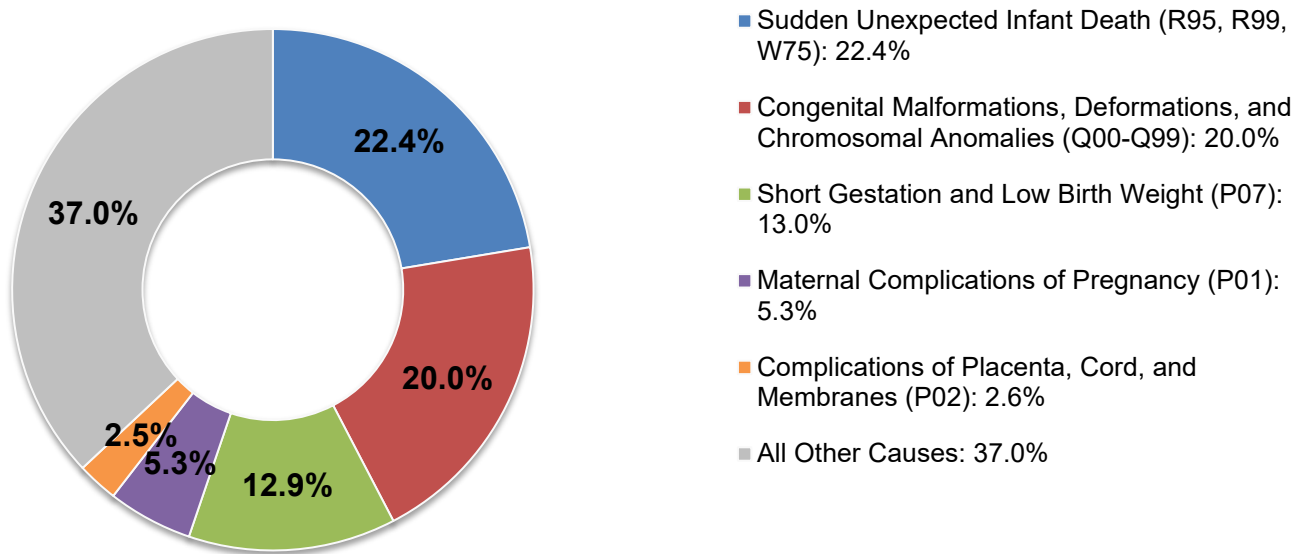
Table B. Infant Deaths by Ten Leading Causes of Infant Death, Kansas, 2020 – 2024

Causes of Death (ICD-10 Code)	Number of Deaths	Percent of Deaths	Rate*	Lower C.I.	Upper C.I.
All Causes	987	100.0	575.7	539.6	611.8
1. R95, R99, W75. Sudden unexpected infant death	221	22.4	128.9	112.0	145.8
2. Q00-Q99. Congenital malformations, deformations and chromosomal abnormalities	197	20.0	114.9	98.9	130.9
3. P07. Disorders related to short gestation and low birth weight, not elsewhere classified	127	12.9	74.1	61.2	87.0
4. P01. Newborn affected by maternal complications of pregnancy	52	5.3	30.3	22.7	39.6
5. P02. Newborn affected by complications of placenta, cord and membranes	25	2.5	14.6	9.5	21.4
6. V01-X59. Accidents (unintentional injuries), excluding W75	24	2.4	14.0	9.1	20.7
7. I00-I99. Diseases of the circulatory system	20	2.0	11.7	7.2	17.9
8. P28.0-P28.1. Atelectasis	20	2.0	11.7	7.2	17.9
9. P36. Bacterial sepsis of newborn	20	2.0	11.7	7.2	17.9
10. P20-P21. Intrauterine hypoxia and birth asphyxia	18	1.8	10.5	6.3	36.9
11. A09. Diarrhea and gastroenteritis of infectious origin	15	1.5	8.7	5.0	41.9
12. P22. Respiratory distress of newborn	14	1.4	8.2	4.6	44

* Infant deaths per 100,000 Live Births

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Figure G. Leading Causes of Infant Mortality, Kansas, 2020 - 2024

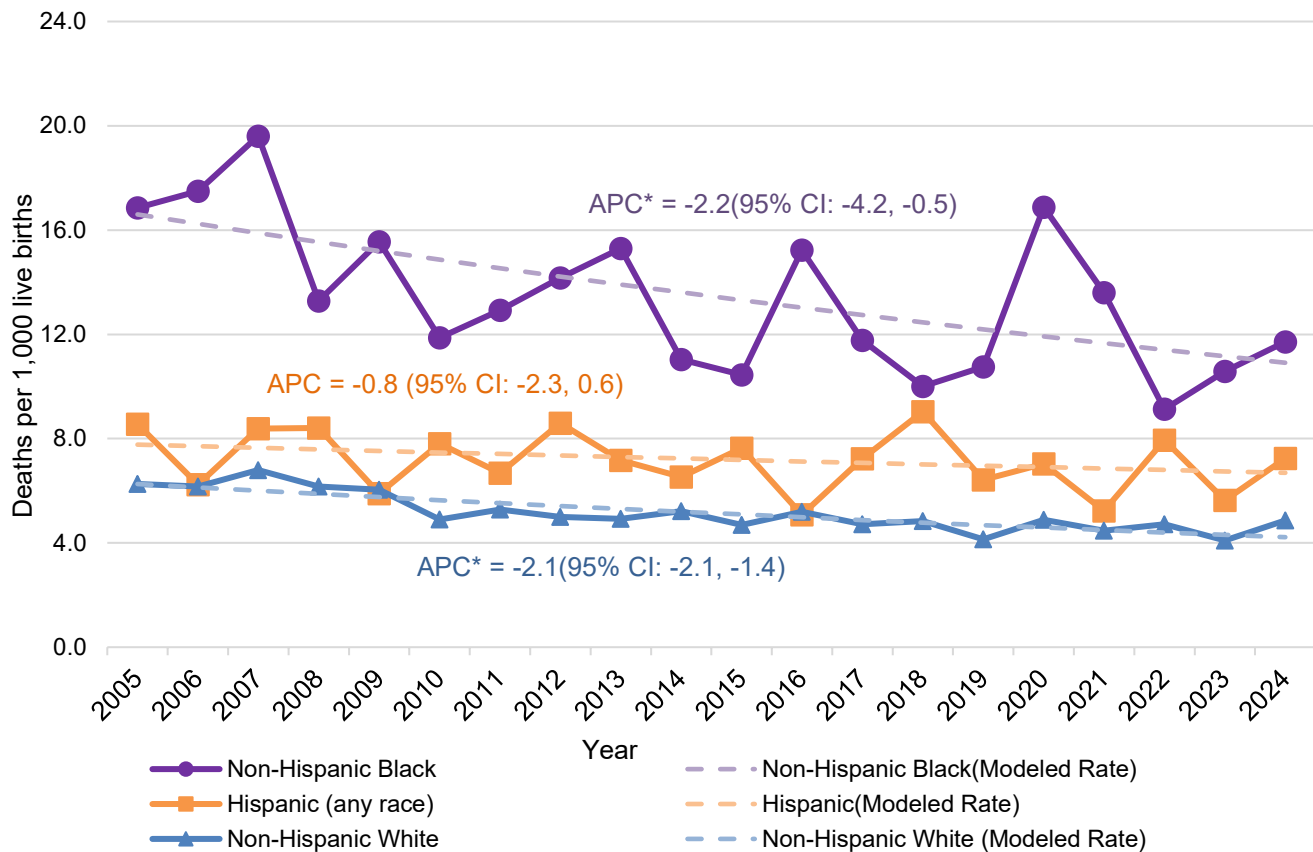


Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Infant Mortality by Race and Ethnicity

From 2005 to 2024, the annual infant mortality rate among Non-Hispanic Black births remained more than twice that of Non-Hispanic White births (except in 2022, Table A3). However, the Non-Hispanic Black infant mortality rate decreased significantly (p-value = 0.02), with an annual percent change of -2.2% (Figure H). The lowest mortality rate among Non-Hispanic Black in the last 20 years was reached in 2022 with a rate of 9.1 deaths per 1,000 live births (95% CI: 5.6, 14.1), but the rate increased in 2024 to 11.7 (95% 7.5, 17.42). Infant mortality also dropped significantly (p-value < 0.0001) among the Non-Hispanic White population, with an annual percent change of -2.1%. There was no statistically significant trend (p-value = 0.26) in the Hispanic infant mortality rate during this period. Due to the small sample size and unreliability of estimates, trends were not shown in Figure H for other population groups.

Figure H. Infant Mortality Rates among the Non-Hispanic White, Non- Hispanic Black, and Hispanic Populations, Kansas 2005-2024.



APC = Annual Percent Change

* Trend is statistically significant (p-value < 0.05).

Source: Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

In the years 2020 to 2024, the primary cause of death among Non-Hispanic Black infants was Sudden Unexpected Infant Death (SUID), accounting for 30.4% of deaths in that group (Table C). Similarly, SUID was also the leading cause of death for Hispanic infants, representing 21.2% of their deaths. For Non-Hispanic White infants, the leading cause was Congenital Malformations, Deformations, and Chromosomal anomalies, which comprised 24.1% of deaths. Notably, in the years 2020 to 2024, it was shown that Sudden Unexpected Infant Deaths was the top leading infant deaths among the Hispanic population.

Table C. Infant Deaths Among the Non-Hispanic White, Non-Hispanic Black, and Hispanic Populations by Leading Causes of Infant Death, Kansas, 2020 - 2024

Cause of Death (ICD 10 Code) by Population Group	Number of Deaths	Percent of Deaths	Rate*	Lower C.I.	Upper C.I.
Non-Hispanic White (n=536)					
1. Q00-Q99. Congenital malformations, deformations, and chromosomal abnormalities	129	24.1	110.8	91.7	129.9
2. R95, R99, W75. Sudden Unexpected Infant Death	111	20.7	95.3	77.6	113.0
3. P07. Disorders related to short gestation and low birth weight, not elsewhere classified	59	11.0	50.7	38.6	65.4
4. P01. Newborn affected by maternal complications of pregnancy	20	3.7	17.2	10.5	26.6
Non-Hispanic Black (n=138)					
1. R95, R99, W75. Sudden Unexpected Infant Death	42	30.4	379.6	273.6	513.1
2. P07. Disorders related to short gestation and low birth weight, not elsewhere classified	18	13.0	162.7	96.4	257.1
3. Q00-Q99. Congenital malformations, deformations, and chromosomal abnormalities	14	10.1	126.5	69.2	212.2
4. P01. Newborn affected by maternal complications of pregnancy	8	5.8	72.3	31.2	142.5
Hispanic, any race (n=212)					
1. R95, R99, W75. Sudden Unexpected Infant Death	45	21.2	140.7	102.6	188.3
2. Q00-Q99. Congenital malformations, deformations and chromosomal abnormalities	43	20.3	134.5	97.3	181.2
3. P07. Disorders related to short gestation and low birth weight, not elsewhere classified	27	12.7	84.4	55.6	122.8
4. P01. Newborn affected by maternal complications of pregnancy	9	4.2	28.1	12.8	53.3

* Infant deaths per 100,000 Live Births

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Some statistically significant racial/ethnic disparities were observed, based on confidence interval comparison (see Technical Notes), in the rate of infant deaths by the leading causes of death, from 2020 to 2024 (Table C). For instance, Non-Hispanic Black births experienced a significantly higher rate of infant deaths than Non-Hispanic White or Hispanic births where the cause of death was Sudden Unexpected Infant Death. The Non-Hispanic Black infant deaths due to short gestation and low birth weight were a significantly higher rate than for Non-Hispanic White but was not significantly higher as compared to Hispanic births. Also, Non-Hispanic Black births had a significantly higher rate of infant deaths than Non-Hispanic White due to maternal complications.

Infant Mortality by Geographic Area

The counties with the highest number of infant deaths from 2020 to 2024 included Sedgwick County (225 or 22.8% infant deaths (987)), Johnson County (127 or 12.9%), Wyandotte County (80 or 8.1%) and Shawnee County (80 or 8.1%). These four counties accounted for more than half (51.9%) of all Kansas infant deaths (Table A4).

The five counties with the highest infant mortality rates, with reliable data ($RSE \leq 30\%$) over these five years, included:

- Barton County (9.3, 95% CI: 5.0, 15.5)
- Shawnee County (8.3, 95% CI: 6.6, 10.3)
- Harvey County (8.3, 95% CI: 4.6, 13.7)
- Pottawatomie (8.2, 95% CI: 4.6, 13.5)
- Crawford (7.3, 95% CI: 4.2, 11.8)

The five counties with the lowest infant mortality rates, with reliable data ($RSE \leq 30\%$) over these five years, included:

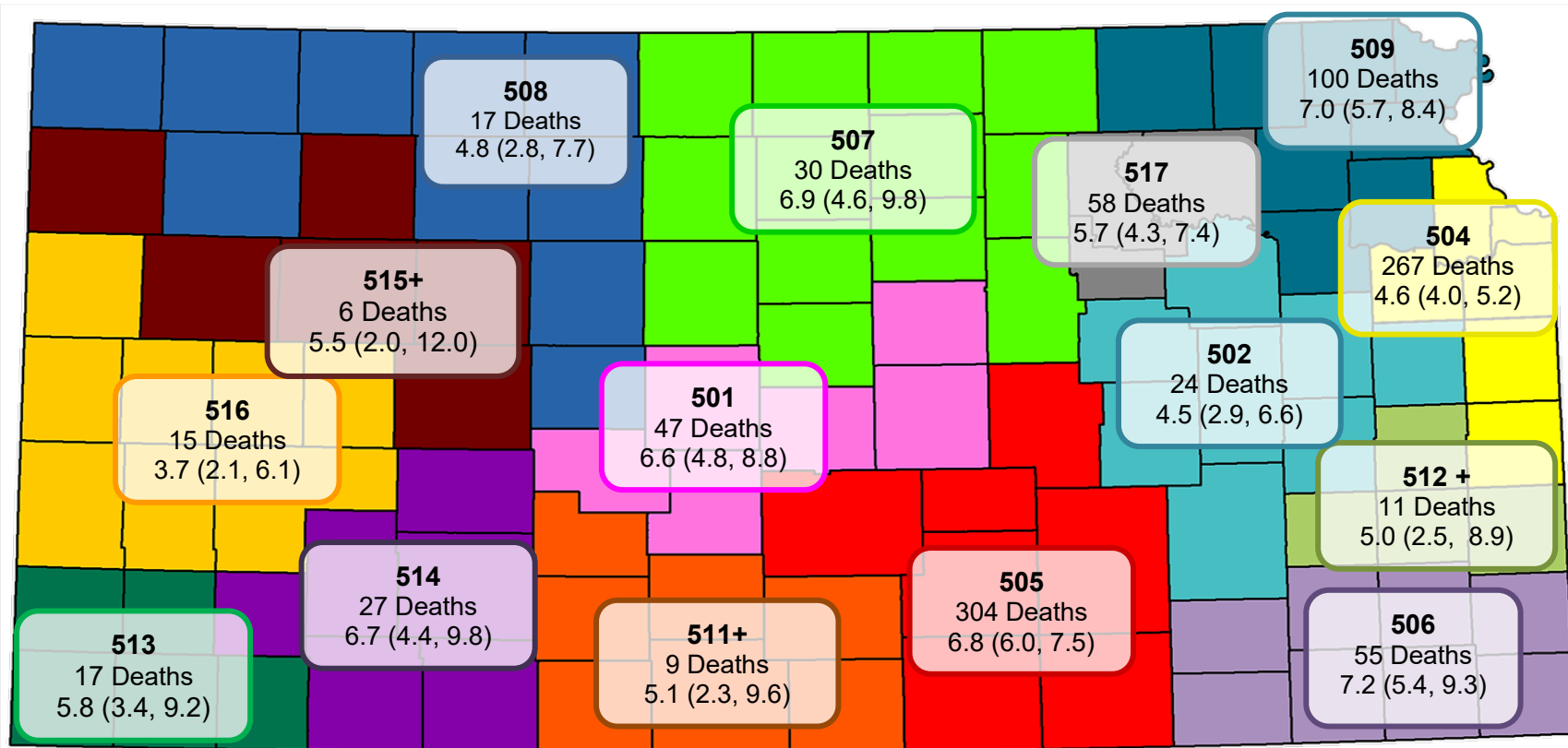
- Riley County (3.3 infant deaths per 1,000 live births, 95% CI: 1.7, 5.8)
- Johnson County (3.7, 95% CI: 3.1, 4.3)
- Douglas County (4.0, 95% CI: 2.4, 6.2)
- Butler County (5.5, 95% CI: 3.3, 8.6)
- Ford County (5.9, 95% CI: 3.4, 9.4)

As the number of deaths was too small for analysis in many counties, counties were combined based on their current Public Health Emergency Preparedness Regions (Figure I). The region with the highest reliable infant mortality rate was the Lower 8 of the Southeast Initiative Region at 7.2 deaths per 1,000 live births (95% CI: 5.4, 9.3). The region with the lowest reliable infant mortality rate was the Western Pyramid Public Health Initiative, at 3.7 deaths per 1,000 live births (95% CI: 2.1, 6.1).

Infant mortality rates were calculated for the county peer groups during 2020 - 2024 (Table A4). There was not enough statistical evidence to show that infant mortality rates differed significantly between Frontier, Rural, Densely Settled Rural, Semi-Urban, and Urban counties.

Non-significant differences were found when categorizing counties using the National Center for Health Statistics (NCHS) urban-rural classification system (Table A4)^{34,35}. Medium metro counties had a higher infant mortality rate (6.9 deaths per 1,000 live births; 95% CI: 4.5, 8.2) than micropolitan counties (6.1 deaths per 1,000 live births; 95% CI: 4.2, 7.4). When we compare the death rate of large fringe metro counties (4.7 deaths per 1,000 live births; 95% CI: 3.4, 6.2) to those of micropolitan counties, small metro (6.1, 95% CI: 3.7, 8.1), and medium metro, those differences were significant. The infant death rate of the fringe metro was the lowest (Table A4).

Figure I. Infant Deaths and Five-Year Average Mortality Rates* with 95% Confidence Intervals by Kansas Health Preparedness Region, 2020 - 2024



Public Health Emergency Preparedness Regions

- | | | |
|--|---|---|
| 501 - Central Kansas Region | 502 - East Central Kansas Public Health Coalition | 504 - Kansas City Area Coalition 15 |
| 505 - Kansas South-Central Metro | 506 - Lower 8 of Southeast Kansas | 507 - North Central Kansas Public Health Initiative |
| 508 - Northwest Bioterrorism Region | 509 - Northeast Corner Regional Initiative | 511+ - South Central Coalition |
| 512 +- Southeast Kansas (SEK) Multi-County | 513 - Southwest Kansas Health Initiative | 514 - Southwest Surveillance Region |
| 515+ - West Central Public Health Initiative | 516 - Western Pyramid Public Health Initiative | 517 - Wildcat Region |

*Infant deaths per 1,000 live births.

+Numbers too small to calculate reliable rates (Relative Standard Error > 30%).

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Characteristics of Linked Infant Deaths

In this section, a variety of maternal and infant characteristics are presented for infants who died during 2020-2024, based on information in linked birth certificates from the period-linked birth death cohort.⁶ The birth-death cohort includes infant deaths that occurred during the given years, which link to births that occurred during the same years or previous years. Rates are presented, with the numerator as the number of infants who died during 2020 - 2024, and the denominator as the number of births during the same period. The number of linked infant deaths was 863 from a total of 987 infant deaths and 171,451 live births during this period. There were seven linked births for which all characteristics of interest were unknown, with additional unknowns depending on the specific characteristic.

In this section, if the confidence intervals of two values did not overlap, it was considered a conservative estimate of a significant difference. When the number of events was 100 or more deaths for any subgroup, the z-test was used to define a significance test statistic (see Technical Notes for details). Additionally, unless stated otherwise all statistics reported in this section can be found in Figure K and in Tables A9 to A10.

Maternal Race/Ethnicity

Differences in infant mortality were observed among race/ethnicity group. Most deceased infants (534 or 62.4% of linked infant deaths where the mother's race/ethnicity was known) were born to Non-Hispanic White mothers, with a corresponding rate was 4.6 (95% CI: 4.2, 5.0) infant deaths per 1,000 live births that occurred during those years. There were 119 deceased infants born to Non-Hispanic Black mothers (13.9% of linked infant deaths where mother's race/ethnicity was known), corresponding to a rate of 10.8 (95% CI: 8.8, 12.7) deaths per 1,000 live births. There were 147 deceased infants born to Hispanic mothers (17.2% of linked deaths where the mother's race/ethnicity was known), corresponding to a rate of 4.6 deaths per 1,000 live births (95% CI: 3.9, 5.3).

Birth Weight

Low birth weight had a notable relationship with infant mortality. Of the linked infant deaths that occurred during 2020 - 2024, where birth weight was known, 527 deaths (61.5%) were born at a low birth weight (under 2,500 grams) with a rate of 40.4 (95% CI: 36.9, 43.9) deaths per 1,000 live births. Less than half (44.1%) of the linked infant deaths where birth weight was known occurred to infants born at a very low birth weight (less than 1,500 grams). Only 2.1 (95% CI: 1.9, 2.3) deaths per 1,000 babies were born at a normal or higher birth weight.

Gestational Age

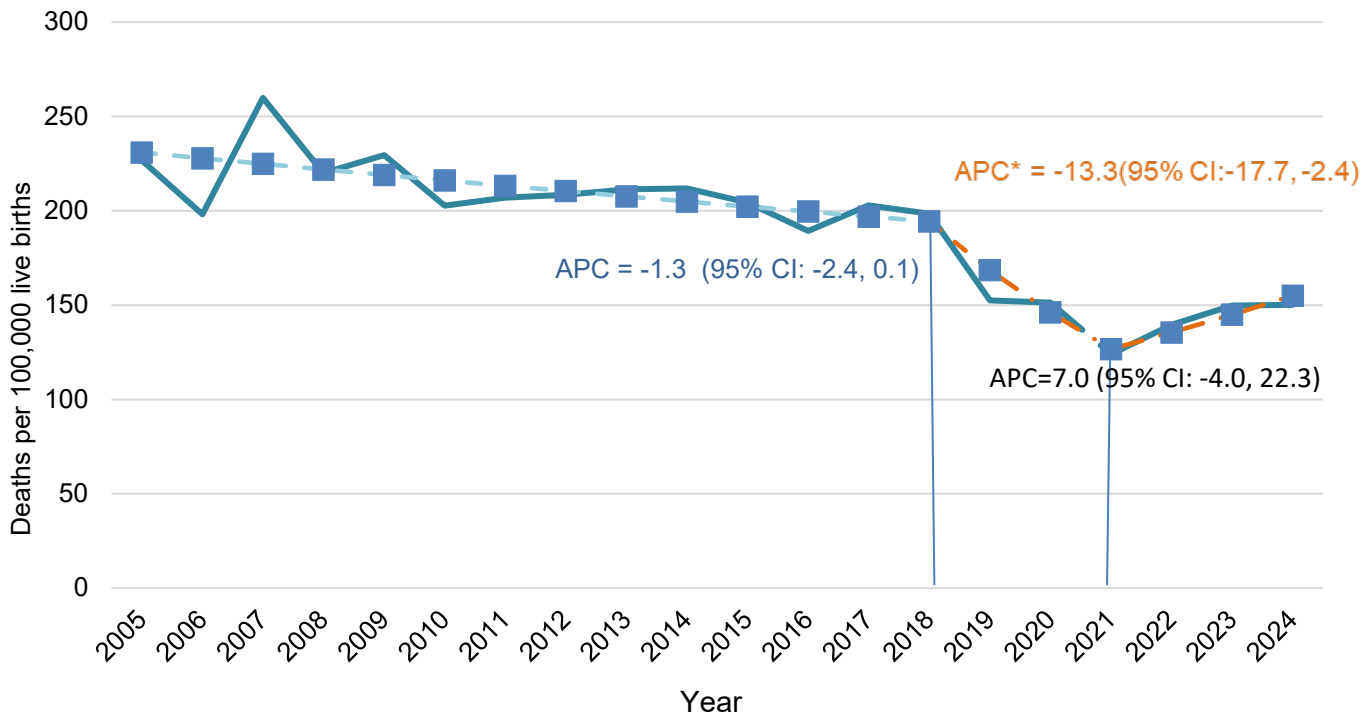
Prematurity is another important factor in infant death.²⁵ Of the linked infant deaths that occurred during 2020 - 2024 where gestational age was known, 378 (56.6%) were very premature (less than 32 weeks). Thirty deceased infants (4.5%) were moderately premature (32 to 33 weeks), 103 (15.4%) were late premature (34 to 36 weeks), 157 (23.5%) were early term (37 and 38 weeks). For preterm births that occurred from 2020 to 2024, there were 29.3 (95% CI: 26.7, 31.9) infant deaths per 1,000 live births.

The leading cause of death among premature infants was short gestation and low birth weight (21.5%), followed by congenital anomalies (12.7%), while the leading cause of death among infants who were born at term was Sudden Unexpected Infant Death (55.9%) (Table A8).

Preterm-Related Mortality

Preterm-related mortality is a standard measure,^{3,11,37} which includes deaths to infants that were born preterm, where the underlying cause of death was within a set of specific ICD-10 code categories (see Figure J footnote). There was a statistically insignificant (p-value = 0.06) decrease in the rate of preterm-related mortality, with an annual percent change of -1.3 from 2005 to 2018, a statistically significant decrease (APC = -13.3, p-value = 0.04) from 2018 to 2021, and a statistically insignificant (p-value = 0.11) increase in the rate with an APC of 7.0 from 2021 to 2024.

Figure J. Preterm-Related Mortality Rates from Linked Birth-Infant Death File, Kansas, 2005 - 2024



APC = Annual Percent Change

* Trend is statistically significant (p-value < 0.05).

Preterm-related deaths included infant deaths where the infant was born preterm, with the underlying cause of death assigned to one of the following ICD-10 cause codes: K550, P000, P010, P011, P015, P020, P021, P027, P070-P073, P102, P220-P229, P250-P279, P280, P281, P360-P369, P520-P523, and P77.

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

During 2020 - 2024, 245 preterm-related deaths were reported, for a rate of 142.9 deaths per 100,000 live births (Table D). The rate of preterm-related mortality was greater among the Non-Hispanic Black and Hispanic populations, compared to the Non-Hispanic White population (Table D). The preterm-related mortality rate among the Non-Hispanic Black population was 307.3 deaths per 100,000 live births. This rate was more than twice that of the Non-Hispanic White population (127.1 deaths per 100,000 live births) and that of the Hispanic population (143.8 deaths per 100,000 live births).

Table D. Preterm-Related Infant Deaths* and Five-Year Average Mortality Rates among Population Groups, Kansas 2020 – 2024

Race/Ethnicity	Number of Linked Infant Deaths	Preterm Related Mortality Rate*	Lower C.I.	Upper C.I.
All	245	142.9	125.0	160.8
Non-Hispanic White	148	127.1	106.6	147.6
Non-Hispanic Black	34	307.3	212.8	429.4
Hispanic	46	143.8	105.3	191.9

* Preterm-related deaths included infant deaths where the infant was born preterm, with the underlying cause of death assigned to one of the following ICD-10 cause codes: K550, P000, P010, P011, P015, P020, P021, P027, P070-P073, P102, P220-P229, P250-P279, P280, P281, P360-P369, P520-P523, and P77.

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Maternal Age

The highest percentage of infant deaths which occurred among infants whose mothers were aged 20 to 24 years old (26.5%), followed by mothers aged 25 to 29 years old (24.7%), 30 to 34 years old (24.1%), and 35 to 39 years old (13.1%, Table A9). Based on the z-test, births to mothers who were under 20 years had a significantly higher infant mortality rate (9.6 deaths per 1,000 live births, 95% CI: 7.6, 12.0, Figure K) than all other age groups, and significantly higher than 25-34 (4.1 deaths per 1,000 live births, 95% CI: 3.7, 4.5) and 35-64 years old (5.0 deaths per 1,000 live births, 95% CI: 4.2, 5.9). Births to mothers who were 20 to 24 years old (6.5 deaths per 1,000 live births, 95% CI: 5.6, 7.3) also had a significantly higher infant mortality rate than births where the mother was 25 to 34 years old (4.1 deaths per 1,000 live births, 95% CI: 3.7, 4.5), but was not statistically different from the infant mortality rate among births where the mother was 35 years or older.

Plurality

Most deceased infants, 759 (88.2%), were singletons at birth, while 94 deceased infants (10.9%) were part of twin deliveries. In total, 102 of the linked infant deaths occurred among plural births (11.8%), corresponding to an infant mortality rate of 18.9 deaths per 1,000 live plural births (95% CI: 15.2, 22.6). By comparison, for every 1,000 singleton live births, there were 4.6 infant deaths (95% CI: 4.2, 4.9).

Birth Order

The infant mortality rate among infants born with a birth order of one (5.5 deaths per 1,000 live births; 95% CI: 4.9, 6.1) and among infants born with a birth order of four or more (6.2; 95% CI: 5.2, 7.2) were significantly higher than the rate among those with a birth order of two (3.8; 95% CI: 3.2, 4.3) but insignificantly higher than the rate among those with a birth order of three (5.2; 95% CI: 4.4, 6.0).

Maternal Pre-pregnancy Body Mass Index (BMI)

More than one-third of linked infant deaths, where Body Mass Index was known, involved infants whose mothers were obese (37.9%), overweight (27.4%), and one-third (31.3%) were to mothers of normal weight. Maternal obesity was associated with an infant mortality rate of 5.6 deaths per 1,000 live births (95% CI: 5.0,

6.2). This was significantly higher than the mortality rate among births to mothers of normal weight (4.2 deaths per 1,000 live births, 95% CI: 3.7, 4.7), and among births to mothers who were overweight (4.8 deaths per 1,000 live births; 95% CI: 4.2, 5.4). Births to underweight mothers were associated with an infant mortality rate of 7.4 deaths (95% CI: 5.0, 10.7) per 1,000 live births.

Maternal Marital Status

For more than half of infant deaths (56.4%), the mother was not married at the time of her delivery. However, the infant mortality rate among births to unmarried mothers (7.2 deaths per 1,000 live births, 95% CI: 7.2, 8.6) was more than twice that of births to married mothers (3.4, 95% CI: 3.1, 3.8).

Pay Source for Delivery

The most common pay source was Medicaid (47.9%) for births linked to an infant death, followed by private insurance (37.4%), and self-pay (9.7%). However, the infant mortality rate among births where Medicaid was the primary payor was 7.6 deaths per 1,000 live births (95% CI: 6.9, 8.4). This was significantly higher than the rate among births primarily paid for by private insurance (3.4 deaths per 1,000 live births; 95% CI: 3.0, 3.7. p -value < 0.05). The death rate for non-Medicaid government program payors was 8.6 deaths per 1,000 live births (95% CI: 4.4, 15.6). This represents an increase compared to the rates from 2019-2023, although the change was not statistically significant.

Maternal Education

The mother's education level was known for 542 (62.8%) of the linked infant deaths where the mother was aged 24 years or older. The education category associated with the highest percentage of infant deaths was high school diploma/GED (24.9%), followed by some college but no degree (19.6%), and bachelor's degree (17.9%). Among births to mothers aged 24 years and older, births to mothers with at least some college education had the lowest infant mortality rate (3.4 deaths per 1,000 live births, 95% CI: 3.0, 3.8). This rate was significantly lower than births to mothers aged 24 years and older who did not have a high school diploma or GED (9.2 deaths per 1,000 live births, 95% CI: 7.4, 11.3), and to those who had a high school diploma or GED but no college education (5.5 deaths per 1,000 live births, 95% CI: 4.6, 6.5).

Prenatal Care Initiation

The month that prenatal care began was known for 845 (97.9%) of the linked infant deaths. For the majority of these (76.7%), the mother had started prenatal care in the first trimester of pregnancy. One in twenty linked infant deaths (5.4%) had no prenatal care. The infant mortality rate was 25.7 deaths per 1,000 live births (95% CI: 18.8, 34.4) among births that did not receive prenatal care. In comparison, among births with first-trimester initiation of prenatal care, the infant mortality rate was only 4.7 deaths per 1,000 live births (95% CI: 4.4, 5.1). The infant mortality rate, 5.1 deaths per 1,000 live births (95% CI: 4.2, 6.0), among births with second-trimester initiation of prenatal care was not significantly higher than among births with first-trimester prenatal care.

Adequacy of Prenatal Care Utilization Index (APNCU)

The APNCU index was known for 841 linked deaths (97.5%) in 2020 - 2024. The 44.2% of linked infant deaths had Adequate Plus care with 7.1 deaths per 1000 live births (95% CI: 6.4, 7.9). Also, 29.4% of linked infant deaths had Adequate care (2.8 deaths per 1000 live births; 95% CI: 2.4, 3.1), 10.3% of linked infant deaths had Intermediate care (9.1 deaths per 1000 live births; 95% CI: 7.3, 11.3), and 16.1% of linked infant deaths had Inadequate care (7.2 deaths per 1000 live births; 95% CI: 6.0, 8.5).

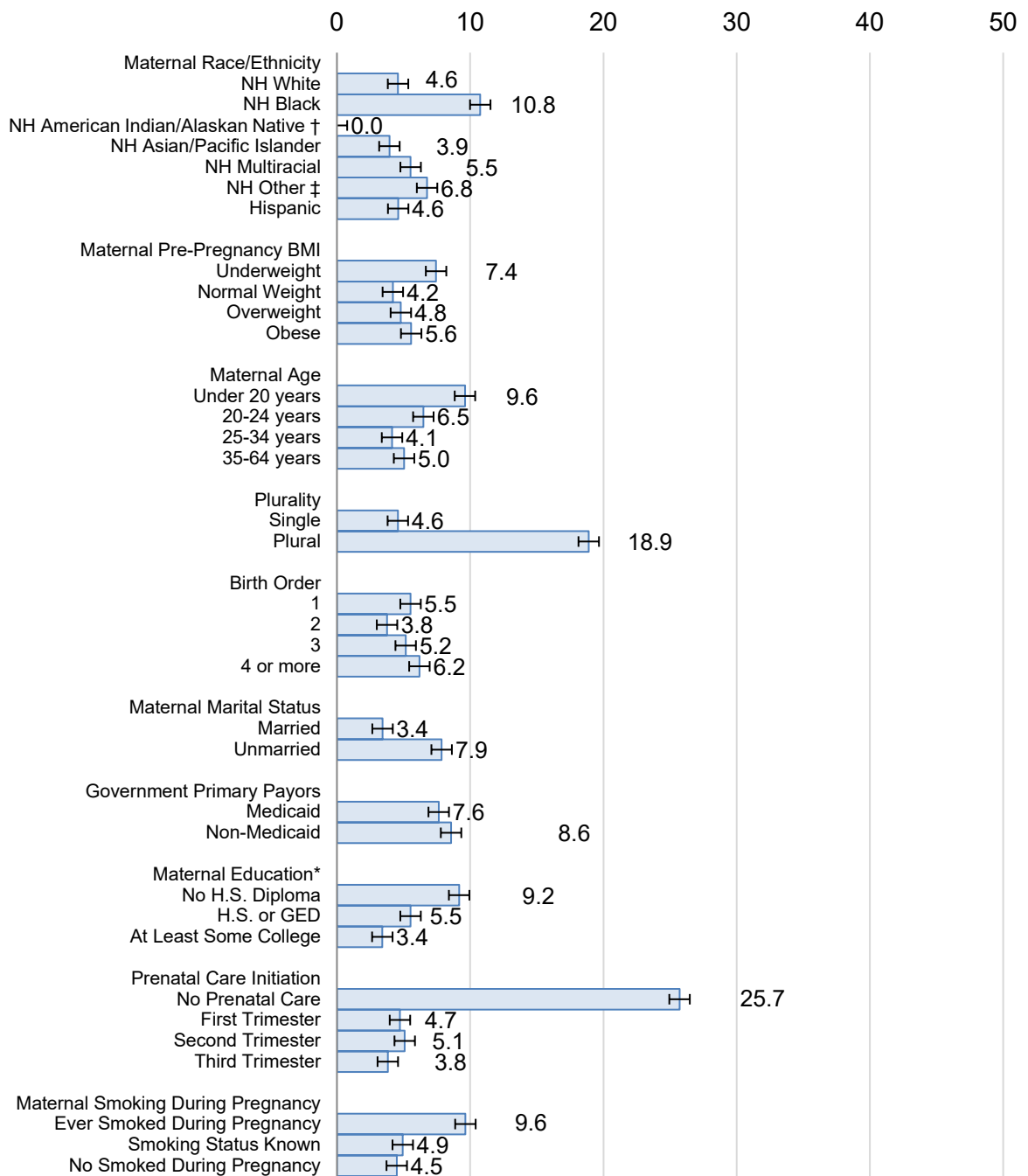
In comparison among all live births in 2020 - 2024, where information for the APNCU index was available, 11.0% received Inadequate care, 5.6% received Intermediate care, 52.7% received Adequate care, and 30.7% received Adequate Plus care (Table A10). In interpreting the APNCU index, it is important to remember that this is a quantitative measure that accounts only for timing and number of visits. It may not be an effective measure of the quality of care received, especially among high-risk pregnancies.

Maternal Smoking Status

Smoking status was known for 843 linked infant deaths (96.7%). For 11.5 of these, smoking at some time during pregnancy had been reported. Births to smokers had nearly twice the infant mortality rate (9.6 deaths per 1,000 live births, 95% CI: 7.8, 11.7) of births to nonsmokers (4.5, 95% CI: 4.2, 4.8).

Figure K. Five-Year Average Infant Mortality Rates (Deaths per 1,000 live births) by Selected Characteristics from the Linked Birth-Infant Death File, Kansas 2020 - 2024

Deaths per 1,000 live births



NH = Non-Hispanic.

Error bars represent 95% confidence intervals.

† Estimate is statistically unreliable (Relative Standard Error > 30%).

* Mothers over 24 years

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Discussion

From 2005 to 2024, the overall infant mortality rate in Kansas saw a significant decline. Additionally, there have been encouraging trends in the rates of stillbirths and infant mortality since 2000, including reductions in infant mortality among Non-Hispanic White and Non-Hispanic Black populations. There has also been a decrease in both perinatal and preterm-related mortality rates. While the preterm-related mortality rate dropped significantly after 2018, it started to increase again, though insignificantly, from 2021 to 2024.

The rate of stillbirths after 20 weeks of gestation in Kansas increased from 2005 to 2024. This rise in recent years may be partly attributed to changes in the state's fetal death reporting law implemented in 2014 (See Technical Notes). In 2020, the stillbirth rate reached 4.8 per 1,000 live births for the first time since the new law was adopted. However, this rate increased to 5.6 in 2021, 5.9 in 2022, and 5.4 in 2023, before decreasing to 4.8 in 2024.

Over these 20 years, Kansas saw a decline in the rate of perinatal deaths, which include stillbirths occurring at or after 28 weeks of gestation and deaths of infants under seven days of age. Additionally, the rate of neonatal deaths (deaths occurring under 28 days of age) decreased in 2024, remained below the national average.

In 2024, the infant mortality rate in Kansas was 5.8 deaths per 1,000 live births, which was higher than the overall rate for the United States, which stood at 5.6. Kansas did not meet the Healthy People 2030 objective of achieving no more than 5.0 deaths per 1,000 live births. The rate for Non-Hispanic White infants was below the target, while the rates for Hispanic infants and Non-Hispanic Black infants were significantly above this objective. From 2005 to 2024, the infant mortality rates for Non-Hispanic White and Non-Hispanic Black births showed significant decreases, with p-values of <0.0001 and 0.02, respectively. However, there were no statistically significant improvements (p-value = 0.26) in infant mortality rates for Hispanic births.

Some areas in the state experienced higher infant mortality rates than others. Barton, Shawnee, Harvey, Pottawatomie, and Crawford counties reported the highest rate with high reliability. In contrast, the counties with the lowest infant mortality rates were Riley, Douglas, Johnson, Butler, and Ford, with high reliability.

The leading cause of infant deaths from 2020 to 2024 was Sudden Unexpected Infant Death (SUID), which affected all population groups in Kansas. SUID significantly affected on infant deaths for the Non-Hispanic Black and Hispanic populations comparing Non-Hispanic White infants. For Non-Hispanic White infants, the top causes of death included congenital malformations, deformations, and chromosomal abnormalities. Additionally, disorders related to short gestation and low birth weight, as well as complications in newborns affected by maternal issues during pregnancy, were among the leading causes of death across all populations.

Limitations

The findings in this report are subject to several limitations. An important concern is the issue of receiving vital events from other states within our reporting deadline. Vital statistics are gathered on an occurrence basis but are traditionally reported on a residence basis. For complete residence statistics, reports must be received from other states for events occurring to Kansas residents. Delays or other late reporting may result in some out-of-state vital events not being received by the cutoff date of June 30 of the year following the event year. Past evaluations indicate that over 99 percent of all vital events to Kansas residents are received before the cutoff date.

Evaluation of the linked birth/infant death cohort is subject to limitations due to the inability to link all deaths to a corresponding birth report. This inability may be due to several reasons related to receipt of the corresponding record from another state, name differences between the two reports, both events not occurring in Kansas, or residency changes.

Additionally, comparison of Kansas linked data to other states or national data has limitations due to the timeliness of the national reports as well as differences in methodology. As mentioned, out-of-state births may not be available to match infant deaths at the state level, but National Center for Health Statistics (NCHS) gets matching birth certificate numbers from states for all infant deaths that occurred in jurisdiction. Hence, they are available for matching annual NCHS natality and mortality data at the national level.

The ICD-10 death classification system helps mitigate bias in how mortality information is coded. It also seeks to minimize the impact of spelling errors or incorrect placement of information in the cause of death fields. However, one limitation of the system is its inability to address variations in knowledge and attitudes among physicians who complete the cause of death information. Factors such as individual biases, unfamiliarity with the patient, or the inability to conduct an autopsy can influence the information available to the medical certifier when determining the cause of death. While many death certificates provide four full lines of detailed information about the events or illnesses leading up to death, some contain only limited information.

A weakness in relation to stillbirth reporting is that the causes of stillbirths are not as well documented as those of infant deaths. Additionally, since KSA 65-2401 was revised in mid-2014 to change the stillbirth reporting requirements from weight of the fetus (>350 grams) to length of gestation (≥ 20 weeks), vital records data following that year may not represent a consistent picture of all stillbirths.

The accuracy of the information presented in this report is largely dependent on the quality of the birth and death records reported to the Kansas Department of Health and Environment (KDHE). Some characteristics related to the mother and delivery, such as smoking status, may be underreported, which can affect the reliability of the data. The analysis of risk factors conducted in this report was meant as a preliminary step toward understanding the relationship between these factors and infant mortality. A more detailed analysis would be necessary to determine how each of these factors influences the risk of infant mortality.

Additionally, due to small sample sizes and the unreliability of estimates, this report did not delve deeply into trends in infant mortality among Non-Hispanic Native American/Alaskan Native, Non-Hispanic Asian/Pacific Islander, Non-Hispanic Other Race, and Non-Hispanic Multiracial populations.

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Technical Notes

Statistical Methodology

Crude Rates. Infant mortality and stillbirth rates were calculated per year, a combination of years and for specific subpopulations. Due to the relatively small number of infant deaths and stillbirths each year, preselected intervals of years were combined to increase data reliability. The five most recent years of data were combined for characteristic analysis. Intervals of 20 years and approximately 100 years were used for trend analysis. The long-term (~100 years) infant mortality numbers and rates may be underreported due to incomplete data collection in the early 1900s.

Data Suppression. The relative standard error (RSE) was used to evaluate reliability of rates. Values with a RSE of 30 percent or less were considered reliable. Values with RSE greater than 30 percent but less than 50 percent were considered unreliable and rates with RSE greater than 50 percent have been suppressed in this document.

Statistical Significance. The following statistical tests have been applied where statistically significant differences have been noted in this document. When counts were ≥ 100 , a normal distribution was assumed, and the z-test was used to compare two infant mortality rates. When counts were < 100 , a Poisson probability distribution was assumed, and confidence intervals were calculated at the 95% confidence level to compare two infant mortality rates. If the confidence intervals of two values did not overlap, it was considered a conservative estimate of a significant difference. Caution should be used in interpreting these differences, due to the relatively small number of occurrences and yearly fluctuations.

Trend Analysis. Poisson JoinPoint regression was performed to model trends, and the annual percent change (APC) was used to characterize the trend over time. Statistical significance was established with an APC p-value of less than 0.05. Where the numerator was less than 20 or the denominator was less than 50, years were combined into five-year intervals and rolling averages were calculated.

Inclusion of Stillbirths. In Kansas, as of July 2014, a stillbirth is defined as complete expulsion or extraction from its mother of a human child, the gestational age of which is not less than 20 completed weeks, resulting in other than a live birth and which is not an induced termination of pregnancy.²⁹ The law prior to 2014 required stillbirths to be reported when fetal weight was greater than 350 grams. The change may result in slightly different counts because of the different definitions of stillbirth and implementation occurring mid-year. The reporting certificate did not change. The new definition resulted in more events being reported. For consistency, in this publication, only stillbirths of at least 20 weeks gestation were included for all years.

Preterm Related Deaths. According to the Federally Available Data guidance from the KDHE Bureau of Maternal and Child Health, the national standard for reporting the rate of pre-term related deaths is multiplied by 100,000.

Residency. All data reported are based on Kansas residence, unless otherwise noted.

Adequacy of Prenatal Care Utilization (APNCU) Index. The assessment of the adequacy of prenatal care measured by the APNCU Index (often referred to as the Kotelchuck Index) is a composite measure based on gestational age of the newborn, the trimester prenatal care began, and the number of prenatal visits made.

Rates and Ratios

Cause-Specific Death Rate(cause-specific deaths) / (total population) X 100,000

Stillbirth Rate(stillbirths) / (live births + stillbirths) X 1,000

Hebdomadal Death Rate(hebdomadal deaths) / (live births) X 1,000

Infant Death Rate(infant deaths) / (live births) X 1,000

Neonatal Death Rate(neonatal deaths) / (live births) X 1,000

Perinatal Period III Death Rate(perinatal period III deaths / (live births + stillbirths) X 1,000

Post-Neonatal Death Rate(post-neonatal deaths) / (live births) X 1,000

Linkage to Birth Records

This report also provides findings based on the linking of birth record and infant death record data. Where referenced, the linked birth/infant death statistics are based on the period-linked birth death cohort. The birth-death cohort includes infant deaths that occurred during the given years, and births that occurred during or prior to the same years. In Kansas, between 2020 and 2024 there were 987 resident infant deaths reported to KDHE (Table E). Of those, 863 (87.4%) were linked to a birth record.

The analyzed birth and infant death data comes from a combination of linked single-year files, created six months after the end of each event year. The linkage of the records is carried out by the BEPHI Public Health Informatics group using a deterministic methodology, which relies on the presence of a birth certificate identification number in the death history file. If an infant death does not match automatically, a manual matching process is employed. It's important to note that any infant death reports received more than six months after the end of a given event year are not included in that year's data.

To obtain statistically reliable state specific data stratified by race and ethnicity, it is necessary to combine years. For this report, five years of linked birth/infant deaths were combined to obtain statistically reliable data for stratification on characteristic variables. Linked data are an important tool to examine infant mortality comparisons between Kansas, other Jurisdictions, and National Center for Health Statistics (NCHS).

This method of linking the infant death and their birth records is valuable for exploring the various relationships of the infant deaths with factors surrounding birth and with mothers' risk factors. The death file contains age at death and underlying cause. The birth file contains birth weight, gestational age, health care expense payment method, and information on the mother such as age, marital status, educational level and maternal risk factors such as tobacco use.

Table E. Percent of Infant Deaths Linked to Birth Records and Infant Mortality Rate, Kansas, 2020- 2024

Year	Total Infant Deaths		Linked Infant Deaths		
	Number	Rate per 1,000 Live Births	Number	Percent Linked	Rate per 1,000 Live Births
Total	987	5.8	863	87.4	5.0
2020	224	6.5	195	87.1	5.7
2021	184	5.3	159	86.4	4.6
2022	200	5.8	170	85.0	4.9
2023	182	5.3	164	90.1	4.8
2024	197	5.8	175	88.8	5.2

Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics.

Notes on Transition to the 2003 Birth Certificates

Data for 2005 and subsequent years are based on the Kansas implementation of the 2003 revision of the U.S. Standard Certificates of Live Birth, Death, and Stillbirth. Data for prior years is based on the 1989 revision of the U.S. Standard Certificate of Live Birth, Death, and Stillbirth. Data analysis involving the 2005 Kansas Certificate of Live Birth is affected in several ways.

- Changes in both question wording and sources for the information collected make it inappropriate to evaluate trends across 2004 and 2005 in some variables, such as the month prenatal care began and education level.
- Determining When Prenatal Care Began: Before 2005, mothers were asked to provide the month when their prenatal care started. However, beginning in 2005, the calculation for the month prenatal care began included both the first day of the last menstrual period before pregnancy and the date of the initial prenatal visit. This change means that rates calculated after 2004 are not comparable to those from earlier years, making such comparisons inappropriate.
- This report is based on births and deaths of residents. If these events occur out of state and the state does not use the 2003 revision of the birth certificate, there may be missing data. This is particularly important for border counties.
- In this report unknowns are excluded from the denominator in all percentage rate calculations involving birth data. Other states may choose to include unknowns in their denominators. The Kansas method provides a more accurate representation of these rates.
- The 2003 revision process resulted in recommendations that prenatal care information be gathered from the prenatal care or medical records, whereas the 1989 revision did not recommend a source for these data. In the case of premature births, sometimes these records are not available when the infant is delivered.
- Infant mortality rates reported by NCHS may differ slightly from the rates presented here. The NCHS rates are derived from data submitted by all states. However, some infant deaths that occur out of state may not be reported to us in time for inclusion in that year's Annual Summary of Vital Statistics or subsequent reports.
- Percentages may not total 100 percent because of rounding.

Notes on Specific Variables and Terms

Infant Age at Death. The first year of life can be categorized by two major periods, the neonatal period (first 27 days of life) and the post neonatal period (28 to 364 days of life). Infant deaths occurring in the neonatal period are also further sub-divided into the hebdomadal deaths (0-6 days) and post-hebdomadal deaths (7-27 days).

Gestational Age. The obstetric estimate of gestational age was coded in weeks. Consistent with NCHS practice, for infants, any gestational age outside of 17-47 weeks was recoded as unknown.³² Preterm births were those of less than 37 weeks. Early term births were considered as those at 37-38 weeks. Only stillbirths of at least 20 weeks gestation were included in this report, consistent with the change in fetal death reporting requirements in Kansas, which occurred in mid-2014. Stillbirths of unknown gestational age were excluded from this report.

Perinatal Mortality. Consistent with NCHS practice, in this report, a perinatal death was defined as a death occurring to an infant fewer than seven days old, or to a fetus of at least 28 weeks gestation.^{19,20} In the Annual Summary of Vital Statistics, perinatal death includes infant deaths that occur at less than seven days of age and fetal deaths with a stated or presumed gestation of 20 weeks or more.

Cause of Death. The cause of death mentioned in this report refers to the primary or underlying cause of death. It is defined as the disease or injury that initiated the chain of events leading directly to death, or the circumstances of an accident or violence that resulted in a fatal injury. Underlying causes of death are identified using the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). This classification system ensures consistency and comparability in the collection and presentation of mortality data. Causes of death were ranked according to the NCHS Instruction Manual, Part 9, specifically the ICD-10 Cause-of-Death Lists for Tabulating Mortality Statistics, effective 1999. For infant deaths, the list of 130 Selected Causes of Infant Death was used, while the list of 124 Selected Causes of Fetal Death was used for stillbirths. There is one exception noted in this report: when ranking the leading causes of infant death, sudden infant death syndrome (SIDS) deaths (ICD-10 code R95) are combined with accidental suffocation and strangulation in bed (ICD-10 code W75) and those categorized as unknown cause (ICD-10 code R99). This combination is referred to as Sudden Unexpected Infant Death (SUID).

Population Groups. This report uses the concept of reporting race and Hispanic origin combined into distinct categories of population groups. This was done to preserve the self-reported information on race and origin reported in the expanded categories. The use of population groups assures a better uniformity of the numerators and denominators in rate calculations. Because of different tabulation methods, totals for population groups may not equal those tabulated by either race or Hispanic origin individually. Rates calculated exclusively on Hispanic origin treat unknowns differently. The aggregation grid for population groups is listed in the Annual Summary of Vital Statistics.²³ Application of this grid assures that every combination of race and origin is assigned to a population group. In instances where the Hispanic origin of an individual is unknown, the person is assigned to a population group solely based on race and is considered Non-Hispanic. In the death

record statistics (unlinked data) of this document, the population groups are classified using the race/ethnicity of the decedent as reported on the death record. The funeral director supplies this information, which is provided by an informant such as a family member. In the linked birth/infant death statistics, the population groups are classified using the race/ethnicity reported on the birth record for the mother. For more information on the population groups, see the Technical Notes in the Annual Summary of Vital Statistics.

Mother's Age. In this report, maternal age values outside the range of 10-64 years were recoded as unknown.

Body-mass Index. Body-mass index was calculated using the mother's height and pre-pregnancy weight. Only values within the range of 13.0-69.9 were included. All other values were considered unknown.

County Peer Group and Urban-Rural Classifications. The county of residence was identified using the Federal Information Processing Standards (FIPS) code for each Kansas county. Starting in 2011, events with unknown county FIPS codes were included in the total counts for that year, whereas prior to 2011, they were excluded. For various demographic studies, it is useful to group counties with similar characteristics. In this summary, "Peer Groups" are defined as those with comparable population densities, based on a method developed by the KDHE Bureau of Community Health Systems (see Table F). It's important to note that this county peer grouping system should not be confused with other definitions of urban and rural areas. The KDHE Bureau of Epidemiology and Public Health Informatics regularly updates these definitions in line with each decennial census. Based on the 2010 U.S. Census, eight Kansas counties changed their peer groups. To facilitate time series comparisons, peer group statistics for previous years are based on the peer groups that were in effect during that decade. The sources used to calculate population densities include population figures from the 2010 U.S. Census and land area data from the same census. In 2020, the peer group changed for two counties due to population shifts.

In addition to peer groups, this report utilizes an urban-rural classification scheme published by the National Center for Health Statistics (NCHS) in 2014²⁴. Table A4 lists each Kansas county by its peer groups based on the 2010 and 2020 Census, respectively, as well as its NCHS 2013 urban-rural category.

Table F. Urban-Rural Classification Scheme, Based on the Kansas County

Kansas County Peer Groups	
Category	Description
Frontier	< 6.0 persons per square mile
Rural	6.0-19.9 persons per square mile
Densely Settled Rural	20.0-39.9 persons per square mile
Semi-Urban	40.0-149.9 persons per square mile
Urban	150.0+ persons per square mile

Table G. 2013 Urban-Rural Classification Scheme by the National Center for Health Statistics

NCHS 2023 Urban-Rural Classification Scheme	
Category	Description
Rural	
Noncore	Non-metropolitan counties that did not qualify as micropolitan
Micropolitan	Counties in micropolitan statistical areas
Urban	
Small metro	Counties in metropolitan statistical areas of populations between 50,000 and 250,000
Medium metro	Counties in metropolitan statistical areas of populations between 250,000 and 999,999
Large fringe metro	Counties in metropolitan statistical areas of 1 million or more population that did not qualify as large central metro counties
Large central metro	Counties in metropolitan statistical areas of 1 million or more population that: <ul style="list-style-type: none"> • contain the entire population of the largest main city of the metropolitan statistical area, or • whose entire population is within the largest main city of the metropolitan statistical area, or • contain at least 250,000 residents of any main city of the metropolitan statistical area

Appendix A

Table A1. Births, Stillbirths, Perinatal Deaths, and Infant Deaths by Year and Period of Death, - Kansas, 2005-2024

Year	Total *	Live	Stillbirths >= 20	Stillbirths >= 28	Hebdomadal†	Perinatal‡	Neonatal§	Postneonatal¶	Infant Deaths#	Perinatal III
2005	39,894	39,701	193	129	153	282	196	101	297	346
2006	41,076	40,896	180	126	137	263	176	117	293	317
2007	42,134	41,951	183	121	163	284	211	122	333	346
2008	41,993	41,815	178	116	160	276	193	110	303	338
2009	41,596	41,388	208	126	144	270	176	114	290	352
2010	40,603	40,439	164	106	143	249	170	83	253	307
2011	39,811	39,628	183	112	121	233	157	90	247	304
2012	40,498	40,304	194	136	142	278	173	81	254	336
2013	38,977	38,805	172	113	140	253	166	82	248	312
2014	39,391	39,193	198	103	138	241	175	71	246	336
2015	39,357	39,126	231	102	132	234	160	70	230	363
2016	38,298	38,048	250	138	119	257	145	78	223	369
2017	36,647	36,464	183	89	128	217	154	63	217	311
2018	36,464	36,268	196	88	136	224	162	69	231	332
2019	35,587	35,395	192	88	101	189	118	71	189	293
2020	34,535	34,368	169	95	116	211	148	76	224	285
2021	34,891	34,697	194	116	87	203	106	78	184	281
2022	34,592	34,389	203	104	108	212	127	73	200	311
2023	34,227	34,041	186	97	92	189	119	63	182	278
2024	34,118	33,956	162	74	90	164	113	84	197	252

*Total Deliveries = Live births + stillbirths at ≥20 weeks.

†Hebdomadal Deaths = Deaths at less than 7 days of age.

‡Perinatal Deaths = Stillbirths at ≥28 weeks + hebdomadal deaths.

§Neonatal Deaths = Deaths at less than 28 days of age.

¶Postneonatal Deaths = Deaths between 28 days and 1 year of age.

#Infant Deaths = Deaths under 1 year of age.

Perinatal death, definition III, includes infant deaths that occur at less than 7 days of age and fetal deaths with a stated or presumed gestation of 20 weeks or more.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table A2. Stillbirth, Perinatal Mortality, and Infant Mortality Rates by Period of Death, Kansas, 2005-2024

Year	Stillbirths at ≥20 Weeks*	Hebdomadal Deaths‡	Perinatal Deaths†	Neonatal Deaths‡		Postneonatal Deaths‡	Infant Deaths‡	
				KS	US		KS	US
2005	4.8	3.9	7.1	4.9	4.5	2.5	7.5	6.9
2006	4.4	3.3	6.4	4.3	4.5	2.9	7.2	6.7
2007	4.3	3.9	6.8	5.0	4.4	2.9	7.9	6.8
2008	4.2	3.8	6.6	4.6	4.3	2.6	7.2	6.6
2009	5.0	3.5	6.5	4.3	4.2	2.8	7.0	6.4
2010	4.0	3.5	6.1	4.2	4.1	2.1	6.3	6.2
2011	4.6	3.1	5.9	4.0	4.1	2.3	6.2	6.1
2012	4.8	3.5	6.9	4.3	4.0	2.0	6.3	6.0
2013	4.4	3.6	6.5	4.3	4.0	2.1	6.4	6.0
2014	5.0	3.5	6.1	4.5	3.9	1.8	6.3	5.8
2015	5.9	3.4	6.0	4.1	3.9	1.8	5.9	5.9
2016	6.5	3.1	6.7	3.8	3.9	2.1	5.9	5.9
2017	5.0	3.5	5.9	4.2	3.8	1.7	6.0	5.8
2018	5.4	3.7	6.2	4.5	3.8	1.9	6.4	5.7
2019	5.4	2.9	5.3	3.3	3.7	2.0	5.3	5.6
2020	4.9	3.4	6.1	4.3	3.6	2.2	6.5	5.4
2021	5.6	2.5	5.8	3.1	3.5	2.2	5.3	5.4
2022	5.9	3.1	6.1	3.7	3.5	2.1	5.8	5.5
2023	5.4	2.7	5.5	3.5	3.7	1.9	5.3	5.6
2024	4.7	2.7	4.8	3.3	3.6	2.5	5.8	5.6

*Per 1,000 (live births + stillbirths at ≥20 weeks).

†Per 1,000 (live births + stillbirths at ≥28 weeks).

‡Per 1,000 live births.

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment
National Vital Statistics System: CDC

**Table A3. Infant Deaths and Mortality Rates* By Selected Population Group of Mother§
Kansas, 2005-2024**

Year	White Non-Hispanic			Black Non-Hispanic			Hispanic Any Race			Black NH [†] to White NH [†] Ratio of Rates	Black NH [†] to Hispanic Ratio of Rates	Hispanic to White NH [†] Ratio of Rates	Total Infant Mortality Rate
	Live Births	Infant Deaths	Rate	Live Births	Infant Deaths	Rate	Live Births	Infant Deaths	Rate				
2005	28,903	181	6.3	2,670	45	16.9	6,073	52	8.6	2.7	2.0	1.4	7.5
2006	29,392	181	6.2	2,801	49	17.5	6,568	41	6.2	2.8	2.8	1.0	7.2
2007	30,170	205	6.8	2,856	56	19.6	6,676	56	8.4	2.9	2.3	1.2	7.9
2008	29,863	184	6.2	2,936	39	13.3	6,781	57	8.4	2.2	1.6	1.4	7.2
2009	29,471	178	6.0	2,830	44	15.5	6,790	40	5.9	2.6	2.6	1.0	7.0
2010	29,000	142	4.9	2,780	33	11.9	6,407	50	7.8	2.4	1.5	1.6	6.3
2011	28,382	150	5.3	2,708	35	12.9	6,293	42	6.7	2.4	1.9	1.3	6.2
2012	28,995	145	5.0	2,682	38	14.2	6,286	54	8.6	2.8	1.6	1.7	6.3
2013	27,821	137	4.9	2,549	39	15.3	6,139	44	7.2	3.1	2.1	1.5	6.4
2014	28,009	146	5.2	2,629	29	11.0	6,129	40	6.5	2.1	1.7	1.3	6.3
2015	27,717	130	4.7	2,585	27	10.4	6,290	48	7.6	2.2	1.4	1.6	5.9
2016	26,786	139	5.2	2,494	38	15.2	6,300	32	5.1	2.9	3.0	1.0	5.9
2017	25,431	120	4.7	2,463	29	11.8	5,945	43	7.2	2.5	1.6	1.5	6.0
2018	25,196	122	4.8	2,499	25	10.0	5,976	54	9.0	2.1	1.1	1.9	6.4
2019	24,400	101	4.1	2,419	26	10.7	6,069	39	6.4	2.6	1.7	1.6	5.3
2020	23,517	115	4.9	2,369	40	16.9	5,965	42	7.0	3.5	2.4	1.4	6.5
2021	23,965	107	4.5	2,280	31	13.6	6,114	32	5.2	3.0	2.6	1.2	5.3
2022	23,569	111	4.7	2,191	20	9.1	6,295	50	7.9	1.9	1.1	1.7	5.8
2023	22,953	94	4.1	2,174	23	10.6	6,564	37	5.6	2.6	1.9	1.4	5.3
2024	22,439	109	4.9	2,050	24	11.7	7,043	51	7.2	2.4	1.6	1.5	5.8

* Rate per 1,000 live births.

† NH = non-Hispanic, population group includes unknown Hispanic origin.

§ Data for other non-Hispanic races are not included in this table due to small numbers but are available upon request. Inquiries can be sent by email to KDHE.HealthStatistic@ks.gov.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table A4. Infant Deaths and Mortality Rates by County of Residence, Peer Group, and Urban Rural Classification*, Kansas, 2020-2024

County	Year					Total Infant Deaths	Total Live Births	Rate†	95% Confidence Intervals	
	2020	2021	2022	2023	2024	2020-2024	2020-2024	2020-2024	Lower	Upper
Kansas	224	184	200	182	197	987	171,451	5.8	5.4	6.1
Allen	0	0	1	1	0	2	650	na ‡	na	na
Anderson	1	0	0	1	0	2	472	na ‡	na	na
Atchison	1	1	2	0	2	6	862	7.0 ‡	2.6	15.2
Barber	0	0	0	0	0	0	209	0.0	0.0	0.0
Barton	3	3	1	6	1	14	1,509	9.3	5.1	15.6
Bourbon	3	0	1	1	0	5	956	5.2 ‡	1.7	12.2
Brown	0	0	0	2	0	2	521	na ‡	na	na
Butler	4	3	2	5	5	19	3,450	5.5	3.3	8.6
Chase	0	0	1	0	0	1	128	na ‡	na	na
Chautauqua	0	1	0	1	0	2	153	na ‡	na	na
Cherokee	3	3	3	1	0	10	1,008	9.9 ‡	4.8	18.2
Cheyenne	0	0	0	1	0	1	164	na ‡	na	na
Clark	0	0	0	0	0	0	96	0.0 ‡	0.0	0.0
Clay	0	0	0	2	0	2	421	na ‡	na	na
Cloud	0	3	0	2	2	7	497	14.1 ‡	5.7	29.0
Coffey	0	0	0	0	0	0	442	0.0 ‡	0.0	0.0
Comanche	0	0	0	1	0	1	86	na ‡	na	na
Cowley	1	3	4	1	3	12	1,995	6.0	3.1	10.5
Crawford	4	3	4	0	5	16	2,196	7.3	4.2	11.8
Decatur	0	0	0	0	1	1	144	na ‡	na	na
Dickinson	1	4	3	0	1	9	962	9.4 ‡	4.3	17.8
Doniphan	0	0	0	3	0	3	332	na ‡	na	na
Douglas	6	3	2	7	2	20	4,994	4.0	2.4	6.2
Edwards	0	0	0	0	1	1	149	na ‡	na	na
Elk	0	1	0	0	0	1	103	na ‡	na	na
Ellis	2	0	1	0	2	5	1,530	3.3 ‡	1.1	7.6
Ellsworth	0	0	0	0	1	1	275	na ‡	na	na
Finney	2	3	2	3	0	10	2,732	3.7 ‡	1.8	6.7
Ford	3	4	4	2	4	17	2,881	5.9	3.4	9.4
Franklin	2	3	1	1	1	8	1,428	5.6 ‡	2.4	11.0
Geary	7	6	4	7	7	31	4,697	6.6	4.5	9.4
Gove	0	0	0	0	0	0	156	0.0 ‡	0.0	0.0
Graham	0	1	0	0	0	1	124	na ‡	na	na
Grant	0	1	1	0	1	3	506	na ‡	na	na
Gray	1	0	1	2	0	4	436	na ‡	na	na
Greeley	1	0	1	0	0	2	79	na ‡	na	na
Greenwood	0	0	1	0	0	1	270	na ‡	na	na
Hamilton	0	0	0	0	0	0	203	0.0 ‡	0.0	0.0
Harper	0	0	0	0	1	1	312	na ‡	na	na
Harvey	2	4	2	3	4	15	1,811	8.3	4.6	13.7
Haskell	0	0	1	1	0	2	268	na ‡	na	na
Hodgeman	1	0	0	0	0	1	81	na ‡	na	na
Jackson	2	1	2	0	1	6	797	7.5 ‡	2.8	16.4
Jefferson	0	2	0	0	0	2	860	na ‡	na	na
Jewell	0	1	0	0	0	1	147	na ‡	na	na
Johnson	30	25	24	27	21	127	34,379	3.7	3.1	4.3
Kearny	0	0	0	1	0	1	309	na ‡	na	na
Kingman	0	1	0	1	0	2	356	na ‡	na	na
Kiowa	0	0	0	0	0	0	142	0.0 ‡	0.0	0.0
Labette	2	0	2	2	1	7	1,200	5.8 ‡	2.3	12.0
Lane	0	0	0	0	0	0	95	0.0 ‡	0.0	0.0
Leavenworth	4	4	6	5	9	28	4,481	6.2	4.2	9.0

Table A4. Infant Deaths and Mortality Rates by County of Residence, Peer Group, and Urban-Rural Classification*, Kansas, 2020-2024

County	Year					Total Infant Deaths	Total Live Births	Rate [†]	95% Confidence Intervals	
	2020	2021	2022	2023	2024	2020-2024	2020-2024	2020-2024	Lower	Upper
Lincoln	1	0	0	0	1	2	142	na ‡	na	na
Linn	1	1	0	2	1	5	503	9.9 ‡	3.2	23.2
Logan	0	0	0	0	0	0	176	0.0 ‡	0.0	0.0
Lyon	1	2	1	3	1	8	1,724	4.6 ‡	2.0	9.1
McPherson	0	0	2	3	3	8	1,556	5.1 ‡	2.2	10.1
Marion	1	0	0	1	0	2	599	na ‡	na	na
Marshall	1	0	0	0	0	1	525	na ‡	na	na
Meade	2	0	1	0	0	3	248	na ‡	na	na
Miami	2	1	1	1	2	7	1,834	3.8 ‡	1.5	7.9
Mitchell	0	0	0	0	0	0	332	0.0 ‡	0.0	0.0
Montgomery	2	3	2	0	2	9	1,657	5.4 ‡	2.5	10.3
Morris	0	0	1	0	1	2	239	na ‡	na	na
Morton	0	0	0	0	0	0	148	0.0 ‡	0.0	0.0
Nemaha	0	0	0	0	0	0	670	0.0 ‡	0.0	0.0
Neosho	3	1	1	2	1	8	958	8.4 ‡	3.6	16.5
Ness	0	0	1	1	0	2	153	na ‡	na	na
Norton	0	0	0	0	0	0	259	0.0 ‡	0.0	0.0
Osage	0	2	0	0	1	3	777	na ‡	na	na
Osborne	0	0	1	0	0	1	194	Na ‡	na	na
Ottawa	2	1	1	0	0	4	287	na ‡	na	na
Pawnee	0	0	0	0	0	0	269	0.0 ‡	0.0	0.0
Phillips	0	2	0	0	0	2	251	na ‡	na	na
Pottawatomie	6	3	4	0	2	15	1,834	8.2	4.6	13.5
Pratt	0	1	1	0	2	4	527	na ‡	na	na
Rawlins	0	0	0	0	0	0	132	0.0 ‡	0.0	0.0
Reno	4	1	8	5	3	21	3,185	6.6	4.1	10.1
Republic	0	0	0	0	1	1	244	na ‡	na	na
Rice	1	0	2	0	0	3	522	na ‡	na	na
Riley	3	4	0	1	4	12	3,594	3.3	1.7	5.8
Rooks	1	0	0	0	0	1	245	na ‡	na	na
Rush	0	0	1	0	0	1	129	na ‡	na	na
Russell	0	0	0	0	0	0	327	0.0 ‡	0.0	0.0
Saline	2	2	10	3	5	22	3,034	7.3	4.5	11.0
Scott	0	1	0	0	0	1	348	na ‡	na	na
Sedgwick	52	45	39	36	53	225	32,682	6.9	6.0	7.8
Seward	2	2	0	3	4	11	1,846	6.0 ‡	3.0	10.7
Shawnee	21	13	18	12	16	80	9,642	8.3	6.6	10.3
Sheridan	0	0	1	0	0	1	131	na ‡	na	na
Sherman	2	0	1	0	0	3	330	na ‡	na	na
Smith	0	0	0	0	0	0	173	0.0 ‡	0.0	0.0
Stafford	0	0	0	0	0	0	232	0.0 ‡	0.0	0.0
Stanton	0	0	0	0	0	0	113	0.0 ‡	0.0	0.0
Stevens	0	1	2	0	0	3	332	na ‡	na	na
Sumner	4	0	4	1	1	10	1,185	8.4 ‡	4.0	15.5
Thomas	2	0	2	0	1	5	547	9.1 ‡	3.0	21.3
Trego	0	0	0	0	0	0	144	0.0 ‡	0.0	0.0
Wabaunsee	0	0	1	0	0	1	364	na ‡	na	na
Wallace	0	0	0	0	0	0	110	0.0 ‡	0.0	0.0
Washington	1	0	1	0	0	2	362	na ‡	na	na
Wichita	1	0	0	0	0	1	171	na ‡	na	na
Wilson	0	0	1	1	0	2	404	na ‡	na	na
Woodson	0	0	2	0	0	2	144	na ‡	na	na
Wyandotte	20	14	13	17	16	80	11,854	6.7	5.4	8.4
n.s							9	0.0		

Table A4. Infant Deaths and Mortality Rates by County of Residence, Peer Group, and Urban-Rural Classification*, Kansas, 2020-2024

County	Year					Total Infant Deaths	Total Live Births	Rate†	95% Confidence Intervals	
	2020	2021	2022	2023	2024	2020-2024	2020-2024	2020-2024	Lower	Upper
Peer Group										
Frontier	9	6	9	5	3	32	6,010	5.3	2.5	10.5
Rural	11	10	21	16	12	70	13,292	5.3	3.6	8.8
Densely -Settled Rural	39	34	34	31	27	165	27,222	6.1	4.1	8.3
Semi-Urban	32	30	34	26	38	160	26,886	6.0	3.6	7.3
Urban	133	104	102	104	117	560	98,032	5.7	4.5	6.7
Urban-rural 6-level classification (NCHS)										
Noncore	27	21	33	21	15	117	21,087	5.5	4.0	8.1
Micropolitan	40	37	49	40	44	210	34,629	6.1	4.2	7.4
Small metro	38	28	27	23	26	142	23,193	6.1	3.7	8.1
Medium metro	62	53	47	46	63	271	39,484	6.9	4.5	8.2
Large fringe metro	57	45	44	52	49	247	53,050	4.7	3.4	6.2
Urban-rural 2-level classification (NCHS)										
Rural	67	58	82	61	59	327	55,716	5.9	4.6	7.1
Urban	157	126	118	121	138	660	115,727	5.7	4.6	6.9

*See Technical Notes for Peer Group and Urban-Rural Classification definitions.

†Rate per 1,000 live births.

‡Rate has a relative standard error greater than 30%, should be used with caution since it doesn't meet the standard of reliability.

n.a. = Rates with a relative standard error greater than 50% have been suppressed.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table A5. Infant Deaths by Ten Leading Causes of Infant Death by Period of Death Kansas, 2020-2024

Cause of Death (ICD-10 Code)	Age of Infant						
	Under 1 Day	1-6 Days	Hebdomadal Deaths (under 7 days)	7-27 Days	Neonatal Deaths (under 28 Days)	Post-Neonatal Deaths (28 Days to 1 Year)	Under 1 Year
All causes	379	114	493	120	613	374	987
1. Sudden unexpected infant death (R95, R99, W75)	7	6	13	23	36	185	221
2. Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	92	37	129	25	154	43	197
3. Disorders related to short gestation and low birth weight, not elsewhere classified (P07)	115	7	122	2	124	3	127
4. Newborn affected by maternal complications of pregnancy (P01)	43	5	48	4	52	0	52
5. Newborn affected by complications of placenta, cord and membranes (P02)	22	2	24	0	24	1	25
6. Accidents (unintentional injuries) (V01-X59, excluding W75)	0	0	0	0	0	24	24
7. Diseases of the circulatory system (I00-I99)	2	3	5	1	6	14	20
8. Atelectasis (P28.0-P28.1)	16	3	19	0	19	1	20
9. Bacterial sepsis of newborn (P36)	8	5	13	7	20	0	20
10. Intrauterine hypoxia and birth asphyxia (P20-P21)	6	7	13	5	18	0	18

Residence data

In the event of a tie, causes are listed in order of ICD-10 code.

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table A6. Infant Deaths by County of Residence and Period of Death, Kansas, 2020-2024

County of Residence	Hebdomadal Deaths (under 7 days)	Neonatal Deaths (Under 28 days)	Post-Neonatal Deaths (28-364 days)	Total Infant Deaths (under 1 year)
Kansas	493	120	374	987
Allen	0	1	1	2
Anderson	0	0	2	2
Atchison	1	1	4	6
Barber	0	0	0	0
Barton	6	2	6	14
Bourbon	5	0	0	5
Brown	1	0	1	2
Butler	11	1	7	19
Chase	1	0	0	1
Chautauqua	1	0	1	2
Cherokee	6	1	3	10
Cheyenne	0	1	0	1
Clark	0	0	0	0
Clay	2	0	0	2
Cloud	3	0	4	7
Coffey	0	0	0	0
Comanche	1	0	0	1
Cowley	8	3	1	12
Crawford	5	4	7	16
Decatur	0	0	1	1
Dickinson	2	1	6	9
Doniphan	2	1	0	3
Douglas	10	4	6	20
Edwards	0	1	0	1
Elk	0	0	1	1
Ellis	3	0	2	5
Ellsworth	1	0	0	1
Finney	6	1	3	10
Ford	7	5	5	17
Franklin	5	1	2	8
Geary	18	2	11	31
Gove	0	0	0	0
Graham	0	0	1	1
Grant	1	1	1	3
Gray	3	0	1	4
Greeley	0	1	1	2
Greenwood	0	0	1	1
Hamilton	0	0	0	0
Harper	1	0	0	1
Harvey	8	1	6	15
Haskell	0	1	1	2
Hodgeman	0	0	1	1
Jackson	3	1	2	6
Jefferson	2	0	0	2
Jewell	0	0	1	1
Johnson	67	15	45	127
Kearny	0	1	0	1
Kingman	0	0	2	2
Kiowa	0	0	0	0
Labette	4	0	3	7
Lane	0	0	0	0

Table A6. Infant Deaths by County of Residence and Period of Death, Kansas, 2020-2024

County of Residence	Hebdomadal Deaths (under 7 days)	Neonatal Deaths (Under 28 days)	Post-Neonatal Deaths (28-364 days)	Total Infant Deaths (under 1 year)
Kansas	493	120	374	987
Leavenworth	12	4	12	28
Lincoln	2	0	0	2
Linn	0	1	4	5
Logan	0	0	0	0
Lyon	5	0	3	8
McPherson	7	0	1	8
Marion	2	0	0	2
Marshall	1	0	0	1
Meade	2	1	0	3
Miami	4	1	2	7
Mitchell	0	0	0	0
Montgomery	4	0	5	9
Morris	1	0	1	2
Morton	0	0	0	0
Nemaha	0	0	0	0
Neosho	3	0	5	8
Ness	1	1	0	2
Norton	0	0	0	0
Osage	1	1	1	3
Osborne	0	0	1	1
Ottawa	1	2	1	4
Pawnee	0	0	0	0
Phillips	1	0	1	2
Pottawatomie	6	1	8	15
Pratt	0	1	3	4
Rawlins	0	0	0	0
Reno	10	2	9	21
Republic	0	0	1	1
Rice	2	1	0	3
Riley	7	2	3	12
Rooks	0	1	0	1
Rush	0	0	1	1
Russell	0	0	0	0
Saline	16	1	5	22
Scott	0	0	1	1
Sedgwick	114	25	86	225
Seward	4	3	4	11
Shawnee	38	8	34	80
Sheridan	1	0	0	1
Sherman	1	0	2	3
Smith	0	0	0	0
Stafford	0	0	0	0
Stanton	0	0	0	0
Stevens	2	0	1	3
Sumner	6	2	2	10
Thomas	2	2	1	5
Trego	0	0	0	0
Wabaunsee	1	0	0	1
Wallace	0	0	0	0
Washington	0	0	2	2
Wichita	1	0	0	1
Wilson	0	0	2	2
Woodson	2	0	0	2
Wyandotte	39	9	32	80
Unknown	0	0	0	0

Residence data, Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table A7. Stillbirths by Ten Leading Causes of Fetal Death and Weeks Gestation Kansas, 2020-2024

Cause of Death (ICD-10 Code)	Stillbirths	20-27	28-31	32-41	42-47	unknown	All	28+
All Causes	914	424	116	368	2	4	100.00%	100.00%
1. P95. Fetal death of unspecified cause	282	132	37	111	1	1	30.85%	30.66%
2. P02. Fetus affected by complications of placenta, cord and membranes	197	73	28	96	0	0	21.55%	25.51%
3. P00. Fetus affected by maternal conditions that may be unrelated to present pregnancy	129	55	21	52	0	1	14.11%	15.02%
4. P01. Fetus affected by maternal complications of pregnancy	81	66	6	9	0	0	8.86%	3.09%
5. Q00-Q99. Congenital malformations, deformations and chromosomal abnormalities	73	34	7	32	0	0	7.99%	8.02%
6. All other causes	53	24	7	20	1	1	5.80%	5.76%
7. P70.0-P70.2. Syndrome of infant of a diabetic mother and neonatal diabetes mellitus	31	4	2	25	0	0	3.39%	5.56%
8. P04. Fetus affected by noxious influences transmitted via placenta	13	4	4	4	0	1	1.42%	1.65%
9. P83.2. Hydrops fetalis not due to hemolytic disease	13	8	3	2	0	0	1.42%	1.03%
10. P05. Slow fetal growth and fetal malnutrition	11	4	0	7	0	0	1.20%	1.44%

Residence Data

In the event of a tie, causes are listed in order of ICD-10 code.

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table A8. Linked Infant Deaths by Ten Leading Causes of Infant Death and by Ten Leading Causes of Infant Death and Weeks Gestation, Kansas 2020 - 2024

Cause of Death (ICD-10 Code)	Total	Very Premature <32 weeks	Moderate Premature 32-33 weeks	Late Preterm 34-36 weeks	Total Preterm <37 weeks	Early Term 37-38 weeks	Term ≥39 weeks	n.s.*
All causes	863	378	30	103	511	157	179	16
R95, R99, W75. Sudden unexpected infant death	215	7	5	31	43	70	100	2
Q00-Q99. Congenital malformations, deformations and chromosomal abnormalities	129	24	10	31	65	40	21	3
P07. Disorders related to short gestation and low birth weight, not elsewhere classified	119	110	0	0	110	0	0	9
P01. Newborn affected by maternal complications of pregnancy	51	47	1	0	48	2	0	1
V01-X59. Accidents (unintentional injuries), excluding W75	23	0	0	4	4	6	0	0
P02. Newborn affected by complications of placenta, cord and membranes	20	14	2	2	18	1	13	0
P28.0-P28.1. Atelectasis	19	18	0	0	18	0	1	0
P36. Bacterial sepsis of newborn	19	14	0	4	18	0	1	0
I00-I99. Diseases of the circulatory system	17	5	1	3	9	4	4	0
P20-P21. Intrauterine hypoxia and birth asphyxia	15	10	1	0	11	1	3	0

*n.s. = Unknown or not stated. Records with gestation outside of 17-47 weeks were classified as unknown gestation. Unknowns are excluded in calculating percents.

In the event of a tie, causes are listed in order of ICD-10 code.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table A9. Linked Infant Deaths by Birth Characteristics and Selected Population Group of the Mother, Kansas, 2020 – 2024

Characteristics	All races and origins	White NH*	Black NH*	American Indian or Alaska Native NH*	Asian or Pacific Islander NH*	Multi Race NH*	Other NH*	Hispanic	Unknown
Total	863	534	119	4	22	24	6	147	7
Sex									
Female	387	251	47	1	12	7	2	65	2
Male	476	283	72	3	10	17	4	82	5
Plurality									
Single	759	473	100	4	19	20	5	133	5
Twin	94	55	18	0	3	4	1	13	0
Triplets or more	8	6	1	0	0	0	0	1	0
Plural	102	61	19	0	3	4	1	14	0
n.s.	2	0	0	0	0	0	0	0	2
Birth Order									
1	344	215	42	1	10	8	3	63	2
2	196	134	22	0	7	3	0	27	3
3	161	97	27	2	0	7	0	28	0
4	70	41	13	0	4	3	1	8	0
5 or more	90	47	15	1	1	3	2	21	0
n.s.	2	0	0	0	0	0	0	0	2
Birthweight									
Less than 2,500 grams	527	316	75	1	20	7	6	99	3
Less than 500 grams	202	117	33	1	7	1	2	40	1
500-1499 grams	176	103	25	0	7	2	2	35	2
1,500-2,499 grams	149	96	17	0	6	4	2	24	0
2,500 grams or more	330	216	44	3	2	17	0	47	1
n.s.	6	2	0	0	0	0	0	1	3
Gestational Age									
Premature (< 37 weeks)	511	302	74	1	19	7	4	101	3
Very Premature (< 32 wks)	378	223	57	1	14	3	3	74	3
Moderate Premature (32-33 wks)	30	16	5	0	2	0	1	6	0
Late Premature (34-36 wks)	103	63	12	0	3	4	0	21	0
Early Term (37-38 weeks)	157	103	21	2	2	7	1	21	0
Term (39-47 weeks)	179	122	21	1	1	10	0	23	1
n.s.	16	7	3	0	0	0	1	2	3
Mother's Age									
Under 20 years	78	41	14	0	1	2	0	20	0
20-24 years	228	149	33	0	2	7	0	35	2
25-29 years	212	135	34	1	2	10	1	28	1
30-34 years	207	128	22	2	7	3	4	40	1
35-39 years	113	69	14	1	8	2	1	17	1
40-64 years	22	11	2	0	2	0	0	7	0
n.s.	3	1	0	0	0	0	0	0	2
Marital Status									
Married	375	276	23	1	15	3	3	51	3
Unmarried	486	258	96	3	7	21	3	96	2
n.s.	2	0	0	0	0	0	0	0	2

Table A9. Linked Infant Deaths by Birth Characteristics and Selected Population Group of the Mother, Kansas, 2020 – 2024

Characteristics	All races and origins	White NH*	Black NH*	American Indian or Alaska Native NH*	Asian or Pacific Islander NH*	Multi Race NH*	Other NH*	Hispanic	Unknown
Total	863	534	119	4	22	24	6	147	7
Payor									
Medicaid	404	230	80	4	4	17	2	65	2
Private Insurance	316	242	22	0	12	3	1	36	0
Self-Pay	75	31	2	0	2	1	3	36	0
Indian Health Service	0	0	0	0	0	0	0	0	0
Tricare	26	10	9	0	1	1	0	4	1
Other Government	12	5	2	0	2	1	0	2	0
Other	11	8	3	0	0	0	0	0	0
n.s.	19	8	1	0	1	1	0	4	4
Mother's Education*									
8th Grade or Less	28	9	3	0	1	0	0	15	0
9-12 Grade, No Diploma	62	21	10	1	1	4	2	23	0
H.S. or GED	135	82	28	2	0	2	1	19	1
Some College, No Degree	106	66	13	0	5	5	2	15	0
Associate Degree	54	37	6	1	2	1	0	7	0
Bachelor's Degree	97	75	4	0	5	2	0	11	0
Master's Degree	49	37	5	0	4	1	1	1	0
Doctorate	11	9	1	0	1	0	0	0	0
n.s.	12	7	2	0	0	0	0	1	2
*Mothers Over 24 years	554	343	72	4	19	15	6	92	3
Prenatal Care									
None	46	25	6	0	1	3	0	8	3
Month 1	28	14	7	0	0	2	1	4	0
Month 2	280	183	42	1	7	4	3	38	2
Month 3	340	221	40	1	11	9	0	57	1
First Trimester	648	418	89	2	18	15	4	99	3
Month 4	82	38	16	1	3	3	0	20	1
Month 5	27	20	1	0	0	0	0	6	0
Month 6	21	9	3	0	0	0	2	7	0
Second Trimester	130	67	20	1	3	3	2	33	1
Month 7	6	3	2	0	0	1	0	0	0
Month 8	8	5	2	0	0	1	0	0	0
Month 9 & Higher	7	3	0	1	0	0	0	3	0
Third Trimester	21	11	4	1	0	2	0	3	0
n.s.	18	13	0	0	0	1	0	4	0
Adequacy of Prenatal Care									
Adequate Plus	372	239	43	3	13	8	1	63	2
Adequate	247	158	37	0	6	8	2	34	2
Intermediate	87	47	19	0	2	2	1	16	0
Inadequate	135	75	20	1	1	5	2	28	3
n.s.	22	15	0	0	0	1	0	6	0
Smoking During Pregnancy									
Ever Smoked During Pregnancy	97	77	5	1	1	4	0	9	0
Smoking Status Known	843	525	118	3	22	22	4	146	3
Pre-pregnancy BMI									
Underweight	29	21	4	0	0	1	0	2	1
Normal weight	260	179	34	1	10	2	2	30	2
Overweight	228	136	30	0	6	10	3	43	0
Obese	315	185	48	3	5	9	0	64	1
n.s.	31	13	3	0	1	2	1	8	3

*NH = Non-Hispanic, population group includes unknown Hispanic origin

Residence data

n.s. = not stated

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table A10. Live Births by Birth Characteristics and Selected Population Group of the Mother, Kansas 2020 – 2024

Characteristics	All races and origins	White NH*	Black NH*	American Indian or Alaska Native NH*	Asian or Pacific Islander NH*	Multi Race NH*	Other NH*	Hispanic	Unknown
Total	171,451	116,443	11,064	790	5,586	4,339	887	31,981	361
Sex									
Female	83,854	56,813	5,465	389	2,666	2,138	435	15,762	186
Male	87,593	59,628	5,598	401	2,920	2,201	452	16,218	175
n.s.	4	2	1	0	0	0	0	1	0
Plurality									
Single	166,042	112,595	10,552	768	5,457	4,209	854	31,253	354
Twin	5,264	3,747	502	22	129	115	32	711	6
Triplets or more	134	98	8	0	0	12	0	16	0
Plural	5,398	3,845	510	22	129	127	32	727	6
n.s.	11	3	2	0	0	3	1	1	1
Birth Order									
1	62,266	42,863	3,629	260	2,325	1,760	322	10,977	130
2	52,129	36,833	2,931	226	1,835	1,243	233	8,726	102
3	31,207	21,035	2,070	146	795	734	178	6,183	66
4	14,469	9,081	1,189	74	383	317	69	3,321	35
5 or more	11,378	6,630	1,245	84	248	284	85	2,774	28
n.s.	2	1	0	0	0	1	0	0	0
Birthweight									
Less than 2,500 grams	13,049	7,975	1,630	53	528	387	84	2,358	34
Less than 500 grams	252	145	44	1	10	2	3	46	1
500-1499 grams	1,760	1,055	257	7	72	34	13	312	10
1,500-2,499 grams	11,037	6,775	1,329	45	446	351	68	2,000	23
2,500 grams or more	158,372	108,451	9,434	736	5,058	3,950	803	29,616	324
n.s.	30	17	0	1	0	2	0	7	3
Gestational Age									
Premature (< 37 weeks)	17,442	11,352	1,604	77	591	449	95	3,228	46
Very Premature (< 32 wks)	2,308	1,428	324	10	83	40	16	399	8
Moderate Premature (32-33 wks)	1,977	1,309	188	8	67	53	11	336	5
Late Premature (34-36 wks)	13,157	8,615	1,092	59	441	356	68	2,493	33
Early Term (37-38 weeks)	50,423	33,148	3,677	278	1,791	1,273	252	9,908	96
Term (≥39 weeks)	103,428	71,858	5,775	435	3,199	2,606	538	18,806	211
n.s.	158	85	8	0	5	11	2	39	8
Mother's Age									
Under 20 years	8,119	3,923	868	44	75	384	27	2,780	18
20-24 years	35,157	21,055	2,943	217	483	1,394	145	8,862	58
25-29 years	52,764	37,079	3,148	231	1,407	1,285	242	9,288	84
30-34 years	48,595	35,763	2,481	178	2,134	883	280	6,759	117
35-39 years	22,336	15,786	1,291	102	1,240	330	162	3,354	71
40-64 years	4,466	2,832	333	18	247	62	31	938	5
n.s.	14	5	0	0	0	1	0	0	8
Marital Status									
Married	109,551	83,588	3,578	312	4,776	1,828	700	14,545	224
Unmarried	61,848	32,827	7,484	478	810	2,511	186	17,424	128
n.s.	52	28	2	0	0	0	1	12	9

Table A10. Live Births by Birth Characteristics and Selected Population Group of the Mother, Kansas, 2020 – 2024

Characteristics	All races and origins	White NH*	Black NH*	American Indian or Alaska Native NH*	Asian or Pacific Islander NH*	Multi Race NH*	Other NH*	Hispanic	Unknown
Total	171,451	116,443	11,064	790	5,586	4,339	887	31,981	361
Payor									
Medicaid	52,899	29,751	6,581	376	1,101	2,163	326	12,495	106
Private Insurance	93,909	74,055	3,110	249	3,729	1,639	353	10,643	131
Self Pay	12,007	5,398	365	32	276	142	110	5,646	38
Indian Health Service	132	24	2	77	0	24	0	5	0
Tricare	7,390	4,842	727	36	321	250	28	1,177	9
Other Government	1,401	730	96	6	54	42	23	444	6
Other	1,661	921	96	3	67	37	23	510	4
n.s.	2,052	722	87	11	38	42	24	1,061	67
Mother's Education*									
8th Grade or Less	3,955	955	252	5	202	26	93	2,408	14
9-12 Grade, No Diploma	5,859	2,316	538	50	168	124	53	2,596	14
H.S. or GED	24,434	14,252	2,365	133	746	620	143	6,145	30
Some College, No Degree	20,900	14,240	1,867	124	476	634	75	3,464	20
Associate Degree	13,317	10,104	679	63	276	313	35	1,836	11
Bachelor's Degree	37,836	31,769	964	107	1,566	575	169	2,639	47
Master's Degree	16,028	13,361	411	35	1,131	187	93	791	19
Doctorate	4,970	4,078	103	8	418	75	37	241	10
n.s.	862	385	74	4	45	6	17	219	112
*Mothers Over 24 years	128,161	91,460	7,253	529	5,028	2,560	715	20,339	277
Prenatal Care									
None	1,789	834	261	22	69	49	20	507	27
Month 1	3,370	2,258	184	15	88	96	23	692	14
Month 2	56,238	40,471	3,279	183	1,843	1,299	267	8,811	85
Month 3	77,428	55,567	4,268	321	2,389	1,916	329	12,503	135
First Trimester	137,036	98,296	7,731	519	4,320	3,311	619	22,006	234
Month 4	15,651	9,219	1,345	105	551	450	84	3,863	34
Month 5	6,318	3,102	660	43	264	205	47	1,982	15
Month 6	3,585	1,693	417	40	142	113	45	1,123	12
Second Trimester	25,554	14,014	2,422	188	957	768	176	6,968	61
Month 7	2,514	1,179	245	18	81	94	23	861	13
Month 8	1,931	839	191	19	76	53	31	717	5
Month 9 & Higher	1,057	498	102	11	34	27	10	367	8
Third Trimester	5,502	2,516	538	48	191	174	64	1,945	26
n.s.	1,570	783	112	13	49	37	8	555	13
Adequacy of Prenatal Care									
Adequate Plus	52,156	37,103	3,113	251	1,884	1,308	180	8,219	98
Adequate	89,353	64,452	4,850	325	2,701	2,144	421	14,332	128
Intermediate	9,529	5,227	928	41	257	266	89	2,689	32
Inadequate	18,627	8,755	2,060	161	686	582	189	6,105	89
n.s.	1,786	906	113	12	58	39	8	636	14
Smoking During Pregnancy									
Ever Smoked During Pregnancy	10,060	7,865	848	118	52	447	7	713	10
Smoking Status Known	170,669	115,935	11,000	782	5,577	4,308	882	31,854	331
Pre-pregnancy BMI									
Underweight	3,898	2,551	324	16	225	138	32	602	10
Normal weight	61,974	44,638	3,309	224	2,777	1,431	340	9,110	145
Overweight	47,527	31,530	2,962	208	1,627	1,118	282	9,712	88
Obese	56,531	36,986	4,333	328	923	1,610	205	12,050	96
n.s.	1,521	738	136	14	34	42	28	507	22

* NH = Non-Hispanic, population group includes unknown Hispanic origin.

Residence data,

n.s. = not stated

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Appendix B

CERTIFICATE OF LIVE BIRTH

115-

State File Number

1. CHILD'S NAME (First, Middle, Last, Suffix)		2. DATE OF BIRTH (Month, Day, Year)		3. TIME OF BIRTH M	
4. SEX	5. BIRTH WEIGHT (Grams)	6. CITY, TOWN, OR LOCATION OF BIRTH		7. COUNTY OF BIRTH	
8. PLACE OF BIRTH <input type="checkbox"/> Hospital <input type="checkbox"/> Freestanding Birthing Center <input type="checkbox"/> Home Birth <input type="checkbox"/> Clinic/Doctor's Office <input type="checkbox"/> Other (Specify) _____			9. FACILITY NAME (If not institution, give street and number)		
10. I CERTIFY THAT THE STATED INFORMATION CONCERNING THIS CHILD IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF. Certifier's Signature ➤ _____		11. DATE SIGNED (Month, Day, Year)	12. ATTENDANT'S NAME AND TITLE (Type) Name _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify) _____		
13. Certifier's Name and Title (Type) Name _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> Hosp Adm. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify) _____		14. ATTENDANT'S MAILING ADDRESS (Street and Number or Rural Route, City, or Town, State, Zip Code)			
15. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)			16. MOTHER'S LAST NAME PRIOR TO FIRST MARRIAGE		
17. DATE OF BIRTH (Month, Day, Year)		18. BIRTHPLACE (State, Territory, or Foreign Country)		19. PRESENT RESIDENCE-STATE	
20. COUNTY		21. CITY, TOWN, OR LOCATION		22. STREET AND NUMBER OF PRESENT RESIDENCE	
23. ZIP CODE	24. INSIDE CITY LIMITS? <input type="checkbox"/> YES <input type="checkbox"/> NO	25. MOTHER'S MAILING ADDRESS (If same as residence, leave blank)			
26. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)		27. DATE OF BIRTH (Month, Day, Year)		28. BIRTHPLACE (State, Territory, or Foreign Country)	
29. PARENTS REQUEST SOCIAL SECURITY NUMBER ISSUANCE? <input type="checkbox"/> YES <input type="checkbox"/> NO		30. IMMUNIZATION REGISTRY I wish to enroll my child in the Immunization Registry <input type="checkbox"/> YES <input type="checkbox"/> NO			
31. I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THE CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. Signature of Parent (or Other Informant) ➤ _____		32. DATE SIGNED (Month, Day, Year)		33. DATE FILED BY STATE REGISTRAR (Month, Day, Year) (Vital Statistics only)	

CONFIDENTIAL INFORMATION FOR INTERNAL USE ONLY

34. IF HOME BIRTH, WAS DELIVERY PLANNED AT HOME? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown					
35. MOTHER'S SOCIAL SECURITY NUMBER			36. FATHER'S SOCIAL SECURITY NUMBER		
37a. WAS MOTHER EVER MARRIED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		37b. MOTHER MARRIED? (At birth, conception or any time between) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
37c. IF NO, HAS PATERNITY ACKNOWLEDGMENT BEEN SIGNED? <input type="checkbox"/> Yes <input type="checkbox"/> No		37d. MOTHER REFUSES TO GIVE HUSBAND'S INFORMATION <input type="checkbox"/> Yes <input type="checkbox"/> No			
38. WHAT IS THE PRIMARY LANGUAGE SPOKEN IN THE HOME? <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Vietnamese <input type="checkbox"/> German <input type="checkbox"/> French <input type="checkbox"/> Russian <input type="checkbox"/> Ukrainian <input type="checkbox"/> Mandarin <input type="checkbox"/> Cantonese <input type="checkbox"/> Sign Language <input type="checkbox"/> Other (Specify) _____					
39. PARENT'S HISPANIC ORIGIN (Check the box or boxes that best describes whether the parent is Spanish, Hispanic, or Latino. Check the "No" box if the parent is not Spanish, Hispanic, or Latino.)		40. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)			
39a. MOTHER <input type="checkbox"/> No, not Spanish/Hispanic/Latina <input type="checkbox"/> Yes, Mexican/Mexican American/Chicana <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latina (Specify) _____ <input type="checkbox"/> Unknown		39b. FATHER <input type="checkbox"/> No, not Spanish/Hispanic/Latino <input type="checkbox"/> Yes, Mexican/Mexican American/Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latino (Specify) _____ <input type="checkbox"/> Unknown		40a. MOTHER <input type="checkbox"/> White <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Black or African American <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Unknown	
		40b. FATHER <input type="checkbox"/> White <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Black or African American <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Unknown			
41. ANCESTRY - What is the parents' ancestry or ethnic origin? - Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)			42. OCCUPATION AND BUSINESS/INDUSTRY		
			Occupation	Business/Industry (Do not give name of company.)	
41a. MOTHER		42a. MOTHER (Most recent)		42c. MOTHER	
41b. FATHER		42b. FATHER (Usual)		42d. FATHER	
43. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery.)					
43a. MOTHER'S EDUCATION		43b. FATHER'S EDUCATION			
<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Unknown		<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)		<input type="checkbox"/> 9 th - 12 th grade; no diploma <input type="checkbox"/> Associate degree (e.g., AA,AS) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)	
				<input type="checkbox"/> High school graduate or GED <input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS)	
44. PREVIOUS LIVE BIRTHS (Do not include this child.)		45. NUMBER OF OTHER OUTCOMES (Spontaneous or induced losses or ectopic or stillbirth pregnancies)		46. PRENATAL CARE? <input type="checkbox"/> Yes <input type="checkbox"/> No	
44a. Now living Number _____ <input type="checkbox"/> None	44b. Now dead Number _____ <input type="checkbox"/> None	45a. Before 20 weeks Number _____ <input type="checkbox"/> None	45b. 20 weeks & over Number _____ <input type="checkbox"/> None	47. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)	
44c. DATE OF LAST LIVE BIRTH (Month, Year)		45c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)		48. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)	
49. PRENATAL VISITS-Total Number (If none, enter "0")		50. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)		51. OBSTETRIC ESTIMATE OF GESTATION (Completed Weeks)	
52. PLURALITY-Single, Twin, Triplet, etc. (Specify)		53. IF NOT A SINGLE BIRTH - Born First, Second, Third, etc. (Specify)	54. TOTAL LIVE BIRTHS AT THIS DELIVERY	55. IS INFANT ALIVE AT THE TIME OF THIS REPORT? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
56. IS INFANT BEING BREAST-FED AT DISCHARGE? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		57. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked per day during each time period. If none, enter "0". Average number of cigarettes or packs of cigarettes smoked per day for each period: No. No. Three months before pregnancy: _____ cigarettes or _____ packs First three months of pregnancy: _____ cigarettes or _____ packs Second three months of pregnancy: _____ cigarettes or _____ packs Third Trimester of pregnancy: _____ cigarettes or _____ packs			
58. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY <input type="checkbox"/> Medicaid <input type="checkbox"/> Private/Employer Ins. <input type="checkbox"/> Self-pay <input type="checkbox"/> Indian Health Service <input type="checkbox"/> CHAMPUS/TRICARE <input type="checkbox"/> Other government <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Unknown				59. MOTHER'S MEDICAL RECORD NO.	
				60. NEWBORN'S MEDICAL RECORD NO.	
61. MOTHER TRANSFERRED IN FOR DELIVERY DUE TO MATERNAL, MEDICAL, OR FETAL INDICATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, enter facility name)				62. INFANT TRANSFERRED (Within 24 hours of delivery) <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, enter facility name)	
FACILITY TRANSFERRED FROM:				FACILITY TRANSFERRED TO:	

CHILD'S NAME _____

MOTHER'S NAME _____

PRENATAL (Birth)	LABOR-DELIVERY/NEWBORN				
63. NUTRITION OF MOTHER 1. Height _____ 2. Prepregnancy Weight _____ 3. Weight at delivery _____ 4. Did mother get WIC food for herself? Yes _____ No _____ Unknown _____	66. OBSTETRICAL PROCEDURES (Check all that apply.) 1. <input type="checkbox"/> Cervical cerclage 2. <input type="checkbox"/> Tocolysis 3. External cephalic version: <input type="checkbox"/> Successful <input type="checkbox"/> Failed 4. <input type="checkbox"/> None of the above	70. INFECTIONS PRESENT AND/OR TREATED (During this pregnancy, check all that apply.) 1. <input type="checkbox"/> Gonorrhea 2. <input type="checkbox"/> Syphilis 3. <input type="checkbox"/> Herpes Simplex Virus (HSV) 4. <input type="checkbox"/> Chlamydia 5. <input type="checkbox"/> Hepatitis B 6. <input type="checkbox"/> Hepatitis C 7. <input type="checkbox"/> AIDS or HIV antibody 8. <input type="checkbox"/> None of the above			
64. MEDICAL RISK FACTORS (Check all that apply.) 1. <input type="checkbox"/> Diabetes, prepregnancy 2. <input type="checkbox"/> Diabetes, gestational 3. Hypertension <input type="checkbox"/> Prepregnancy (Chronic) <input type="checkbox"/> Gestational (PIH, preeclampsia) <input type="checkbox"/> Eclampsia 4. <input type="checkbox"/> Previous preterm birth 5. <input type="checkbox"/> Other previous poor pregnancy outcome (SGA, perinatal death, etc.) 6. <input type="checkbox"/> Vaginal bleeding during this pregnancy prior to labor 7. <input type="checkbox"/> Pregnancy resulted from infertility treatment (If yes, check all that apply.) <input type="checkbox"/> Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination <input type="checkbox"/> Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT)) 8. <input type="checkbox"/> Mother had a previous cesarean delivery, if yes, how many? Number: _____ 9. <input type="checkbox"/> Alcohol use No. of drinks per week: _____ 10. <input type="checkbox"/> None of the above	67. ONSET OF LABOR (Check all that apply.) 1. <input type="checkbox"/> Premature Rupture of the Membranes (prolonged, ≥ 12 hours) 2. <input type="checkbox"/> Precipitous Labor (< 3 hrs) 3. <input type="checkbox"/> Prolonged Labor (≥ 20 hrs) 4. <input type="checkbox"/> None of the above	71. ABNORMAL CONDITIONS OF NEWBORN (Check all that apply) 1. <input type="checkbox"/> Assisted ventilation required immediately following delivery 2. <input type="checkbox"/> Assisted ventilation required for more than six hours 3. <input type="checkbox"/> NICU admission 4. <input type="checkbox"/> Newborn given surfactant replacement therapy 5. <input type="checkbox"/> Antibiotics received by the newborn for suspected neonatal sepsis 6. <input type="checkbox"/> Seizure or serious neurologic dysfunction 7. <input type="checkbox"/> Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention) 8. <input type="checkbox"/> None of the above			
65. METHOD OF DELIVERY 1. Forceps attempted? Yes _____ No _____ Successful Yes _____ No _____ 2. Vacuum extraction attempted? Yes _____ No _____ Successful Yes _____ No _____ 3. Fetal presentation at delivery <input type="checkbox"/> Cephalic <input type="checkbox"/> Breech <input type="checkbox"/> Other 4. Final route and method of delivery (check one) <input type="checkbox"/> Vaginal/spontaneous <input type="checkbox"/> Vaginal/forceps <input type="checkbox"/> Vaginal/vacuum <input type="checkbox"/> Cesarean, if cesarean was a trial of labor attempted? Yes _____ No _____	68. CHARACTERISTICS OF LABOR AND DELIVERY (Check all that apply.) 1. <input type="checkbox"/> Induction of labor 2. <input type="checkbox"/> Augmentation of labor 3. <input type="checkbox"/> Non-vertex presentation 4. <input type="checkbox"/> Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery 5. <input type="checkbox"/> Antibiotics received by the mother during labor 6. <input type="checkbox"/> Clinical chorioamnionitis diagnosed during labor or maternal temperature ≥ 38 C (100.4 F) 7. <input type="checkbox"/> Moderate/heavy meconium staining of the amniotic fluid 8. <input type="checkbox"/> Fetal intolerance of labor: (examples: in-utero resuscitative measures, further fetal assessment, or operative delivery) 9. <input type="checkbox"/> Epidural or spinal anesthesia during labor 10. <input type="checkbox"/> None of the above	72. VACCINES ADMINISTERED TO NEWBORN 1. <input type="checkbox"/> Hepatitis B Date Given: _____ 2. <input type="checkbox"/> Other* Specify: _____ Date Given: _____			
69. MATERNAL MORBIDITY (Check all that apply.) (These are complications associated with labor and delivery.) 1. <input type="checkbox"/> Maternal transfusion 2. <input type="checkbox"/> Third or fourth degree perineal laceration 3. <input type="checkbox"/> Ruptured uterus 4. <input type="checkbox"/> Unplanned hysterectomy 5. <input type="checkbox"/> Admission to intensive care unit 6. <input type="checkbox"/> Unplanned operating room procedure following delivery 7. <input type="checkbox"/> None of the above		73. APGAR SCORE <table border="1"> <tr> <td data-bbox="850 802 1094 919">1 min</td> <td data-bbox="1094 802 1338 919">5 min</td> <td data-bbox="1338 802 1560 919">10 min</td> </tr> </table>	1 min	5 min	10 min
1 min	5 min	10 min			
		74. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.) 1. <input type="checkbox"/> Anencephaly 2. <input type="checkbox"/> Meningocele/Spina bifida 3. <input type="checkbox"/> Cyanotic congenital heart disease 4. <input type="checkbox"/> Congenital diaphragmatic hernia 5. <input type="checkbox"/> Omphalocele 6. <input type="checkbox"/> Gastroschisis 7. <input type="checkbox"/> Limb reduction defect (excluding congenital amputation and dwarfing syndromes) 8. <input type="checkbox"/> Cleft Lip with or without Cleft Palate 9. <input type="checkbox"/> Cleft Palate alone 10. <input type="checkbox"/> Down Syndrome <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending 11. <input type="checkbox"/> Suspected chromosomal disorder <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending 12. <input type="checkbox"/> Hypospadias 13. <input type="checkbox"/> Fetal alcohol syndrome 14. <input type="checkbox"/> Other congenital anomalies (Specify) _____ 15. <input type="checkbox"/> None of the above			

Parent's Telephone Number: _____

CHILD'S NAME _____

MOTHER'S NAME _____

<p>Test required by K.S.A. 65-153f 153G Serological Test Made:</p> <p>_____ 1st _____ 2nd _____ 3rd (Trimester) _____ At Delivery _____ Not Performed</p> <p>If no test made, state reason:</p>	<p>Test required by K.S.A. 65-180 Infant Neonatal Screening specimen taken:</p> <p>_____ Yes _____ No</p> <p>Kit Number _____</p> <p>If no test made, state reason:</p>	<p>Test required by K.S.A. 65-1157A Newborn Hearing Screening Accomplished:</p> <p>_____ Yes _____ No</p>
--	---	---

Infant's patient number: _____

Infant's Primary Care Physician

First	Middle	Last	Title (MD, DO, etc.)
-------	--------	------	----------------------

<p>If screening accomplished, Date hearing screened _____/_____/_____</p> <p>Month Day Year</p>	<p>The results of the hearing screening ✓:</p> <p>Right ear: _____ Pass _____ Refer for further testing Left ear: _____ Pass _____ Refer for further testing</p>
---	--

Physiologic equipment used ✓: _____ OAE _____ AABR _____ ABR

If screening not accomplished, ✓ one reason:

_____ b – missed appointment	_____ o – other
_____ c – could not test	_____ r – did not consent
_____ d – deceased	_____ s – scheduled but not completed
_____ i – Incomplete test	_____ t – transferred to another hospital
_____ m – Infant discharged before screening	_____ u – no information
_____ n – transferred to NICU	_____ x – invalid results

Kansas Department of Health and Environment
Office of Vital Statistics

CERTIFICATE OF STILLBIRTH (FETAL DEATH)

State File Number

1. NAME (First, Middle, Last, Suffix)		2. DATE OF DELIVERY (Month, Day, Year)	3. TIME OF DELIVERY M
4. SEX	5. CITY, TOWN, OR LOCATION OF DELIVERY		6. COUNTY OF DELIVERY
7. PLACE OF DELIVERY <input type="checkbox"/> Hospital <input type="checkbox"/> Freestanding Birthing Center <input type="checkbox"/> Home Delivery <input type="checkbox"/> Clinic/Doctor's Office <input type="checkbox"/> Other (Specify) _____		8. FACILITY NAME (If not institution, give street and number and zip code)	
9. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)			10. MOTHER'S LAST NAME PRIOR TO FIRST MARRIAGE
11. DATE OF BIRTH (Month, Day, Year)	12. BIRTHPLACE (State, Territory, or Foreign Country)		13. PRESENT RESIDENCE-STATE
14. COUNTY	15. CITY, TOWN, OR LOCATION	16. STREET AND NUMBER OF PRESENT RESIDENCE	
17. ZIPCODE	18. INSIDE CITY LIMITS? <input type="checkbox"/> Yes <input type="checkbox"/> No	19. MOTHER'S MAILING ADDRESS (If same as residence, leave blank)	
20. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)		21. DATE OF BIRTH (Month, Day, Year)	22. BIRTHPLACE (State, Territory, or Foreign Country)
23. I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THE CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. Signature of Parent (or Other Informant) >			24. DATE SIGNED (Month, Day, Year)
25. CAUSE/CONDITIONS CONTRIBUTING TO FETAL DEATH			
25a. INITIATING CAUSE/CONDITION (Among the choices below, please select the <u>one</u> which most likely began the sequence of events resulting in the death of the fetus.)			
Maternal Conditions/Diseases (Specify) _____			
Complications of Placenta, Cord, or Membranes – <input type="checkbox"/> Rupture of membranes prior to onset of labor <input type="checkbox"/> Abruptio placenta <input type="checkbox"/> Placental insufficiency <input type="checkbox"/> Prolapsed cord			
<input type="checkbox"/> Chorioamnionitis <input type="checkbox"/> Other (Specify) _____			
Other Obstetrical or Pregnancy Complications (Specify) _____		Fetal Anomaly (Specify) _____	
Fetal Injury (Specify) _____		Fetal Infection (Specify) _____	
Other Fetal Conditions/Disorders (Specify) _____		<input type="checkbox"/> Unknown	
25b. OTHER SIGNIFICANT CAUSES OR CONDITIONS (Select or specify all other conditions contributing to death in item 25a.)			
Maternal Conditions/Diseases (Specify) _____			
Complications of Placenta, Cord, or Membranes – <input type="checkbox"/> Rupture of membranes prior to onset of labor <input type="checkbox"/> Abruptio placenta <input type="checkbox"/> Placental insufficiency <input type="checkbox"/> Prolapsed cord			
<input type="checkbox"/> Chorioamnionitis <input type="checkbox"/> Other (Specify) _____			
Other Obstetrical or Pregnancy Complications (Specify) _____		Fetal Anomaly (Specify) _____	
Fetal Injury (Specify) _____		Fetal Infection (Specify) _____	
Other Fetal Conditions/Disorders (Specify) _____		<input type="checkbox"/> Unknown	
26. ESTIMATED TIME OF FETAL DEATH <input type="checkbox"/> Dead at time of first assessment, no labor ongoing <input type="checkbox"/> Dead at time of first assessment, labor ongoing <input type="checkbox"/> Died during labor, after first assessment <input type="checkbox"/> Unknown time of fetal death		27a. WAS AN AUTOPSY PERFORMED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Planned	27b. WAS A HISTOLOGICAL PLACENTAL EXAMINATION PERFORMED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Planned
		27c. WERE AUTOPSY OR HISTOLOGICAL PLACENTAL EXAMINATION RESULTS USED IN DETERMINING THE CAUSE OF FETAL DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> No	
28. I CERTIFY THAT THIS DELIVERY OCCURRED ON THE DATE STATED ABOVE AND THE FETUS WAS BORN DEAD. Signature >		29. DATE SIGNED (Month, Day, Year)	30. ATTENDANT'S NAME AND TITLE (If delivery not attended by physician) Name (Type) _____ <input type="checkbox"/> CNM/CM <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify) _____
31. CERTIFIER'S NAME AND TITLE (Type) <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> Other (Specify) _____		32. CERTIFIER'S MAILING ADDRESS (Street and Number or Rural Route, City or Town, State, Zip Code)	
		33a. METHOD OF DISPOSITION <input type="checkbox"/> Burial <input type="checkbox"/> Cremation <input type="checkbox"/> Donation <input type="checkbox"/> Hospital Disposition <input type="checkbox"/> Removal from State <input type="checkbox"/> Other (Specify) _____	
33b. PLACE OF DISPOSITION (Name of cemetery, crematory, or other place)		33c. LOCATION (City or Town, and State)	
34. FUNERAL DIRECTOR OR HOSPITAL ADMINISTRATOR Signature >		35. FIRM OR HOSPITAL NAME AND ADDRESS	
		36. DATE FILED BY STATE REGISTRAR (Month, Day, Year)	

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37. IF HOME DELIVERY, WAS DELIVERY PLANNED AT HOME? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			38. MOTHER'S MEDICAL RECORD NO.		
39a. WAS MOTHER EVER MARRIED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		39b. MOTHER MARRIED? (At birth, conception or any time between) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
40. PARENT'S HISPANIC ORIGIN (Check the box or boxes that best describes whether the parent is Spanish, Hispanic, or Latino. Check the "no" box if the parent is not Spanish, Hispanic, or Latino.)			41. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)		
40a. MOTHER-		40b. FATHER-		41a. MOTHER	
<input type="checkbox"/> No, not Spanish/Hispanic/Latina <input type="checkbox"/> Yes, Mexican/Mexican American/Chicana <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latina (Specify) _____ <input type="checkbox"/> Unknown		<input type="checkbox"/> No, not Spanish/Hispanic/Latino <input type="checkbox"/> Yes, Mexican/Mexican American/Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latino (Specify) _____ <input type="checkbox"/> Unknown		<input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Unknown	
42. ANCESTRY - What is the parents' ancestry or ethnic origin? - Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)			43. OCCUPATION AND BUSINESS/INDUSTRY		
			Occupation		Business/Industry (Do not give name of company.)
42a. MOTHER		43a. MOTHER (Most recent)		43c. MOTHER	
42b. FATHER		43b. FATHER (Usual)		43d. FATHER	
44. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery.)					
44a. MOTHER'S EDUCATION		44a. FATHER'S EDUCATION		44b. MOTHER'S EDUCATION	
<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Unknown <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)		<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Unknown <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)		<input type="checkbox"/> 9 th - 12 th grade, no diploma <input type="checkbox"/> Associate degree (e.g., AA,AS) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)	
45. PREVIOUS LIVE BIRTHS (Do not include this child.)		46. NUMBER OF OTHER OUTCOMES (Spontaneous or induced losses or ectopic or stillbirth pregnancies)		47. PLURALITY - Single, Twin, Triplet, etc. (Specify)	
45a. Now living Number _____ <input type="checkbox"/> None	45b. Now dead Number _____ <input type="checkbox"/> None	46a. Before 20 weeks Number _____ <input type="checkbox"/> None	46b. 20 weeks & over Number _____ <input type="checkbox"/> None	49. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)	
45c. DATE OF LAST LIVE BIRTH (Month, Year)		46c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)		50. OBSTETRIC ESTIMATE OF GESTATION (Completed Weeks)	
52. PRENATAL CARE? <input type="checkbox"/> Yes <input type="checkbox"/> No		53. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)		54. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)	
55. PRENATAL VISIT - Total number (If none, enter "0")		51. WEIGHT OF FETUS (grams)			
56. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked per day . If none, enter "0". Average number of cigarettes or packs of cigarettes smoked per day : No. No. Three months before pregnancy: _____ cigarettes or _____ packs First three months of pregnancy: _____ cigarettes or _____ packs Second three months of pregnancy: _____ cigarettes or _____ packs Third Trimester of pregnancy: _____ cigarettes or _____ packs			57. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY <input type="checkbox"/> Medicaid <input type="checkbox"/> Private/Employer Ins. <input type="checkbox"/> Self-pay <input type="checkbox"/> Indian Health Service <input type="checkbox"/> CHAMPUS/TRICARE <input type="checkbox"/> Other government <input type="checkbox"/> Other <input type="checkbox"/> Unknown		
			58a. MOTHER TRANSFERRED IN FOR DELIVERY DUE TO MATERNAL, MEDICAL, OR FETAL INDICATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, enter facility name)		58b. FACILITY TRANSFERRED FROM:

CHILD'S NAME _____
VS233 Rev. 05/01/2010

MOTHER'S NAME _____
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PRENATAL	LABOR-DELIVERY/STILLBORN FETUS
<p>59. NUTRITION OF MOTHER</p> <p>1. Height _____</p> <p>2. Prepregnancy Weight _____</p> <p>3. Weight at delivery _____</p> <p>4. Did mother get WIC food for herself? Yes _____ No _____ Unknown _____</p> <p>60. MEDICAL RISK FACTORS (Check all that apply.)</p> <p>1. <input type="checkbox"/> Diabetes, prepregnancy</p> <p>2. <input type="checkbox"/> Diabetes, gestational</p> <p>3. Hypertension <input type="checkbox"/> Prepregnancy (Chronic) <input type="checkbox"/> Gestational (PIH, preeclampsia) <input type="checkbox"/> Eclampsia</p> <p>4. <input type="checkbox"/> Previous preterm birth</p> <p>5. <input type="checkbox"/> Other previous poor pregnancy outcome (SGA, perinatal death, etc.)</p> <p>6. <input type="checkbox"/> Vaginal bleeding during this pregnancy prior to labor</p> <p>7. <input type="checkbox"/> Pregnancy resulted from infertility treatment (If yes, check all that apply.) <input type="checkbox"/> Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination <input type="checkbox"/> Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))</p> <p>8. <input type="checkbox"/> Mother had a previous cesarean delivery, if yes, how many Number _____</p> <p>9. <input type="checkbox"/> Alcohol use No. of drinks per week: _____</p> <p>10. <input type="checkbox"/> None of the above</p> <p>61. METHOD OF DELIVERY</p> <p>1. Forceps attempted? Yes _____ No _____ Successful: Yes _____ No _____</p> <p>2. Vacuum extraction attempted? Yes _____ No _____ Successful: Yes _____ No _____</p> <p>3. Fetal presentation at delivery <input type="checkbox"/> Cephalic <input type="checkbox"/> Breech <input type="checkbox"/> Other</p> <p>4. Final route and method of delivery (check one) <input type="checkbox"/> Vaginal/spontaneous <input type="checkbox"/> Vaginal/forceps <input type="checkbox"/> Vaginal/vacuum <input type="checkbox"/> Cesarean, if cesarean was a trial of labor attempted? Yes _____ No _____</p> <p>5. Hysterotomy/Hysterectomy Yes _____ No _____</p>	<p>62. MATERNAL MORBIDITY (Check all that apply.) (These are complications associated with labor and delivery.)</p> <p>1. <input type="checkbox"/> Maternal transfusion</p> <p>2. <input type="checkbox"/> Third or fourth degree perineal laceration</p> <p>3. <input type="checkbox"/> Ruptured uterus</p> <p>4. <input type="checkbox"/> Unplanned hysterectomy</p> <p>5. <input type="checkbox"/> Admission to intensive care unit</p> <p>6. <input type="checkbox"/> Unplanned operating room procedure following delivery</p> <p>7. <input type="checkbox"/> None of the above</p> <p>63. INFECTIONS PRESENT AND/OR TREATED (During this pregnancy, check all that apply.)</p> <p>1. <input type="checkbox"/> Gonorrhea</p> <p>2. <input type="checkbox"/> Syphilis</p> <p>3. <input type="checkbox"/> Herpes Simplex Virus (HSV)</p> <p>4. <input type="checkbox"/> Chlamydia</p> <p>5. <input checked="" type="checkbox"/> Listeria</p> <p>6. <input type="checkbox"/> Group B Streptococcus</p> <p>7. <input type="checkbox"/> Cytomeglovirus</p> <p>8. <input type="checkbox"/> Parvo virus</p> <p>9. <input type="checkbox"/> Toxoplasmosis</p> <p>10. <input type="checkbox"/> AIDS or HIV antibody</p> <p>11. <input type="checkbox"/> None of the above</p> <p>12. <input type="checkbox"/> Other (Specify) _____</p> <p>64. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.)</p> <p>1. <input type="checkbox"/> Anencephaly</p> <p>2. <input type="checkbox"/> Meningocele/Spina bifida</p> <p>3. <input type="checkbox"/> Cyanotic congenital heart disease</p> <p>4. <input type="checkbox"/> Congenital diaphragmatic hernia</p> <p>5. <input type="checkbox"/> Omphalocele</p> <p>6. <input type="checkbox"/> Gastroschisis</p> <p>7. <input type="checkbox"/> Limb reduction defect (excluding congenital amputation and dwarfing syndromes)</p> <p>8. <input type="checkbox"/> Cleft Lip with or without Cleft Palate</p> <p>9. <input type="checkbox"/> Cleft Palate alone</p> <p>10. <input type="checkbox"/> Down Syndrome <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending</p> <p>11. <input type="checkbox"/> Suspected chromosomal disorder <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending</p> <p>12. <input type="checkbox"/> Hypospadias</p> <p>13. <input type="checkbox"/> Fetal alcohol syndrome</p> <p>14. <input type="checkbox"/> Other congenital anomalies (Specify) _____</p> <p>15. <input type="checkbox"/> None of the above</p>

THIS IS NOT PART OF THE CERTIFICATE OF STILLBIRTH
Test required by K.S.A. 65-153F, 153G

Serological Test Made: _____ 1st _____ 2nd _____ 3rd (Trimester) _____ At Delivery _____ Not Performed

If no test made, state reason: _____

<p>31. ANCESTRY-What is this person's ancestry or ethnic origin? Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)</p>	<p>33. RACE (Check one or more boxes to indicate what race(s) the decedent considered himself or herself to be.)</p>	<p>34. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of death.)</p>
<p>32. HISPANIC ORIGIN (Check the box or boxes that best describes whether the decedent is Spanish/Hispanic/Latino. Check the "no" box if the decedent is not Spanish/Hispanic/Latino)</p>	<p><input type="checkbox"/> White</p> <p><input type="checkbox"/> Black or African American</p> <p><input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes)</p> <p>_____</p> <p>_____</p>	<p><input type="checkbox"/> 8th grade or less</p> <p><input type="checkbox"/> 9th - 12th grade; no diploma</p> <p><input type="checkbox"/> High school graduate or GED</p> <p><input type="checkbox"/> Some College credit, but no degree</p> <p><input type="checkbox"/> Associate degree (e.g., AA, AS)</p> <p><input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS)</p> <p><input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)</p> <p><input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)</p> <p><input type="checkbox"/> Unknown</p>
<p><input type="checkbox"/> No, not Spanish/Hispanic/Latino</p> <p><input type="checkbox"/> Yes, Mexican/Mexican American/Chicano</p> <p><input type="checkbox"/> Yes, Puerto Rican</p> <p><input type="checkbox"/> Yes, Cuban</p> <p><input type="checkbox"/> Yes, Central American</p> <p><input type="checkbox"/> Yes, South American</p> <p><input type="checkbox"/> Yes, other Spanish/Hispanic/Latino (Specify)</p> <p>_____</p> <p><input type="checkbox"/> Unknown</p>	<p><input type="checkbox"/> Asian Indian</p> <p><input type="checkbox"/> Chinese</p> <p><input type="checkbox"/> Filipino</p> <p><input type="checkbox"/> Japanese</p> <p><input type="checkbox"/> Korean</p> <p><input type="checkbox"/> Vietnamese</p> <p><input type="checkbox"/> Other Asian (Specify)</p> <p>_____</p> <p>_____</p>	<p>35. DECEDENT'S USUAL OCCUPATION (Give kind of work done during most of working life. Do not use retired.)</p>
	<p><input type="checkbox"/> Native Hawaiian</p> <p><input type="checkbox"/> Guamanian or Chamorro</p> <p><input type="checkbox"/> Samoan</p> <p><input type="checkbox"/> Other Pacific Islander (Specify)</p> <p>_____</p> <p>_____</p> <p><input type="checkbox"/> Other (Specify)</p> <p>_____</p> <p>_____</p> <p><input type="checkbox"/> Unknown</p>	<p>36. KIND OF BUSINESS/INDUSTRY (Do not give name of company.)</p>