



# Infant Mortality Kansas, 2012 Research Brief

---

**Bureau of Epidemiology and Public Health Informatics  
Division of Public Health**

**Kansas Department of Health and Environment** Curtis

State Office Building – 1000 SW Jackson, Topeka, KS, 66612-1354

<http://www.kdheks.gov/bephi/>

August 2013

This Research Summary Was Prepared By:

Kansas Department of Health and Environment  
Robert Moser, MD, Secretary

Bureau of Epidemiology and Public Health Informatics D.  
Charles Hunt, MPH, Director and State Epidemiologist  
Elizabeth W. Saadi, PhD, Deputy Director and State Registrar

Prepared by: Carol Moyer, MPH

Edited by: Greg Crawford, BA  
Cathryn Savage, PhD  
Joy Crevoiserat, BA

Desktop Publishing by: Laurie Stanley

Data for this report were collected by:

Office of Vital Statistics  
Donna Calabrese, Director

Our Vision – Healthy Kansans living in safe and sustainable environments.

Our Mission –To protect and improve the health and environment of all Kansans.

## Infant Mortality, Kansas, 2012 Research Brief

### Introduction

Infant mortality is an important indicator of the health of a community. It serves as a proxy indicator of population health, since there exists a potential association between the causes of infant mortality and factors that are likely to influence health status of the whole population. The Kansas Department of Health and Environment's (KDHE) Division of Public Health monitors infant mortality and supports programs that promote access to health services and prevention for mothers and infants.

### Methods

The KDHE Bureau of Epidemiology and Public Health Informatics (BEPHI) maintains the Kansas civil registration system through the Office of Vital Statistics (OVS). All vital events that occur in Kansas are reported to OVS. Vital events occurring in other states to Kansas residents are reported to OVS via inter-state jurisdictional exchange agreements. On July 1 of each year, history files of events that occurred the previous calendar year are created. Prior to the creation of history files, quality improvement programs validate the data and identify records that need correction. The history files are then used as the basis of statistical summaries (annual tables) and the *Kansas Annual Summary of Vital Statistics*. All data reported herein are residence data, regardless of where the event occurred. Trends are analyzed using five- and twenty-year time periods.

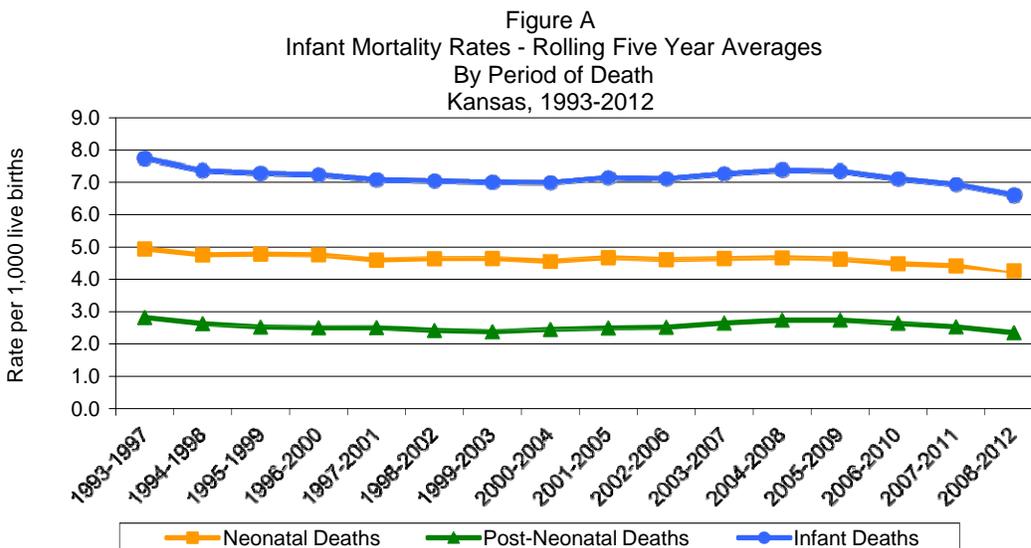
### Findings

The number of infant deaths to Kansas residents increased from 247 in 2011 to 254 in 2012. The number of Kansas resident births in 2012 was 40,304, resulting in an infant mortality rate (IMR) of 6.3 per 1,000 live births, slightly higher than 2011 (6.2 per 1,000 live births) and the same as 2010 (6.3 per 1,000 live births). Fifty-six percent of infant deaths in 2012 occurred among males and forty-four percent occurred among females (Table 1).

Even though the Kansas IMR has fluctuated annually over the last 20 years, Poisson regression analysis with Joinpoint shows a statistically significant decreasing trend. When analyzed separately, the last five years also show a statistically significant decreasing trend.

When looking at data with small numbers of events, annual fluctuations are common. In the last 4 years, neonatal deaths (infants less than 28 days of age) have ranged from 176 deaths (4.3 per 1,000 live births) in 2009, down to 157 deaths (4.0 per 1,000 live births) in 2011, and back up to 173 (4.3 per 1,000 live births) in 2012. Post-neonatal deaths (deaths at age equal to or greater than 28 days and less than 365 days) have ranged from 114 deaths (2.8 per 1,000 live births) in 2009, down to 81 deaths (2.0 per 1,000 live births) in 2012 (Table 2).

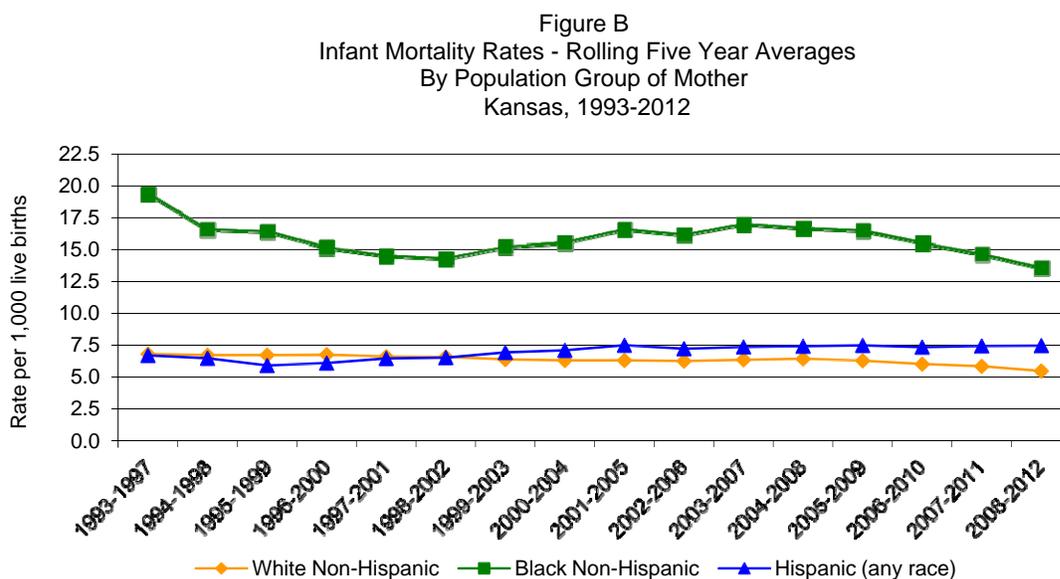
Rolling five-year averages in neonatal and post-neonatal deaths showed slight fluctuations, and a gradual overall decrease in the 1993-2012 time range (Figure A).



Residence data

In 2012, the number of deaths decreased to 145 from 150 in 2011 among White non-Hispanic infants, and increased among Black non-Hispanic and Hispanic infants (Table 3). The ratio in IMR between Black non-Hispanic infants and White non-Hispanic infants has increased from 2.4 in 2011 to 2.8 in 2012.

Five-year moving averages (1993-2012) show that the Black non-Hispanic population had the highest IMR. The White non-Hispanic population showed a slight decreasing trend, and the Hispanic population increased slightly in most 5-year time periods, from a low in the 1995-1999 time period (Figure B).



Residence data

In 2012, prematurity or low birthweight was the leading underlying cause of death, followed by congenital anomalies and SIDS/suffocation in bed (Table 4).

The year 2011 is the most current year preliminary national data is available. While the Kansas IMR declined in 2011 to 6.2 per 1,000 live births, it was still 4.0 percent above the national rate of 6.0 per 1,000 live births.

#### Discussion

In Kansas, for 2012, the infant mortality rate increased slightly, to 6.3 infant deaths per 1,000 live births, from 6.2 in 2011. The number of infant deaths among the White non-Hispanic population decreased, while the number of infant deaths among Black non-Hispanic and Hispanic populations increased. The rate of infant deaths per 1,000 live births for Black non-Hispanic infants continues to be over 2 times that of White non-Hispanic infants.

It is important to note that the relatively small number of infant deaths that occur are subject to statistical volatility, and trends should not be based on analyses of single year fluctuations, especially in drill downs by race and ethnic population groups. BEPHI, with the initiation of an expanded report on infant mortality, has begun reporting statistics by grouping five years together and presenting trends on a rolling five-year basis. This methodology increases data stability, and smoothing of rates makes trends more apparent.

These findings are subject to at least two limitations. Some very small under-reporting of vital events may occur. Additionally some infant deaths occur in other states. Late reporting of those events may affect totals. BEPHI quality improvement processes have been put in place to monitor these missing occurrences, allowing Kansas to work with other jurisdictions to obtain more complete data.

The *2012 Annual Summary of Vital Statistics, and Selected Special Statistics, Stillbirths and Infant Deaths, Kansas, 2012* will contain additional analyses.

Prepared by: Vital Statistics Data Analysis Section, Public Health Informatics  
Bureau of Epidemiology and Public Health Informatics,  
Division of Public Health  
Kansas Department of Health and Environment

Source Data: Office of Vital Statistics, Public Health Informatics  
Bureau of Epidemiology and Public Health Informatics  
Division of Public Health  
Kansas Department of Health and Environment

Resident Infant Deaths by Selected Characteristics, Kansas, 2009, 2010, and 2011, 2012

<b>TABLE 1. SEX BY YEAR</b>				
SEX	YEAR OF DEATH			
	2009	2010	2011	2012
FEMALE	141	104	107	111
MALE	149	149	140	143
TOTAL	290	253	247	254

<b>TABLE 2. AGE-GROUP BY YEAR</b>				
AGE-GROUP	YEAR OF DEATH			
	2009	2010	2011	2012
UNDER 1 HOUR	45	45	39	45
1 HOUR TO UNDER 1 DAY	70	74	60	64
1 DAY TO UNDER 1 WEEK	29	24	22	33
1 WEEK TO UNDER 1 MONTH	32	27	36	31
1 MONTH TO UNDER 1 YEAR	114	83	90	81
TOTAL	290	253	247	254

<b>TABLE 3. RACE/HISPANIC ORIGIN BY YEAR</b>				
POPULATION GROUP	YEAR OF DEATH			
	2009	2010	2011	2012
WHITE NH*	178	142	150	145
BLACK NH*	44	33	35	38
NATIVE AMERICAN NH*	3	1	5	1
ASIAN NH*	6	5	5	3
NATIVE HAWAIIAN AND OTHER PACIFIC ISLANDER NH*	0	0	0	0
OTHER NH*	2	1	1	3
MULTI RACE NH*	13	19	8	8
HISPANIC (ANY RACE)	40	50	42	54
N.S.	4	2	1	2
TOTAL	290	253	247	254

\*NH stands for non-Hispanic.

<b>TABLE 4. CAUSE OF DEATH GROUP BY YEAR</b>				
CAUSE GROUP (ICD-10 Code)	YEAR OF DEATH			
	2009	2010	2011	2012
CONGENITAL ANOMALIES (Q00-Q99)	72	66	59	51
LENGTH GESTATION/LOW BIRTHWEIGHT (P07)	36	35	49	58
MATERNAL FACTORS AND COMPLICATIONS (P00-P04)	52	39	28	20
SIDS/SUFFOCATION IN BED (R95, W75)	39	32	31	27
OTHER EXTERNAL CAUSES* (V01-Y89)	17	10	12	10
OTHER CAUSES	74	71	68	88
TOTAL	290	253	247	254

\*Excluding suffocation in bed.