

Oklahoma Infant Mortality

Preparing for a Lifetime, It's Everyone's Responsibility
September 14, 2017

Objectives

- Define infant mortality
- Review infant mortality rates
- Describe racial/ethnic disparities
- Review top causes of infant death

Definitions

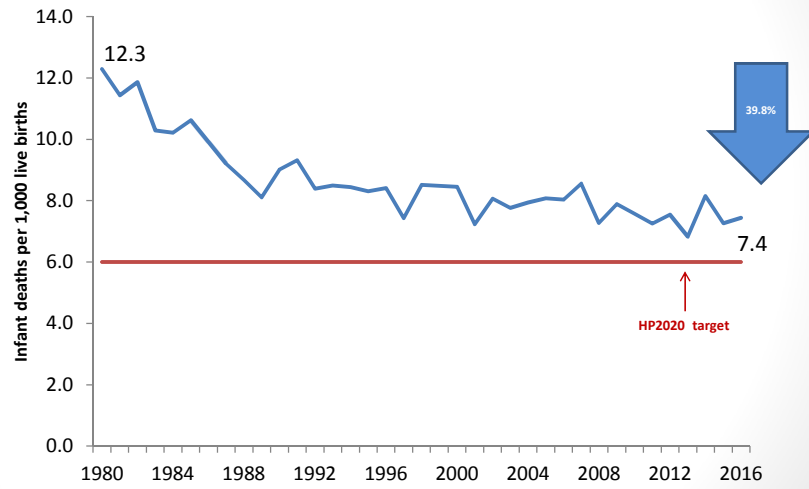
- Infant death = death of a child at less than 365 days
- Neonatal death = death occurring <28 days of life
- Postneonatal death = death between 28 and 364 days of life
- Infant mortality rate (IMR) = number of infant deaths per 1,000 live births

Infant mortality rate

- Overall 2016 IMR = 7.4 infant deaths per 1,000 live births
- Racial and ethnic disparities persist
 - White, 6.1
 - Black/African American, 13.9
 - American Indian, 9.7
 - Asian/Pacific Islander, 7.7
 - Hispanic, 7.4

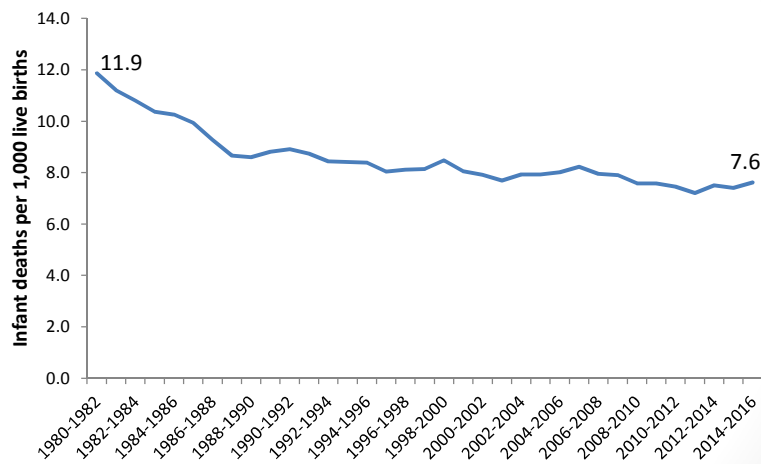
Source: Oklahoma Vital Statistics, 2016

Trend in infant mortality rate



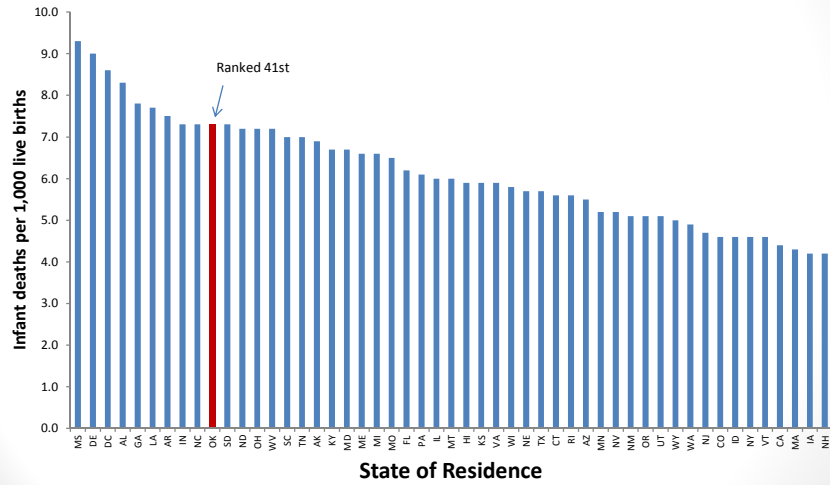
Source: Oklahoma Vital Statistics, 1980-2016

Trend in infant mortality, 3-year rate

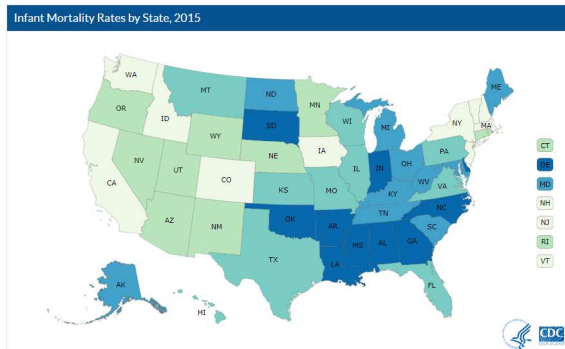


Source: Oklahoma Vital Statistics, 1980-2016, 3-year moving rates

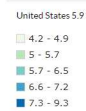
Infant mortality rate by state



Source: CDC Wonder, 2015

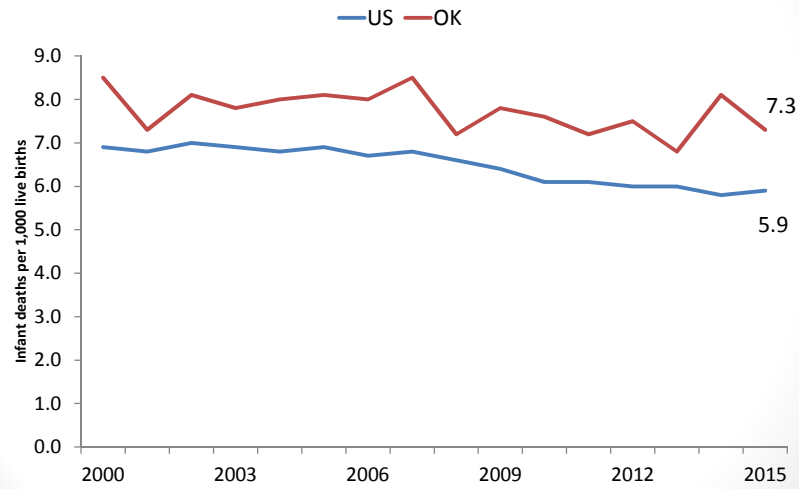


Death Rates¹



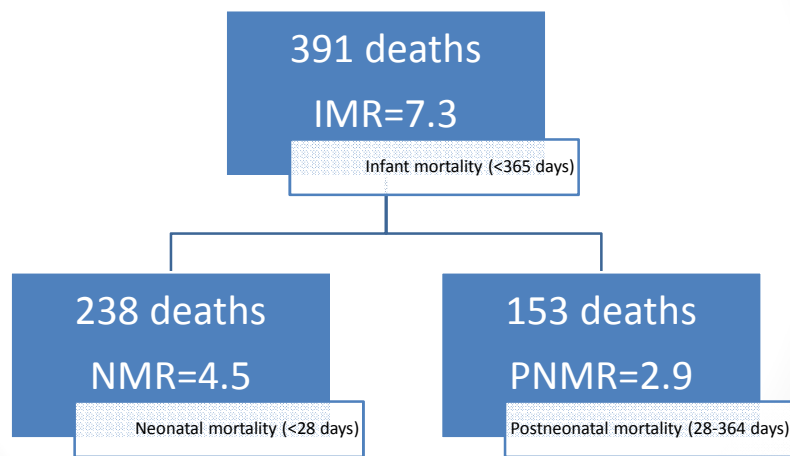
Source: CDC Wonder, 2015

Infant mortality rate: US vs. OK



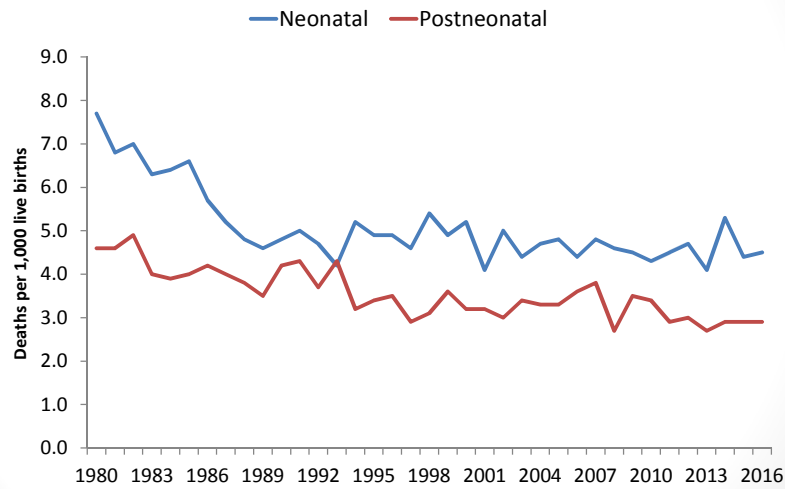
Source: CDC Wonder, 2000-2015

Infant mortality: age at death



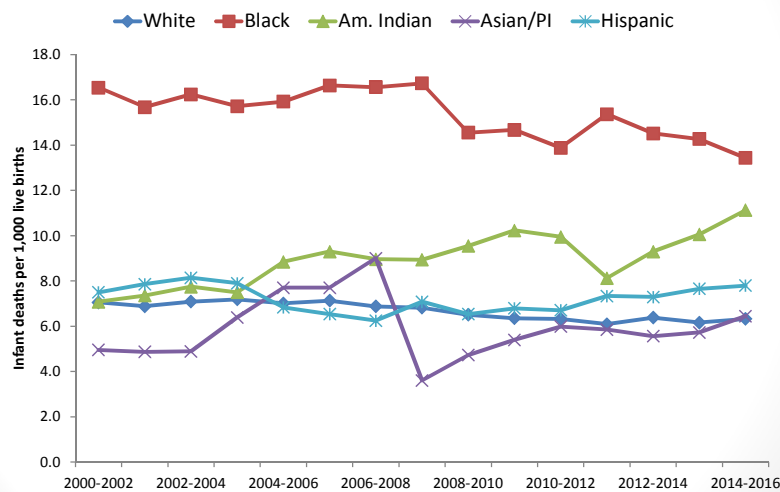
Source: Oklahoma Vital Statistics, 2016

Neonatal & postneonatal mortality rates



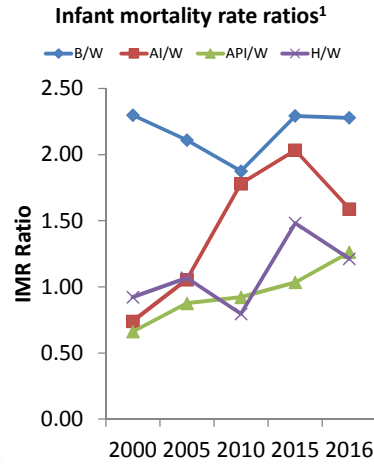
Source: Oklahoma Vital Statistics, 1980-2016

Infant mortality rate: race and Hispanic origin



Source: Oklahoma Vital Statistics, 2000-2016, 3-year rolling rates

Infant mortality: race & ethnic disparity



Race /ethnicity	Pop ² %	Birth ³ %	Infant death ³ %
White	77.9	74.2	61.4
Black	8.9	10.5	19.7
Am. Indian	10.6	11.8	15.3
Asian/PI	2.7	3.5	3.6
Hispanic	10.3	14.4	14.4

1 Oklahoma Vital Statistics, 2000, 2005, 2010, 2015-2016
 2 U.S. Census Bureau, 2016
 3 Oklahoma Vital Statistics, 2016

Infant mortality rate by select maternal characteristics

Characteristic	IMR
Age	
15-19	10.0
20-24	7.6
25-29	6.4
30-34	6.3
≥35	7.9
Education	
<HS	9.6
HS	8.5
>HS	5.4
Marital Status	
Married	5.7
Not Married	9.6

Source: Oklahoma Vital Statistics, linked infant death/birth, 2011-2015

Top causes* of infant death

Cause	2007-2009†	2014-2016†	% change
Congenital malformations (Q00-Q99)	180.85	164.75	-9%
Disorders related to short gestation and low birth weight (P07)	119.96	154.06	28%
Sudden infant death syndrome (SIDS, R95)	43.23	92.44	114%
Newborn affected by maternal complications of pregnancy (P01)	32.27	54.08	68%
Accidents (unintentional injuries, V01-X59)	24.36	39.62	63%

* Based on International Classification of Diseases, 10th Revision
 † Rates are per 100,000 live births
 Source: Oklahoma Vital Statistics

Top causes† of infant death by race/ethnicity

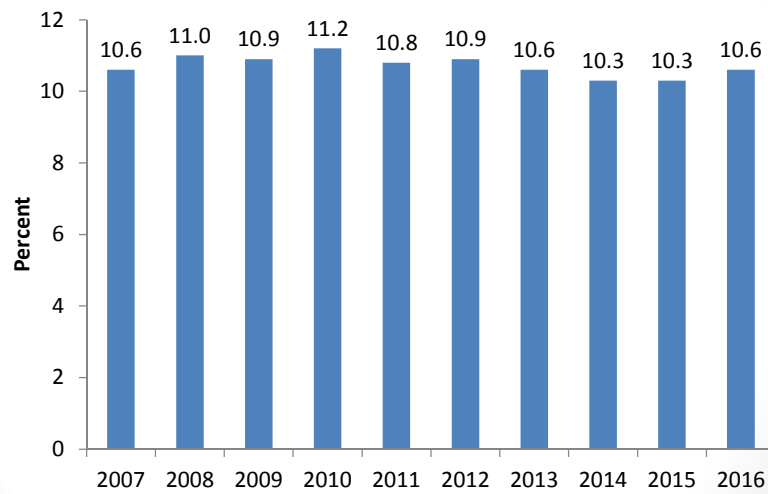
- **White & Hispanic**
 1. Congenital anomalies (Q00-Q99)
 2. Disorders related to short gestation and low birth weight (P07)
 3. Sudden Infant Death Syndrome (SIDS, R95)
- **Asian/Pacific Islander**
 1. Disorders related to short gestation and low birth weight (P07)
 2. Congenital anomalies (Q00-Q99)
 3. Newborn affected by maternal complications of pregnancy (P01)
- **Black & American Indian**
 1. Disorders related to short gestation and low birth weight (P07)
 2. Congenital anomalies (Q00-Q99)
 3. Sudden Infant Death Syndrome (SIDS, R95)

†Based on International Classification of Diseases, 10th Revision
 Source: Oklahoma Vital Statistics, 2012-2016

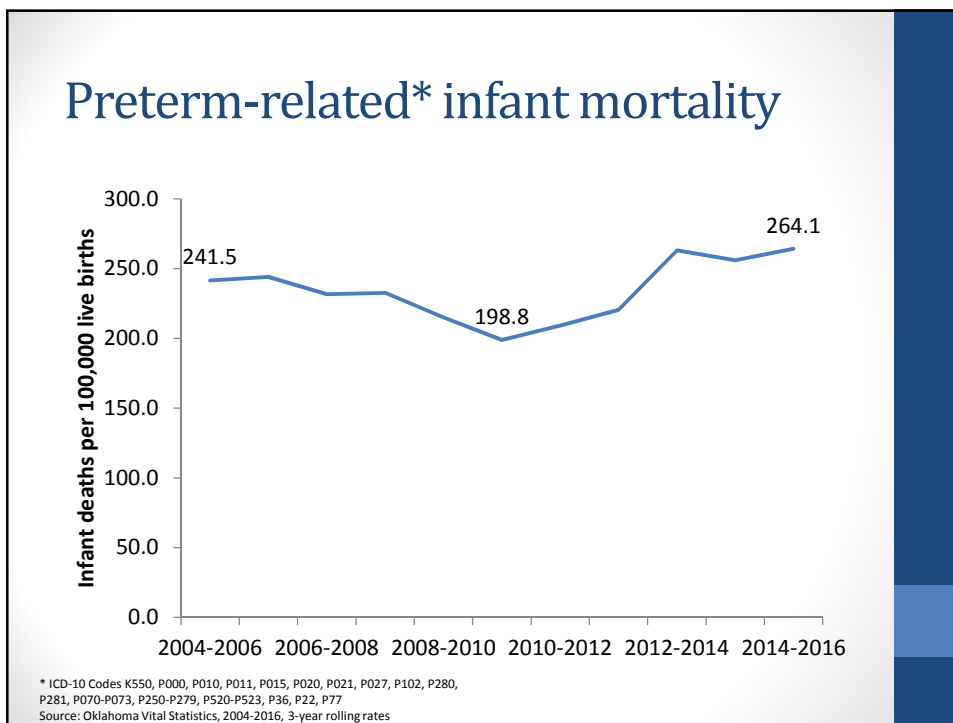
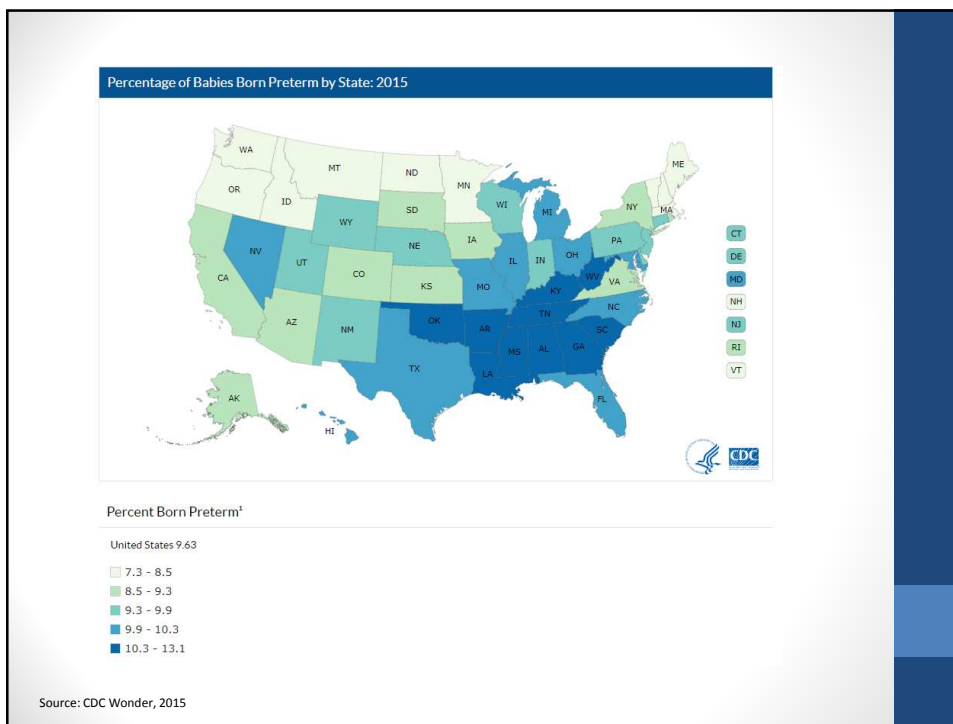
Infant mortality - priority areas

- Prematurity
- Infant safe sleep
- Breastfeeding
- Infant injury
- Maternal mood disorder
- Preconception/interconception care
- Tobacco cessation

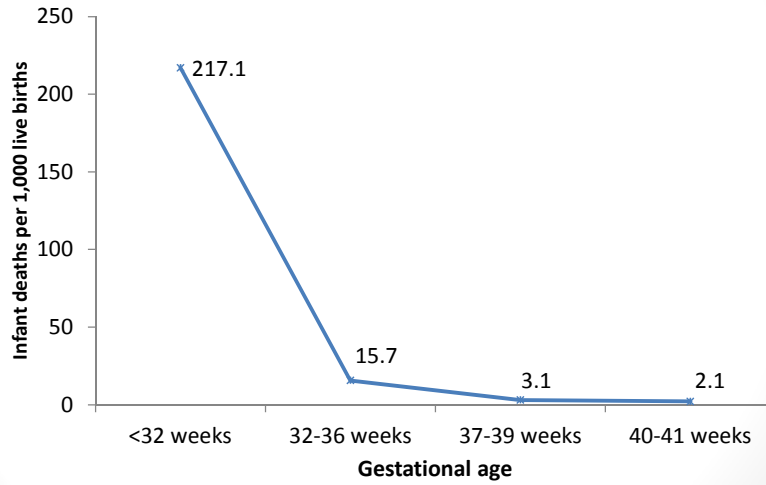
Percent of births delivered preterm (< 37 weeks)



Source: Oklahoma Vital Statistics, 2007-2016

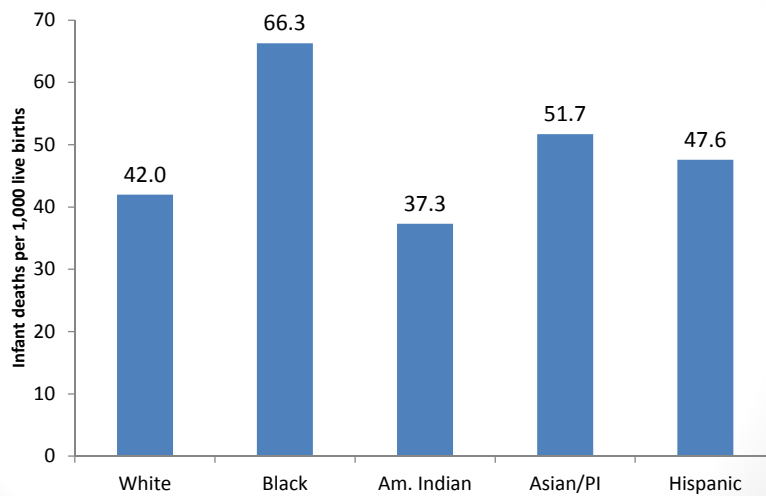


Infant mortality rate by gestational age – singleton births



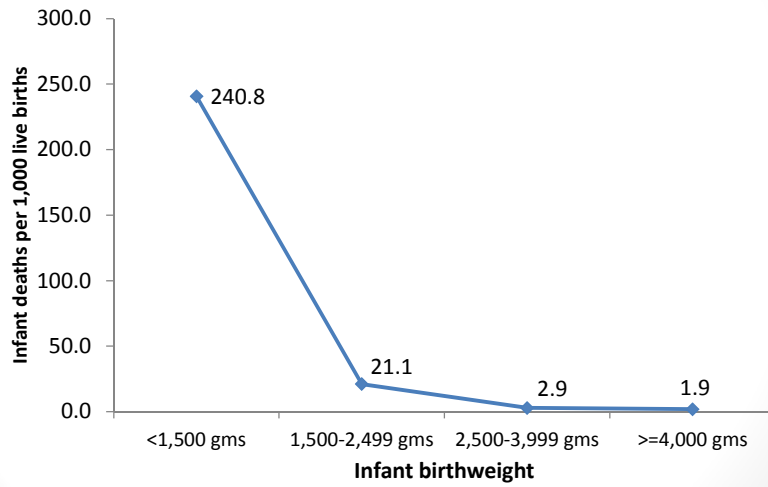
Source: Oklahoma Vital Statistics, linked infant death/birth, 2011-2015

Infant mortality rates among preterm* births, by race/ethnicity – singleton births



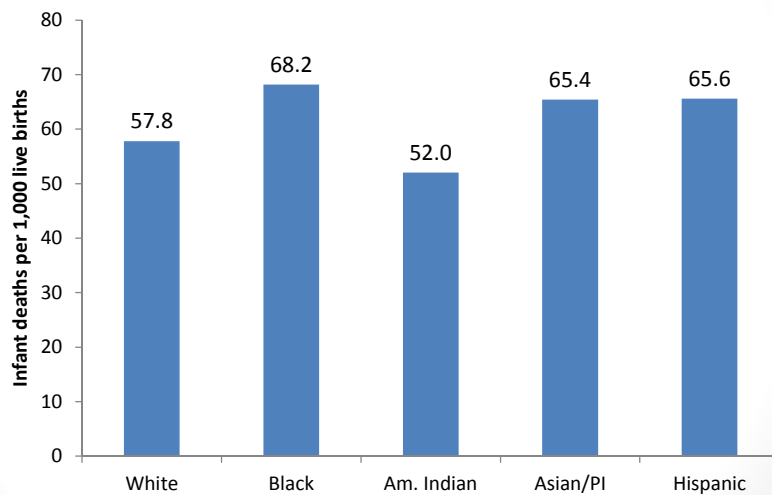
*Birth prior to 37 weeks gestation
Source: Oklahoma Vital Statistics, linked infant death/birth, 2011-2015

Infant mortality rate by birthweight – singleton births



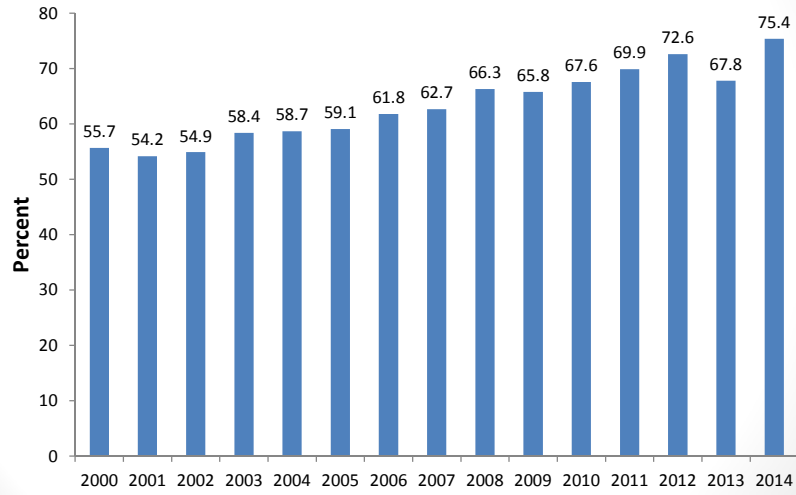
Source: Oklahoma Vital Statistics, linked infant death/birth, 2011-2015

Infant mortality rate among low birth weight* infants, by race/ethnicity – singleton births



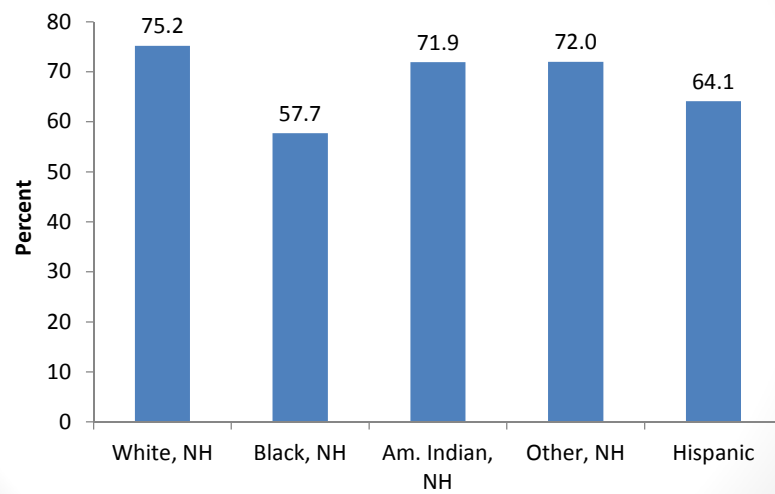
*Birthweight <2,500 grams
Source: Oklahoma Vital Statistics, linked infant death/birth, 2011-2015

Percent of infants laid on back to sleep



Source: PRAMS, 2000-2014

Percent of infants most often laid on back to sleep, by race/Hispanic origin



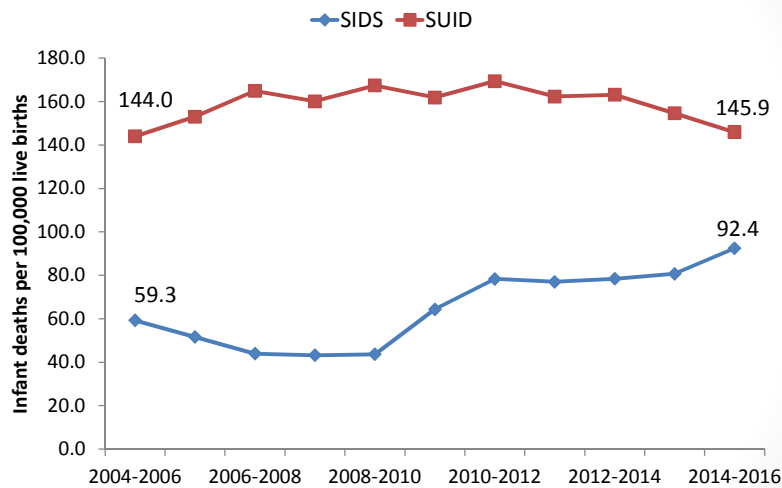
Source: PRAMS, 2014

Infant sleep practices

Practice	White, NH	Black, NH	Am. Indian, NH	Hispanic
My baby sleeps in a crib or portable crib (Pack-N-Play)	89.4	74.4	79.1	81.5
My baby sleeps on a firm or hard mattress	83.3	69.2	79.3	76.3
My baby sleeps with a pillow and/or stuffed toys	7.1	12.4	8.0	14.2
My baby sleeps with bumper pads	27.1	21.1	29.6	36.5
My baby sleeps with a loose blanket or sheet	65.8	69.8	76.9	64.2
My baby sleeps with me or another person	24.5	47.5	31.1	27.4

Source: PRAMS, 2012-2014

SIDS and SUID infant mortality



SIDS = ICD-10 code R95
 SUID = ICD-10 codes R95, R99, W75
 Source: Oklahoma Vital Statistics, 2004-2016, 3-year rolling rates

PRAMS Briefs – Preconception & Breastfeeding



Assessment of Preconception Wellness among Mothers with Medicaid

The overall health of mothers before pregnancy is of utmost importance in improving the outcome of the pregnancy and the well-being of the infant.¹ The United States is the only developed country where maternal mortality is still the leading cause of death for the fetus despite advances in prenatal care. To change this tragedy, preconception health status must improve.

Preconception wellness is defined as the social, emotional, environmental, and behavioral health of mothers before pregnancy. The National Preconception Health and Health Care Initiative has proposed a set of measures to track the quality of preconception wellness (PCW).²

These measures address the domains that affect preconception wellness such as clinical factors, social determinants of health, mental health and access to care.

among mothers enrolled in Medicaid. In this report, Medicaid coverage reflects self-reported coverage prior to pregnancy initiation either on Medicaid, Pregnancy Risk Assessment Monitoring System (PRAMS) 2012–2014, or were enrolled in a health plan that reported a history of maternal reported having Medicaid prior to pregnancy.

Pregnancy Intention (PCW1)
Unintended pregnancies have significant negative effects on the health and well-being of the mother and child. One-third of mothers with Medicaid had an unintended pregnancy compared to one-third of all mothers without Medicaid prior to pregnancy.

Maternal Health (PCW2)
Prenatal and maternal health during a pregnancy can prevent certain birth defects in babies. Mothers with Medicaid took a multivitamin daily or on some days at a significantly lower rate than non-Medicaid mothers (49% vs. 67%, $p < 0.001$) (Fig 2).

OKLAHOMA FACTS

- Nearly 72% of Medicaid mothers had an unintended pregnancy compared to 57% of non-Medicaid mothers.
- Medicaid mothers had a much lower rate of multivitamins use prior to pregnancy.
- Three months prior to pregnancy, more 38% of Medicaid mothers enrolled compared to 26% among non-Medicaid mothers.
- More mothers on Medicaid more overweight or obese compared to non-Medicaid mothers.
- Nearly 19% of Medicaid mothers reported being diagnosed with depression compared to 10% of non-Medicaid mothers.
- Type 1 diabetes was diagnosed in 4.7% of Medicaid mothers compared to 2.2% among non-Medicaid mothers.
- Only 63.3% of Medicaid mothers received prenatal care in the first trimester compared to 77.7% among non-Medicaid mothers.

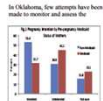
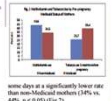


Figure 1. Prevalence of Key Hospital Baby-Friendly Practices as Experienced by Breastfeeding Mothers*, PRAMS 2012



Preconception



Hospital Baby-Friendly® Practices Experienced in 2012

Increasing the number of Baby-Friendly® Hospitals in Oklahoma is a priority for improving the health of mothers and infants. Baby-Friendly® Hospitals have undergone a rigorous assessment to ensure they have policies in place and consistently practice the evidence-based best steps to help mothers breastfeed successfully. Hospitals certified as Baby-Friendly® have increased breastfeeding initiation and duration rates, particularly among mothers with lower levels of education.

Breastfeeding mothers are asked about seven of the ten evidence-based practices of Baby-Friendly® Hospitals in the PRAMS survey. Mothers who did not breastfeed at

who did not deliver at a hospital were not asked the question. This brief will examine the prevalence of these 7 key practices for breastfeeding mothers and their collective impact on breastfeeding duration in 2012, among mothers not admitted to the neonatal intensive care unit (NICU) before admission to the NICU) were excluded because several of the Baby-Friendly® practices, like breastfeeding in the first hour after birth, may not have been possible for medical reasons.

Figure 1 highlights the 2012 prevalence in Oklahoma of the seven Baby-Friendly® practices for breastfeeding mothers. One in three breastfeeding mothers reported not receiving a gift pack with formula.

OKLAHOMA FACTS

- In 2012, 32.5% of breastfeeding infants (excluding those in the NICU) did NOT receive a hospital gift pack with formula at discharge.
- 62.0% reported their baby was given only breast milk at the hospital.
- 16.0% experienced all 7 measured Baby-Friendly® practices.
- 75.5% experienced 5 or more practices.
- 72.5% of mothers who experienced 1 or more practices breastfed for 8 weeks or longer compared to 69.0% of mothers who had 4 or fewer practices.
- Mothers with insurance funded by a job or by military health insurance were more likely to experience 3 or more practices compared to mothers with Medicaid or DSW (initial funded prenatal care).



Becoming Baby Friendly

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