

# MATERNAL AND INFANT HEALTH IN OKLAHOMA

**Coalition of Oklahoma Breastfeeding Advocates**

**Becky Mannel, MPH, IBCLC**

**Chair, Board of Directors**

**Heidi Russell, MA**

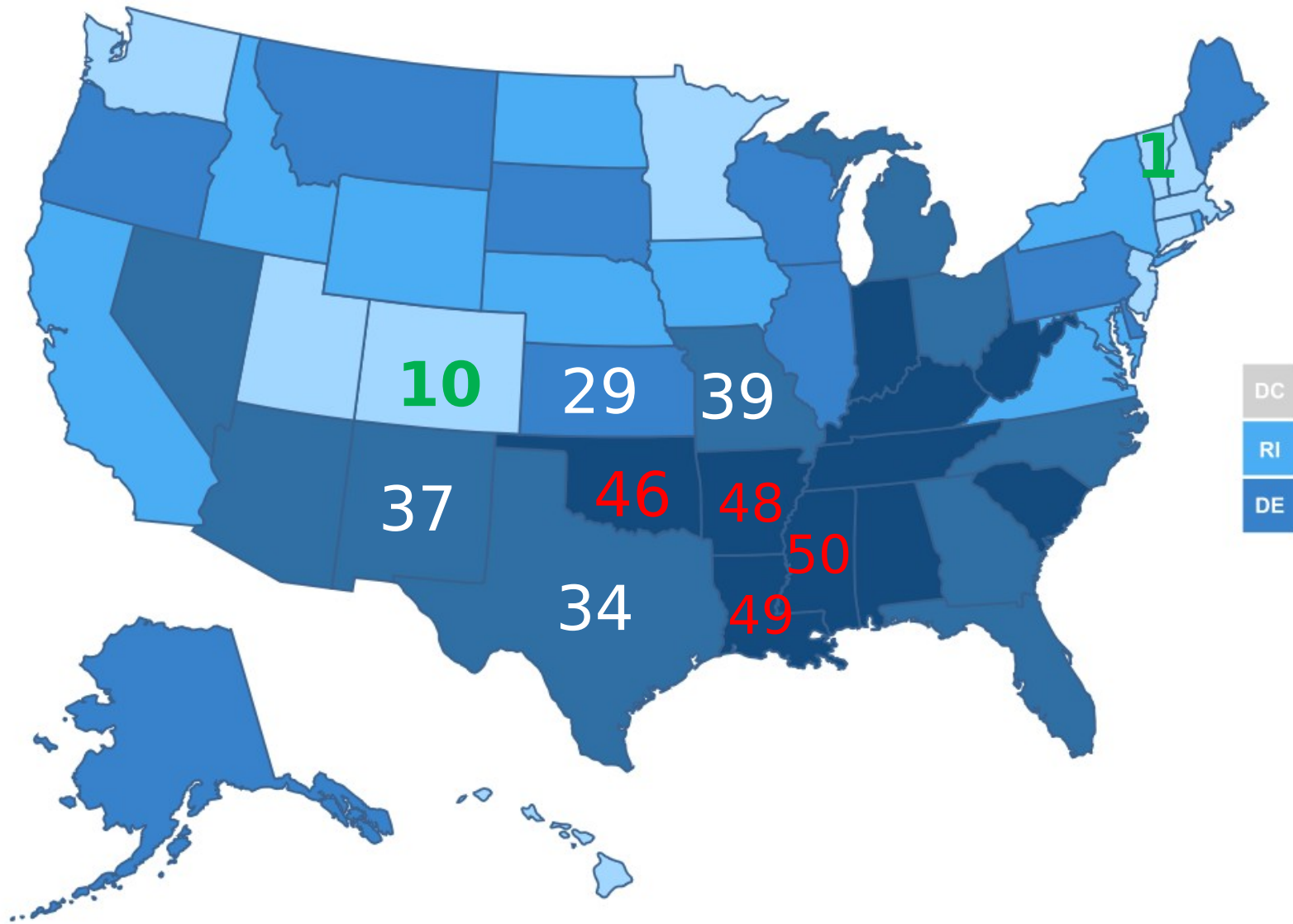
**Executive Director**



US Breastfeeding Committee



# AMERICA'S HEALTH RANKINGS 2019



1 - 10

11 - 20

21 - 30

31 - 40

41 - 50

N/A

<https://www.americashealthrankings.org/>

# Oklahoma Health of Women and Children

**OVERALL RANK:**  
**48**



	2016	2018	2019
Women	<b>47</b>	<b>40</b>	<b>45</b>
Infants	<b>39</b>	<b>43</b>	<b>45</b>
Children	<b>41</b>	<b>48</b>	<b>50</b>
<b>Overall</b>	<b>46</b>	<b>47</b>	<b>48</b>

Annual Report Rank: **47**

Senior Report Rank: **47**

**Strengths:**

- Low prevalence of excessive drinking among women
- Low cost of infant child care
- Low prevalence of homeless family households

**Challenges:**

- High percentage of uninsured women
- High prevalence of household smoke
- High prevalence of 2+ adverse childhood experiences

**State Health Department Website:**

[ok.gov/health](http://ok.gov/health)

**Highlights:**

- In the past year, preterm birth increased 8% from 10.3% to 11.1% of live births before 37 weeks gestation
- In the past year, teen births decreased 15% from 34.8 to 29.7 births per 1,000 females ages 15-19
- In the past year, HPV immunization among males ages 13-17 increased 7% from 35.0% to 37.5%
- In the past three years, tobacco use among youth ages 12-17 decreased 44% from 11.0% to 6.2%
- In the past three years, smoking among women ages 18-44 decreased 12% from 24.2% to 21.3%
- In the past three years, tobacco use during pregnancy decreased 15% from 13.1% to 11.2% of live births

# MATERNAL MORTALITY (CDC)

**NCHS**

National Center  
for Health Statistics

**2018 MATERNAL MORTALITY RATE**



**17.4 deaths**  
per 100,000 LIVE BIRTHS

OK =  
30.1

SOURCE: National Center for Health Statistics. National Vital Statistics System.  
For more information, visit <https://www.cdc.gov/nchs/maternal-mortality/>.

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# OKLAHOMA LOSES 1 MOTHER A MONTH



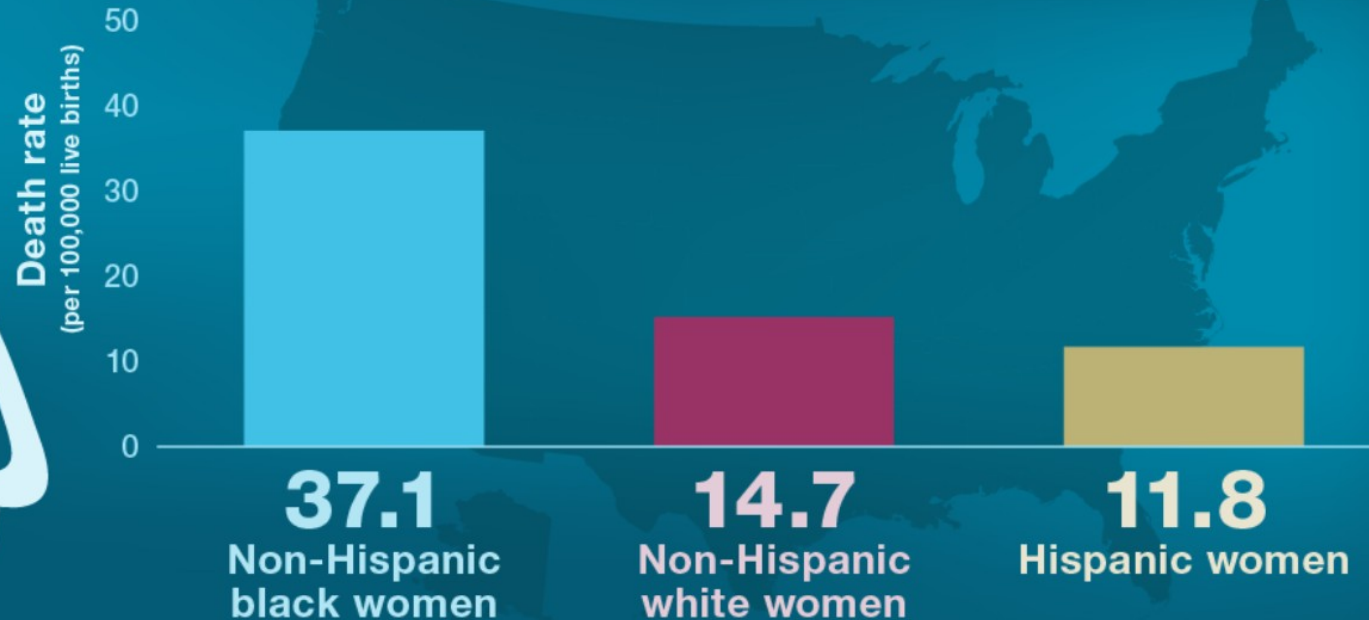
*(Image via Kassie McClung/Canva)*



# MATERNAL MORTALITY (CDC)



## 2018 MATERNAL MORTALITY STATISTICS HIGHLIGHT WIDE RACIAL AND ETHNIC GAPS

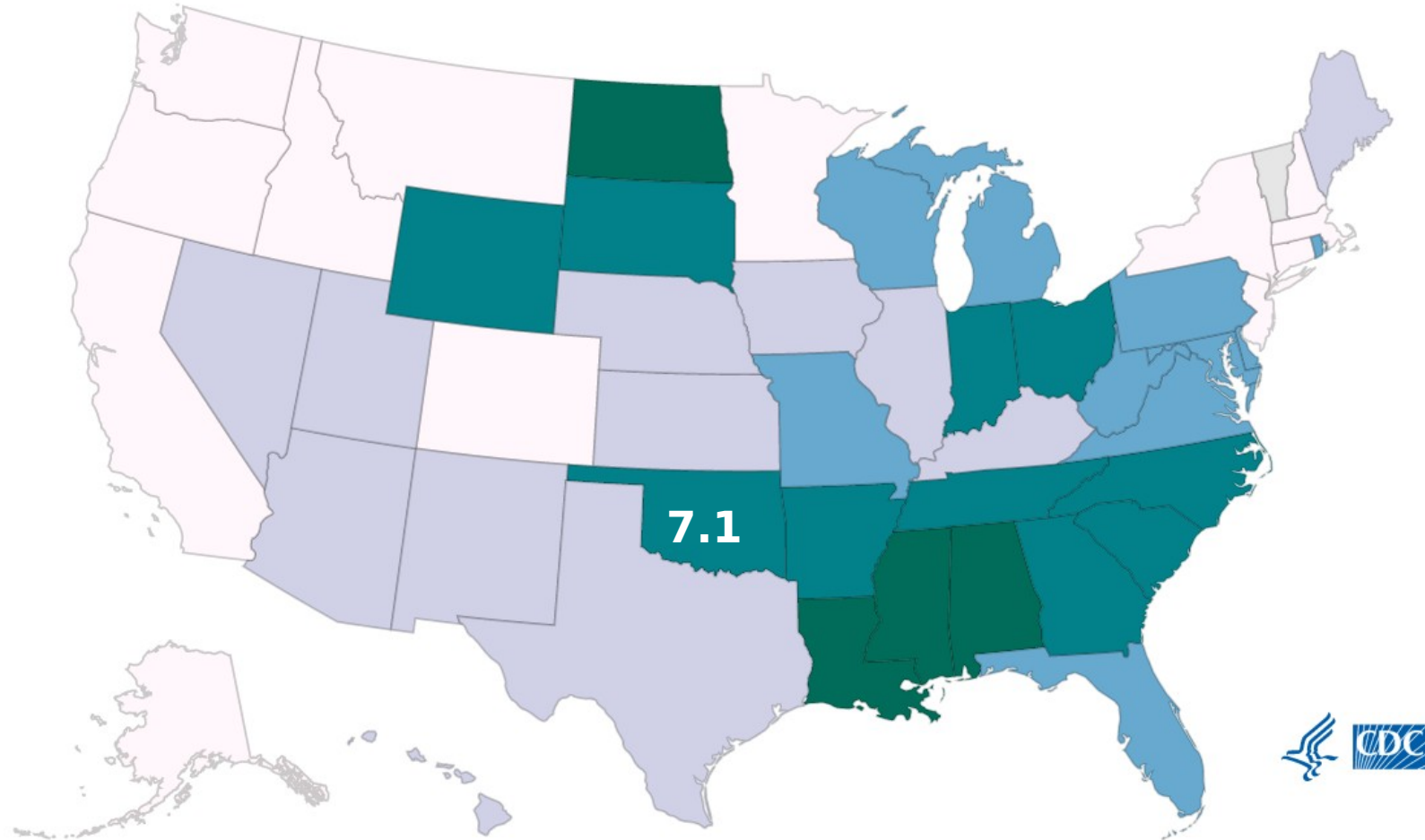


SOURCE: National Center for Health Statistics, National Vital Statistics System.  
For more information, visit <https://www.cdc.gov/nchs/maternal-mortality/>.

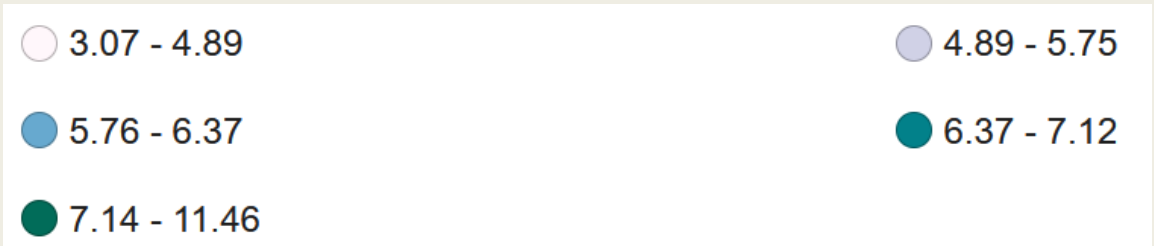
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# Infant Mortality Rates by State

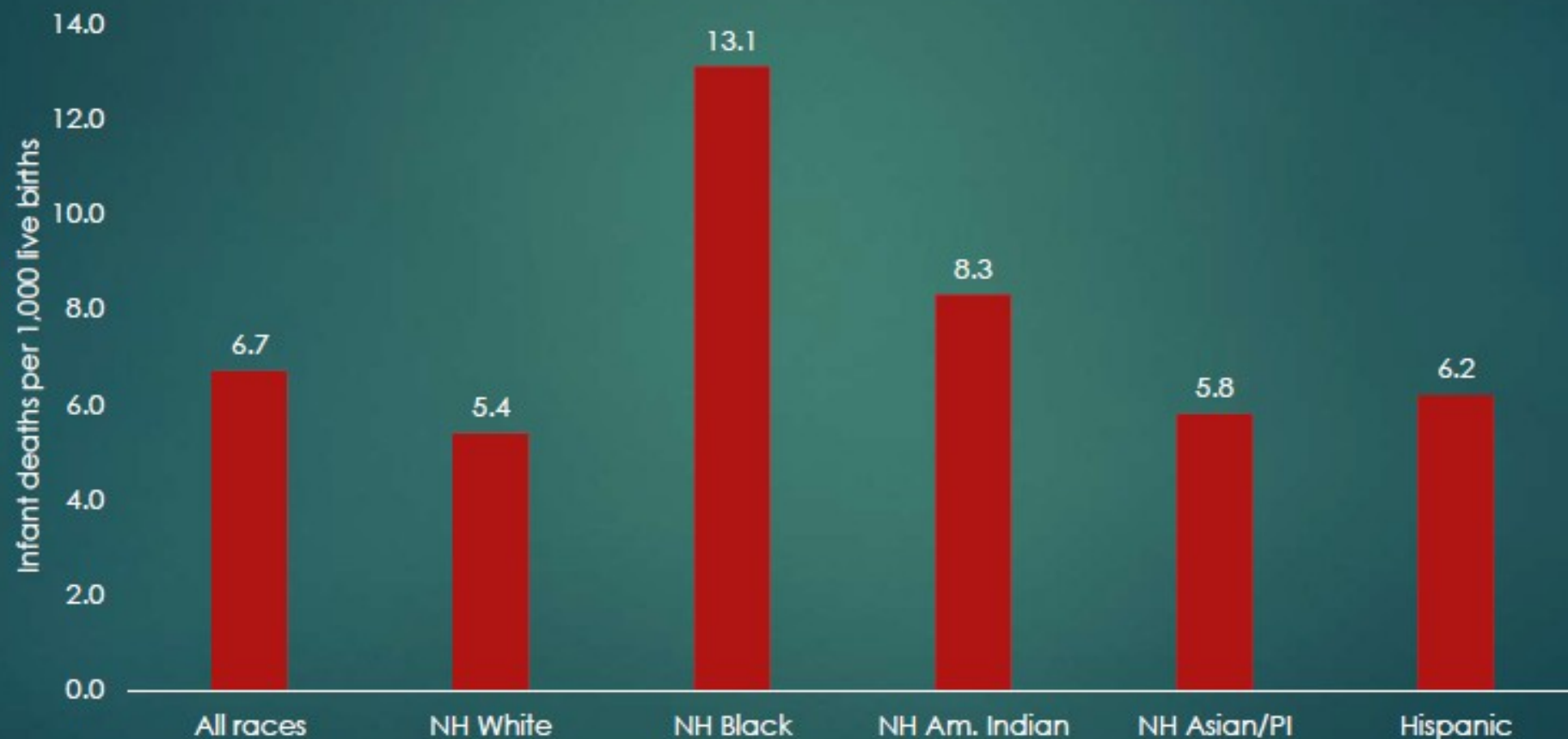


***Oklahoma loses 1 baby every day***



Source: CDC 2019

# Infant mortality by race and Hispanic origin – multiyear rates





## ***Medical recommendation for breastfeeding duration***

- Exclusive breastfeeding (EBF) for 6 months
- Continued breastfeeding to age of 1-2 years
  - *Adding age-appropriate complementary foods*

*“Continuation of breastfeeding for 1 year or longer*

*as mutually desired by mother and infant” (AAP 2012)*



# Breastfeeding is a public health issue

Even in developed countries, infants who are not breastfed face higher risks of infectious and chronic diseases, and mothers with breast cancer and metastatic



# AMERICAN JOURNAL OF PUBLIC HEALTH

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## PREVENTION OF INFANT MORTALITY BY BREAST FEEDING

By WILLIAM H. DAVIS, M.D.,

*Vital Statistician of Boston Board of Health.*

Much has been said from time to time in favor of breast feeding of infants; and statements have been made that 80 or 85 per cent. of infant deaths occur among bottle-fed babies.

Published in 1912

# Breastfeeding: Important for the Child

## Lack of breastfeeding increases the risk of:

- Obesity
- Diabetes (Type 1 and 2)
- Asthma
- GI Infections
- Crohns & Ulcerative Colitis
- Respiratory and Ear Infections
- Childhood Cancers
- Hospitalizations
- Sudden Infant Death Syndrome

AAP 2012, Dieterich et al 2017



US Breastfeeding Committee



# Breastfeeding: Important for the Preterm Baby

## Preterm Infants Not Fed Human Milk have:

- ↑ **Necrotizing Enterocolitis**
- ↑ **Suboptimal Brain Development**
- ↑ **Sepsis**
- ↑ **Eye Disease (what Stevie Wonder has)**
- ↑ **Bronchopulmonary Dysplasia**
- ↑ **SIDS**
- ↑ **Length of Stay in NICU**
- ↑ **Hospital Readmission**

AAP 2012, Dieterich et al 2017



Oklahoma Mothers' Milk Bank

Impact is  
dose-  
related



# Exclusive Breastfeeding Protects the Newborn's Intestinal Microbiome

- Breastfed infants have lower intestinal pH: 5.1-5.4
- Predominant bacteria: Bifidobacterium
- Human milk colonizes infant's intestine
- Secretory IgA and Human Milk Oligosaccharides protect
  
- Small amounts of cow-milk based formula increase the pH and increase prevalence of disease-causing bacteria, e.g. E. coli.

# Breastfeeding: Important for the Mother

Breastfeeding is associated with reduced risk for maternal:

- Breast cancer
- Ovarian cancer
- Endometrial cancer
- Diabetes (Type 2)
- Postpartum depression
- Cardiovascular disease
- Metabolic syndrome
- Rheumatoid Arthritis
- Anemia in short birth intervals
- Postpartum weight retention
- Child abuse/neglect



For every 597 women who optimally breastfeed, **one maternal OR child death is prevented.**

*Enabling* **optimal breastfeeding**  
*would prevent* **2619 maternal deaths**  
**& 721 child deaths** *annually in the U.S.*

# LEADING CAUSES OF DEATH IN US WOMEN CDC 2017

Race/Origin	Heart Disease	Cancer	3 <sup>rd</sup> Cause
Hispanic	19.6%	22.0%	Stroke
Non-Hispanic American Indian	16.5%	17.6%	Injuries
Non-Hispanic Black	22.8%	21.5%	Stroke
Non-Hispanic White	21.9%	20.3%	Chronic Respiratory Disease

# Top causes of infant mortality by race and Hispanic origin

## ▶ Non-Hispanic, White

1. Congenital anomalies
2. Disorders related to short gestation and low birth weight
3. Sudden Infant Death Syndrome

## ▶ Non-Hispanic, Black

1. Disorders related to short gestation and low birth weight
2. Congenital anomalies
3. Sudden Infant Death Syndrome

## ▶ Non-Hispanic, American Indian

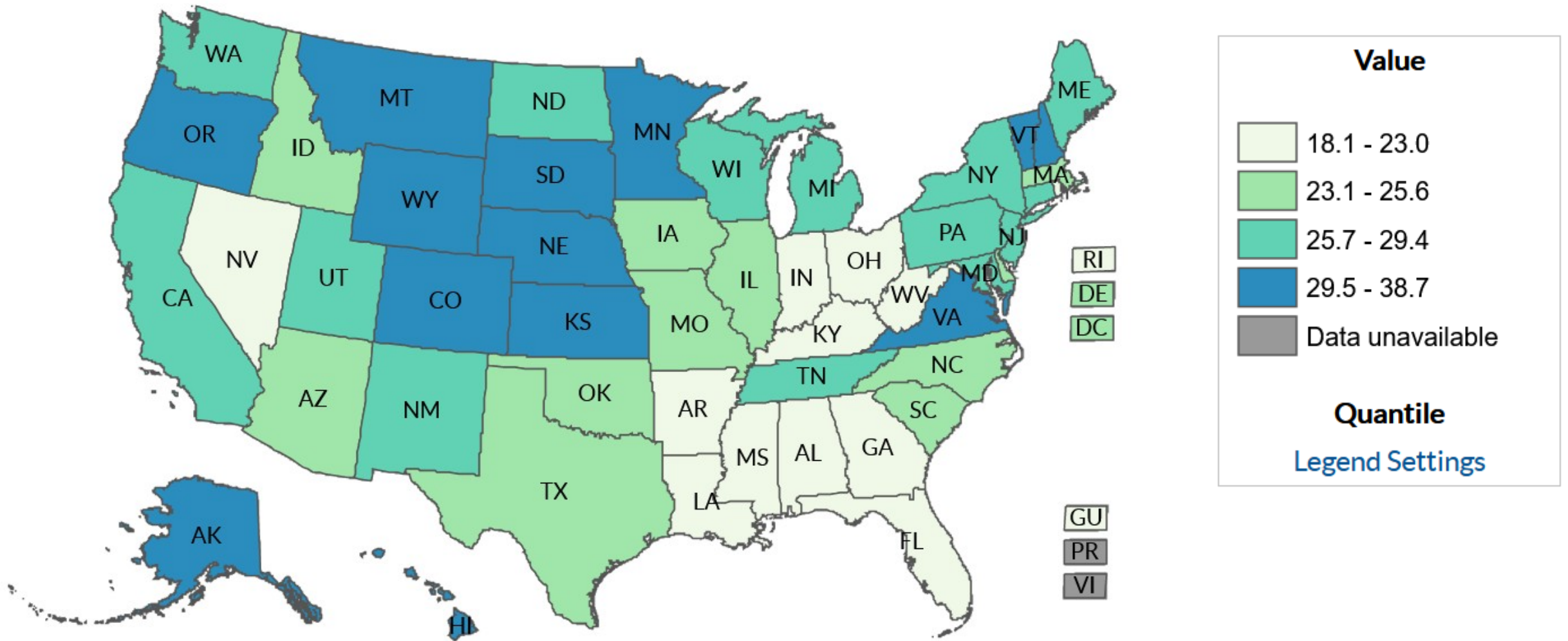
1. Congenital anomalies
2. Sudden Infant Death Syndrome
3. Disorders related to short gestation and low birth weight

## ▶ Hispanic

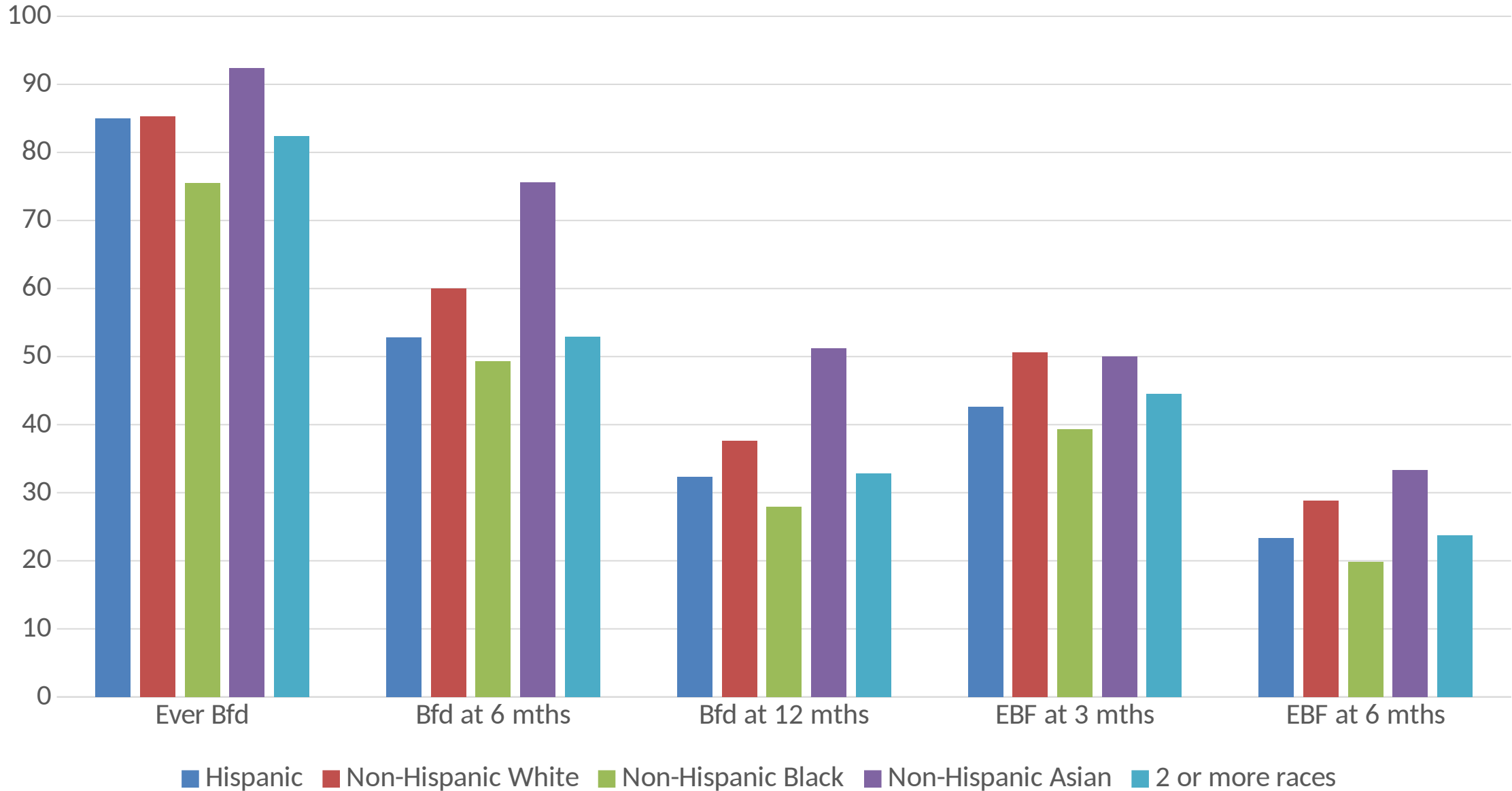
1. Disorders related to short gestation and low birth weight
2. Congenital anomalies
3. Newborn affected by maternal complications of pregnancy



# Percent of Infants EBF Through 6 Months Babies Born in 2017 (CDC 2020)



## Breastfeeding by Race/Ethnicity Babies Born in 2018 (CDC 2021)



# Breastfeeding Saves Lives Calculator

[www.usbreastfeeding.org/saving-calc](http://www.usbreastfeeding.org/saving-calc)

Accessed February 20, 2018

- Stuebe, A. M. et al. An online Calculator to estimate the impact of changes in breastfeeding rates on population health and costs. *Breastfeeding Medicine*, 2017;12(10): 645-658.
- Stuebe AM, Horton BJ, Chetwynd E, Watkins S, Grewen K, Meltzer-Brody S. Prevalence and risk factors for early, undesired weaning attributed to lactation dysfunction. *J Womens Health (Larchmt)*. 2014;23(5):404-412.
- Bartick MC, Schwarz EB, Green BD, et al. Suboptimal breastfeeding in the United States: Maternal and pediatric health outcomes and costs. *Matern Child Nutr*. 2016.

# Based on expected impact on 5 maternal and 9 pediatric diseases

## **MATERNAL**

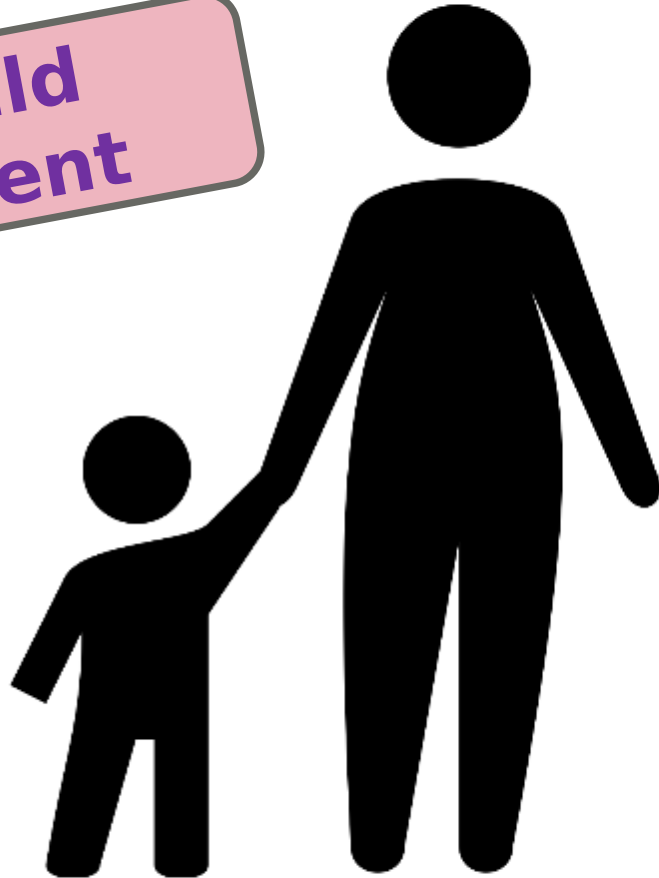
- Pre-menopausal ovarian cancer
- Breast cancer
- Hypertension
- Diabetes
- Myocardial Infarction

## **PEDIATRIC**

- Acute Lymphoblastic Leukemia
- Crohn's Disease
- Ulcerative Colitis
- Sudden Infant Death Syndrome
- Ear Infections
- Gastrointestinal Illness
- Obesity
- Lower Respiratory Tract Infection
- Necrotizing Enterocolitis

# If we achieved 80% EBF at 6 Months

Would prevent



## Medical Costs

**\$33,086,161**

(\$21,996,764 to \$45,822,207)

## Non Medical Costs

**\$14,004,363**

(\$11,492,067 to \$16,924,695)

## Death Costs

**\$164,496,827**

(\$42,578,303 to \$300,675,219)

## Maternal deaths

**28**

(-7, 67)

## Child deaths

**9**

(2, 17)



# Child Economic Well-Being in Oklahoma

24% of Oklahoma children live in poverty

- *“Growing up in **poverty is one of the greatest threats to healthy child development.** Poverty and financial stress can impede children’s cognitive development and their ability to learn.”*

*Annie E. Casey Foundation*

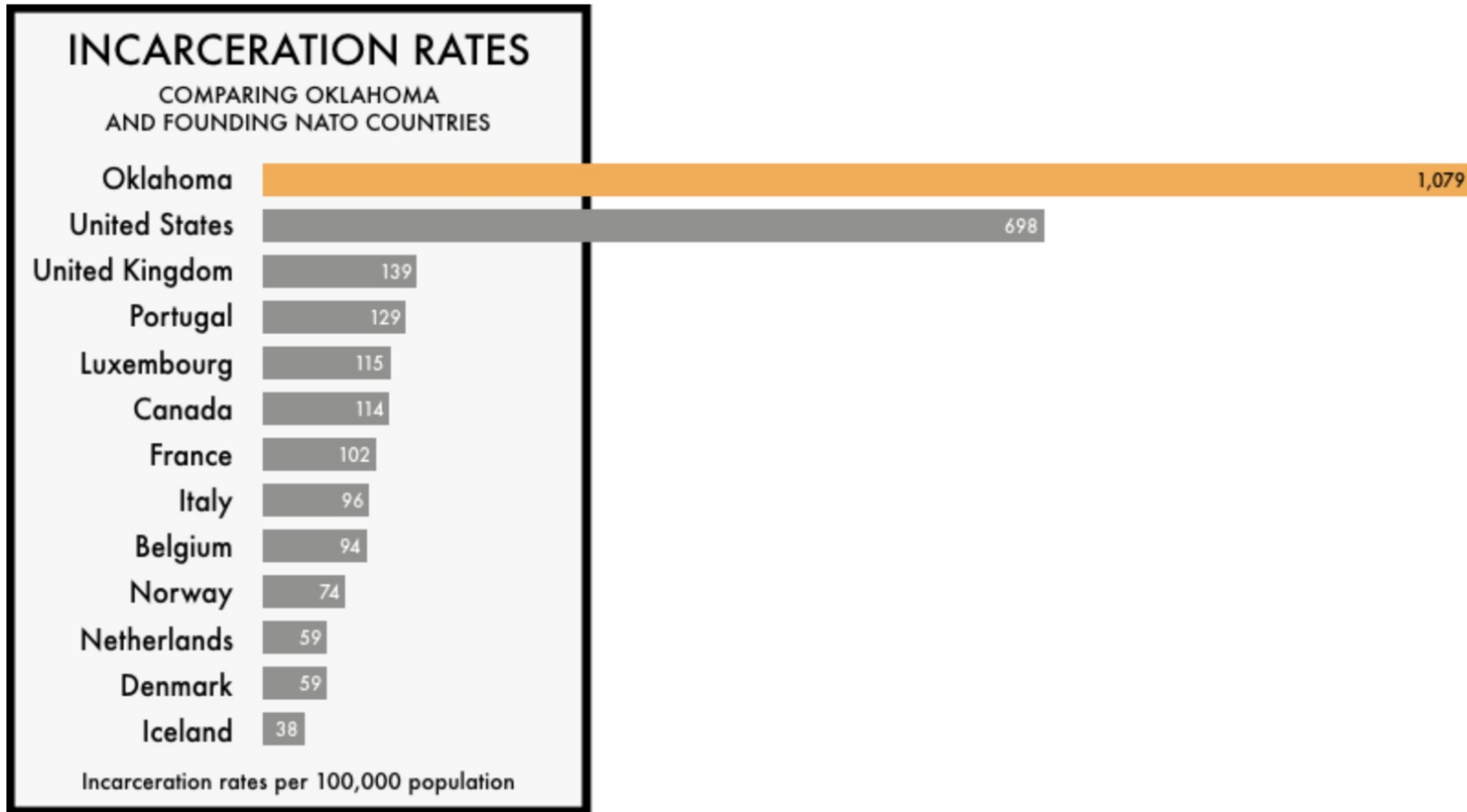


# Child Economic Well-Being in

- **Oklahoma** Breastfeeding provides equal opportunity to all children for optimal development

- *“Breastfeeding is a child’s first inoculation against death, disease, and poverty, but also their most enduring investment in physical, cognitive, and social capacity.” Keith Hansen, Vice President, World Bank*





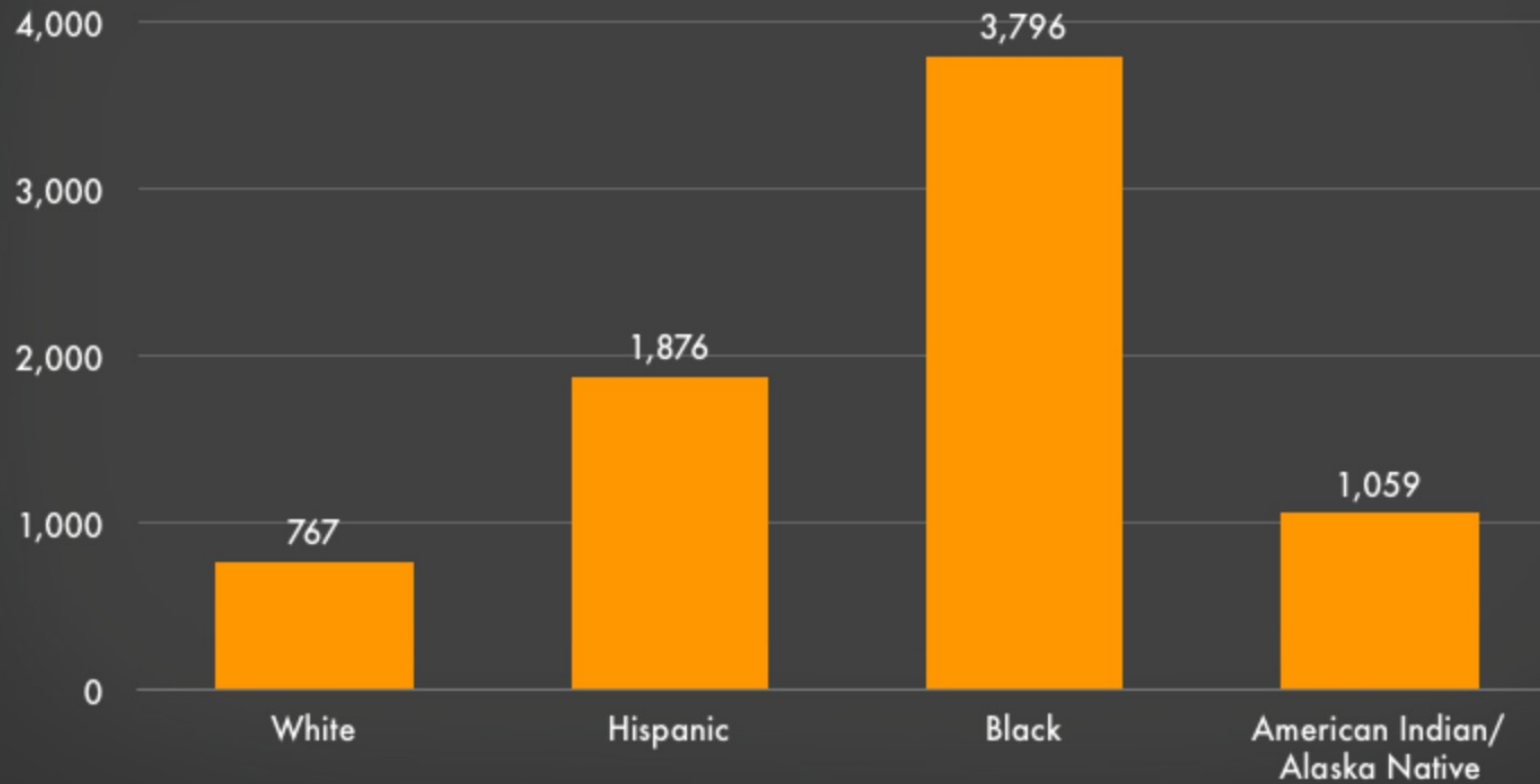
Source: <https://www.prisonpolicy.org/global/2018.html>

**Accepting our highest-in-the-world incarceration rate means believing that Oklahomans are the worst people**

People of color are overrepresented in prisons and jails

## OKLAHOMA INCARCERATION RATES BY RACE/ETHNICITY, 2010

(Number of people incarcerated per 100,000 people in that racial/ethnic group)



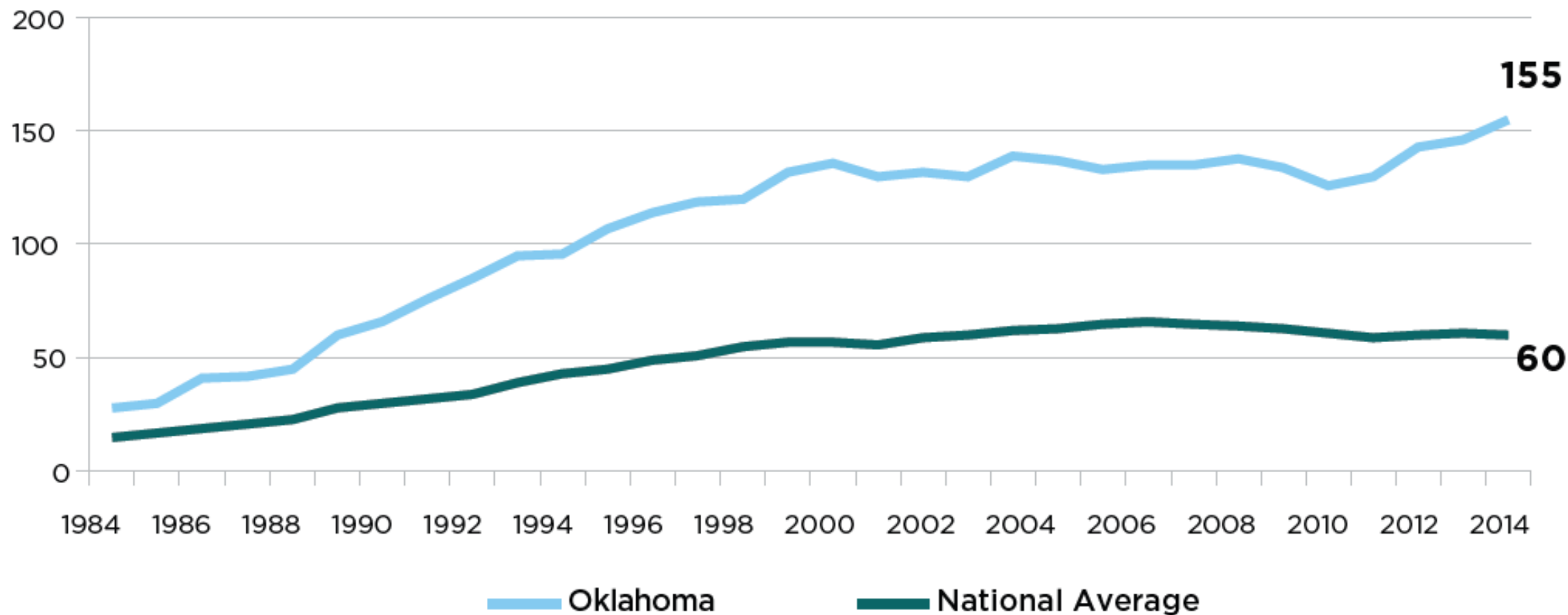
**PRISON**  
POLICY INITIATIVE

Source: Calculated from U.S. Census 2010 Summary File 1. Incarceration populations are all types of correctional facilities in a state, including federal and state prisons, local jails, halfway houses, etc. Statistics for Whites are for Non-Hispanic Whites.



**Figure 5. Oklahoma Has the Highest Female Imprisonment Rate in the Nation, More Than Twice as High as the National Average and Growing**

FEMALE IMPRISONMENT RATES, 1984-2015



Source: Data from the Bureau of Justice Statistics, Correctional Statistical Analysis Tool



# 80 PERCENT OF OKLAHOMA'S INCARCERATED WOMEN ARE MOTHERS

by The Black Wall Street Times | Published: July 6, 2019 | Last Updated on January 4, 2021



# Report from the Oklahoma Justice Reform Task Force, 2018



- **Female prison admissions: 83% nonviolent crimes  
42% drug crimes**
- **Incarcerated women: 70% with mental illness**
- **Victims of abuse: ???**

**Majority are FIRST TIME  
OFFENDERS  
Many are single mothers  
Half were living with their children**

# Tulsa World 8-day Breaking the Cycle series 2019

Oklahoma and Adverse Childhood Experiences

## SPECIAL REPORT: BREAKING THE CYCLE



**OKLAHOMA  
LEADS THE  
NATION IN  
CHILDHOOD  
TRAUMA.**

How are the scars  
we leave on our  
children affecting our  
state, and what can  
we do about it?



# Adverse Childhood Experiences (ACEs)

■ Traumatic events experienced before age 18 including:

- *all forms of child abuse*
- *household member who is incarcerated*
- *exposure to domestic violence*
- *Neglect*
- *parent with an untreated mental illness or substance use disorder*

■ ACEs disrupt brain development → social, emotional, and cognitive problems

■ Increased likelihood of:

- *risky health behaviors*
- *chronic health conditions*
- *difficulty functioning at school/work*
- *early death.*



**No. 1 in female incarceration rates**

**No. 1 in the nation in incarceration rates when other factors such as the juvenile and jail populations are included, according to a 2018 study by the nonprofit organization Prison Policy Initiative.**

**No. 1 in heart-disease mortality**

**No. 2 in male incarceration rates**

**No. 3 in divorce with 13.1% of the state population reporting at least one marriage as ending in that manner, according to U.S. Census Bureau American Community Survey statistics for 2013-17.**

**No. 5 in cancer deaths per capita, according to the U.S. Centers for Disease Control and Prevention.**

**No. 5 in teen smoking with an estimated 12.5% of teens, according to CDC data.**

**No. 9 per capita in substantiated child abuse cases, according to the U.S. Department of Health and Human Services.**



### **Part 3: 'All I ever knew.' Drugs. Alcohol. Jail. Oklahoma's children repeat the patterns of their parents**



**Tara Peterson never knew a life other than one filled with drugs and alcohol. Her parents abused them. She did too. With a jail sentence looming, and her own daughter growing up the same way she did, the cycle seemed destined to repeat itself. Then came Women in Recovery. By Michael Overall**

*IAN MAULE/Tulsa World*

# Incarcerated Mothers

- About 4,000 women give birth in prisons in the US
- In states with no prison nursery program, infants are removed from their mothers at 48-72 hours
- Most prison rules prohibit breastfeeding during visits
- Some prisons allow pumping and milk storage
  - *Alabama*
- 9 states have prison nursery programs:
  - *Illinois, Indiana, Nebraska, New York, Ohio, South Dakota, Washington, West Virginia, Wyoming*

Shafer et al, 2018



UNICEF UK



Fighting for Her Right to Breastfeed

# The Significance of Breastfeeding to Incarcerated Pregnant Women

Three main themes about wanting to breastfeed:

1. They're removed from familiar social/cultural context so uncertain about their breastfeeding plans
2. Separation from high-risk lifestyle increases desire for new start in motherhood
3. Planning to breastfeed = new start and chance to redefine their maternal identity





OU Health

THANK YOU!



OBRC, with permission



OU Health



US Breastfeeding Committee