



OPQIC

OKLAHOMA PERINATAL **QUALITY**  
IMPROVEMENT COLLABORATIVE

OPQIC

Creating a culture of excellence,  
safety and equity in perinatal  
care



# Oklahoma Perinatal Quality Improvement Collaborative

We work to create a culture of excellence, safety  
and equity in perinatal care in Oklahoma.

[PATIENT RESOURCES](#)

[PROFESSIONAL RESOURCES](#)



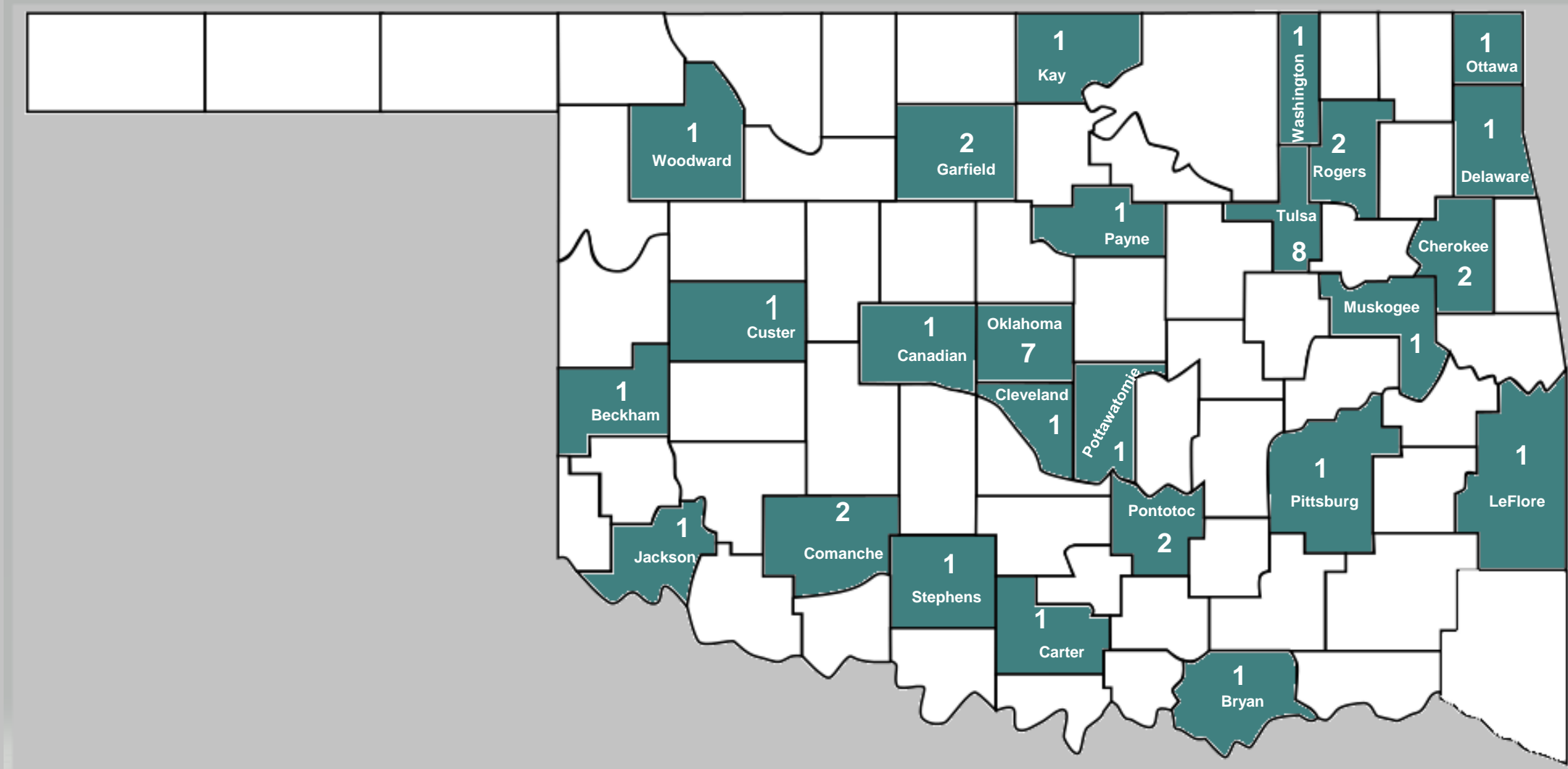
# The Landscape of Maternal and Infant Health in Oklahoma

43 birthing hospitals

47,605 annual births in 2023

49% rural location  
51% urban location

~75% in urban hospitals  
~25% in rural hospitals  
Range in 2023 = 45 – 4188 births  
~56% covered by Medicaid  
3 tribal birthing hospitals  
1 IHS birthing hospital  
5 Birth Centers  
7 Level III or IV NICUs



**Oklahoma Birthing Hospitals May 2024 = 43**

**SEVERE MATERNAL MORBIDITY**

**MATERNAL MORTALITY**



**Jenna Bellantoni, MHS | Perinatal and Reproductive Health Epidemiologist**  
MCH Assessment | Maternal and Child Health Service



Jenna Bellantoni is the Perinatal and Reproductive Health Epidemiologist in the Maternal and Child Health Service at the Oklahoma State Department of Health (OSDH). She provides epidemiological support to the Oklahoma maternal mortality review committee, state maternity and family planning programs, and federal grants focused on improving maternal and child health in Oklahoma, including the State Maternal Health Innovation (MHI) Program grant, the Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE-MM) grant, and the Title V Maternal and Child Health (MCH) Services Block grant. She is passionate about using data to understand and address issues and disparities in public health.



# Maternal and Child Health Data Portal

## Our Goal

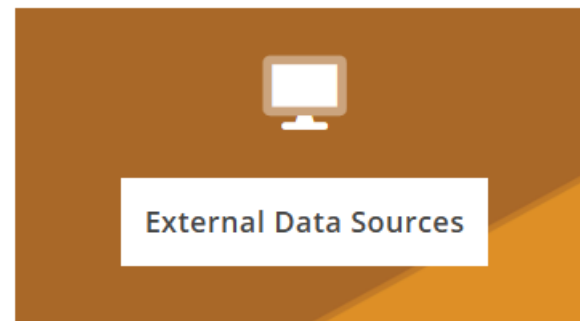
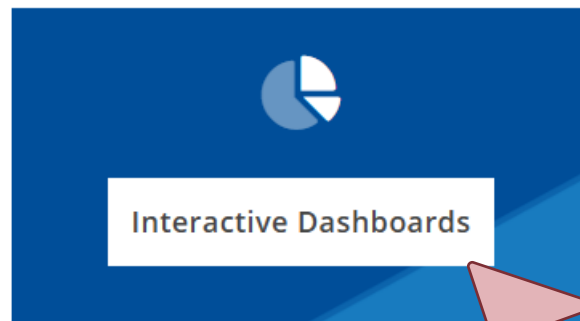
Provide a platform for quality health-related data to promote evidence-based programs, assist in policy development, and improve health outcomes for mothers and children.

## About

The Data Portal provides quick access to maternal, infant, and children's health information. This includes reports, factsheets/infographics, interactive dashboards, and maps.

Data displayed on the portal comes from a variety of sources, including Oklahoma Vital Records, the Youth Risk Behavior Survey (YRBS), the Pregnancy Risk Assessment Monitoring System (PRAMS), The Oklahoma Toddler Survey (TOTS), and CDC WONDER. The quality of the data from each internal source is carefully reviewed, and standardizations are made when necessary. Aggregating data over multiple years ensures confidentiality.

Technical notes are provided under each reporting domain. Send any requests for additional information about portal indicators to Maternal and Child Health Assessment.



[Children & Family Health](#) > [Maternal and Child Health](#) > [MCH Data Portal](#) > **Interactive Dashboards**

# Interactive Dashboards



- Live Births
- Infant Deaths
- Fetal Deaths

- Women's Health
- Maternal Health



- Youth Risk Behavior Survey (YRBS)
- Teen Birth Statistics

# Perinatal and Reproductive Health Dashboard

- Live Births
- Infant Deaths
- Fetal Deaths
- Technical Notes
- Severe Maternal Morbidity

## Severe Maternal Morbidity (SMM)

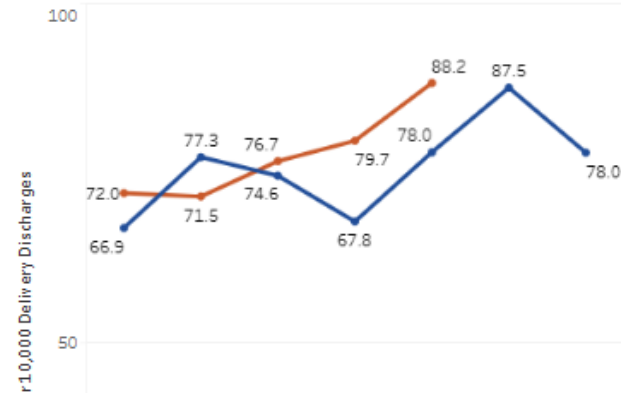
Severe Maternal Morbidity (SMM) refers to unexpected outcomes of labor and delivery that can result in significant short- or long-term health consequences. SMM is characterized by identifying in-hospital deliveries where a mother develops severe complications during labor and delivery based on a list of 21 indicators that correspond to applicable International Classification of Diseases (ICD) codes (20 excluding blood transfusions).

Rates for SMM are reported as in-patient delivery discharges with any SMM indicator per 10,000 in-patient delivery discharges.

This dashboard presents SMM in Oklahoma from 2016 through 2022 by selected variables. Blood transfusions are excluded from the working definition for the data in this dashboard. Of note, only state-licensed facilities contribute to the collection of SMM data in Oklahoma. Deliveries that occur outside of state-licensed acute care hospitals (e.g., home births, birthing centers, tribal facilities not regulated by the state) are not included in the inpatient discharge data from which SMM rates are calculated.

### SMM Data Technical Notes

Trends in Rates of SMM  
Oklahoma, 2016-2022



Rate of SMM by County of Residence  
2018-2022 \* 5-year aggregate used due to low SMM counts

Select Years:  
2018-2022





Oklahoma Maternal Health

# Morbidity & Mortality

Annual Report 2024



<https://opqic.org/mmrcreport>



# Definitions Related to Maternal Mortality

- **Maternal Mortality:** The death of a woman **while pregnant or within 42 days** of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. (WHO Definition) Rate used in the U.S. and OK for reporting purposes-denominator of **100,000 live births**. (This definition used to compare U.S. to other countries.)
- **Pregnancy Related Deaths:** The death of a woman **while pregnant or within 1 year** of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. Rate used in the U.S. and OK for reporting purposes-denominator of **100,000 live births**. (This definition most often is produced from state MMRCs.)
- **Pregnancy Associated Deaths:** The death is the death of any women, from any cause, while pregnant or within 1 year of termination of pregnancy, regardless of duration and the site of pregnancy. Rate used in the U.S. and OK for reporting purposes-denominator of **100,000 live births**. (Generally, a definition associated with timing only.)

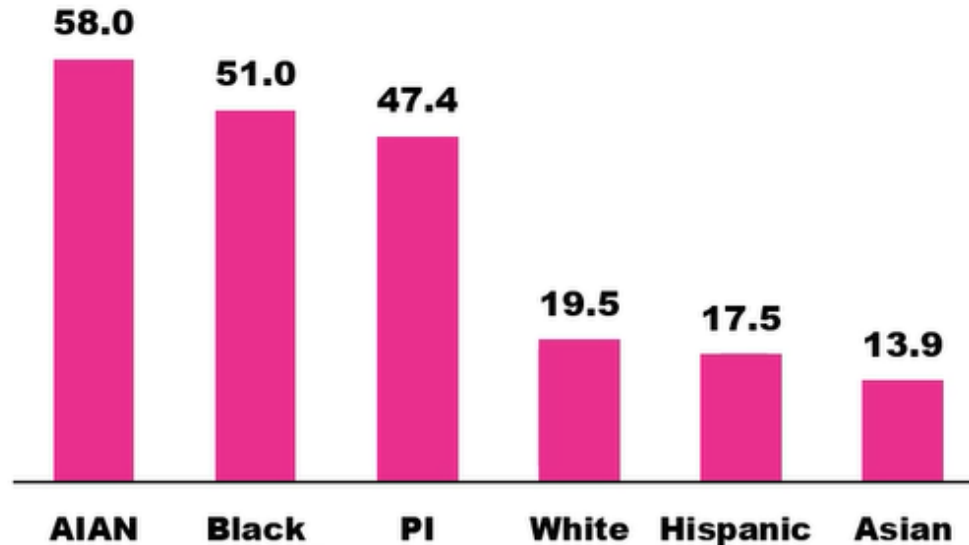
# 2024 MARCH OF DIMES US REPORT CARD

**Maternal mortality has returned to pre-pandemic rates. Still, over 800 maternal deaths occurred in 2022 and disparities by race/ethnicity persist**

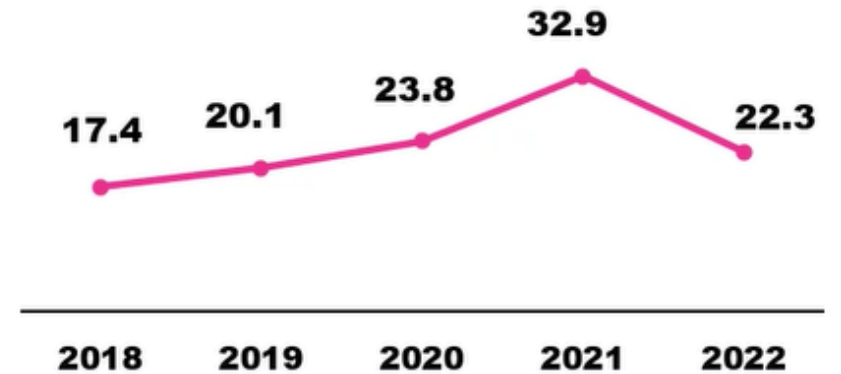
**2022  
MATERNAL  
MORTALITY  
RATE  
22.3**

Maternal mortality is a death from complications of pregnancy or childbirth that occur during the pregnancy or within six weeks after the pregnancy ends.

Maternal mortality rate (deaths per 100,000 live births) by race/ethnicity, 2018-2022



Maternal mortality rate (deaths per 100,000 live births) by year, 2018-2022



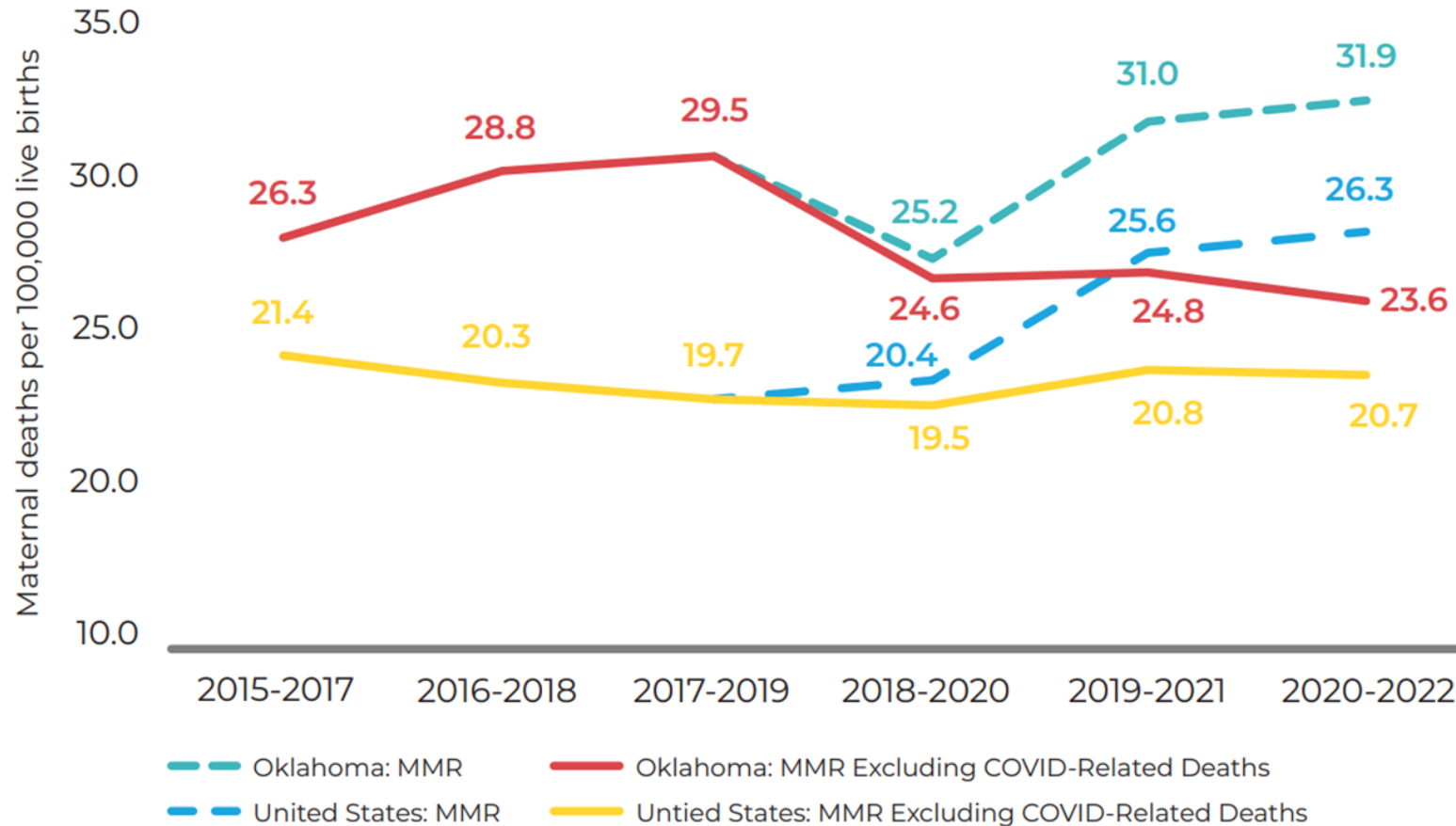
## Maternal Mortality Rate

- Healthy People 2030 Goal = 15.7
  - ▶ 2020-2022 **Oklahoma** Maternal Mortality Rate\* for maternal deaths within 42 days of termination of pregnancy is **31.9**
  - ▶ 2022 **United States** Maternal Mortality Rate\* for maternal deaths within 42 days of termination of pregnancy is **22.3**

\*MMR = number of maternal deaths (while pregnant or within 42 days of end of pregnancy) excluding accidents and incidental causes, per 100,000 live births

Source: Oklahoma Vital Statistics, 2020-2022; National Center for Health Statistics, Maternal Mortality Rates in the United States, 2022

Chart 8: three-year rolling maternal mortality rate (MMR) excluding and including COVID-related deaths, Oklahoma and United States 2015 - 2022



**Source:** Oklahoma Vital Statistics, 2015 - 2022; CDC Wonder, Mortality and Natality, 2015 - 2022

**Definitions:** Maternal death - underlying cause of death A34, O00-O95, O98-O99; COVID-related death - any multiple cause of death U07.1



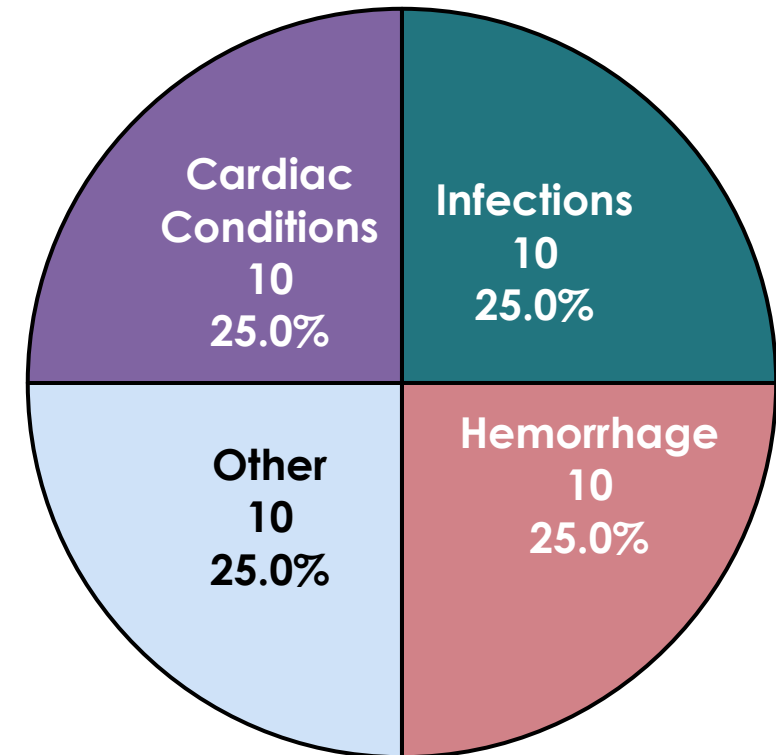
# Maternal Mortality Review

- 80 deaths occurring from 2017-2021 reviewed
- Age range: 15-42 years
- 21 (26.3%) were of an advanced maternal age (>35 years)
- Poverty: 40 cases had Medicaid coverage (61.5%\*)
- 42 deaths (52.5%) were pregnancy-related

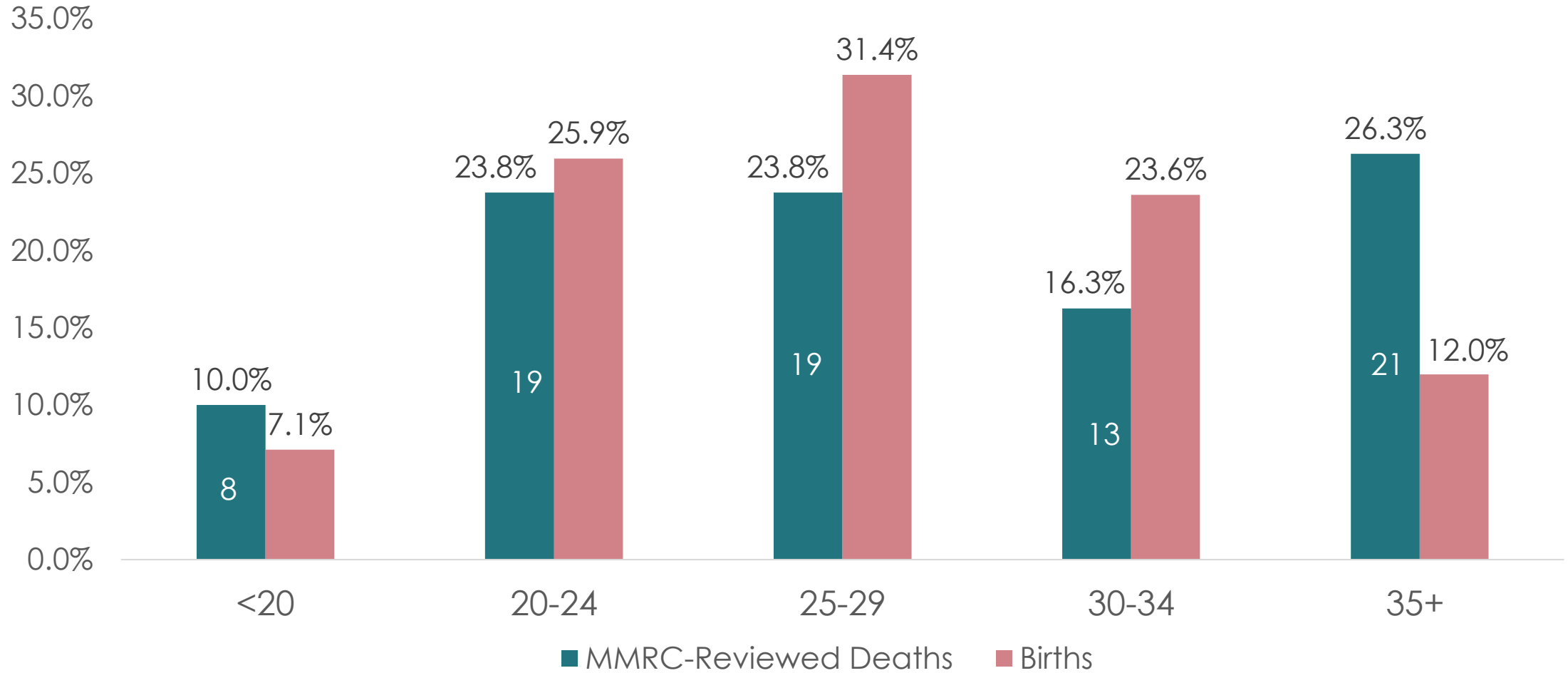
\*Among deaths with known insurance status for health care before, during, or after pregnancy (N=65)

Source: Oklahoma Maternal Mortality Review Committee, deaths occurring from 2017-2021

Top causes among pregnancy-related deaths with an MMRC determination of cause of death (n=40)

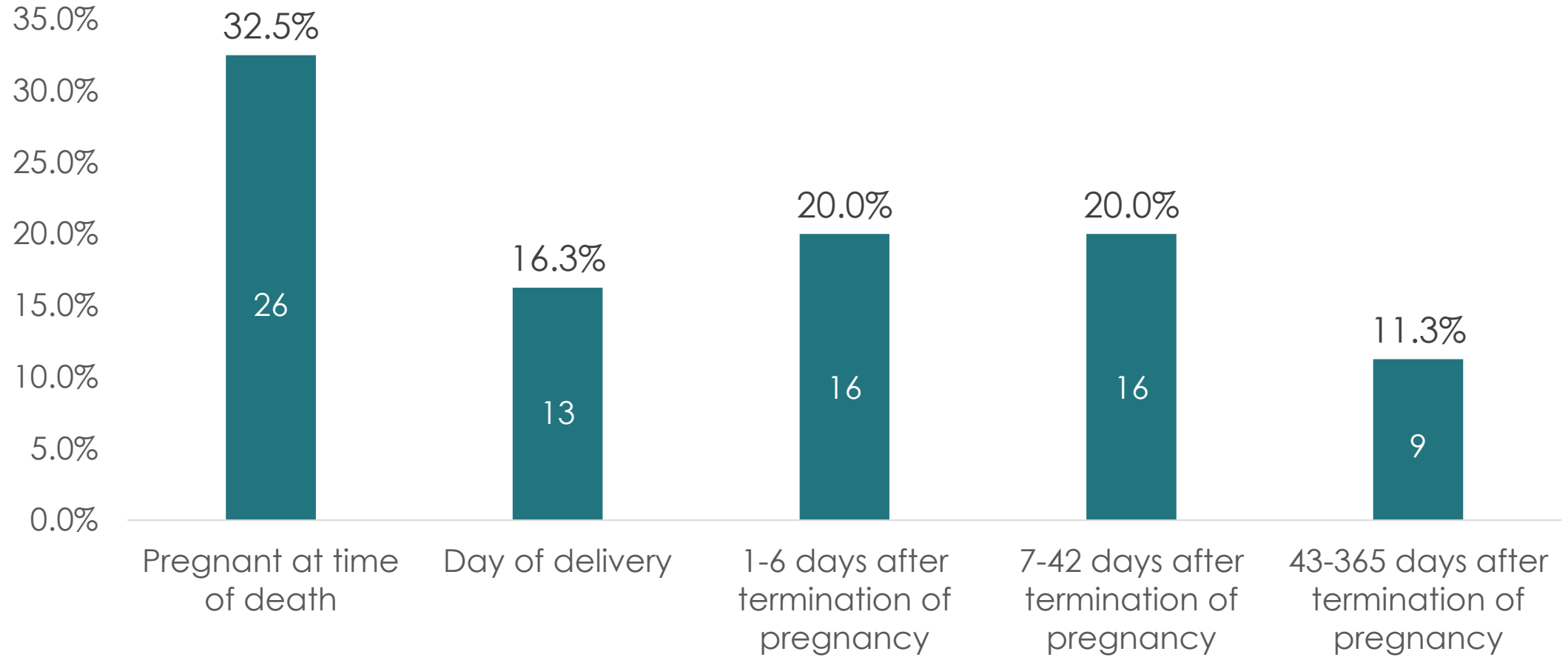


## MMRC-Reviewed Deaths and Live Births by Age, occurring 2017-2021



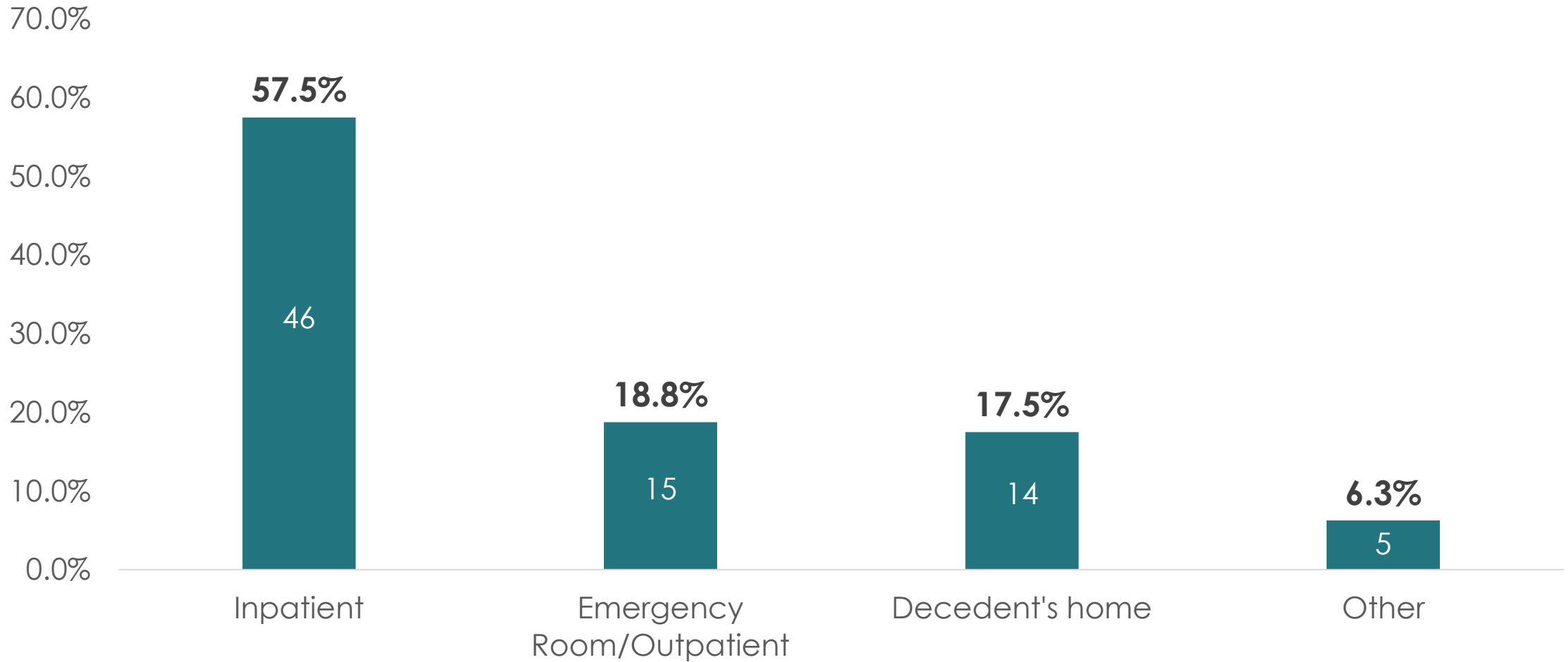
Source: Oklahoma Maternal Mortality Review Committee (Deaths), Oklahoma Vital Statistics (Births), occurring from 2017-2021

## MMRC-Reviewed Deaths by Timing of Death



Source: Oklahoma Maternal Mortality Review Committee, deaths occurring from 2017-2021

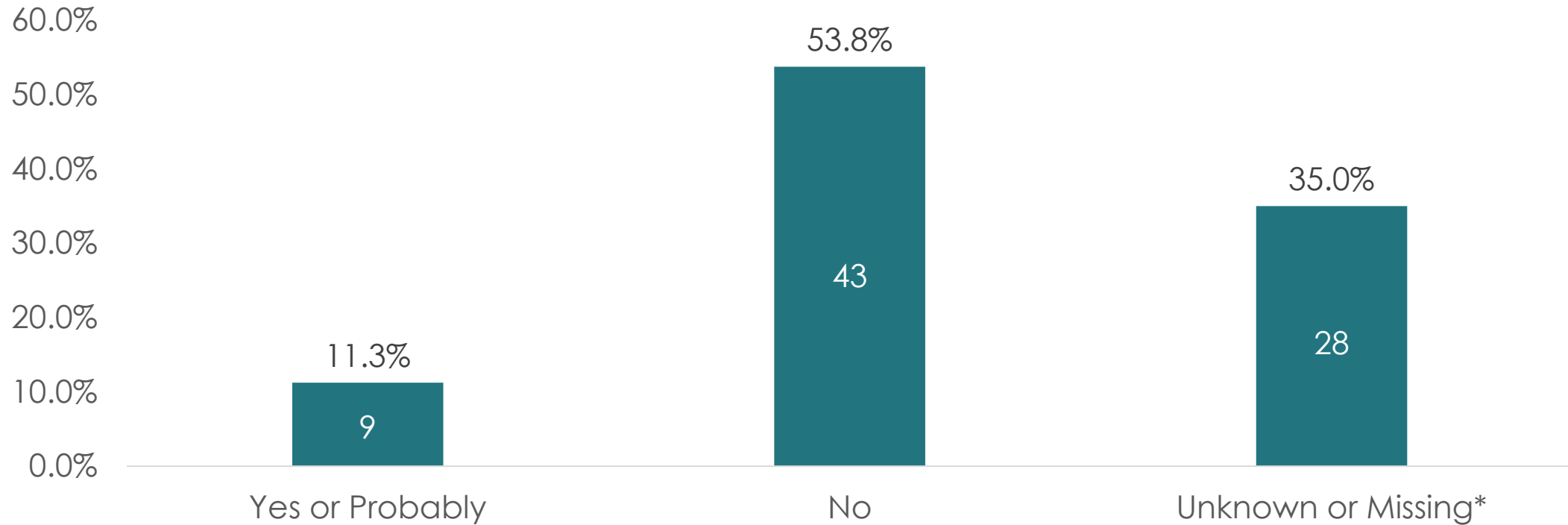
## MMRC-Reviewed Deaths by Place of Death



Source: Oklahoma Maternal Mortality Review Committee, deaths occurring from 2017-2021



## MMRC-Reviewed Deaths by Substance Use Disorder Contribution

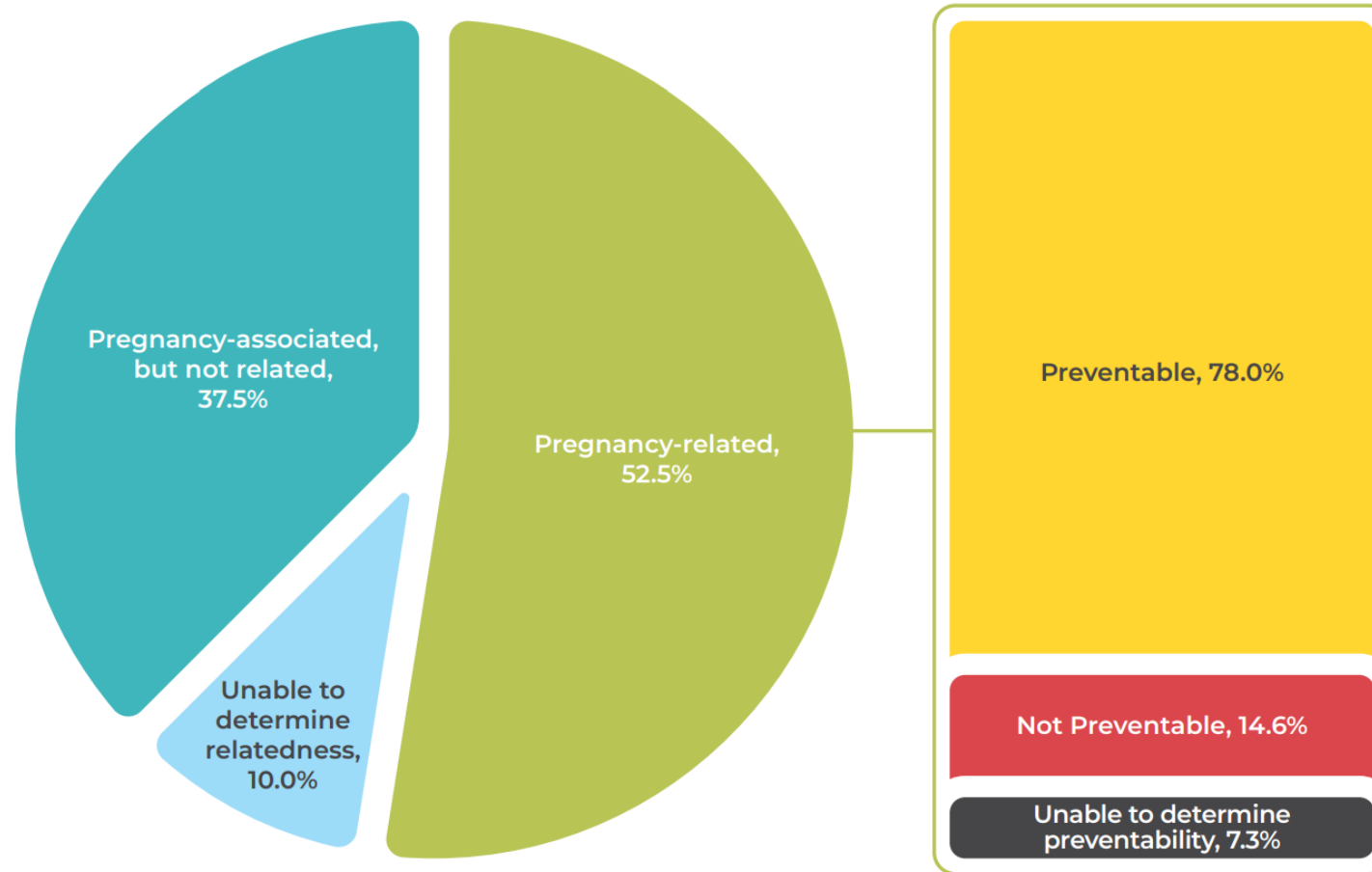


### "Did Substance Use Disorder Contribute to the Death?"

\*Deaths with "Unknown" or missing data may include deaths with limited relevant information (e.g., health care records, autopsy report) or limited documentation related to substance use disorder

Source: Oklahoma Maternal Mortality Review Committee, deaths occurring from 2017-2021

Chart 11: Relatedness of pregnancy-associated deaths and preventability of pregnancy-related deaths\*, Oklahoma 2017 - 2021

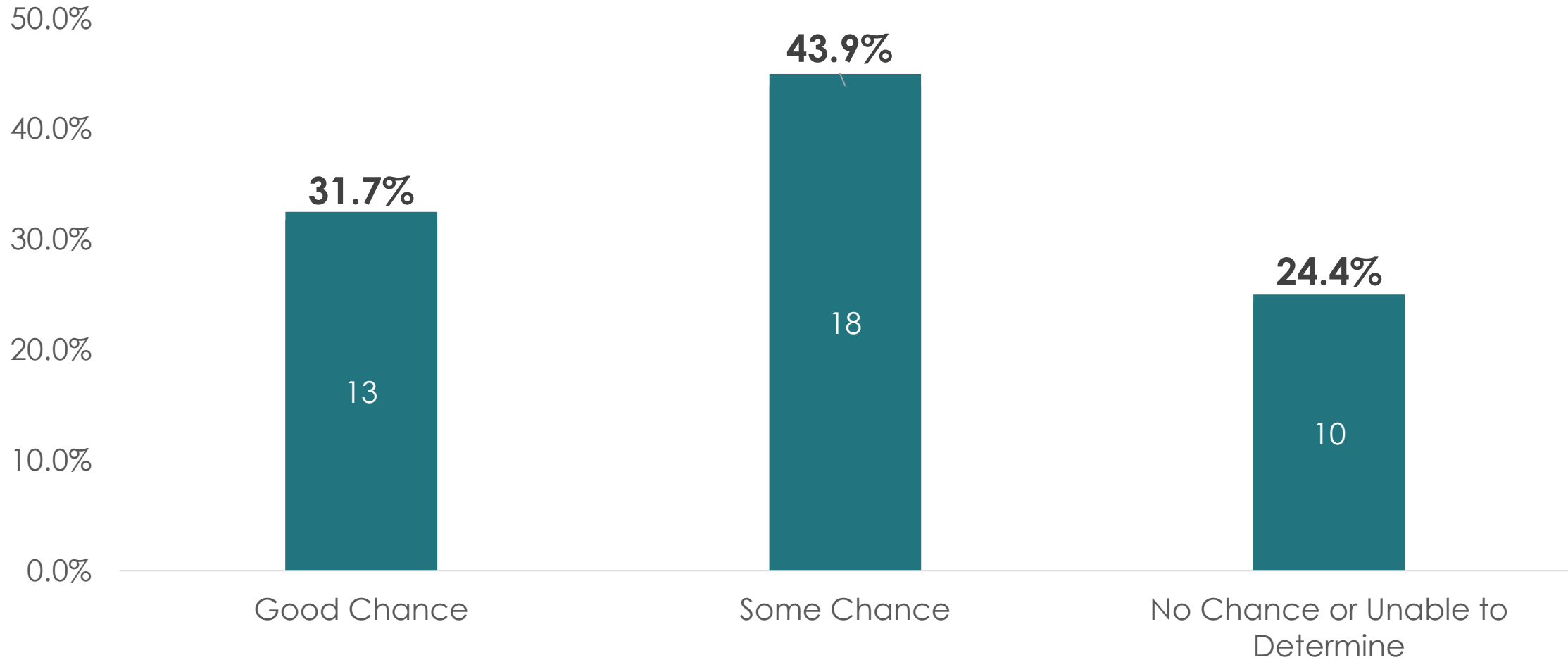


Source: Oklahoma Maternal Mortality Review Committee (MMRC), 2017 - 2021

\*With an MMRC determination of preventability



## Pregnancy-Related Deaths\* by Chance to Alter Outcome

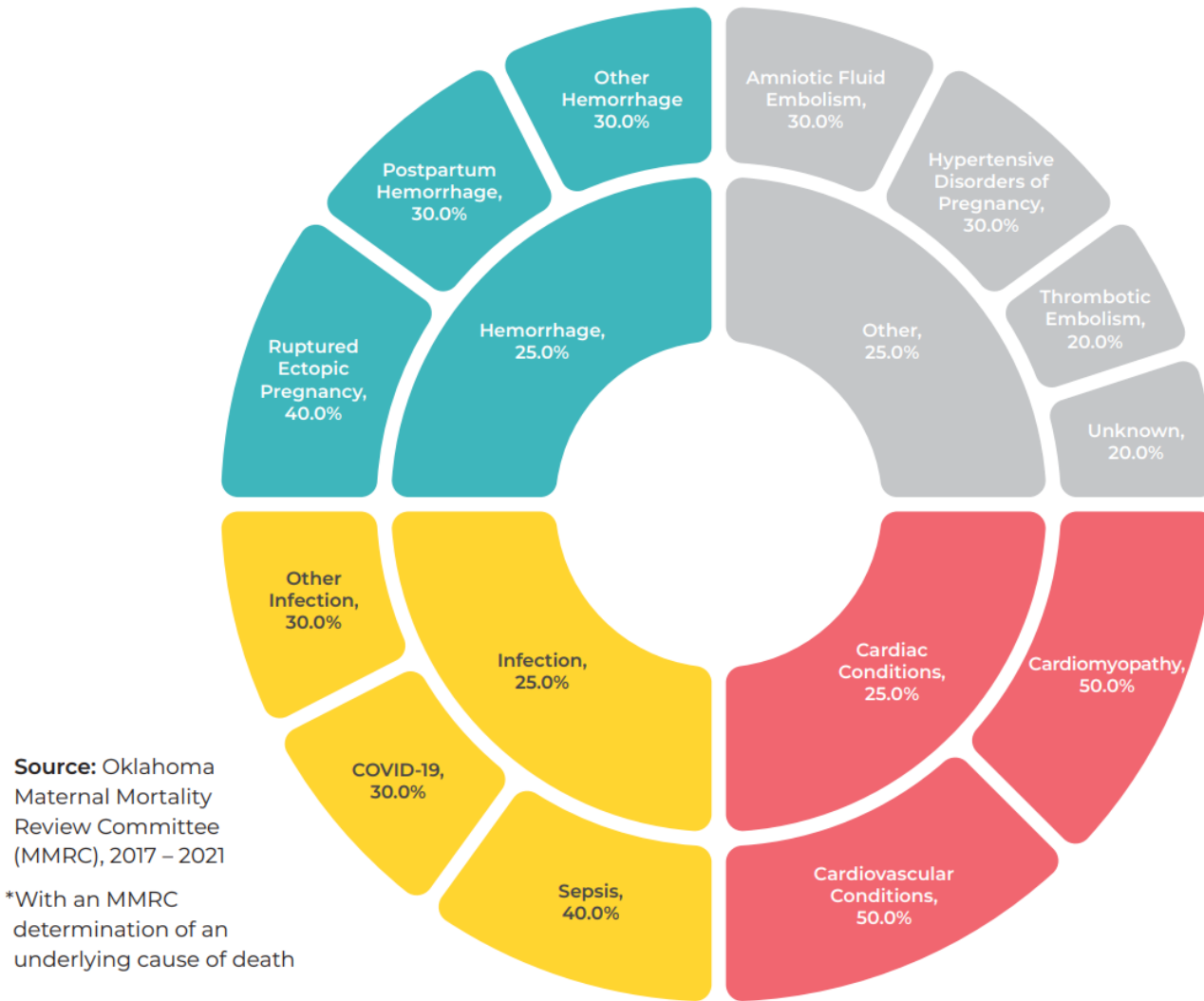


**"Was there a chance to alter the outcome?"**

Source: Oklahoma Maternal Mortality Review Committee, deaths occurring from 2017-2021

\*With an MMRC determination of preventability or chance to alter outcome

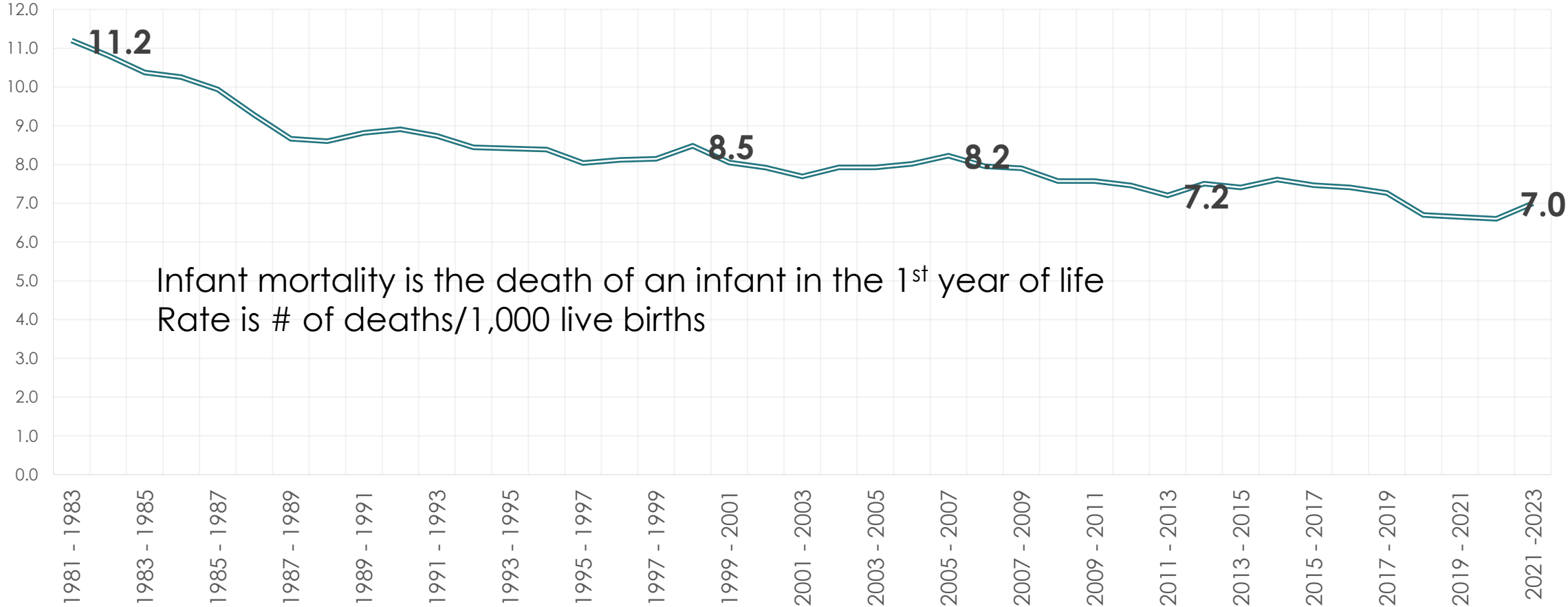
Chart 12: Causes of pregnancy-related deaths\*, Oklahoma 2017 - 2021





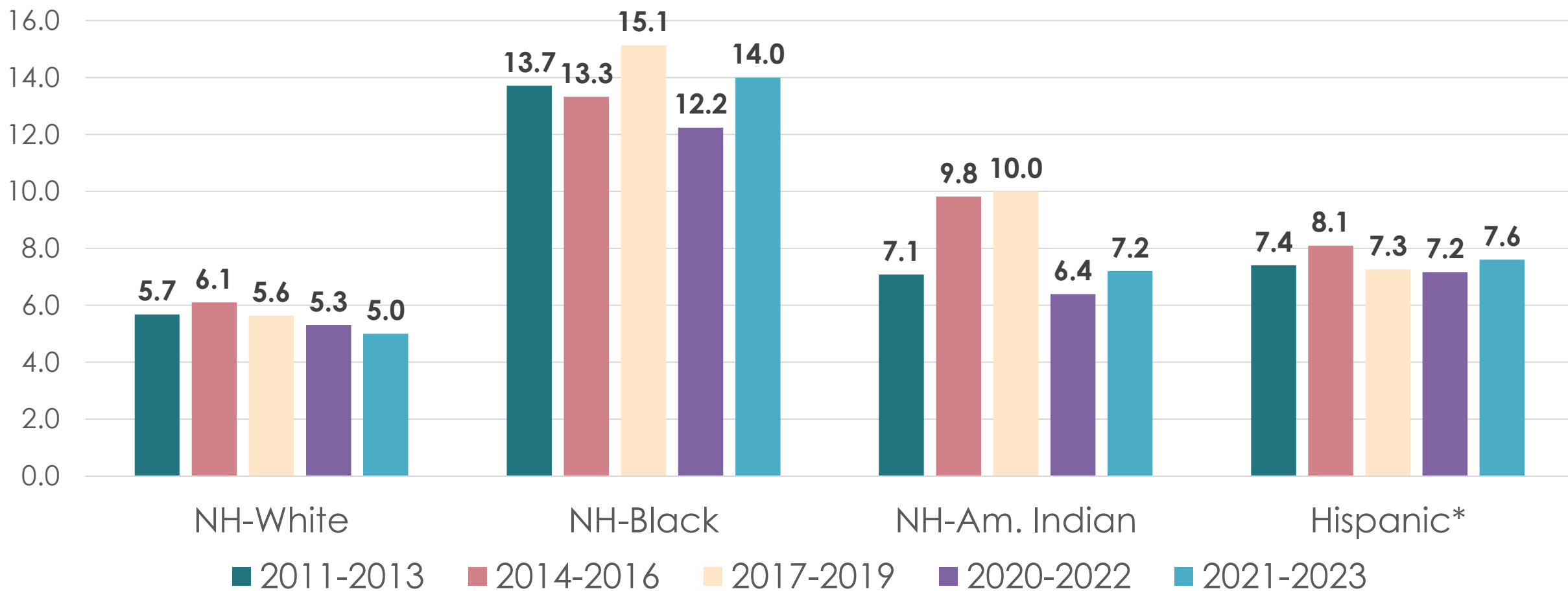
# INFANT MORTALITY

# Infant Mortality Rate Oklahoma, 1981-2023



\*Source: Oklahoma Vital Statistics, 1981-2023

## Infant Mortality Rates by Race and Hispanic Origin Oklahoma, 2011-2023



# Top 3 Rankable Causes\* of Infant Death

Oklahoma, 2021-2023

	NH White	NH Black	NH AI	Hispanic
Rank 1	LBW	LBW	LBW	ANOM
Rank 2	ANOM	INJ	ANOM	LBW
Rank 3	SIDS	SIDS	INJ, MAT, SIDS	MAT

**LBW** = Disorders of newborn related to short gestation and low birth weight (P07)

**ANOM** = Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)

**SIDS** = Sudden infant death syndrome (R95)

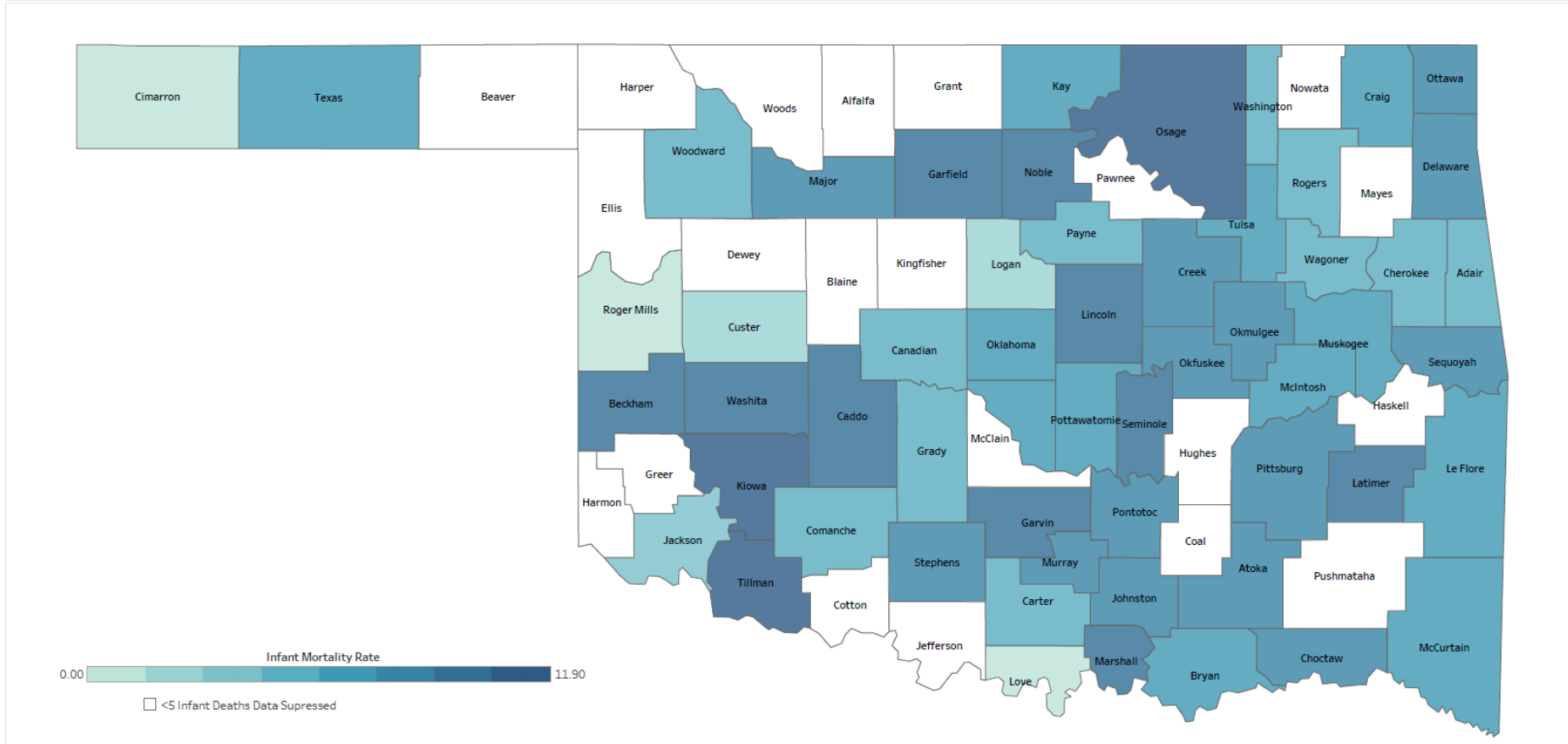
**INJ** = Unintentional injuries (V01-X59)

**MAT** = Newborn affected by maternal complications of pregnancy (P01)

\*Based on International Classification of Diseases, 10<sup>th</sup> Revision Source: Oklahoma vital statistics 2021-2023

# Infant Mortality Rate by County Oklahoma, 2019-2023

Rate of Infant Mortality By County Per 1,000 Births  
2019-2023



**Note:** Infant mortality is the death of an infant before his or her first birthday. The infant mortality rate is the number of infant deaths for every 1,000 live births.

**Data Source:** Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Vital Statistics 2019-2023

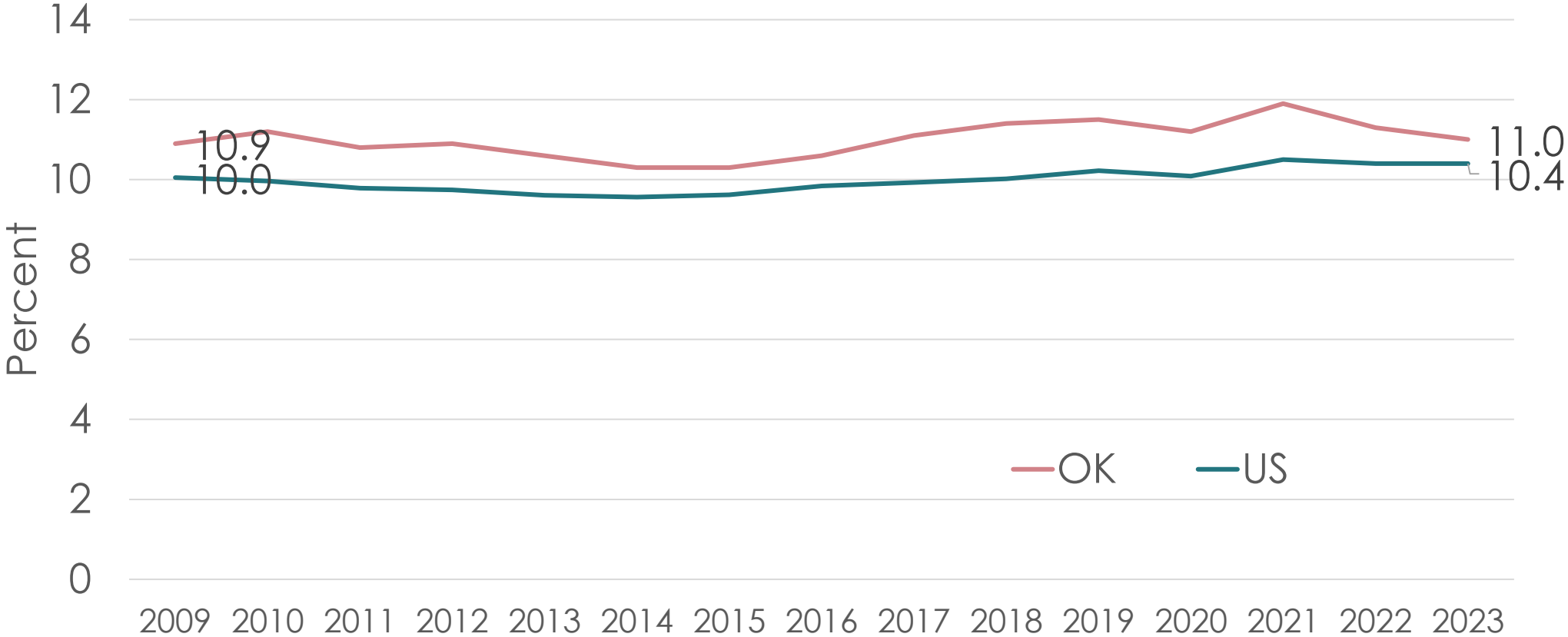
# Preparing for a Lifetime

It's *everyone's* responsibility.



# **PRETERM BIRTH PREVENTION**

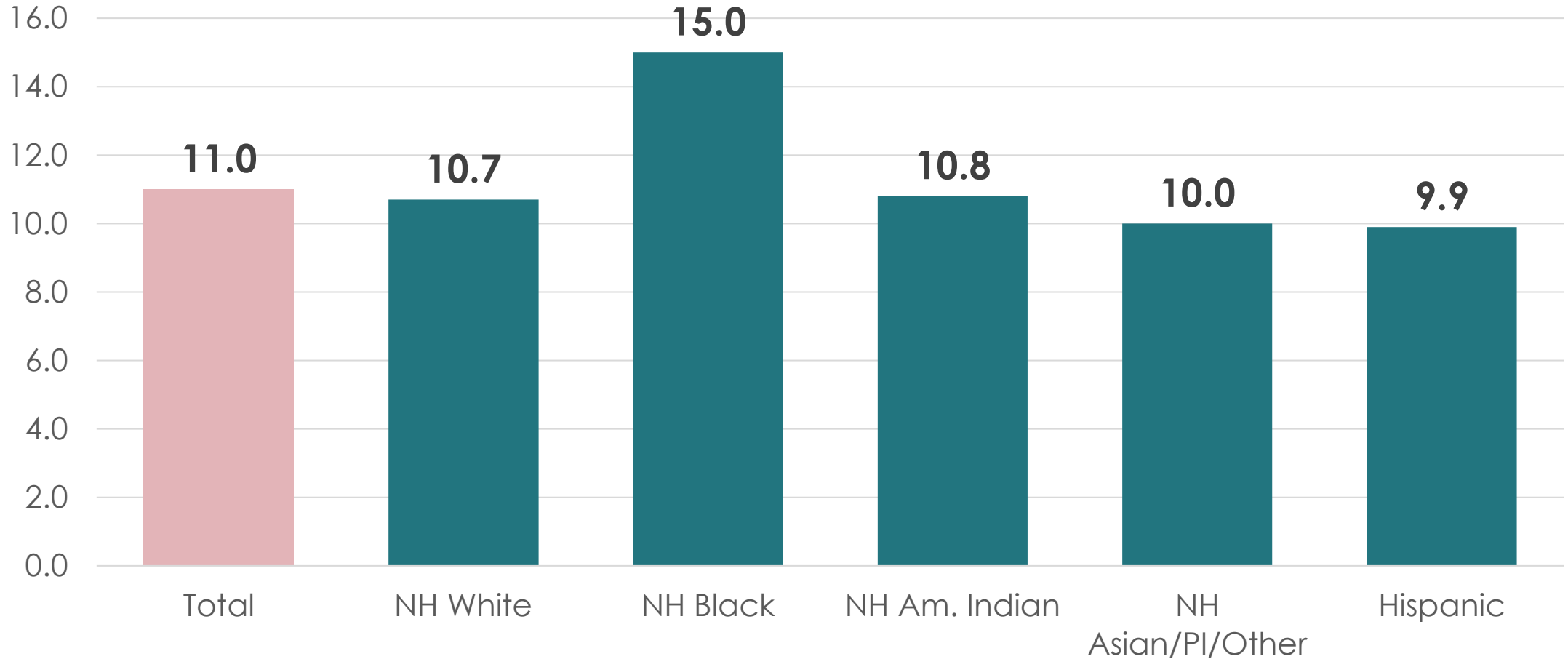
# Percent of Births Delivered Preterm U.S. and Oklahoma, 2009-2023



Preterm birth = Delivery < 37 completed weeks gestation, based on obstetric estimate  
 Sources: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Natality on CDC WONDER Online Database; MCH Standardized Birth File, 2010-2023



## Percentage of Births Delivered Prior to 37 Weeks Gestation by Race/Hispanic Origin Oklahoma, 2023





# 2024 MARCH OF DIMES REPORT CARD OKLAHOMA

The preterm birth rate in Oklahoma was **11.0%** in 2023, lower than the rate in 2022

**PRETERM  
BIRTH  
GRADE**

**D**

**US RATE**



10.4

**OK RATE**



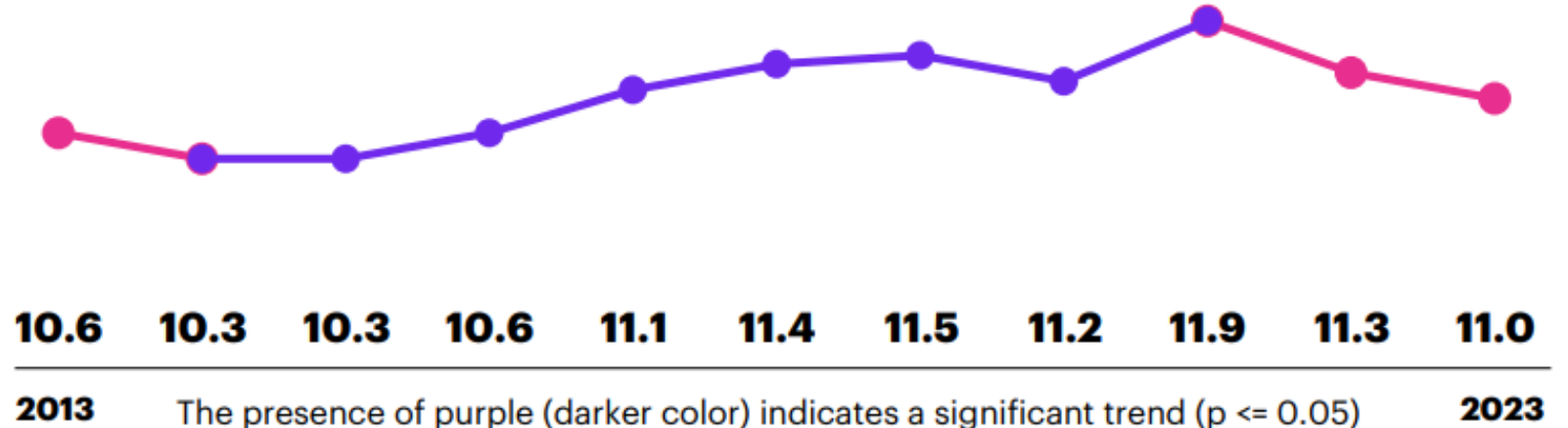
11.0

**OK RANK**



37

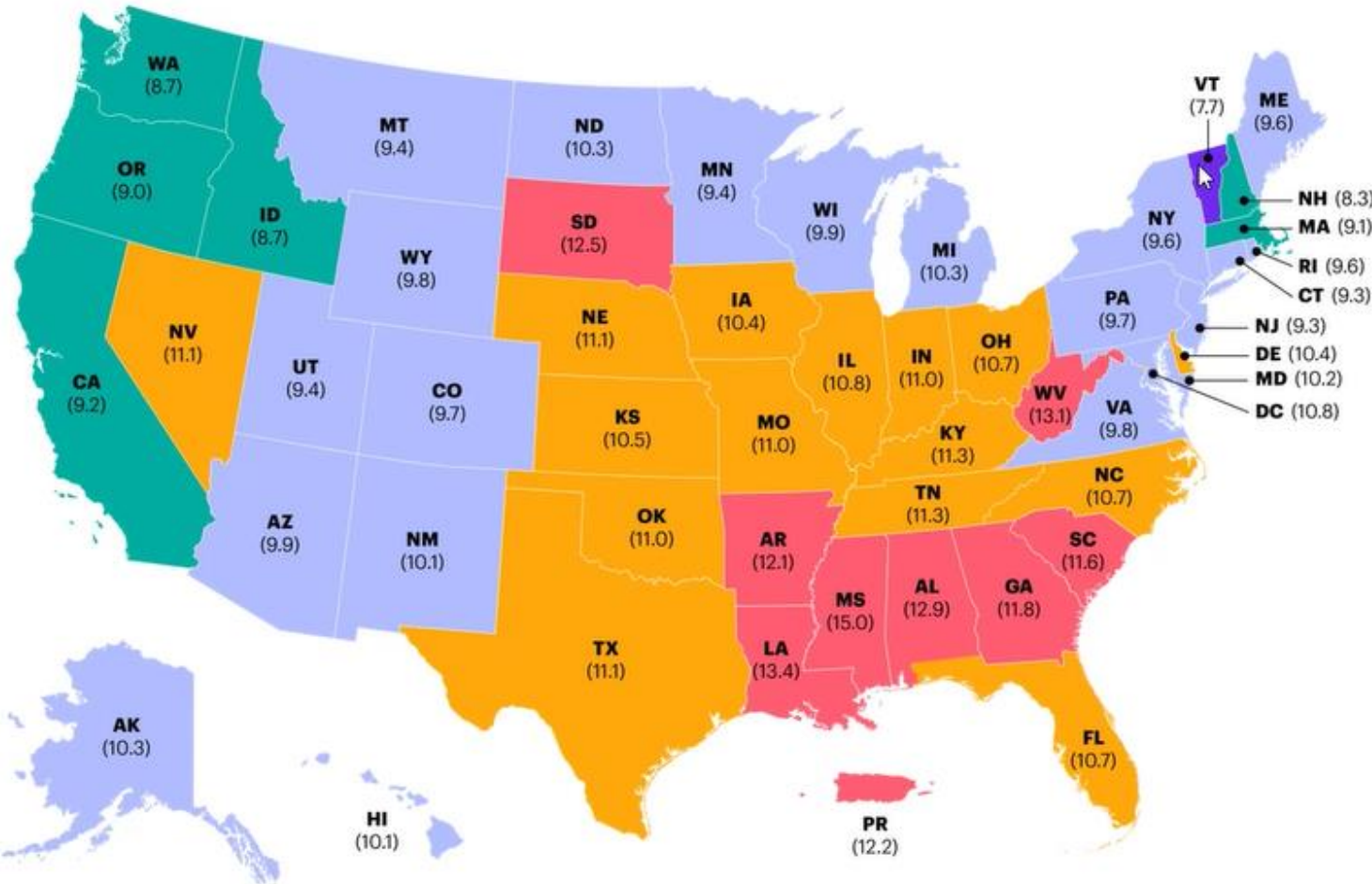
Percentage of live births born preterm



# 2024 MARCH OF DIMES US REPORT CARD

The preterm birth grade was **D+** in 2023; the worst grades occurred in the southern region of the US

Preterm birth rate (born before 37 completed weeks gestation) and grade by state, 2023

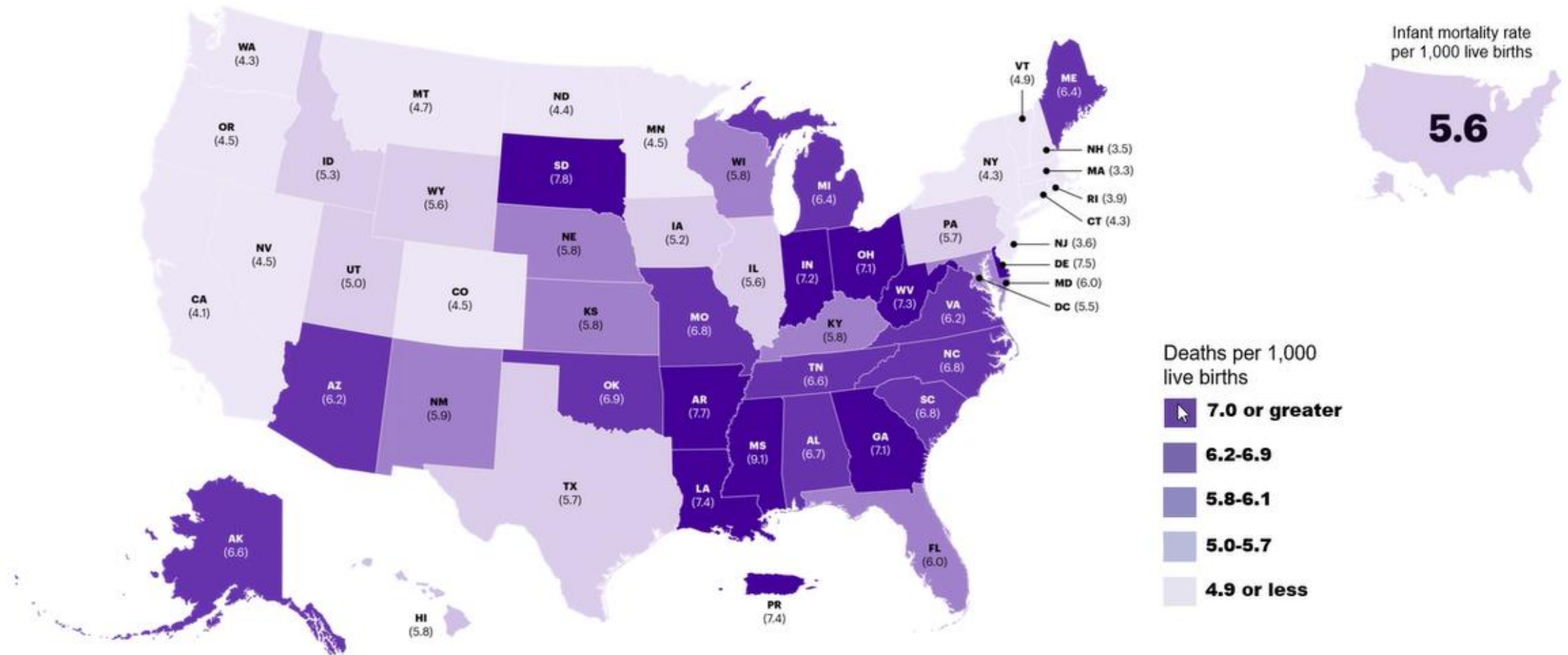


GRADE	PRETERM BIRTH RATE RANGE SCORING CRITERIA
<b>A</b>	Less than or equal to 7.7%.
<b>A-</b>	Preterm birth rate of 7.8 to 8.1%.
<b>B+</b>	Preterm birth rate of 8.2 to 8.5%.
<b>B</b>	Preterm birth rate of 8.6 to 8.9%.
<b>B-</b>	Preterm birth rate of 9.0 to 9.2%.
<b>C+</b>	Preterm birth rate of 9.3 to 9.6%.
<b>C</b>	Preterm birth rate of 9.7 to 10.0%.
<b>C-</b>	Preterm birth rate of 10.1 to 10.3%.
<b>D+</b>	Preterm birth rate of 10.4 to 10.7%.
<b>D</b>	Preterm birth rate of 10.8 to 11.1%.
<b>D-</b>	Preterm birth rate of 11.2 to 11.4%.
<b>F</b>	Preterm birth rate greater than or equal to 11.5%.

# 2024 MARCH OF DIMES US REPORT CARD

**Over 20,000 babies died before their first birthday; the greatest rates occurred in the South and Midwest regions**

Infant mortality rate (deaths per 1,000 live births) by state, 2022



# 2024 MARCH OF DIMES REPORT CARD

**Adoption of the following policies and sufficient funding in Oklahoma is critical to improve and sustain maternal and infant health**



## **MEDICAID EXTENSION**

State has extended coverage for women to one year postpartum.



## **MEDICAID EXPANSION**

State has adopted this policy, which allows greater access to preventative care.



## **MENTAL HEALTH**

State Medicaid program requires and reimburses for postpartum mental health screening.



## **DOULA REIMBURSEMENT**

State Medicaid agency is actively reimbursing doula care.



## **PAID FAMILY LEAVE**

State has required employers to provide a paid option while out on parental leave.



## **COMMITMENT TO PREVENTION**

State has a CDC funded maternal mortality review committee and reviews fetal and infant deaths.

# PERINATAL MOOD DISORDERS AND POSTPARTUM DEPRESSION

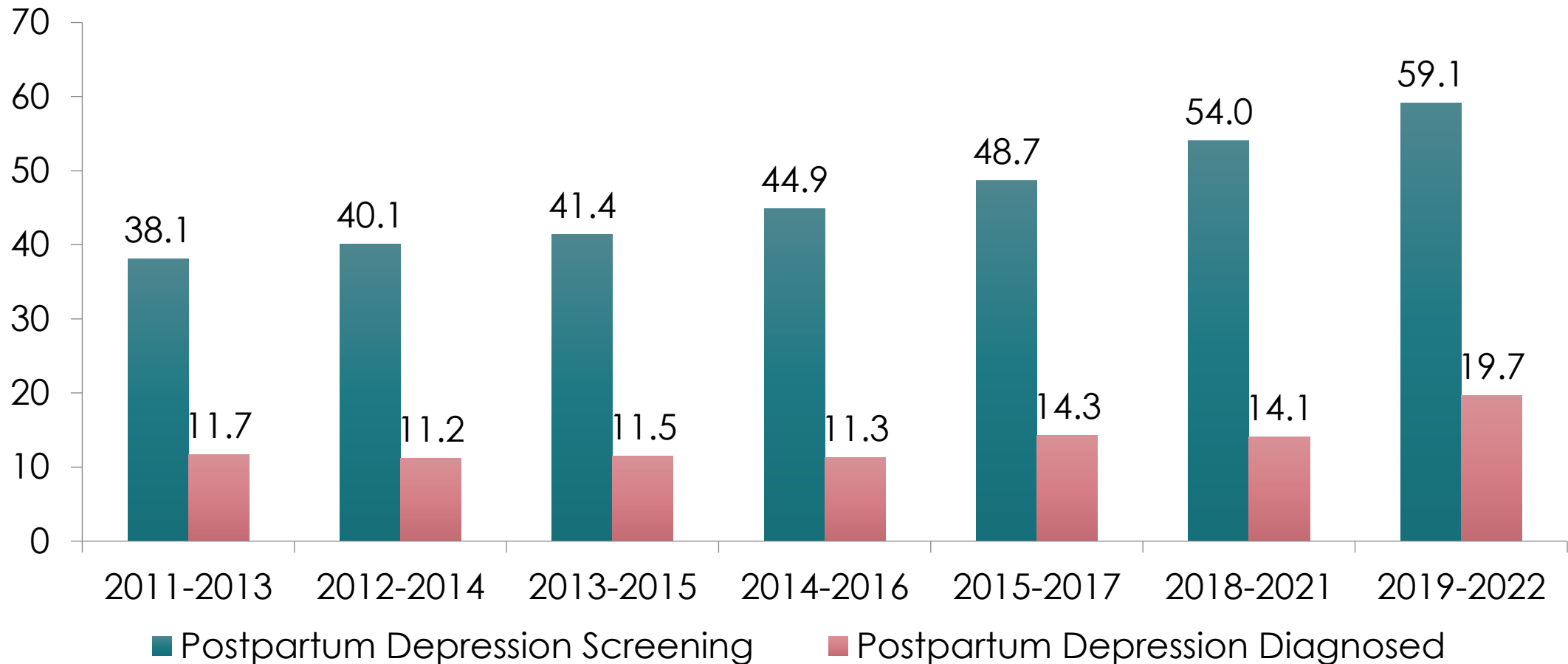
Prepare for  
a lifetime,  
ask for help  
when you  
need it.



Preparing  
for a  
Lifetime  
It's Everyone's Responsibility



## Percent of mothers who were screened and diagnosed with postpartum depression Oklahoma 2011 - 2022

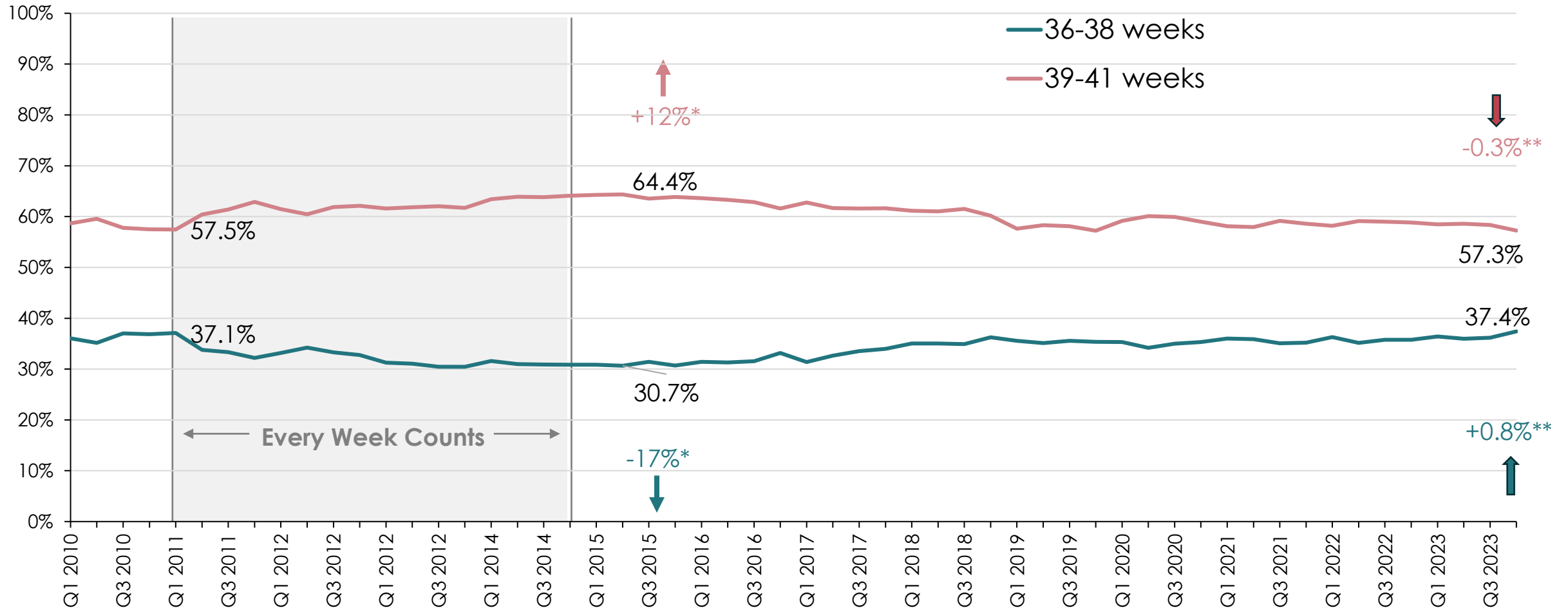


Source: Oklahoma Toddler Survey (TOTS), 2011-2022. Oklahoma TOTS survey did not meet response rate threshold in 2020 hence the 2020 data is excluded

**EVERY WEEK STILL COUNTS**



# Percent of Singleton Births by Length of Gestation Oklahoma, Qtr. 1 2010 – Qtr. 4 2023



\* Comparison is Q1 2011 to Q2 2015 (max difference)

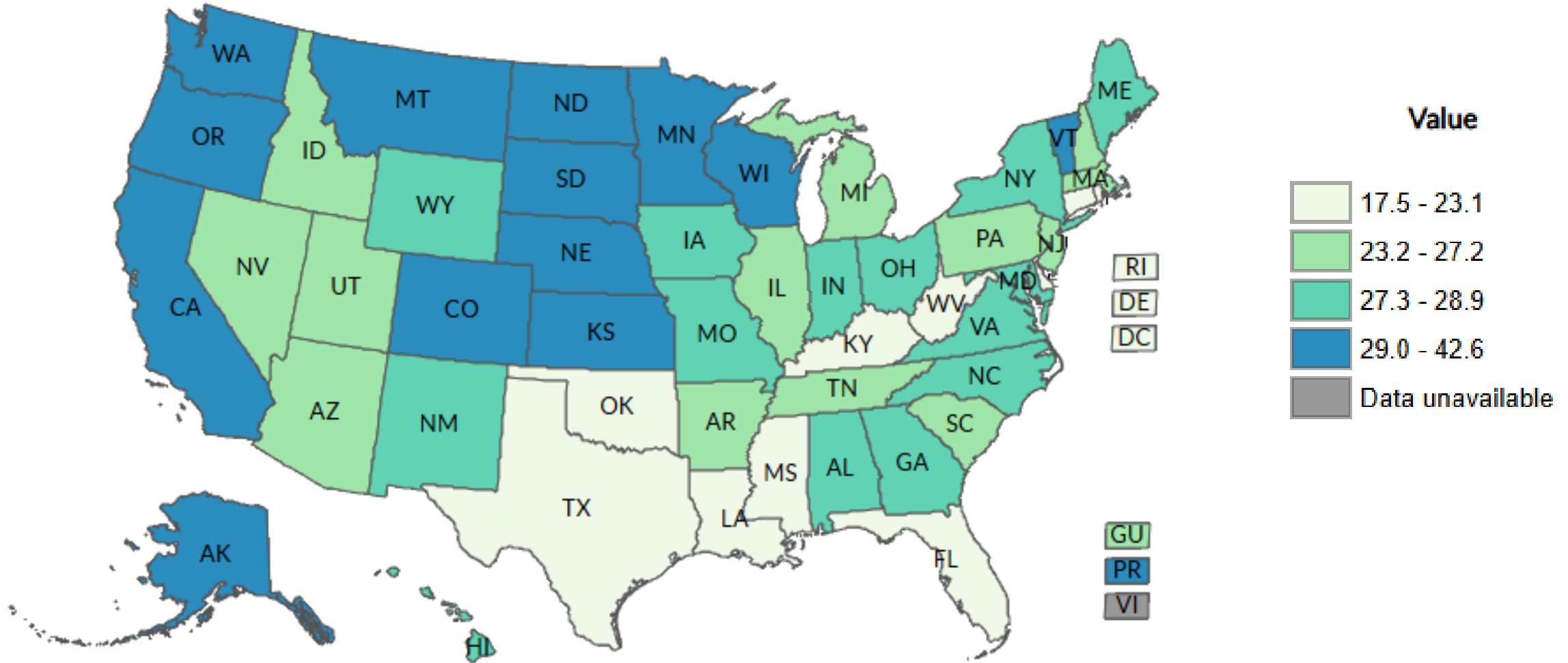
\*\* Comparison is Q1 2011 to Q4 2023

# BREASTFEEDING

## Oklahoma Breastfeeding Rates Babies Born in 2021 (CDC 2024)

2024 (CDC)	National	Oklahoma	Ranking (out of 50)
Ever breastfed	84.1%	78%	<b>44th</b>
Any <u>Bfdg</u> at 6 months	59.8%	46.7%	<b>48th</b>
Any <u>Bfdg</u> at 12 months	39.5%	27%	<b>48th</b>
EBF at 3 months	46.5%	36.6%	<b>49th</b>
EBF at 6 months	27.2%	20%	<b>48th</b>

# Percent of Infants EBF through 6 months Born in 2021



# Infant Safe Sleep



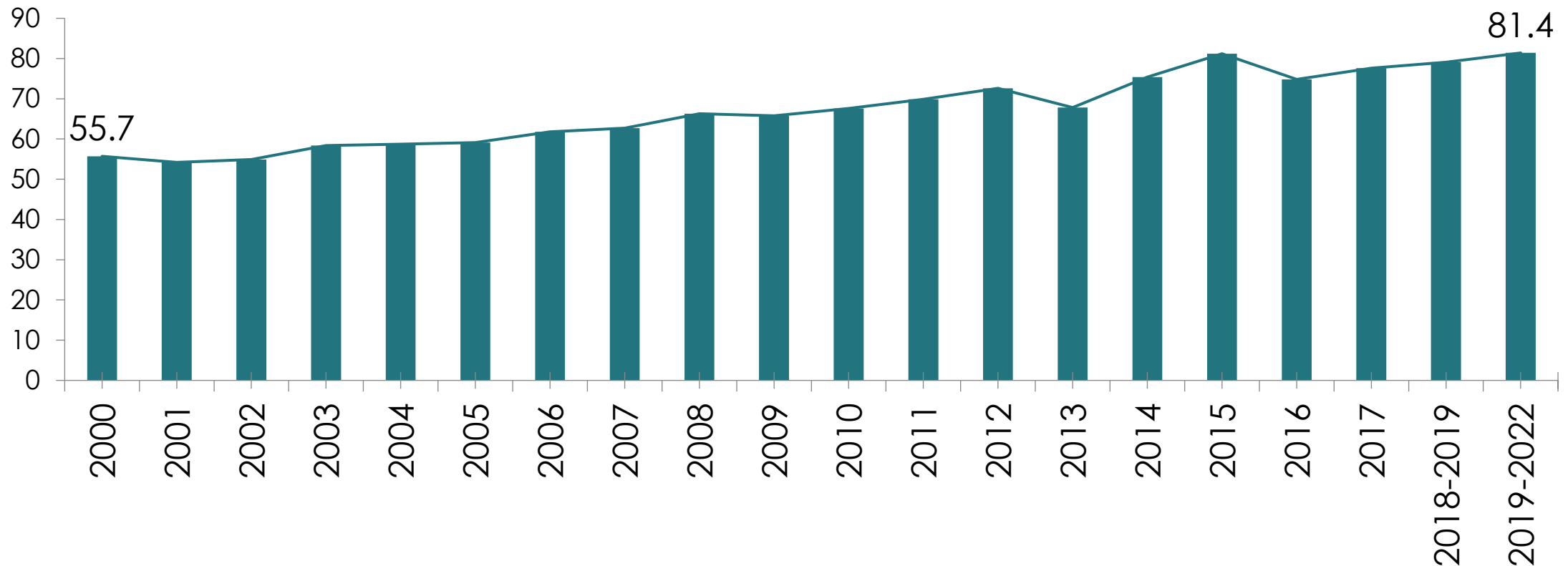
Prepare for a lifetime,  
**practice  
safe sleep.**



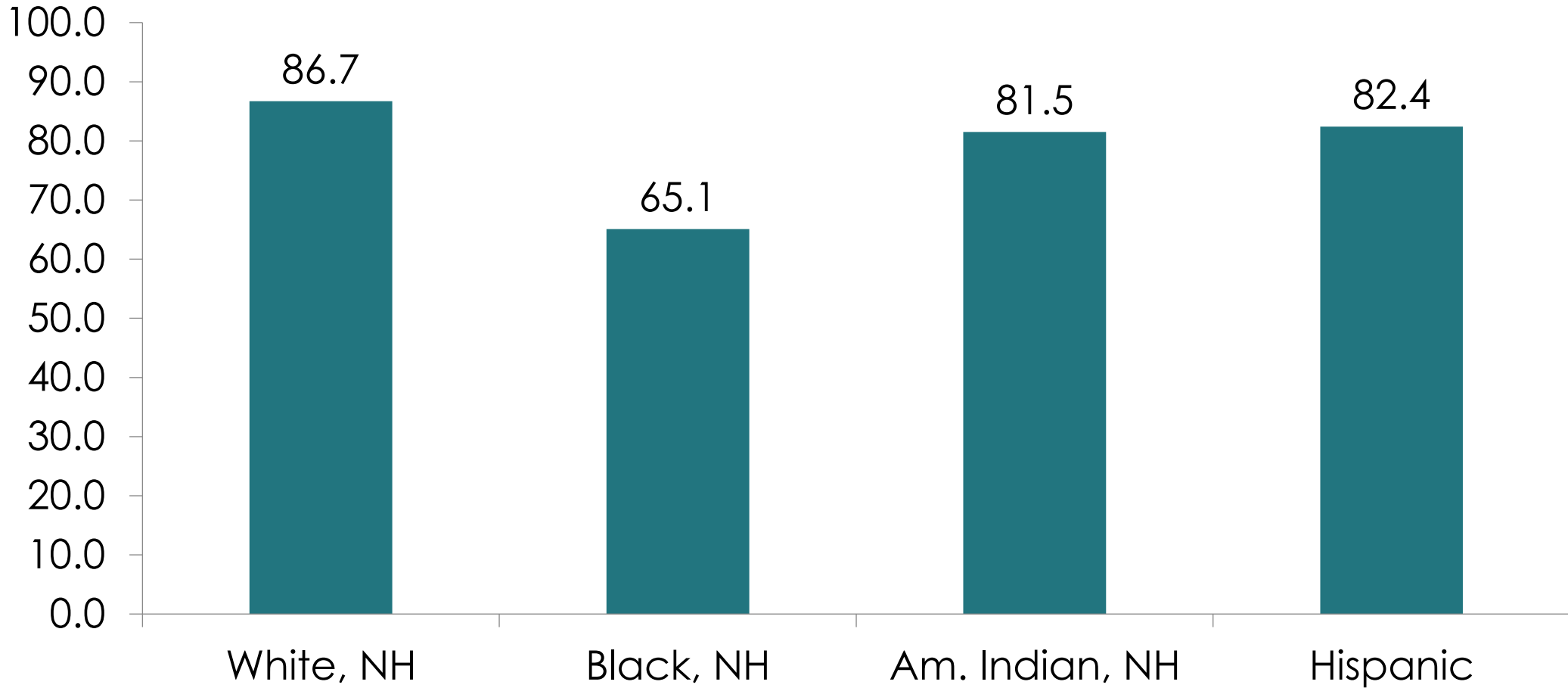
OKLAHOMA  
State Department  
of Health

# Percent of infants most often laid on back to sleep: Oklahoma, 2000-2022

- PRAMS 2020 did not meet response rate threshold for weighting, hence 2020 sleep position prevalence cannot be reported
  - Source: Pregnancy Risk Assessment Monitoring System (PRAMS)



## Percent of infants most often laid on back to sleep, by race/Hispanic origin: Oklahoma, 2021



NH = non-Hispanic

Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

Prepare for  
**PREGNANCY**

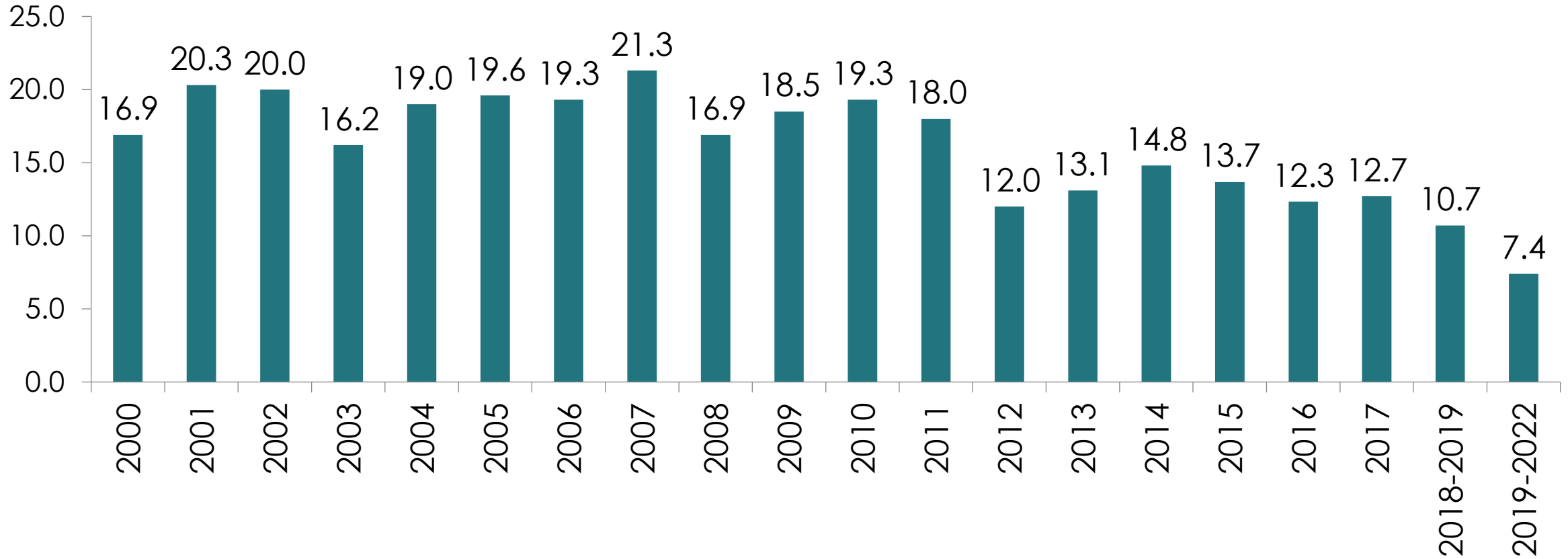


- Live a healthy lifestyle.
- Take Folic Acid.
- Quit smoking.
- Reduce stress.

## **TOBACCO CESSATION**



## Percent of women smoking in the last trimester of pregnancy: Oklahoma 2000-2022



PRAMS 2020 did not meet response rate threshold for weighting, hence single year prevalence cannot be reported

Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

**WE APPRECIATE YOUR PARTNERSHIP TO IMPROVE  
OUTCOMES FOR OKLAHOMA'S MOTHERS AND INFANTS**

**THANK YOU!**



**Thank you!**

**[info@opqic.org](mailto:info@opqic.org)**