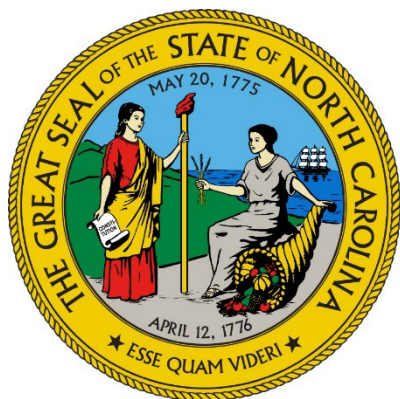


Welcome!

Thanks for your interest in learning about 2021 NC data on child deaths and infant mortality.

Note: 2021 data is the most recently finalized data from the NC State Center for Health Statistics. 2022 data is not expected to be finalized and available until late 2023.





NC Department of Health and Human Services

North Carolina Infant & Child Deaths: 2021 Data Update

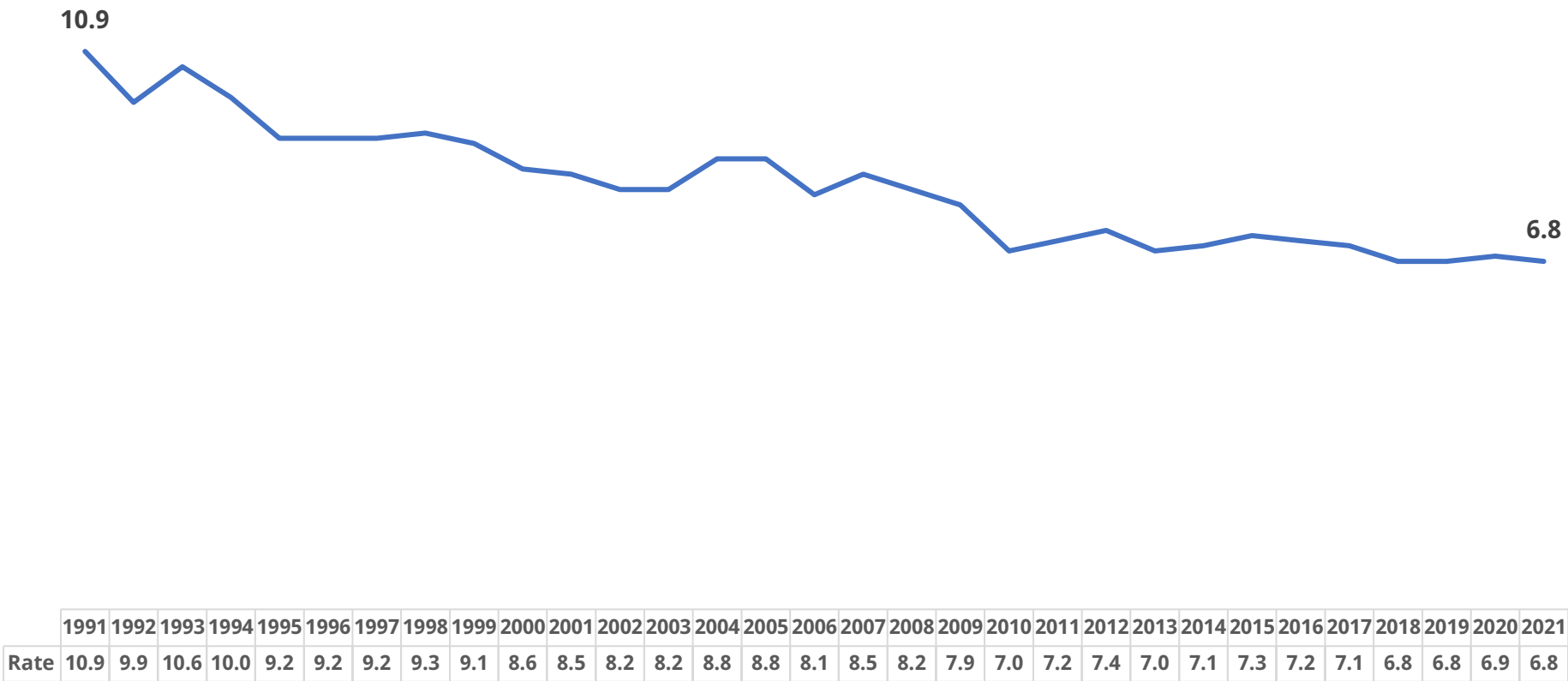
Kathleen Jones-Vessey

Division of Public Health
Title V Office

February 27, 2023

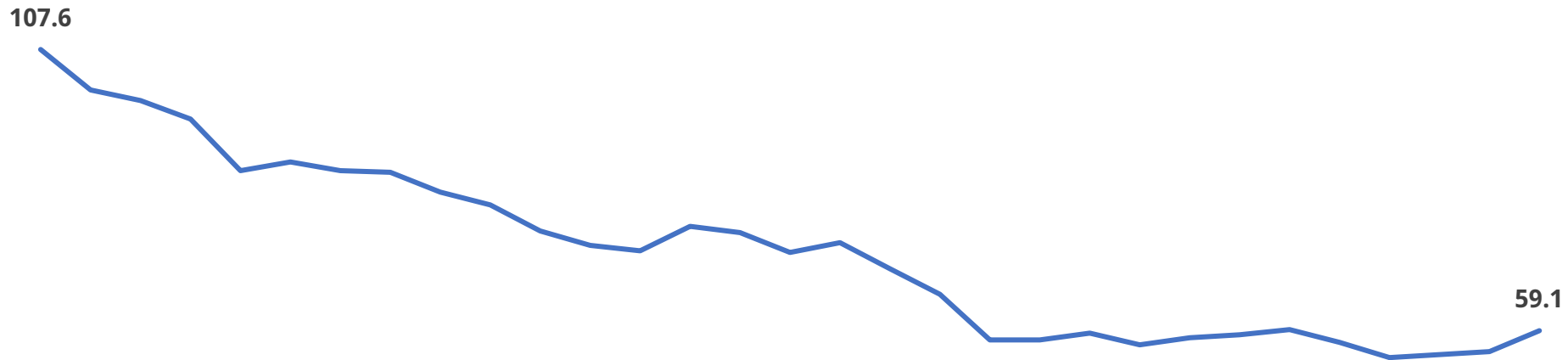
Infant Mortality Rates declined 38% since the Child Fatality Task Force & Prevention System were established in 1991

Infant Deaths per 1,000 Live Births, North Carolina Residents 1991-2021



Child Death Rates declined 45% since the Child Fatality Task Force & Prevention System were established in 1991

Child Deaths per 100,000 Children Ages 0 to 17, North Carolina Residents 1991-2021



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Rate	107.6	100.6	98.8	95.6	86.7	88.2	86.7	86.4	83.0	80.8	76.3	73.8	72.9	77.1	76.0	72.6	74.3	69.8	65.4	57.5	57.5	58.7	56.7	57.9	58.4	59.3	57.1	54.5	55.0	55.5	59.1

1,360 Child Deaths = 76 classrooms of children* lost in North Carolina in 2021



Trends in North Carolina Resident Births

Over the last two decades, North Carolina's birth rates mirrored national rates, with both declining since 2002

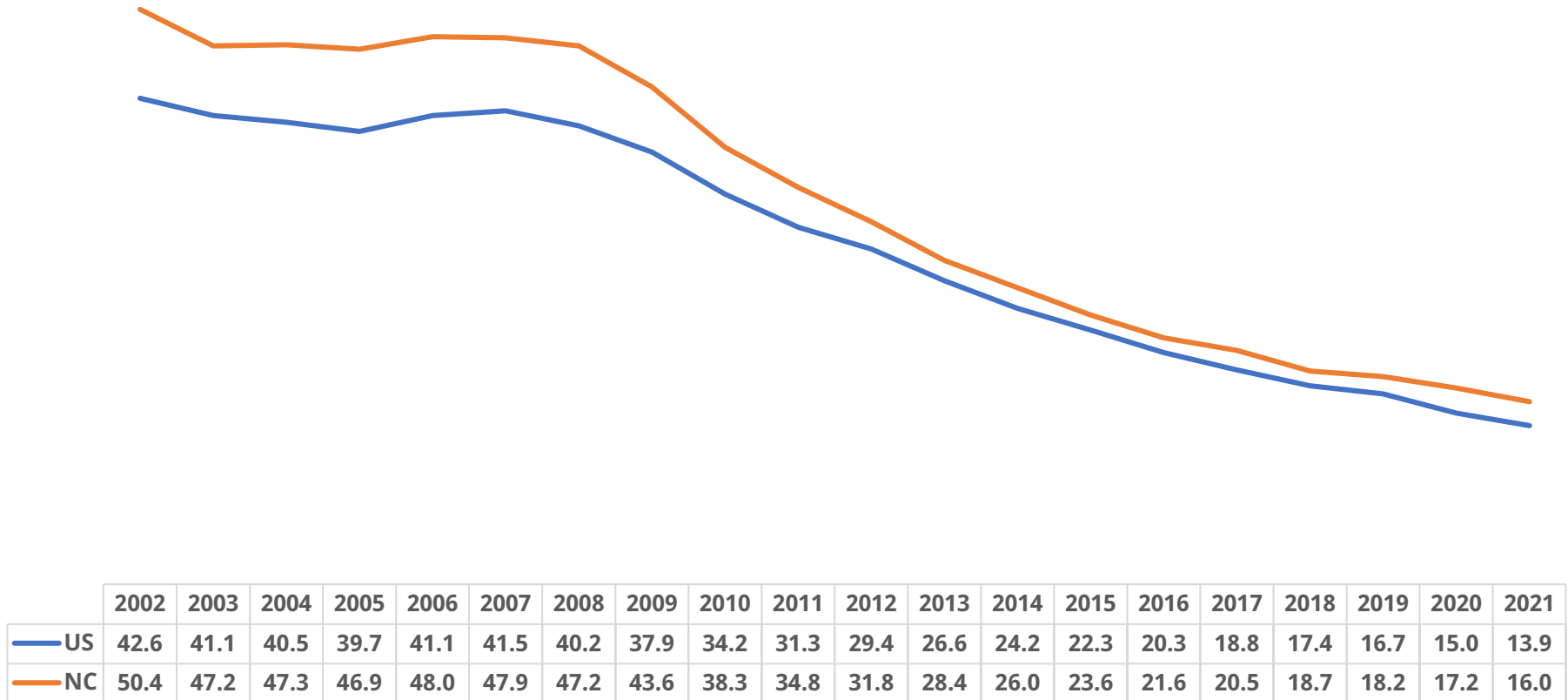
Live Birth Rates per 1,000 Population, US & NC 2002-2021



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
US	14.0	14.1	14.0	14.0	14.3	14.3	14.0	13.5	13.0	12.7	12.6	12.4	12.5	12.4	12.2	11.8	11.6	11.4	11.0	11.0
NC	14.1	14.1	14.0	14.2	14.4	14.4	14.2	13.5	12.8	12.5	12.3	12.1	12.2	12.0	12.0	11.7	11.5	11.3	11.0	11.4

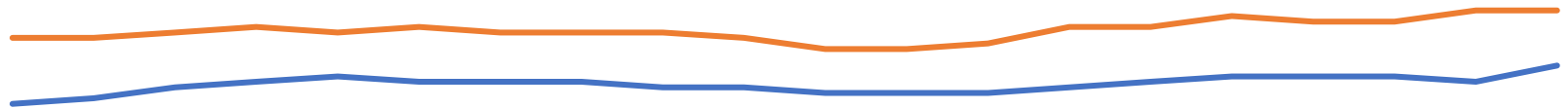
Teen birth rates have declined significantly over the last 20 years in both the US & NC (> 65% decrease)

Teen (Ages 15 to 19) Birth Rates per 1,000 Population, US & NC 2002-2021



North Carolina's low birth weight rates have remained higher than the US average throughout the last two decades

Percent of Births that are Low Birthweight (< 5 lbs 8 ozs), US & NC 2002-2021



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
— U.S.	7.8	7.9	8.1	8.2	8.3	8.2	8.2	8.2	8.1	8.1	8.0	8.0	8.0	8.1	8.2	8.3	8.3	8.3	8.2	8.5
— N.C.	9.0	9.0	9.1	9.2	9.1	9.2	9.1	9.1	9.1	9.0	8.8	8.8	8.9	9.2	9.2	9.4	9.3	9.3	9.5	9.5

Preterm rates increased in North Carolina & the US over the last decade

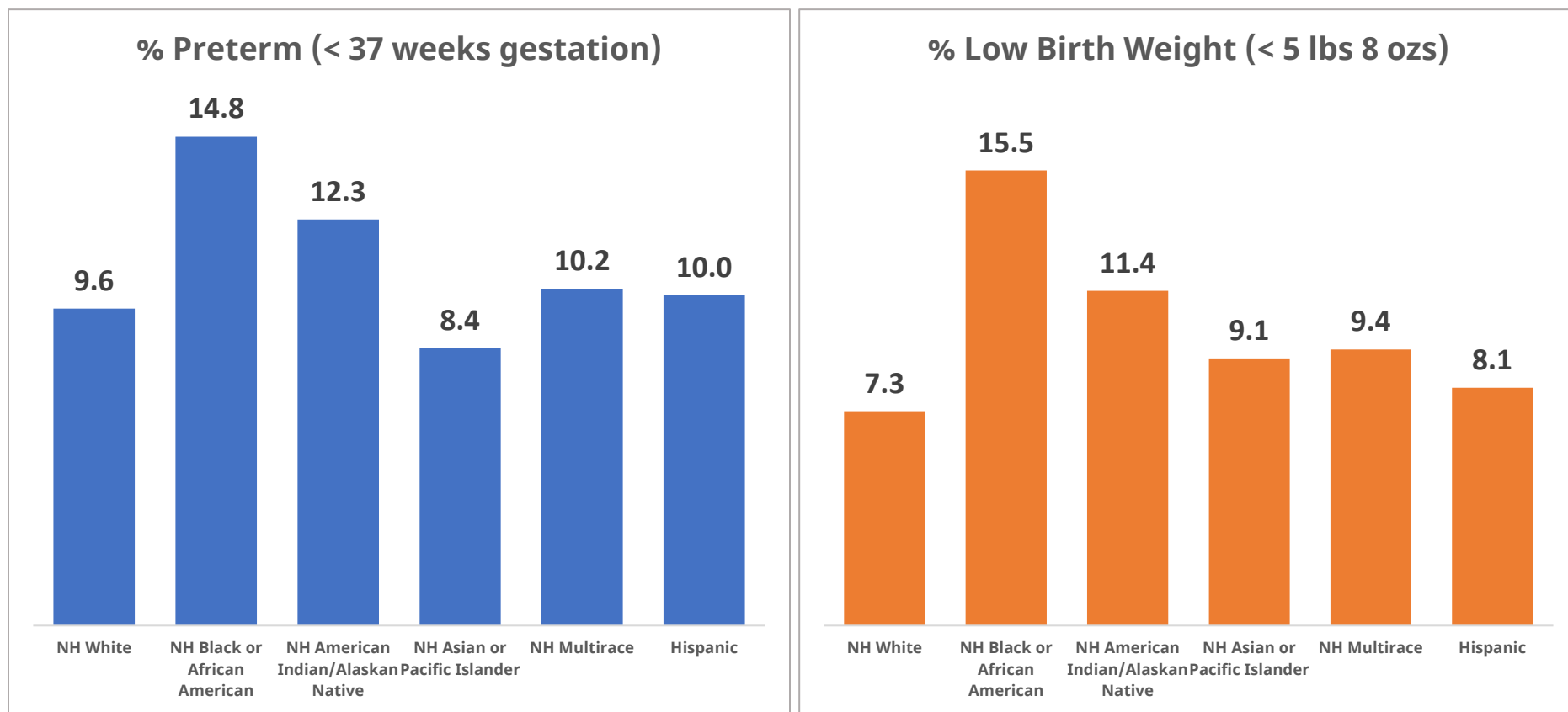
Percent of Births that are Preterm (< 37 weeks gestation): US & NC 2012-2021



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
U.S.	9.7	9.6	9.6	9.6	9.8	9.9	10.0	10.2	10.1	10.5
N.C.	10.1	9.9	9.7	10.2	10.4	10.5	10.4	10.6	10.8	10.8

Disparities in preterm and low birth weight persist among North Carolina births

Percent of Births that are Low Birthweight and Preterm by Race/Ethnicity, NC Residents 2021

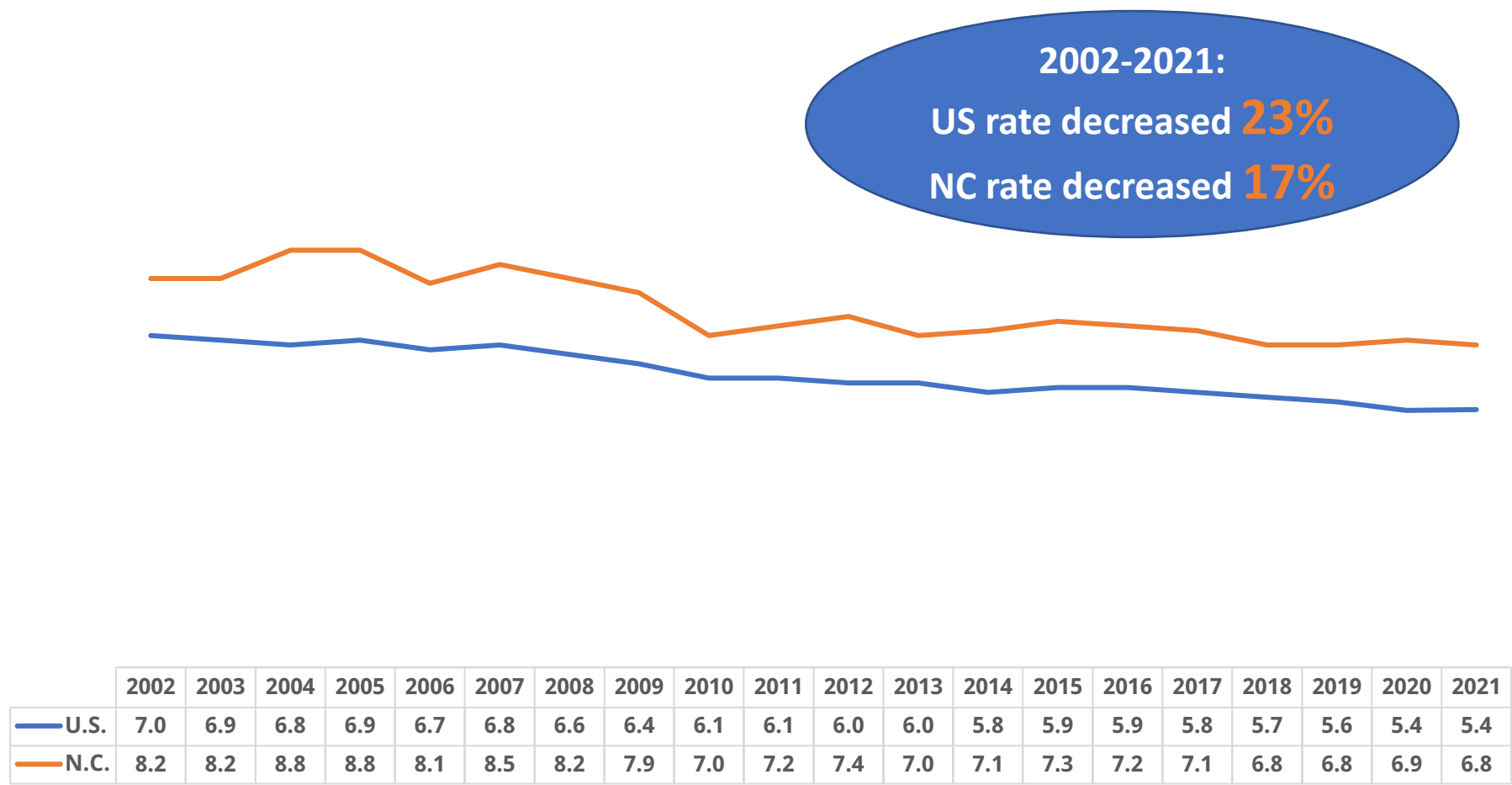


Note: SCHS has implemented a new race reporting methodology. Race figures presented here are not comparable with earlier reports.

Trends in Infant & Child Death Rates

North Carolina infant mortality rates are consistently higher than US rates and have declined at a slower pace

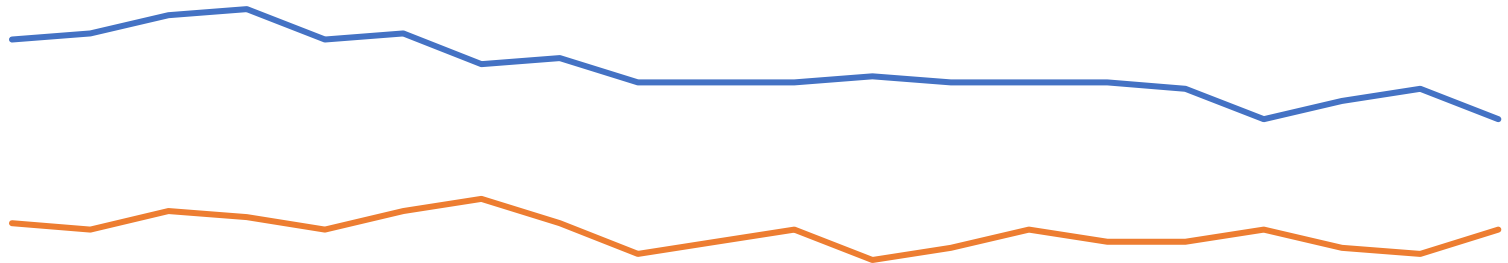
Infant deaths per 1,000 live births: US & NC 2002-2021



North Carolina's neonatal death rates are decreasing at a faster pace than postneonatal death rates

Neonatal & Postneonatal Mortality Rates, NC Residents 2002-2021*

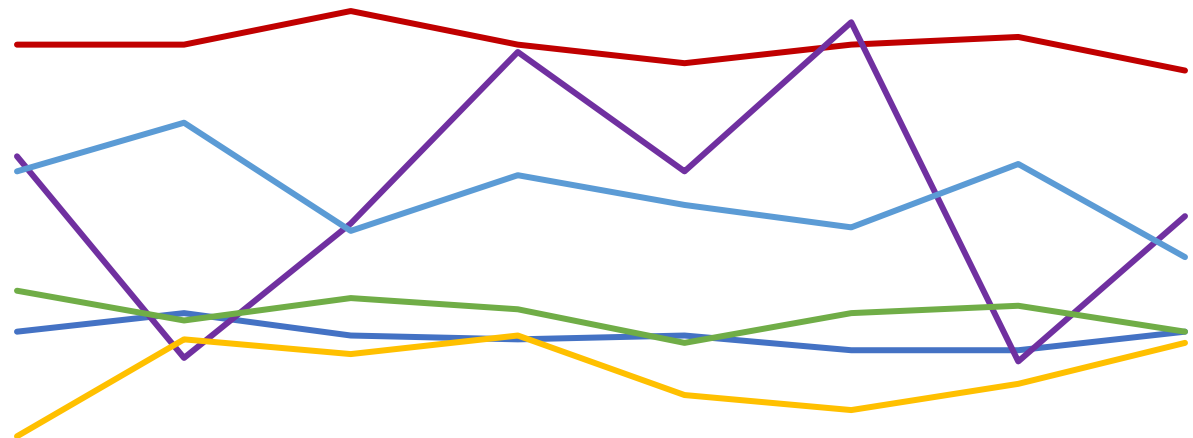
2002 to 2021:
Neonatal decreased **23%**
Postneonatal decreased **4%**



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
— Neonatal	5.6	5.7	6.0	6.1	5.6	5.7	5.2	5.3	4.9	4.9	4.9	5.0	4.9	4.9	4.9	4.8	4.3	4.6	4.8	4.3
— Postneonatal	2.6	2.5	2.8	2.7	2.5	2.8	3.0	2.6	2.1	2.3	2.5	2.0	2.2	2.5	2.3	2.3	2.5	2.2	2.1	2.5

Infant mortality rates are higher among North Carolina's NH Black, NH American Indian, & Multi-racial populations

Infant Death Rates by Race/Ethnicity, NC Residents 2014-2021



	2014	2015	2016	2017	2018	2019	2020	2021
NH White, single race	5.1	5.6	5.0	4.9	5.0	4.6	4.6	5.1
NH Black, single race	12.8	12.8	13.7	12.8	12.3	12.8	13.0	12.1
NH Am. Ind., single race	9.8	4.4*	8.0	12.6	9.4	13.4	4.3*	8.2
NH Asian/PI, single race	2.3	4.9	4.5	5.0	3.4	3.0	3.7	4.8
NH Multiracial	9.4	10.7	7.8	9.3	8.5	7.9	9.6	7.1
Hispanic	6.2	5.4	6.0	5.7	4.8	5.6	5.8	5.1

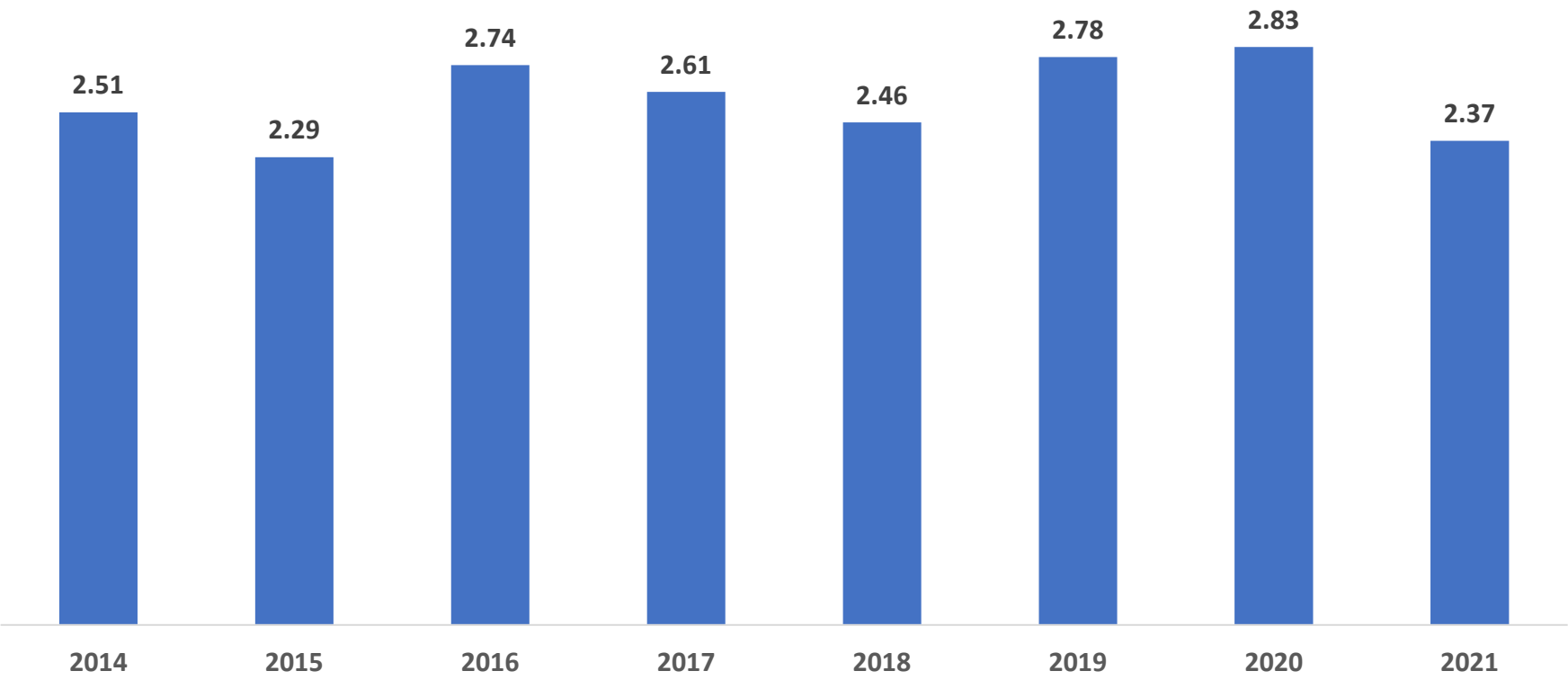
* Rates with an asterisk are based on a small number of deaths (< 10 deaths) and may be statistically unreliable – interpret with caution.

Caution: Racial categories have changed from prior years and now reflect single race categories & multi-race. Comparisons with prior reports are not advised.

Non-Hispanic Black Infants continue to die at rates more than two times higher than Non-Hispanic White Infants

Infant Mortality Disparity Ratios*, NC Residents 2014-2021

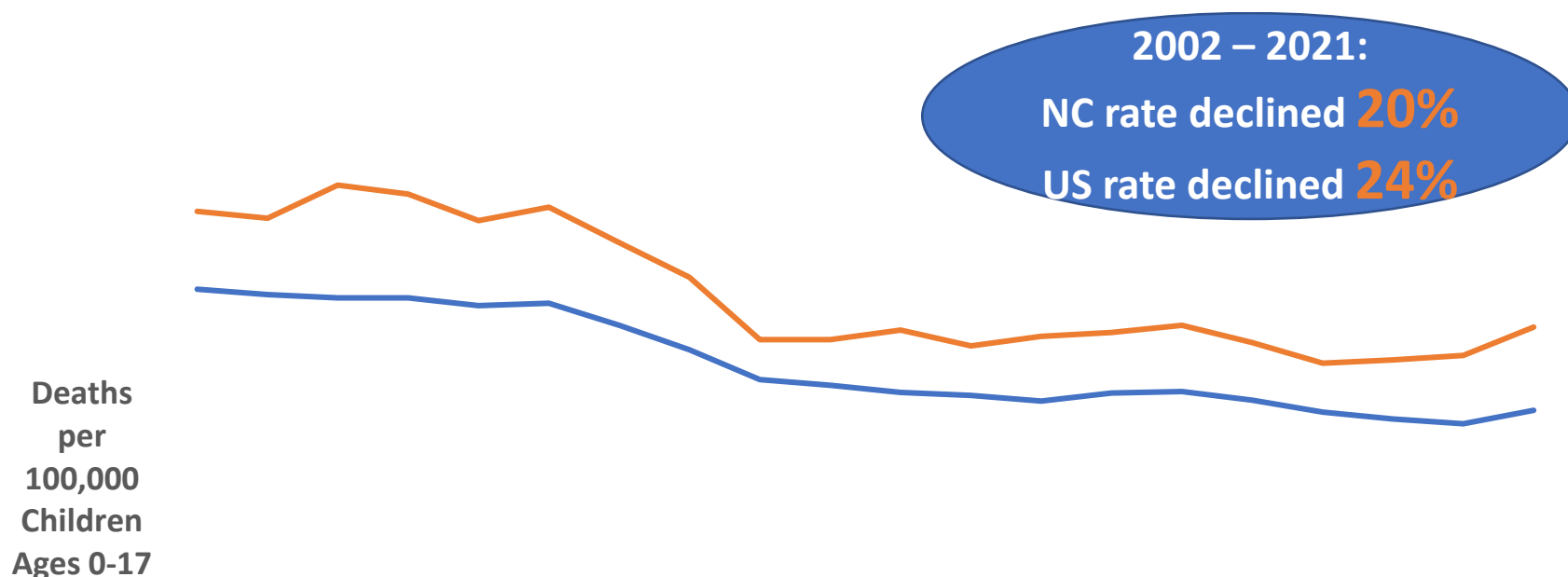
NC Perinatal Health Equity Collective Goal: 1.90
Healthy NC 2030 Target: 1.50



Caution: Racial categories have changed from prior years and now reflect single race categories & multi-race. Comparisons with prior reports are not advised.

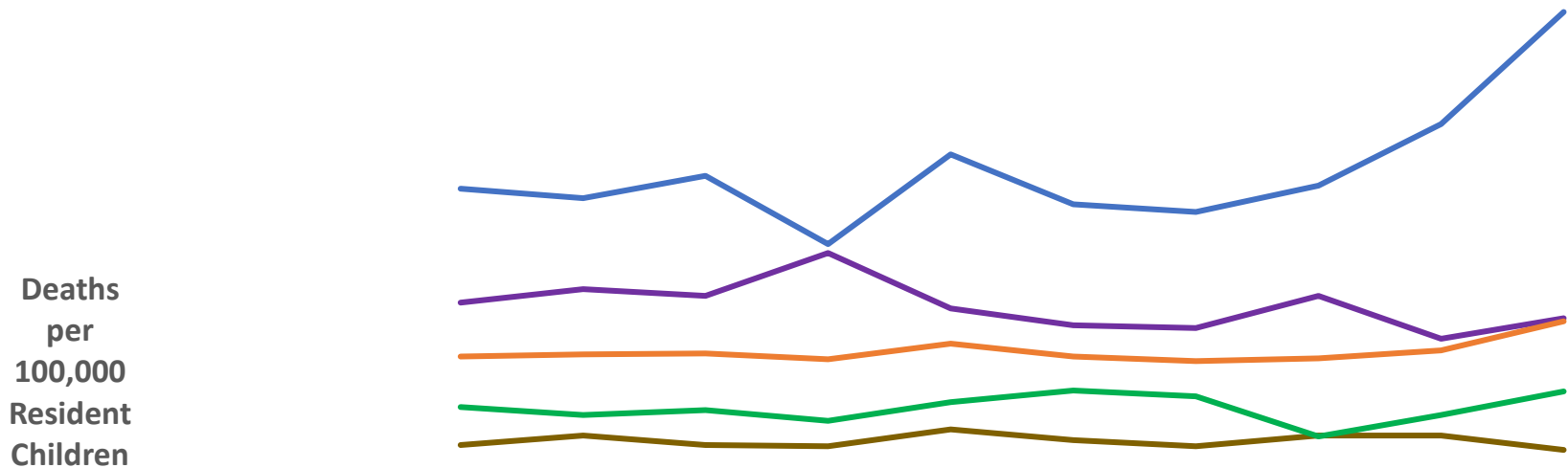
North Carolina's Child Death rates remain consistently higher than US rates over the last two decades

Child Death Rates, NC & US 2002-2021



Among non-infant children, adolescents ages 15 to 17 have the highest mortality rates over the last decade

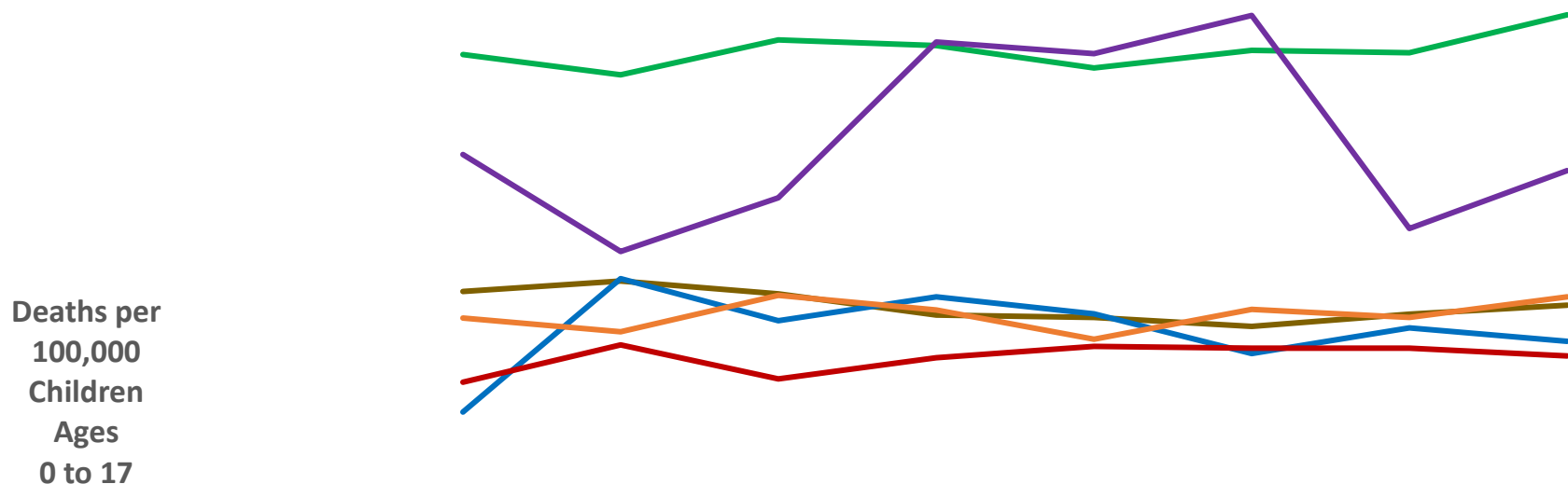
Non-Infant Child Death rates among children ages 1 to 17 by age group, NC 2012--2021



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
... Ages 1-4	26.6	28.0	27.3	31.7	26.0	24.3	24.0	27.3	22.9	25.0
... Ages 5-9	12.0	13.0	12.0	11.9	13.6	12.5	11.9	13.0	13.0	11.5
... Ages 10-14	15.9	15.1	15.6	14.5	16.4	17.6	17.0	12.9	15.1	17.5
... Ages 15-17	38.3	37.3	39.6	32.6	41.8	36.7	35.9	38.6	44.9	56.4
... (Exc. Infants) Ages 1-17	21.1	21.3	21.4	20.8	22.4	21.1	20.6	20.9	21.7	24.7

Non-Hispanic Black & American Indian children consistently have higher mortality rates compared to other groups

Child Death Rates by Race/Ethnicity: NC 2014-2021



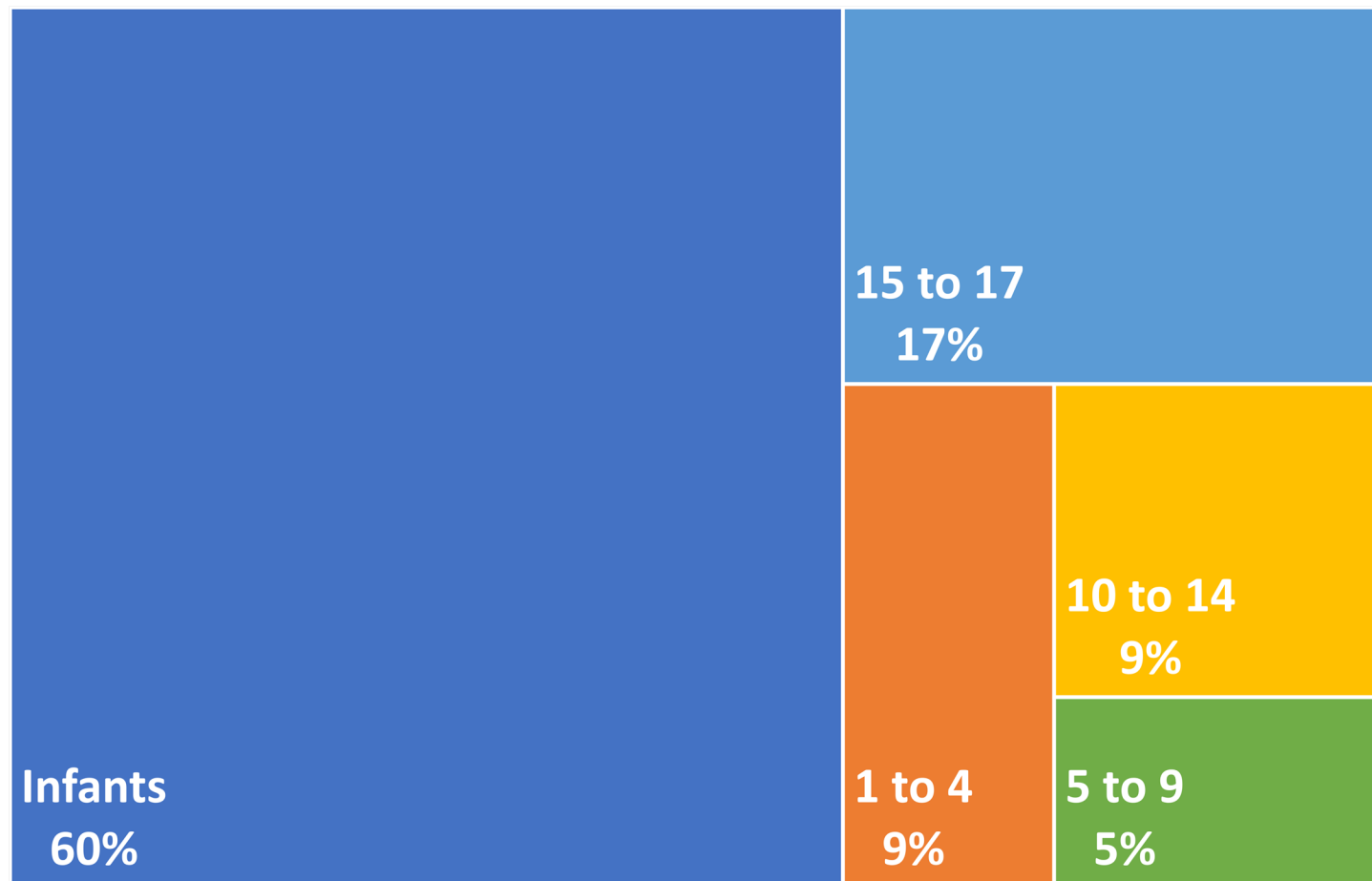
Note: NH=Non-Hispanic. P.I.=Pacific Islander. Am.Ind. includes American Indian & Alaskan Native.

Caution: Racial categories have changed from prior years and now reflect single race categories & multi-race. Comparisons with prior reports are not advised.

Characteristics of Infant and Child Mortality in North Carolina

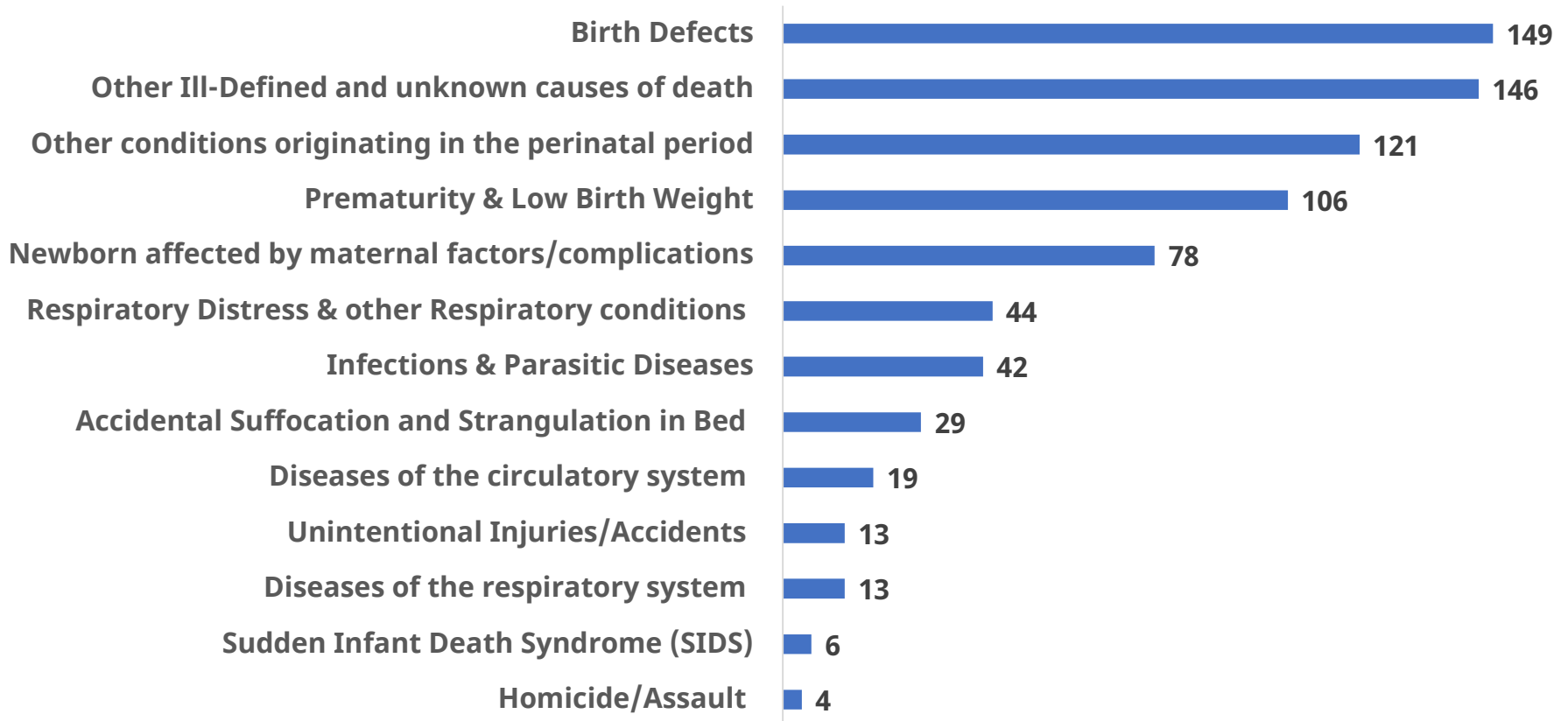
Infants comprise the largest proportion of child deaths in North Carolina

Child Deaths by Age Group, NC Residents 2021 (N=1,360 deaths)



Birth Defects are the leading cause of infant death in North Carolina in 2021, followed by deaths of undetermined cause

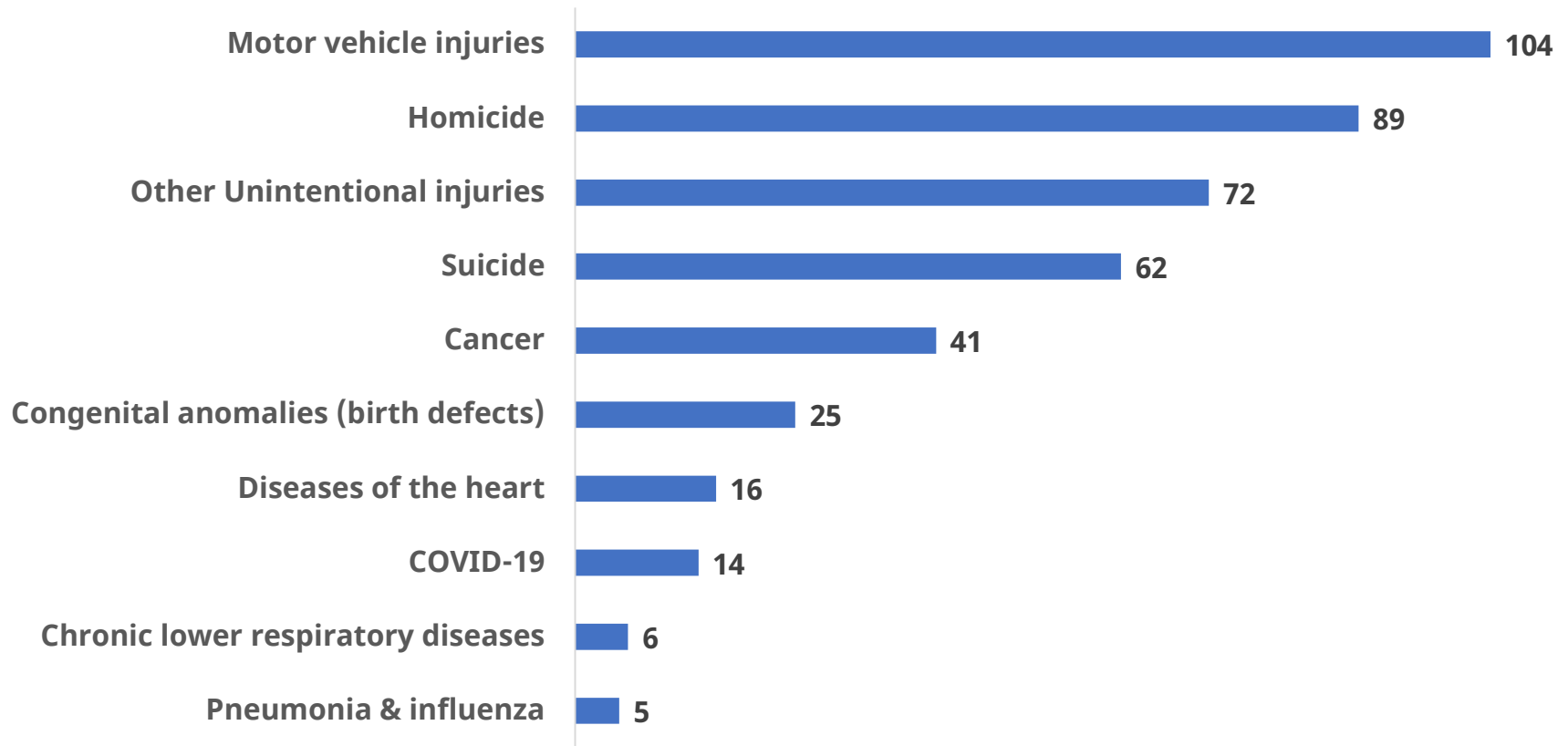
*Leading Causes of Death Among Infants: Number of Deaths by Cause, NC 2021
(N=820 Total Deaths)*



* Residual (all other causes) = 50 deaths

In 2021, injuries are the leading cause of death among North Carolina children ages 1 to 17 - comprising 61% of all (non-infant) child deaths

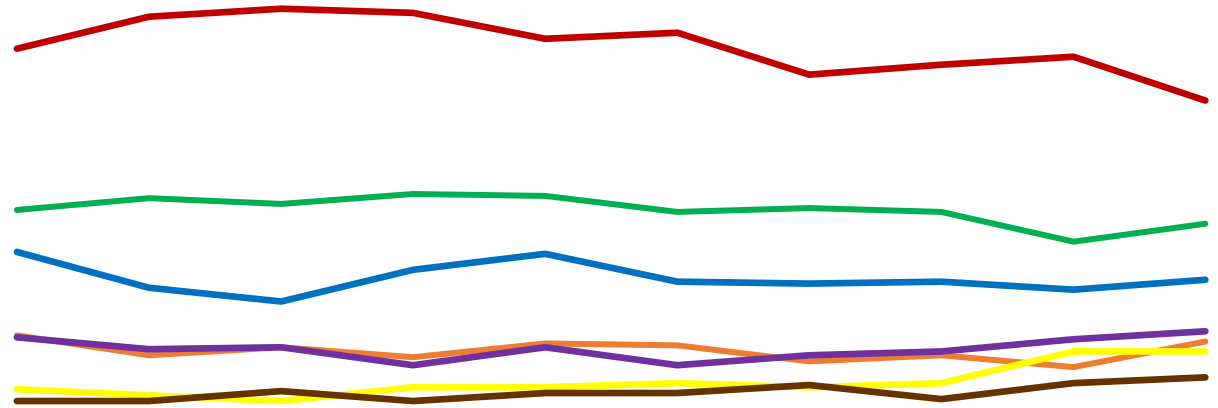
*Leading Causes of Death Among Children Ages 1 to 17: Number of Deaths by Cause, NC 2021
(N=540 Total Deaths)*



** Residual (all other causes) = 106 deaths*

Over the last decade, child death rates associated with homicides, suicides & unintentional (non-MVA) injuries have increased

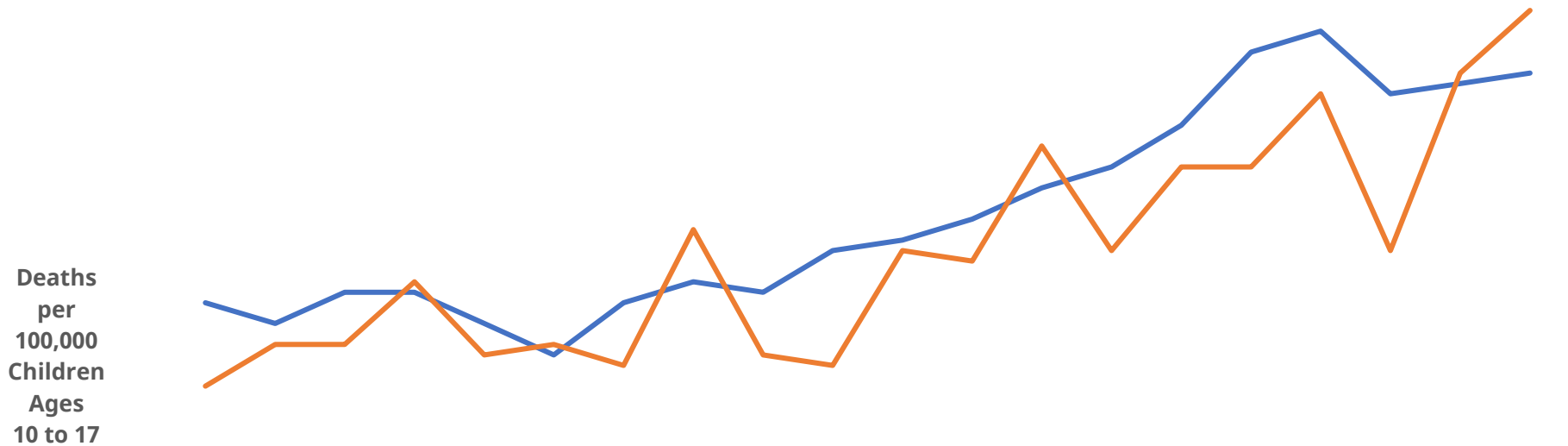
Trends in Child Death Rates for Selected Causes of Death, NC 2012-2021*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Birth Defects	9.0	7.2	6.5	8.1	8.9	7.5	7.4	7.5	7.1	7.6
Perinatal Conditions	19.2	20.8	21.2	21.0	19.7	20.0	17.9	18.4	18.8	16.6
Medical Conditions/Illnesses	11.1	11.7	11.4	11.9	11.8	11.0	11.2	11.0	9.5	10.4
Motor Vehicle Injuries	4.8	3.8	4.2	3.7	4.4	4.3	3.5	3.8	3.2	4.5
Other Unintentional Injuries	4.7	4.1	4.2	3.3	4.2	3.3	3.8	4.0	4.6	5.0
Homicide	2.1	1.8	1.5	2.2	2.2	2.4	2.2	2.4	4.0	4.0
Suicide	1.5	1.5	2.0	1.5	1.9	1.9	2.3	1.6	2.4	2.7

Among children ages 10 to 17, suicide rates increased in both the US and NC over the last two decades

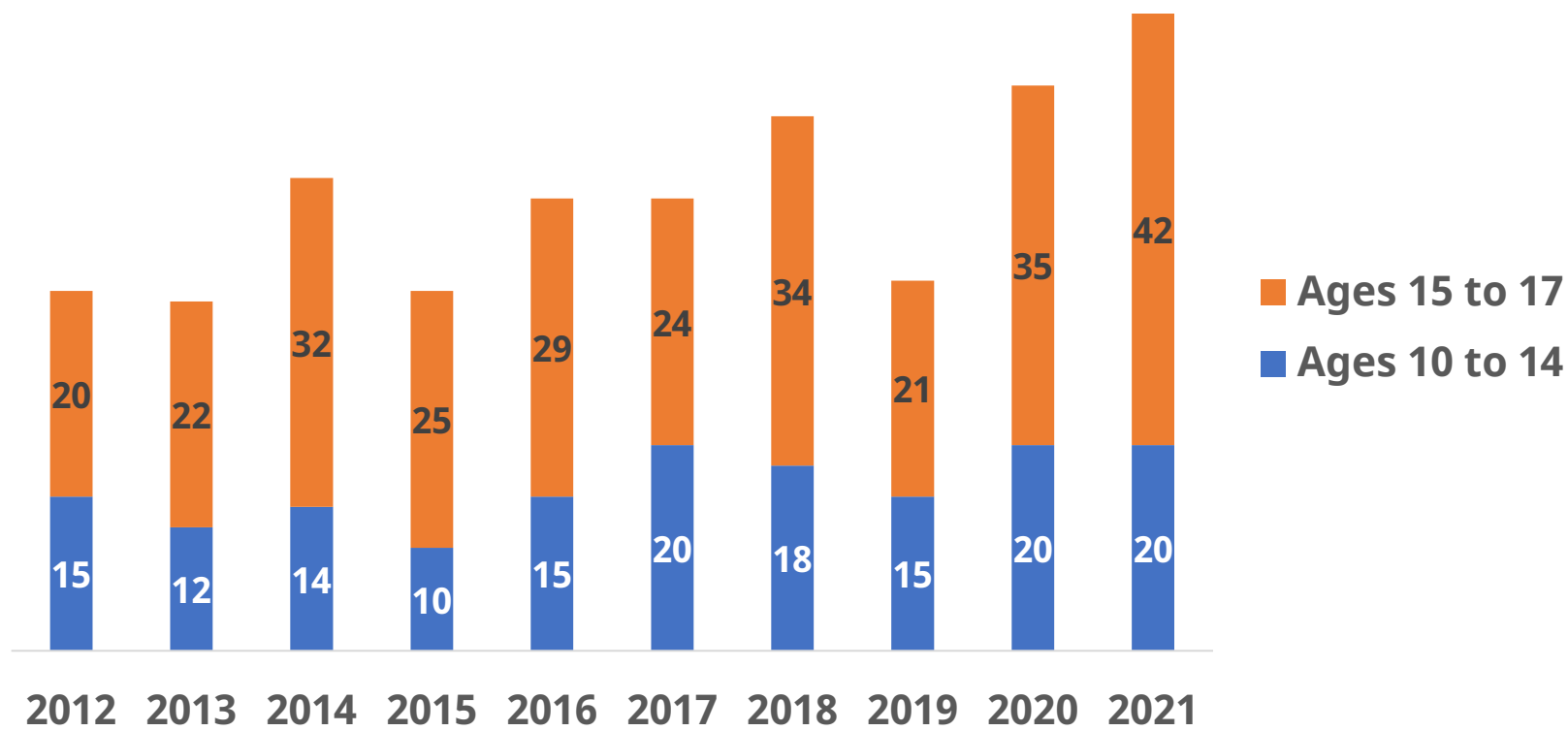
*Suicide Rates, Ages 10 to 17: US & NC 2002-2021**



* Suicides include the following ICD mortality codes : X60-X84 (Intentional self-harm; Y87.0 (Sequelae of intentional self-harm), U03 (Suicide Terrorism)

Suicides have been rising among NC children ages 10 to 17 over the last decade, with older teens experiencing the largest increase

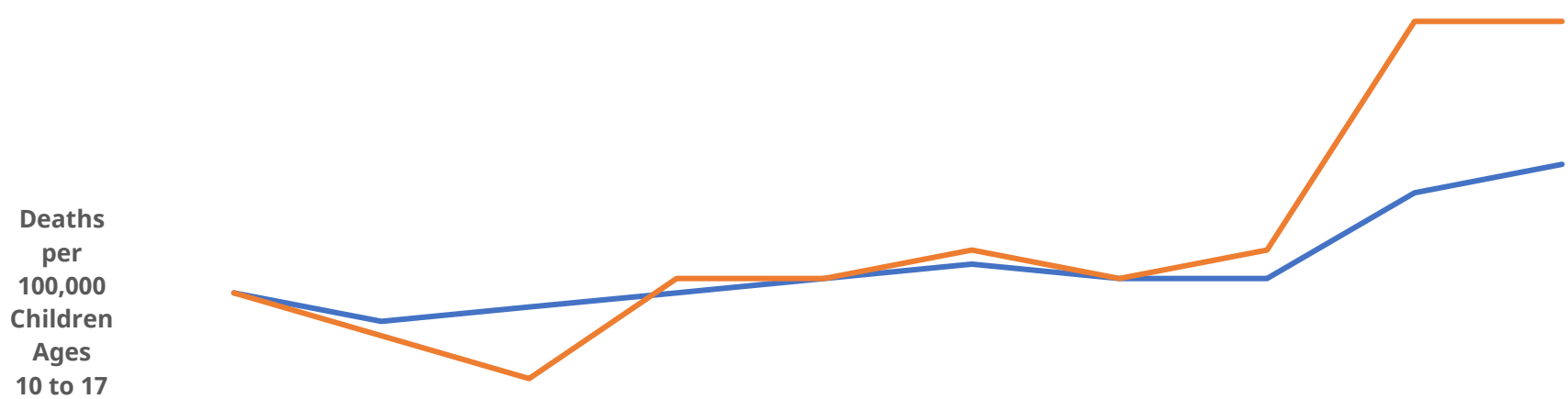
Number of Suicides by Age Group: Ages 10 to 17, NC 2012-2021



* Suicides include the following ICD mortality codes : X60-X84 (Intentional self-harm; Y87.0 (Sequelae of intentional self-harm), U03 (Suicide Terrorism)

North Carolina Child Homicide rates remain high in 2020 and 2021

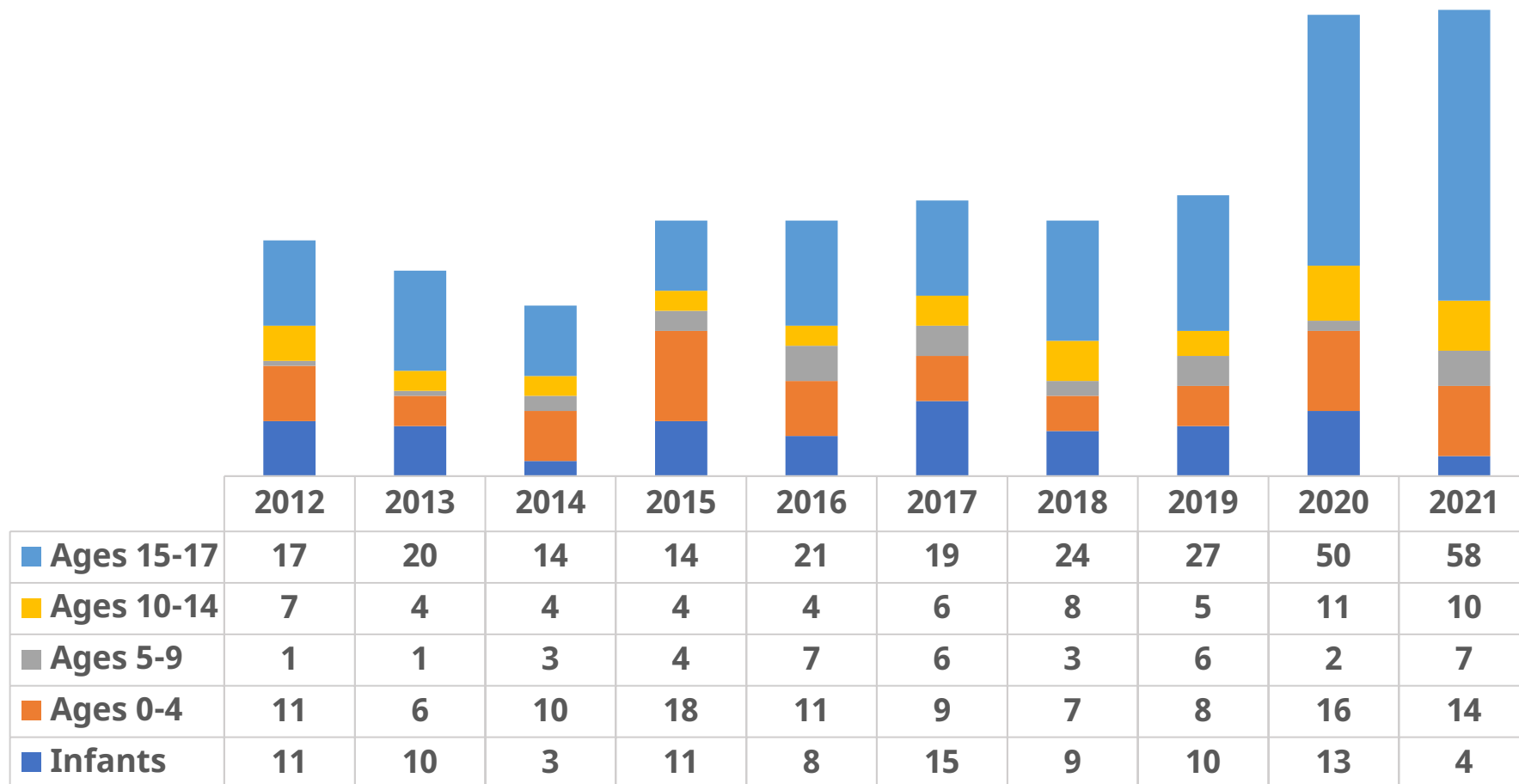
Child Homicide Rates, Ages 0 to 17: US & NC, 2012-2021



* Homicide includes the following ICD mortality codes : X85-Y09 (Assault), Y87.1 (Sequelae of assault), U01 (Terrorism Assault)

Among children, older teens (ages 15 to 17) account for the largest increase in homicides over the last decade

Number of Child Homicides by Age Group: NC 2012-2021

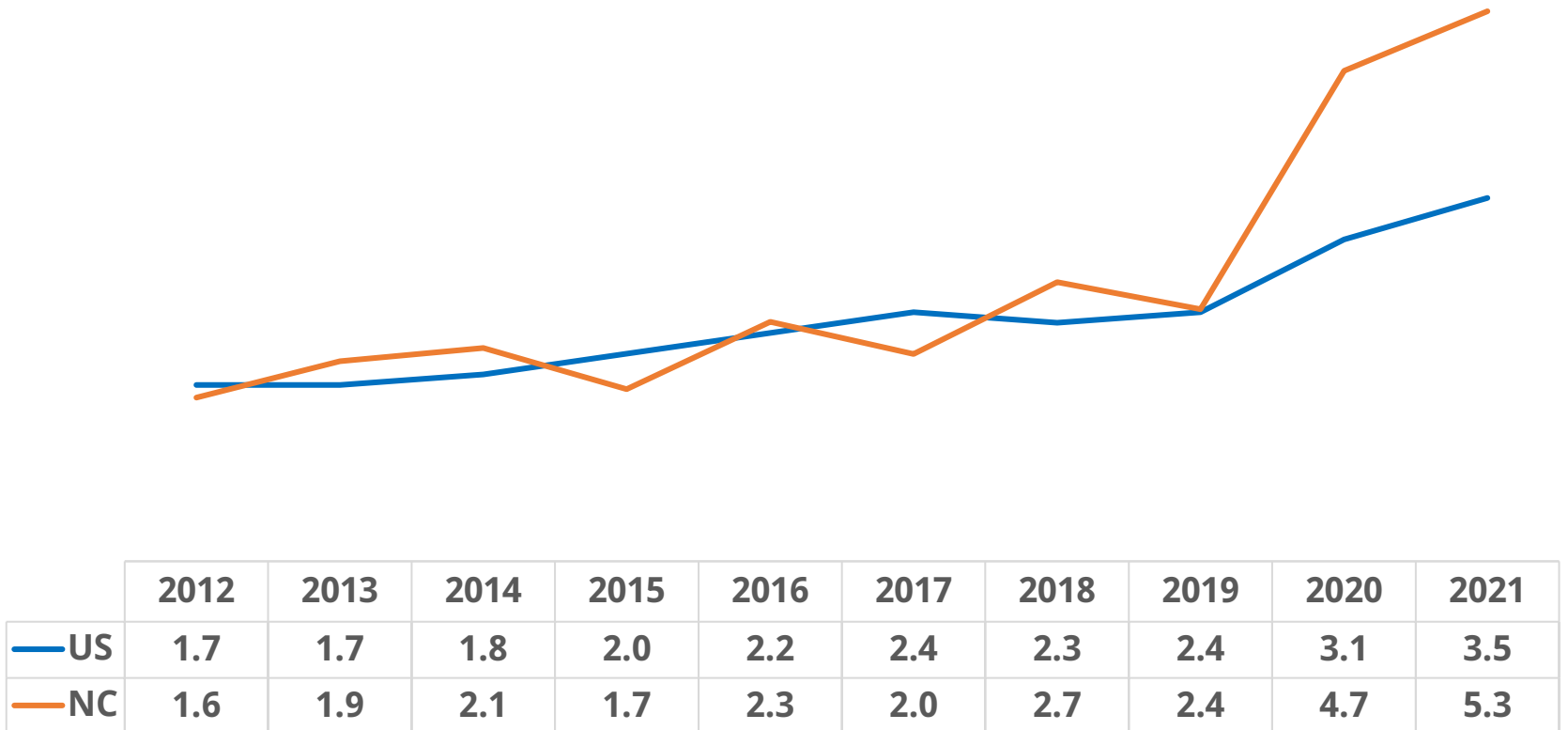


* Homicide includes the following ICD mortality codes : X85-Y09 (Assault), Y87.1 (Sequelae of assault), U01 (Terrorism Assault)

Firearm-related death rates have increased substantially in North Carolina in the last two years

Firearm-related Mortality Rates, Children Ages 0 to 17: NC & US, 2012-2021*

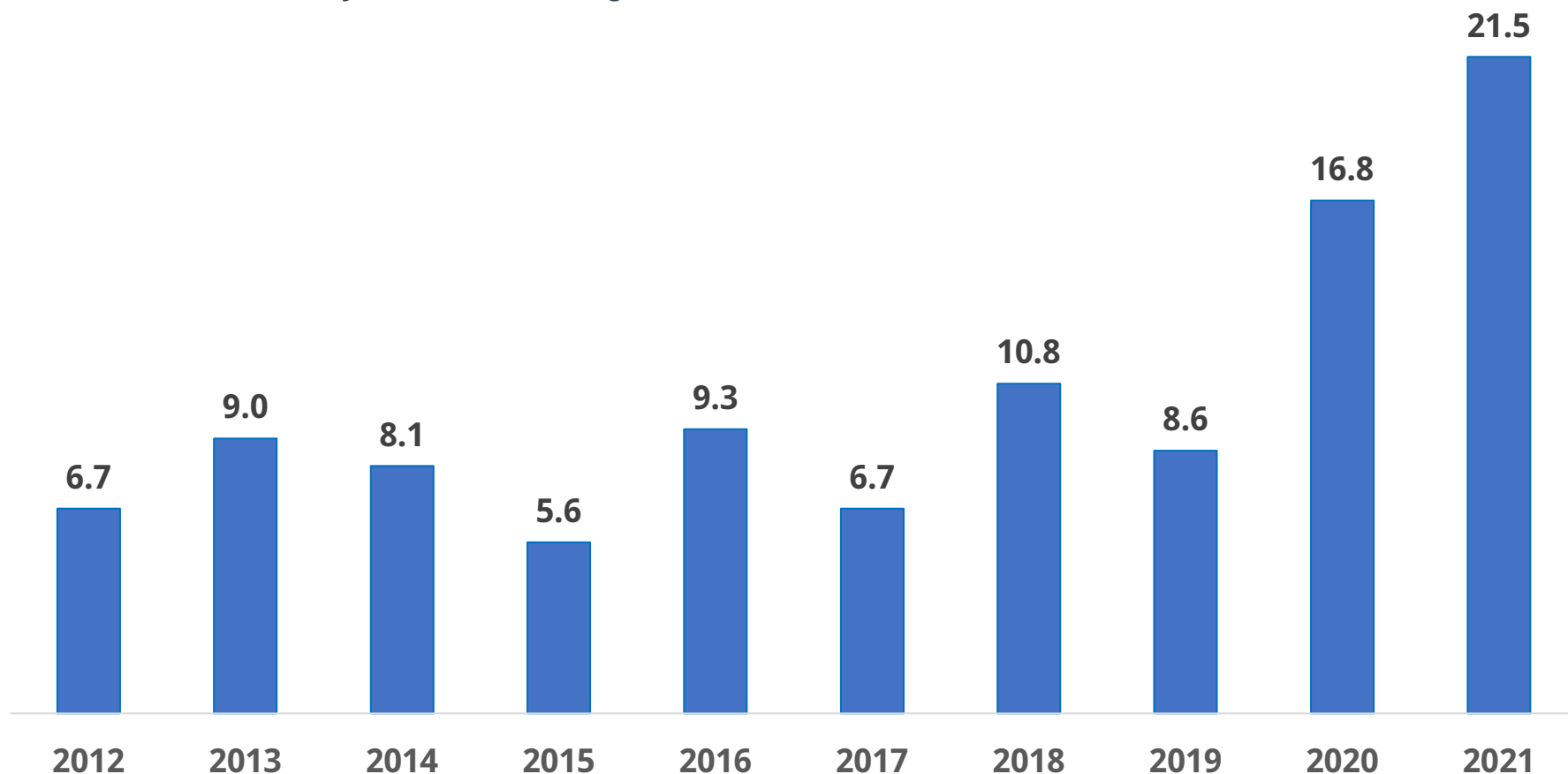
Deaths
per
100,000
Children
Ages
0 to 17



* Firearm deaths include the following ICD mortality codes : W32-W34 (Unintentional), X72-X74 (Suicide), X93-X95 (Homicide), U014 (Terrorism), & Y22-Y24 (Undetermined Intent)

Adolescents ages 15 to 17 have experienced large increases in firearm-related mortality rates in both 2020 & 2021

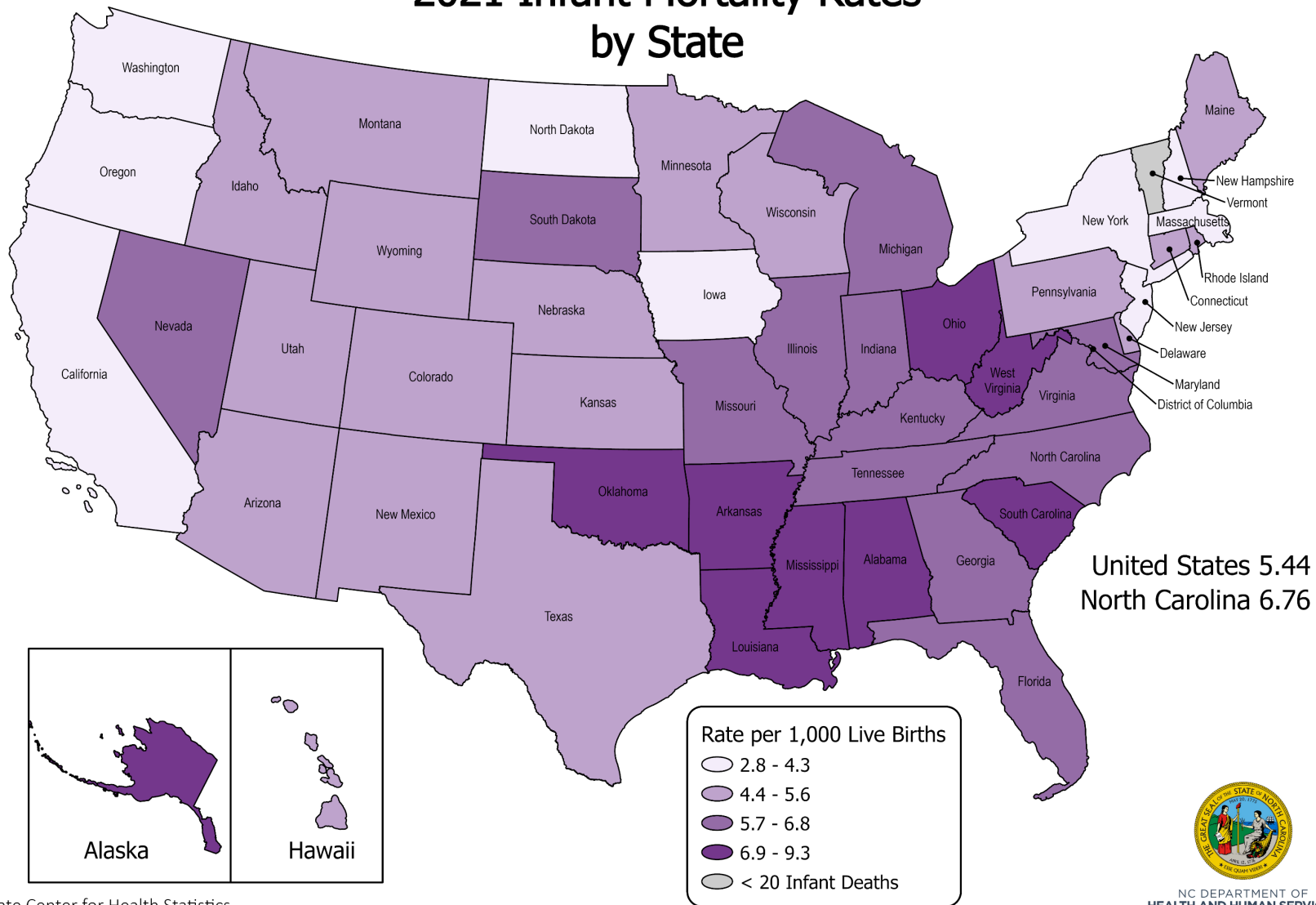
Firearm-related Mortality Rates, Children Ages 15 to 17: NC, 2012-2021*



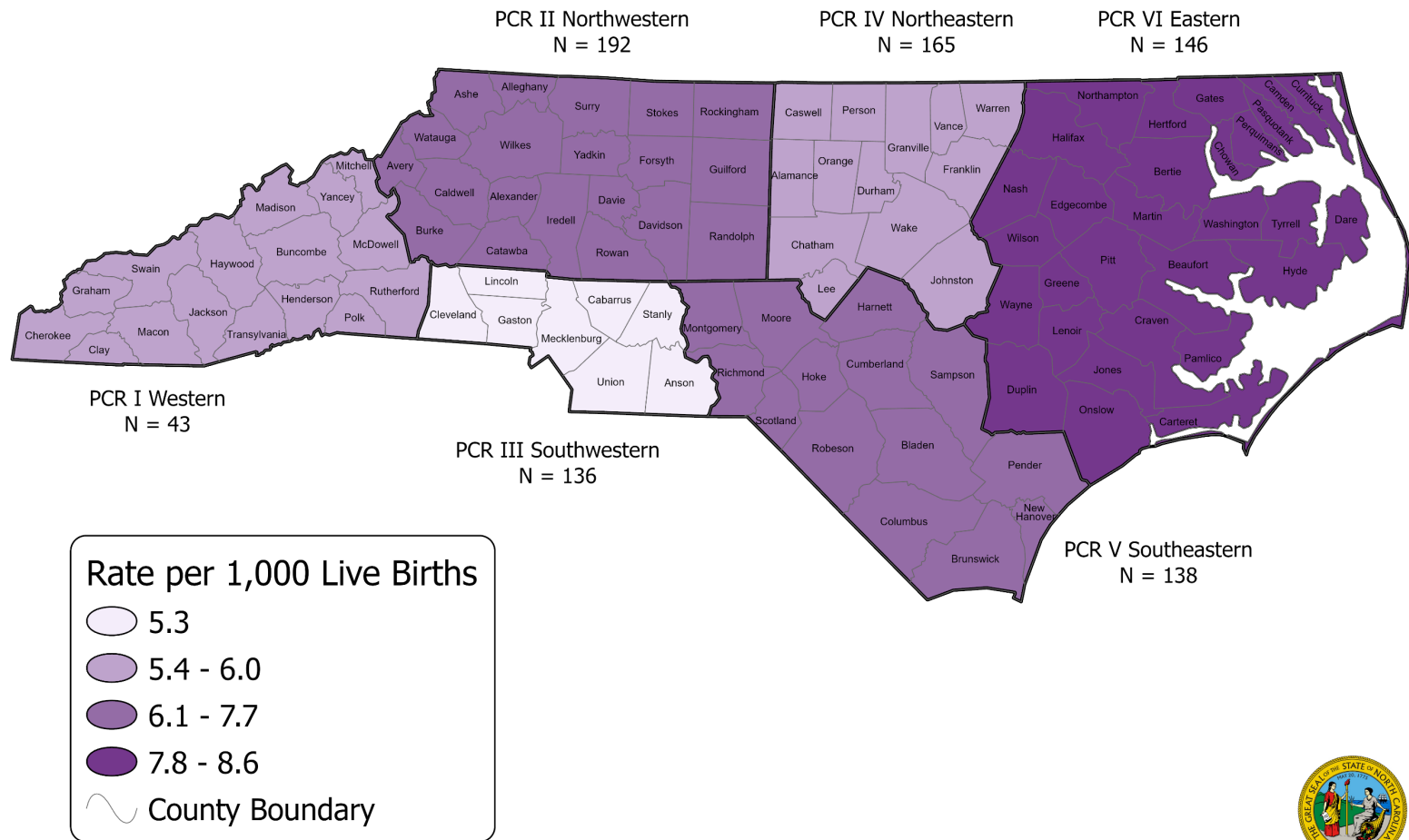
* Firearm deaths include the following ICD mortality codes : W32-W34 (Unintentional), X72-X74 (Suicide), X93-X95 (Homicide), U014 (Terrorism), & Y22-Y24 (Undetermined Intent)

Geographic Patterns in Infant & Child Mortality

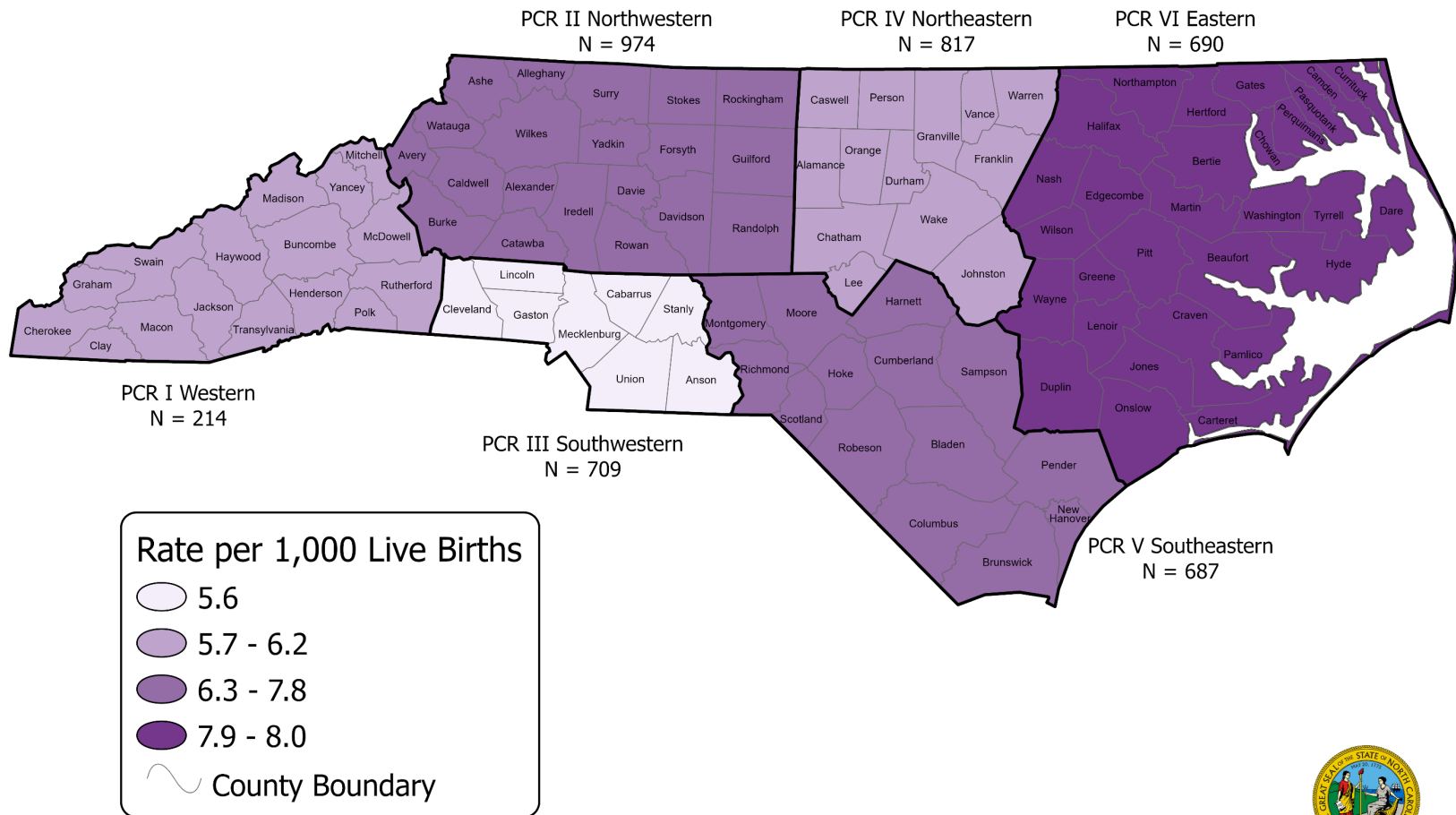
United States 2021 Infant Mortality Rates by State



North Carolina Infant Mortality Rates by Perinatal Care Regions (PCR) 2021

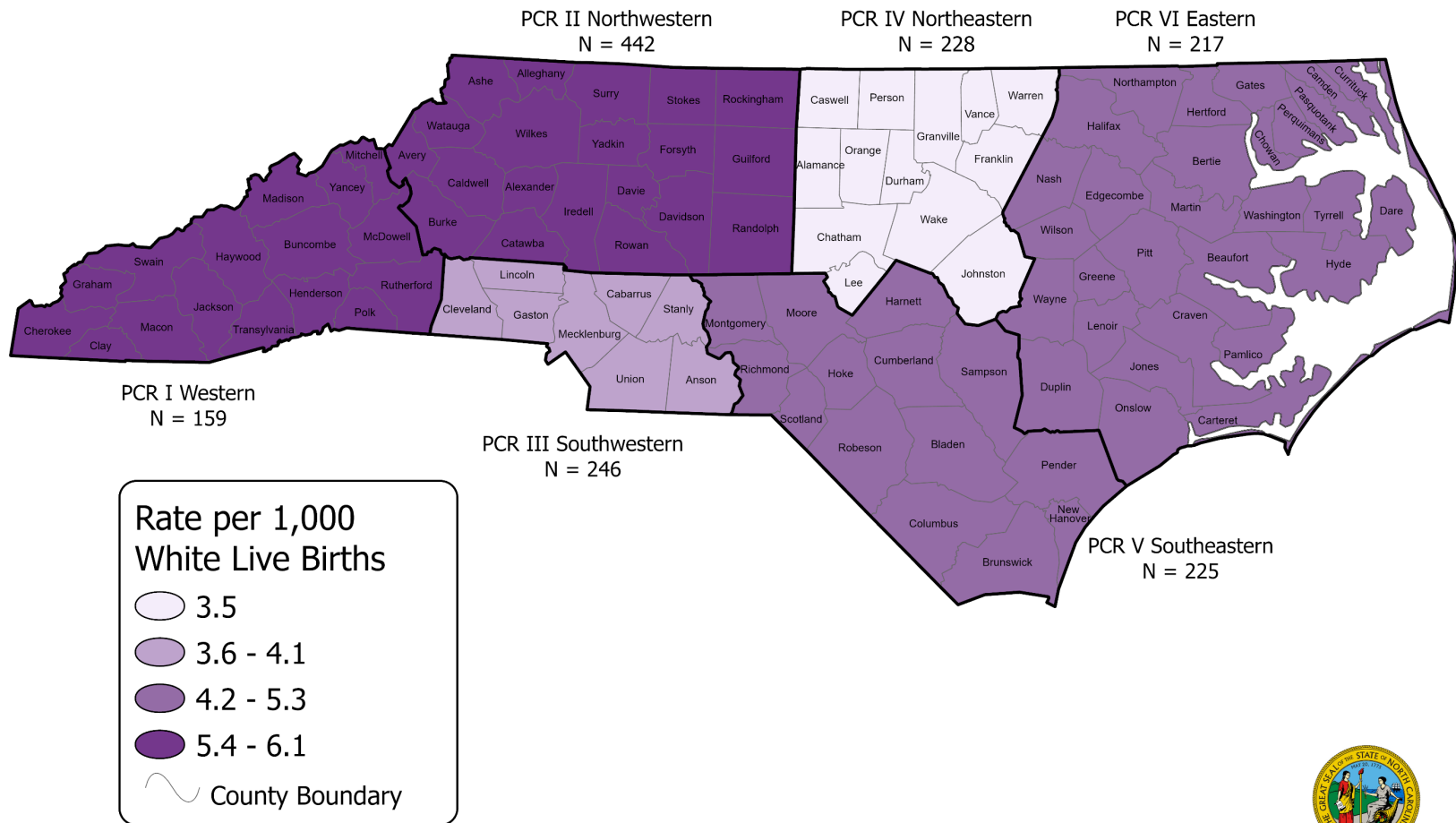


North Carolina Infant Mortality Rates by Perinatal Care Regions (PCR) 2017 - 2021



North Carolina

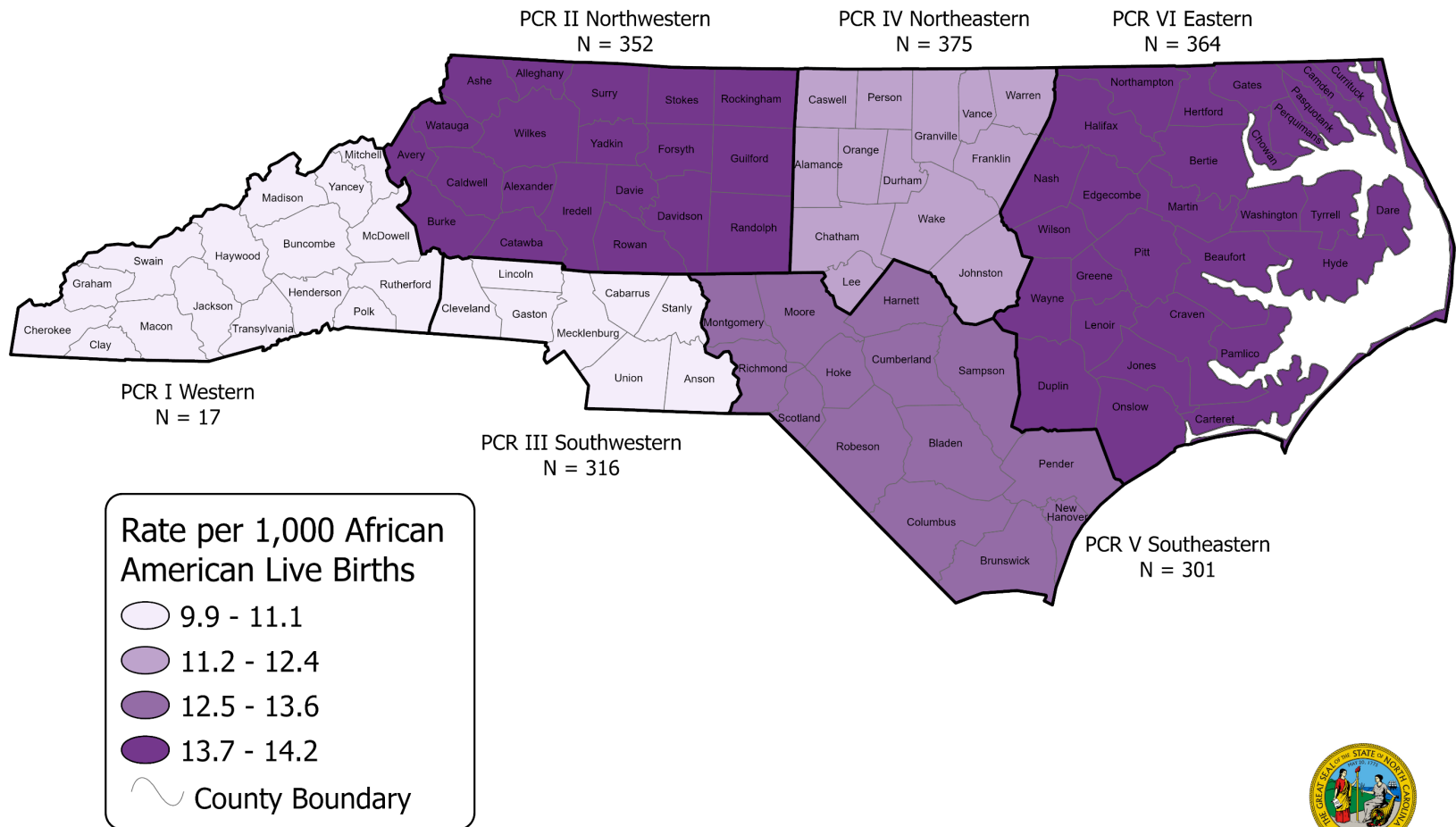
Non-Hispanic White Infant Mortality Rates by Perinatal Care Regions (PCR) 2017 - 2021



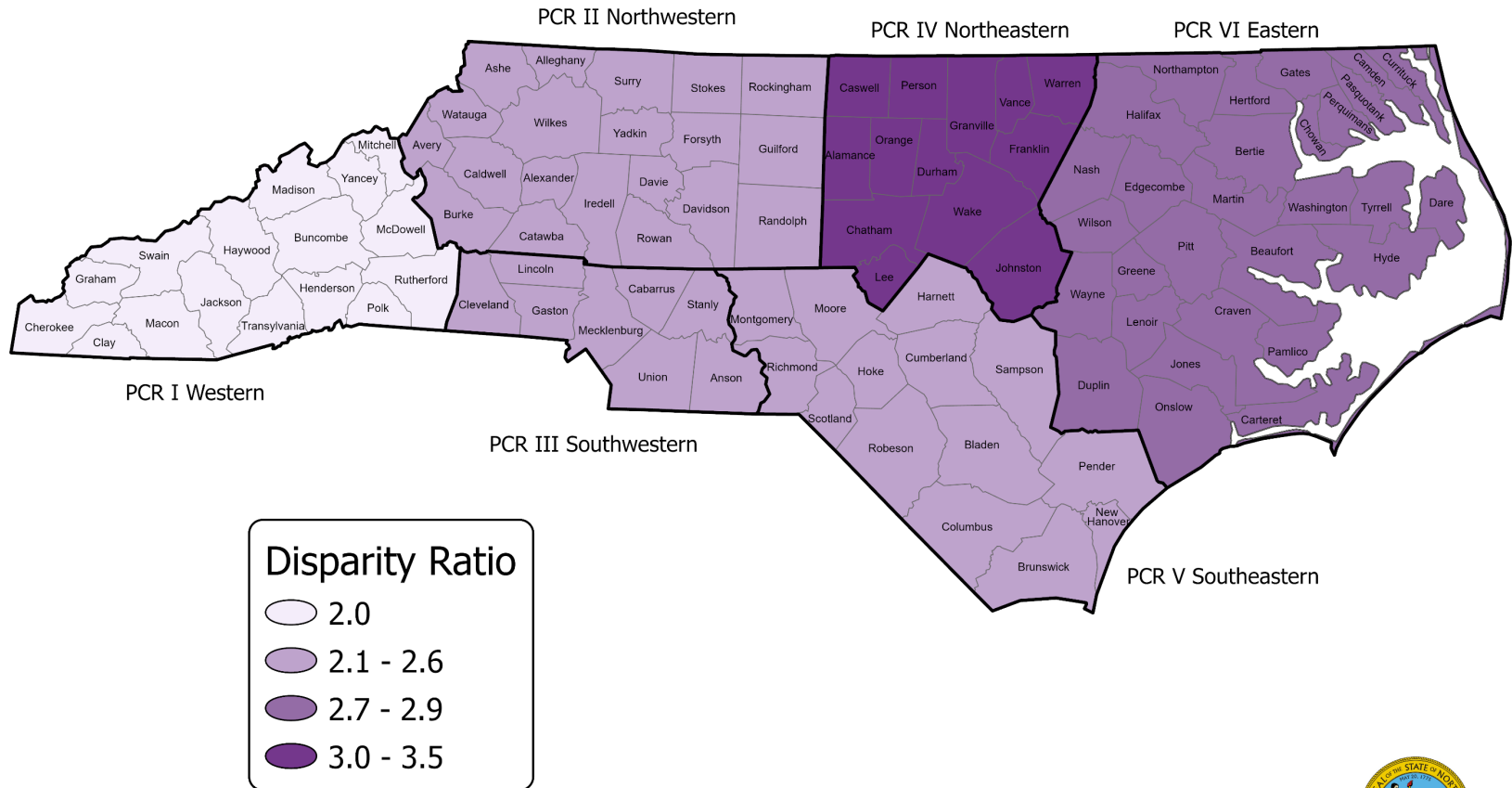
North Carolina

Non-Hispanic African American Infant Mortality Rates by Perinatal Care Regions (PCR)

2017 - 2021

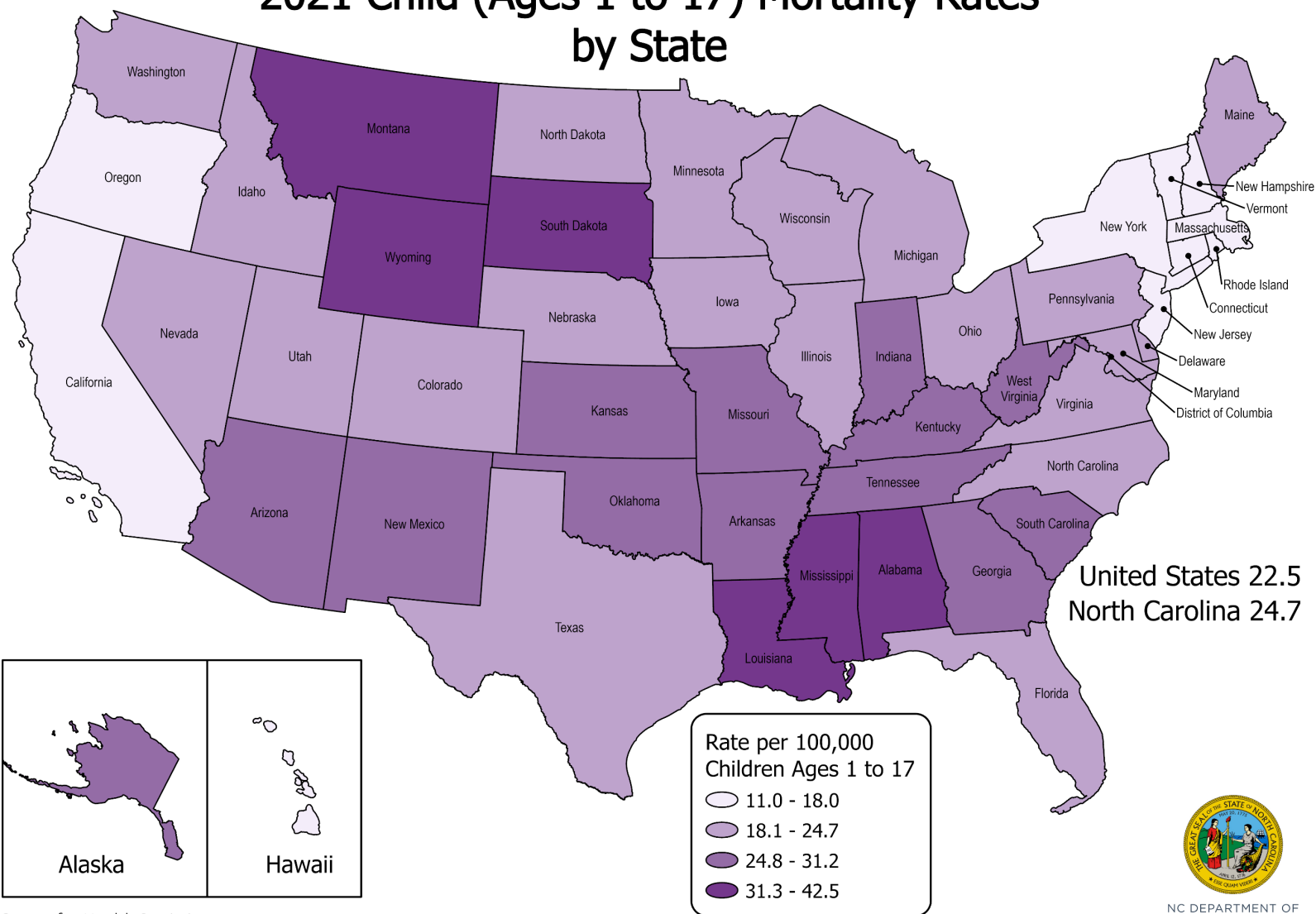


North Carolina Infant Mortality Racial Disparities Between Non-Hispanic Whites and Non-Hispanic African Americans by Perinatal Care Regions (PCR) 2017 - 2021



United States

2021 Child (Ages 1 to 17) Mortality Rates by State

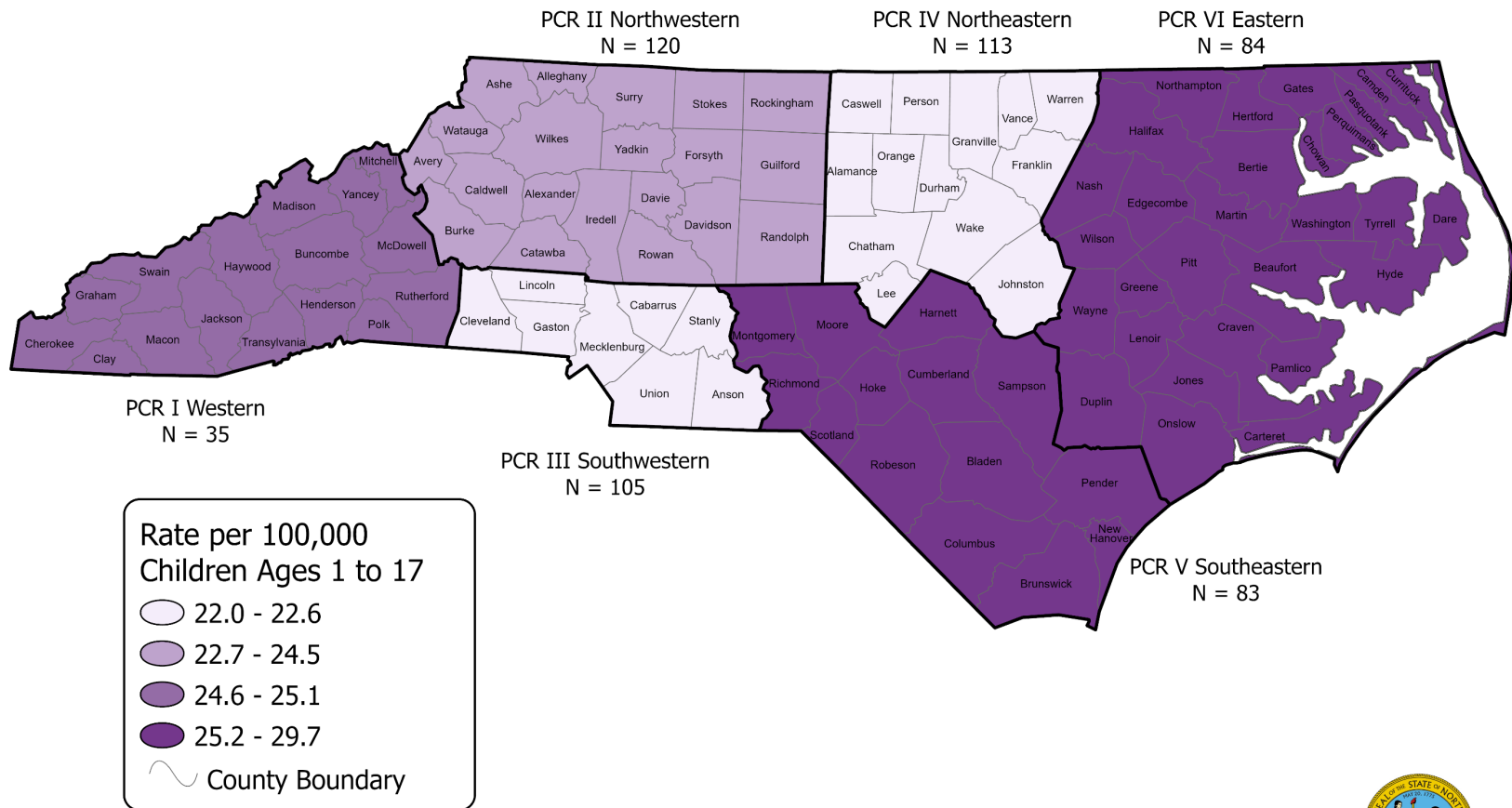


North Carolina

Child (Ages 1 to 17) Mortality Rates

by Perinatal Care Regions (PCR)

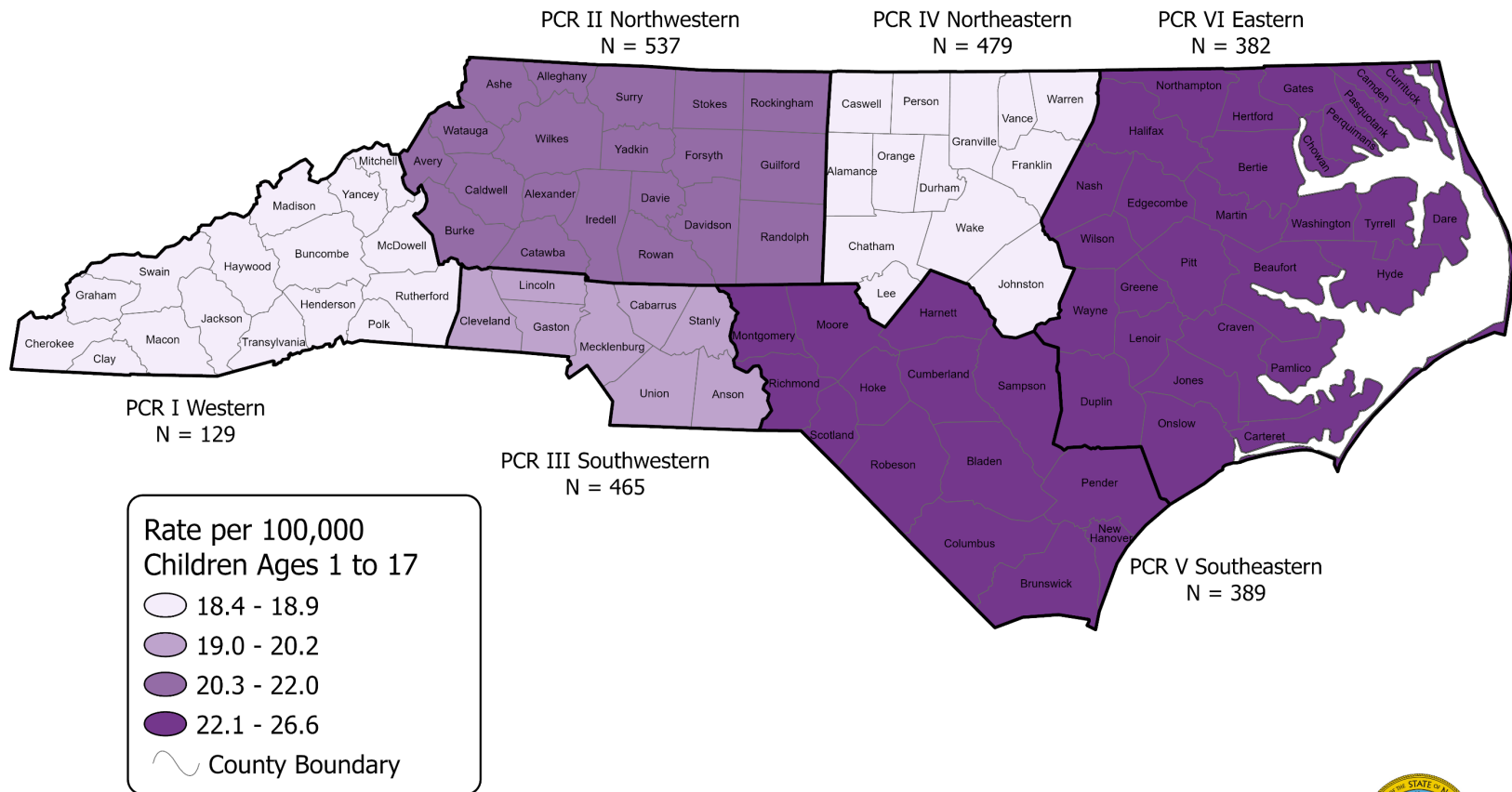
2021



North Carolina

Child (Ages 1 to 17) Mortality Rates by Perinatal Care Regions (PCR)

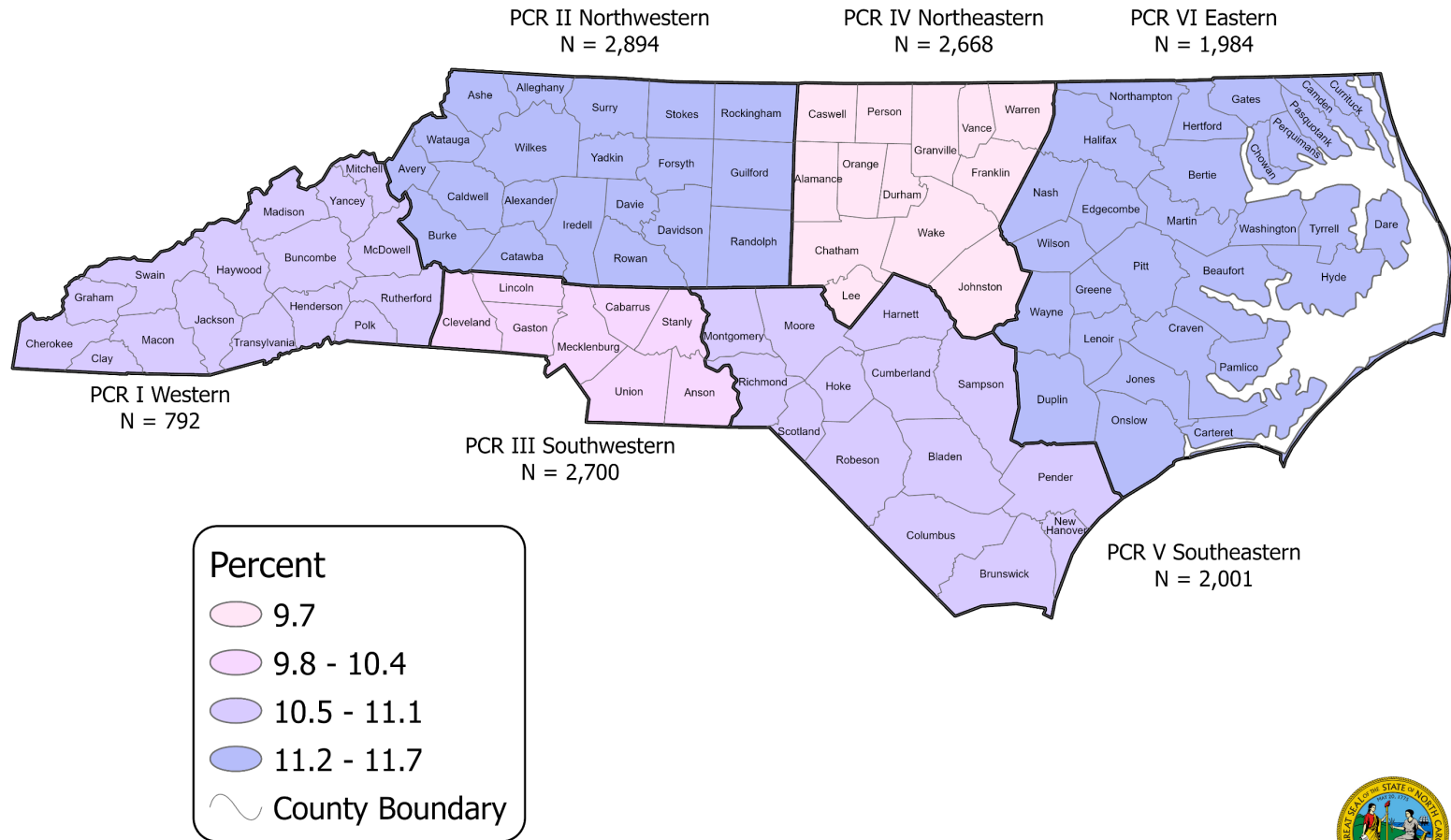
2017 - 2021



Geographic Patterns Among North Carolina Resident Births

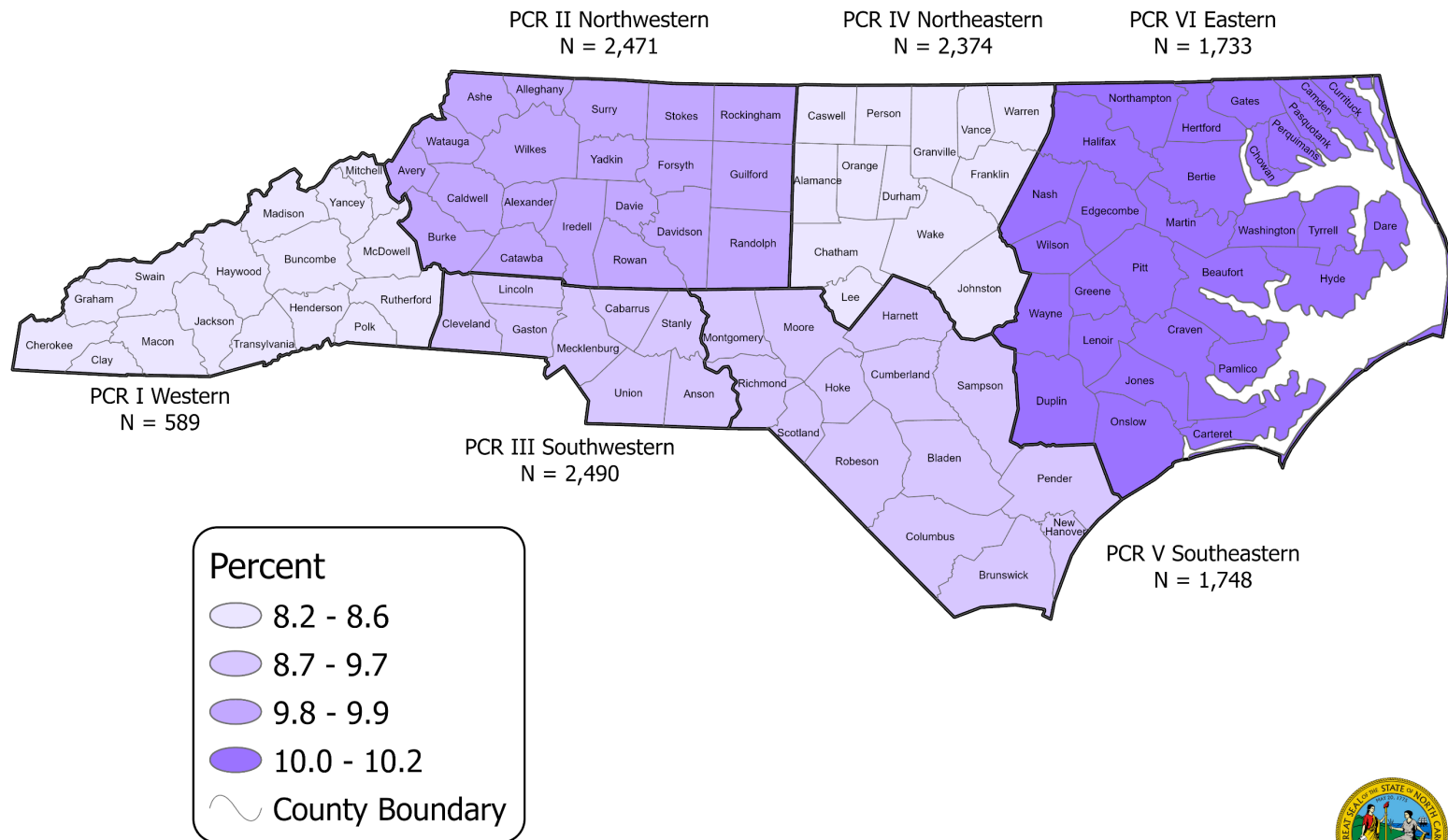
North Carolina

2021 Percent Preterm Births by Perinatal Care Regions (PCR)



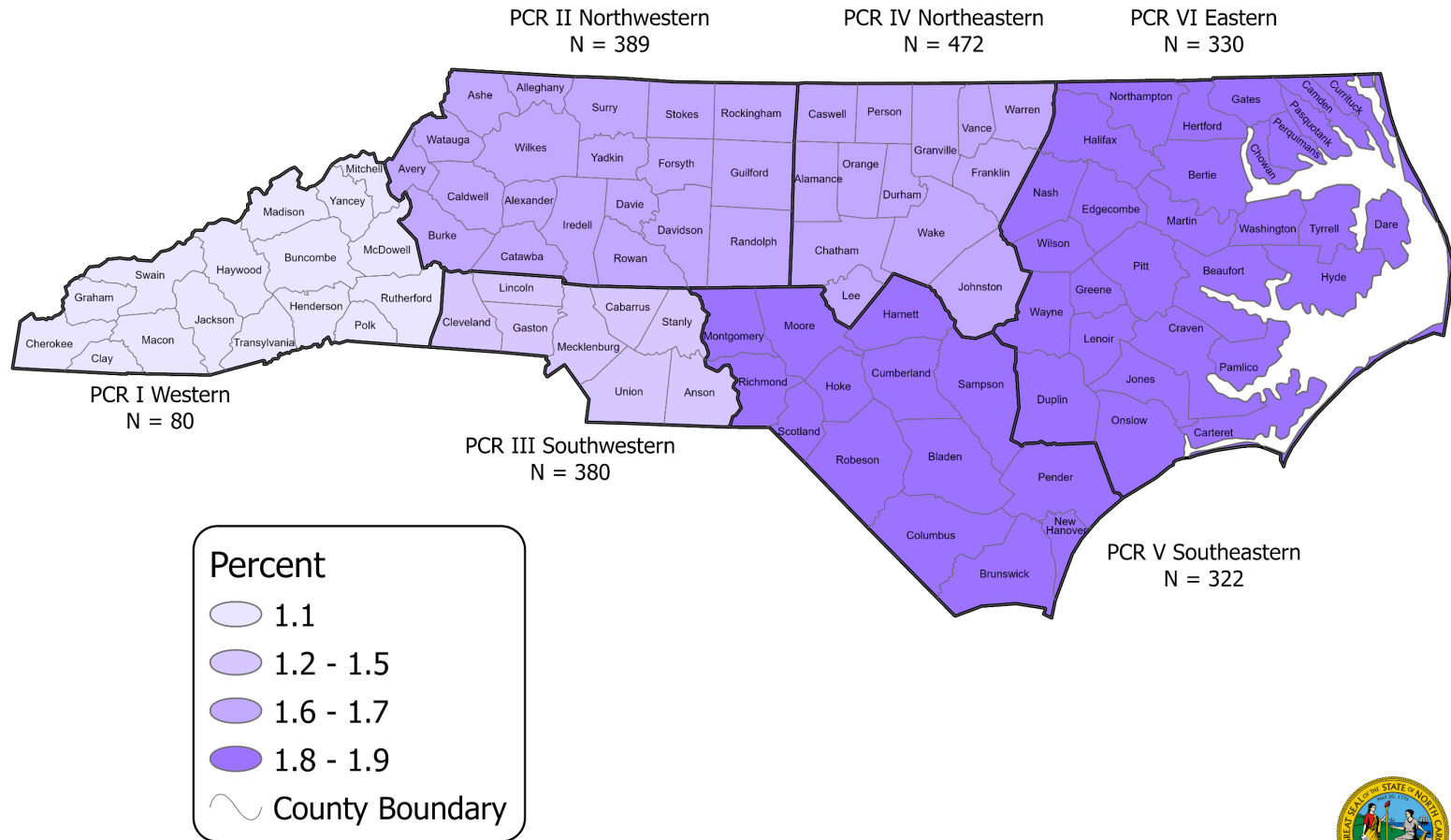
North Carolina

2021 Percent Low Birthweight Births by Perinatal Care Regions (PCR)



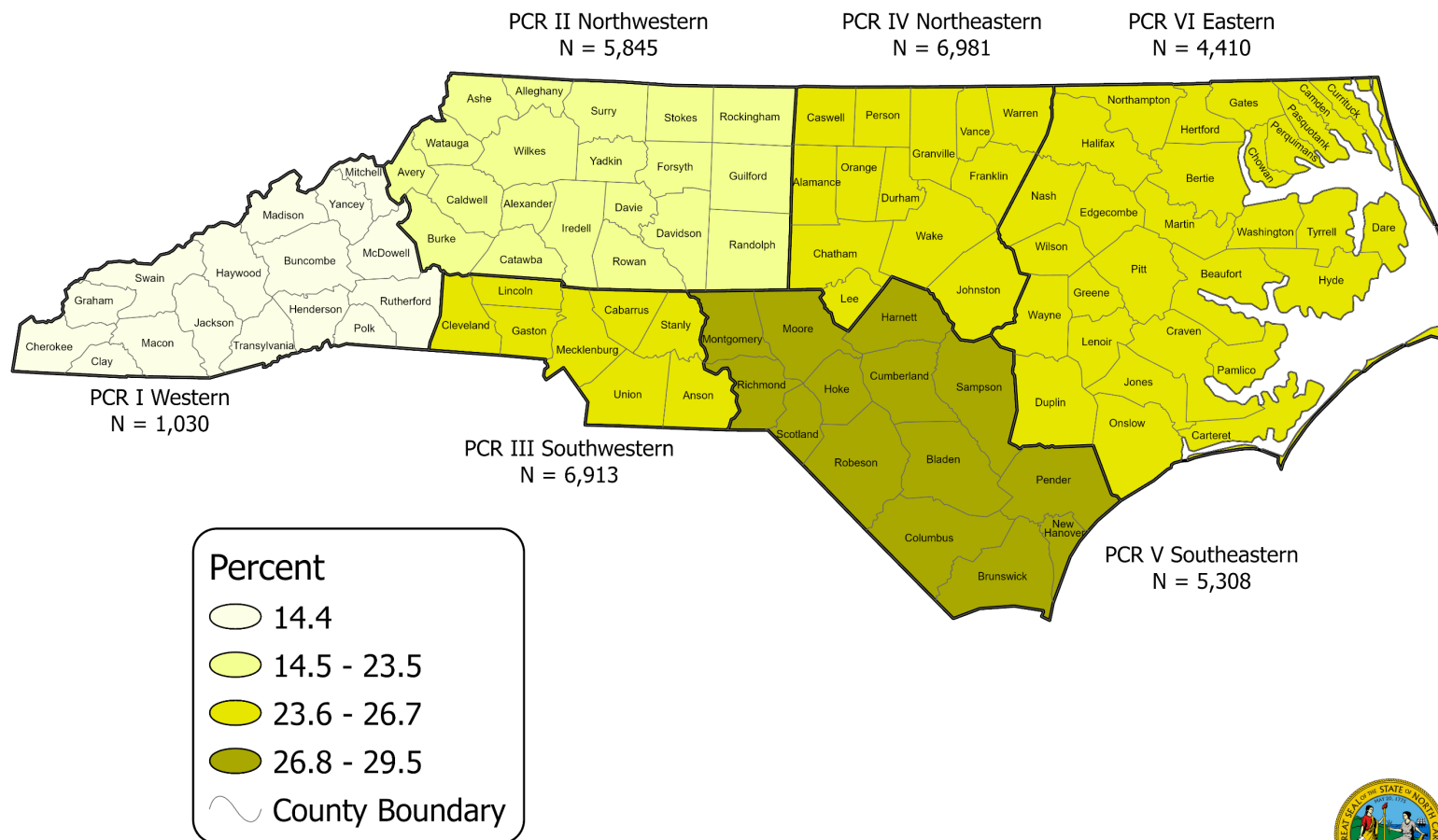
North Carolina

2021 Percent Very Low Birthweight Births by Perinatal Care Regions (PCR)



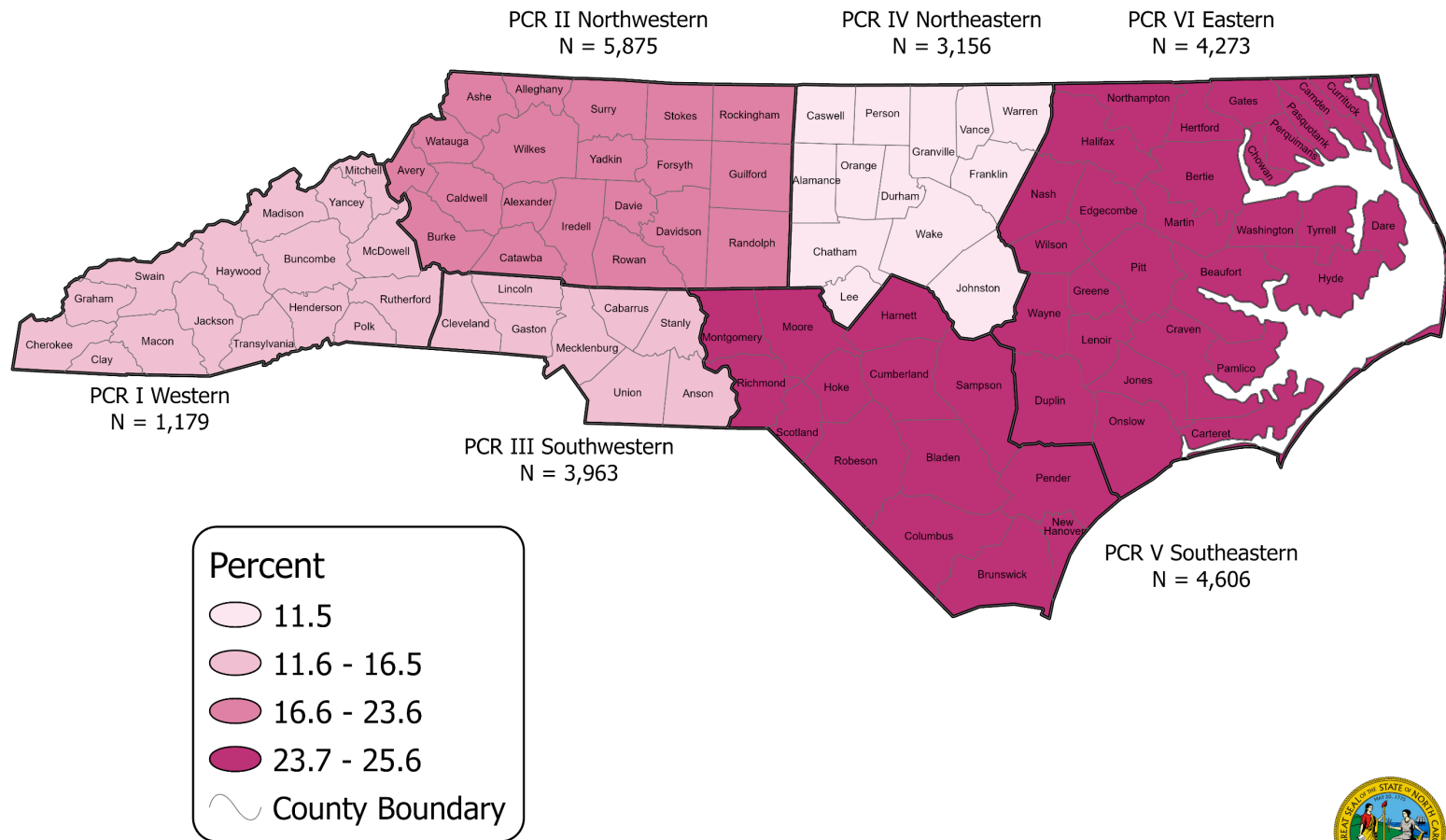
North Carolina

2021 Percent Births to Mothers with Late Prenatal Care by Perinatal Care Regions (PCR)



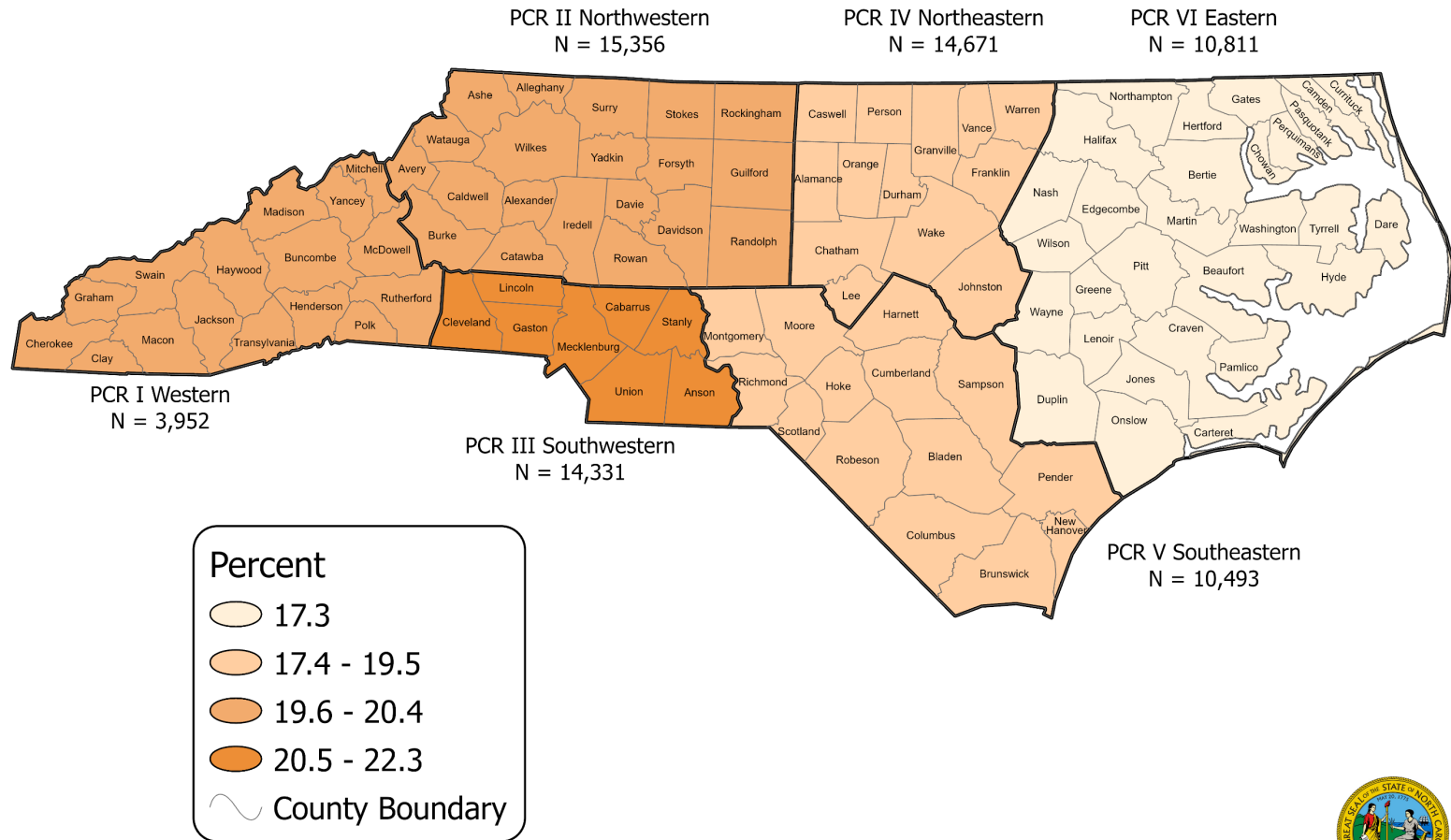
North Carolina

2021 Percent Births Not Breastfeeding at Discharge by Perinatal Care Regions (PCR)



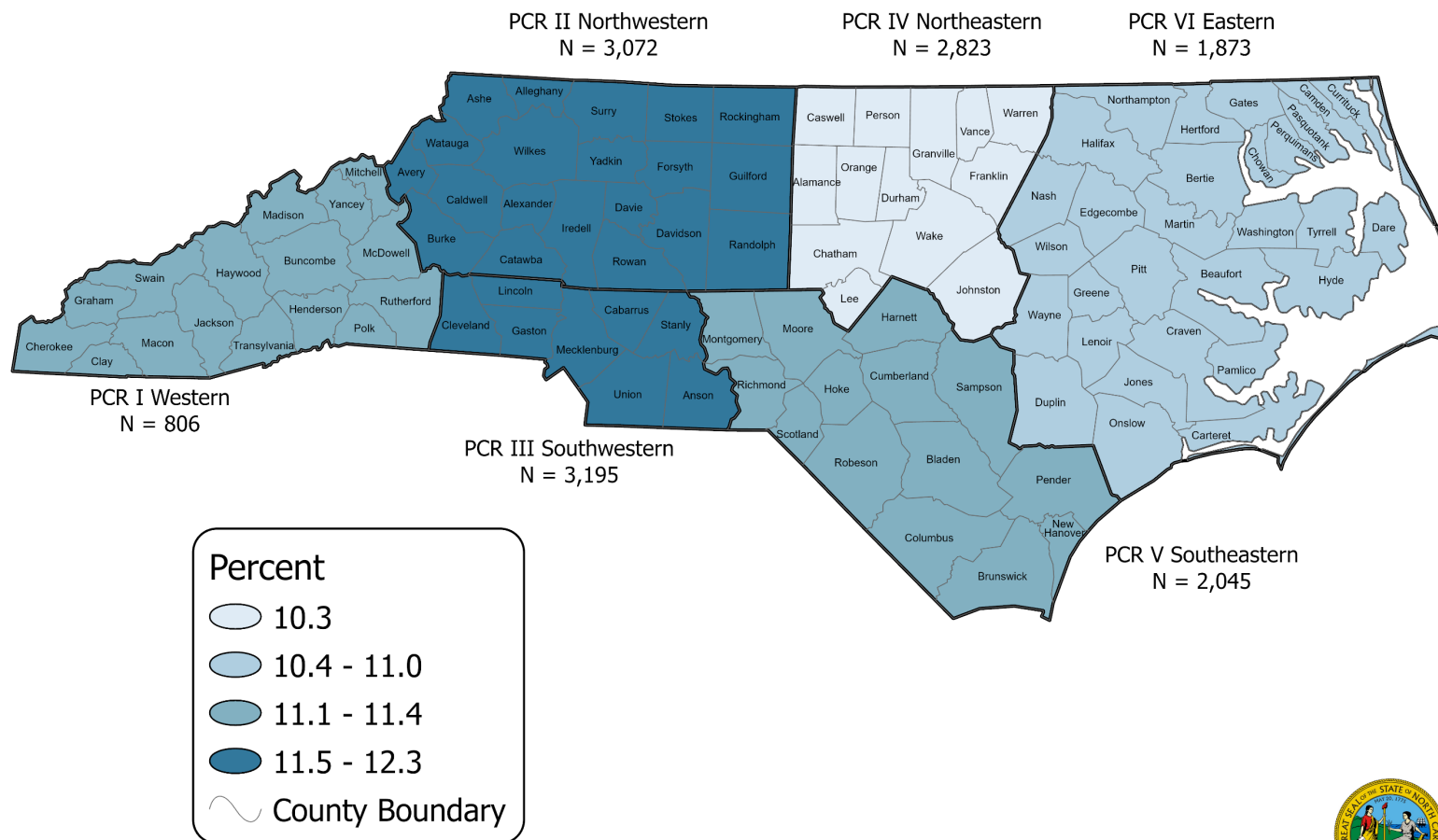
North Carolina

2021 Percent Births to Mothers Overweight or Obese by Perinatal Care Regions (PCR)



North Carolina

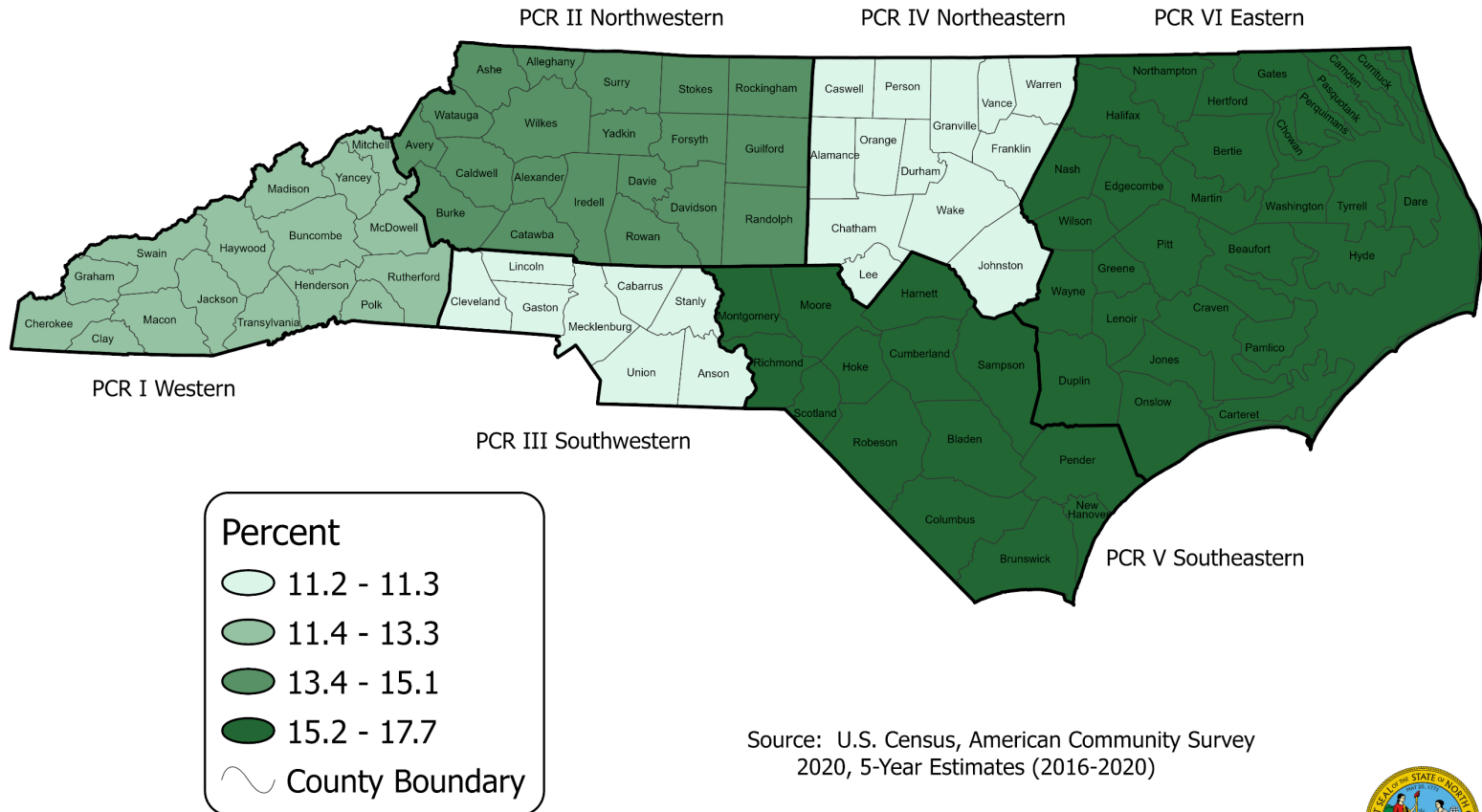
2021 Percent Births to Mothers with No High School Diploma by Perinatal Care Regions (PCR)



Geographic Patterns in Social Determinants of Health in North Carolina

North Carolina

2020 Estimated Percent Population Below Poverty by Perinatal Care Regions (PCR)

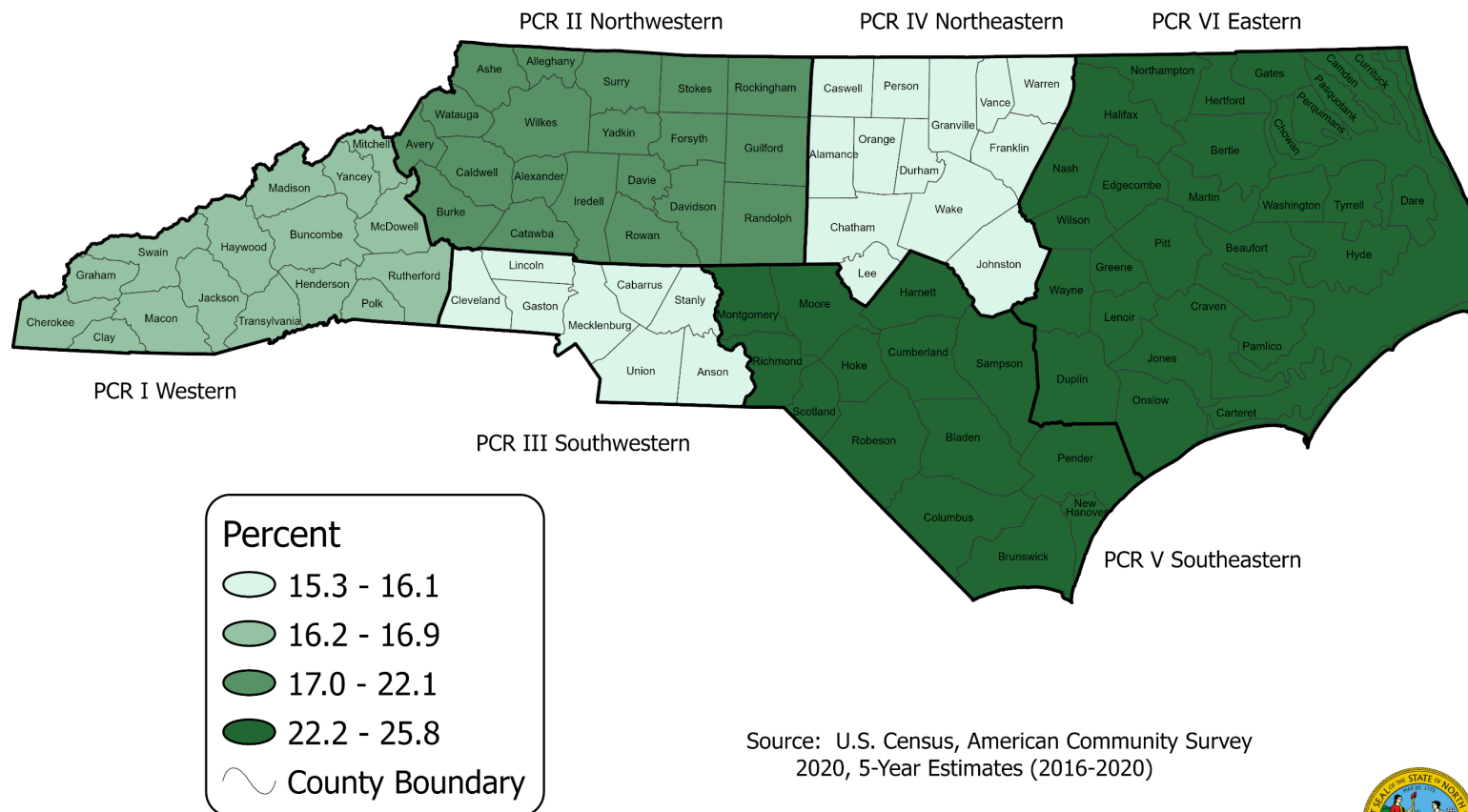


Source: U.S. Census, American Community Survey
2020, 5-Year Estimates (2016-2020)



North Carolina

2020 Estimated Percent Children Ages 0 to 17 Below Poverty by Perinatal Care Regions (PCR)

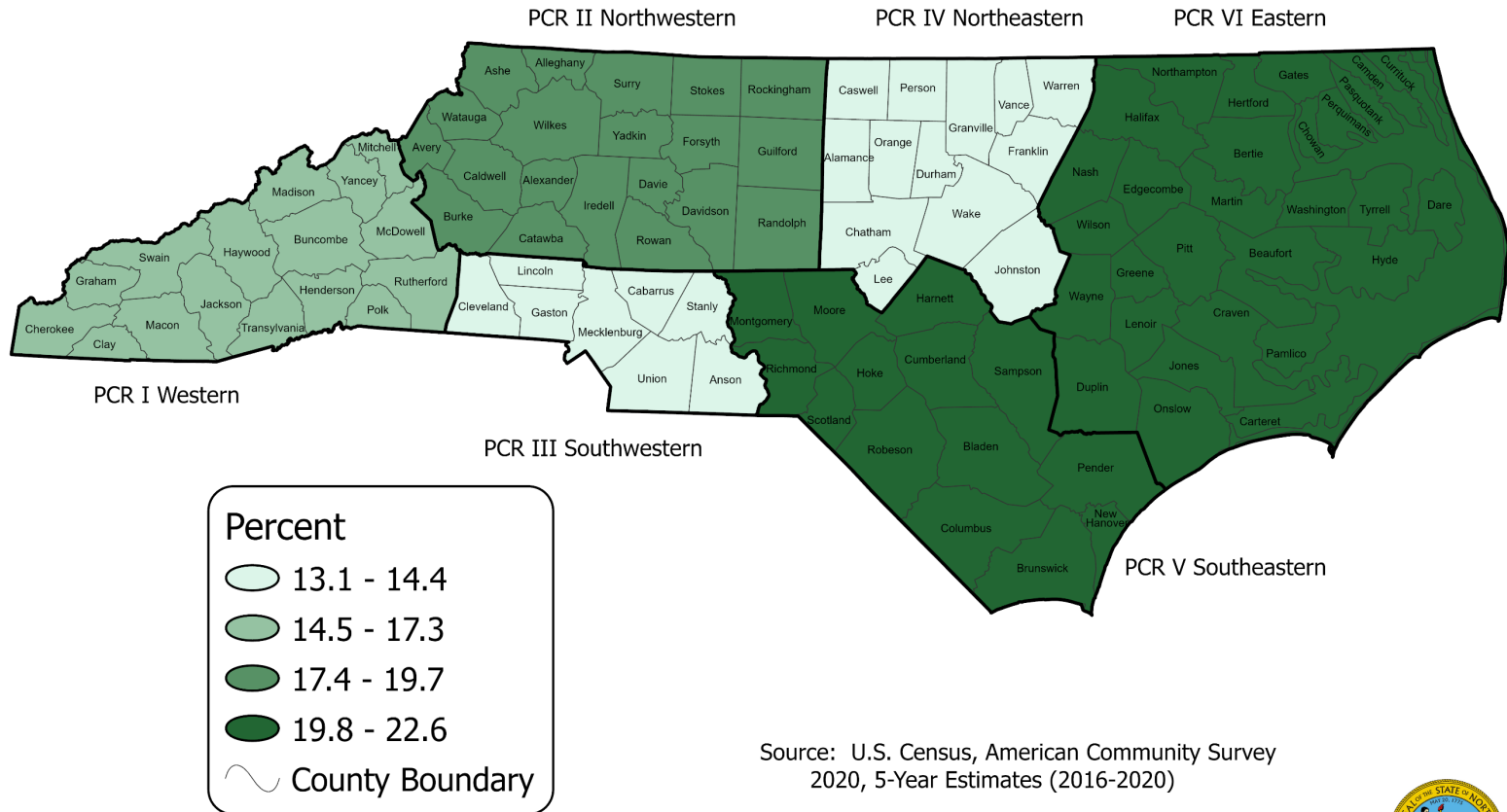


Source: U.S. Census, American Community Survey
2020, 5-Year Estimates (2016-2020)



North Carolina

2020 Estimated Percent Females Ages 15 to 44 Below Poverty by Perinatal Care Regions (PCR)

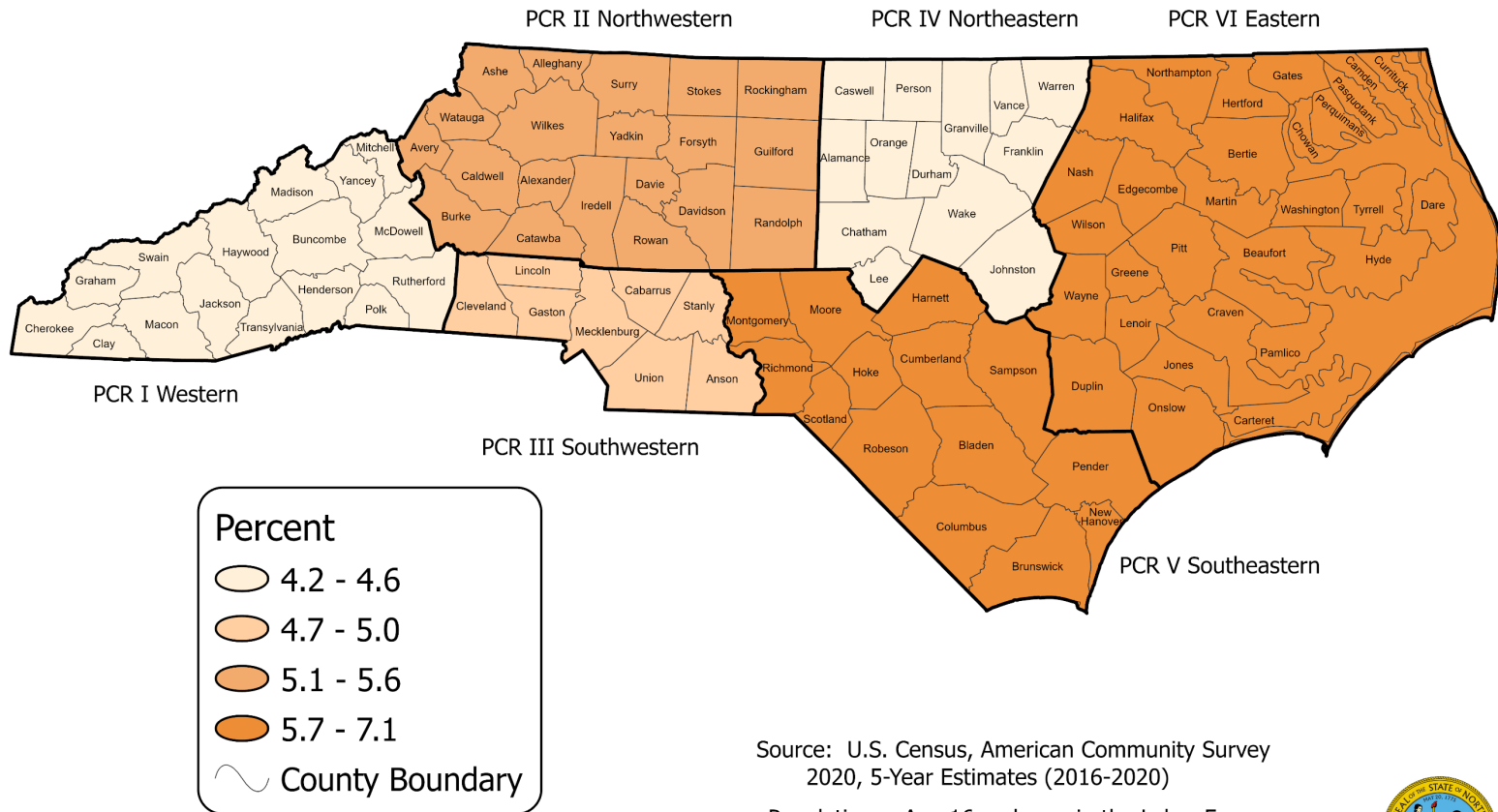


Source: U.S. Census, American Community Survey
2020, 5-Year Estimates (2016-2020)



North Carolina

2020 Estimated Percent Population Unemployed by Perinatal Care Regions (PCR)



Source: U.S. Census, American Community Survey
2020, 5-Year Estimates (2016-2020)

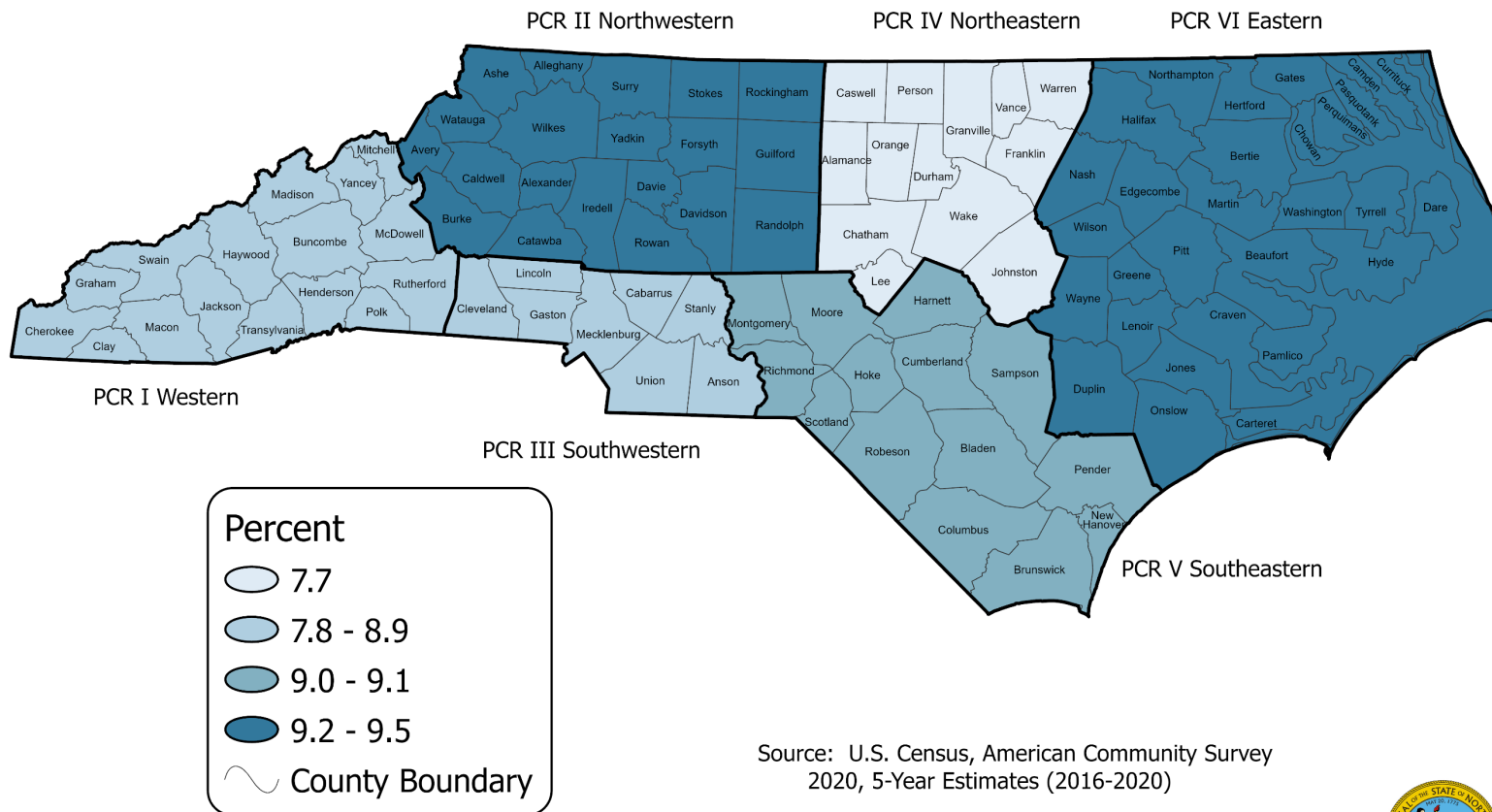
Population = Age 16 and over in the Labor Force



NC DEPARTMENT OF
HEALTH AND HUMAN SERVICES

North Carolina

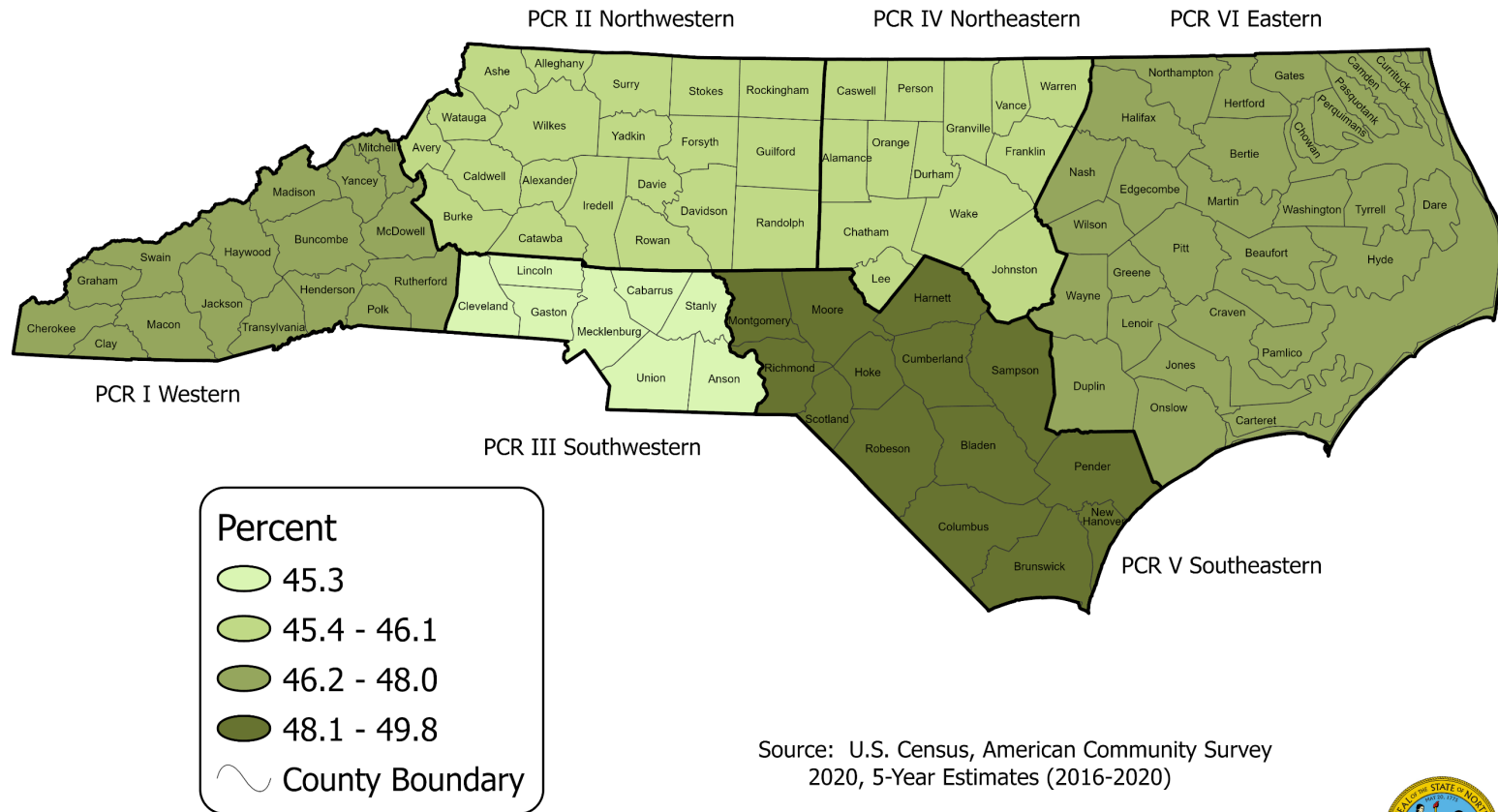
2020 Estimated Percent Females Ages 18 to 44 with No High School Diploma by Perinatal Care Regions (PCR)



Source: U.S. Census, American Community Survey
2020, 5-Year Estimates (2016-2020)



North Carolina
2020 Estimated Percent Renters Spending Greater Than 30%
of Household Income on Rent by Perinatal Care Regions (PCR)



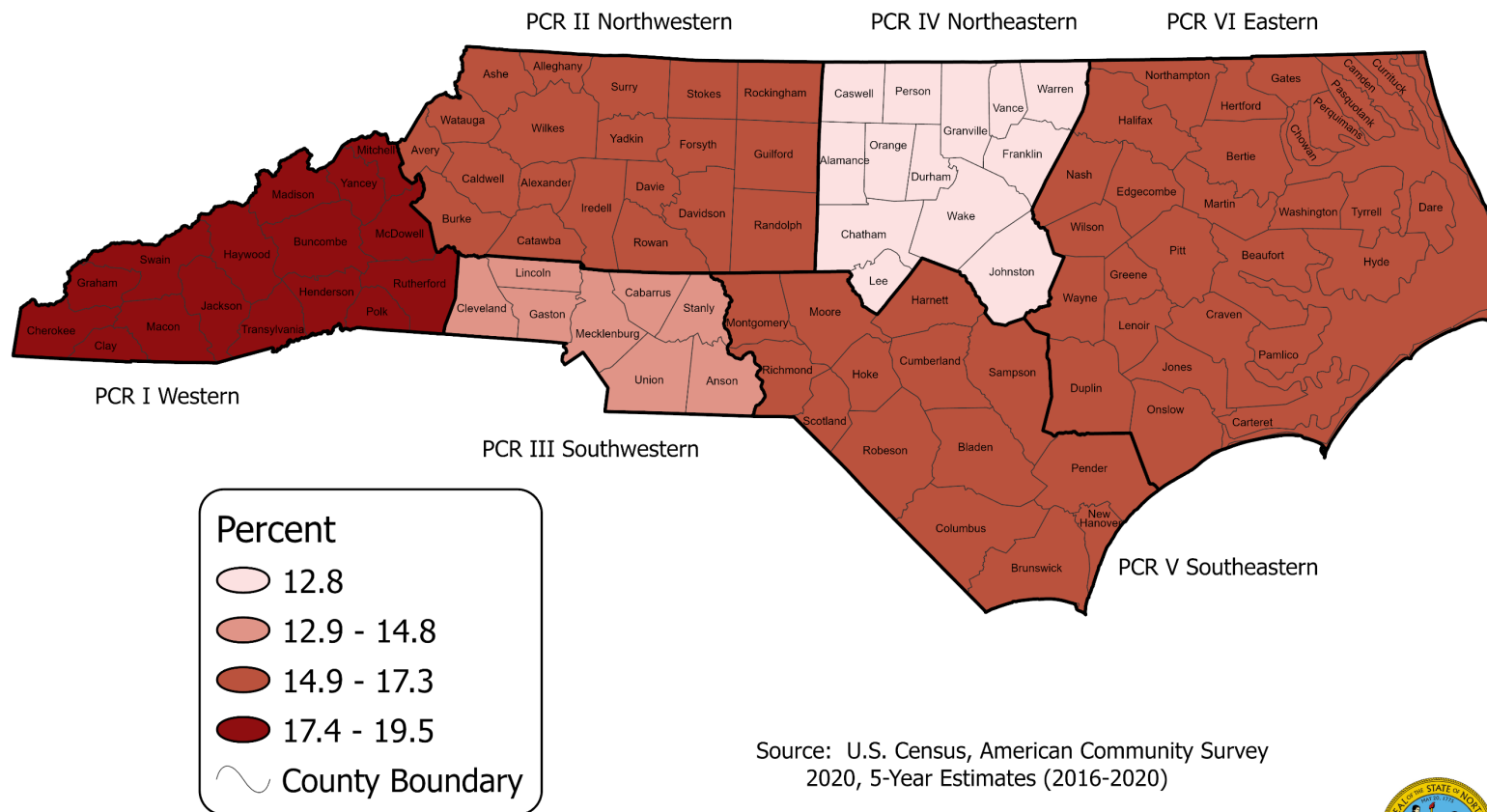
Source: U.S. Census, American Community Survey
2020, 5-Year Estimates (2016-2020)



NC DEPARTMENT OF
HEALTH AND HUMAN SERVICES

North Carolina

2020 Estimated Percent Females Ages 19 to 44 with No Health Insurance by Perinatal Care Regions (PCR)



Source: U.S. Census, American Community Survey
2020, 5-Year Estimates (2016-2020)



Summary

- North Carolina infant death rates were down slightly in 2021
 - Child Death rates rose slightly in 2021
 - Despite slight fluctuations, infant and child death rates have stagnated in recent years
 - US & NC overall birth rates & teen births have both declined over the last two decades
 - North Carolina infant mortality, prematurity, and low birthweight rates are consistently higher than US rates
-

Summary (continued)

- Racial disparities in NC infant mortality, prematurity, and low birthweight persist in 2021
 - In 2021, injuries were the leading cause of death among North Carolina children ages 1 to 17
 - Over the last decade, child death rates associated with homicides, suicides & unintentional (non-MVA) injuries have increased
 - Eastern regions of NC experience the highest rates of infant & child death, as well as social determinant risk factors (e.g., poverty, unemployment, etc.)
-

Infant Mortality & Child Death Reports available at the State Center for Health Statistics:

- **2021 Infant Mortality Report:**
<https://schs.dph.ncdhhs.gov/data/vital/ims/2021/>
- **2021 Child Death Report:**
<https://schs.dph.ncdhhs.gov/data/vital/cd/2021/>

Questions?

Contact:

Kathleen Jones-Vessey
kathleen.jones-vessey@dhhs.nc.gov

NC Child Fatality Task Force

The 2023 Child Fatality Task Force Annual Report was released today!

Report includes some of the 2021 child death data and 11 legislative recommendations to prevent child death and promote child well-being.

These slides will be posted on the CFTF website under reports and data, child fatality data reports.

Child Fatality Task Force Website:
<https://sites.ncleg.gov/nccftf/>