# RACIAL AND ETHNIC HEALTH DISPARITIES IN NORTH CAROLINA

# NORTH CAROLINA HEALTH EQUITY REPORT 2018



NC DEPARTMENT OF HEALTH AND HUMAN SERVICES Office of Minority Health and Health Disparities



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# **UNDERSTANDING HEALTH**

There are a few concepts we need to know before we can understand health.

**Health equity** is the absence of avoidable or remediable differences, allowing for the attainment of optimal health for all people. Health equity is achieved when everyone has the opportunity to attain their full health potential and no one is disadvantaged because of socially determined circumstances. Achieving it requires focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities.<sup>1</sup>

**Health inequities** are unfair health differences closely linked to social, environmental, or economic disadvantages that adversely affect specific groups of people. Inequity involves more than inequality with respect to health determinants and access to resources; it also represents a failure to avoid or overcome inequalities that infringe on fairness and human rights norms. It is important to understand that health inequities are different from health disparities.

**Health disparities** are measurable differences in health status between people that are related to social or demographic factors such as race, gender, income, or geographic region. While ensuring equality in health and access to resources seems appropriate to mitigate health disparities, it should be noted that equality differs greatly from equity. *Figure 1* demonstrates the differences between these concepts.

**Equality**, demonstrated in the first image, refers to equal inputs, though the outcomes can still be unequal.

**Equity**, demonstrated in the second image, refers to inputs that may need to be different to achieve equal outcomes.

## **FIGURE 1: EQUALITY VS. EQUITY**

In the third image, no support or accommodations are needed because the cause of inequity has been addressed and the systematic barrier has been removed.

**Social Determinants of Health** are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. The five determinant areas that reflect the critical components that influence health outcomes in the state of North Carolina are neighborhood and built environment, economic stability, health

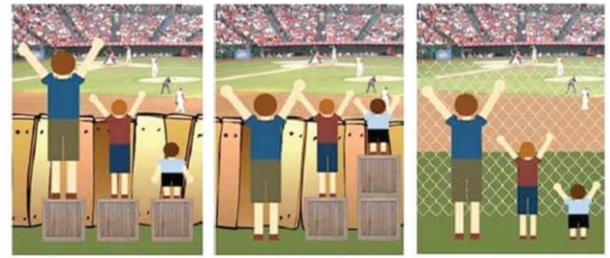


Photo adapted by City for All Women Initiatives equity and inclusion lens.

and health care, education, and social and community context. Within those areas, access to healthy foods, primary and other quality health care, and environmental conditions have a significant impact on disease development and prevention. For years, wealth and income have been linked to health. Economic resources protect people from certain daily stressors that, over time, can be particularly damaging to health.



## **ACCESS TO HEALTHY FOODS**

Diet plays a critical role in the incidence and prevalence of chronic diseases. In 2014, 23 percent of North Carolina's total population lived in **food deserts** – areas where residents experienced both a lack of access to supermarkets and healthy food, and high death rates from diet-related disease. The lack of adequate transportation available in low-income, segregated communities exacerbates malnutrition among the poor by hindering access to healthy foods in surrounding grocery stores.

## **ENVIRONMENTAL CONDITIONS**

Racial and ethnic communities are less likely to have access to parks and other physical activity settings compared to white communities. Resource-poor neighborhoods can contribute to chronic and acute daily stress. Stress and other negative emotions have shown to evoke physiological processes that are associated with cardiovascular and liver diseases, obesity, hypertension, and diabetes.<sup>2</sup>



## **ACCESS TO HEALTH CARE**

Residents living in low-income, segregated communities face greater barriers in accessing health services due to a growing shortage of providers. Adding to the problem is the lack of physicians willing and able to work in impoverished neighborhoods. Access to quality health care is an important component of prevention and management. Studies have shown that many low-income individuals do not seek needed medical care due to competing priorities, such as having to pay for food, shelter, or utilities bills.<sup>3</sup> Adults and children from all racial minority and ethnic groups are less likely to have a usual place of care than whites.

# **Racial and Ethnic Health Disparities in North Carolina**

## **PURPOSE OF THIS REPORT**

Racial and Ethnic Health Disparities in North Carolina Health Equity Report 2018 is a tool that:

- Measures and monitors the state's progress toward eliminating the health status gaps experienced by racial/ethnic minorities;
- Provides current data that can aid community-based organizations, faith-based organizations, tribal governments, local health departments, state agencies, legislators, local businesses, and communities in devising services and outreach plans; and
- Can inform key decision makers about eliminating health disparities through policy reform and system change.

America's Health Rankings a report that analyzes states' health through the lens of clinical care, behaviors, community and environment, policy, and outcomes data, ranks North Carolina 32nd in the nation in overall health status in 2016. Health status is directly impacted by the health status of minorities and other underserved populations.

## **ABOUT THE DATA**

This North Carolina Health Equity Report contains data from various sources. The key indicators used were chosen based on their relevance to health and health disparities and the availability of data. Although data are presented by race/ethnicity to describe health status gaps, race/ ethnicity by itself is not a cause of any health condition or health status. For this 2018 Health Equity Report, all rates presented by race/ethnicity are mutually exclusive categories. Therefore, rates and figures presented here will differ from earlier Report Cards. Note: Some data show percentages, e.g., from the North Carolina Behavioral Risk Factor Surveillance System (BRFSS), while other data show rates per 100,000 population (e.g., mortality data).

The ratios in this report are a measure, within each of the predominant racial/ ethnic groups in North Carolina, divided by that same measure in the White group; each indicates whether a disparity exists and the extent of that difference. The white population is used as a point of comparison because they are the majority population in North Carolina. In this report, the ratios have been categorized by color: red indicates a group fares worse than the referent group, green indicates a group fares better than the referent group, and white indicates no significant difference between the referent and comparison group.

#### Here is an example.

The 2004—2008 prostate cancer death rate shown for African Americans (59.1) divided by the prostate cancer death rate for whites (21.3) provides a ratio of 2.8 (i.e., 59.1÷21.3=2.8). This ratio indicates that the prostate cancer death rate for African American men was 2.8 times the rate for white men during this time period.

The color coding system provided in this report does not consider trends in the data nor the ranking of North Carolina relative to the United States. Also note that data are not shown in cases where racial/ethnic groups have a small number of reported events or if their rates/ percentages are statistically unstable. The ♦ symbol is used to indicate reliable rates could not be calculated.

## HEALTH EQUITY REPORT SUMMARY

Subject	Subcategory	African American	American Indian	Hispanic/Latinx	Other
	Income				
Social and Economic Well-Being	Education				
	Employment				
Maternal /Child Llealth	Infant Death Rate				
Maternal/Child Health	Late or No Prenatal Care				
	Death of Children				
Child and Adolescent Health	Teen Pregnancy				
	Children without Health Insurance		•		
Diele Factore	Current Smokers				
Risk Factors	Overweight		•		
Mostality Dates	Cancer				
Mortality Rates	Heart Disease				
Communicable Diseases	HIV Infection				
	Chlamydia				
Violence and Iniury	Homicide				
Violence and Injury	Suicide				
Access to Health Care	No Health Insurance				
Access to Health Care	Could Not See a Doctor		•		
<ul> <li>Green indicates a group is faring</li> <li>Red indicates a group is faring v</li> </ul>			is no significant difference b able rates could not be calcu		nparison group

## DEMOGRAPHICS

2016 Donulation Ectimator 4	Tot	al	White		African American		American Indian		Hispanic/Latinx		Other	
2016 Population Estimates <sup>4</sup>	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Total	10,146,788	100.0	6,539,036	64.4	2,243,994	22.1	121,630	1.2	932,221	9.2	309,907	3.1
Gender												
Male	4,932,952	48.6	3,191,245	48.8	1,049,934	46.8	58,386	48.0	484,263	51.9	149,124	48.1
Female	5,213,836	51.4	3,347,791	51.2	1,194,060	53.2	63,344	52.0	447,958	48.1	160,783	51.9
Age Group												
Under 18	2,298,720	22.7	1,258,132	19.2	566,279	25.2	30,420	25.0	363,788	39.0	80,101	25.8
18-64	6,278,603	61.9	4,040,457	61.8	1,419,866	63.1	76,565	62.9	537,146	57.6	207,569	67.0
65 & Over	1,569,465	15.5	1,240,447	19.0	260,849	11.6	14,645	12.0	31,287	3.4	22,237	7.2



In 2016, North Carolina's population was an estimated 10.1 million, with whites constituting the majority population at 6.5 million people (64.4 percent of the total state population). African Americans represent the largest minority group, constituting 22.1 percent of the population, followed by Hispanic/Latinx at 9.2 percent. Data suggest that by 2050 there will be a demographic shift, with racial minorities becoming the majority population.<sup>5</sup>

## SOCIAL AND ECONOMIC WELL-BEING

		Total	White	African <i>I</i>	American	America	n Indian	Hispani	c/Latinx	Other	
Subject	Subcategory	%/Rate	%/Rate	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio
	High School Graduation Rate, 2016-2017 <sup>6</sup>	86.5	89.2	83.8	1.1	84.3	1.1	80.5	1.1	93.6	1.0
Education	Adults 25+ with High School Diploma or GED, 2016 <sup>7</sup>	87.3	89.3	84.7	1.1	75.7	1.2	59.5	1.5	87.0	1.0
	Adults 25+ with Bachelor's Degree, 2016 <sup>7</sup>	30.4	33.2	20.3	1.6	13.9	2.4	14.8	2.2	57.1	0.6
Employment	Unemployed, 2016 <sup>7</sup>	3.8	3.0	6.1	2.0	5.4	1.8	4.4	1.5	3.7	1.2
Income	Median Household Income, 20167	\$50,584	\$55,656	\$36,014	1.5	\$38,002	1.5	\$39,388	1.4	\$80,381	0.7
	All Ages	15.4	12.0	23.5	2.0	25.5	2.1	27.3	2.3	11.9	1.0
Poverty Rate	Children <18 Years, 2016 <sup>7</sup>	21.7	15.8	33.8	2.1	33.4	2.1	35.8	2.3	10.9	0.7
	Elderly 65+ Years, 2016 <sup>7</sup>	9.4	7.7	16.6	2.2	16.9	2.2	21.4	2.8	6.6	0.9
Housing	Living in a Home They Own, 2016 <sup>7</sup>	64.2	71.2	43.9	1.6	63.5	1.1	43.0	1.7	61.1	1.2
Disability Status	Disability, 2016 <sup>7</sup>	13.8	14.0	15.4	1.1	16.5	1.2	6.8	0.5	5.1	0.4
Green indica	tes a group is faring better than the referent group	)									

Red indicates a group is faring worse than the referent group

□ White indicates there is no significant difference between the referent and comparison group



Many factors can create or limit opportunities for good health. In North Carolina, some communities are resource-rich while others lack the social, economic, and environmental investments needed to support good health. Public health literature suggests that our health is greatly shaped by our everyday environment: where we live, learn, grow, and play.<sup>5</sup> Whether families have access to quality health care, nutritious foods, and neighborhoods with safe outdoor spaces, all impact health. Our socioeconomic status, including our education level, employment, income, and housing, also influence health.



#### **EDUCATION**

In the state of North Carolina, 87.3 percent of adults aged 25 years and older have a high school diploma or GED; 30.4 percent have a bachelor's degree. These proportions for whites are higher than the state average, with 89.3 percent of adults with a high school diploma or GED and 33.2 percent with a bachelor's degree. African Americans. American Indians, and Hispanic/Latinx have comparatively lower proportions of adults with high school diplomas/GEDs (84.7 percent, 75.7 percent, and 59.5 percent, respectively) and bachelor's degrees (20.3 percent, 13.9 percent, and 14.8 percent, respectively). Compared to whites, other races (including Asian/Pacific Islanders) have similar proportions of adults with high school diplomas/GEDs (87.0 percent), but the highest proportion of adults with a bachelor's degree (57.1 percent) in the state.

### **EMPLOYMENT**

The overall rate of unemployment in North Carolina in 3.8. Whites have the lowest rate of unemployment in the state (3.0); rates among African Americans, American Indians, and Hispanic/Latinx exceed that of whites (6.1, 5.4, and 4.4, respectively). The rate of unemployment for other races, including Asian/Pacific Islanders, also exceeds that of whites, but is comparable to the state rate at 3.7.

#### INCOME

White households report a median income of \$55,656 – nearly \$20,000 more than African American, American Indian, and Hispanic/ Latinx households in the state. Other races, including Asian/Pacific Islanders, report a median household income of \$80,381, almost \$25,000 more than white households and nearly \$30,000 more than the state average.

### **DISABILITY**

Nearly 1 in 7 North Carolinians has a disability. Disabilities are most prevalent among American Indians (16.5 percent), followed by African Americans (15.4 percent), whites (13.8 percent), and Hispanic/Latinx (6.8 percent). Disabilities are least prevalent among other races (5.1 percent).

## **ORAL HEALTH**

Over Marshthe 2016	W	hite	African /	African American		American Indian		ic/Latinx	Other	
Oral Health, 2016	%	CI	%	CI	%	CI	%	CI	%	CI
Adults who have not visited a dentist or dental clinic within the last year, 2016 <sup>8</sup>	32	30.3-33.8	44.5	41.1-47.9	43.0	31.4-54.5	51.2	45.9-56.5	•	•
Adults who have had any of their permanent teeth removed, 2016 $^{\rm 8}$	45.5	43.7-47.3	58.5	55.1-61.9	52.3	40.7-63.9	43.6	38.5-48.8	•	•
Adults aged 65+ that have had all their natural teeth extracted, 2016 <sup>8</sup>	16.7	14.3-19.2	24.6	18.2-31.1	٠	•	٠	•	٠	•
Green indicates a group is faring better than the referent group		*	□ White	indicates the	e is no signi	ficant differei	nce betweer	the referent	and compar	ison group

Green indicates a group is faring better than the referent group

Red indicates a group is faring worse than the referent group

Cl indicates confidence interval, or a range of values in which a result is expected to fall.



Dental health and hygiene is an important part of overall health. Poor oral health can lead to diseases and injuries of the skull and face. Public health has been focusing on improving oral health for all by reducing disparities and expanding access to effective prevention programs. Efforts include community water fluoridation, school dental sealant programs, and integrating oral health programs into chronic disease prevention efforts and medical care.

Symbol indicates reliable rates could not be calculated

### **CHILD ORAL HEALTH**

In North Carolina, children of minority backgrounds continue to have high rates of tooth decay. Among American Indian and Hispanic children, 55 percent and 52 percent respectively experience tooth decay compared to 30 percent of white children. Untreated tooth decay among children has decreased to 13 percent, half of the national goal. However, 29 percent of American Indian and 23 percent of Asian American children have untreated

tooth decay, compared to 13 percent of white children.9

## **ADULT ORAL HEALTH**

In 2016, 32 percent of white adults in North Carolina did not visit a dentist or dental clinic. Significantly fewer African Americans (44.5 percent) and Hispanic/Latinx (51.2 percent) did not see a dentist in this timeframe. While African Americans were less likely to have visited a dentist, a greater proportion of this population has had at least one of their

permanent teeth removed (58.5 percent). For North Carolinians age 65 and older, 18 percent have had all their natural teeth removed. Of those, 24.6 percent were African Americans, while 16.7 percent were white.



## **MATERNAL AND CHILD HEALTH**

	Total	White	African <i>I</i>	American	America	n Indian	n Indian Hispanic/Latinx			Other	
Maternal/Child Health Indicators	%/Rate	%/Rate	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	
Infant Death Rate (per 1,000 live births), 2012-16 <sup>10</sup>	7.2	5.4	13.0	2.4	9.0	1.7	5.1	0.9	5.3	1.0	
Low Birth Weight (<=2500 grams) Births (%), 2014-16 <sup>11</sup>	9.1	7.5	14.1	1.9	12.0	1.6	7.0	0.9	8.6	1.1	
Late or No Prenatal Care (%), 2014-16 <sup>11</sup>	30.6%	23.9%	39.1%	1.6	35.9%	1.5	41.1%	1.7	32.6%	1.4	
Maternal Smoking During Pregnancy (%), 2014-16 <sup>11</sup>	9.4%	11.9%	9.0%	0.8	23.1%	1.9	1.7%	0.1	1.6%	0.1	

Green indicates a group is faring better than the referent group

- Red indicates a group is faring worse than the referent group
- □ White indicates there is no significant difference between the referent and comparison group



Improving the well-being of mothers, infants, and children is an important public health goal for the United States. Their well-being determines the health of the next generation and can help predict future public health challenges for families, communities, and the health care system.<sup>12</sup>

### **INFANT DEATH RATE**

North Carolina's total infant death rate is 7.2 per 1,000 live births. Whites (5.4), Hispanic/ Latinx (5.1), and other racial minorities, including Asian/Pacific Islanders (5.3), have lower infant death rates than the state average, surpassing the Healthy People 2020 goal of 6.0 per 1,000 live births. American Indians have an infant death rate of 9.0, while the rate among African Americans is 13.0.

#### LATE OR NO PRENATAL CARE

Nearly 1 in 3 North Carolinians either receives no prenatal care or enters prenatal

care after the first trimester of pregnancy. This proportion is even greater among Hispanic/Latinx (41.1 percent), African Americans (39.1 percent), and American Indians (35.9 percent).

### MATERNAL SMOKING DURING PREGNANCY

Less than 1 in 10 North Carolinians smokes during pregnancy, though the proportion of whites (11.9 percent) and American Indians (23.1 percent) that do is higher than the state average. Smoking during pregnancy is particularly rare among Hispanic/Latinx (1.7 percent) and other races (1.6 percent).



## **CHILD AND ADOLESCENT HEALTH**

	Total	White	African /	American	America	ican Indian 🛛 Hispa		c/Latinx	Other	
Child and Adolescent Health	%/Rate	%/Rate	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio
Deaths of children 1-17 years (per 100,000 population), 2012-16 <sup>10</sup>	21.4	20.6	28.2	1.4	27.8	1.3	13.9	0.7	14.0	0.7
Teen birth rate ages 15-19, 2012-16 <sup>11</sup>	26.2	19.0	33.7	1.8	46.6	2.5	46.9	2.5	12.6	0.7
Percent of high school students who smoked 1+ cigarettes in the past 30 days <sup>13</sup>	13.1	14.6	10.8	0.7	•	•	14.9	1.0	31.4	2.2
Percent of high school students who drank alcohol in the past 30 days <sup>13</sup>	29.2	32.9	25.2	0.8	٠	•	24.2	0.7	•	•
Percent of low income children under age 18 who are obese <sup>14</sup>	14.6	14.5	12.6	0.9	•	•	11.2	0.8	5.7	0.4
Percent of children under age 18 who have ever been diagnosed with asthma <sup>15</sup>	16.8	14.6	22.1	1.5	٠	•	17.8	1.2	18.4	1.3
Percent of children under age 18 who do not have a regular dentist <sup>16</sup>	17.9	16.6	20.7	1.2	٠	•	18.1	1.1	19.8	1.2
Percent of children under age 18 who did not have health insurance at some point during the past 12 months <sup>17</sup>	6.7	5.4	9.7	1.8	٠	•	8.8	1.6	8.0	1.5
<ul> <li>Green indicates a group is faring better than the referent group</li> <li>Red indicates a group is faring worse than the referent group</li> </ul>				is no signific able rates co			the referent	and compar	rison group	



North Carolina is home to more than 2.2 million children and adolescents, representing 26.7 percent of the state's total population. Children and adolescents face day-to-day challenges that can impact their health and well-being.



#### **DEATH OF CHILDREN**

In 2016, there were 21.4 deaths per 100,000 North Carolina children and adolescents, a slight decrease from 2012 when the rate of death was 22.8. African Americans and American Indians experience greater rates of childhood death than other racial groups in the state at rates of 28.2 and 27.8, respectively. Hispanic/Latinx experience the fewest child deaths at 13.9 per 100,000.

#### **TEEN BIRTH RATE**

North Carolina continues to see decreased rates of teen births. In 2012, the teen birth rate was 42.9 per 100,000, and in 2016 the rate decreased to 26.2. Teen pregnancy rates were highest among Hispanic/Latinx (46.9) and American Indians (46.6). Other racial minority groups, including Asian/ Pacific Islanders, had the lowest rate of teen pregnancy at 12.6.

#### **HIGH SCHOOL STUDENTS WHO SMOKE**

Many programs and initiatives have been developed to decrease the number of adolescents who smoke. North Carolina has seen a decrease in the percentage of high school students and adults who smoke. In 2011, 17.7 percent of high school students smoked one or more cigarettes in the past 30 days. That percentage dropped to 13.1 percent in 2016. Other races, including Asian/Pacific Islanders, had the greatest proportion of adolescent smokers (31.4 percent), where African Americans had the least (10.8 percent).

#### **CHILD AND ADOLESCENT OBESITY**

With increasing percentages of childhood obesity, and with obesity being linked to several chronic diseases and conditions, North Carolina aimed to decrease childhood obesity through active living and enhanced consumption of nutritious foods. In 2009, 18.0 percent of children were considered obese, and in 2016, that percentage dropped to 14.6 percent. The percentage of white children that are considered obese (14.5 percent) is greater than African Americans (12.6 percent), Hispanic/Latinx (11.2 percent), and other races (5.7 percent) in the state.

## HEALTH RISK FACTORS AMONG NORTH CAROLINA ADULTS

	To	otal	White		African American		American Indian		Hispanic/Latinx		Other	
Health Risk Factor Among NC Adults, 2016 <sup>18</sup>	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio	%/Rate	Disparity Ratio
Percent of Adults who are Current Smokers	17.9	16.7-19.2	17.9	16.4-19.5	20.0	17.3-23.0	26.2	17.6-37.1	13.6	10.2-17.8	14.3	10.1-19.8
Percent of Adults who are Overweight	35.0	33.6-36.5	35.0	33.2-36.8	34.7	31.4-38.1	•	•	35.1	29.8-40.8	33.7	25.6-42.9
Percent of Adults who are Obese	31.8	30.4-33.3	30.0	28.2-31.7	41.3	37.9-44.9	٠	•	31.2	26.0-36.9	16.2	11.6-22.0
Percent of Adults Reporting Fair/Poor Health	18.3	17.2-19.5	16.5	15.2-17.9	20.9	18.3-23.7	٠	•	26.6	22.1-31.5	13.8	8.7-21.2
Percent of Adults Diagnosed with 2+ Chronic Conditions	25.7	24.5-26.9	28.9	27.3-30.5	24.2	21.5-27.1	32.2	23.1-42.9	6.8	4.8-9.6	14.5	10.2-20.0
Green indicates a group is faring better than the referent group Uk White indicates there is no significan									he referent	and compar	ison group	

Red indicates a group is faring worse than the referent group

White indicates there is no significant difference between the referent and comparison grou
 Symbol indicates reliable rates could not be calculated



According to the World Health Organization, a risk factor is any attribute, characteristic, condition, or behavior that increases the likelihood of developing a disease or injury.<sup>19</sup> Some examples of risk factors include smoking, being underweight or overweight, and reporting poor health.

#### **SMOKERS**

In 2012, 20.9 percent of North Carolinians were smokers. That percentage decreased to 17.9 percent in 2016. American Indians have the highest percentage of smokers (26.2 percent), whereas Hispanic/Latinx have the lowest (13.6 percent).

### OBESE

The percentage of obese adults in North Carolina has increased from 29.6 percent in 2012, to 31.8 percent in 2016. Significantly more African Americans are considered obese (41.3 percent) compared to whites (30.0 percent), while Hispanic/Latinx are slightly higher at 31.2 percent.

## **MORTALITY RATES**

ortality Rates, 2012–2016 <sup>20</sup>	Total	White	African /	American	America	n Indian	Hispani	c/Latinx	Ot	her
<b>, 2012-2016</b> <sup>20</sup>	Rate	Rate	Rate	Disparity Ratio	Rate	Disparity Ratio	Rate	Disparity Ratio	Rate	Disparity Ratio
	161.3	159.0	187.1	1.2	182.0	1.1	56.6	0.4	76.0	0.5
	43.1	40.6	56.0	1.4	39.5	1.0	21.7	0.5	36.4	0.9
	23.0	18.8	44.0	2.3	45.0	2.4	11.3	0.6	14.3	0.8
Respiratory Disease	45.6	50.7	27.6	0.5	43.8	0.9	8.6	0.2	12.5	0.2
	16.4	13.4	31.0	2.3	19.6	1.5	8.2	0.6	10.5	0.8
	2.2	0.8	7.5	9.4	1.6*	•	1.1	1.4	•	•
Total	166.5	165.0	190.7	1.2	158.7	1.0	72.9	0.4	104.4	0.6
Colorectal	14.0	13.3	18.9	1.4	13.1	1.0	5.0	0.4	8.0	0.6
Lung	47.5	49.1	46.3	0.9	51.2	1.0	13.1	0.3	23.5	0.5
Breast	20.9	19.4	28.3	1.5	20.2	1.0	9.9	0.5	13.2	0.7
Prostate	20.1	17.2	39.1	2.3	28.5	1.7	6.8	0.4	6.5	0.4
	Pespiratory Disease Total Colorectal Lung Breast Prostate	Rate         161.3         43.1         23.0         Respiratory Disease         45.6         16.4         2.2         Total         166.5         Colorectal         14.0         Lung       47.5         Breast       20.9         Prostate       20.1	Rate         Rate           161.3         159.0           43.1         40.6           23.0         18.8           223.0         18.8           Respiratory Disease         45.6         50.7           16.4         13.4           2.2         0.8           Total         166.5         165.0           Colorectal         14.0         13.3           Lung         47.5         49.1           Breast         20.9         19.4           Prostate         20.1         17.2	Rate         Rate         Rate         Rate           161.3         159.0         187.1           43.1         40.6         56.0           23.0         18.8         44.0           223.0         18.8         44.0           Respiratory Disease         45.6         50.7         27.6           16.4         13.4         31.0         2.2         0.8         7.5           Total         166.5         165.0         190.7         190.7           Colorectal         14.0         13.3         18.9         18.9           Lung         47.5         49.1         46.3         8           Breast         20.9         19.4         28.3         9           Prostate         20.1         17.2         39.1         17	Rate         Rate         Rate         Rate         Dispancy Ratio           161.3         159.0         187.1         1.2           43.1         40.6         56.0         1.4           23.0         18.8         44.0         2.3           Respiratory Disease         45.6         50.7         27.6         0.5           16.4         13.4         31.0         2.3           2.2         0.8         7.5         9.4           166.5         165.0         190.7         1.2           Colorectal         14.0         13.3         18.9         1.4           Lung         47.5         49.1         46.3         0.9           Breast         20.9         19.4         28.3         1.5           Prostate         20.1         17.2         39.1         2.3	RateRateRateDisparity RatioRate161.3159.0187.11.2182.043.140.656.01.439.523.018.844.02.345.0tespiratory Disease45.650.727.60.543.8tespiratory Disease16.413.431.02.3158.7Colorectal14.013.318.91.413.1Lung47.549.146.30.951.2Breast20.919.428.31.520.2Prostate20.117.239.12.328.5	RateRateRateRateDispandy RatioRateDispandy Ratio161.3159.0187.11.2182.01.143.140.656.01.439.51.023.018.844.02.345.02.4despiratory Disease45.650.727.60.543.80.9tespiratory Disease45.650.727.60.543.80.916.413.431.02.319.61.52.20.87.59.41.6*•Total166.5165.0190.71.2158.71.0Lung47.549.146.30.951.21.0Breast20.919.428.31.520.21.0Prostate20.117.239.12.328.51.7	RateRateRateDisparity RatioRateDisparity RatioRateDisparity RatioRate161.3159.0187.11.2182.01.156.643.140.656.01.439.51.021.723.018.844.02.345.02.411.3tespiratory Disease45.650.727.60.543.80.98.6tespiratory Disease45.650.727.60.543.80.98.6Total16.413.431.02.319.61.58.2Total166.5165.0190.71.2158.71.072.9Colorectal14.013.318.91.413.11.05.0Lung47.549.146.30.951.21.013.1Breast20.919.428.31.520.21.09.9Prostate20.117.239.12.328.51.76.8	Rate         Rate         Rate         Rate         Displicity Ratio         Rate         Displicity Ratio         Rate         Displicity Ratio           161.3         159.0         187.1         1.2         182.0         1.1         56.6         0.4           43.1         40.6         56.0         1.4         39.5         1.0         21.7         0.5           23.0         18.8         44.0         2.3         45.0         2.4         11.3         0.6           respiratory Disease         45.6         50.7         27.6         0.5         43.8         0.9         8.6         0.2           respiratory Disease         45.6         50.7         27.6         0.5         43.8         0.9         8.6         0.2           respiratory Disease         45.6         50.7         27.6         0.5         43.8         0.9         8.6         0.2           respiratory Disease         45.6         50.7         27.6         0.5         43.8         0.9         8.6         0.2           respiratory Disease         45.6         50.7         27.6         0.5         1.5         8.2         0.6           respiratory Disease         16.4         13.4	Rate         Rate         Rate         Displicity Ratio         Displicity Ratio         Displicity Ratio         Displicity Ratio         Displicity Ratio         Displicity Ratio         Displity Ratio

Green indicates a group is faring better than the referent group

□ White indicates there is no significant difference between the referent and comparison group

Red indicates a group is faring worse than the referent group

Symbol indicates reliable rates could not be calculated

\* Rates based on fewer than 20 cases may be statistically unstable and should be interpreted with caution. Rates based on fewer than five cases are suppressed in this report.



Chronic diseases and injuries are responsible for approximately two-thirds of all deaths in North Carolina, or about 50,000 deaths each year. Cancer, heart disease, stroke, chronic lung disease, and unintentional injuries make up the top five causes of death in North Carolina. Many deaths in the state are preventable, particularly through alterations in risky behaviors or lifestyles. Among the leading causes of preventable death are tobacco use, unhealthy diet/physical inactivity, and alcohol and drug abuse and misuse.<sup>21</sup>

## CANCER

Although there has been a decrease of cancer death rates, from 179.1 in 2012 to 166.5 in 2016, cancer continues to be the number one cause of death in North Carolina. Lung Cancer is the leading cause of cancer death, killing 47.5 per 100,000 North Carolinians. Whites (49.1) and American Indians (51.2) die at a higher rate than African Americans (46.3), Hispanic/ Latinx (13.1), and other races, including Asians/Pacific Islanders (23.5).

The second leading cause of cancer death is breast cancer. African Americans die at a rate of 28.3, significantly higher than whites (19.4) and American Indians (20.2), and more than twice the rate of Hispanic/Latinx (9.9) and other races, including Asian/ Pacific Islanders (13.2).

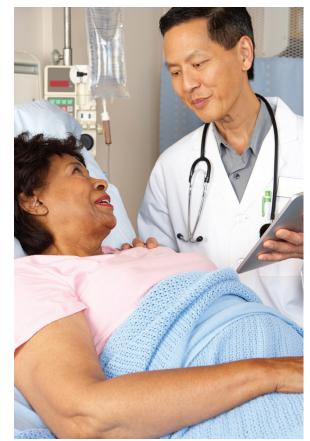
#### **HEART DISEASE**

Heart disease is the second leading cause of death in North Carolina. African Americans die from heart disease at a higher rate than any other ethnic group (187.1); however, this rate has decreased from 206.9 in 2012. While Hispanic/Latinx die from heart disease at a much lower rate than any other group (56.6), this rate has increased from 52.7 in 2012.

#### **CHRONIC LOWER RESPIRATORY DISEASE**

The Centers for Disease Control and Prevention (CDC) defines Chronic Lower Respiratory Diseases (CLRD) as illnesses that obstruct airways and other lung structures. CLRD's include asthma and chronic obstructive pulmonary disease.<sup>22</sup>

In North Carolina, CLRD is the third leading cause of death, killing 45.6 per 100,000 North Carolinians. Whites experience the highest rate of CLRD death (50.7), while Hispanic/Latinx experience the lowest (8.6). There have been small decreases in death rates from chronic lower respiratory diseases across all racial groups except American Indians, which increased significantly from 36.4 in 2012 to 43.8 in 2016. Other races also experienced a slight increase, from a rate of 9.1 in 2012 to 12.5 in 2016.



## **COMMUNICABLE DISEASE**

	Total	White	African /	American	America	n Indian	Hispani	c/Latinx	Other	
Communicable Disease Rates, 2016 <sup>23</sup>	Rate	Rate	Rate	Disparity Ratio	Rate	Disparity Ratio	Rate	Disparity Ratio	Rate	Disparity Ratio
Newly Diagnosed Adult/ Adolescent HIV Infection Cases	16.4	5.8	47.2	8.1	12.0*	٠	22.4	3.9	8.4	1.4
Newly Diagnosed Adult/ Adolescent AIDS Cases	7.0	2.0	21.0	10.5	6.0*	٠	9.7	4.9	2.8*	•
Newly Diagnosed Primary and Secondary Syphilis	10.7	4.7	28.9	6.1	6.6*	٠	7.5	1.6	3.2*	•
Newly Diagnosed Chlamydia	572.4	151.1	905.6	6.0	629.8	4.2	401.3	2.7	101.6	0.7
Newly Diagnosed Gonorrhea	194.4	37.6	438.2	11.7	217.1	5.8	70.7	1.9	14.8	0.4
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Green indicates a group is faring better than the referent group

Red indicates a group is faring worse than the referent group

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\* Rates based on fewer than 20 cases may be statistically unstable and should be interpreted with caution. Rates based on fewer than five cases are suppressed in this report.



Communicable diseases are illnesses caused by an infectious agent or its toxins that occur through the direct or indirect transmission of the infectious agent or its products from an infected individual, animal, vector, or inanimate environment to a susceptible animal or human host. Prevention and control are key factors for communicable disease management, as they can have a great impact on the population.

All communicable diseases listed in the table above disproportionately affect African Americans more than any other racial or ethnic group. African Americans experience new diagnoses of all the indicated diseases at rates 6-12 times that of whites, and at more than twice the rate of other groups, with the exception of newly diagnosed chlamydia in American Indians. Whites experience new diagnoses of HIV and AIDS at lower rates than all other ethnic groups, while other races, including Asian/Pacific Islanders, experience new diagnoses of chlamydia and gonorrhea at lower rates than all other racial groups.

## **VIOLENCE AND INJURY**

	Total	White	African American		American Indian		Hispani	c/Latinx	Other		
Violence and Injury, 2012–2016 <sup>20</sup>	Rate	Rate	Rate	Disparity Ratio	Rate	Disparity Ratio	Rate	Disparity Ratio	Rate	Disparity Ratio	
Unintentional Motor Vehicle Injuries	14.1	14.0	15.3	1.1	27.5	2.0	10.8	0.8	6.0	0.4	
Other Unintentional Injuries	31.9	37.3	21.8	0.6	40.8	1.1	11.8	0.3	13.7	0.4	
Suicide	12.9	16.6	5.0	0.3	11.5	0.7	4.2	0.3	8.2	0.5	
Homicide	6.2	3.1	15.3	4.9	16.7	5.4	3.8	1.2	3.3	1.1	
Green indicates a group is faring b	petter than the	referent group	ferent group 🛛 White indicates there is no significant difference between the referent and comparison group								
Red indicates a group is faring wo	ip is faring worse than the referent group • Symbol indicates reliable rates could not be calculated										



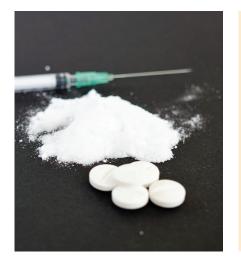
In North Carolina, injury and violence-related morbidity and mortality continue to be a growing problem. While there has been much debate about their inclusion as a public health issue, injury and violence do negatively impact the population.

Data show that more North Carolinians die due to unintentional injuries, such as falls, fires, and drowning, than any other form of reported violence or injury at a rate of 31.9 per 100,000. This rate has more than doubled since 2012.

In 2012, the suicide rate among whites was 15.0. In 2016, that rate increased to 16.6. The rate of suicide is also relatively high among American Indians (11.5), and much lower for African Americans (5.0), Hispanic/Latinx (4.2), and other races (8.2). The homicide rate is lowest among whites (3.1) and other races (3.3), with rates among African Americans and American Indians nearly five times that of whites (15.3 and 16.7, respectively).

## **OPIOID EPIDEMIC**

Aniaid Enidomic 2017	W	nite	African American		Other		Unknown	
Opioid Epidemic, 2017	%	Number	%	Number	%	Number	%	Number
Opioid Overdose Emergency Department Visits, North Carolina 2017	85	4,888	10	571	10	216		71
Green indicates a group is faring better than the referent group								up
Red indicates a group is faring worse than the referent group		Symbol indi	cates reliable ra	tes could not be	calculated			



Opioids are drugs that act on the nervous system to relieve pain. Commonly prescribed opioid medications include drugs like oxycodone and hydrocodone. Use of other, synthetic narcotics, like fentanyl, are escalating. Deaths are increasingly the result of fentanyl analogues that are illicitly manufactured. A common misconception is that opioid use is a middle-aged, white male issue. However, heroin use and overdose has been an issue in communities of color for decades.

In 2015, over 1,100 North Carolinians died due to opioid-related causes. That is a 73 percent increase in the past 10 years. An April 2016 report found that of the 25 most addicted cities in America, four cities are in North Carolina. Fayetteville was 18th, Jacksonville ranked 12th, Hickory ranked 5th, and Wilmington ranked 1st.<sup>24</sup>

### **OPIOID OVERDOSE**

There has been a steady increase of emergency department visits due to opioid overdose from 2009 (2,879) to 2017 (5,722). In December 2017, 424 people in North Carolina went to the emergency department due to an opioid overdose, 93 more visits than December 2016. Mecklenburg, Wake, Guilford, Cumberland, and Forsyth counties had the highest number of cases. Recently, cases have been predominantly male, 63 percent, white, 88 percent, and between the ages of 25-34, 43 percent. However, American Indians have higher rates of unintentional commonly prescribed opioid overdose than any other race.<sup>25</sup>

## **OPIOID ACTION PLAN**

Because of the consistent increase of opioid overdose in North Carolina, Governor Cooper has announced a statewide epidemic. To combat the opioid crisis, North Carolina has developed an Opioid Action Plan with community partners. It is a living document that will continue to change as North Carolina makes progress and as new issues arise.<sup>26</sup> Strategies on the Opioid Action Plan include:

- Coordinating the state's infrastructure to tackle the opioid crisis.
- Reducing the oversupply of prescription opioids.
- Reducing the diversion of prescription drugs and the flow of illicit drugs.
- Increasing community awareness and prevention.

## **ACCESS TO HEALTH CARE**

Access to Health Care	Total	White	African American		American Indian		Hispanic/Latinx		Other		
	%	%	%	Disparity Ratio	%	Disparity Ratio	%	Disparity Ratio	%	Disparity Ratio	
Percent of adults ages 18-64 with no health insurance, 2016 <sup>7</sup>	10.4	9.2	10.9	1.2	18.2	2.0	29.6	3.2	9.5	1.0	
Percent of adults who could not see a doctor in the previous 12 months due to cost <sup>17</sup>	15.5	12.8	18.1	1.4	•	•	27.4	2.1	18.0	1.4	
Percent of adults who did not visit a dentist in the past year 27	64.2	69.3	55.2	0.8	٠	•	43.0	0.6	64.3	0.9	
Green indicates a group is faring better than the referent group			White indicates there is no significant difference between the referent and comparison group								
Red indicates a group is faring worse than the referent group				<ul> <li>Symbol indicates reliable rates could not be calculated</li> </ul>							



The implementation of the Affordable Care Act in 2010 meant thousands of previously uninsured North Carolinians could obtain health insurance. In 2012, 16.6 percent of North Carolina residents did not have health insurance; in 2016, that percentage decreased to 10.4 percent. Even though the number of insured people increased, there are still thousands more without health insurance. Some do not have sufficient income to qualify for an insurance subsidy, yet those same individuals do not qualify for Medicaid, indicating a persistent gap in health care coverage. Lack of insurance disproportionately affects Hispanic/Latinx and American Indians, impacting 29.6 percent and 18.2 percent of these populations, respectively.

The total percentage of North Carolina adults who could not see a doctor due to cost was 15.5 percent. Fewer whites experience this barrier to health care (12.8 percent), whereas more than a quarter of the Hispanic/Latinx population (27.4 percent) indicates that cost prevented them from accessing a doctor in the previous year. Conversely, African Americans, Hispanic/Latinx, and other racial groups were more likely to have seen a dentist in the past year than their white counterparts.

# Key Terms in Discussing Racial and Ethnic Health Disparities

### **BRFSS (Behavioral Risk Factor**

**Surveillance System):** An ongoing, monthly telephone survey which collects data from randomly selected North Carolina adults in households with telephones.

**Data:** Information or numbers collected and used to present facts.

**Disparity:** Health disparities refer to differences in the health of different groups of people — differences that can be prevented. Some diseases and other poor health outcomes unfairly impact groups of people based on their race or ethnicity, religion, income or education, sex or gender, sexual orientation, age, mental health, disability, or where they live. This is because of how our society has viewed or treated each of these groups at one time or another and how resources were given to some groups of people but not to others.

**Disparity Ratio:** A measure or number for a race or ethnic group compared to the measure of another group.

**Food Desert:** a low-income census tract where either a substantial number or share of residents has low access to a supermarket or large grocery store **Health Disparities:** the measurable differences or gaps seen in one group's health status in relation to another or other group(s).

**Health Equity:** the opportunity for everyone to have good health.

**Health Inequities:** the unfair differences that prevent everyone from the opportunity to have good health.

**Healthy People 2020:** A federal initiative and report that states the goals and objectives needed to improve the health and quality of life for individuals and communities by the year 2020

**Mortality Rate:** The number of deaths in proportion to a population.

**Social Determinates of Health:** The social factors such as housing, education, income, and employment that greatly influence the health and quality of life in neighborhoods and communities.







# References

- 1. Disparities. Healthy People 2020. Retrieved December 05, 2017, from <u>https://www.healthypeople.gov/2020/</u> <u>about/foundation-health-measures/</u> <u>Disparities</u>
- Geronimus, A. T., Hicken, M. Keene, D., & Bound, J. (2006). "Weathering" and age patterns of allostatic load scores among Blacks and Whites in the United States. American Journal of Public Health, 96(2), 1-7.
- Diamant, A. L., Hays, R. D., Morales, L. S., Ford, W., Calmes, D., Asch, S., Duan, N., Fielder, E., Kim, S., Fielding, J., Summer, G., Shapiro, M. F., Hayes-Bautista, D., & Gelberg, L. (2004). Delays and unmet need for health care among adult primary care patients in a restructured urban public health system. American Journal of Public Health, 94(5), 783-789.
- 4. National Center for Health Statistics, 2016 Vintage Postcensal Bridged Population Estimates. Available at: <u>https://www.cdc.gov/nchs/nvss/</u> <u>bridgedrace.htm</u>

- 5. NC Department of Public Instruction. The North Carolina Four-Year Cohort Graduation Rate reflects the percentage of ninth graders (cohort) who graduated from high school four years later. Rates for "other races" include Asians and Multi-race categories. Refer to <u>http://www.ncpublicschools.org/</u> <u>accountability/reporting/cohortgradrate</u> for further information.
- Huang, K., Cheng, S., & Theise, R. (2013, Nov. & Dec.). School Contexts as Social Determinants of Child Health: Current Practices and Implications for Future Public Health Practice. Retrieved December 05, 2017, from <u>https://www.ncbi.nlm.nih.</u> gov/pmc/articles/PMC3945445/
- 2016 American Community Survey Single-Year Estimates: Table S0201: Selected Population Profile for North Carolina. Note: "Non-Hispanic Other" category is exclusively Asian Alone, Non-Hispanic.
- 8. Prevalence Data & Data Analysis Tools. (2016, December 14). Retrieved January 15, 2018, from <u>https://nccd.</u> <u>cdc.gov/BRFSSPrevalence/rdPage.</u>

aspx?rdReport=DPH BRFSS.ExploreByLocation&rdProcessAction= &SaveFileGenerated=1&irbLocation Type=States&islLocation=37&islState =&islCounty=&islClass=CLASS13&islTop ic=TOPIC04&islYear=2016&hidLocation Type=States&hidLocation=37&hidClass =CLASS13&hidTopic=TOPIC04& hidTopicName=All Teeth Removed& hidYear=2016&irbShowFootnotes= Show&rdICL-iclIndicators= ALTETH2& iclIndicators rdExpandedCollapsed History=&iclIndicators= ALTETH2& hidPreviouslySelectedIndicators=&Dash boardColumnCount=2&rdShowElement History=divYearUpdating%3dHide%2 cislYear%3dShow%2c&rdScrollX=0& rdScrollY=140&rdRnd=84719

- 9. Portrait of Oral Health in North Carolina. (2018, January). Retrieved January 22, 2018, from <u>https://www. oralhealthnc.org/</u>
- 10. Infant mortality rates per 1,000 live births (based on birth certificate and death certificate data). Child death rates exclude infants and are presented per 100,000 population ages 1-17 (based on death certificate data).

obstetric gestation. Obesity is defined as mothers having a Pre-pregnancy Body Mass Index >=30.0. Teen birth rates represent the number of live births per 1,000 females ages 15-19.
12. Maternal, Infant, and Child Health. Healthy People 2020. Retrieved November 22, 2017, from <u>https://</u> www.healthypeople.gov/2020/topicsobjectives/topic/maternal-infant-and-

11. Based on information reported

on North Carolina resident birth

at less than 37 weeks clinical/

certificates from 2014-2016. Preterm

births are defined as those occurring

13. NC Department of Public Instruction and the NC Department of Health and Human Services, Healthy Schools Initiative, Youth Risk Behavior Survey (YRBS). NC YRBS High School Reports 2015: <u>http://www.nchealthyschools.</u> <u>org/docs/data/yrbs/2015/statewide/ highschool/tables.pdf</u>

child-health

14. North Carolina Nutrition and Physical Activity Surveillance System (NC-NPASS) includes data on children seen in North Carolina public health sponsored WIC and child health clinics and some school-based health centers. Percentiles were based on the CDC/NCHS Year 2000 body mass index (BMI) Reference. NC PASS Tables showing Overweight by age, ethnicity, and gender: 2015: <u>https://</u> <u>www.eatsmartmovemorenc.com/</u> <u>Data/Texts/0617/2015NC-PedNESS\_</u> <u>ObesityinChildren2to18byrace.pdf</u>

- North Carolina Division of Public Health, State Center for Health Statistics, North Carolina Child Health Assessment and Monitoring Program (CHAMP). North Carolina CHAMP data 2010 [Electronic data files]. Raleigh, NC: State Center for Health Statistics [Producer]. <u>http://www.schs.state.</u> <u>nc.us/data/champ/2010/k11q01.html</u>
- North Carolina Division of Public Health, State Center for Health Statistics, North Carolina Child Health Assessment and Monitoring Program (CHAMP). North Carolina CHAMP data 2010 [Electronic data files]. Raleigh, NC: State Center for Health Statistics [Producer]. <u>http://www.schs.state.</u> <u>nc.us/data/champ/2010/k14q02.html</u>
- North Carolina Division of Public Health, State Center for Health Statistics, North Carolina Child Health Assessment and Monitoring Program (CHAMP). North Carolina CHAMP data 2010 [Electronic data files]. Raleigh, NC: State Center for Health Statistics [Producer]. <u>http://www.schs.state.</u> nc.us/data/champ/2009/k05q04.html

- 18. Latest available data from the North Carolina Behavioral Risk Factor Surveillance System (NC BRFSS). Cl refers to the Confidence Interval (at 95 percent probability level). Disparity ratios not presented due to overlapping confidence intervals. Estimates showing "n/a" are suppressed because they do not meet statistical reliability standards.
- World Health Organization. (2018). Risk factors. Retrieved November 22, 2017, from <u>http://www.who.int/topics/</u> <u>risk\_factors/en/</u>
- 20. With the exception of infant death rates, mortality rates are age-adjusted per 100,000 resident population. Numerators are derived from 2012-2016 death certificate data. Population denominators for all mortality rates (except for infant deaths) are estimates for 2012-2016 based on Vintage 2016 (Postcensal) bridged population estimates from the National Center for Health Statistics Bridged Population Estimates & the U.S. Census Bureau.
- 21. North Carolina Division of Public Health, N. (2017, November). Chronic Disease and Injury Section. Retrieved December 05, 2017, from <u>http://publichealth.nc.gov/</u> chronicdiseaseandinjury/

- 22. Gateway to Health Communication & Social Marketing Practice. (2017, September 15). Retrieved December 22, 2017, from <u>https://</u> www.cdc.gov/healthcommunication/ toolstemplates/entertainmented/tips/ ChronicRespiratoryDisease.html
- 23. 2016 North Carolina HIV/STD/Hepatitis Surveillance Report, NC Department of Health and Human Services, Division of Public Health, HIV/STD Prevention & Care Branch. HIV infection cases include all newly reported HIV infected individuals by the year of first diagnosis regardless of the stage of infection (HIV or AIDS). All rates are per 100,000 population. Refer to: <u>http://epi.publichealth.nc.gov/</u> <u>cd/stds/annualrpts.html</u> for further information.
- 24. Staff, P. S. (2016, June 24). Study -Wilmington No. 1 in opioid abuse. Retrieved January 03, 2018, from <u>http://www.starnewsonline.com/</u> <u>news/20160421/study---wilmington-</u> <u>no-1-in-opioid-abuse</u>

- 25. North Carolina Office of Minority Health and Health Disparities, the North Carolina American Indian Health Board, and the Maya Angelou Center for Health Equality at Wake Forest University. (2017). NC American Indian Opioid Information. Retrieved January 10, 2018, from <u>http://www.ncminorityhealth.org/</u> <u>documents/OpioidFinal.pdf</u>
- 26. NC Department of Health and Human Services. (2017). Opioid Crisis. Retrieved January 10, 2018, from <u>https://www.ncdhhs.gov/opioids</u>
- 27. North Carolina Division of Public Health, State Center for Health Statistics. North Carolina Behavioral Risk Factor Surveillance System Survey Data 2015. Raleigh, NC: State Center for Health Statistics [Producer]. <u>http://www.schs.state.nc.us/data/</u> <u>brfss/2015/nc/all/medcost.html</u>



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