

# Health Impacts of COVID-19 in North Carolina

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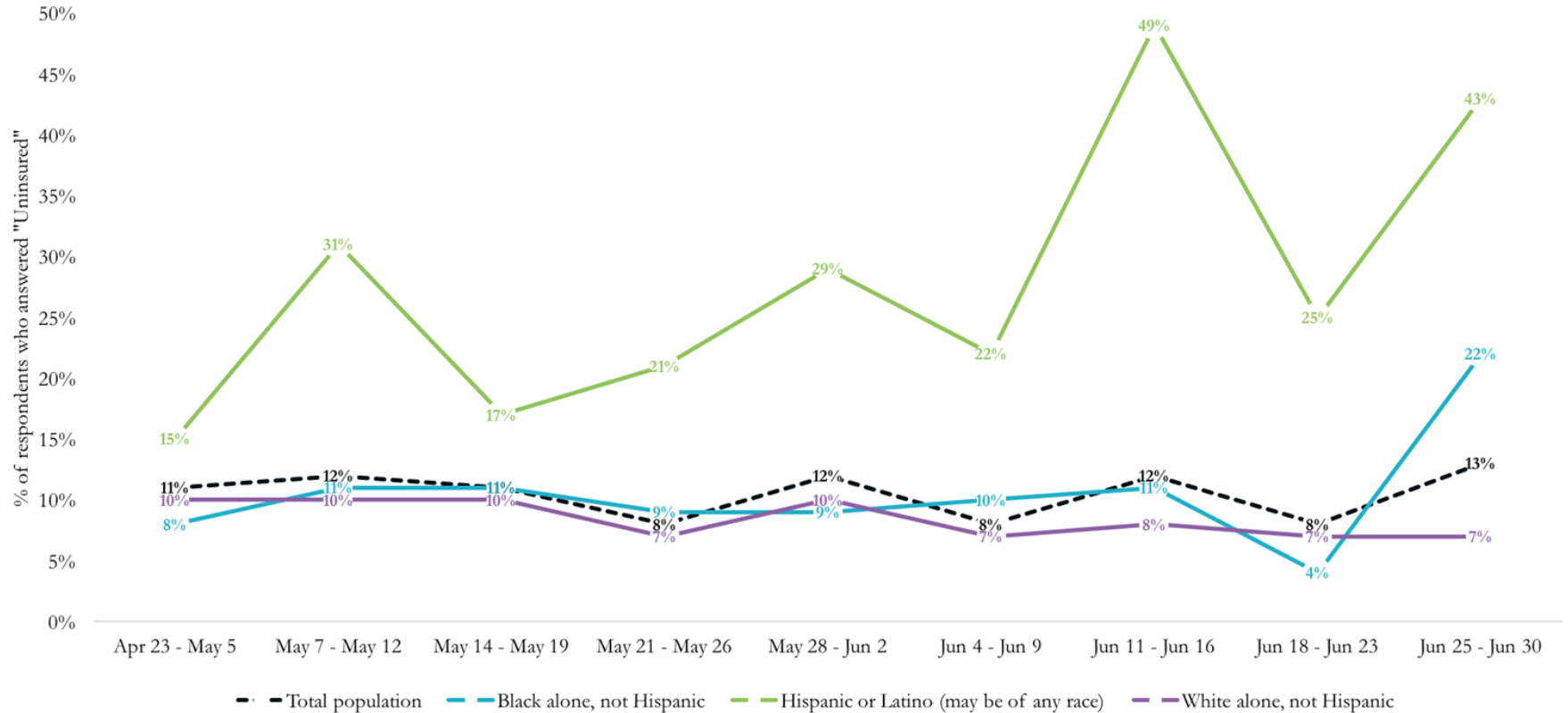
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# U.S. Census Household Pulse Survey Data

## NC Uninsurance Rate by Race and Ethnicity, April – June 2020



**Source:** U.S. Census Bureau Household Pulse Survey: Health Tables, 2020

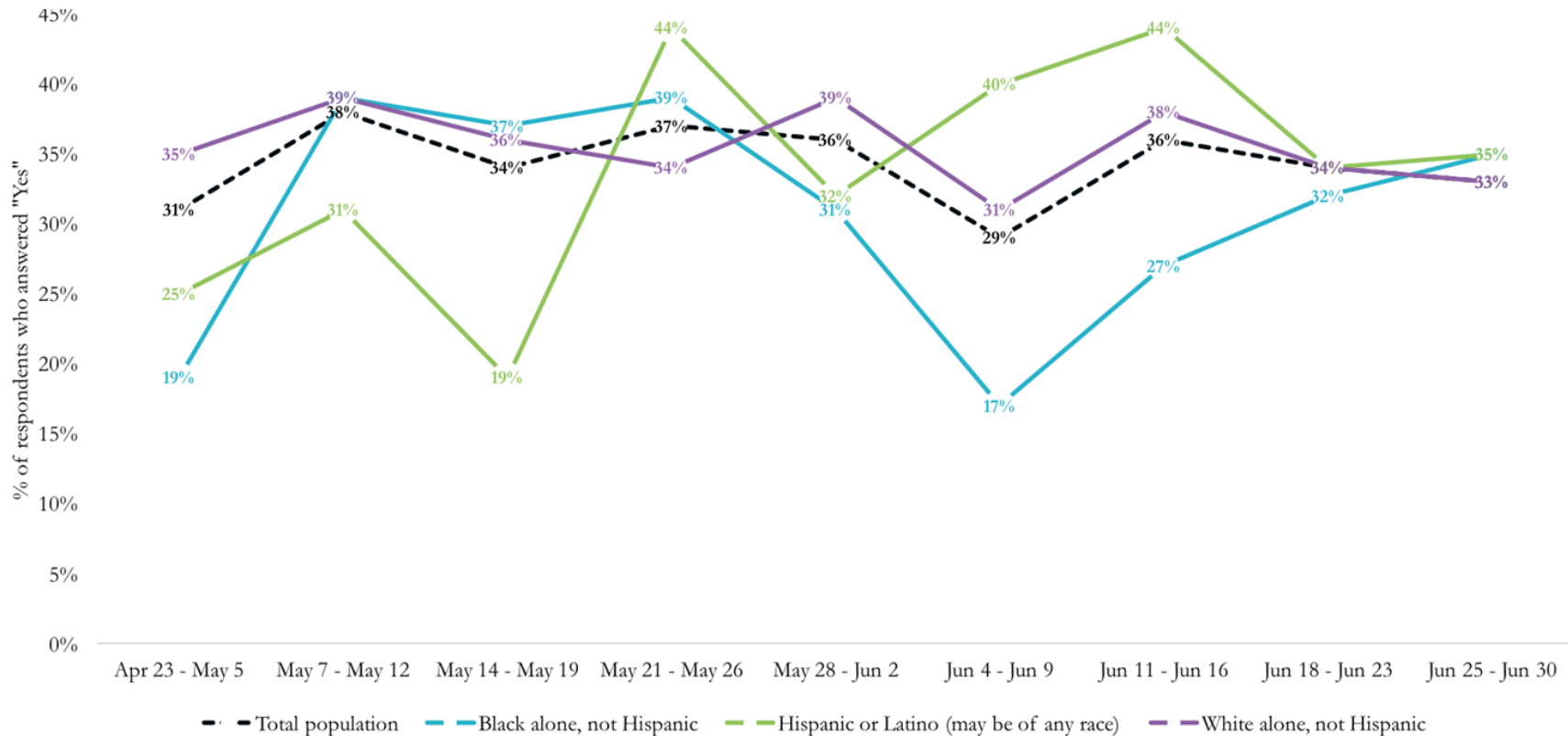
**Note:** Respondents were given the answer choices of "Insured," "Uninsured," and "Did not report or didn't know." Within the "Insured" category respondents could select private, public, or select more than one option.

**Author:** Olivia Huckel

# Insurance Rates in NC

- Hispanic or Latino respondents are uninsured at much higher rates than white respondents (ex. Between June 11 - 16, 49% of Hispanic or Latino respondents reported being uninsured compared to only 8% of white respondents during the same week).
  - The [News and Observer](#) reported that much of the Latinx population works in industries such as agriculture, meat processing plants, construction, and domestic work where remote work is not an option. Most of these high risk and high exposure jobs provide no health insurance or paid sick leave, which disadvantages the Latinx employees and makes them more vulnerable to the effects of COVID-19.
- Overall rates of uninsurance could be connected to unemployment (employer-based insurance plans, State healthcare plans, etc.).
- NC is the 5th highest of any state regarding loss of insurance during the pandemic according to [Families USA](#). NC has not expanded Medicaid coverage, so individuals may fall into the coverage gap if they lose insurance but do not qualify for Medicaid.

## Delayed Medical Care by Race and Ethnicity, April – June 2020



**Source:** U.S. Census Bureau Household Pulse Survey: Health Tables, 2020

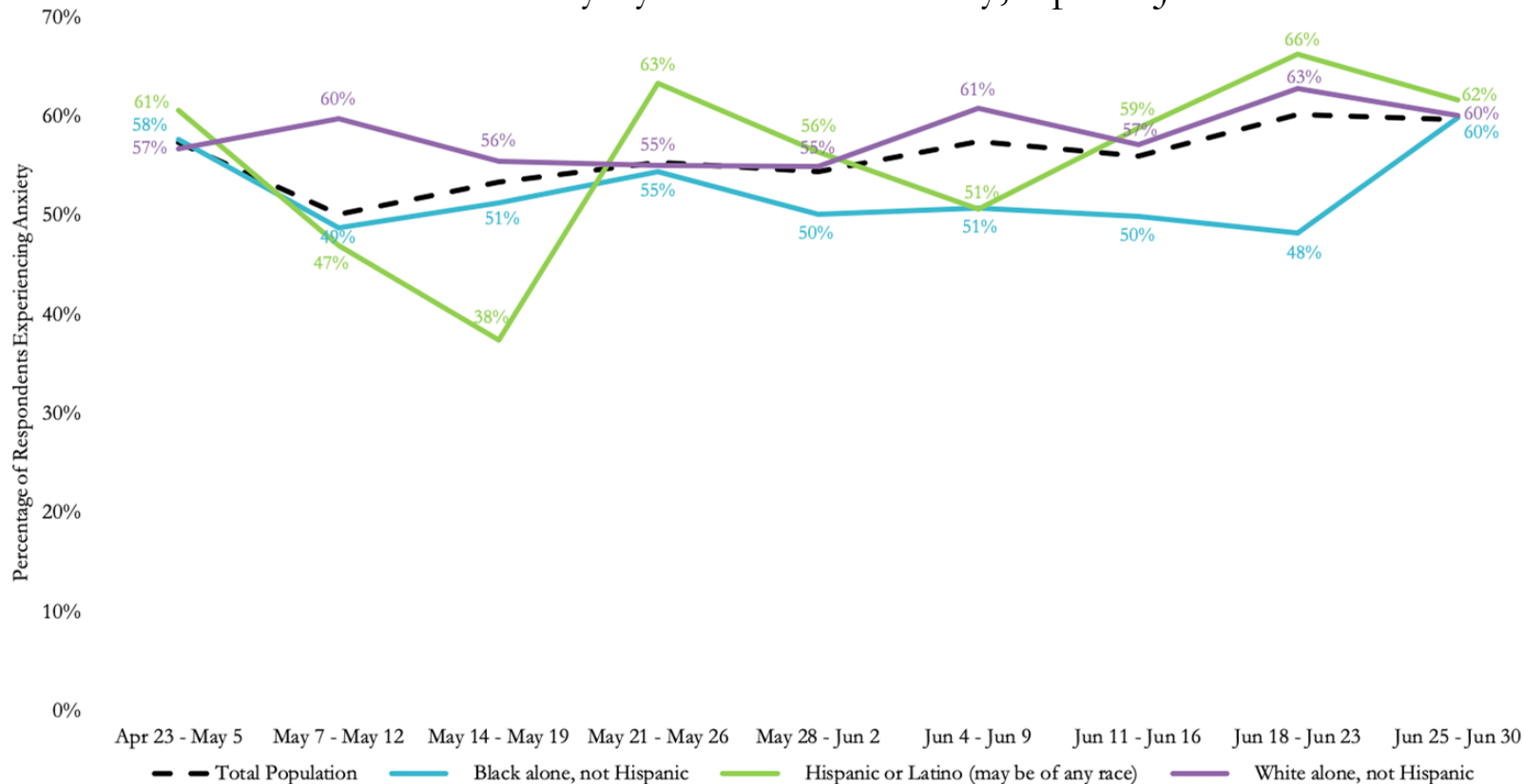
**Notes:** Respondents were asked the question, "In the last four weeks did you delay getting medical care because of COVID-19 pandemic?"

**Author:** Olivia Huckel

# Delayed Health Care Rates in NC

- The specific health care services that respondents delayed were not specified in the survey.
- We see the greatest variability among minority populations, whereas the white population remains fairly consistent.
  - This could be related to unaffordability due to loss of jobs and insurance, causing a delay in receiving medical care. As minorities seem to have the greatest changes in delayed healthcare, we should consider what kind of jobs are dominated by minority populations and if they do or do not have medical benefits such as insurance or sick time.

## Prevalence of Anxiety by Race and Ethnicity, April – June 2020

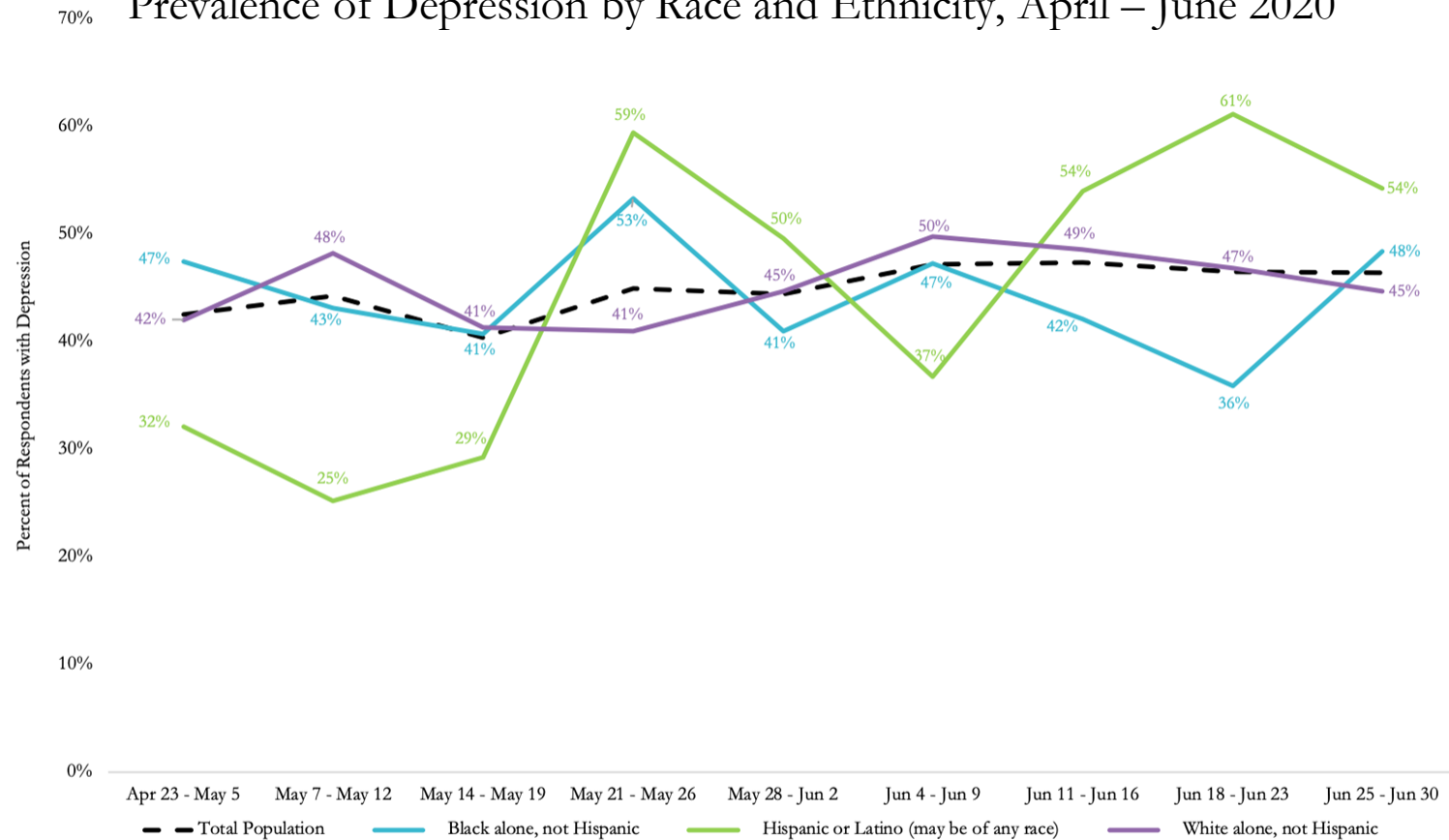


**Source:** U.S. Census Bureau Household Pulse Survey: Health Tables, 2020

**Notes:** Data show percentage of respondents who reported feeling anxious, nervous, or on edge "several days," "more than half the days," or "nearly every day" in the last seven days.

**Author:** Aditi Adhikari

## Prevalence of Depression by Race and Ethnicity, April – June 2020



**Source:** U.S. Census Bureau Household Pulse Survey: Health Tables, 2020

**Notes:** Data show percentage of respondents who reported feeling down, depressed, or hopeless "several days," "more than half the days," or "nearly every day" in the last seven days.

**Author:** Aditi Adhikari

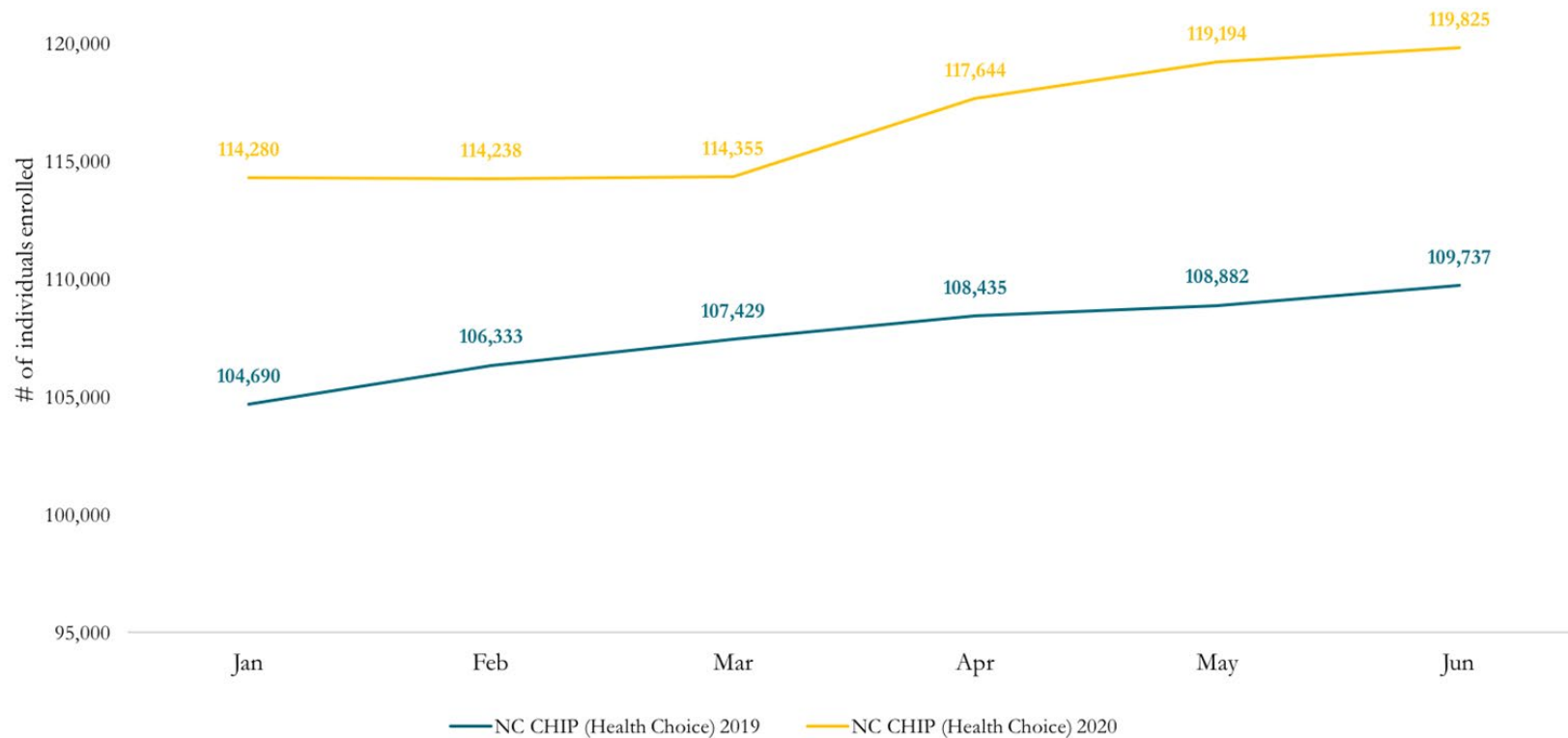


# Prevalence of Anxiety and Depression in North Carolina

- 55-60% of respondents experienced anxiety-like symptoms and 45-50% of respondents reported depression-like symptoms in the weeks following the COVID-19 lockdown.
- The data show little difference in the prevalence of anxiety symptoms between races.
  - This data contradicts previous findings that show white Americans tend to report higher rates of mood and anxiety disorders than Black or Latino Americans (Vilsaint et. al., 2019).
  - The closure of this gap might be due to the disparate negative effects of COVID-19 on communities of color.
- Higher rates of anxiety may be due to increased food and housing insecurity, income loss, or recent socio-political events related to the Black Lives Matter movement.

# COVID-19 Impacts on Public Insurance Enrollment

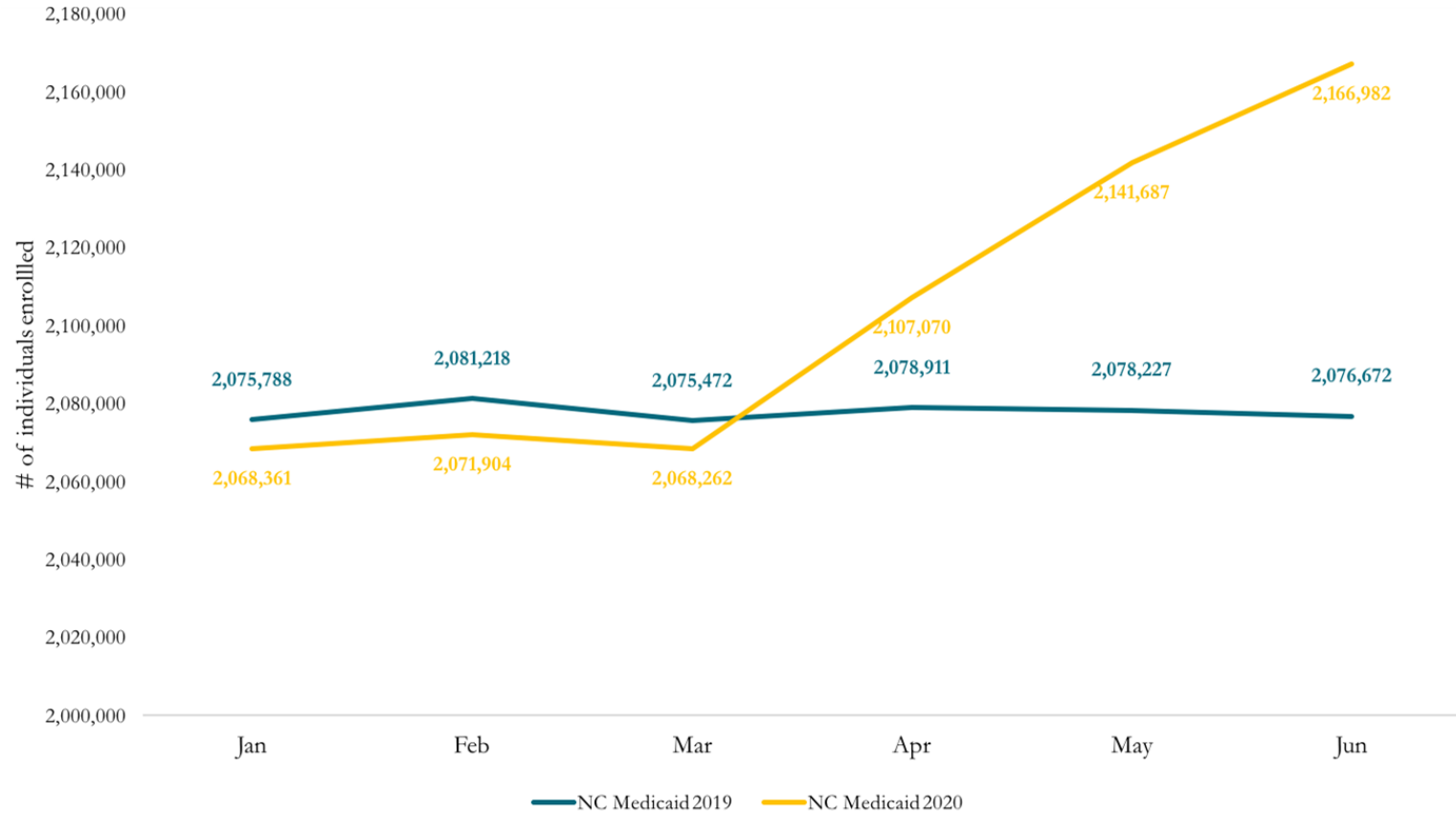
## NC CHIP (Health Choice) Enrollment, January – June 2020



**Source:** NC Department of Health and Human Services Medicaid Enrollment Dashboard

**Author:** Olivia Huckel

## NC Medicaid Enrollment, January – June 2020



**Source:** NC Department of Health and Human Services Medicaid Enrollment Dashboard

**Author:** Olivia Huckel

# Medicaid and CHIP Enrollment in NC

- NC saw a 4.78% increase in CHIP enrollment from March-June 2020.
- NC saw a 4.77% increase in Medicaid enrollment from March-June 2020.
- According to a [report by ABC 11](#) local news, 238,000 workers who have been laid off are losing health insurance, meaning 20% of the adult population under age 65 is entirely without health insurance. It is important to note that this creates a strain on the public health insurance system and social safety net, while NC residents are suffering from a public health crisis.

# Racial and Geographic Disparities within North Carolina

## NC COVID Cases by Race and Ethnicity Through June 2020

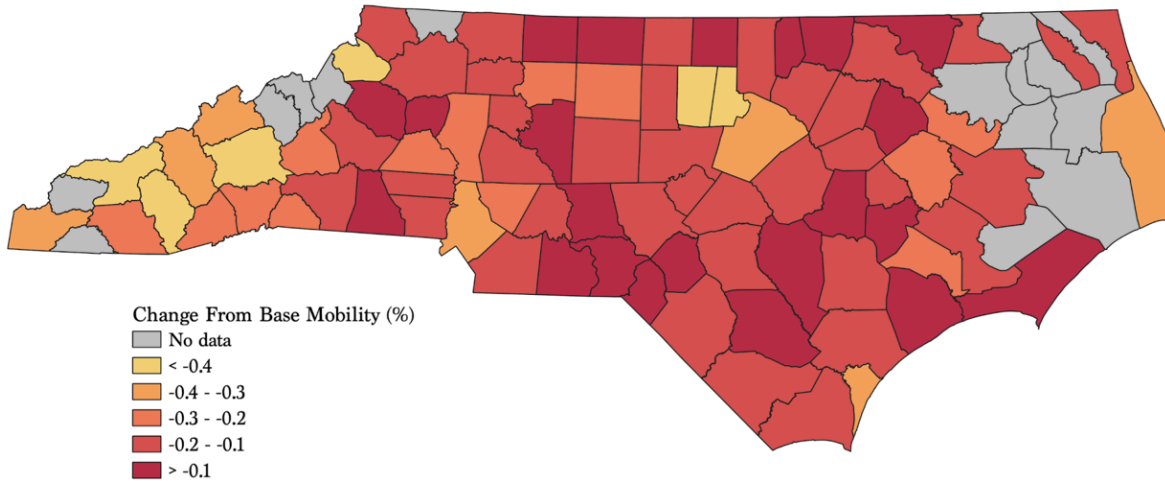
Race	Percentage of Population	Percentage of Cases	Percentage of Deaths
Black or African American alone	21%	24%	33%
Hispanic or Latino	9%	44%	10%
White alone	69%	56%	58%

**Source:** The COVID Tracking Project, Racial Data Dashboard, North Carolina 2020

**Notes:** North Carolina has reported race data for 68% of cases and 96% of deaths. North Carolina has reported ethnicity data for 66% of cases and 93% of deaths. It should be noted that percentages are derived from total tests and may be indicative of disparities among races. The source flags a group's case or death proportion as suggestive of racial/ethnic disparity when it meets three criteria: 1) Is at least 33% higher than the Census Percentage of Population. 2) Remains elevated whether we include or exclude cases/deaths with unknown race/ethnicity. 3) Is based on at least 30 actual cases or deaths. The Hispanic and Latino Percentage of Cases and the Black or African American percentage of Deaths have been shaded in this table for that reason.

**Author:** Olivia Huckel

# County-Level Change in Mobility during Stay At Home Order



Change in Mobility After Implementing Stay at Home Order

	% Change from Base
Raleigh	-38.8%
Charlotte	-33.1%
Greensboro	-32.1%
Urban Counties	-27.3%
North Carolina	-23.5%
Rural Counties	-15.6%

**Source:** Apple Maps Mobility Trends Reports, 2020

**Notes:** Baseline was calculated for each county as an average of all mobility data from 1/13/2020 - 1/31/2020. The average mobility during the state-mandated Stay At Home order (3/31/2020 - 5/8/2020) was compared to baseline. Phase One began at 5pm on 5/8/2020. This data is generated by counting the number of requests made to Apple Maps for directions in select countries, counties, and cities. State, Urban County, and Rural County averages are weighted by county population. Only driving data is included at the county level. For Raleigh, Charlotte, and Greensboro, driving and walking data are equally weighted and transit data is excluded.

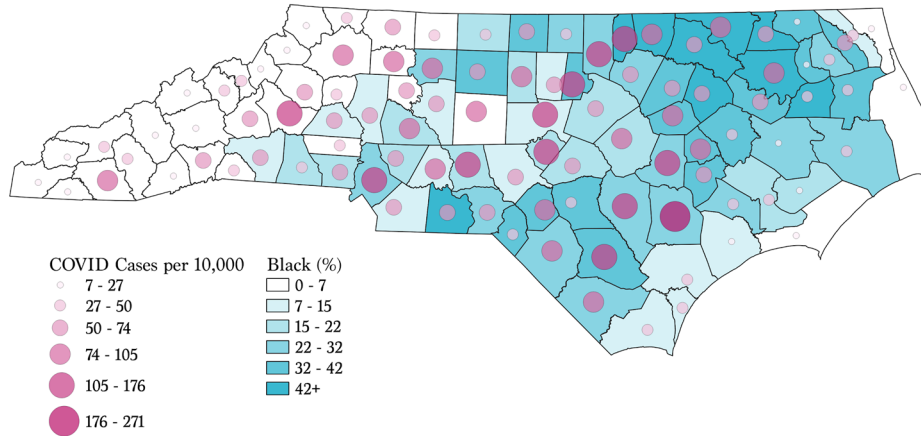
**Author:** Aditi Adhikari



# County-Level Adherence to Stay At Home Order

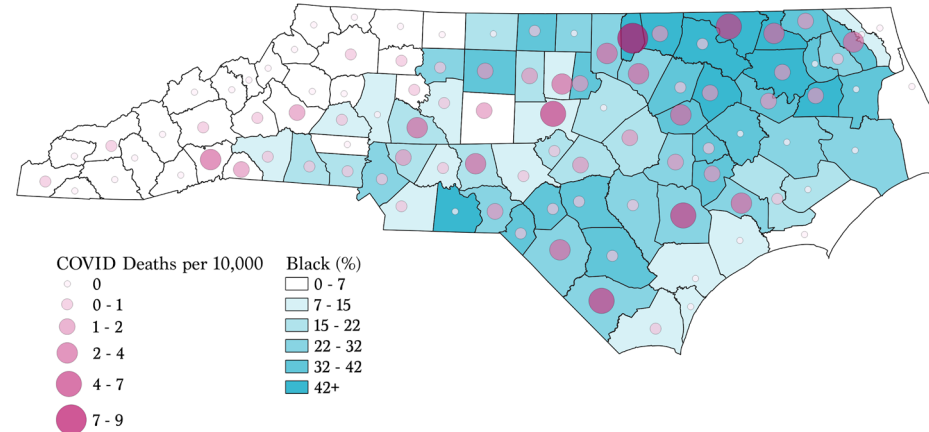
- NC residents decreased average mobility during the Stay At Home order by 23.5% across the board. This average is weighted by population.
- Residents of major NC cities decreased their average mobility during the Stay At Home period by 32-39%
- Western NC, on average, decreased average mobility more than Eastern NC. Urban counties, on average, decreased average mobility more than rural counties. A greater decrease in average mobility indicates greater adherence to the Stay At Home Order.
  - Given higher population density in urban counties, it may be of higher public health importance to ensure that the Stay At Home Order is more effective in urban areas.

## COVID-19 Cases Overlaid with Black, not Hispanic Population, March 3 – July 7



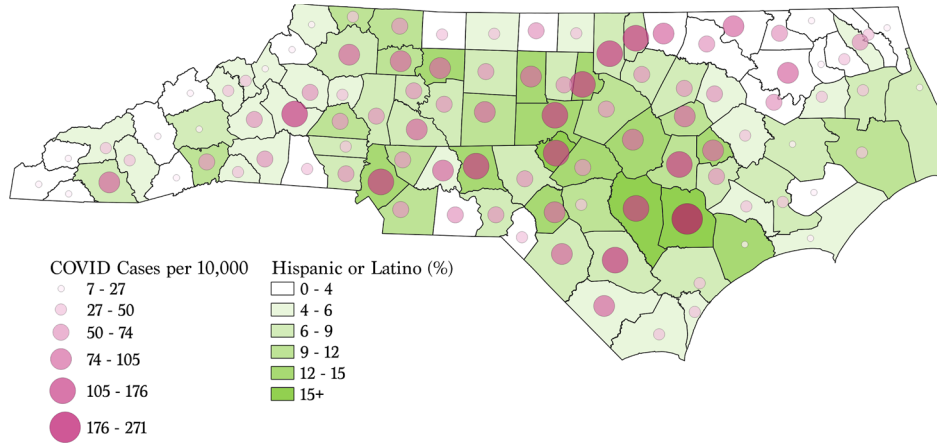
**Source:** NC Department of Health and Human Services North Carolina COVID-19 Dashboard and US Census American Community Survey 2018  
**Notes:** COVID-19 cases counted cumulatively from March 3 - July 7.  
**Author:** Anwesha Nandi

## COVID-19 Deaths Overlaid with Black, not Hispanic Population, March 3 – July 7



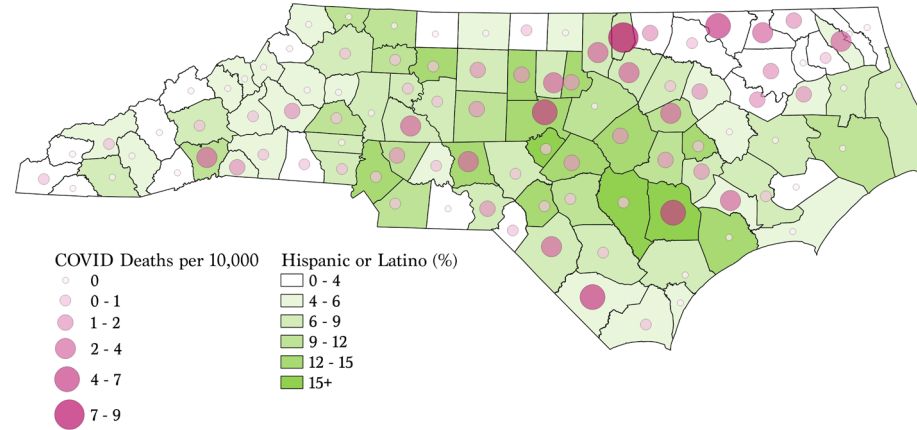
**Source:** NC Department of Health and Human Services North Carolina COVID-19 Dashboard and US Census American Community Survey 2018  
**Notes:** COVID-19 Deaths counted cumulatively from March 3 - July 7.  
**Author:** Anwesha Nandi

## COVID-19 Cases Overlaid with Hispanic or Latino Population, March 3 – July 7



**Source:** NC Department of Health and Human Services North Carolina COVID-19 Dashboard and US Census American Community Survey 2018  
**Notes:** COVID-19 cases counted cumulatively from March 3 - July 7.  
**Author:** Anwesha Nandi

## COVID-19 Deaths Overlaid with Hispanic or Latino Population, March 3 – July 7

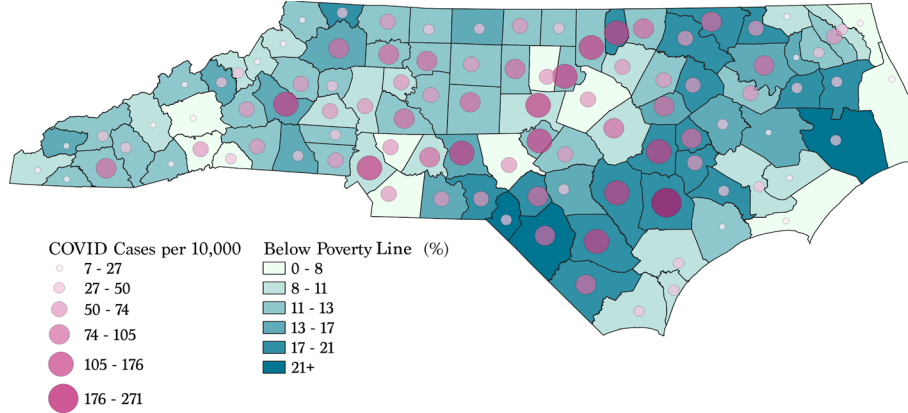


**Source:** NC Department of Health and Human Services North Carolina COVID-19 Dashboard and US Census American Community Survey 2018  
**Notes:** COVID-19 deaths counted cumulatively from March 3 - July 17.  
**Author:** Anwesha Nandi

# The Relationship Between COVID-19 and Race and Ethnicity

- Counties with more Black residents have greater concentrations of cases and higher death rates, than counties which have fewer Black residents.
  - There is a belt of counties with high death and case concentrations in the northeastern region of the state, which are also the most Black counties.
  - 7 of the 10 counties with the highest probability of death are over 32% black.
- Despite high case concentrations in predominantly Hispanic or Latino counties, those counties do not have similarly high death rates.
- An [interactive map](#) with cases, deaths, and demographic information for all counties is available online.

## COVID-19 Cases Overlaid with Population Experiencing Poverty, March 3 – July 7

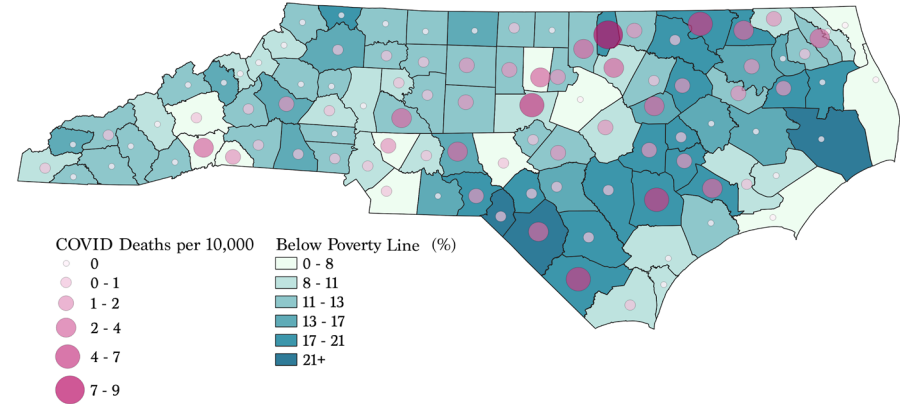


Source: NC Department of Health and Human Services North Carolina COVID-19 Dashboard and US Census American Community Survey 2018

Notes: COVID-19 cases counted cumulatively from March 3 - July 7

Author: Anwesha Nandi

## COVID-19 Deaths Overlaid with Population Experiencing Poverty, March 3 – July 7



Source: NC Department of Health and Human Services North Carolina COVID-19 Dashboard and US Census American Community Survey 2018

Notes: COVID-19 deaths counted cumulatively from March 3 - July 7.

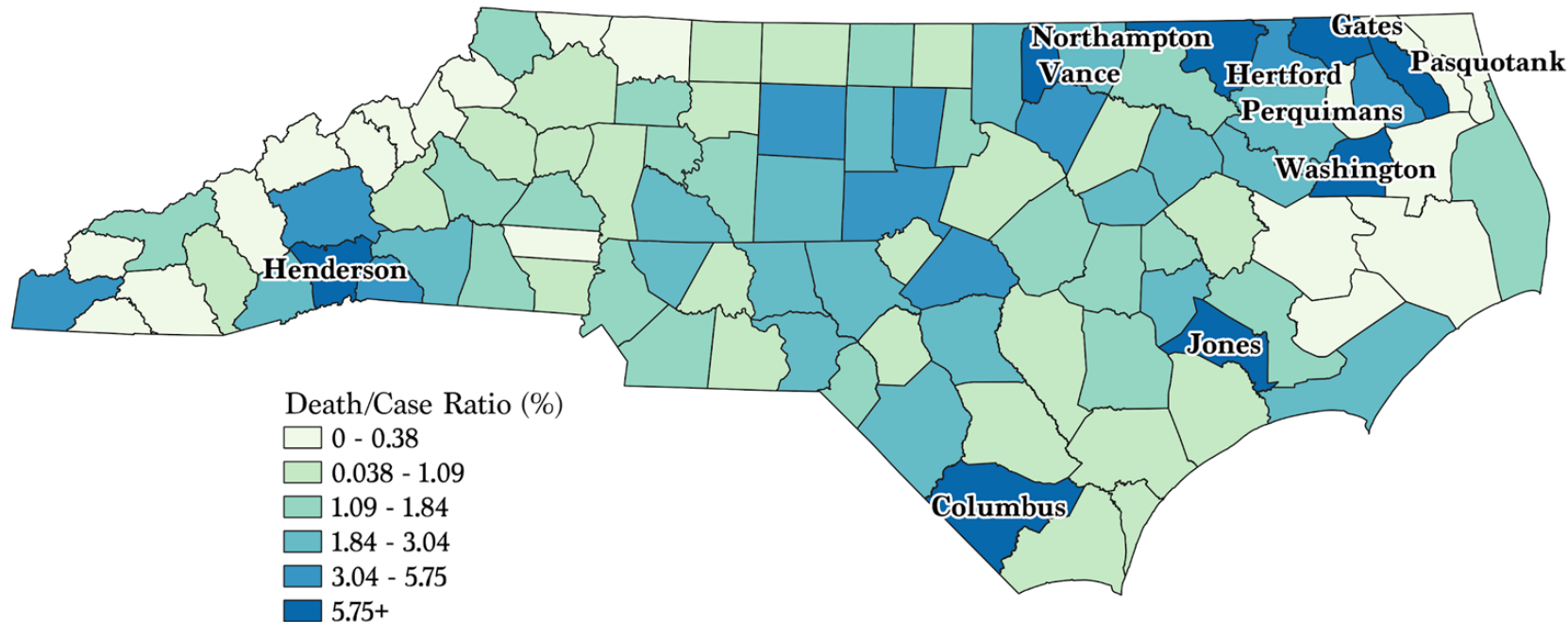
Author: Anwesha Nandi

# The Relationship Between COVID-19 and Poverty

- Counties with a higher percentage of people living below the poverty line have higher concentrations of cases. This reality is depicted in the Eastern region of North Carolina.
- However, counties with higher percentage of people living below the poverty line have relatively lower concentrations of deaths, with the exception of Duplin county.
- There are other variables intersecting with poverty that could explain the high concentration of cases:
  - There is a potential correlation between the presence of agriculture and meatpacking plants, and poverty.
  - The counties with the highest proportion of people living below the poverty line have higher proportions of Black population and Hispanic or Latino population

# Probability of Death from COVID-19 by County

current as of July 7, 2020



**Source:** NC Department of Health and Human Services North Carolina COVID-19 Dashboard

**Notes:** Counties with the 10 highest death/case ratio or probability of death are labeled. COVID-19 cases and deaths counted cumulatively from March 3 - July 7.

**Author:** Anwesha Nandi

# Top 10 Counties with the Highest Death to Case Ratios

County	Death/Case Ratio	Black	Hispanic or Latino	White	Poverty Rate	Number of Animal Farms
Northampton	7.9%	57%	2%	39%	17%	23
Jones	7.7%	31%	5%	62%	19%	53
Pasquotank	7.6%	37%	5%	55%	11%	3
Gates	7.4%	34%	<1%	63%	9%	10
Vance	7.3%	50%	8%	40%	18%	0
Washington	7.3%	47%	5%	45%	18%	5
Columbus	6.8%	31%	5%	59%	18%	50
Henderson	6.8%	3%	10%	83%	7%	4
Hertford	5.8%	60%	4%	33%	20%	7
Perquimans	5.4%	25%	3%	72%	11%	9
North Carolina	1.9%	22%	10%	71%	14%	-
U.S.A	3.7%	13%	19%	76%	12%	-

**Source:** U.S. Census Bureau, NC Department of Health and Human Services, NC Department of Environmental Quality

**Note:** Data are current as of July 7, 2020. Demographic percentages may not add up to 100% due to rounding. Farms may have poultry, pig, or cattle.

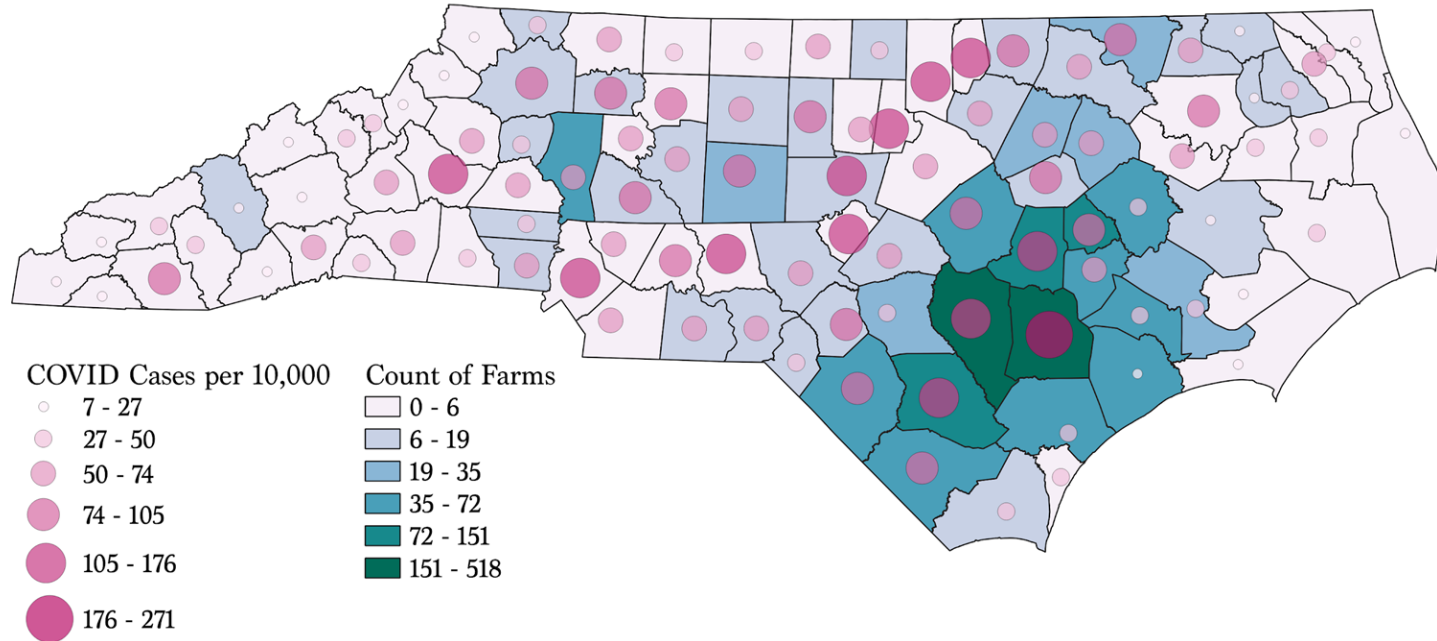
**Author:** Anwesha Nandi, Aditi Adhikari



# Death to Case Ratios by County

- Counties with the highest death to case ratios tend to have higher poverty rates, larger Black populations, and smaller Hispanic or Latino populations than NC or USA averages.
- Generally, rural counties have a higher probability of death than urban counties. This may be linked to the higher concentration of animal farms and meat processing plants in rural areas.
- Orange County has an abnormally high death to case ratio (5.0%) relative to demographically similar counties:
  - Mecklenburg County: 1.2%
  - Wake County: 0.8%

# Correlation Between Number of Cases and Number of Animal Farms by County, March 3 – July 7



**Source:** NC Department of Health and Human Services North Carolina COVID-19 Dashboard and NC Department of Environmental Quality

**Notes:** COVID-19 cases counted cumulatively from March 3 - July 7.

**Author:** Anwesha Nandi

# Agriculture and COVID-19

- 2000+ workers at meat or poultry processing plants have been infected with COVID-19, and 23 meat processing plants were linked with outbreak clusters, as of May 2020.
- Animal farms are concentrated in Southeastern North Carolina, particularly in Duplin and Sampson Counties, and may explain the greater number of cases in Eastern North Carolina
- There is a correlation between the presence of the agricultural industry and concentration of COVID-19 cases in a county
  - The largest hog processing plant in the US is located in Bladen County, suggesting a relationship between meat processing plants, farms, and COVID-19

## Notable Counties

County	Case to Death Ratio	Cases (per 10,000)	Deaths (per 10,000)	% Black	% Hispanic	% Below Poverty Line	Why Notable
Northampton	7.9%	96	7	57	2	17	Disproportionately more deaths and a mostly poor, non-white and old population. Many assisted-living facilities and pork processing plants present
Orange	5.0%	58	3	12	8	5	Large number of deaths despite being affluent, White, young, and well-resourced
Duplin	1.8%	271	5	25	21	20	Large number of cases attributed to meat processing plant outbreaks, but relatively low number of deaths
Mecklenburg	1.2%	122	1	33	14	13	Large number of cases may be attributed to high population density, but cannot be attributed to agriculture or assisted living
Sampson	0.6%	176	1	25	19	18	Demographics and agriculture industry are very similar to neighboring Duplin County, but significantly lower cases and deaths

**Source:** US Census Bureau, North Carolina Department of Health and Human Services, and various local news outlets

**Notes:** A preliminary list of 15-20 notable counties was generated. This list was chosen to represent both counties that followed the trend (e.g. high cases and/or deaths in vulnerable counties) as well as those that did not (e.g. high cases and/or deaths in counties that are not typically considered vulnerable). Data are current as of July 7, 2020

**Author:** Rachel Beardsley, Aditi Adhikari

# Notable Counties

- Counties with notable non-white, old, and impoverished populations or strong agricultural industries appear to have more cases and deaths, with some exceptions:
  - Sampson County has had very few deaths, as of July 7, 2020, despite a reliance on the agricultural industry
  - Orange County has had a disproportionately high death to case ratio, as of July 7, 2020, despite having a relatively young and affluent population, as well as access to essential health resources
- Though trends emerge, case and death numbers in any given county may be correlated with a number of underlying factors, including but not limited to:
  - Presence of large Non-White populations (e.g. Northampton, Mecklenburg, and Duplin)
  - Percent of population living under the federal poverty line (e.g. Northampton and Duplin)
  - Presence of meat processing plants, animal farms, vacation hubs, assisted living facilities, and universities (e.g. Northampton, Orange, Duplin, and Mecklenburg)
- When evaluating county-level preparedness and vulnerability, all factors must be considered, as no one factor consistently predicts cases and deaths.

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