

Running the Numbers

*A Periodic Feature to Inform North Carolina Health Care Professionals
About Current Topics in Health Statistics*

Health Insurance Coverage in North Carolina: The Rural-Urban Uninsured Gap

One of the primary drivers of health is being covered by health insurance. A review of available literature found a wide range of effects of health insurance, including a 20% relative reduction in mortality among previously uninsured people who become eligible for Medicare [1]. Many factors lead to lower rates of health insurance coverage in rural areas compared to urban areas: for example, rural residents typically have lower incomes [2], more employment in small businesses [3] that are often economically unable to provide health insurance for their employees [4, 5], and lower enrollment in the Health Insurance Marketplace (“Obamacare” plans) [6]. In this piece, we present data on the disparity in health insurance coverage between urban (metropolitan) and rural (nonmetropolitan) counties in North Carolina.

Methods and Data Sources

The two primary data sources for health insurance coverage trace to continuous surveying from the US Census Bureau. The American Community Survey (ACS) surveys about 2.3 million residents nationally per year, asking for demographic, economic, and housing information. This annual effort has replaced the detailed, long-form survey that was part of the decennial census until 2000; instead of a large share of American households completing the long form every 10 years, a smaller share is surveyed every year. The ACS data summaries are reported in 1-year, 3-year, and 5-year compilations, but areas with fewer than 10,000 people (eg, many North Carolina rural counties) are reported only in 5-year groupings to protect respondents from potentially being identified by the combination of precise social measures reported in the ACS. Health insurance information in the file reports whether the respondent had health insurance that year for

many population subgroups and type of insurance (or none) for fewer subgroups. These data describe the area characteristics for a 5-year period, most recently the years 2012 through 2016. A second source—the Census Bureau’s Small Area Health Insurance Estimates (SAHIE) program—uses data from the ACS program, but enhances the annual data with models that yield single-year county estimates for small places where the Census Bureau is restricted from publishing the unenhanced data for the same period. This approach is similar to one that our team has used for years prior to the development of the SAHIE [7]. The SAHIE data only addresses presence or absence of health insurance for an individual and limits its scope to Americans under 65 years old.

Although there are many systems for classifying rural or urban status for regions in the United States, our use of counties in this context leads us to measure based on the most popular federal definition. Using the Core-Based Statistical Area (CBSA) system by the US Office of Management and Budget (and published in data tables by the Census Bureau), metropolitan counties are usually classified as urban areas and other counties as rural. The CBSA system identifies major and minor employment commuting areas as metropolitan and micropolitan areas (counties in the employment market serving a metropolitan core area or that of a micropolitan core) with many noncore counties

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Address correspondence to Randy Randolph, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, CB# 7590, 725 Martin Luther King Jr. Blvd. Chapel Hill, NC 27599 (randy_randolph@unc.edu).

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that receive neither designation. Some counties with a high commuting pattern into metropolitan areas may appear “rural” to most people, but this is a common issue with county based rural classification schemes.

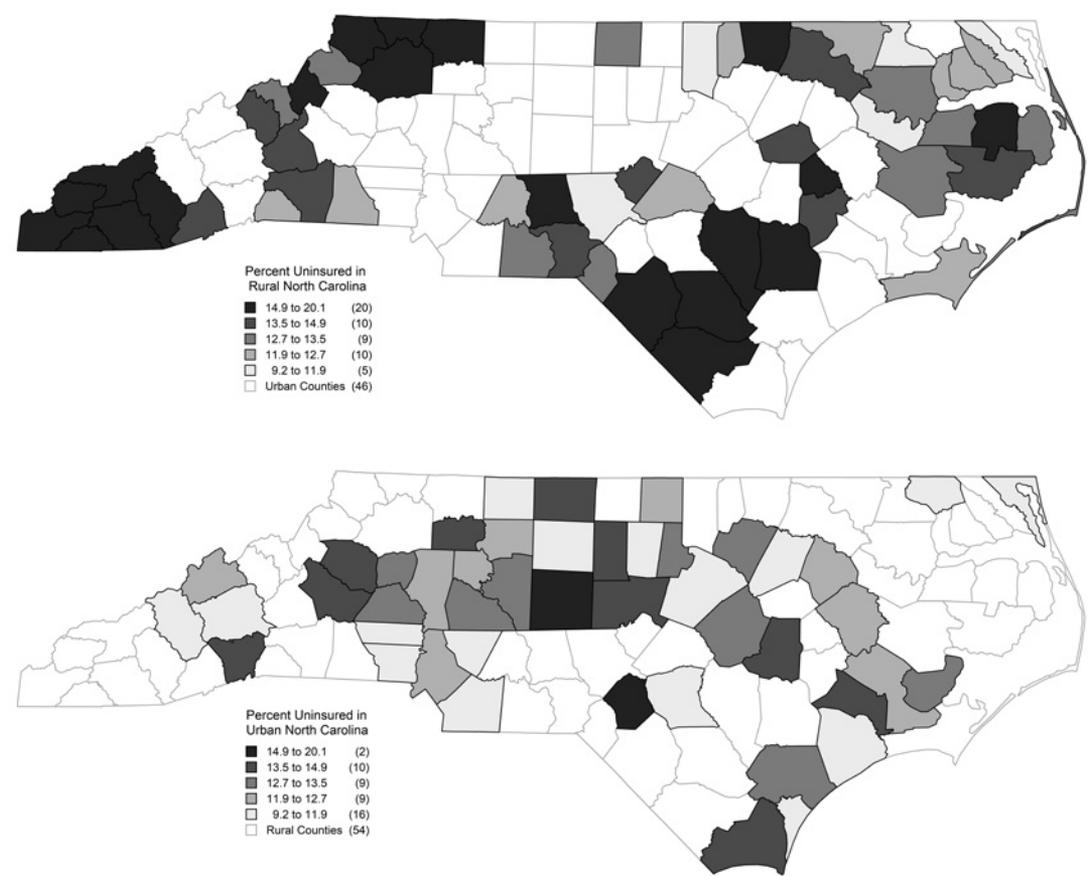
Findings

The rural counties in North Carolina have a larger share of residents with no health insurance than the urban counties. Figure 1 contains maps of the countywide SAHIE estimates of insurance coverage for residents under 65 years of age [8, 9]. The maps show the same categories (based on quintiles for all 100 counties, with some variation in category counts due to single-digit precision

of the data) for rural counties in the top map and for urban counties below. While rural areas contain 54% of the counties in North Carolina, these areas account for 20 of the 22 counties with the highest percentage of residents without health insurance, and only five of the 21 North Carolina counties with the highest percentage of residents having insurance. Clusters of rural counties with health insurance shortages are conspicuous in the mountain and southern coastal plain regions.

Though rural counties in North Carolina generally have more residents without health insurance, not all segments of the rural population are less likely to be insured than their urban counterparts. The data in Table 1 is compiled from the ACS for the

FIGURE 1.
Percentage of Population without Health Insurance in Rural and Urban North Carolina: Residents Less Than 65 Years Old, 2016



Source. Small Area Health Insurance Estimates (SAHIE), US Census Bureau, 2018.

period 2012–2016 [9, 10]. The share of the population without health insurance is shown for all of North Carolina, rural counties, and urban counties for ACS population characteristics including age, gender, race, Hispanic ethnicity, income (indexed to poverty threshold), educational attainment,

employment status, and citizenship. The majority of the summaries for these measures show rural North Carolina residents less likely to have health insurance than those in urban areas. It is notable that, among many citizen groups traditionally vulnerable to losing health insurance coverage, a larger

TABLE 1.
Percentage of North Carolina Residents with No Health Insurance by Rural-Urban Status and Demographic Categories, 2012-2016

	NC	Rural	Urban
Age			
Under 6 years	3.9	3.8	3.9
6 to 17 years	6.3	7.0	6.1
18 to 24 years	21.2	25.2	20.2
25 to 34 years	26.2	31.6	25.0
35 to 44 years	20.8	25.6	19.6
45 to 54 years	16.5	20.7	15.3
55 to 64 years	11.7	13.3	11.1
65 to 74 years	0.6	0.4	0.7
75 years and over	0.4	0.3	0.4
Citizenship			
Native Born	10.9	12.9	10.4
Naturalized	14.9	20.4	14.3
Noncitizen	54.1	68.0	51.7
Educational Attainment			
Less than high school graduate	30.2	26.6	31.8
High school graduate (includes equivalency)	18.6	18.2	18.8
Some college or associate's degree	13.9	14.7	13.7
Bachelor's degree or higher	5.2	6.2	5.0
Employment Status			
Employed	15.8	18.8	15.0
Unemployed	44.8	48.8	43.6
Not in labor force	11.1	11.8	10.9
Gender			
Male	14.6	16.5	14.1
Female	12.0	13.4	11.6
Poverty Level			
Under 138% of poverty threshold	24.4	23.6	24.7
138% to 199% of poverty threshold	19.8	18.5	20.2
200% to 399% of poverty threshold	11.4	12.2	11.2
400% of poverty threshold and over	3.8	4.8	3.6
Race or Ethnicity			
White alone	11.6	13.4	11.0
Black or African American alone	14.8	15.1	14.7
American Indian and Alaska Native alone	19.2	19.8	18.1
Asian alone	13.4	20.8	12.9
Native Hawaiian and Other Pacific Islander alone	23.8	19.8	24.6
Some other race alone	39.7	43.4	38.7
Two or more races	11.4	12.9	11.1
Hispanic or Latino	35.0	37.6	34.4

share of rural residents had health insurance during this time period. In rural North Carolina these groups—preschool children, those over 65 years of age, those with no college coursework, and those below 200% of the federal poverty threshold—all have a smaller percentage of population without health insurance than in the urban areas. Health insurance coverage for noncitizens is relatively rare in North Carolina, but in rural areas, shortage of insurance coverage for the group is severe. The very high rate of health insurance coverage in the age 65 and over categories demonstrates the ubiquity of Medicare in that population.

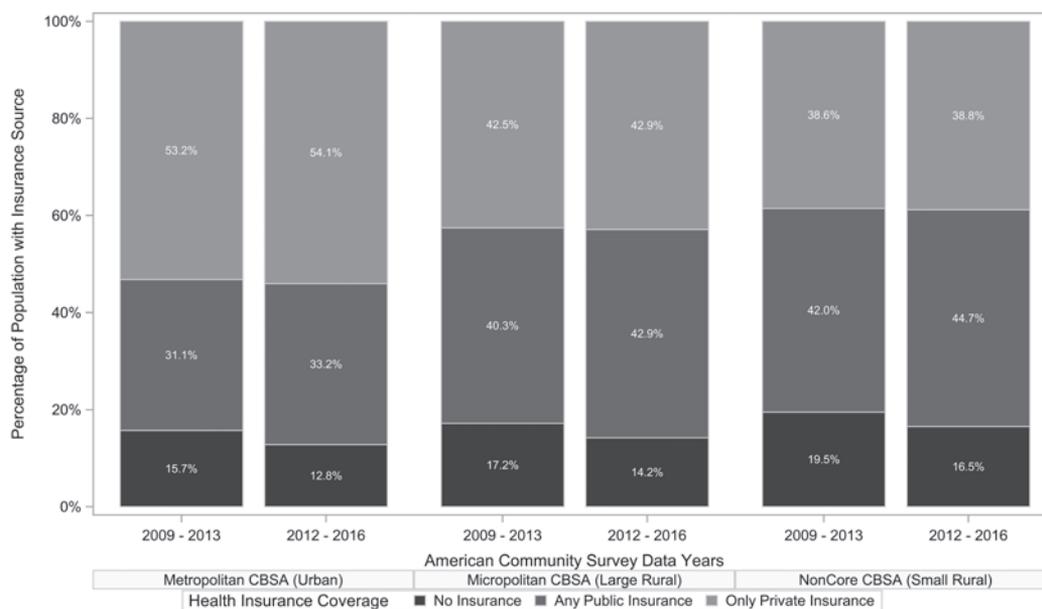
During the period that the ACS has measured health insurance coverage, the share of North Carolina residents with health insurance coverage has increased in rural and urban areas. The insurance coverage categories in the ACS were summarized as residents with private insurance, with (any) public insurance, and with no insurance for the earliest and most recent periods in Figure 2. Metropolitan, micropolitan, and noncore areas all had more insured residents in the most recent (years 2012-2016) ACS 5-year time period when

compared with the first period for which the data was reported (years 2009-2013) [8, 10, 11]. Rural and urban areas had comparable reductions in the percentage of residents without insurance. All rural/urban categories experienced small increases in the share of population with health insurance. The percentage of residents with private insurance increased, as did the share with all or some public coverage. The correspondence between increased public insurance coverage rates and the reduced share of residents without insurance implies that federal policy aiming to increase health coverage has improved the percent covered by roughly three points in all North Carolina urbanization categories. **NCMJ**

Randy Randolph, MRP applications specialist, North Carolina Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

Mark Holmes, PhD director, North Carolina Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, Chapel Hill, North Carolina; professor, Department of Health Policy and Management, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

FIGURE 2.
Source of Health Insurance Coverage by Rural-Urban Categories, 2009-2013 and 2012-2016



Source. American Community Survey 2009-2013 and 2012-2016, US Census Bureau, 2014 and 2017.

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