Findings Brief
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# Differences in Community Characteristics of Sole Community Hospitals

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## OVERVIEW

In 1983, Congress created the Sole Community Hospital (SCH) program to support small rural hospitals for which "by reason of factors such as isolated location, weather conditions, travel conditions, or absence of other hospitals, is the sole source of inpatient hospital services reasonably available in a geographic area to Medicare beneficiaries."[1] A hospital qualifies as a SCH by meeting the following criteria: 1) It is located at least 35 miles from a similar hospital; or 2) It is between 25 and 35 miles from a similar hospital; and meets one of the following 2a) No more than 25% of total inpatients or 25% of Medicare inpatients admitted are also admitted to similar hospitals within a 35 mile radius; or 2b) It has less than 50 acute care beds and would admit at least 75% of inpatients from the service area were it not for some patients requiring specialized care that the hospital does not offer; or 3) It is between 15 and 25 miles from other similar hospitals that are inaccessible for at least 30 days in two of three years due to topography or weather; or 4) Travel time to the nearest hospital is at least 45 minutes because of distance, posted speed limits, or weather.[2]

A SCH is often the only source of hospital care for isolated rural residents.[3] As such, the Medicare hospital classification is intended to keep these institutions viable through certain payment enhancements and protections to the hospital. The purpose of this brief is to: 1) present a snapshot of SCHs[4] and the communities served by them in 2015 (cross-sectional analysis) and 2) identify some trends in selected SCH and community characteristics between 2006 and 2015 (longitudinal analysis).

## METHOD

The method in this brief is the same as that described in a previous findings brief where hospitals with cost report periods less than 360 days and hospitals missing one or more cost reports during the study period were excluded.[5] For inpatient services provided to Medicare patients, SCHs are reimbursed at a rate that is the greater of 1) the federal Inpatient Prospective Payment System (IPPS) rate and 2) the hospital-specific rate (HSR) based on a fiscal year cost[6] per discharge. In any single year, a SCH is reimbursed at either the IPPS or HSR rate; however a SCH may be reimbursed at the IPPS rate in one year and at the HSR rate in the next year. Therefore, for the 2015 cross-sectional analysis, SCHs were divided into two groups:

- *SCH (IPPS)* = SCHs with Medicare inpatients reimbursed at the IPPS rate in 2015 (n=107).
- *SCH (HSR)* = SCHs with Medicare inpatients reimbursed at the HSR in 2015 (n=248).

To account for changing samples for the 2006-2015 longitudinal analysis, SCHs were divided into three groups:

- *SCH (IPPS)* = SCHs with Medicare inpatients reimbursed at the federal IPPS rate in every year of the study period of 2006-2015 (n=61).
- *SCH (HSR)* = SCHs with Medicare inpatients reimbursed at the hospital-specific rate in every year of the study period 2006-2015 (n=114).
- *SCH (Switch)* = SCHs with Medicare inpatients reimbursed alternating between the IPPS rate and the hospital-specific rate across the study period 2006 to 2015 (n=180; 2015 n=46 IPPS; 2015 n=134 HSR).

### KEY FINDINGS

- The SCH program provides financial benefits to qualifying rural hospitals. For inpatient care provided to Medicare beneficiaries, SCHs may receive reimbursement at a HSR which is higher than the usual federal IPPS rate. However, this study found that the SCHs that benefited from the SCH program were:
  - located in larger hospitals markets with lower unemployment and poverty rates and higher high school graduation rates;
  - located in counties with better health status;
  - more profitable, larger, and had higher occupancy rates and employed more FTE staff per bed.
- The SCH program appears to offer additional benefit to hospitals located in more favorable markets with better health status and that are in stronger financial condition.

Hospital-specific markets were created by identifying the ZIP codes accounting for 75% of that hospital's Medicare discharges or that contributed at least 3% of the hospital's Medicare admissions for that year. We matched data from the Centers for Medicare and Medicaid Services (CMS) Healthcare Cost Report Information System ("Medicare Cost Reports"), Provider of Services, Hospital Service Area File, and Nielsen-Claritas Pop-Facts data to the hospital markets. Health status indicators for a hospital's county were accessed via County Health Rankings.

## RESULTS

A Snapshot of SCHs and the Communities They Served in 2015

*Census Location*[7] *and Rurality*
Table 1 shows that a little more than 70 percent of SCHs (IPPS) are in the South, while SCHs (HSR) are more evenly dispersed with 31 percent in the Midwest and 30 percent in the South. Overall, most SCHs are in rural areas but the level of rurality differs slightly. SCHs (IPPS) are about evenly divided between large and small rural areas with more in large rural areas with a Rural Urban Community Area (RUCA) code less than 7.[8] While more than 70 percent of SCHs (HSR) are in large rural areas and 22 percent are in small rural areas, less than 6 percent of both SCHs (IPPS) and SCHs (HSR) are in isolated rural areas.

*Hospital Market and County Health Status*
Markets served by SCHs (IPPS) and those served by SCHs (HSR) had a similar average population density (persons per square mile) in the market despite differing in total population; roughly speaking these are equivalent to markets with radii of 27 miles for SCH (IPPS) and 32 miles for SCH (HSR).[9] There were no significant differences among percentage of population age 65 and older and percentage of population who are Black or Hispanic. The SCH (IPPS) markets had higher rates of unemployment and poverty, and had lower rates of high school graduation than did SCHs (HSR).

Figure 1 shows SCHs by reimbursement type and the median market poverty rate. Most SCHs in markets with high poverty (more than 13.5%)[10] and more SCHs reimbursed using the IPPS rate were located in the south. In the table, comparison of the county health status shows that SCHs (IPPS) had a higher percentage of people who are obese, who report fair or poor self-rated health status, and who have no health insurance. The number of years of potential life lost, a measure of mortality, was also higher in SCH (IPPS) counties than SCH (HSR) counties. The percentage of the counties without strong social support was similar between the two reimbursement types.

*Hospital Organization and Finances*
A majority of SCHs are not government owned. Only 31% of both SCHs (IPPS) and SCHs (HSR) are owned by a government entity. Additionally, most SCHs do not have a long-term care facility or a rural health clinic. There were stark differences between the two types of SCH in profitability as indicated by total and operating margin. The SCHs (HSR) were larger, had a higher median net patient revenue, a higher occupancy rate, and more full-time equivalent employees (FTEs) per acute bed than SCHs (IPPS).

It is important to note that these comparisons do not account for other characteristics. Because SCH (IPPS) are far more common in the South (where many of these county measures are generally indicative of more vulnerable populations), the finding that SCH (IPPS) are in more vulnerable communities is not altogether unexpected.

Trends in SCHs and the Communities They Served between 2006 and 2015

*County Health Status*
Figure 2 shows that SCHs (IPPS always) counties had a higher percentage of people with a fair or poor self-rated health status than SCHs (HSR always). SCHs that switched between reimbursement types had a similar self-rated health status to HSR always SCHs. Similarly, SCHs (IPPS always) have had much higher levels of mortality than SCHs (HSR always) as indicated by the years of potential life lost in Figure 3.

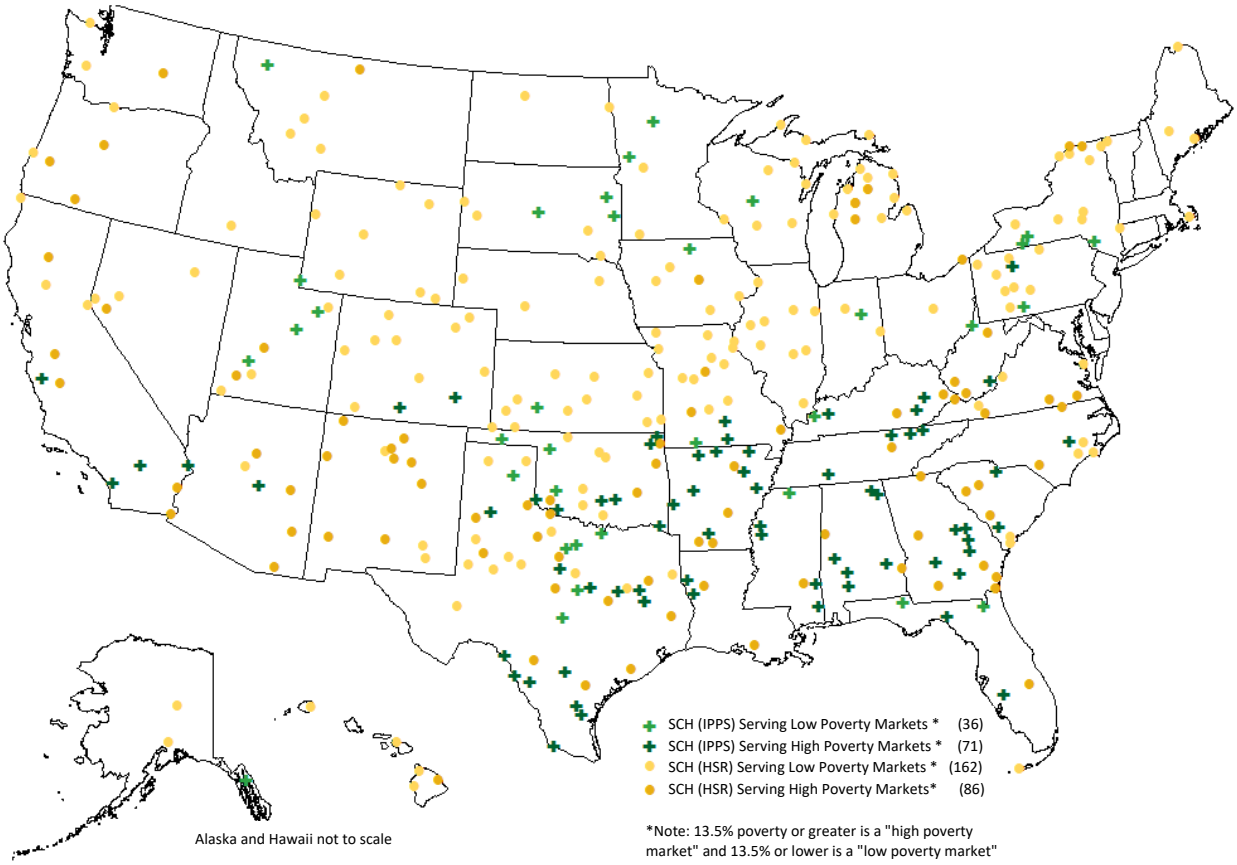
*Hospital Finances*
SCHs are safety-net hospital service providers, often being the only source of such services for many rural communities. The Medicare payment enhancements SCHs receive are meant to protect against financial distress so that these institutions can continue to serve communities. At the program's inception, SCHs were protected from their high costs to cover inpatient operations by receiving higher inpatient reimbursements. Figures 4 and 5 show that the SCH (HSR always) on average had more FTEs and paid higher salaries per FTE than did SCHs (IPPS always). SCHs (switch) had a higher number of FTEs than those SCHs (HSR always) but paid similar salaries per FTE.

**Table 1. Snapshot of Sole Community Hospitals and Communities They Served, 2015[*]**

| Variable | SCH (IPPS) | SCH (HSR) |
|---|---|---|
| **Number of Hospitals** | **107** | **248** |
| **Census Location[7]** | | |
| Northeast | 5.60% | 9.68% |
| New England | - | 2.42% |
| Middle Atlantic | 5.61% | 7.26% |
| Midwest | 11.21% | 31.45% |
| East North Central | 1.87% | 13.71% |
| West North Central | 9.35% | 17.74% |
| South | 71.03% | 30.24% |
| South Atlantic | 14.02% | 11.29% |
| East South Central | 17.76% | 2.42% |
| West South Central | 39.25% | 16.53% |
| West | 12.15% | 28.63% |
| Mountain | 8.41% | 19.76% |
| Pacific | 3.74% | 8.87% |
| **Rurality** | | |
| Large rural | 51.40% | 72.18% |
| Small rural | 42.99% | 22.18% |
| Isolated rural | 5.61% | 5.65% |
| **Hospital Market Median** | | |
| ***Total population*** | ***57,017*** | ***85,489*** |
| Persons per square mile | 26.85 | 26.69 |
| 65 and older | 17.13% | 17.76% |
| Hispanic | 2.46% | 3.47% |
| Black | 2.50% | 2.34% |
| Non-White | 9.66% | 7.00% |
| ***Unemployment*** | ***9.69%*** | ***8.70%*** |
| ***Poverty rate*** | ***15.31%*** | ***11.85%*** |
| ***High school graduation rate*** | ***80.72%*** | ***86.27%*** |
| **County Health Status Median[11]** | | |
| ***Smokers*** | ***19.45%*** | ***17.60%*** |
| ***Obese*** | ***32.15%*** | ***30.30%*** |
| ***Fair/poor self-rated health*** | ***20.65%*** | ***15.90%*** |
| ***No health insurance*** | ***17.30%*** | ***14.00%*** |
| No social support | 12.74% | 12.94% |
| ***Years of potential life lost*** | ***9,317*** | ***7,559*** |
| **Hospital Organization Median** | | |
| Government Owned | 30.84% | 31.05% |
| Have Long Term Care | 23.36% | 26.21% |
| Have Rural Health Clinic | 44.86% | 35.08% |
| **Hospital Finances Median** | | |
| ***Total margin*** | ***0.78%*** | ***4.89%*** |
| ***Operating margin*** | ***-0.56%*** | ***4.32%*** |
| ***Net patient revenue*** | ***$36 million*** | ***$76 million*** |
| ***Occupancy rate*** | ***25.18%*** | ***36.14%*** |
| ***FTE per bed*** | ***4.90*** | ***5.83*** |

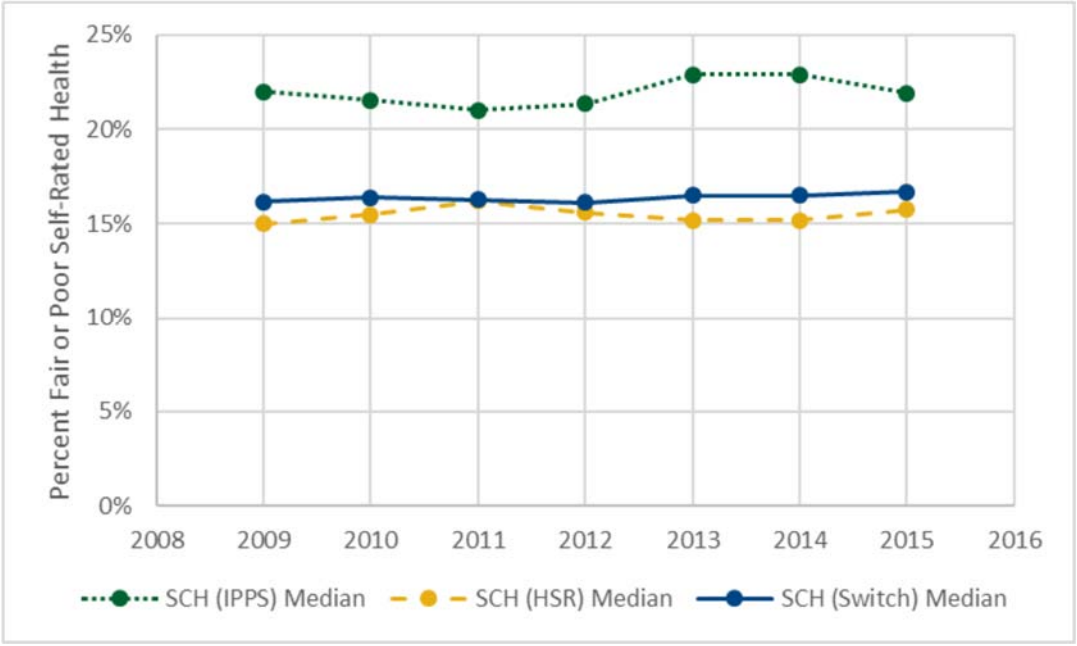
[*] Statistically significant differences are indicated by bolded italics.

**Figure 1: Location of SCHs by Reimbursement Type and Median Hospital Market Poverty Rate, 2015**



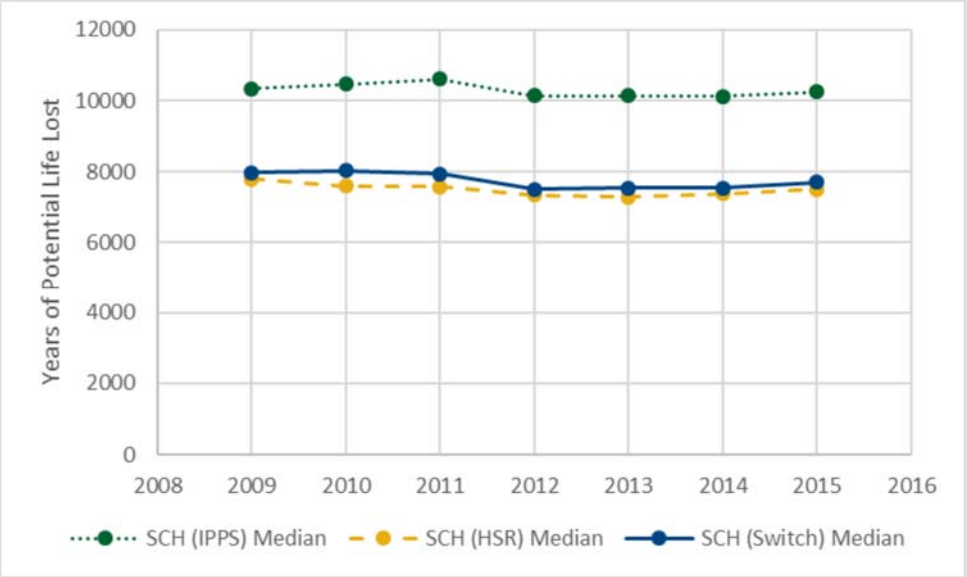

Source: North Carolina Rural Health Research and Policy Analysis Center, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, July 2017
http://www.shepscenter.unc.edu/programs-projects/rural-health/

**Figure 2: Median Percent Self-rated as Being in Fair or Poor Health of Counties with SCHs by Reimbursement Type, 2009–2015 ***




*data for this variable was not available before 2009

**Figure 3: Median Number of Years of Potential Life Lost in Counties with SCHs by Reimbursement Type, 2009-2015***




* data for this variable was not available before 2009

**Figure 4: Median Number of Full-time Equivalent Employees of SCHs by Reimbursement Type, 2006-2015**

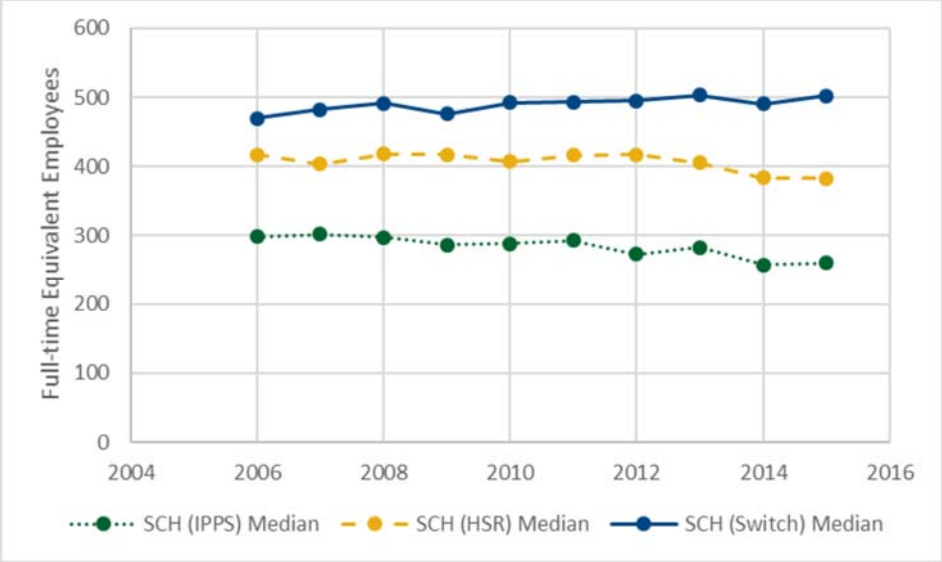
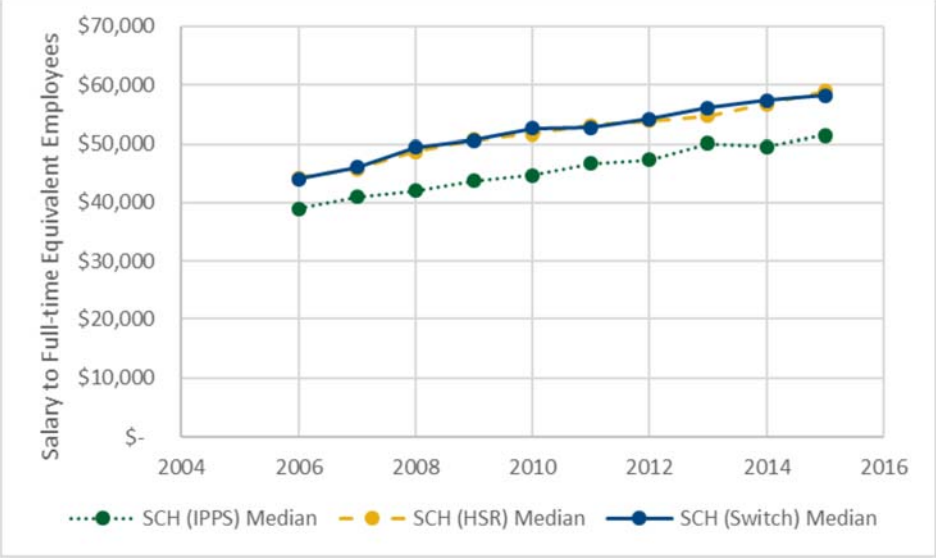



**Figure 5: Median Salary per Full-time Equivalent Employees of SCHs by Reimbursement Type, 2006-2015**



## CONCLUSION

The SCH program provides financial benefits to qualifying rural hospitals. For inpatient care provided to Medicare beneficiaries, SCHs may receive reimbursement at a HSR which is higher than the usual federal IPPS rate. However, this study found that the SCHs that benefited from the SCH program were:

- Located in hospitals markets with greater total population, lower unemployment and poverty rates, and higher high school graduation rates.
- Located in counties with lower percentages of people who are obese, have fair/poor self-rated health, and have no health insurance, as well as a lower number of potential years of life lost.
- More profitable (higher total and operating margins), larger (greater net patient revenue), more efficient (higher occupancy rate), and employed more FTE staff per bed.

Sole Community Hospitals serve communities where access to other health care providers may be limited. Many of these hospitals pre-date the prospective payment system. Since the introduction of PPS reimbursements, the SCH payment designation was meant to protect these SCHs with expectantly high costs from fluctuations in the federal IPPS rate. Indeed, SCHs were the most profitable of rural hospitals second only to Rural Referral Centers.[12] Additionally, out of 82 rural hospital closures since 2010, under 10 percent are SCHs.[13] Given this information and the findings in this brief, it appears that, the hospitals benefiting more from the SCH program are those being paid at the HSR. Additionally, these SCHs reimbursed at the HSR are typically located in more favorable markets and counties that have better health status and that are in better financial condition. Further, our findings also raise questions about the adequacy of the payment adjustment, which may vary among regions and therefore should probably be assessed.

## REFERENCES AND NOTES


1. Section 405.476, Title 42 of the 1983 Code of Federal Regulations.
2. "Sole Community Hospital." Rural Health Fact Sheet. Retrieved 4/2/2015, from http://www.ruralhospitalcoalition.com/images/uploads/CMS_Fact_Sheet_--_SCH.pdf.
3. For many rural communities, Critical Access Hospitals are the alternative to SCHs. SCHs receive cost-based payments for inpatient care only whereas CAHs receive cost-based payments for inpatient, outpatient, lab, therapy, and post-acute services in swing beds.
4. Sole Community Hospitals that were also Rural Referral Centers were included in this group.
5. Thomas SR, Randolph R, Holmes GM, Pink GH. The Financial Importance of the Sole Community Hospital Payment Designation (November 2016). Findings Brief 135. http://www.shepscenter.unc.edu/download/13910/.
6. For cost reporting periods beginning on or after fiscal year 2000, the hospital-specific rate was based on either the fiscal year 1982, 1987, or 1996 costs per discharge. After 2009, the cost per discharge base was updated to fiscal year 2006 for cost reporting periods beginning on or after fiscal year 2009. Prior to 2009, most SCHs were reimbursed at the IPPS federal rate but after the 2009 update, most SCHs were reimbursed at the hospital-specific rate.
7. Information about census regions and divisions can be found at https://www.census.gov/geo/reference/gtc/gtc_census_divreg.html.
8. Rurality is subdivided by Rural Urban Community Area (RUCA) codes. Large Rural areas are those with a RUCA code less than 7; Small Rural areas have a RUCA code of 7, 8, or 9; and Isolated Rural areas have a RUCA code of 10. For more information on RUCA codes, go to https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx.
9. Calculated as the square root of [population / ($\pi$ density)].
10. The US poverty rate for 2015 was 13.5%. Source: US Census.
11. National comparative data for County Health Rankings can be found at http://www.countyhealthrankings.org/rankings/data.
12. Thomas S, Holmes M, Pink G. 2012-14 Profitability of Urban and Rural Hospitals by Medicare Payment Classification (March 2016). Findings Brief 128. http://www.shepscenter.unc.edu/download/12744/.
13. North Carolina Rural Health Research Program tracking of rural hospital closures. http://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures/.



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