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DEMOGRAPHY

The University
of North Carolina
at Chapel Hill

Carolina Population Center

Impacts of Rural Hospital Closures on North Carolinians

Published March 2026

Written by Emma Marshall, M.S.,
and Nathan T. Dollar, Ph. D.

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In Partnership With Carolina Demography

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Executive Summary

Carolina Demography at the Carolina Population Center, UNC-Chapel Hill, was commissioned by the North Carolina Association of County Commissioners (NCACC) to support President Wallace Nelson's 2025-2026 Presidential Initiative, NC Counties Care: Access Within Reach.

This white paper presents research on the impacts of rural hospital closures on North Carolinians, with a focus on access to care, travel burden, and health care workforce supply.

- **Rural residents travel farther, and the gap is growing.** Between 2015 and 2018, the average distance rural North Carolinians traveled for inpatient care increased each year, reaching 33.2 miles by 2018. Suburban and urban patients saw no comparable increase.

- **Some populations bear a disproportionate burden.** Children under 18, Black non-Hispanic patients, and Medicaid enrollees in counties that experienced hospital closures traveled significantly farther for care than their counterparts in non-closure counties, reflecting deep structural inequities in rural health care access.

- **Closures alone did not cause the disparities in travel burden, underlying disparities in access to care existed before hospitals closed.** Our difference-in-differences analysis found no statistically significant increase in travel distance directly attributable to the 2017 hospital closures in Davie and Richmond counties. However, Medicaid patients in those communities were already traveling farther before closures occurred, pointing to long-standing access gaps.

- **The health care workforce is contracting in closure counties.** Between 2015 and 2018, closure counties lost registered nurses, physicians, and primary care providers per 10,000 residents while non-closure counties gained them. Davie County lost more than half its pediatric physicians during this period.

- **A critial gap remains.** This research captures only patients who received care. It cannot measure those who needed care but did not receive it following a closure, a population that may represent the most serious health consequences of rural hospital closures in North Carolina.

To learn more about the North Carolina Association of County Commissioners (NCACC), visit **ncacc.org**.

BACKGROUND AND INTRODUCTION

This white paper was prepared by Carolina Demography at the Carolina Population Center, University of North Carolina at Chapel Hill, and **commissioned by the North Carolina Association of County Commissioners (NCACC)** in support of President Wallace Nelson's 2025-2026 Presidential Initiative, *NC Counties Care: Access Within Reach*. The initiative recognizes that county commissioners across North Carolina are on the front lines of health care access challenges facing their communities, and that sound, evidence-based research is essential for informing policy decisions that will shape rural health outcomes for years to come.

A National Problem With Local Consequences

Between 2005 and 2026, 195 rural hospitals across the United States have closed or converted to limited-service facilities. One hundred ten closed completely; 85 converted from inpatient services to facilities that provide some level of outpatient, rehabilitation, or nursing care. North Carolina has not been spared: Twelve rural hospitals in the state have closed or converted during this period, with eight no longer providing any inpatient services (UNC Sheps Center for Health Services Research, 2025).

These closures are not abstract statistics. They represent the loss of community anchors: institutions that provide emergency care, deliver babies, treat chronic illness, and employ nurses, physicians, and support staff who live and spend in the local economy. When a rural hospital closes, the consequences ripple outward in ways that are felt for years.

Distance becomes a barrier to care. On average, families in rural areas already live 11 miles from the nearest acute care hospital, nearly three times farther than their urban counterparts, who live about 4 miles away (Khushalani et al., 2022). When a rural hospital closes, that distance grows. Research has shown that increased travel distance following closures is associated with higher mortality from time-sensitive conditions, such as heart attacks and unintentional injuries (Buchmueller et al., 2006), and for patients without reliable transportation, the additional distance can become an insurmountable obstacle.

Vulnerable populations bear the greatest burden. Elderly residents, low-income families, and Medicaid enrollees are more likely to live in rural communities and less likely to have the resources, including transportation, time off work, and flexible child care, to absorb the burden of traveling farther for care. Elderly and low-income individuals are especially likely to face transportation challenges following a closure and, as a result, are more likely to delay or forgo needed care (Wishner et al., 2016).

The workforce follows the hospitals. Research has shown that rural hospital closures are associated with an 8.2% decrease in primary care physician supply within six years of closure (Germack et al., 2019). When physicians, nurses, and other health care workers leave a community, the access problem compounds, and recovering that workforce takes years, if it happens at all. Closures have also been linked to an increased risk of hospital readmission in more isolated rural areas (Hoffman et al., 2025).

The North Carolina Picture

North Carolina has the second-largest rural population of any U.S. state, behind Texas. North Carolina's rural communities are particularly exposed to these pressures. The state's rural counties already face significant health disparities relative to urban and suburban areas, including higher rates of chronic disease, lower rates of insurance coverage, and fewer health care providers per resident. Hospital closures threaten to deepen these gaps.

Between 2015 and 2018, the period covered by this research, five North Carolina hospitals closed. Three are central to this study: Davie County, where hospital services relocated approximately 12 miles away in 2017; Richmond County, where a full hospital closure occurred in 2017; and Halifax County, which saw its community hospital convert to a nursing and rehabilitation facility. Two additional closures occurred in Franklin and Yadkin counties in 2015.

Although these closures have coincided with decreases in outpatient and emergency department utilization, research has not found a corresponding decrease in overall health care spending, raising important questions about where patients are going, what they are forgoing, and what the long-term population health consequences may be (Andreyeva et al., 2022).[1]

Purpose and Scope of This Research

This white paper investigates the impacts of rural hospital closures on North Carolinians, with a particular focus on three questions directly relevant to county commissioners and their constituents. Prior research on Medicaid enrollees in North Carolina has documented significant rural-urban differences in utilization of inpatient and emergency services, underscoring the importance of studying how closures affect this population specifically (Friedman et al., 2024).

- Are rural residents traveling farther for care, and are some groups traveling significantly farther than others?
- Did the 2017 hospital closures in Davie and Richmond counties cause measurable increases in how far patients, especially Medicaid patients, traveled for care?
- What has happened to the health care workforce in counties that experienced closures, and what does that mean for future access?

To answer these questions, we analyze North Carolina hospital discharge data from fiscal years 2015 through 2018, covering inpatient, outpatient, and emergency room visits. We use a difference-in-differences framework, a rigorous method for measuring the causal effect of a specific event, to isolate the effect of hospital closures from broader trends affecting all counties. We supplement this analysis with descriptive workforce data from the NC Health Workforce unit at the Sheps Center.

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[1] The Andreyeva et al. (2022) study analyzed commercially insured individuals aged 19-64 residing in rural Texas using individual-level commercial claims data linked to CMS files. Findings are not directly generalizable to North Carolina or to Medicaid populations but are cited here as the best available evidence on the relationship between rural hospital closures and overall health care spending and utilization patterns.

This research does not resolve every question about the consequences of rural hospital closures, and the analysis presented in this paper has limitations that readers should note. Among the biggest limitations is that our analysis captures only patients who received care. It cannot measure patients who needed care but did not seek it following a closure. Addressing that gap will require new data collection and is itself a policy priority.

How This Paper Is Organized

The remainder of this paper is organized as follows:

- **Data and Methods** describes the data sources, sample construction, and the difference-in-differences analytical framework.
- **Rural Travel Burden: Patterns Across Demographics and Service Types** presents descriptive findings on how far rural North Carolinians are traveling for inpatient, outpatient, and emergency care, and which demographic groups face the greatest burdens.
- **Context and Contributing Factors: Health Care Workforce** documents changes in physician and nursing supply in closure counties between 2015 and 2018, providing context for the access patterns documented in the preceding section.
- **Results** presents the findings of the difference-in-differences analysis, examining whether the 2017 closures caused measurable changes in travel distance for Medicaid and non-Medicaid patients across all three service types.
- **Conclusion and Discussion** synthesizes findings, addresses limitations, and offers policy considerations for county commissioners and members of the North Carolina General Assembly.

The findings in this paper are intended to inform, not to prescribe. *The decisions facing county commissioners and state legislators about rural health infrastructure are complex, and they involve trade-offs that extend beyond what any single study can resolve. Our goal is to ensure those decisions are grounded in the best available evidence about what is happening to North Carolinians who live far from the care they need.*

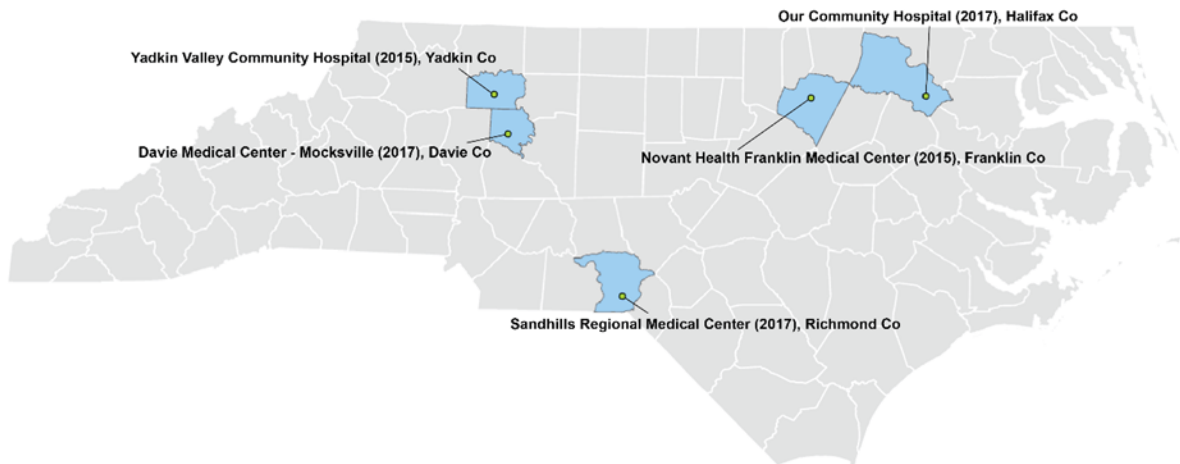
DATA AND METHODS

This study uses the North Carolina Hospital Discharge dataset obtained from the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill. To conduct a comprehensive analysis of the North Carolina health care landscape, we analyzed inpatient, outpatient, and emergency room discharge records for fiscal years 2015-2018. The dataset includes facility information, patient demographics, patient ZIP code, admission type, diagnosis and procedure codes, payer type, and total billed charges, among other fields. Notably, the data do not contain admission or discharge dates, which prevents us from isolating inpatient stays to specific periods within a given fiscal year. We further restrict our analysis to North Carolina residents, as we cannot capture all relevant alternatives for patients traveling from out of state. Inpatient and outpatient samples are limited to elective visits, a restriction imposed to study the subset of patients actively choosing among care alternatives, rather than emergency patients, who are typically admitted to the nearest available facility.

Our analysis is designed to answer two core questions: Do Medicaid patients experience disproportionate increases in travel time following a hospital closure? And how do these effects differ between inpatient, outpatient, and emergency room care?

To answer these questions, we use a difference-in-differences (DiD) framework, a method that compares how outcomes change over time for a group affected by an event (the treatment group) relative to a group that was not affected (the control group). This approach allows us to isolate the effect of hospital closures from broader trends that may have affected all counties during the study period.

Figure 1: Hospital Closures Between 2015 and 2018



As shown in **Figure 1**, five hospitals closed across North Carolina during our study period. The treatment group consists of residents of Davie and Richmond counties, where hospitals closed in 2017. These counties were selected because the 2015-2018 study window allows observation of both pre-closure and post-closure periods, a requirement for the DiD framework. Counties where hospitals closed in 2015 (Franklin and Yadkin) were excluded from the treatment group because

the data do not allow estimation of pre-closure trends. Our Community Hospital in Halifax County was also excluded from the treatment group due to insufficient observations and because the facility converted to a nursing and rehabilitation facility following closure. Franklin and Yadkin counties are likewise excluded from the control group to avoid introducing bias into the comparison. The control group consists of all remaining North Carolina counties.

One important note regarding Davie County: The 2017 closure reflects a relocation of hospital services approximately 12 miles away to a new facility in Bermuda Run, rather than a complete loss of inpatient capacity. As a result, elective inpatient estimates are driven primarily by Richmond County, where a full closure occurred and pre- and post-period data are more balanced.

Table 1 summarizes the analytical sample sizes by care type and group.

Table 1: Samples Used for Analysis

Group	Inpatient (Elective)	Outpatient (Elective)	Emergency Room
Treatment (Davie & Richmond counties)	9,601	405,886	234,125
Control (all other counties except Franklin & Yadkin)	866,372	29,747,121	17,793,184
Total	875,973	30,153,007	18,027,307

Source: North Carolina Hospital Discharge Dataset (FY2015-FY2018). Analysis restricted to elective inpatient and outpatient visits. Treatment group includes residents of Davie and Richmond counties (hospital closures in 2017). Franklin and Yadkin counties are excluded from both treatment and control groups.

Rural Travel Burden: Patterns Across Demographics and Service Types

Before examining the causal effects of specific hospital closures, it is important to understand the broader travel distance landscape across North Carolina. The descriptive findings in this section draw on all North Carolina residents in the dataset, from both closure and non-closure counties, to document how far rural and suburban/urban patients are traveling for care and which demographic groups face the greatest burdens.

Statewide Rural vs. Suburban/Urban Trends

Across all types of hospital care, rural North Carolina residents travel longer distances than their suburban and urban counterparts, and that gap widened between 2015 and 2018. **Table 2** shows that the average distance traveled by rural patients increased across all three service types during the study period, with rural inpatient patients consistently traveling the farthest. Suburban and urban patients, by contrast, showed no meaningful increase in travel distance over the same period.

Table 2: Rural Patient Average Travel Distance (Miles) by Service Type and Rurality

Year	Inpatient - Rural	Inpatient - Suburban/Urban	Outpatient - Rural	Outpatient - Suburban/Urban	ER - Rural	ER - Suburban/Urban
2015	31.7	18.1	20.3	14.4	9.0	8.8
2016	32.4	17.5	20.8	14.2	9.4	8.5
2017	32.5	17.9	20.9	14.2	9.4	8.9
2018	33.2	18.1	21.4	14.0	9.6	8.6

Source: North Carolina Hospital Discharge Dataset (FY2015-FY2018). Rural ZIP codes defined using USDA Rural-Urban Commuting Area (RUCA) classification, consistent with UNC Sheps Center standards (RUCA type 4 or higher). Inpatient and outpatient samples are restricted to elective visits.

Residents of the five closure counties, Yadkin, Franklin, Davie, Richmond, and Halifax, already sought care outside their home county at high rates. Between 2015 and 2018, nearly 90% of inpatient care, 71.6% of outpatient care, and 47.1% of emergency department visits for residents of these counties occurred outside their home county. In non-closure counties, those figures were substantially lower: 48.4% for inpatient, 38.0% for outpatient, and 22.7% for emergency care.

Disparities by Demographics: Inpatient and Outpatient Care

Tables 3 and 4 compare average travel distances for inpatient and outpatient patients in closure counties versus non-closure counties, broken down by gender, age, race and ethnicity, and insurance status. Several patterns are consistent across both service types and warrant particular attention.

Children travel the farthest. Among inpatient patients, those under 18 in closure counties travel an average of 41.5 miles, the greatest distance of any age group and 6.8 miles farther than children in non-closure counties. A similar pattern holds for outpatient care. This finding is consistent with the workforce contraction documented in the following section: as the supply of local pediatric providers shrinks, families are forced to travel farther to find care (Malone et al., 2022).

Black non-Hispanic patients face the largest disparities. Black non-Hispanic inpatient patients in closure counties travel 13.2 miles farther on average than their counterparts in non-closure counties, the largest gap of any racial or ethnic group. For outpatient care, that gap is 9.6 miles. These disparities reflect long-standing structural inequities in the geographic distribution of health care resources in rural North Carolina.

Medicaid patients bear a disproportionate burden. Medicaid inpatient patients in closure counties travel 9.5 miles farther than Medicaid patients in non-closure counties, nearly four miles more than the gap observed for non-Medicaid patients. A similar pattern holds for outpatient care, where

Medicaid patients in closure counties travel 7.3 miles farther. These patterns align with prior research on rural-urban disparities in Medicaid utilization in North Carolina (Friedman et al., 2024).

Table 3: Average Travel Distance (Miles) for Inpatient Patients – Closure vs. Non-Closure Counties

Demographic	Closure Counties (mi)	Non-Closure Counties (mi)	Difference (mi)
Sex			
Male	30.7	26.3	4.4
Female	26.0	18.8	7.2
Age Groups			
Under 18	41.5	34.7	6.8
18 to 34	24.7	15.6	9.1
35 to 49	28.7	21.5	7.2
50 to 64	28.8	24.6	4.2
65 to 74	27.9	23.2	4.7
75 to 84	26.8	20.8	6.0
85+	25.2	17.3	7.9
Race and Ethnicity			
White non-Hispanic	26.4	22.5	3.9
Hispanic	26.1	17.3	8.8
Black non-Hispanic	31.4	18.2	13.2
Other Race/Ethnicity	31.8	21.2	10.6
Medicaid Status			
Medicaid	28.1	18.6	9.5
Non-Medicaid	27.7	21.9	5.8
All	27.8	21.3	6.5
Observations	23,928	861,162	--

Source: North Carolina Hospital Discharge Dataset (FY2015-FY2018). Restricted to elective inpatient visits.

Table 4: Average Travel Distance (Miles) for Outpatient Patients – Closure vs. Non-Closure Counties

Demographic	Closure Counties (mi)	Non-Closure Counties (mi)	Difference (mi)
Sex			
Male	21.7	17.4	4.3
Female	19.7	14.7	5.0
Age Groups			
Under 18	24.5	19.2	5.3
18 to 34	21.6	15.3	6.3
35 to 49	20.2	15.9	4.3
50 to 64	20.2	16.1	4.1
65 to 74	20.2	15.7	4.5
75 to 84	18.9	13.7	5.2
85+	16.2	10.8	5.4
Race and Ethnicity			
White non-Hispanic	19.2	16.3	2.9
Hispanic	16.7	13.7	3.0
Black non-Hispanic	23.1	13.5	9.6
Other Race/Ethnicity	28.9	18.4	10.5
Medicaid Status			
Medicaid	23.1	15.8	7.3
Non-Medicaid	20.0	15.7	4.3
All	20.4	15.4	5.0
Observations	858,297	29,601,400	--

Source: North Carolina Hospital Discharge Dataset (FY2015-FY2018). Restricted to elective outpatient visits.

CONTEXT AND CONTRIBUTING FACTORS: HEALTH CARE WORKFORCE

The travel distance patterns documented above do not occur in isolation. Hospital closures have been shown to accelerate the departure of health care professionals from affected communities, compounding the access challenges created by the closures themselves (Wishner et al., 2016). The following tables draw on workforce data from the NC Health Workforce Unit at the Sheps Center to illustrate how physician supply changed in closure counties between 2015 and 2018. These data are descriptive and cover all five closure counties; they are presented as contextual evidence, not causal findings.

Two trends are particularly notable. First, Davie and Richmond counties, the treatment group in our analysis, experienced sharp drops in pediatric physician coverage during the study period. By 2018, Davie County had fewer than half the pediatric physicians per 10,000 residents it had in 2015 (**Table 5**). This contraction helps explain why children under 18 face the greatest travel distances in closure counties: the supply of nearby providers has shrunk. Second, primary care physician supply fell in most closure counties even as it held roughly steady statewide (**Table 6**). Franklin County saw its primary care physician rate cut in half between 2015 and 2018. These patterns are consistent with national research documenting an average annual 8.2% decrease in primary care physician supply in the years following a rural hospital closure (Germack et al., 2019).

Table 5: Pediatric Physicians per 10,000 Population – Closure Counties

Year	Yadkin	Franklin	Davie	Richmond	Halifax	North Carolina
2015	0	0.16	1.46	0.90	0.98	1.58
2016	0	0.16	1.44	0.68	0.99	1.57
2017	0	0.16	0.95	0.69	0.99	1.55
2018	0	0.16	0.71	0.69	1.01	1.56
Change 2015-2018	0	0	-0.75	-0.21	-0.03	-0.02

Source: NC Health Workforce, Sheps Center. Includes physicians with a primary area of practice in Adolescent Medicine (FM), Adolescent Medicine (IM), Adolescent Medicine (Peds), and Pediatrics.

Table 6: Primary Care Physicians per 10,000 Population – Closure Counties

Year	Yadkin	Franklin	Davie	Richmond	Halifax	North Carolina
2015	2.95	1.60	4.85	4.28	5.69	7.02
2016	3.22	1.26	4.56	3.88	5.92	7.00
2017	3.21	0.77	3.10	4.57	5.37	7.04
2018	2.95	0.76	3.33	3.89	5.43	7.09
Change 2015-2018	0	-0.84	-1.52	-0.39	-0.26	-0.07

Source: NC Health Workforce, Sheps Center. Includes physicians in Family Medicine, General Practice, Internal Medicine, Internal Medicine - Pediatrics, Obstetrics/Gynecology, Pediatrics, and related Adolescent Medicine subspecialties. This category overlaps with other specialty categories.

Comparing workforce trends across closure and non-closure counties reveals a widening divide. Between 2015 and 2018, closure counties lost approximately three registered nurses per 10,000 residents, while non-closure counties gained about six. Closure counties also saw declines in physicians and licensed practical nurses, while non-closure counties experienced modest gains across most categories (Tables 7 and 8). A modest increase in nurse practitioners in closure counties partially offsets these losses but does not fully compensate for the reduction in physician supply. Research on the economic effects of rural hospital closures confirms that workforce loss is among the most persistent and damaging downstream consequences of closure (Malone et al., 2022).

Table 7: Health care Workforce per 10,000 Population – Non-Closure Counties

Profession	2015	2016	2017	2018	Change 2015-2018
Registered Nurses	101.52	101.86	102.72	107.55	+6.03
Physicians	23.76	24.06	24.40	24.65	+0.89
Licensed Practical Nurses	18.11	18.08	18.10	18.45	+0.34
Nurse Practitioners	6.07	6.66	7.23	7.72	+1.65
Physicians, Pediatrics	1.60	1.59	1.57	1.58	-0.02
Physicians, Primary Care	7.10	7.08	7.13	7.18	+0.08

Source: NC Health Workforce, Sheps Center. Licensed practical nurse data from North Carolina Board of Nursing (active practitioners as of October 31 each year). Population estimates from the North Carolina Office of State Budget and Management via NC LINC, based on U.S. Census data.

Table 8: Health Care Workforce per 10,000 Population – Closure Counties

Profession	2015	2016	2017	2018	Change 2015-2018
Registered Nurses	56.36	55.21	53.89	53.46	-2.91
Physicians	8.46	7.98	7.27	7.13	-1.32
Licensed Practical Nurses	17.12	16.17	15.33	16.03	-1.10
Nurse Practitioners	2.54	2.83	3.11	3.61	+1.07
Physicians, Pediatrics	0.68	0.63	0.55	0.50	-0.17
Physicians, Primary Care	3.76	3.63	3.23	3.11	-0.66

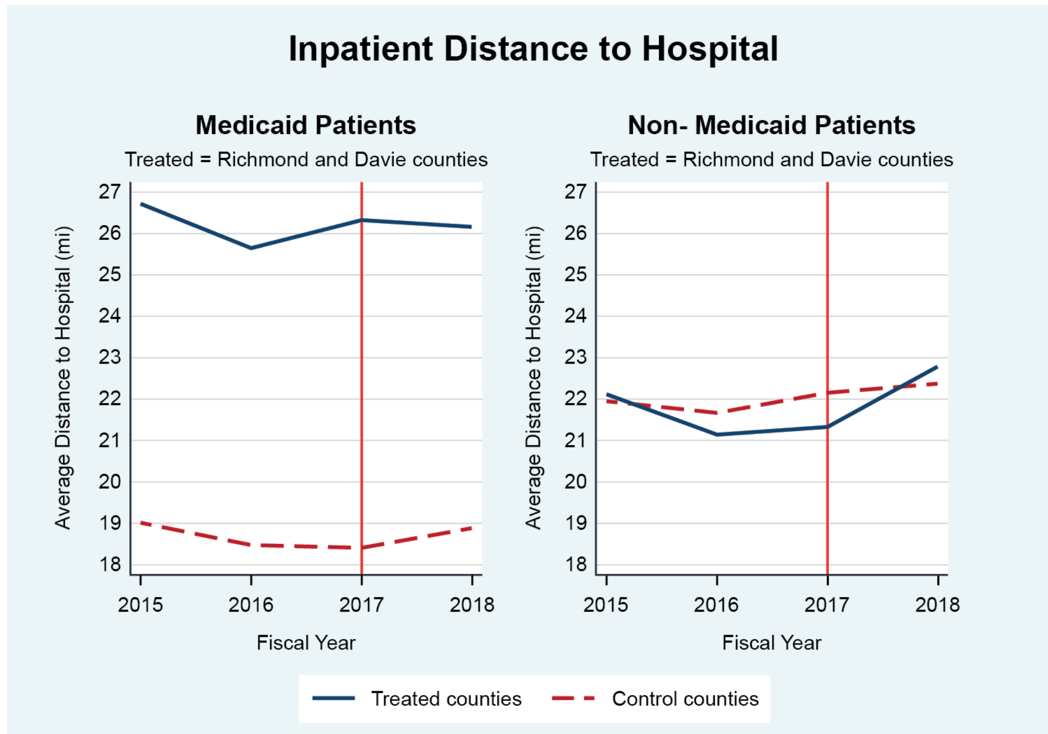
Source: NC Health Workforce, Sheps Center. See Table 7 notes for data definitions and sources.

RESULTS: CAUSAL EFFECTS OF HOSPITAL CLOSURES ON TRAVEL DISTANCE

The descriptive findings above establish that rural residents, and particularly Medicaid patients, children, and Black non-Hispanic patients, face greater travel burdens in counties that experienced hospital closures. However, descriptive comparisons alone cannot determine whether the closures themselves caused these differences or whether affected counties were already disadvantaged before any hospitals closed. To answer that question, we turn to our difference-in-differences analysis.

For all three samples, inpatient, outpatient, and emergency room, we use a difference-in-differences-in-differences model that compares changes in travel distance between treatment and control counties before and after 2017 and further examines whether those changes were larger for Medicaid patients than for non-Medicaid patients. Models control for patient demographics, county, year fixed effects, and, for inpatient care, clinical condition categories (Major Diagnostic Categories). Recent research has documented similar rural-urban disparities in Medicaid enrollee utilization patterns in North Carolina, providing important context for interpreting our results (Friedman et al., 2024).

Inpatient



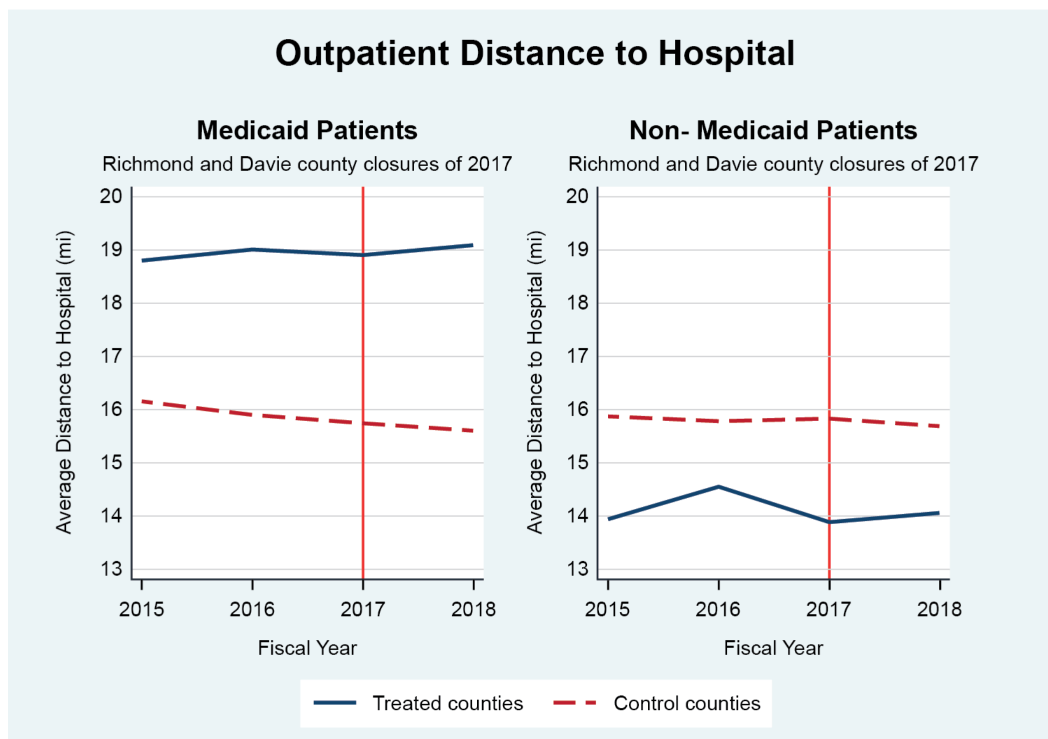
Hospital closures were not associated with a statistically significant change in the distance inpatient patients traveled for care. Medicaid inpatient patients across all counties and years traveled approximately 2.35 miles less than non-Medicaid patients on average; however, in

counties that later experienced closures, Medicaid patients were already traveling significantly farther than non-Medicaid patients before any closure occurred. The analysis suggests Medicaid inpatient patients in closure counties may have traveled a small amount less relative to non-Medicaid patients after closure, but the magnitude was less than half a mile and should not be overinterpreted.

In short, closures did not appear to cause a measurable increase in how far inpatient patients traveled. The travel disadvantages observed for Medicaid patients in these communities appear to reflect preexisting structural conditions rather than a direct consequence of the 2017 closures. These preexisting conditions are consistent with patterns documented in broader North Carolina Medicaid research (Friedman et al., 2024).

Important limitation: This analysis includes only individuals who received inpatient care. It does not capture patients who may have needed inpatient services but did not seek or obtain care following the closures, a group whose experiences may be most affected by closure.

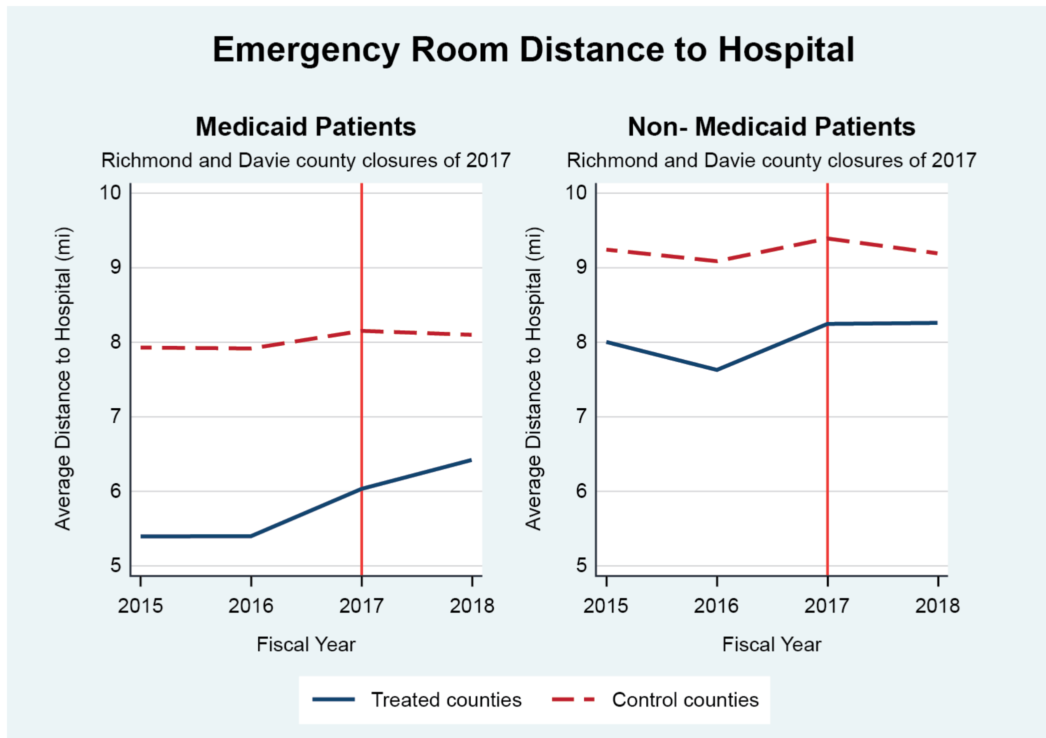
Outpatient



Similarly, hospital closures were not associated with a statistically significant change in outpatient travel distance. Medicaid outpatient patients in closure counties traveled about 4.05 miles farther than non-Medicaid patients in those counties before the closures, a preexisting gap that persisted throughout the study period. There is no evidence that Medicaid patients were disproportionately affected by the closures in terms of outpatient travel distance.

Important limitation: As with the inpatient analysis, this finding applies only to patients who received outpatient care and does not capture those who may have forgone care.

Emergency Room



Note on interpretation: The emergency room sample did not satisfy the parallel pre-trends assumption required for a valid difference-in-differences analysis, meaning the treatment and control groups were already moving in different directions before 2017, independent of any closure. This means the preexisting differences between these communities, rather than the closures themselves, may be driving what we observe. Emergency room results should therefore be interpreted with caution.

With that caveat in mind, the analysis suggests that Medicaid emergency department patients in closure counties traveled a slightly greater distance for emergency care relative to non-Medicaid patients after the closures, but the magnitude of this effect was approximately one-third of a mile, small enough to be of limited practical significance. The overall change in travel distance for all emergency department patients was not statistically significant.

Important limitation: As with other service types, this analysis captures only patients who received emergency care and does not reflect individuals who may have needed emergency services but did not seek them.

CONCLUSION AND DISCUSSION

What the Research Tells Us

Taken together, the findings of this study tell a story that is at once reassuring and alarming, and the distinction matters for policy.

The reassuring part: Our difference-in-differences analysis found no statistically significant evidence that the 2017 hospital closures in Davie and Richmond counties, on their own, caused large increases in how far patients traveled to receive inpatient, outpatient, or emergency care. For the patients captured in our data, those who received care during the study period, the closures did not appear to dramatically worsen the travel burden in the short term.

The alarming part: Those patients were already bearing a substantial burden before the closures occurred. Medicaid patients in closure counties were traveling farther for every type of care than Medicaid patients elsewhere, and that gap predated the closures. Children under 18 were traveling the farthest of any age group. Black non-Hispanic patients faced travel distance gaps more than twice the size of those experienced by White non-Hispanic patients. Across closure counties, the health care workforce was contracting at the same time, with fewer physicians, fewer nurses, and fewer primary care providers per resident, even as the statewide picture was stable or improving.

This pattern points to something more durable and challenging than the closures themselves: a structural health care access deficit that has been accumulating in North Carolina's rural communities for years. The closures did not create this deficit, but they are a symptom of it, and they may be accelerating it. These findings are consistent with research documenting that rural hospital closures have widespread and persistent effects on community access to care well beyond what can be captured in short-term utilization data (Planey et al., 2025).

The Patients We Cannot See

The most important limitation of this research is also its most consequential policy implication. Our analysis is built on hospital discharge records, data that by definition only include people who received care. It is silent on those who needed care but did not seek it: the patient who drove past the county line and turned around, the elderly resident who delayed a follow-up visit, and the child whose parents decided the trip was too far.

There is reason to believe this population is not small. Research on rural hospital closures consistently finds decreases in utilization following closure, decreases that likely reflect, at least in part, patients forgoing care rather than finding it elsewhere (Andreyeva et al., 2022).[2] Measuring the size and health consequences of this foregone care is one of the most urgent gaps in the rural health research literature, and one that North Carolina is well-positioned to address through targeted data collection and surveillance.

Implications for Local and State Policy Makers

These findings have several direct implications for North Carolina policymakers.

Preexisting disparities demand proactive intervention. The travel burdens documented in this research, for Medicaid patients, children, and Black non-Hispanic residents in closure counties, did not emerge from the 2017 closures. They were already present. This means that waiting for a hospital closure to trigger a policy response is too late. County commissioners and state legislators should treat rural health care access as an ongoing structural challenge requiring sustained investment, not a crisis to be managed after the fact.

Workforce retention is inseparable from access. The loss of pediatric and primary care physicians in closure counties is not incidental; it is causally linked to the travel burdens observed for children and other vulnerable patients. Programs that support health care workforce recruitment and retention in rural counties, including loan forgiveness, rural practice incentives, and expanded scope of practice for nurse practitioners, are among the most direct levers available to the General Assembly (Germack et al., 2019).

Medicaid patients need targeted support. Across every service type and every model, Medicaid patients in closure counties faced greater travel burdens than non-Medicaid patients, and those burdens preceded the closures. Transportation assistance, flexible appointment scheduling, and expanded telehealth access are policy tools that can meaningfully reduce this disparity without waiting for infrastructure solutions that may take years to materialize (Friedman et al., 2024).

Measuring foregone care should be a policy priority. North Carolina currently lacks the data infrastructure to track patients who need care and do not receive it following a hospital closure. Establishing mechanisms to monitor utilization changes, emergency department diversions, and health outcomes in counties that experience closures would give future policymakers the evidence base they need to act more quickly and precisely.

Limitations and Future Research

In addition to the foregone care limitation discussed above, this study has several other confines worth noting. The analysis covers fiscal years 2015-2018, and the treatment group is limited to Davie and Richmond counties, two counties with distinct closure circumstances. Davie County's closure was a relocation rather than a complete loss of services, which may have dampened effects that would be more pronounced in a setting with a full closure and no nearby replacement. The study period is also relatively short; longer-term effects of closures on travel patterns, workforce supply, and health outcomes may differ from what is observable within a three-year post-closure window.

Future research should examine longer post-closure periods and extend the analysis to health outcomes such as readmission rates, preventable hospitalizations, and mortality. Research examining the spatial accessibility of preventive care services in the aftermath of closures offers a promising direction for understanding downstream effects on population health (Planey et al., 2025). Research that follows Medicaid enrollees longitudinally, rather than analyzing discharge records at a point in time, would provide a more complete picture of how closures affect the populations most dependent on rural health care infrastructure (Friedman et al., 2024).

Closing

All of North Carolina's communities should have the ability to see a doctor, take a child to a pediatrician, or reach an emergency room without a journey that takes the better part of an hour. The evidence in this report makes clear that, for many rural North Carolinians, that access is already strained, and that hospital closures, workforce contraction, and long-standing structural inequities are tightening that strain further.

The North Carolina Association of County Commissioners, through the NC Counties Care: Access Within Reach, 2025-2026 Presidential Initiative, has made this a priority. The research presented here is intended to give that commitment a factual foundation and to provide the state's elected leaders the evidence they need to act.

Continue the Conversation

To continue the conversation, county leaders are encouraged to share feedback or questions on the white paper or forum topics at president@ncacc.org.

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