NC RHRP

Findings Brief
NC Rural Health Research Program

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Rural Hospitals with Long-term Unprofitability

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OVERVIEW

To remain open, businesses generally need to be profitable (have revenues greater than expenses). Hospitals are no different. Hospitals use profits to pay for new and upgraded buildings, equipment, technology, programs, and other patient care needs. To assess hospital profitability, we often look at total margin. Total margin measures the control of expenses relative to revenues, and expresses the profit a hospital makes as a proportion of revenue brought in. For example, a five percent total margin means that a hospital makes five cents of profit on every dollar of revenue.[1]

In a recent study, we found that average profitability of rural hospitals decreased while the profitability of urban hospitals increased between 2016 and 2018.[2] Long-term unprofitability has been found to be associated with a higher probability of financial distress and closure.[3]

The purpose of this study is to examine the characteristics of 311 rural hospitals that had a negative total margin in 2016 and 2017 and 2018 (out of a total of 2,453 rural hospitals). The characteristics include net patient revenue, Medicare payment classification, region, and state.

KEY FINDINGS

⇒ 311 hospitals out of 2,453 rural hospitals had a negative total margin in 2016 and 2017 and 2018. Among these hospitals, the majority:

- Had $0-25 million in net patient revenue;
- Were Critical Access Hospitals (CAHs), and;
- Were in the South and Midwest census regions.

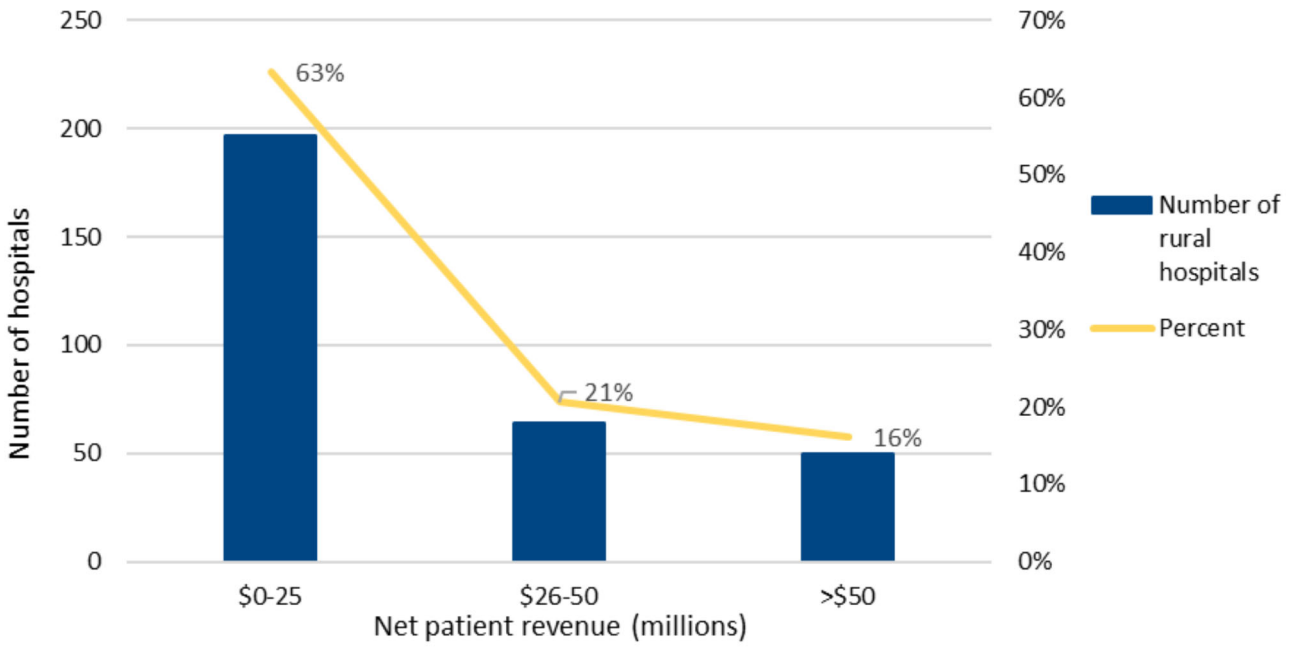
⇒ The states with the greatest number of rural hospitals that had a negative total margin in 2016 and 2017 and 2018 were Kansas (39), Mississippi (22), Alabama (17), Oklahoma (17), and Texas (15).

RESULTS

Long-term unprofitability is more common among smaller hospitals

The majority of rural hospitals with a negative total margin in 2016 and 2017 and 2018 were the smallest as measured by net patient revenue. Figure 1 shows that, among the 311 hospitals, 197 (63%) had $0-25 million, 64 (21%) had $26-50 million, and 50 (16%) had > $50 million in net patient revenue.

Figure 1. Rural Hospitals with a Negative Total Margin in 2016 and 2017 and 2018 by Net Patient Revenue

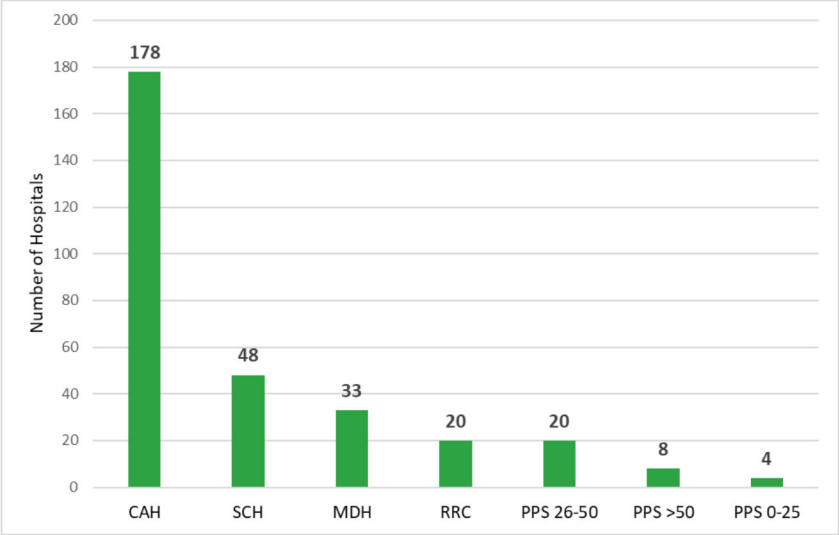


Long-term unprofitability by Medicare payment classification

Four classifications of rural hospitals qualify for special payment provisions under Medicare: Critical Access Hospitals (CAHs), Medicare Dependent Hospitals (MDHs), Sole Community Hospitals (SCHs), and Rural Referral Centers (RRCs). The remainder of rural hospitals are rural Prospective Payment System (PPS) hospitals, which were divided into three categories based on number of beds: (0-25 beds, 26-50 beds and > 50 beds). The Medicare payment classifications with the highest percentage of hospitals that had a negative total margin in 2016 and 2017 and 2018 were MDHs, PPS 26-50, and SCHs.

Table 1 and Figure 2. Rural Hospitals with a Negative Total Margin in 2016 and 2017 and 2018 by Medicare Payment Classification

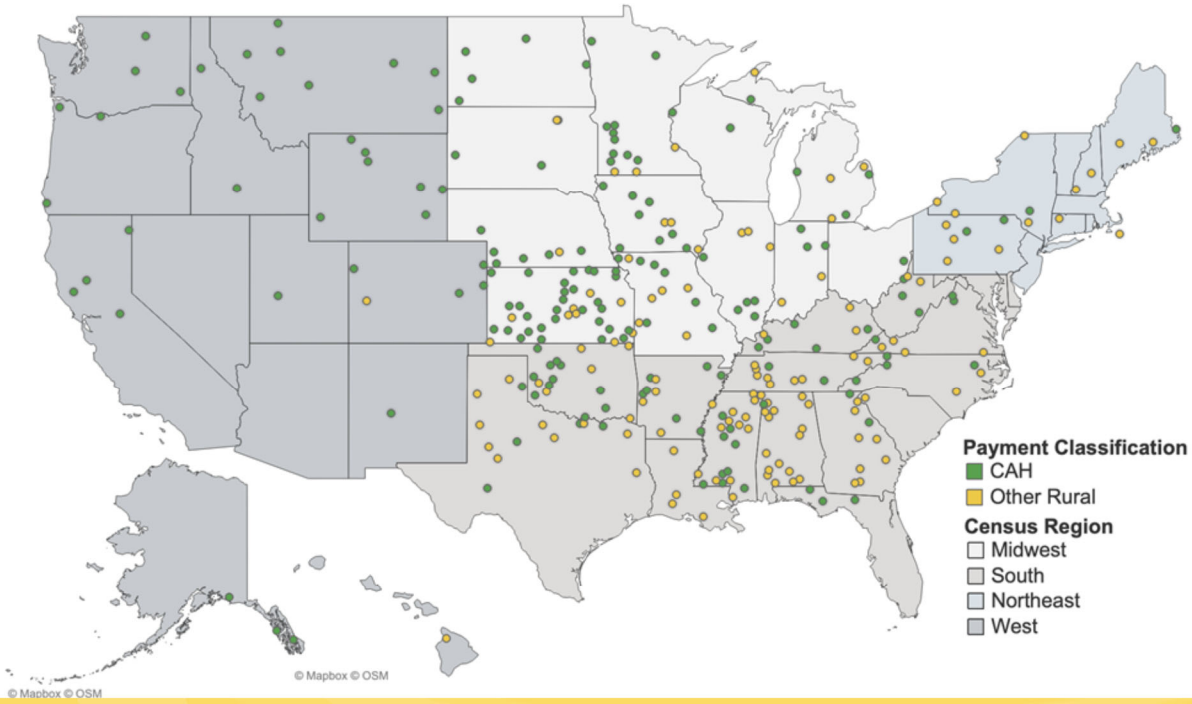
	CAH	SCH	MDH	RRC	PPS 26-50	PPS > 50	PPS 0-25
Number with negative total margins	178	48	33	20	20	8	4
Total number of hospitals	1,301	292	128	465	109	129	29
Percent with negative total margins	14%	16%	26%	4%	18%	6%	14%



Long-term unprofitability by region

There are distinctive regional patterns in rural hospitals with a negative total margin in 2016 and 2017 and 2018. Among the 311 hospitals, Figure 3 shows that 139 (49%) are located in the Midwest and 116 (37%) in the South census regions. Furthermore, in the Midwest there are a higher proportion of CAHs, and in the South there are a higher proportion of rural hospitals.

Figure 3. Rural Hospitals with a Negative Total Margin in 2016 and 2017 and 2018 by Region

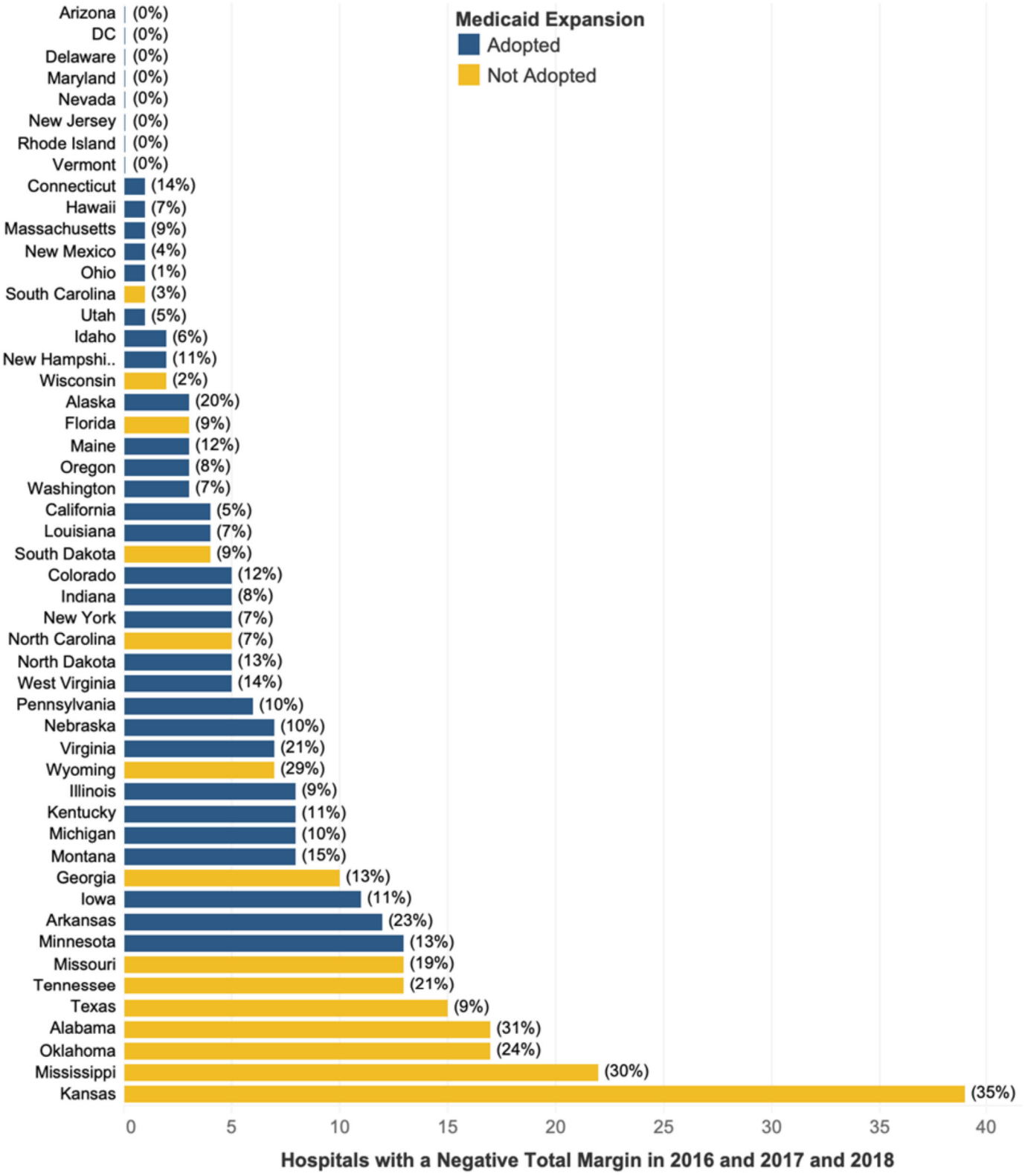


Long-term unprofitability by state

Finally, there are also substantial differences in rural hospitals with a negative total margin in 2016 and 2017 and 2018 among states. Figure 4 shows that Kansas, by far, had the greatest number of hospitals with three consecutive years of negative total margins (39) followed by Mississippi (22), Alabama (17), Oklahoma (17), and Texas (15).

Additionally, Figure 4 shows that 54% of the 311 hospitals that a negative total margin in 2016 and 2017 and 2018 were located in the 14 states that have not adopted Medicaid expansion[4] (shaded in yellow).

Figure 4. Rural Hospitals with a Negative Total Margin in 2016 and 2017 and 2018 by State



DISCUSSION

There are two findings from this study: 1) 311 hospitals out of 2,453 rural hospitals had a negative total margin in 2016 and 2017 and 2018. Among these hospitals, the majority had $0-25 million in net patient revenue, were CAHs, and were in the South and Midwest census regions, and; 2) The states with the greatest number of rural hospitals that had a negative total margin in 2016 and 2017 and 2018 were Kansas (39), Mississippi (22), Alabama (17), Oklahoma (17), and Texas (15).

Some of the potential reasons for long-term unprofitability of a rural hospital include:

- *Patient volume*. More patient activity generates higher revenue and spreads fixed costs over more patients. Furthermore, hospitals with less patient activity experience greater volatility (on a percentage basis) in revenue and costs.
- *Payer mix*. Rural patients are older, sicker, and poorer[5] and serve a population that is more likely to be uninsured[6] or on public insurance programs.[7] Consequently, unprofitable hospitals may have a higher proportion of self-pay and a lower proportion of revenue from commercial and private payers.
- *Patient bypass*. These hospitals may be less able to maintain an effective mix of medical, nursing, and other staff that can meet local patient demand, increasing the number of patients who travel to obtain care at other hospitals.
- *Outpatient services*. These hospitals may have less ability to acquire and support a wide range of diagnostic and surgical outpatient services.
- *Medicaid expansion*. States that have expanded Medicaid may differ from non-expansion states in relative level of Medicaid payment rates, Medicaid eligibility requirements, and other strategies of supporting rural hospitals.

In conclusion, rural hospitals with long-term unprofitability are particularly vulnerable to shifts in the economy and demography of their markets as well as to state and federal policy changes. This puts them at higher risk of financial distress, complete closure, or conversion to some other type of health care facility that offers only non-inpatient services. These outcomes may have implications for the communities served by rural hospitals. For all of these reasons, it is important for policy makers to monitor the financial performance of rural hospitals, particularly those that report unprofitability over time.

STUDY METHOD

The research design is based on standard financial statement analysis. Project data came from the Centers for Medicare & Medicaid Services(CMS) Healthcare Cost Report Information System (HCRIS) and the CMS Fiscal Year Impact Files. Longitudinal files were created that included Medicare cost report worksheets required for provider identification and calculation of financial indicators. The financial indicator definitions and the Medicare cost report account codes for them were verified with a technical adviser and compared to other sources of financial ratios. An analytical file with the Medicare Cost Report data was created for each hospital with at least 360 days in a cost report period for fiscal years 2016 through 2018. There were missing data for some indicators and outlier values were excluded; therefore, the number of hospital cost reports used to calculate an indicator median was sometimes less than the total number of hospital cost reports in a fiscal year. Medicare payment designation was verified using the CMS FY 2016 through 2018 Impact Files. The Medicare Cost Report (2010) definition of each profitability ratio and the number of Medicare Cost Reports used are shown in the tables below.

Table 1. Profitability Indicator Definition and Medicare Cost Report Accounts

Ratio	Definition	Numerator	Denominator
Total margin	$\frac{\text{Net income}}{\text{Total revenue}}$	Worksheet G-3, line 29	Worksheet G-3, lines 3+25

Table 2. Number of Medicare Cost Reports* by Medicare Payment Classification and Net Patient Revenue

	Net Patient Revenue			
Medicare Payment Classification	**$0-25M**	**$26-50M**	**>$50**	**Total**
CAH	806	327	168	1,301
Other rural hospitals:				
SCH	54	68	170	292
MDH	51	33	44	128
RRC	1	13	451	465
PPS 0-25 beds	20	6	3	29
PPS 26-50 beds	34	36	39	109
PPS > 50 beds	6	21	102	129
Total other rural hospitals	166	177	809	1152
Urban hospitals	64	120	1,690	1,874
Total	1,036	624	2,667	4,327

*The number of hospitals having total margin values for Medicare Cost Reports having at least 360 days in production falling between fiscal year 2016 and 2018.

REFERENCES AND NOTES

1. Because the total margin is a proportion, two hospitals with the same total margin can have vastly different absolute dollars of profit. For example, a hospital with a five percent total margin and $50 million in total revenues will have $2.5 million in profits, whereas a hospital with the same five percent total margin but only $5 million in revenue will have only $250,000 in profits
2. Maxwell AW, Howard HA, Pink GH. (March 2020). 2016-18 Profitability of Urban and Rural Hospitals by Medicare Payment Classification, NC Rural Health Research Program, Sheps Center for Health Services Research, UNC-Chapel Hill.
3. Holmes GM, Kaufman BG, Pink GH. Predicting Financial Distress in Rural Hospitals, *Journal of Rural Health* 2017;33:239–249.
4. A provision of the Patient Protection and Affordability Act that called for states to expand Medicaid eligibility to adults under the age of 64 with incomes up to 138% of the federal poverty level. States are not mandated to expand Medicaid.
5. Rural Communities: Age, Income, and Health Status, Rural Health Research RECAP (November 2018). Rural Health Research Gateway. https://www.ruralhealthresearch.org/assets/2200-8536/rural-communities-age-income-health-status-recap.pdf.
6. Rural Health Snapshot (2017). NC Rural Health Research Program, Sheps Center for Health Services Research, UNC-Chapel Hill. https://www.shepscenter.unc.edu/wp-content/uploads/dlm_uploads/2017/05/Snapshot2017.pdf.
7. The 2008 Report to the Secretary: Rural Health and Human Services Issues. (April 2008). The National Advisory Committee on Rural Health and Human Services. https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/rural/reports-recommendations/2008-report-to-secretary.pdf.

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