Findings Brief
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A Comparison of Independent and System-Affiliated Rural Hospitals

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BACKGROUND

Rural hospitals provide vital health care services to the remote and underserved regions of rural America. However, access to care in many communities has been reduced by rural hospital closures.[1] Between January 2010 and November 2025, there were 152 rural hospital closures and conversions (not counting Rural Emergency Hospital conversion).[2] Although the causes of rural hospital closures are complex and multifaceted,[3,4] many rural hospitals are acquired by a health system as an alternative to closure. System affiliation may provide rural hospitals with access to technology, staff recruitment and retention, expanded health care and operational services, group purchasing, and reduced cost of capital.[5] On the other hand, independent hospitals may: better understand local needs and focus on services that directly address community needs; keep more health care and spending within the community, supporting local businesses and jobs;[6] be more likely to spend on community benefits and financial assistance compared to those within a larger health system that files group tax returns;[7] have the ability to make decisions and implement changes more quickly without navigating a large, bureaucratic system;[6] and avoid potential drawbacks of consolidation, such as service cuts, reduced responsiveness to local needs, and lower wages and reduced job security.[8] In addition, there are options for rural hospitals to remain independent and gain some of the benefits of being in a group, such as rural hospital networks, clinically integrated networks, or accountable care organizations.[9]

KEY FINDINGS

In this study, system-affiliated hospitals are defined as those that are part of a chain organization (as reported in the Medicare Hospital Cost Report), and independent hospitals are those that are not part of a chain organization. Considering organizational characteristics, financial performance, and county characteristics, this study found that, compared to system-affiliated rural hospitals, independent rural hospitals:

- Had fewer acute beds.
- Had a higher proportion that were Critical Access Hospitals, did not receive a low volume adjustment, did not participate in the Medicare Shared Savings Program, were government-owned, operated Rural Health Clinics, provided long-term care, used swing beds, and were located in areas with Rural-Urban Commuting Area Codes 7-10 (small towns and rural areas).
- Were substantially less profitable, had lower net patient revenue and acute average daily census, and had higher long-term debt and Medicare inpatient payer mix.
- Were in counties with a smaller population, a higher percentage of residents in rural areas, and higher uninsured rates.

There have been several studies that compared independent and system-affiliated rural hospitals, including comparisons of the following hospital characteristics:

Profitability. Several studies have found increased profitability following system affiliation. In a previous study, we found that rural hospitals with system affiliation had a higher median total margin than those without a system affiliation in every period except 2021-22.[10] A 2024 study found that operating margins for system-affiliated Critical Access Hospitals (CAHs) were 4.4 percentage points higher than for independent CAHs.[11] Further, operating margins have been found to increase significantly following rural hospital affiliation with a health system,[12] and system affiliation of CAHs has been associated with higher total margin, operating margin, and cash flow margin.[13]

Prices. There is evidence of higher prices after system affiliation. A recent study found that relative to independent CAHs, standardized inpatient commercial prices[14] were 7.1% higher among system-affiliated CAHs, 15.4% lower among independent non-CAHs, and 13.2% higher among system-affiliated non-CAHs; for outpatient services, the relative differences were 11.7%, 18.4%, and 0.5%, respectively. The authors concluded that system affiliation enables aggregations of negotiation leverage, leading to higher prices, particularly in commercial markets.[11]

Risk of closure. Evidence has been mixed on how system affiliation affects risk of closure. A 2022 study found that joining a system may lower the risk of closure for some rural hospitals already in financial distress. However, among initially financially stable hospitals, joining a system appears to have the opposite association (i.e., increased risk of closure). This latter finding raises concerns about the association of affiliation with closures in some circumstances.[15] However, a 2023 study found that rural markets have experienced meaningful rates of hospital closures and mergers, yet many hospitals have survived despite poor financial performance.[16]

Other financial measures (see Appendix for definitions). System affiliation of CAHs has also been found to be associated with greater use of equity financing and greater ability to cover debt service payments, higher revenues from outpatient as compared to inpatient services, higher patient deductions, higher average salary per full-time equivalent (FTE), higher uncompensated care, fewer days in net and gross accounts receivable (faster receivables collection), lower use of debt financing, lower Medicare outpatient cost to charge, lower average age of plant, and fewer FTEs per adjusted occupied bed.[13]

Quality measures. System affiliation appears to have mixed effects on quality. One study found that hospitals affiliated with health systems had better quality of care compared with independent hospitals.[17] However, another study concluded that despite quality-focused missions, affiliation networks do not always lead to improvements in publicly reported quality measures.[18] Other research suggests that while mergers and consolidations often reduce quality, strategically planned affiliations can substantially improve quality when implemented effectively.[19]

Community characteristics. Community-level factors play a key role in the operations and sustainability of rural hospitals,[20] whether independent or system-affiliated. Independent hospitals are more often located in smaller, more isolated, and economically disadvantaged areas, while system-affiliated hospitals tend to serve communities with greater resources and better access to infrastructure.

We conducted this study to provide an updated, comprehensive, data-driven profile of how independent rural hospitals differ from system-affiliated rural hospitals across organizational structure, financial performance, community context, and indicators of financial distress, using the most recent national data available. Our goal was to identify the structural, financial, and environmental pressures that uniquely shape the viability of independent hospitals, and to present these findings within the current landscape of rural hospital closures, market consolidation, and emerging alternatives such as rural networks and clinically integrated networks.

STUDY METHOD

Data

The study sample included short-term, nonfederal acute care hospitals and CAHs [excluded specialty, federal, and Indian Health Service (IHS) hospitals] identified in the 12-31-2024 release of data from the Healthcare Cost Report Information System (HCRIS).[21] The financial data were obtained from the most recent Medicare Cost Report (MCR) available in HCRIS, limited to hospitals with fiscal year-end dates in either 2023 or 2024, and excluding all cost reports with fewer than 360 days in the reporting period. Medicare payment designation was verified with the CMS Provider of Services file.[22] Definitions of financial indicators are in the Appendix. The Medicare Cost Report data for selected organizational characteristics are shown in Table 1.

Table 1. Medicare Cost Report Data for Organizational Characteristics

Variable	Source
System Affiliation	MCR Worksheet S-2, Part I, Line 141, Column 1
Low Volume Adjustment	Worksheet E, Part A, Column 1, Line 70.96 + 70.97 + 70.98
Ownership	MCR Worksheet S-2, Part 1, column 1, line 21 [Type of Control (see MCR instructions)] values 7–13
Operation of a Rural Health Clinic	Defined by whether any of the MCR Worksheet S-2, Part 1, column 2, line 15.XX (Hospital-Based Health Clinic) fields have values within the following ranges: 3400–3499, 3975–3999, 8500–8899
Provision of Long-term Care	Defined by whether MCR Worksheet S-3, Part I, column 8, lines 19, 20, and/or 21 (Skilled Nursing Facility; Nursing Facility; Other Long-Term Care) are strictly positive and non-missing. Column 8 is "Total All Patients." Note that this category does not include hospitals that provide long-term care only through swing beds.
Use of Swing Beds	Defined by whether MCR Worksheet S-3, Total Hospital Adults & Peds. Swing Bed SNF col.8, line 5 / Days in period > 0

Hospitals were defined as rural using the 2025 definition from the Federal Office of Rural Health Policy (FORHP).[23] Hospitals participating in the Medicare Shared Savings Program (MSSP) were identified from the CMS Shared Savings Program Provider-Level Research Identifiable File[24] and provided by the Rural Policy Research Institute at the University of Iowa. Rural Community Hospital (RCH) Demonstration hospitals were identified from the CMS Innovation Center website.[25] 2010 Rural-Urban Commuting Area (RUCA) Codes were obtained from the Department of Agriculture website.[26] RUCA codes classify U.S. census tracts using measures of population density, urbanization, and daily commuting. The classification contains 10 primary codes: 1-3 for metropolitan areas: 4-6 for micropolitan areas; and 7-10 for small town and rural areas. The Financial Distress Index for each rural hospital was obtained from a previous study.[27,28] Data for characteristics of counties where independent and system-affiliated rural hospitals are located were obtained from the 2024 University of Wisconsin Population Health Institute County Health Rankings.[29]

Analysis

Chi-square tests were used to compare the proportions of independent and system-affiliated rural hospitals across categorical organizational characteristics and Financial Distress Index groups. Kruskal-Wallis tests were used to compare the differences in medians across the continuous financial indicators and county characteristic measures. Analyses were performed and verified using Microsoft Excel, R, and Python statistical software.

RESULTS

Location of independent hospitals

Figure 1 and Table 2 show the number of independent hospitals by state in 2023-24. In Figure 1, states are shaded light to dark blue with lighter colors having fewer independent hospitals and darker colors having more. The five states with the greatest number of independent hospitals are Texas (88), Kansas (78), Nebraska (52), Georgia (44), and Mississippi (42). The five states with the highest percentage of independent hospitals are Washington (85.0%), Kansas (76.5%), Idaho (73.3%), Nebraska (73.2%), and Louisiana (71.7%).

Figure 1. Map of Number of Independent Rural Hospitals in 2023-24

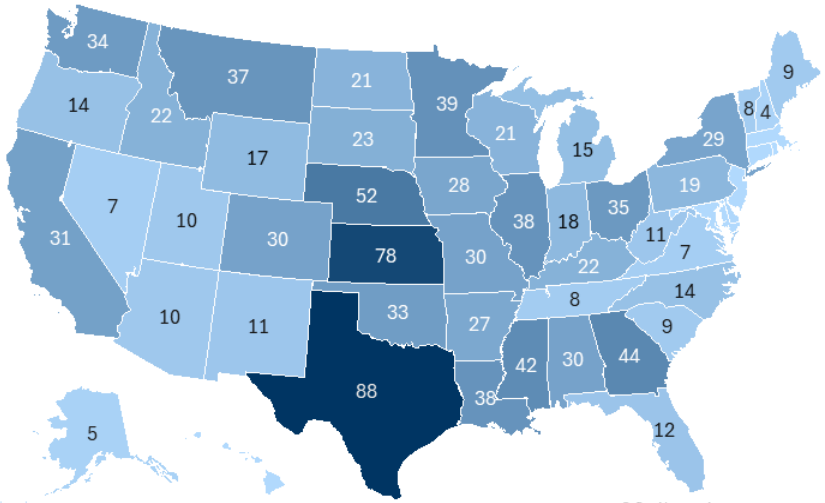

Table 2. Number and Percentage of Independent and System-affiliated Rural Hospitals by State in 2023-24

State	Number of Independent Hospitals	Percent of Independent Hospitals	Number of System-affiliated Hospitals	Percent of System-affiliated Hospitals	Total Number of Rural Hospitals
AL	30	58.8%	21	41.2%	51
AK	5	31.3%	11	68.8%	16
AZ	10	47.6%	11	52.4%	21
AR	27	57.4%	20	42.6%	47
CA	31	55.4%	25	44.6%	56
CO	30	71.4%	12	28.6%	42
CT	1	25.0%	3	75.0%	4
DE	2	66.7%	1	33.3%	3
FL	12	57.1%	9	42.9%	21
GA	44	62.9%	26	37.1%	70
HI	1	8.3%	11	91.7%	12
ID	22	73.3%	8	26.7%	30
IL	38	52.1%	35	47.9%	73
IN	18	34.6%	34	65.4%	52
IA	28	30.4%	64	69.6%	92
KS	78	76.5%	24	23.5%	102
KY	22	30.1%	51	69.9%	73
LA	38	71.7%	15	28.3%	53
ME	9	36.0%	16	64.0%	25
MD	1	20.0%	4	80.0%	5
MA	1	20.0%	4	80.0%	5
MI	15	24.6%	46	75.4%	61
MN	39	41.9%	54	58.1%	93
MS	42	60.9%	27	39.1%	69
MO	30	53.6%	26	46.4%	56
MT	37	69.8%	16	30.2%	53
NE	52	73.2%	19	26.8%	71
NV	7	53.8%	6	46.2%	13
NH	4	23.5%	13	76.5%	17
NJ	1	100.0%	0	0.0%	1
NM	11	50.0%	11	50.0%	22
NY	29	58.0%	21	42.0%	50
NC	14	26.9%	38	73.1%	52
ND	21	55.3%	17	44.7%	38
OH	35	49.3%	36	50.7%	71
OK	33	45.8%	39	54.2%	72
OR	14	43.8%	18	56.3%	32
PA	19	38.8%	30	61.2%	49

Table 2. Number and Percentage of Independent and System-affiliated Rural Hospitals by State in 2023-24 continued

State	Number of Independent Hospitals	Percent of Independent Hospitals	Number of System-affiliated Hospitals	Percent of System-affiliated Hospitals	Total Number of Rural Hospitals
RI	0	0.0%	0	0.0%	0
SC	9	37.5%	15	62.5%	24
SD	23	50.0%	23	50.0%	46
TN	8	15.1%	45	84.9%	53
TX	88	58.3%	63	41.7%	151
UT	10	45.5%	12	54.5%	22
VT	8	61.5%	5	38.5%	13
VA	7	22.6%	24	77.4%	31
WA	34	85.0%	6	15.0%	40
WV	11	37.9%	18	62.1%	29
WI	21	29.6%	50	70.4%	71
WY	17	70.8%	7	29.2%	24
US	**1,087**	**49.9%**	**1,090**	**50.1%**	**2,177**

Organizational characteristics

Table 3 compares the organizational characteristics of independent and system-affiliated rural hospitals in 2023-24. In comparison to system-affiliated rural hospitals, independent hospitals were more likely to have <26 beds, have CAH status, not receive a low volume adjustment, not participate in the Medicare Shared Savings Program, be government-owned, operate a Rural Health Clinic (RHC), provide long-term care (LTC), use swing beds, and be located in RUCA 7-10 areas (small town and rural areas). In comparison to independent rural hospitals, system-affiliated hospitals had a higher proportion of hospitals that have more than 50 beds, are Prospective Payment System (PPS) hospitals, receive a low volume adjustment, are not-for-profit, do not provide long-term care, do not use swing beds, and are located in RUCA 1-3 areas (metropolitan) and RUCA 4-6 areas (micropolitan).

Table 3. Organizational Characteristics of Independent and System-affiliated Rural Hospitals in 2023-24

Organizational Characteristics		Number of Independent Hospitals	Percent of Independent Hospitals	Number of System-affiliated Hospitals	Percent of System-affiliated Hospitals	*p*-value*
Hospital Size	< 26 Beds	781	71.9%	609	55.9%	< .0001*
	26-50 Beds	157	14.4%	191	17.5%	
	> 50 Beds	149	13.7%	290	26.6%	
	Total	1,087	100.0%	1,090	100.0%	
Medicare Payment**	CAH	736	67.7%	560	51.4%	< .0001*
	EAC/RRC	0	0.0%	2	0.2%	
	MDH	54	5.00%	68	6.2%	
	MDH/RRC	8	0.7%	13	1.2%	
	PPS	110	10.1%	158	14.5%	
	REH	1	0.1%	1	0.1%	
	RRC	21	1.9%	63	5.8%	
	SCH	113	10.4%	151	13.9%	
	SCH/RRC	44	4.1%	74	6.8%	
	Total	1,087	100.0%	1,090	100.0%	

Table 3. Organizational Characteristics of Independent and System-affiliated Rural Hospitals in 2023-24 continued

Organizational Characteristics		Number of Independent Hospitals	Percent of Independent Hospitals	Number of System-affiliated Hospitals	Percent of System-affiliated Hospitals	*p*-value*
Low Volume Adjustment	Yes	223	20.5%	320	29.4%	< .0001*
	No	864	79.5%	770	70.6%	
	Total	1,087	100.0%	1,090	100.0%	
Medicare Shared Savings Program Participation	Yes	300	27.6%	442	40.6%	< .0001*
	No	787	72.4%	648	59.4%	
	Total	1,087	100.0%	1,090	100.0%	
Rural Community Hospital Demonstration	Yes	12	1.1%	7	0.6%	0.2460
	No	1,075	98.9%	1,083	99.4%	
	Total	1,087	100.0%	1,090	100.0%	
Ownership	Government	577	53.1%	141	12.9%	< .0001*
	Not-for-profit	484	44.5%	776	71.2%	
	For-profit	26	2.4%	173	15.9%	
	Total	1,087	100.0%	1,090	100.0%	
Operation of a Rural Health Clinic (RHC)	Yes	777	71.5%	516	47.3%	< .0001*
	No	310	28.5%	574	52.7%	
	Total	1,087	100.0%	1,090	100.0%	
Provision of Long-term Care (LTC)	Yes	228	21.0%	145	13.3%	< .0001*
	No	859	79.0%	945	86.7%	
	Total	1,087	100.0%	1,090	100.0%	
Use of Swing Beds	Yes	830	76.4%	600	55.1%	< .0001*
	No***	257	23.6%	490	44.9%	
	Total	1,087	100.0%	1,090	100.0%	
Rurality - Hospitals with RUCA:	1-3 Metropolitan Areas****	81	7.5%	70	6.4%	< .0001*
	4-6 Micropolitan Areas	273	25.1%	448	41.1%	
	7-10 Small Town and Rural Areas	733	67.4%	572	52.5%	
	Total	1,087	100.0%	1,090	100.0%	

* Chi-square *p*-value level of significance < .001

** CAH = Critical Access Hospital
EAC = Essential Access Community Hospital
MDH = Medicare Dependent Hospital
PPS = Prospective Payment System Hospital
REH = Rural Emergency Hospital
RRC = Rural Referral Center
SCH = Sole Community Hospital

*** Among the (257+490=) 747 hospitals with no swing bed days, there are 238 hospitals that have a swing CCN

**** Some rural hospitals are located in RUCA 1-3 areas (metropolitan). See Pink GH, Howard, HA. Types of Rural and Urban Hospitals and Counties Where They Are Located. NC Rural Health Research Program. UNC Sheps Center. July 2022. FB 183.

Financial Performance

Table 4 compares the financial performance of independent and system-affiliated rural hospitals in 2023-24 (see Appendix for definitions). In comparison to system-affiliated rural hospitals, independent hospitals had lower median net patient revenue and poorer financial performance across all profitability, liquidity, and capital structure indicators except current ratio and days cash on hand. The lower days cash on hand among system-affiliated hospitals may reflect cash management practices that sweep cash from rural hospitals owned by a system. Independent hospitals also had lower acute average daily census and higher Medicare inpatient payer mix than system-affiliated hospitals.

Table 4. Financial Performance of Independent and System-affiliated Rural Hospitals in 2023-24

Domain	Financial Metric (see Appendix for definitions)	Independent Hospitals Median	System-affiliated Hospitals Median	*p*-value*
	Net Patient Revenue	$29,506,650	$51,435,746	< .0001*
Profitability	Total Margin (%)	1.85%	6.54%	< .0001*
	Operating Margin (%)	-1.74%	5.31%	< .0001*
	Return on Equity (%)	3.37%	10.11%	< .0001*
	Cash Flow Margin (%)	3.55%	8.22%	< .0001*
Liquidity	Days in Gross Accounts Receivable	54.0	36.6	< .0001*
	Days in Net Accounts Receivable	49.8	46.4	< .0001*
	Current Ratio (times)	2.8	2.2	< .0001*
	Days Cash on Hand	109.8	24.9	< .0001*
Capital Structure	Equity Financing (%)	63.73%	68.97%	.0001*
	Long Term Debt to Capitalization (%)	23.18%	8.90%	< .0001*
	Debt Service Coverage (times)	3.2	7.1	< .0001*
Outpatient	Hospital Medicare Outpatient Payer Mix (%)	26.46%	21.65%	< .0001*
	Medicare Outpatient Cost to Charge Ratio	0.39	0.26	< .0001*
	Outpatient Revenue to Total Revenue (%)	81.57%	80.79%	.3068
Inpatient	Swing Average Daily Census (patients)	0.98	0.24	< .0001*
	Acute Average Daily Census (patients)	2.87	6.92	< .0001*
	Medicare Inpatient Payer mix (%)	51.81%	38.25%	< .0001*
	Medicare acute Inpatient cost per Day ($)	$3,713	$3,388	< .0001*
Labor	FTEs per bed	5.6	3.8	< .0001*
	Average salary per FTE ($)	$73,655	$79,951	< .0001*
	Salaries to net patient revenue (%)	47.62%	37.27%	< .0001*
Other	Patient deductions (%)	51.30%	65.04%	< .0001*
	Uncompensated care (%)	2.84%	3.13%	.0007*
	Medicaid payer mix (%)	14.02%	15.66%	< .0001*
	Plant age (years)	13.1	11.2	< .0001*

* Kruskal-Wallis *p*-value level of significance < .001

Financial Distress Index

The Financial Distress Index (FDI) uses historical data about hospital financial performance, government reimbursement, organizational characteristics, and market characteristics to predict the probability of rural hospital financial distress in two years. The model assigns every rural hospital to one of four financial relative risk categories: highest, mid-highest, mid-lowest, or lowest risk.[28] Table 5 compares the distribution of the 2024 FDI categories of independent and system-affiliated rural hospitals. In comparison to system-affiliated rural hospitals, a higher percentage of independent hospitals are in the mid-lowest and mid-highest risk of financial distress categories. In comparison to independent hospitals, a higher percentage of system-affiliated hospitals are in the lowest and highest risk of financial distress categories. System-affiliated hospitals had more missing FDI data than independent hospitals.

Table 5. Number of Independent and System-affiliated Rural Hospitals in Financial Distress Index Categories (2024 FDI)

Risk of Financial Distress	Independent Hospitals Number	Independent Hospitals Percentage	System-affiliated Hospitals Number	System-affiliated Hospitals Percentage	*p*-value*
Lowest	327	30.08%	376	34.50%	< .0001*
Mid-lowest	409	37.63%	299	27.43%	
Mid-highest	206	18.95%	184	16.88%	
Highest	49	4.51%	71	6.51%	
Missing	96	8.83%	160	14.68%	
Total	**1,087**	**100.00%**	**1,090**	**100.00%**	

* Chi-square *p*-value < .001

County Characteristics

Table 6 compares characteristics of counties where independent and system-affiliated rural hospitals are located. In comparison with system-affiliated hospitals, independent hospitals are located in counties with smaller median population, a higher percentage of people living in rural areas, and higher uninsured rates.

Table 6. Characteristics of Counties where Independent and System-affiliated Rural Hospitals are Located (2025 County Health Rankings)

Domain	County Characteristics	Independent Hospitals Median	System-affiliated Hospitals Median	*p*-value*
Socio-economic	Population	19,681	34,978	< .0001*
	Household Income	$58,975	$60,026	.0026
	% Unemployment	3.43%	3.49%	.0681
	% Children in Poverty	18.40%	18.20%	.0118
	% High School Completion	89.48%	89.78%	.0588
	% County Population Living in a Census-Defined	75.57%	63.29%	< .0001*
Health and Access	% Poor or Fair Health	17.00%	16.80%	.0125
	Premature Deaths per 100,000 Population	9,353	9,269	.2998
	% Uninsured	11.00%	9.32%	< .0001*
	Ratio of Population to Primary Care Physicians	1,991	2,018	.5938
	Ratio of Population to Mental Health Providers	681	650	.4759
Race and Ethnicity	% American Indian & Alaska Native	0.97%	0.75%	< .0001*
	% Asian	0.73%	0.80%	.0001*
	% Non-Hispanic Black	1.40%	1.65%	.2152
	% Native Hawaiian/Other Pacific Islander	0.07%	0.07%	.1995
	% Hispanic	4.98%	4.36%	.0021
	% Non-Hispanic White	82.79%	86.21%	< .0001*

* Kruskal-Wallis *p*-value < .001

DISCUSSION

The purpose of this study is to compare independent and system-affiliated rural hospitals. The study found statistically significant differences in organizational characteristics, financial performance, and characteristics of counties where independent and system-affiliated rural hospitals are located. There are no clear findings from the comparison of FDI for independent and system-affiliated rural hospitals. The key findings from the study are below.

The state percentage of rural hospitals that are independent ranges from 8.3% (HI) to 85.0% (WA). This could reflect state differences in:

- *State Policies and Regulations:* Varying health care policies and regulations can impact the viability of independent hospitals. States with supportive policies for rural health care may have more independent hospitals.[31]
- *Economic Conditions*: States with stronger economies may provide more support for independent hospitals through local funding and community support.[31]
- *Community Preferences*: In some states, communities may prefer to keep their hospitals independent to maintain local control and ensure that health care services are tailored to their specific needs.[31]

Compared to system affiliated hospitals, a higher proportion of independent rural hospitals are in small town and rural areas (RUCA Codes 7-10). Hospitals in these areas serve fewer people and need fewer acute care beds. Compared to system-affiliated rural hospitals, independent hospitals have fewer acute beds and a higher proportion that are CAHs, did not receive a low volume adjustment, did not participate in the Medicare Shared Savings Program, are government-owned, operate Rural Health Clinics, provide long-term care, use swing beds, and are located in areas with RUCA Codes 7-10 (small towns and rural areas.) Government may be the only possible owner for some rural hospitals, and this allows hospitals to receive local and state tax revenues, which can be crucial for their financial stability. Remote locations and few other providers in a community may also explain the higher percentage of independent hospitals that operate RHCs.

Independent rural hospitals were substantially less profitable, reported lower net patient revenue and acute average daily census, and carried higher long-term debt and a greater Medicare inpatient payer mix than system-affiliated rural hospitals. These findings are consistent with other studies that found higher profitability and overall financial performance among system-affiliated rural hospitals.[10,32] Independent hospitals may have fewer financial resources and no access to system-provided capital, resulting in higher levels of debt.[15] Hospitals in small towns and rural areas tend to have older populations, which means a higher proportion of residents are eligible for Medicare.[33]

Compared to system-affiliated rural hospitals, independent hospitals are in counties with smaller populations, a higher percentage of people living in rural areas of their county, and higher uninsured rates. Small towns and rural areas generally have lower income levels and higher poverty rates, leading to more people being uninsured. In addition, residents of more rural counties have less access to employer-sponsored insurance, increasing the likelihood of being uninsured.[34]

This study describes some differences between independent and system-affiliated rural hospitals. These differences are occurring within a rapidly changing organizational landscape for rural hospitals. An increasing number of independent rural hospitals are choosing to join rural hospital networks, clinically integrated networks, and accountable care organizations. Networks may provide opportunities for independent rural hospitals to realize some of the benefits of being in a collaborative group, without giving up their independence. Further research is needed to begin to more fully understand the context and success factors of rural hospital networks – the distance to network partners, other health care services in the communities, financial strength of partners, amount of competition, populations served, impact of the network on quality and access, and other factors.

REFERENCES AND NOTES

1. American Hospital Association. *Rural Hospital Closures Threaten Access Solutions to Preserve Care in Local Communities*. 2022. Accessed at: https://www.aha.org/system/files/media/file/2022/09/rural-hospital-closures-threaten-access-report.pdf
2. 88 complete closures and 65 converted closures as shown at *Rural Hospital Closures*. NC Rural Health Research Program, UNC–Sheps Center. Accessed June 8, 2025. https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures
3. Kaufman BG, Thomas SR, Randolph RK, Perry JR, Thompson KW, Holmes GM, Pink GH. The rising rate of rural hospital closures. *J Rural Health*. 2015;32(1):35–43. doi:10.1111/jrh.12128
4. Somanchi H, Perry K, Thompson K, Pink G. *News Media Coverage of Rural Hospital Closures and the Causes*. NC Rural Health Research Program, UNC Sheps Center; October 2024. https://www.shepscenter.unc.edu/download/28106/?tmstv=1741892183
5. Oyeka O, Ullrich F, Mackinney B, Lupica J, Mueller K. *The Rural Hospital and Health System Affiliation Landscape: A Brief Review*. RUPRI, University of Iowa; November 2018. https://www.ruralhealthresearch.org/publications/1231
6. National Rural Health Association. *Rural Hospitals: The Beating Heart of a Local Economy*. June 18, 2018. https://www.ruralhealth.us/blogs/2018/06/rural-hospitals-the-beating-heart-of-a-local-economy
7. MacDougall H, Latcham M, Eliason E. Rural nonprofit hospital community benefit and financial assistance spending: a call for greater reporting transparency. *J Rural Health*. 2025;41(1):e12914. doi:10.1111/jrh.12914
8. Godwin J, Levinson Z, Hulver S. *Understanding Mergers between Hospitals and Health Systems in Different Markets*. Kaiser Family Foundation Issue Brief; August 23, 2023. https://www.kff.org/health-costs/issue-brief/understanding-mergers-between-hospitals-and-health-systems-in-different-markets/
9. MacKinney C, White N, Norell B. *Better Together: Rural Hospital High-Value Networks*. Rural Health Information Hub. https://www.ruralhealthinfo.org/rural-monitor/rural-hospital-high-value-networks
10. Srinivasan SM, Thompson K, Pink G. *2018–23 Profitability of Rural Hospitals by Ownership and System Affiliation*. NC Rural Health Research Program, UNC Sheps Center; June 2024. https://www.shepscenter.unc.edu/download/27342/?tmstv=1741892183
11. Whaley C, Bartlett M, Bai G. Financial performance gaps between critical access hospitals and other acute care hospitals. *JAMA Health Forum*. December 2024. doi:10.1001/jamahealthforum.2024.3959
12. O'Hanlon CE, Kranz AM, DeYoreo M, Mahmud A, Damberg CL, Timbie J. Access, quality, and financial performance of rural hospitals following health system affiliation. *Health Aff (Millwood)*. 2019;38(12):2095–2104. doi:10.1377/hlthaff.2019.00918
13. Bozovich L, Knocke K, Pink GH, Howard HA, Reiter KL. *The Association Between System Affiliation and Financial Performance in Critical Access Hospitals*. Flex Monitoring Team; October 2021. https://www.flexmonitoring.org/sites/flexmonitoring.umn.edu/files/media/fmt-pb60-system-affiliation-2021.pdf
14. Standardized inpatient commercial prices refer to the negotiated rates that commercial health insurers pay to hospitals for covered services. These rates are typically determined through contractual agreements between hospitals and insurers. See: Araich H, Tran J, Jung J, Horný M, Sadigh G. Healthcare price transparency in North America and Europe. *Br J Radiol*. 2023;96(1151):20230236. doi:10.1259/bjr.20230236
15. Jiang HJ, Fingar KR, Liang L, Henke RM. Risk of closure among independent and multihospital-affiliated rural hospitals. *JAMA Health Forum*. 2022;3(7):e221835. doi:10.1001/jamahealthforum.2022.1835
16. Carroll C, Euhus R, Beaulieu N, Chernew ME. Hospital survival in rural markets: closures, mergers, and profitability. *Health Aff (Millwood)*. 2023;42(4). doi:10.1377/hlthaff.2022.01191
17. Henke RM, Karaca Z, Moore B, et al. Impact of health system affiliation on hospital resource use intensity and quality of care. *Health Serv Res*. 2018;53(1):63–86. doi:10.1111/1475-6773.12631
18. Jin B, Nembhard IM. Effects of affiliation network membership on hospital quality and financial performance. *Health Serv Res*. 2022;57(2):248–258. doi:10.1111/1475-6773.13876

19. Wang E, Arnold S, Jones S, et al. Quality and safety outcomes of a hospital merger following a full integration at a safety-net hospital. *JAMA Network Open*. 2022;5(1):e2142382. doi:10.1001/jamanetworkopen.2021.42382

20. Rhoades CA, Whitacre BE, Davis AF. Community sociodemographics and rural hospital survival. *J Rural Health*. 2022. doi:10.1111/jrh.12728

21. Centers for Medicare & Medicaid Services. *Cost Reports*. Published April 2024. https://www.cms.gov/data-research/statistics-trends-and-reports/cost-reports

22. HealthData.gov. *Provider of Services File – Hospital and Non-Hospital Facilities*. https://healthdata.gov/dataset/Provider-of-Services-File-Hospital-Non-Hospital-Fa/m5p7-uvg2/about_data

23. FORHP defines the following areas as rural: Non-metropolitan counties, Outlying metropolitan counties with no population from an urban area of 50,000 or more people, Census tracts with RUCA codes 4–10 in metropolitan counties, Census tracts of at least 400 square miles with population density of ≤35 people/sq mi with RUCA 2–3 in metropolitan counties, Census tracts with RRS 5 and RUCA 2–3 ≥20 square miles in metropolitan counties. https://www.hrsa.gov/rural-health/about-us/what-is-rural

24. RESDAC. *Medicare Shared Savings Program Accountable Care Organizations (ACO) Provider-Level RIF*. https://resdac.org/cms-data/files/share-saving-program-aco-provider-level

25. Centers for Medicare & Medicaid Services. *Where Innovation Is Happening*. https://www.cms.gov/priorities/innovation/where-innovation-happening#model=rural-community-hospital-demonstration

26. US Department of Agriculture, Economic Research Service. *Rural-Urban Commuting Area (RUCA) Codes*. https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/documentation/

27. Malone TL, Pink GH, Holmes GM. An updated model of rural hospital financial distress. *J Rural Health*. Published October 3, 2024. doi:10.1111/jrh.12882

28. Malone TL, Pink GH, Thompson KW, Holmes GM. *Using the Updated Financial Distress Index to Describe Relative Risk of Hospital Financial Distress*. NC Rural Health Research Program, UNC Sheps Center; April 2024. https://www.shepscenter.unc.edu/download/27219/?tmstv=1743871277

29. 2025 County Health Rankings & Roadmaps. *Data & Documentation*. https://www.countyhealthrankings.org/health-data/methodology-and-sources/data-documentation

30. Hospitals may be located in counties with both rural and non-rural areas. Thus, a hospital may be located in a rural portion of a county even though a percentage of the county population lives in a non-rural area. See: Pink GH, Howard HA. *Types of Rural and Urban Hospitals and Counties Where They Are Located*. NC Rural Health Research Program, UNC Sheps Center; July 2022.

31. American Hospital Association. *Rural Report*. February 2019. https://www.aha.org/system/files/2019-02/rural-report-2019.pdf

32. Bai G, Anderson GF. A more detailed understanding of factors associated with hospital profitability. *Health Aff (Millwood)*. 2016;35(5):889–897. doi:10.1377/hlthaff.2015.1193

33. Legasse J. Half of rural hospitals in the red, pressured by high Medicare Advantage enrollment. *Healthcare Finance News*. February 15, 2024. https://www.healthcarefinancenews.com/news/half-rural-hospitals-red-pressured-high-medicare-advantage-enrollment

34. ASPE Office of Health Policy. *Access to Affordable Care in Rural America: Current Trends and Key Challenges*. July 9, 2021. https://aspe.hhs.gov/reports/access-care-rural-america

APPENDIX—Financial Indicator Definitions

Domain	Indicator	Definition	Description
Profitability	Total Margin (%)	Net income / Total revenue	Total Margin measures the control of expenses relative to revenues. A positive value indicates total expenses are less than total revenues (a profit). Very high positive values may indicate higher patient volumes, which drive down the cost per unit of service. A negative value indicates total expenses are greater than total revenues (a loss). Very high negative values may indicate financial difficulty.
	Operating Margin (%)	(Net income – Contributions, Investments. and Appropriations + Depreciation expense + Interest expense) / (Net patient revenue + Other income – Contributions, Investments and Appropriations)	Operating Margin measures the control of operating expenses relative to operating revenue (net patient and other revenue). A positive value indicates operating expenses are less than operating revenue (an operating profit). Very high positive values may indicate higher patient volumes, which drive down the cost per unit of service. A negative value indicates operating expenses are greater than operating revenues (an operating loss). Very high negative values may indicate financial difficulty.
	Return on Equity (%)	Net income / Net assets	Return on Equity measures the net income generated by equity investment (net assets). In a not-for-profit entity, the equity represents the sum of federal, state, and local grants, contributions, and the accumulated earnings of the hospital. A positive value indicates net income was generated by equity investment. Very high positive values may indicate an opportunity for debt financing. A negative value indicates a net loss was generated by equity investment. Very high negative values may indicate financial difficulty.
	Cash Flow Margin (%)	(Net patient revenue + Other revenue –Total operating expenses) / (Net patient revenue + Other revenue)	Cash Flow Margin measures the cash inflow per dollar of revenue from providing patient care services. A positive value indicates cash outflows are less than cash inflows. A negative value indicates cash outflows are greater than cash inflows.
Liquidity	Days in Gross Accounts Receivable	Gross patient accounts receivable / (Gross patient revenue / Days in period)	Days Gross Revenue in Accounts Receivable compared to Days Net Revenue in Accounts Receivable measures revenue cycle performance. Days gross and net revenues in accounts receivable that are close in value indicate good revenue cycle performance. Days gross revenue in accounts receivable greater than days net revenue in accounts receivable may indicate that allowances for doubtful accounts (implicit price concessions) require analysis and possible adjustment.
	Days in Net Accounts Receivable	Net patient accounts receivable / (Net patient revenue / Days in period)	Days Net Revenue in Accounts Receivable measures the number of days that it takes an organization, on average, to collect its receivables. A high value indicates many days to collect receivables. Very high values may indicate a need to review collection policies and procedures. A low value indicates only a few days to collect receivables and may indicate a more efficient system for processing accounts receivable, higher Medicare and Medicaid payer mix, offering of long-term care services, or some combination.
	Current Ratio	Current assets / Current liabilities	Current Ratio measures the number of times short-term obligations can be paid using short-term assets. A value greater than 1.0 indicates current assets are greater than current liabilities. Very high values may indicate underinvestment in longer-term assets that usually yield higher returns. A value less than 1.0 indicates current assets are less than current liabilities. Very low values may indicate financial difficulty.
	Days Cash on Hand	(Cash + Temporary investments + Investments) / ((Total expenses – Depreciation) / Days in period)	Days Cash on Hand measures the number of days an organization could operate if no cash were collected or received. A low value indicates only a few days of cash on hand. Very low values may indicate financial difficulty. A high value indicates many days of cash on hand. Very high values may indicate under-investment in longer-term assets that usually yield higher returns. Days Cash on Hand is calculated at fiscal year end, which does not reflect uneven cash flow throughout the year.

APPENDIX—Financial Indicator Definitions continued

Domain	Indicator	Definition	Description
Capital Structure	Equity Financing (%)	Net assets / total assets	Equity Financing measures the percentage of total assets financed by equity. In a not-for-profit entity, equity represents the sum of federal, state, and local grants, contributions, and the accumulated earnings of the hospital. A value greater than 50 percent indicates that more of the assets are financed by equity than by debt. Very high values may indicate opportunities for debt financing. A value less than 50 percent indicates that more of the assets are financed by debt than by equity. Very low values may indicate exposure to financial risk because debt service is a fixed charge.
	Long-term Debt to Capitalization (%)	Long-term debt / (Long-term debt + Net assets)	Long-term Debt to Capitalization measures the percentage of total capital that is debt. A value greater than 50 percent indicates that a majority of capital is debt. Very high values may indicate exposure to financial risk because debt service is a fixed charge. A value less than 50 percent indicates that the majority of capital is equity. Very low values may indicate opportunities for debt financing.
	Debt Service Coverage (times)	Net income + Depreciation + Interest expense / (Notes and loans payable (short term) * 365/DIP + Interest expense)	Debt Service Coverage measures the cash inflow per dollar of principal payments and interest expense. A positive value greater than 1.0 indicates cash flow greater than current fixed charge payments. Very high positive values may indicate an opportunity for debt financing. A positive value less than 1.0 or a negative value indicates cash flow less than current fixed charge payments. Very low values may signal a need to reassess debt policies. Refinancing may be an option if interest rates are lower in the current period than when the original debt financing occurred.
Outpatient	Hospital Medicare Outpatient Payer Mix (%)	Hospital Medicare outpatient charges / Hospital total outpatient charges	Hospital Medicare Outpatient Payer Mix measures the percentage of total outpatient charges that is for Medicare patients. A value greater than 50 percent indicates that the majority of outpatient charges is for Medicare patients. Very high values may indicate lack of financial diversification due to high dependence on Medicare reimbursement. A value less than 50 percent indicates that the majority of outpatient charges is for Medicaid, privately insured, and other patients.
	Hospital Medicare Outpatient Cost to Charge Ratio	Hospital Medicare outpatient costs / Hospital Medicare outpatient charges	Hospital Medicare Outpatient Cost to Charge measures the outpatient Medicare costs per dollar of Medicare outpatient charges. A value less than 50 indicates that Medicare outpatient costs are less than one half of Medicare outpatient charges. Very low values may indicate patient volume is relatively high, gross charges are relatively high, costs are relatively low, or some combination of these factors. A value greater than 50 indicates that Medicare outpatient costs are greater than one half of Medicare outpatient charges. Very high values may indicate low volume, an inadequate rate structure, an opportunity to review operating costs, or some combination.
	Outpatient Revenue to Total Revenue (%)	Total outpatient revenue / Total patient revenue	Outpatient Revenues to Total Revenues measures the percentage of total revenues that is for outpatient services (including, for example, Rural Health Clinics, free-standing clinics, and home health clinics). A value greater than 50 percent indicates that the majority of total patient revenues is for outpatient services. A value less than 50 percent indicates that the majority of total patient revenues is for inpatient services.

APPENDIX—Financial Indicator Definitions continued

Domain	Indicator	Definition	Description
Inpatient	Average Daily Census – Swing / SNF (patients)	Inpatient swing bed SNF days / Days in period	Average Daily Census Swing-SNF measures the average number of swing-SNF patients per day. A high value indicates a high average number of swing-SNF patients. A low value indicates a low average number of swing-SNF patients. Average Daily Census swing-SNF is influenced by the number of acute care beds available.
	Average Daily Census – Acute (patients)	Inpatient acute care bed days / Days in period	Average Daily Census - Acute measures the average number of acute care patients per day. A high value indicates a high average number of acute care patients. A low value indicates a low average number of acute care patients. Average Daily Census Acute is influenced by the number of acute care beds available.
	Medicare Inpatient Payer Mix (%)	Medicare inpatient days / (Total inpatient days – Nursery bed days – NF swing bed days)	Medicare Inpatient Payer Mix measures the percentage of total inpatient days that is provided to Medicare patients. A value greater than 50 percent indicates that the majority of inpatient days is for Medicare patients. Very high values may indicate lack of financial diversification due to high dependence on Medicare reimbursement. A value less than 50 percent indicates that the majority of inpatient days is for Medicaid, privately insured, and other patients.
	Medicare Acute Inpatient Cost per Day ($)	Medicare acute inpatient cost / Medicare inpatient days (excl HMO)	Medicare Acute Inpatient Cost per Day measures the average daily cost of a Medicare acute inpatient. Skilled nursing facility (SNF) days are excluded. A high value indicates a high acute inpatient cost per day for Medicare patients. A low value indicates a low acute inpatient cost per day for Medicare patients. Medicare Acute Inpatient Cost per Day is influenced by facility occupancy rates, utilization of services, and the ability to manage costs.
Labor	FTEs per Adjusted Occupied Bed	Number of FTEs / ((Total acute inpatient days + psychiatric days + rehabilitation days – NF swing days – Nursery days) * [Total patient revenue/(Total inpatient revenue – Inpatient NF revenue – Other LTC revenue)]/ Days in period)	FTEs per Adjusted Occupied Bed measures the number of full-time employees per each occupied acute care bed. A high value indicates many employees per bed. Very high values may indicate low volume and a potential opportunity to evaluate staff productivity. A low value indicates a few employees per bed. Very low values may indicate high volume or a high level of staff productivity.
	Average Salary per FTE ($)	Salary expense / Number of FTEs	Average Salary per FTE measures the price and mix of labor. A high value indicates that a hospital pays above average wages / salaries and/or employs relatively more high-skill occupations and/or experienced staff. A low value indicates that a hospital pays below average wages / salaries and / or employs relatively fewer high skill occupations and/or experienced staff.
	Salaries to Net Patient Revenue (%)	Salary expense / Net patient revenue	Salaries to Net Patient Revenue measures the percentage of net patient revenue that is labor costs. A value greater than 50 percent indicates that the majority of net patient revenue is for salaries. Very high values may indicate labor intensive organizations, employment of medical staff, or old plant and equipment. A value less than 50 percent indicates that the majority of net patient revenue is for supplies, equipment, and other expenses. Very low values may indicate capital-intensive organizations or new plant and equipment.

APPENDIX—Financial Indicator Definitions continued

Domain	Indicator	Definition	Description
Other	Patient Deductions (%)	(Contractual allowances + Discounts) / Gross total patient revenue	Patient Deductions measures the allowances and discounts per dollar of total patient revenue. A high value indicates higher average discounts and/or allowances. Higher values may result from higher volume of services provided, higher rate structures, or higher penetration of managed care contracts. A low value indicates lower average discounts and/or allowances. Lower values may result from lower volume of services provided, lower rate structures, or less penetration of managed care contracts.
	Uncompensated Care (%)	(Charity care + bad debt) / Total operating expenses	Uncompensated Care measures charity care and bad debt as a percentage of total operating expenses. A high value indicates a greater percentage of total operating expenses for which no patient or third party payment was received. Higher values may result from higher rates of un-insured and under-insured patients, prevalence of high-deductible health plans among patients, and other payment factors. A low value indicates a lower percentage of total operating expenses for which no payment was received.
	Medicaid Payer Mix (%)	Medicaid charges / Total patient charges	Medicaid Payer Mix measures the percentage of total patient charges for Medicaid patients. A value greater than 50 percent indicates that the majority of total patient charges is for Medicaid patients. Very high values may indicate lack of financial diversification due to high dependence on Medicaid reimbursement. A value less than 50 percent indicates that the majority of patient charges is not from Medicaid beneficiaries, but from patients with other forms of health insurance. It is important to note that total charges vary by payer and actual payments are not always the same percentage of charges for all payers.
	Average Age of Plant (years)	Accumulated depreciation / (Depreciation expense * 365/Days in period)	Average Age of Plant measures the average accounting age in years of the fixed assets of an organization. It may differ from the average chronological age because of depreciation practices. Higher values indicate greater amounts of older assets. Very high values may indicate a need for fixed asset replacement. Lower values indicate greater amounts of newer assets. Very low values may indicate a new building or recent replacement of fixed assets.

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