Reassessing Financial Peer Groups for Critical Access Hospitals

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KEY FINDINGS

- The current financial peer group factors of net patient revenue, government ownership, provision of long-term care, and operation of a rural health clinic should be retained.

- Adding a surgical revenue indicator to the financial peer group factors may improve comparability with regard to measures of outpatient revenue and cost, salaries, and utilization.

- Location in a non-core based statistical area is associated with measures of revenue, cost and utilization. Results also suggest regional differences in CAH financial performance and condition. However, users of peer groups should be cognizant of the fact that these factors are not under the control of hospital managers.

BACKGROUND

Since 2004, the Flex Monitoring Team has produced the Critical Access Hospital Financial Indicators Report (CAHFIR)[1] that provides CAH administrators with comparative financial indicators. In 2006, peer groups for CAHs were created by a survey of CAH executives, literature review, advice from technical advisors, and statistical analysis.[2] Net patient revenue, government ownership, operation of a rural health clinic (RHC), and provision of long-term care (LTC) were identified as factors that significantly influenced CAH financial performance and condition and were thus used as the basis of CAH peer groups. Establishing relevant peer groups enhanced the utility of the CAHFIR by facilitating "apple-to-apple" comparisons.

In the past ten years, significant changes have occurred in the U.S. health system and economy that may have changed the operating environment for CAHs. For example, sequestration cut reimbursement for hospitals, the Patient Protection and Affordable Care Act led to changes in insurance coverage through Medicaid expansion and the creation of federal and state exchanges, the Medicare Electronic Health Record Incentive Program incentivized adoption and mean-ingful use of electronic health records, and the Great Recession put pressure on wages and employment. These events suggest that factors influencing CAH financial performance may have changed.

PURPOSE

The purpose of this study was to assess whether the factors used in the current CAH financial peer groups are still important influences on CAH financial performance, and whether new hospital, geographic or community factors should be considered for peer groups.

APPROACH AND DATA

A review of the literature identified many factors that influence hospital financial performance. These factors were assessed for potential inclusion in the study by the strength of evidence and relevance to CAHs. For ease of exposition, the factors were then allocated to three categories: hospital characteristics (e.g., ownership), geographic characteristics (e.g., region), and community characteristics (e.g., population size). Twelve

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CAHFIR financial indicators, representing each of the six categories of financial performance and condition – profitability, liquidity, capital structure, revenue, cost and utilization – were selected for study based on the strength of their association with the four existing peer group factors in 2011.

Statistical analysis was then used to identify factors that were important influences on CAH financial performance in 2012-2014. Factors that did not demonstrate statistically significant associations with financial performance, or that were highly correlated with other factors, were eliminated through an iterative process. These included four hospital factors (provision of hospice, home health, obstetrics and emergency services); three geographic factors (distance to the nearest hospital, driving distance to the nearest hospital and driving distance to the nearest non-CAH); and two community factors (unemployment rate and poverty rate). In the final iteration, nine factors were retained representing the three categories as follows: (1) hospital (net revenue, government ownership, long-term care, rural health clinic, surgical charges); (2) geographic (region, county-level measure of rurality, distance to the nearest 100-bed hospital); and (3) community (total population). Multivariate regression analysis was used to identify which of the hospital, geographic, and community factors were the most influential on the CAHFIR indicators. Regressions were run separately by CAHFIR indicator and by year. Results were assessed for consistency over time, and only 2014 results are reported.

All financial and operational data came from the Centers for Medicare & Medicaid Services' Healthcare Cost Report Information System (HCRIS). Geographic and community data came from the U.S. Census Bureau, Nielsen Pop-Facts, and the Area Health Resource File (AHRF). Four fiscal years (FYs) of data (2011-2014) were used (5,096 hospital years). Forty-five observations were excluded because reporting was for a partial year (e.g., less than 360 days), or data were missing (e.g., net patient revenue), leaving 5,051 observations for analysis. Analyses also excluded erroneous or implausible values (e.g., negative values for various financial indicators) and extreme outliers (e.g., greater than $6 million for average salary per FTE).

RESULTS

The 2014 summary statistics for the final study variables are presented in Table 1 (next page). Statistics for other years are not presented but were relatively stable over the entire study period.

Table 1. Summary Statistics for Fiscal Year 2014

CAHFIR Indicators (Dependent Variables)	Median	Minimum	Maximum
Operating margin	0.7%	-50.0%	37.7%
Cash flow margin	6.5%	-50.0%	43.4%
Days cash on hand	72.4	0	963.9
Long-term debt to capitalization	25.4%	0.0%	100.0%
Outpatient revenues to total revenues	75.7%	10.5%	99.6%
Patient deductions	40.8%	0.0%	81.9%
Medicare inpatient payer mix	72.4%	10.3%	100%
Medicare outpatient payer mix	37.3%	2.6%	82.3%
Medicare outpatient cost to charge	46.5%	12.1%	173.5%
Salaries to net patient revenue	45.6%	2.7%	97.4%
Average salary per FTE	$52,226	$22,532	$99,427
Average daily census-acute beds	2.9	<1	17.8

Peer Group Factors (Independent Variables)	Percent of CAHs	Median	Minimum	Maximum
Distance in miles to nearest 100-bed hospital		35.7	1.2	673.9
Total population		20,385	1,074	346,358
Government-owned	41%			
Operates a rural health clinic	56%			
Provides long-term care	25%			
< $10M net patient revenue	25%			
$10-20M net patient revenue	35%			
>$20M net patient revenue	40%			
Surgical charges > 1% of total charges	78%			
Northeast region	5%			
Midwest region	50%			
South region	26%			
West region	19%			
Metropolitan	20%			
Micropolitan	16%			
Non-CBSA	64%			

Results of the final multivariate regressions for 2014 are presented in Tables 2a and 2b (next page and page 5, respectively). Regression results from other years are omitted as results remained relatively stable over time. Table 2a shows associations of peer group factors with measures of profitability, liquidity, capital structure and cost. Table 2b shows associations of peer group factors with measures of revenue and utilization. Results for distance and population are excluded because although several of the coefficients were statistically significant, none was practically significant as the effect sizes were very small.

Table 2a: Multivariate Regression Analysis of the Association of Peer Group Factors with Select Financial Indicators, 2014

	Profitability		Liquidity	Capital	Cost	
	Operating margin	Cash flow margin	Days cash on hand	Long-term debt to capitalization	Salaries to net patient revenue	Average salary per FTE
Current Peer Group Factors						
Government-owned (not govt-owned)	-0.036***	-0.031***	17.929**	0.028*	0.029***	-2827.49***
Operates a rural health clinic (no RHC)	-0.017***	-0.021***	-30.216***	0.039**	0.036***	-236.55
Provides long-term care (no LTC)	-0.036***	-0.034***	-17.272*	0.025	0.039***	-6250.39***
$10-20M net patient revenue (<$10M)	0.044***	0.052***	6.732	0.046**	-0.057***	3491.28***
>$20M net patient revenue (<$10M)	0.080***	0.076***	50.815***	0.023	-0.086***	8806.46***
Supplemental Peer Group Factors						
Surgical charges > 1% of total charges (≤1%)	0.006	0.021**	1.893	0.048**	-0.029***	419.66
Midwest region (Northeast)	0.054***	0.050***	25.942	-0.094**	-0.078***	-3626.74***
South region (Northeast)	0.045***	0.034**	-13.605	-0.109***	-0.061***	-7274.12***
West region (Northeast)	0.027*	0.028*	-8.054	-0.092**	-0.044***	3126.01**
Micropolitan (metro)	-0.013	-0.011	13.36	-0.031	-0.001	2200.14**
Non-CBSA (metro)	-0.01	-0.002	4.287	-0.023	-0.002	-2340.15***

Base for categorical variables in parentheses. *p<.10, **p<.05, ***p<.01.

Table 2b: Multivariate Regression Analysis of the Association of Peer Group Factors with Select Financial Indicators, 2014

	Revenue					Utilization
	Outpatient revenues to total revenues	Patient deductions	Medicare inpatient payer mix	Medicare outpatient payer mix	Medicare outpatient cost to charge	Average daily census: acute beds
Current Peer Group Factors						
Government-owned (not govt-owned)	-0.003	-0.044***	0.013	0.014***	0.055***	-0.061
Operates a rural health clinic (no RHC)	0.020***	-0.01	0.032***	0.025***	-0.027***	-0.099
Provides long-term care (no LTC)	-0.121***	-0.044***	0.031***	0.010*	0.012	-0.531***
$10-20M net patient revenue (<$10M)	0.034***	0.076***	-0.047***	-0.027***	-0.119***	0.933***
>$20M net patient revenue (<$10M)	0.055***	0.120***	-0.152***	-0.065***	-0.173***	4.040***
Supplemental Peer Group Factors						
Surgical charges > 1% of total charges (≤1%)	0.047***	0.052***	-0.017	0.028***	-0.084***	1.319***
Midwest region (Northeast)	-0.001	-0.015	-0.045**	0.019	-0.015	-1.400***
South region (Northeast)	-0.015	0.125***	-0.100***	-0.037***	-0.108***	0.010
West region (Northeast)	-0.035**	0.008	-0.138***	-0.037***	0.011	-1.040***
Micropolitan (metro)	-0.039***	0.004	-0.019	0.008	0.002	1.565***
Non-CBSA (metro)	-0.030***	-0.038***	0.030***	0.049***	0.033***	1.010***

Base for categorical variables in parentheses. *p<.10, **p<.05, ***p<.01.

The four factors currently used to develop CAH peer groups—net patient revenue, provision of long-term care, operation of a rural health clinic, and government ownership—continued to be statistically significantly and practically important (defined as having a large effect size) for most of the CAHFIR indicators. Government ownership, provision of long-term care and operation of a rural health clinic were associated with lower profitability and higher dependence on Medicare. Larger hospitals (as defined by the amount of net patient revenue) were more profitable than smaller hospitals, were less dependent on Medicare, and had higher acute average daily census. Surgical charges, the only supplemental hospital characteristic, was statistically significant for eight of the 12 financial indicators showing positive associations with cash flow margin, outpatient percentages, and acute average daily census, and negative associations with the proportion of salary costs and outpatient cost to charges.

There was mixed evidence about the influence of geographic and community factors on the CAHFIR indicators. Census Region was statistically significant for all indicators except days cash on hand (liquidity). Location in a non-core-based statistical area (the most rural counties) was associated with measures of cost, revenue and utilization. Specifically, the most rural hospitals had lower average salaries per FTE, lower proportions of outpatient to total revenues and patient deductions, higher outpatient cost to charges, greater dependence on Medicare and higher average daily census than CAHs located in metropolitan areas. Distance to the nearest 100-bed hospital was statistically significant for half of the indicators, and total population was statistically significant for seven of the indicators; however, the effect sizes were very small (results not shown). This may have been due to the correlation of these factors with measures of county rurality.

CONCLUSION

This study analyzed the influence of hospital, geographic, and community characteristics on the financial performance and condition of CAHs. The results indicate that the current peer groups of net patient revenue, government ownership, provision of long term care, and operation of a rural health clinic should be retained. Adding surgical charges to the peer group factors may improve comparability with regard to measures of outpatient revenue and cost, salaries, and utilization.

Geographic characteristics, which are inherent to the CAH, also appear to play a role in hospital financial performance and condition. Location in a non-core-based statistical area was associated with measures of revenue, cost, and utilization; and Census Region was associated with most of the CAHFIR indicators. Population did not appear to be associated with financial performance; however, the effects of population size are likely reflected in other peer group factors such as net patient revenue and geographic location.

For more information on this study,
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REFERENCES

1. The Critical Access Hospital Financial Indicators Report (CAHFIR) was produced from 2004-2015. In 2016, the Flex Monitoring Team unveiled CAHMPAS, which stands for "Critical Access Hospital Measurement & Performance Assessment System." It is a free online data query tool that makes it easy for hospital executives, State Flex Coordinators, and Federal staff to explore the financial, quality, and community performance of Critical Access Hospitals. It was developed and is maintained by the Flex Monitoring Team with funding from the Federal Office of Rural Health Policy, a division of HRSA. http://www.flexmonitoring.org/cahmpas/

2. Pink GH, Holmes GM, Slifkin RT, Thompson RE. Developing financial benchmarks for Critical Access Hospitals. Health Care Financ Rev 2009 Spring;30(3):55-69.