



## Rural Hospital Mergers and Acquisitions: Who Is Being Acquired and What Happens Afterward?

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### BACKGROUND

Hospital mergers and acquisitions<sup>1</sup> are changing the face of health care in both rural and urban communities across the country. Declining reimbursement levels, increased capital needs, a weak economy and easier access to credit have all contributed to a level of mergers not seen in more than a decade.<sup>2,3</sup> Studies from the 1980s and 1990s showed three anticipated benefits of merger – improved financial performance, service consolidation and operating efficiencies.<sup>4</sup> Merger was also suggested as a strategy for rural hospitals in financial distress.<sup>5</sup> However, in a study of mergers in general, two-thirds of all deals fell short of pre-merger expectations.<sup>6</sup> Concerns have also been raised about the effects of rural hospital mergers on the community.<sup>7</sup>

### KEY FINDINGS

- From 2005 to 2012, 121 of the 1,492 rural hospitals included in the study (approximately eight percent) were part of a merger.
- Both financial and staffing characteristics were predictive of rural hospital merger. Hospitals with lower total profit margins, more debt financing, and a lower percentage of outpatient revenue derived from Medicare versus other payers were more likely to merge, as were hospitals with lower ratios of salary expense to net patient revenue and fewer full-time equivalent employees per bed.
- Post-merger, hospital operating margins, on average, decreased by 1.4 percentage points; however, the result was only slightly statistically significant.
- After merger, total salary expense, on average, decreased by \$664,488, or \$1,223 per full-time equivalent employee, but there was no evidence of a change in the number of full-time equivalent employees per bed. This would be consistent with a change in personnel mix (e.g., eliminating high-salary positions and expanding lower-salary positions).
- There was no evidence of pre- and post-merger differences in the number of skilled nursing facility or newborn nursery days, or hospital capital expenditures.

To better understand the implications of mergers and acquisitions for small rural hospitals, this brief examined two research questions: 1) What were the characteristics of rural hospitals that merged, and 2) Were there changes in hospital financial performance, staffing or services following a merger?

### RESULTS

#### Characteristics Predictive of Rural Hospital Merger

Figure 1 shows the number of rural hospital mergers and acquisitions in each year from 2005 to 2012. From the Irving Levin Associates data, we identified 121 mergers that included a rural hospital for this time period. This represented approximately eight percent of the 1,492 rural hospitals in the study sample, identified as acute non-federal hospitals operating in nonmetro counties.

**Figure 1: Annual Number of Rural Hospital Mergers and Acquisitions, 2005-2012**

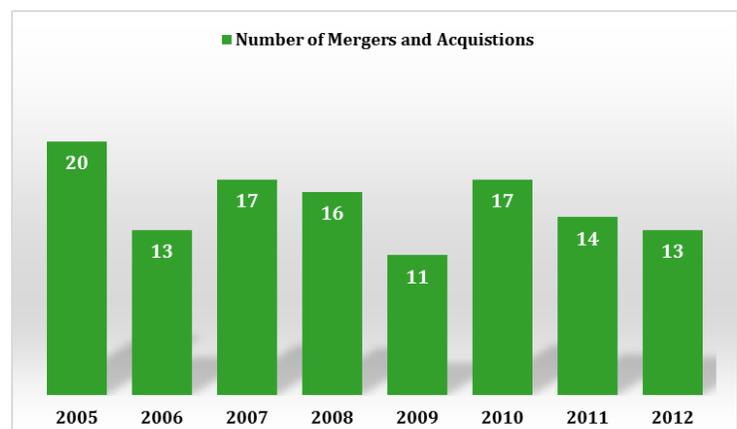


Figure 2 depicts the association of hospital financial and operating characteristics with the likelihood of merger. Results suggested that, on average, rural hospitals with weaker financial performance and lower staffing costs were more likely to merge. Higher total profit margins, lower proportions of debt relative to equity financing, and higher proportions of outpatient revenue from Medicare versus other payers were negatively associated with the likelihood of merger. Higher salary expense to net patient revenue and greater numbers of full-time equivalent employees per bed were also negatively associated with the likelihood of merger.

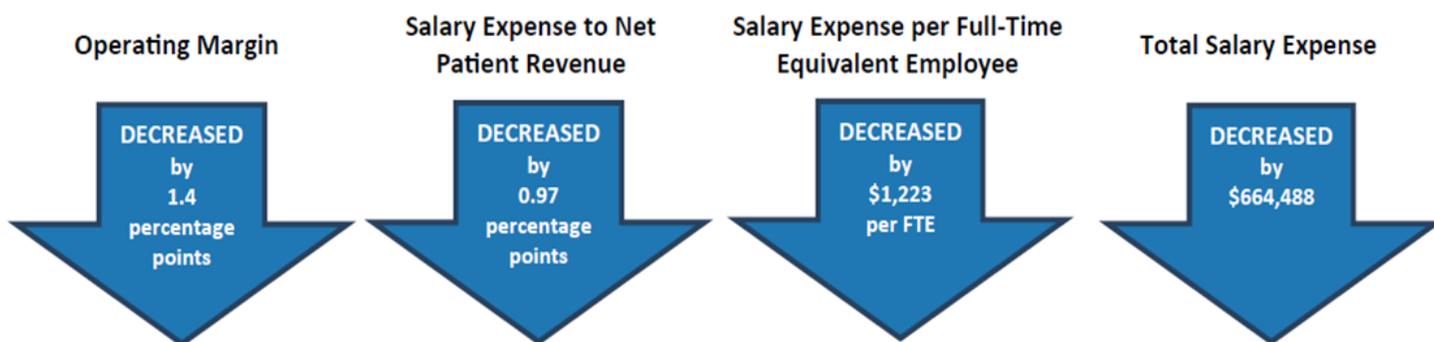
**Figure 2: Who Merged? Hospitals with:**

LOWER	HIGHER
Profit margins	Amounts of debt
Percent of total outpatient revenue from Medicare	
Salary expense to net patient revenue	
FTEs per bed	

### Changes in Financial Performance, Staffing and Services Following Merger

Figure 3 presents the statistically significant post-merger differences in financial performance for merged hospitals relative to non-merged hospitals in comparable periods. Following a merger, hospital profitability (as measured by operating margin) decreased, on average, by 1.4 percentage points; however, this result was statistically weak. Results also showed statistically significant reductions in labor costs. Total salary expense, on average, fell by \$664,488 ( $p < 0.01$ ); a reduction of \$1,223 per full-time equivalent employee ( $p < 0.01$ ). There was no evidence that the number of full-time equivalent employees declined. Results also showed no statistically significant post-merger changes in the number of skilled nursing facility or newborn nursery days, hospital capital expenditures, or the amount of debt relative to equity financing.

**Figure 3: What Happened after Merger?**



## DISCUSSION

### What Did We Find?

On average, rural hospitals with weaker financial performance but lower staffing and staffing costs were more likely to merge. Following a merger, there was weak evidence that operating margins declined and stronger evidence suggesting reductions in salary expense. There was no evidence of changes in the numbers of full-time equivalent employees, skilled nursing facility days or newborn nursery days, nor was there evidence that capital expenditures or the amount of debt financing changed.

### What Are the Policy Implications?

The results of this research point to the necessity for understanding hospital motives behind mergers. If small rural hospitals solicit mergers because they are expecting an influx of capital, a relief of debt burden, or an improvement in bottom line profitability, there was no evidence to support this expectation. Capital expenditures, which fund investments in technology and facility improvements, also did not increase despite the fact that this is often mentioned as a motivation for seeking out a merger.

The finding that operating margins may have declined is consistent with recent research showing either little change or reductions in profit margins in urban hospitals following a merger or acquisition.<sup>8</sup> Although studies showed post-merger improvement in hospital profitability in the 1980s and 1990s, these results derived primarily from higher revenues as market share increased.<sup>4</sup> However, changes to reimbursement structures over the past decade have limited opportunities for revenue and volume growth for all hospitals. Thus, the size and location of rural hospitals may present fewer opportunities for revenue enhancement than larger, more urban hospitals.

Although there was little evidence of significant financial improvement following a merger, this strategy may still be a viable option for maintaining the hospital and the access to care it provides. The reasons behind the mergers and acquisitions could not be ascertained from this study, but the results suggested that struggling rural hospitals were more likely to merge, perhaps as a way of avoiding closure. Those hospitals with greater staffing efficiency appeared to be more attractive targets. Despite concerns about community impact, we found no evidence of conversion of acute care hospitals into long-term care facilities following a merger, nor was there evidence that select services lines, such as obstetrics care, were closed. Results may help alleviate fears of job consolidation or elimination as there was no evidence of a change in full-time equivalent employees per bed. Although there was some evidence of a reduction in salary expense, this may have resulted from the consolidation of a few, senior level positions.

## METHODS

This study used financial, staffing, and utilization data for all rural hospitals from the Centers for Medicare and Medicaid Services' Healthcare Cost Report Information System over the period 2005 to 2012. Rural hospitals were defined as those located in a non-metropolitan county as defined by the Office of Management and Budget. Rural hospitals that merged during the study period were identified using data from Irving Levin Associates.<sup>9</sup> Hospitals engaged in multiple mergers during 2005 to 2012 (and thus had no single "merger" event to be compared pre/post), hospitals part of a hospital chain prior to 2005 (those that had merged prior to the study), and hospital-year observations with fewer than 360 days or more than 370 days in a Medicare cost-reporting period were eliminated from the sample. A logistic regression model was used to identify hospital financial and staffing characteristics that were associated with the likelihood of merging. A series of multivariate regression models were then used to determine if there were statistically significant changes in key hospital financial indicators following a merger as compared to non-merged rural hospitals. Hospital fixed effects were included to adjust for systematic differences between hospitals that did or did not engage in a merger. Critical Access Hospital status, acute average daily census, region, and number of discharges were included to control for hospital characteristics found to be associated with merger in previous studies.

## LIMITATIONS

Although we used the best available data, we may not have captured all rural hospital mergers; thus some merging hospitals could have been treated as "non-merger" in the comparisons. The focus of this study was the short-term effects; the longer-term implications of mergers for rural hospitals may differ. For example, health system strategies may change over time and in response to health care reform, leading to future closures of rural hospitals, further consolidation of services, or conversion of rural hospitals to outpatient, long-term care or other types of providers. Future studies should also consider the impact of merger on hospital quality of care.

## REFERENCES AND NOTES

1. When one company takes over another and clearly establishes itself as the new owner, the purchase is called an "acquisition". A "merger" happens when two firms agree to go forward as a single new company rather than remain separately owned and operated. The distinction between a "merger" and an "acquisition" has become increasingly blurred. Being bought out often carries negative connotations; therefore, by describing the deal as a merger, deal makers and top managers try to make the takeover more palatable. In this findings brief, "merger" is used to denote both mergers and acquisitions. Analytically, we consider hospitals and try to predict whether they become engaged in a merger.
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