Vol. XI, No. 2
February 2008

Changes in Health Care Financing & Organization (HCFO)

findings brief

key findings

- Much of the variation in hospital ownership effect on financial performance can be explained by a study's research focus and methodology
- The majority of studies reported no statistically significant difference between not-for-profit and for-profit hospitals in quality of care defined as mortality or other adverse events
- Studies that did show that ownership had an impact on quality of care were influenced by their institutional context, including differences across regions, markets, and time period

Robert Wood Johnson Foundation

Changes in Healthcare Financing and Organization is a national program of the Robert Wood Johnson Foundation administered by AcademyHealth.

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The Impact of Hospital Ownership: Looking for Consistency Among Conflicting Findings

Understanding whether profit status of hospitals affects performance and quality of care is important for many policy issues. Much of the current policy governing issues such as for-profit conversions, not-for-profit mergers, and not-for-profit special tax status assume that these hospitals differ from each other in policy-relevant ways. Some believe there are significant and important differences between not-for-profit and for-profit hospitals in terms of cost, quality, patient population, and/or charitable activities and community benefits. Others argue that the only difference between not-for-profit and for-profit hospitals is that one pays taxes and the other does not.

The theoretical advantage of various ownership features has attracted much attention, leading one to believe it is a potentially important factor for explaining variation in hospital performance. Yet, anyone setting out to assess the impact of an ownership-related policy change will find that the evidence base has mixed results on the variables that may be influenced by ownership, and it seems to be very difficult to make generalizations across all hospitals. The lack of clear evidence invites subjective and selective reference to studies that support the individual analysts' views.

A review of the evidence on the impact of hospital ownership status can provide important insights to policymakers and researchers as they continue to examine the most appropriate policy response to the various types of hospitals. In 2004, HCFO funded Karen Eggleston, Ph.D., at Stanford University to examine how hospital ownership affects health care performance. Specifically, Eggleston and her colleague Yu-Chu Shen, Ph.D., and others conducted a quantitative meta-analysis of the empirical literature to determine how variations in the study design influence study findings. They also synthesized the available information to determine whether they could make any tentative conclusions about the significance of ownership effects on financial outcomes and quality of care.

"The primary goal of our review is to understand what factors account for the wide variation in study results and whether there exists a consensus in the empirical literature to indicate that ownership matters," said Eggleston.

Eggleston and Shen's analysis shows that there was some consistency in findings. In particular, for-profit hospitals were found to have greater or no differences in revenue and profit margins compared to not-for-profit hospitals across studies. Studies did not consistently support the contention that for-profit hospitals operate more efficiently. Also, overall the researchers found that much of the variation in ownership's effect on financial performance can be explained by a study's research focus and methodology.[1]

As for quality of care, ownership appears to be systematically related to the institutional context in which the study is done. Unlike with financial outcomes, divergent results on quality depend less on differences in analytic methodologies and more on data sources, time periods, and regions covered.[2]

Methodology

A literature search identified observational studies from 1990-2004 that used multivariate analysis to examine nonfederal, general acute, short-stay U.S. hospitals of multiple ownership forms and one or more of the following outcomes: financial performance (cost, revenue, profit margin, and efficiency) and patient outcomes (mortality, complications, and other adverse outcomes). Of the selected studies, 31 examined quality of care and 40 examined financial performance. Eggleston and colleagues also tested for publication bias (the tendency to publish results that show a difference over those that do not) and did not find this to be a factor.

The researchers extracted and coded pertinent information on data, methodology, results, and patient, hospital, and market characteristics. In addition, they characterized the research focus of the financial outcomes studies and classified the studies into one of three methodological categories according to their levels of control for confounding factors.

Using the guidance of an expert panel, the researchers determined the analytic methods for standardizing, explaining, and quantifying differences among studies. Since studies examining hospital ownership usually have overlapping samples, timeframes, and data sources and thus are not independent, pooling results across studies would produce misleading results. The researchers demonstrate that pooled estimates of ownership effects differ according to the subset of studies included and the extent of overlap among hospitals analyzed in the underlying studies. Instead, the researchers used a random-effects meta-regression model to explain the variation in study results.

Key Findings

The purpose of the study was two-fold: to explain the variation in results and to determine whether and when there is consistency across studies to answer the question of whether ownership matters. Eggleston and Shen argue that this type of review is very important because any attempt to synthesize the literature must first understand why results differ.

The researchers found that much of the variation in ownership effect found in the literature can be explained by the research focus of the study, methodology, data source, time period, and/or region covered.

Financial Performance

The meta-regression analysis showed that the more a study controlled for confounding factors, i.e. unobserved effects, the less difference there was between for-profit and not-for-profit hospitals. In addition, sample size, application of log transformations, data source, and region of study also mattered.

This evaluation also revealed some consistency in findings across studies about how ownership matters, as well as some inconsistency. All revenue studies report either no difference between for-profit and not-for-profit hospitals or a positive effect, indicating that for-profits generally earn greater revenue. Studies found either no difference between for-profit and not-for-profit hospitals or that for-profit hospitals earn higher profit margins than not-for-profits do.

Efficiency and cost results were more mixed. Efficiency studies of a single or limited number of states found for-profits have no difference or are more efficient than not-for-profits, while the majority of national studies found for-profits to be less efficient. As for costs, studies showed results in both directions. Yet, the researchers point out that whether studies found that for-profits have lower or higher costs than not-for-profit hospitals is of little economic significance since in most studies ownership appears to play a much less important role in influencing hospital performance than other characteristics, even when it is a significant predictor.

"Overall, the dispersion and inconsistency of estimates about how hospital ownership status correlates with financial performance mirrors the larger question of what drives wide variations in performance across hospitals of the same type," states Eggleston.

Quality of Care

Eggleston and Shen found that the majority of studies reported no statistically significant difference between not-for-profit and for-profit hospitals in quality of care, defined as mortality or other adverse events. In contrast, many studies that compared not-for-profit hospitals to government hospitals found lower quality of care in government hospitals. For example, the 72 percent of studies using Medicare claims were associated with findings of significantly higher mortality and adverse event rates in government-owned hospitals compared to private not-for-profit hospitals.

Studies that did show ownership had an impact on quality of care were influenced by their institutional context, including differences across regions, markets, and time period. Two-thirds of studies that used hospital data representative of the United States were associated with a finding of higher mortality rates or adverse event rates in for-profit hospitals compared to private not-for-profit hospitals.

Eggleston and Shen suggest caution when drawing overall conclusions about ownership and quality, since not all discrepancies among studies of ownership could be explained by this analysis.

Conclusion

The range of findings and the disconnect between theory and evidence on the impact hospital ownership has on financial performance and quality of care hinders efforts to address concerns about whether for-profit and not-for-profit hospitals are fundamentally different. This study has provided several reasons for the variation in findings to help researchers and policymakers better interpret the literature.

This study also synthesized the existing body of work on ownership and found that there are a number of areas with general agreement and others that require more in-depth research. Overall, there are only a few areas that showed a significant difference based on ownership status, though even then the magnitude of that effect was often small.

The 'true' effect of ownership appears to depend on context. Eggleston and Shen conclude that a better understanding of organizational decision making and market-level dynamics across a range of economies would contribute to a better understanding of the institutional contexts in which ownership matters.

"Policymakers designing health care delivery policy should be aware of the underlying reasons for conflicting findings and they deserve a rigorous evidence base to inform their decisions," Eggleston says.

About the Author

Christal Stone is an associate with the HCFO initiative. Questions can be directed to hcfo@academyhealth.org.

Endnotes

1 Shen, Y. et al. "Hospital Ownership and Financial Performance: What Explains the Different Findings in the Empirical Literature?" *Inquiry*, Vol. 22, No. 1, Spring, 2007, pp. 41-68.

2 Eggleston, K. et al. "Hospital Ownership and Quality of Care: What Explains the Different Results in the Literature?" *Health Economics*, January 11, 2008, published online DOI: 10.1002/hec.1333.