



NIHCM FOUNDATION

expert voices

November 2009

ESSAYS ON TRENDS, INNOVATIVE IDEAS AND CUTTING-EDGE RESEARCH IN HEALTH CARE

Hospital Market Consolidation: Trends and Consequences

William B. Vogt, PhD, Senior Economist, RAND Corporation

The inpatient hospital market in the United States was transformed by a wave of hospital consolidation* during the 1990s, which witnessed more than 900 mergers and acquisitions. Many cities came to be dominated by two or three large hospital systems, and by 2003 almost 90 percent of Americans in metropolitan areas faced a “highly concentrated” hospital market, according to U.S. antitrust standards.

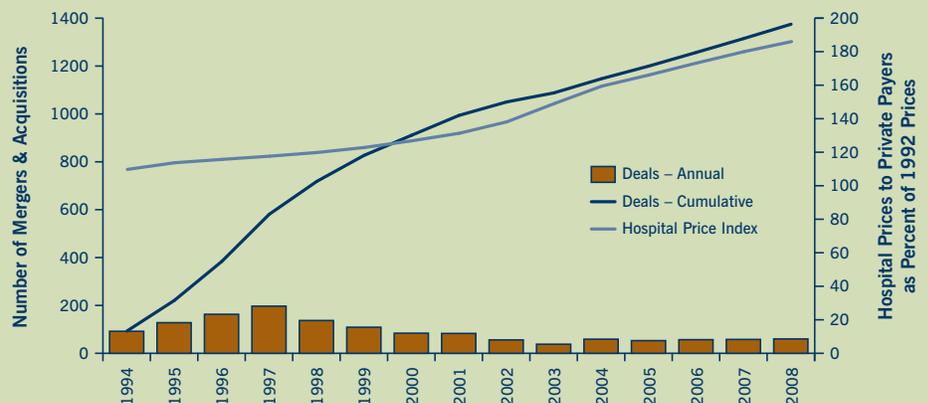
This wave of consolidation attracted the attention of U.S. antitrust enforcers, health insurers and the academic and health policy communities who were concerned about changes in market power and potential impacts on competition. The Federal Trade Commission (FTC) and Department of Justice (DOJ) held extensive hearings on health care competition in 2003 and issued a major report.¹ More recently, health reform discussions have sparked renewed interest in the competitiveness of health care markets, and the FTC and DOJ are revisiting their long-standing guidelines for horizontal mergers.

In this essay, I describe the hospital consolidation wave and synthesize the evidence on how consolidation affects the price, quality and cost of hospital care.²

A Closer Look at the Consolidation Wave

After the 1990s consolidation wave, prices and the pace of spending for hospital care rose markedly (Figure 1). Whereas hospital prices to private payers rose by a total of 20 percent nationally between 1994 and 2001, they increased by 42 percent between 2001 and 2008. Real per-capita spending on hospital care also spiked dramatically, moving from an average annual increase of only 0.4 percent between 1993 and 2000 to average increases of 3.8 percent per year between 2000 and 2007.³

Figure 1. Trends in Hospital Consolidation and Pricing, 1994-2008



Sources: Hospital deals are the number of publicly announced mergers and acquisitions, as reported by Irving Levine Associates, <http://www.levinassociates.com/>. Hospital price index is from the Bureau of Labor Statistic's Series 62211A6, "General Medical and Surgical Hospitals, All Payers Other than Medicare and Medicaid." <http://data.bls.gov/>

Hospital prices are notoriously difficult to measure because of variation in the types of patients treated and the sources of payment. Detailed data collected by California, however, make it possible to calculate prices specifically for private payers after adjusting extensively for patient case mix. A recent study using these data found that hospital prices to private payers in California fell from \$10,800 per discharge in 1992 to \$8,500 in 1999 – a more than 20 percent decline during this period of tightly managed care. After that, as hospitals consolidated and the impact of managed care waned, prices to private payers increased rapidly, nearly doubling to \$15,600 per discharge by 2006. These price increases were highest in markets with a small number of dominant hospitals.⁴

The hospital consolidation wave followed closely on the heels of the rapid rise of managed care and is widely believed to be a

response to financial pressures hospitals were feeling as both the demand and prices for inpatient services fell under managed care. The empirical literature studying the causal link between managed care and consolidations is, however, inconclusive.

Consolidation Raises Hospital Prices

A large academic literature examines the effects of consolidation on hospital prices. These studies generally employ one of three different research approaches. With only a few exceptions, results consistently demonstrate that hospital consolidations result in higher prices for hospital services. The magnitude of price increase varies by methodology and by the characteristics of the markets under study, ranging from low-end estimates of 5 percent price hikes to increases of more than 50 percent.

* In a **facilities consolidation**, two hospitals come to be owned by the same firm and merge their hospital licenses, effectively becoming one hospital. In an **ownership or system expansion consolidation**, hospitals come under the ownership of the same hospital system but maintain separate licenses and operations. Finally, in a **network expansion**, hospitals agree to cooperate in some functions without joining ownership. Most interest has focused on the first two types of consolidation, and I follow that practice.

In the event study technique, hospital prices from before and after a merger are compared. Ideally comparison data from the same period are included for “control” hospitals not experiencing a merger. On balance, findings from the large body of research using this approach show that hospital consolidation results in price increases of 10 to 20 percent. Price effects tend to be larger in studies using more recent data and when consolidating hospitals are located near one another.

Another popular methodology is the structure-conduct-performance design, which compares hospital prices in markets with few competitors and those with many. To measure the potential effect of a merger that causes a market to move from, say, five hospital systems to four, one compares prices in markets of these sizes (adjusting for differences in costs, demand, etc). The studies in this vein that employ the strongest methods find, on average, that a consolidation from five to four hospital systems raises prices by around 5 percent. However, due to difficulties in defining markets, measuring prices, and controlling for important differences between markets, these studies probably under-estimate merger effects.

The newest method of assessing merger effects is the simulation study. Researchers first use data on hospital markets to estimate a model of hospital competition, then simulate the price effects of hypothetical hospital mergers. While much more data intensive and computationally difficult, these studies can better account for differences in the geographic distribution of patients and hospitals, payer mix, patient case mix, and hospital costs. Representative findings from this literature include predictions of price increases of more than 5 to 10 percent from hospital mergers in Los Angeles and San Diego — both areas with large numbers of hospitals and believed to be fairly competitive, and a prediction that a change from three to two hospitals in San Luis Obispo would increase hospital prices by more than 50 percent.

Evidence on Quality Impact is Mixed

Hospital consolidation could affect quality in several ways. If hospitals compete on quality (say via referral effects mediated by physician knowledge of hospital quality), consolidation might reduce quality by decreasing competition. On the other hand, if consolidation increases prices and margins, then it also increases the incentive to compete on quality. Finally, hospital consolidation may achieve higher procedure volume per hospital, and

many studies have shown that higher volumes are associated with better outcomes.

Most of the growing body of research on hospital consolidation and quality uses either the structure-conduct-performance or event study paradigms described above. Quality is typically measured using case mix-adjusted mortality for particular procedures, the AHRQ patient safety indicators, in-hospital complications, or adverse events after surgery.

Perhaps unsurprisingly given the ambiguous predictions, the research here is mixed. Studies have found that consolidation has no effect on quality, that it improves quality and that it reduces quality. On balance, the studies performed on the Medicare population and those with the strongest methods tend to find that hospital consolidation lowers quality modestly.

Small Reductions in Hospital Costs

Consolidating hospitals could achieve cost savings by realizing scale economies, reducing excess capacity, eliminating wasteful duplication, and curtailing excessive investments in new services and equipment. An extensive literature has used cross-sectional comparisons of hospitals of varying sizes to investigate whether larger hospitals achieve lower costs per patient after adjusting for case mix. Results have been mixed. Older studies suggest that hospitals see their average costs fall as size increases up to about 200 beds, while some, but not all, recent studies find scale economies for even larger hospitals. Event studies, which compare costs or rates of cost growth before and after consolidation, have yielded more uniform results but have often been limited by their inability to find appropriate comparison hospitals. Overall, these studies suggest that hospitals involved in consolidation see modest cost savings or slower cost growth afterward. One of the best such studies also demonstrated that savings are enhanced if the hospitals consolidate their facilities and services under a single license.

Lessons for the Future

The weight of the empirical evidence indicates that hospital prices generally increase following consolidation in the hospital market, sometimes by very significant amounts. Although merging hospitals can achieve savings in the cost of producing their services, most evidence indicates that these savings are modest and are not passed on to payers and consumers in the form of lower prices. While each hospital merger is unique, on balance the evidence suggests that hospital consolidation often enhances hos-

pitals’ negotiating positions with insurers, enabling them to raise prices. Furthermore, although the evidence is far from conclusive, it is hard to demonstrate that consolidation has a consistently positive impact on quality of care. In the Medicare market, hospital consolidation seems to lead to lower quality, at least for easily measured quality indicators.

Despite the massive wave of hospital consolidation in the 1990s, most markets in the U.S. still have several hospitals, so competition has not been extinguished. Merger and acquisition activity in many industries occurs in waves, reflecting changes in technology, demand, regulation and capital market liquidity. Given the likelihood of future regulatory and payment changes as part of health reform, coupled with the constant march of health care technology, another hospital merger wave at some point seems likely. Indeed, recent data show an uptick in the number of hospitals involved in mergers since 2003.⁵

The government’s future approach to antitrust policy in health care markets is at this time unknown. The FTC and DOJ are now soliciting public comment in advance of upcoming meetings to discuss revisions to their horizontal merger guidelines. Their wide ranging inquiries cover topics such as whether merging firms will be able to engage in anti-competitive behavior unilaterally, the impact of having large buyers in the market, and the competitive effects in markets where prices are negotiated.⁶ Clearly this on-going discussion bears watching. ■

- 1 *Improving Health Care: A Dose of Competition*, Federal Trade Commission and the U.S. Department of Justice. Washington, 2004.
- 2 Unless otherwise cited, the findings summarized in this essay are drawn from three comprehensive surveys of the literature: Bazzoli GJ, LoSasso A, Arnould R and Shalowitz M. “Hospital Reorganization and Restructuring Achieved through Merger.” *Health Care Management Review*, 27(1):7-20, 2002; Gaynor M. “Competition and Quality in Health Care Markets,” *Foundations and Trends in Microeconomics*, 2(6):441-508, 2006; and Vogt WB and Town R. “How has hospital consolidation affected the price and quality of hospital care?” *The Synthesis Project*, 9, Robert Wood Johnson Foundation, Princeton 2006.
- 3 CMS National Health Accounts, http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp, and author’s calculations.
- 4 Akosa Antwi Y, Gaynor M and Vogt WB “A bargain at twice the price? California hospital prices in the new millennium,” *Forum for Health Economics & Policy*, 12(1). <http://www.bepress.com/fhep/12/1/3>
- 5 Gaynor M. “Provider Integration and Impacts on Competition,” Presentation to the Medicare Payment Advisory Commission, October 9, 2009.
- 6 “Horizontal Merger Guidelines: Questions for Public Comment,” Federal Trade Commission and the U.S. Department of Justice, September 22, 2009. <http://www.ftc.gov/bc/workshops/hmg/hmg-questions.pdf>