

# Viewing Health Care Consolidation through the Lens of the Economics of Strategy

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In January 2009, the Changes in Health Care Financing and Organization (HCFO) Initiative convened an invitational work group meeting as part of its program, 2009 Policy Reform: Implications of the Supply and Organization of the Delivery System on Health Care Reform, sponsored by the Robert Wood Johnson Foundation. The work group, co-chaired by Robert Berenson, M.D., and Harold Luft, Ph.D., commissioned several papers, including this one by David Dranove, Ph.D. Access the other commissioned briefs and reports at [www.hcfo.org/publications](http://www.hcfo.org/publications).

For the past three decades, health care providers have hoped that consolidation would improve their competitive position. During the 1970s, for-profit systems acquired hundreds of mostly smaller, rural hospitals to help them cope with increasing regulatory complexity. Beginning in the 1980s and continuing almost unabated since then, urban hospitals have consolidated with erstwhile competitors in their local markets to improve their efficiency and enhance bargaining power. Not to be outdone, physicians have also partnered in local markets, with many single-specialty groups seeming to dominate the affected markets. Providers have also consolidated vertically. During the 1980s, hospitals and physicians formed physician-hospital organizations (PHO) to accept capitation from HMOs. In the 1990s, more fully integrated delivery systems (IDS) supplanted PHOs. While many IDSs still operate successfully, few industry observers discuss IDSs with the same enthusiasm that they did a decade ago.

This paper examines the peaks and valleys of provider integration through the lens of the management field known as the “economics of strategy.” What emerges from this analysis is a not always flattering picture of health care management decision-making. While some horizontal combinations have created value for patients and providers, new research methods reveal how other combinations have enhanced market power. At the same time, many vertical combinations appear to be motivated by little more than providers’ desire to cope with a changing environment, with little regard for underlying economic principles. Yet, integration can create value for owners and consumers alike if providers pursue integration strategies for the right reasons and at the right time.<sup>1</sup> Given today’s climate in which electronic medical records support quality reporting and disease management, that time might have arrived.

## What Is the Economics of Strategy?

Before describing and assessing integration strategies, a brief introduction to the economics of strategy is in order.<sup>2</sup> One of the central themes of the economics of strategy is that firms will succeed in the long run only by creating value for consumers. Firms that profit by exploiting market imperfections usually sow the seeds of their own destruction as entrants join the fray and trading partners seek their share of the spoils. For example, after the enactment of Medicare and Medicaid, hospitals enjoyed a long period of prosperity by largely avoiding head-to-head price competition. Buyers reacted by reining in prices, first when states regulated hospital prices and later when private insurers turned to selective contracting. At the same time, physicians opened outpatient surgery facilities and specialty hospitals

Another central theme is that antitrust laws are most potent when competition is least potent. Local hospital and physician consolidation has enabled providers to prosper, but antitrust enforcement is intensifying amid mounting evidence of market power abuses.

The economics of strategy also preaches the importance of incentives in agency relationships in the vertical chain. It is not merely that incentives matter but that firms must have information systems in place to consistently reward agents who take the desired actions. Supporters of pay-for-performance schemes understand this point all too well. Selection is also important—new incentive systems invariably attract those workers with the most to gain. Too often, physicians who sold their practices to physician practice management firms and hospitals in exchange for salaried positions were eager to reduce their workload. A related theme is the inherent advantage of independent firms. Integrated firms



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struggle to implement compensation systems that closely tie pay to performance, often protect poorly performing divisions that would be weeded out in a competitive market, and struggle to allocate internal capital efficiently among competing divisions and workers. Smaller, focused firms are more likely to operate with the expertise and internal management controls lacking in vertically integrated firms.

Integration can achieve certain goals unattainable through arm's-length transactions (i.e., contracts). The next section considers some of the most commonly stated rationales for integration.

### Rationales for Integration

While the economics of strategy is concerned with long-run profitability, managers often focus on short-term financial performance, especially when owners cannot include stocks and stock options as part of compensation packages. In fact, the focus on short-term performance may explain why some hospital managers pursue integration strategies that bring in financial resources in the near term yet fail to provide long-run benefits. Nonetheless, some managers pursue integration as a long-run solution to provider woes, and it is in consideration of the long run that the economics of strategy offers the most potent lessons. Here are some potential long-run benefits of integration:

*Economies of scale and scope.* Firm mergers almost always invoke the dual mantras of scale and scope economies. (Scale refers to increasing the size of the organization; scope refers to expanding the breadth of activities undertaken by the organization.) Mergers do not always yield theorized economies, however. Scale and scope economies are greatest when production is capital-intensive and mergers can help spread fixed costs. Given that labor costs are divisible, the merger of labor-intensive processes generally does not yield substantial scale economies. Learning economies are closely related to economies of scale. Despite abundant evidence of learning by doing in health care, consolida-

tion by itself does not necessarily facilitate learning.

*Market power.* Merger opponents often argue that economies of scale and scope are minimal and that mergers mainly provide a means to enhance market power. While horizontal mergers are generally recognized as enhancing market power, antitrust economists have identified a variety of ways in which vertical integration can enhance market power. Cuellar and Gertler (2006) developed a theoretical model in which physician/hospital integration can enhance bargaining power in managed care settings, but the empirical evidence is mixed.<sup>3</sup>

*The “market for corporate control.”* As first described by Manne (1965), talented managers can leverage their expertise by acquiring underperforming firms. Acquirers sometimes suffer from “hubris,” however, and overestimate their ability to translate managerial success from their own firm to the target. A critical assumption justifying consolidation is that the owners of the target are somehow unable or unwilling to replace a poorly performing manager without selling the firm outright.

*Coordination in the vertical chain.* Milgrom and Roberts (1992) coined the term “design attributes” to describe those aspects of a production process that must “fit together” just right so that quality and/or cost will not suffer. For example, the launch of a campaign to sell a new car must coincide with increased production and distribution. The sunroof of the car must fit precisely into the roof opening. The sequence of steps in the treatment of a complex disease may also be a design attribute; if a test is delayed or a device is unavailable, the result for the patient could be catastrophic. It is not enough to identify the steps that require coordination. An organization must have information and incentive systems that facilitate coordinated action; otherwise, integration cannot “outcoordinate” the market.

*Promotion of relationship-specific investments.* A relationship-specific asset is an investment made to support a given transaction and may not be redeployed to another transaction

without some sacrifice in its productivity. Examples include co-location of a physician office building next to a hospital (the value of the physicians' offices falls if physicians do not have admitting privileges at the nearby hospital) and electronic medical records (whose interoperability depends on the availability and use of compatible software).

With these rationales for integration laid out, it is time to cast a critical eye on health care provider consolidation.

### History of Horizontal Integration and Strategic Rationales

The first wave of horizontal integration occurred in the 1970s when for-profit chains such as Hospital Corporation of America and Humana acquired small, mostly rural hospitals. These were classic “market for corporate control” acquisitions. Launched in 1966, Medicare and Medicaid imposed a host of new and complicated rules on hospitals. The National Health Planning and Resources Development Act of 1974 added to the complexity. Hospitals required skilled accountants to cope with cost-based reimbursement and nuanced political skills to satisfy Certificate-of-Need criteria. For-profit systems brought much-needed management expertise to their acquirees but also offered management services to independent hospitals under contract. The first merger wave was necessarily limited because large urban hospitals could afford to employ their own management experts. Over time, independent firms emerged to offer management expertise in accounting, billing, and coding to even the smallest hospitals that wished to remain independent. By the 1980s, most for-profit systems had over-expanded and divested some or all of their holdings.

The second wave of horizontal integration began as the first wave ebbed. Whether responding to the competitive forces of selective contracting or the need for efficiency created by the Medicare Prospective Payment System, hospitals began entering into partnerships with local competitors.

In the ensuing two decades, local hospital markets have become increasingly consolidated. Hospitals claim that mergers bring

much-needed efficiencies and prevent cost-increasing medical arms' races. Indeed, anecdotal examples point to mergers that have helped rationalize local health care delivery. During the 1990s, Barnes Hospital, Jewish Hospital, and Christian Health Services in Missouri combined to form the BJC Health System. With the Washington University School of Medicine acting as a centralizing force, BJC centralized many tertiary services at Barnes Jewish Hospital, including the Washington University Heart Care Institute and a renowned joint preservation and reconstruction program. Other mergers, such as the 1997 combination of Stanford University Medical Center and UC San Francisco Hospital, failed partly because powerful medical staffs could not reach an agreement on consolidated clinical services.

The occasional success stories did little to pacify skeptics who believed that successful selective contracting required local competition. Often at the behest of payers, the Federal Trade Commission (FTC) and the U.S. Department of Justice (DoJ) challenged several hospital mergers during the 1990s. The antitrust agencies lost nearly every case, even when the mergers appeared to create local monopolies. Most challenges turned on the issue of geographic market definition. Defendant hospitals invariably produced evidence that a non-trivial fraction (greater than 10 percent) of patients traveled outside the local community for care. Invoking a study of coal markets by Elzinga and Hogarty (1973), the hospitals argued that high "outflows" of patients implied that the merging hospitals faced substantial competition from hospitals outside the local community.<sup>4</sup>

Many economists watched the court proceedings in disbelief. It made little sense to take a method developed to study competition in a homogeneous goods market and apply it to hospital markets characterized by differentiation and selective contracting, especially when Werden (1981) had challenged the theoretical connection between product flows and the extent of competition in homogeneous good markets.

Two recent studies review the available evidence on hospital competition and confirm economists' skepticism. According to a 2004 study by the FTC and DoJ:

Most studies of the relationship between competition and hospital prices have found that high hospital concentration (i.e., the market is dominated by one or two hospitals or hospital systems) is associated with increased prices, regard-less of whether the hospitals are for-profit or nonprofit.

Similarly, a 2006 Robert Wood Johnson Foundation Synthesis Project report by Vogt and Town states:

Research suggests that hospital consolidation in the 1990s raised prices by at least five percent and likely by significantly more.

Vogt and Town also review the evidence on efficiencies, finding:

The balance of the evidence indicates that hospital consolidation produces some cost savings and these cost savings can be significant when hospitals consolidate their services more fully.

The evidence suggests that the anecdotal success stories are the exception. More often than not, systems do not consolidate many services, and any efficiencies are more than offset by price increases facilitated by market power.

Kenneth Elzinga testified in the recent Evanston Northwestern Healthcare merger case that Elzinga and Hogarty (EH) analysis is not appropriate for assessing hospital competition. The apparent demise of EH analysis would have created a vacuum in the economic analysis of hospital mergers were it not for ongoing economic research. Motivated by empirical studies of differentiated goods markets, industrial organization economists have developed new models for studying competition among health care providers. Town and Vistnes (2001) and Capps et al. (2003) emphasize

the importance of selective contracting and network formation. In addition, the FTC introduced the related concept of two-stage hospital competition in its case against Evanston Northwestern. In the first stage, insurers assemble networks of hospitals and hospital pricing is largely determined. In the second stage, patients choose their hospital. In at least one recent merger case, the FTC applied the two-stage method for estimating the impacts of hospital mergers on pricing as detailed by Capps et al.<sup>5</sup> The recently developed methods usually generate smaller geo-graphic markets than those associated with EH analysis. If the courts accept the newer methods, many merging hospitals will find themselves under the antitrust microscope.

## History of Vertical Integration and Strategic Rationales

The 1980s and 1990s saw two significant waves of vertical integration. In the 1980s, PHOs brought hospitals and their medical staffs together in joint ventures for the purpose of securing HMO contracts. The author worked as a consultant to the Alexian Brothers Hospital PHO, one of the first in the Chicago area, and discovered that appropriate management information systems were essential to successful vertical integration. Like most PHOs, Alexian attempted to integrate the hospital, its staff specialists, and independent primary care physicians (PCP) into a unified business entity. The PHO would succeed if physicians held the line on medical spending, which would require a change in physician behaviors.

Alexian's management was particularly concerned with the high cost of surgical stays. It could not capitate surgeons because the needed risk models did not exist.<sup>6</sup> Instead, Alexian had to rely on PCPs to choose the most cost-effective surgeons—no small task. Alexian Brothers could compute the costs of each surgery but could not adequately risk-adjust the data to determine whether its high-cost surgeons were inefficient or treating sicker patients. In addition, it could not track costs of care outside the hospital. Surgeons adamantly opposed the release of cost data to the PCPs, fearing that referrals would be

based on potentially misleading economic indicators. In time, Alexian abandoned its attempts to change physician behavior. It was not alone. PHO leaders from across Chicago agreed that a combination of poor information systems and resistance by medical staff stymied efforts to change physician behavior. They had learned in the field what the economics of strategy predicts from theory: incentive systems will not work in the absence of reasonably accurate performance measures.

By the mid-1990s, PHOs were being replaced by more fully IDSs that combined several elements of the health care value chain under a single organization umbrella. The typical IDS owned several hospitals and dozens of PCP practices in its local market. It might also have owned ancillary providers and sold capitated global risk products.

It is impossible to overstate the strategic importance of the IDS movement in the 1990s. As reported in the *Integrated Health Systems Digest Report*, only 16 percent of hospitals were part of an IDS in 1994.<sup>7</sup> By 1998, nearly half of all hospitals were part of an IDS. In 1995, noted policy analyst Russell Coile wrote, “American health care is being restructured, reengineered, and reinvented in a new systems model—the integrated delivery network.”<sup>8</sup> The volume of media coverage also reflected the IDS trend. In 1990, *Modern Healthcare* published fewer than one article per month that mentioned “integrated delivery.” By the mid-1990s, more than two articles appeared each week.<sup>9</sup>

In trying to explain the IDS movement, industry experts opined that financial pressures were forcing the industry to undergo a process of *evolution*, in which development of the IDS was a critical step. Medical sociologist Steven Shortell described four stages of evolution for health care markets:<sup>10</sup>

- Stage 1. Proliferation of individual hospitals and physicians

- Stage 2. Emergence of hospital systems
- Stage 3. Emergence of IDS
- Stage 4. Development of community health care management systems<sup>11</sup>

Shortell believed that “most, if not all communities throughout the United States” were evolving toward stages 2 and 3 and that, once a community reached stage 2, the transition to stage 3 was rapid.<sup>12</sup> But IDS proponents overreached. By the early 2000s, amid startling losses, hospitals were selling off physician practices and eliminating their risk products.

The economics of strategy suggests that the IDS movement of the 1990s was largely doomed to fail.<sup>13</sup> Part of the explanation for the movement’s failure lay in one of the key elements of the IDS strategy—the acquisition of physician practices. One of the cardinal lessons from the economics of strategy is that integration can exacerbate incentive and selection problems. When a hospital acquires a physician practice, the affected physician undergoes a change in status from an independent entrepreneur and residual claimant of all practice revenues to an employee on a fixed salary with a bonus that, at best, is weakly tied to productivity. Physician effort is bound to decrease. Indeed, one study found that physician productivity declined by 15 to 20 percent after hospitals acquired their practices.<sup>14</sup>

Hospitals acquiring physician practices also exposed themselves to adverse selection. If physicians differ by their desire to work, then physicians who do not intend to continue working hard are likely to sell their practices.

Other flaws marked the practice acquisition strategy. For example, in the case of several hospitals in a market, the competition to acquire practices drives up acquisition prices to roughly equal the expected profits from acquisition, thereby transferring all rents to physicians. Finally, it is likely that each

hospital would acquire a share of practices, effectively Balkanizing the market and leaving each hospital with a roughly equal share of referrals and making practice acquisition a Prisoner’s Dilemma—hardly a recipe for financial success.

Another illustration of how the economics of strategy sheds light on integration strategies involves the move by many IDSs to offer global capitation. IDSs contracted with insurers to provide all care for their subscribers for approximately 80 percent of the total of collected premiums. This arrangement effectively cast IDSs as insurers forced to outsource administrative functions, including medical underwriting. Traditional “insurers” involved only in administrative functions, however, had no incentive to take on medical underwriting. The IDSs failed to recognize that medical underwriting capability was now their responsibility; unfortunately, most had no such capability. Amid mounting losses, hospitals that had once scrambled to embrace global capitation were just as eager to abandon the strategy. Again, the problem seemed obvious to practitioners of the economics of strategy, but was invisible to health care managers until billions of dollars had been wasted.

## Can Integration Work?

Economics is not called the “dismal science” for nothing. Too often, economists throw cold water on new business ideas, but the economics of strategy does identify circumstances under which vertical integration can be highly productive. In particular, careful analysis suggests that integration can outperform market-based transactions when (1) contracts are incomplete and (2) production involves coordination and/or asset specificity. Each of these topics is subtle and largely beyond the scope of this discussion. Interested readers should consult Milgrom and Roberts (1992) or Besanko et al. (2009).

Before integration, any manager must ask, What can I accomplish through integration that I cannot accomplish through contract? For example, a hospital executive might

ask how acquisition of physician practices would facilitate changes in physician behavior (and reductions in costs) that could not be achieved by insurers. If both the hospital and the insurer rely on financial incentives, then the insurer, with experience and access to considerable data, might be more effective, making integration counterproductive (especially in light of the incentive and selection issues described above).

Integration makes sense only if the firm's governance mechanism facilitates conduct that cannot be achieved through arm's-length market transactions. To continue the example, the hospital executive might be able to reward staff physicians on the basis of subjective indicators of quality. An independent insurer, however, would likely be unable to duplicate such rewards through contract, in which quality measures would have to be clearly delineated and easy to measure. Given that the insurer's contract with providers does not capture all relevant measures of quality, it is said to be incomplete. More generally, contractual incompleteness arises when contracts fail to specify or adequately measure all relevant expectations and rewards. Contracts are invariably incomplete because of a variety of factors, including cognitive limitations and limited asymmetric information.

Contractual incompleteness is often a powerful motivation for integration, as the informal reward structures, culture, and politics of the organization can often achieve what incomplete contracts cannot. But, if contractual incompleteness is a justification for integration, then the integrated firm had better accomplish what the market cannot. To continue with the example, if the hospital executive implements internal quality metrics that replicate those used by third parties, then integration will reap no benefits.

Contractual incompleteness is especially important when production involves coordination and investments in specific assets. Coordination is required when steps in the production process must fit together, either physically or in time. Disease management

is a good example in that each step in the delivery of care is carefully sequenced. Electronic medical records, which must achieve a software fit, offers another good example. If it is difficult to ensure coordination through contract, strong governance may achieve what markets cannot.

An individual or worker makes a relationship-specific investment when the value of that investment is contingent on transacting with a specific trading partner. For example, a hospital uses the EPIC electronic health records technology, and a physician who practices at that hospital is considering the purchase of an electronic health records technology. That doctor will clearly gain a lot of value by also investing in EPIC. However, if that doctor chooses to practice elsewhere, the value of the EPIC system will fall unless the new hospital also uses EPIC. Because the doctor who purchases EPIC is more or less "locked in" to his or her current hospital, he or she might think twice about making the purchase. In an IDS, on the other hand, central management could purchase EPIC systems for the hospital and its staff.

These examples demonstrate that vertical integration can succeed in areas where arm's length contracting might not. However, all three examples—quality evaluation, disease management, and electronic health records—represent relatively new opportunities for hospitals.

### Lessons Learned

Under constant financial pressure, health care providers have often turned to consolidation. Despite its popular appeal, horizontal integration and especially vertical integration have largely failed to deliver on the promise of cost containment. Local provider mergers have sometimes enhanced market power, but evolving anti-trust policy looms as a threat. Financial pressures are only intensifying. If the past is the prologue, health care managers will again look for ways to change the status quo. Too often, that "something" will be integration.

Integration has never been and will never be a panacea for health providers. Integration can create value, provided that it solves concrete problems, such as coordination, that cannot be resolved through arm's length transactions. Integration can also make things worse, especially when firms lack the necessary information and incentive systems for proper internal controls. Even the development of electronic health records represents a two-edged sword for integration. As currently implemented, integration facilitates coordination and investments in compatible information systems. If and when standards emerge, electronic health records will "talk" with each other such that independent providers may be able to coordinate as effectively as integrated systems.

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### References

- Besanko, D., Dranove, D., Shanley, M., and S. Schaefer. 2009. *Economics of Strategy*. 5th Ed. New York: Wiley.
- Burns, L.R., and M.V. Pauly. "Integrated Delivery Networks: A Detour on the Road to Integrated Health Care?" *Health Affairs*, Vol. 21, No. 4, July/August 2002, pp. 128-43.
- Capps, C., Dranove, D., and M. Satterthwaite. "Competition and Market Power in Option Demand Markets," *RAND Journal of Economics*, Vol. 34, No. 4, 2003, pp. 737-63.
- Ciliberto, F., and D. Dranove. "The Effect of Physician-Hospital Affiliations on Hospital Prices in California," *Journal of Health Economics*, Vol. 25, No. 1, 2006, pp. 25-38.
- Coile, R. "Integrated Delivery Networks," *Health Trends*, Vol. 7, No. 12, 1995, p.1.
- Cuellar, A., and P. Gertler. "Strategic Interaction of Hospitals and Physicians," *Journal of Health Economics*, Vol. 25, No. 1, 2006, pp. 1-28.

Elzinga, K. and T. Hogarty. “The Problem of Geographic Market Delineation in Antimerger Suits.” *Antitrust Bulletin* 18, 1973, pp. 45-81.

Figliuolo, M.L., Mango, P., and D. McCormick. “Hospital, Heal Thyself,” *The McKinsey Quarterly*, February 2000.

Hoechst Marion Roussel, various years, *Integrated Health Systems Digest*.

Manne, H. “Mergers and the Market for Corporate Control,” *Journal of Political Economy*, Vol. 73, No. 2, 1965, pp: 110-20.

Milgrom, P. and J. Roberts. 1992. *Economics, Organization, and Management*. New York: Prentice Hall.

Saloner, G., Shepard, A., and J. Podolny. 2005. *Strategic Management*. New York: Wiley.

Shortell, S. et al. 1996. *Remaking Health Care in America*. San Francisco: Jossey Bass.

U.S. Department of Justice and Federal Trade Commission, “Improving Healthcare: A Dose of Competition,” *Report*, July 2004.

Town, R. and G. Vistnes. “Hospital Competition in HMO Networks,” *Journal of Health Economics*, Vol. 20, No. 5, pp: 733-53.

Town, R. and W. Vogt. “How Has Hospital Consolidation Affected the Price and Quality of Hospital Care?” Robert Wood Johnson Foundation (RWJF) Synthesis Project, Issue 9, February 2006.

Werden, G. “The Use and Misuse of Shipments Data in Defining Geographic Markets,” *The Antitrust Bulletin* 26, 1981, pp. 719–37.

## Endnotes

- 1 In the economics of strategy, value consists of profits (the difference between price and cost) and consumer surplus (the difference between consumer willingness to pay and price). Value creation requires increasing what consumers are willing to pay and/or becoming more efficient in production.
- 2 The field has evolved mainly from industrial organization and the economics of organizations. Some seminal texts include Milgrom and Roberts. *Economics, Organization, and Management*; Besanko, Dranove, Shanley, and Schaefer, *Economics of Strategy*; and Saloner, Shepard, and Podolny, *Strategic Management*.

3 See Ciliberto and Dranove (2006) for empirical evidence that contradicts the evidence in Cuellar and Gertler (2006).

4 In a variant of this defense, economists showed that a small amount of travel created a “critical loss” of patients that would make it unprofitable for the merging hospitals to raise prices.

5 Source: Personal communication with FTC expert economist.

6 A key issue was assigning capitated fees to patients not referred to specialists.

7 Hoescht Marion Roussel (various years).

8 Coile, R. “Integrated Delivery Networks,” *Health Trends*, Vol. 7, No. 12, 1995, p. 1.

9 Data based on Lexis-Nexus full text search for the term “integrated delivery.”

10 For example, see Shortell, S. et al. (1996).

11 Shortell does not offer a concise definition of this type of system. One feature that distinguishes this system from an IDS is that the community health care management system is supposed to take responsibility for the health of an entire community and link available community resources through information systems, outcomes research, and other endeavors.

12 Shortell, *ibid*.

13 Burns and Pauly (2002) provide a rigorous analysis of the economics of IDSs and make similar arguments to those herein.

14 Michael L. Figliuolo et al., (2000).