

Trends In Hospital Consolidation: The Formation Of Local Systems

Both for-profit and nonprofit hospitals are forming locally concentrated systems, but the effect on consumers is not yet known.

by **Alison Evans Cuellar and Paul J. Gertler**

ABSTRACT: During the past decade the hospital industry has made profound organizational changes, including the extensive consolidation of hospitals through merger and the formation of hospital systems. Although the rate of hospital system acquisitions may be slowing, the local presence of hospital systems is growing. Locally concentrated systems have been formed by both for-profit and nonprofit hospitals. Researchers have tended to ignore acquisitions or have portrayed system formation as primarily an issue of hospital ownership conversion, thereby focusing on the expansion of national, for-profit systems. This has left a large gap in policymakers' understanding of how locally concentrated systems may affect patient care and competition.

THE PAST DECADE HAS SEEN PROFOUND CHANGES in how the hospital industry organizes itself. Standing out among these changes has been the extensive consolidation of hospitals through merger and the rising importance of hospital systems.¹ Researchers either have tended to focus on the effects of merger transactions, ignoring system acquisitions, or they have portrayed system formation as primarily an issue of hospital ownership conversion, thereby focusing on the expansion of national, for-profit systems.² Relatively little attention has been paid to the rising local presence of hospital systems and how this could affect consumers and health care markets.³

Hospital consolidation can occur through either merger or acquisition. Mergers—transactions in which separate hospitals come together under a shared license—typically occur among hospitals located near one another. Acquisitions occur when joining hospitals retain their licenses but are owned by a common governing body; they can occur among hospitals that are near or far away.

Most of what we know about hospital consolidation comes from studies of hospital mergers. However, mergers and acquisitions might reflect very different hos-

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hospital strategies and, consequently, could have different effects on efficiency. Furthermore, the implications for market power and bargaining with health plans also could depend on the differences in geographic coverage. Policymakers need answers to a number of questions about the formation of hospital systems. Do hospitals behave differently when they join systems? What happens to costs, prices, quality, patient safety, and charity care? Does it matter if hospitals belong to non-profit or for-profit systems? What are the differences between locally concentrated and geographically dispersed systems?

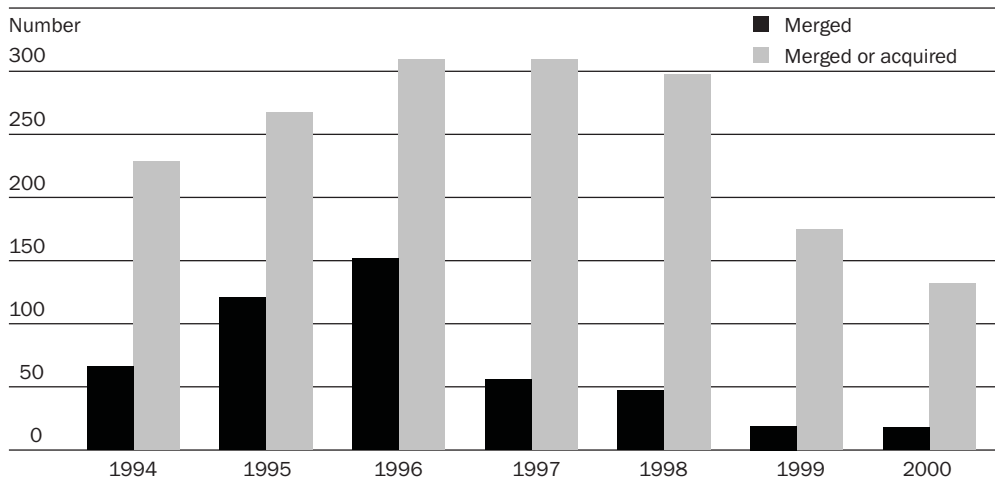
Ultimately, the older merger literature does not help us understand if the formation of hospital systems, whether among locally concentrated or geographically dispersed hospitals, harms or benefits consumers. More recent studies, while few in number, suggest that locally concentrated systems could be cause for policy concern. These studies suggest that hospital prices have risen as a result of system formation, which raises concerns about potential anticompetitive behavior.

Before engaging in serious consideration of the pros and cons of hospital consolidation, one must look closely at the nature of system formation and where it is occurring. This paper examines the formation of U.S. hospital systems in the late 1990s and highlights recent research that addresses this topic.

Trends In Hospital Consolidation

The number of mergers peaked in 1996 at 152 mergers and fell to 18 in 2000 (Exhibit 1). Consolidations from hospital acquisitions by systems far outnumbered hospital mergers. The number of mergers and acquisitions combined peaked at 310 in 1997 and remained relatively high at 132 in 2000.

EXHIBIT 1
Number Of U.S. Hospitals Involved In A Merger Or Acquisition, 1994–2000



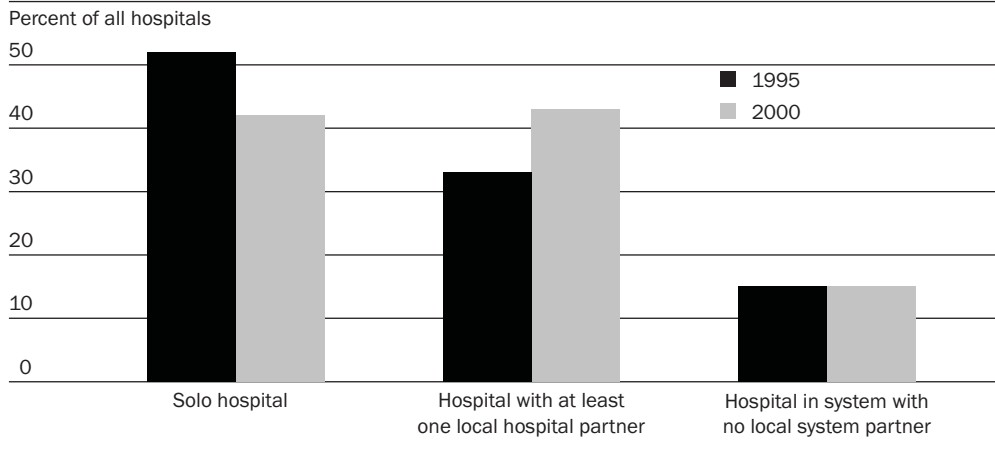
SOURCES: American Hospital Association Annual Survey of Hospitals, 1995–2000; and Irving Levin Associates, “The Health Care Acquisition Report,” 1999 and 2000 announced transactions.

Although the public impression may be one of growing national hospital chains, hospital chain formation is as much a story of small, local chains as of large, national ones. In fact, on a national scale, even the largest system, Columbia/HCA (now HCA—The Healthcare Company), is relatively small and accounted for only 6 percent of all inpatient admissions nationally in 1995. HCA's share of admissions declined slightly to 4.6 percent by 2000. Tenet, the second-largest system, had 1.7 percent of inpatient admissions in 1995 and 2.9 percent in 2000.

Many of the potential benefits of hospital systems are more likely to accrue within local markets. Although operational and managerial benefits may arise when hospitals join geographically dispersed system, hospitals can rationalize service delivery and coordinate care more effectively within a local area. Consequently, the more interesting phenomenon is not how large national systems have become, but rather how system formation has affected local markets.

The number of “solo” hospitals—that is, hospitals that did not belong to a system, has declined since 1995.⁴ These changes are most prominent among private for-profit and nonprofit hospitals, rather than government-owned hospitals. In 1995 around half of private hospitals were solo, compared with 42 percent in 2000 (Exhibit 2). Over this time period private hospitals shifted toward joining systems. Particularly noteworthy is the proportion of hospitals that joined systems with at least one other hospital partner in the same metropolitan statistical area (MSA). In 1995, 33 percent of private hospitals were part of a system that owned at least one other hospital in the MSA, and this proportion increased to 43 percent in 2000.⁵ We refer to these hospitals as “in systems locally,” for short, to contrast them with hospitals that belong to systems with no other partner hospital in the same MSA. We refer to hospitals as being in systems locally if there is at least one other hospital in the same MSA, even if the system they both belong to is a na-

EXHIBIT 2 General, Acute, Nongovernmental Hospitals, By System Type, 1995 And 2000



SOURCE: American Hospital Association Annual Survey of Hospitals, 1995 and 2000.

tional chain. The third category, private hospitals in systems with no local partner, grew only slightly.⁶

Hospitals in systems locally accounted for a growing proportion of total patient admissions and total beds as well. They accounted for 34 percent of admissions and 34 percent of beds in 1995 compared with 48 percent of admissions and 46 percent of beds in 2000 (Exhibit 3).

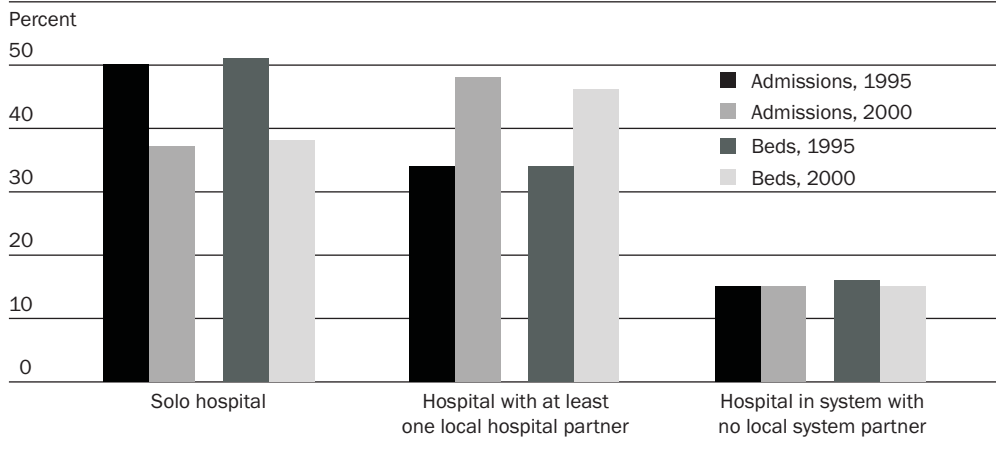
Hospitals In Systems With Local Hospital Partners

Hospitals that joined systems with a local hospital partner were predominantly private hospitals, both nonprofit and for-profit. Public hospital systems have not expanded greatly; they have been outdistanced locally by the growth in nonprofit and for-profit hospital systems. The two largest U.S. public systems are no longer the largest systems in their area. In Los Angeles, for example, the county system has been surpassed by Tenet Healthcare Corporation. In New York City the Health and Hospitals Corporation was the largest system in 1995, but it is now equaled in size by New York Presbyterian Healthcare System.

Policymakers often frame the discussion of hospital systems as one of for-profit takeovers.⁷ However, hospitals with a local system partner are increasingly likely to be nonprofit. In 1995, 28 percent of nonprofit hospitals had a local system partner, compared with 43 percent in 2000 (Exhibit 4). In contrast, the proportion of for-profit hospitals that are in systems locally has remained steady.

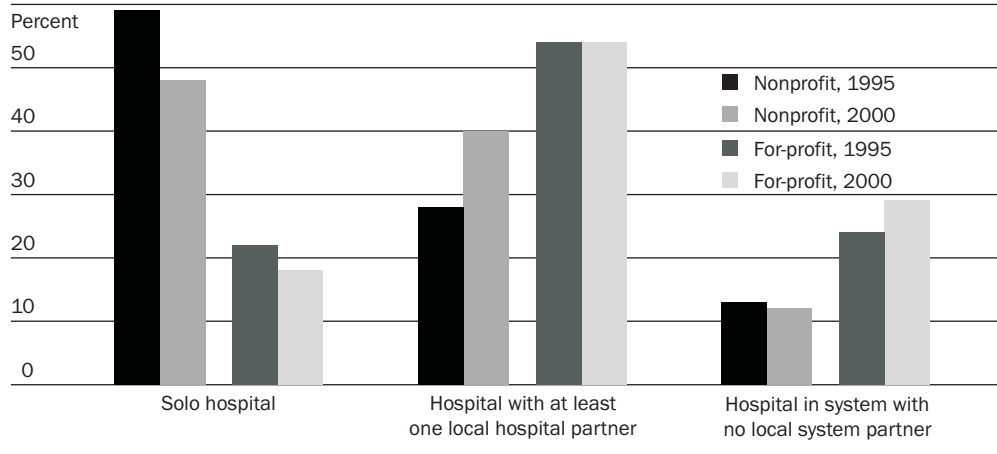
The increase in system participation among teaching hospitals has been striking, particularly major teaching hospitals.⁸ In 1995, 27 percent of private, major teaching hospitals were part of systems locally, compared with 55 percent in 2000 (data not shown).

EXHIBIT 3
Trends In General, Acute, Nongovernmental Hospital Admissions And Total Number Of Beds, By System Type, 1995 And 2000



SOURCE: American Hospital Association Annual Survey of Hospitals, 1995 and 2000.

EXHIBIT 4
Trends In General, Acute, Nongovernmental Hospital System Types, By Ownership Status, 1995 And 2000



SOURCE: American Hospital Association Annual Survey of Hospitals, 1995 and 2000.

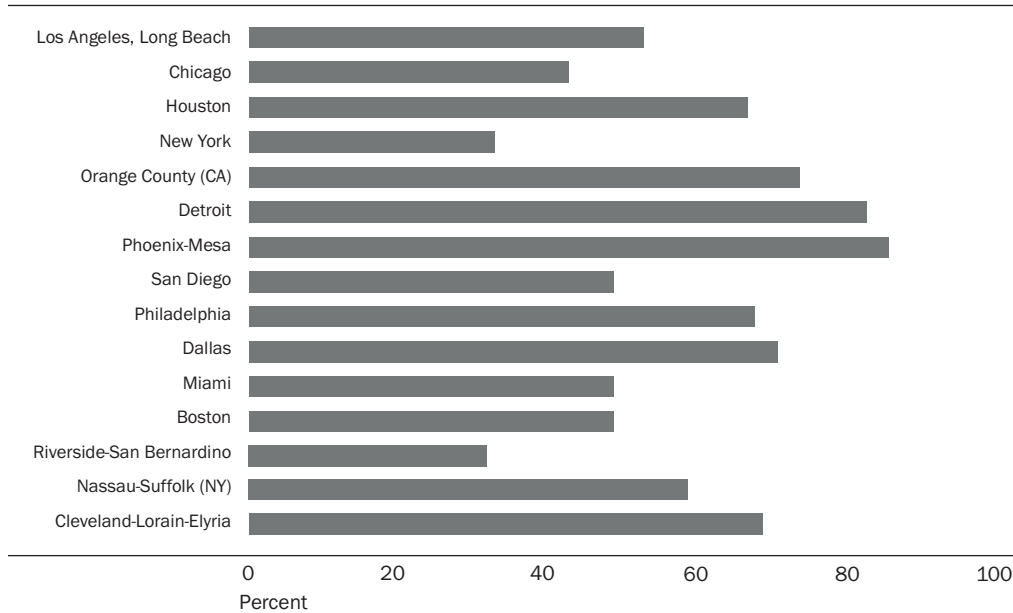
Local system formation is more common in urban areas (in MSAs), but it also occurs in non-MSAs.⁹ In 1995, 32 percent of hospitals in non-MSAs were in systems locally, compared with 40 percent in 2000. In MSAs, 34 percent of hospitals were in systems locally in 1995, and this grew to 44 percent in 2000. Exhibit 5 shows the fifteen largest MSAs with the proportion of private hospital admissions in each MSA accounted for by hospitals in systems locally in 2000. In some cases, the proportion exceeds 80 percent. Some speculate that the recent decline in acquisitions reflects the extensive hospital consolidation that has already occurred.¹⁰

The rise of hospitals in systems locally appears to be partially a response to managed care. In 2000 hospitals in areas with high managed care penetration were more likely than those in areas with low managed care penetration were to be part of hospitals systems locally. Locally concentrated systems may be more likely to form when managed care has tighter, more selective networks.¹¹

Viewing Hospitals As Part Of Locally Concentrated Systems

Hospitals that belong to the same system locally can be viewed either as separate entities or as one entity.¹² Whether or not we address the system nature of hospitals affects how concentrated a local market appears to be. One way to measure hospital concentration is the Herfindahl-Hirschmann Index (HHI).¹³ The Federal Trade Commission recently announced that it is reinvigorating its hospital merger program, which includes a review of, and potential challenge to, consummated transactions that might have resulted in anticompetitive price increases.¹⁴ Antitrust guidelines specify that if a postmerger HHI is less than 1,000, it does not promote competitive concerns.¹⁵ A postmerger HHI of 1,000–1,800 is considered moderately competitive, while one exceeding 1,800 is considered highly

EXHIBIT 5
Percentage Of Admissions From General, Acute, Nongovernmental Hospitals In
Systems With At Least One Local System Partner, In Selected U.S. Metropolitan
Statistical Areas, 2000



SOURCE: American Hospital Association Annual Survey of Hospitals, 2000.

concentrated. Previous research, however, finds that federal authorities do not typically challenge hospital consolidation cases at concentration levels as low as 1,800.¹⁶ Instead, the average HHI in practice for contested mergers was 4,789.¹⁷

Using previous research as a guide, we calculated market shares and an HHI index for each MSA, first treating hospitals as individual entities, and then treating same-system hospitals in a given MSA as one entity. If hospitals are viewed as solo entities, then our analysis shows that nine additional MSAs became highly concentrated between 1995 and 2000. If, however, we treat system members as one entity in each MSA, we find that nineteen MSAs became more concentrated between 1995 and 2000.

Federal antitrust guidelines take into account both the level of concentration and the change in concentration because of merger. The policy is to scrutinize transactions where the change in HHI is at least fifty points. In practice, the lowest challenged change was found to be approximately 1,700 points.¹⁸ Using a change of 1,700 as our benchmark, we found that seven of the nineteen MSAs that became highly concentrated showed an increase in HHI of at least 1,700 when hospitals were viewed as systems. These data indicate only potential antitrust concerns, because in actual enforcement practice the HHI is only one of many factors considered.¹⁹ Nonetheless, the analysis highlights the different conclusions that policymakers and researchers would come to, depending on whether they factor

in the local system phenomenon.

Given the rise in systems concentrated locally, what evidence is there that hospitals have gained market power and raised prices? As noted above, hospital acquisitions far outnumber mergers, but this issue is relatively understudied. There is a relatively large body of older studies that focuses on mergers only, but not system acquisitions.²⁰

The distinction between merger and system acquisition is subtle; from the standpoint of antitrust policy and economic theory, it is not meaningful. Researchers made a distinction between mergers and acquisitions in part as a research convenience: There have been publicly available data on hospital mergers for many years, whereas system formation has historically been more difficult to track and study.²¹ It is not clear whether results from the relatively small number of merger transactions would translate to the acquisition transactions.

One recent study that focused on a hospital acquisition by a Catholic hospital chain found anticompetitive effects, but this was a single case study with limited generalizability.²² Another study examined both mergers and acquisitions in Ohio and California and found higher prices.²³ A study examining nonprofit systems in California found that systems raised prices in concentrated markets.²⁴

Another type of study, hospital concentration analysis, dates back to the early 1980s.²⁵ The perspective from the original studies that lingers in court decision making is that less hospital competition leads to better outcomes for consumers.²⁶ Early studies showed that higher costs and prices resulted from greater competition, a phenomenon sometimes called the “medical arms race.” However, these early studies, which were conducted in a period of cost-based and fee-for-service reimbursement, are largely irrelevant in today’s managed care and prospective payment health care marketplace. More recent studies of concentrated markets find that hospital prices are higher in concentrated areas.²⁷ However, concentration often is measured by treating hospitals as solo entities, not as local systems.

Existing studies have poor measures of price and, in particular, cannot separate managed care and indemnity prices. It is likely that research would show even greater price effects if these product markets were assessed separately. Managed care plans attempt to extract price discounts by threatening to exclude providers from their selected networks. Hospitals wanting to improve their competitive position might try to lower costs and improve quality or might develop strategies to counter plans’ bargaining power. Recently, anecdotal evidence suggests that hospitals’ rates paid by managed care plans have improved.²⁸

To draw conclusions about the effect to consumers of higher hospital prices, we must understand what happens to quality. Hospital quality varies considerably and should be taken into account.²⁹ Although higher prices could be the result of greater bargaining power, they also might simply reflect higher quality. If the observed price increases are associated with quality improvements, this is consistent with hospitals’ attempting to appeal to managed care firms that selectively con-

tract with high-quality providers. Observing higher prices without changes in quality is consistent with a finding of market power. A finding of higher prices or costs alone means very little if quality improved. One recent study found no measurable impact on hospital quality from mergers and acquisitions.³⁰ Another found that hospital concentration led to both lower costs and better health outcomes, particularly in areas with high managed care enrollment. The latter study examined hospital concentration through 1994, but to the extent that managed care recently has “softened” its effect on hospital competition, these positive effects for consumers could be at risk.³¹

Do hospitals that join locally concentrated systems provide more or less charity care? On the one hand, some argue that hospitals in systems could lose their local community orientation as control shifts to corporate offices. On the other hand, hospitals might be able to leverage greater bargaining power and use additional profits to provide more charity care.³² No recent studies address the question of charity care and hospital systems directly. However, there are indications that the effect on charity care is likely to be important. Private hospitals that join locally concentrated systems are more likely than average to be providers with high Medicaid shares.³³ High Medicaid and high charity care share frequently go hand in hand.³⁴ Thus, although private hospitals in systems locally serve large shares of low-income patients, the effect on charity care is as yet unknown. This stands in contrast to studies of hospital conversion and charity care. Typically, hospitals that converted from nonprofit to for-profit ownership were not high in charity care, and the amount of charity care they provided changed little after conversion.³⁵

Hospitals In Systems With No Local Hospital Partner

As Exhibit 2 shows, many hospitals belong to systems that are not concentrated locally and contain no other hospital in the same MSA. Potential benefits from consolidating entities, even if they are not in the same geographic market, could include improved use of labor-saving information systems, brand-name recognition, lower transaction costs, or greater access to expertise and capital. Traditional economic theory says that a monopolist firm in one market cannot leverage monopoly power in a separate, competitive market, which makes it difficult from the standpoint of market power to understand why some hospital systems enter many separate markets. However, more recent theories that focus on the nature of bargaining between managed care firms and providers leave room for speculation that multimarket presence could be an attempt to increase bargaining power, to leverage higher prices from managed care companies.³⁶ As yet there is little empirical evidence to support or refute these theories and explain the effects of national, multimarket systems.

In fact, in addition to the hospitals that were in systems with no local hospital partner, another 10 percent reported being in systems but with no other hospital at all. They belong to a corporate body that owns other health-related facilities

but not other hospitals. Instead of being multihospital systems, these systems are likely to be vertical systems of care, encompassing other providers, such as physician groups, home health agencies, or outpatient surgery centers.³⁷ We know very little about the effects of vertical integration on hospital services. The few existing studies provide conflicting results and use cross-sectional data, which makes it difficult to draw causal conclusions.³⁸

Key Policy Questions

Overall, we find that hospital systems' acquisitions are declining, but the local presence of hospital systems is growing. Locally concentrated systems are being formed by for-profit as well as nonprofit hospitals. Furthermore, the increased concentration is occurring both in and outside of urban areas. The formation appears to be at least partially a response to managed care.

Is the formation of locally concentrated systems harmful or beneficial to consumers? Proponents of consolidation and system formation argue that it will improve efficiency, lower costs, and improve health outcomes.³⁹ There is limited evidence to date to support this view. Others are concerned that consolidation may be motivated by a desire for greater market power or that large systems may be overly focused on financial performance, rather than patient care.⁴⁰ Recent studies support the hypothesis that hospital acquisitions have led to higher prices. It is not known whether higher prices have led to greater provision of community benefits, such as charity care.

Key policy questions remain largely unanswered: Does recent hospital consolidation explain part of the recent rise in hospital spending growth rates and the return to rapid medical care cost inflation? What is the significance of systems that operate across many markets rather than concentrating locally? Can hospitals lower costs, implement information systems more effectively, or leverage their bargaining power with insurers when entering multiple geographic areas? And finally, what role do vertically integrated systems play in changing administrative costs, clinical efficiencies, quality of care, patient safety, charity care, and prices? In all likelihood, we will need to revisit these issues periodically as the health care system evolves.

There is an urgent need for policymakers and regulators to understand how hospital system formation affects health care markets and consumers, and we are continuing our research on this important issue. By addressing the causal connection between different types of hospital integration and key outcomes, we hope to build an important body of evidence for policy making and encourage others to examine these issues as well.

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NOTES

1. C.S. Lesser and P.B. Ginsburg, "Update on the Nation's Health Care System: 1997-1999," *Health Affairs* (Nov/Dec 2000): 206-216.
2. K.E. Thorpe, C.S. Florence, and E.E. Seiber, "Hospital Conversions, Margins, and the Provision of Uncompensated Care," *Health Affairs* (Nov/Dec 2000): 187-194.
3. J. Spetz, S. Mitchell, and J.A. Seago, "The Growth of Multihospital Firms in California," *Health Affairs* (Nov/Dec 2000): 224-230. A recent *Wall Street Journal* article observed that "in a little-known power shift since the late 1990s, HCA and other major hospital chains have reshaped themselves into local oligopolists with the muscle to enforce much higher prices." B. Martinez, "Strong Medicine: With New Muscle, Hospitals Squeeze Insurers on Rates," *Wall Street Journal*, 12 April 2002.
4. Authors' tabulations from the American Hospital Association (AHA) Annual Survey of Hospitals, 1995 and 2000. Hospitals report whether they are part of a health care system—that is, whether they are owned or managed by a system. We ignore hospitals that report being contract-managed by the system in our definition of *system hospitals*. In addition, we verified system names reported in the data through published listings of system members, "Reports of Health Care Acquisitions" by Irving Levin Associates, *Modern Healthcare*, and the Internet, to confirm whether hospitals that reported similar system names were in fact part of the same system.
5. The picture of increasing local system dominance does not change appreciably if we define the local market to be a county, rather than an MSA. Using a county definition, nongovernment local system hospitals accounted for 24 percent of admissions in 1995 and 35 percent in 2000. The trend is less pronounced, but still increasing, if we define a market as a ten-mile radius around the hospital, rather than as the county or MSA. Using the ten-mile definition, local system hospitals accounted for 18 percent of admissions in 1995 and 27 percent in 2000.
6. Others have defined local versus nonlocal systems based on the distance between the hospitals and the system headquarters. See, for example, G.J. Young, K.R. Desai, and F.J. Hellinger, "Community Control and Pricing Patterns of Nonprofit Hospitals: An Antitrust Analysis," *Journal of Health Politics, Policy and Law* (December 2000): 1051-1081. Given our interest in the potential market power of nonprofit and for-profit systems, we chose a definition that focuses on the local concentration of systems, regardless of corporate office location.
7. Spetz et al., "The Growth of Multihospital Firms in California."
8. We define *major teaching hospitals* as having a resident-to-bed ratio of 0.25 or greater.
9. For non-MSAs we define hospitals in locally concentrated system to be those that are located in any non-MSA area of the same state. We base this definition on interviews with health plan and hospital representatives, who described the regional nature of rate bargaining that occurs. For large states, however, this may overstate the relevant region.
10. Lesser and Ginsburg, "Update on the Nation's Health Care System."
11. *Ibid.*
12. With few exceptions, unless hospitals are jointly owned, they may not jointly set prices, as this is considered anticompetitive behavior. In December 1994 the U.S. Department of Justice (DOJ) charged an alliance of hospitals that was using a joint bargaining agent to prevent discounts for hospitals services to managed care plans with anticompetitive behavior. The case was settled by consent decree. See U.S. Department of Justice, "Justice Department Sues to Block Long Island Hospital Combination," Press Release, 11 June 1997, www.usdoj.gov/opa/pr/1997/June97/242at.htm (12 August 2003).
13. The HHI is a measure of market concentration that equals the sum of the squared market shares for all business competing in a given market. Antitrust authorities use percentage of the market, as opposed to proportion of the market; thus, the maximum HHI is 10,000, which represents a single monopolist.
14. Federal Trade Commission, "Federal Trade Commission Announces Formation of Merger Litigation Task Force," Press Release, 28 August 2002, www.ftc.gov/opa/2002/08/mergerlitigation.htm (12 August 2003).
15. Department of Justice/Federal Trade Commission, "Horizontal Merger Guidelines," 8 April 1997, www.usdoj.gov/atr/public/guidelines/horiz_book/hmg1.html (12 August 2003).
16. G.J. Bazzoli et al., "Federal Antitrust Merger Enforcement Standards: A Good Fit for the Hospital Industry?" *Journal of Health Politics, Policy and Law* (Spring 1995): 137-169.
17. For our analysis we used an HHI of 5,000 or more as the cutoff point for a highly concentrated market.
18. Bazzoli et al., "Federal Antitrust Merger Enforcement Standards."

19. G. Vistnes, "Hospital Mergers and Antitrust Enforcement," *Journal of Health Politics, Policy and Law* (Spring 1995): 175-190.
20. Examples include H.R. Spang, G.J. Bazzoli, and R.J. Arnould, "Hospital Mergers and Savings for Consumers: Exploring the Evidence," *Health Affairs* (July/Aug 2001): 150-158; J.A. Alexander, M.T. Halpern, and S.D. Lee, "The Short-Term Effects of Merger on Hospital Operations," *Health Services Research* (February 1996): 827-847; R.A. Connor et al., "Which Types of Hospital Mergers Save Consumers Money?" *Health Affairs* (Nov/Dec 1997): 62-74; and U.T. Sinay, "Pre and Post-Merger Investigation of Hospital Mergers," *Eastern Economic Journal* (Winter 1998): 83-87.
21. For instance, the AHA has published annual listings of hospital mergers, but not acquisitions, for many years.
22. M. Vita and D. Sacher, "The Competitive Effects of Not-for-Profit Hospital Mergers: A Case Study," *Journal of Industrial Economics* (March 2001): 63-84.
23. R. Krishnan, "Market Restructuring and Pricing in the Hospital Industry," *Journal of Health Economics* (March 2001): 213-237.
24. Young et al., "Community Control and Pricing Patterns of Nonprofit Hospitals."
25. See, for example, J.C. Robinson and H.S. Luft, "The Impact of Hospital Market Structure on Patient Volume, Average Length of Stay, and the Cost of Care," *Journal of Health Economics* (December 1985): 333-356. For reviews of the literature, see H.E. Frech, *Competition and Monopoly in Medical Care* (Washington: AEI Press, 1996); and M.A. Morrissey, "Competition in Hospital and Health Insurance Markets: A Review and Research Agenda," *Health Services Research* (April 2001): 191-221.
26. P.J. Hammer and W.M. Sage, "Antitrust, Health Care Quality, and the Courts," *Columbia Law Review* (April 2002): 545.
27. See, for example, G.A. Melnick, E. Keeler, and J. Zwanziger, "Market Power and Hospital Pricing: Are Nonprofits Different?" *Health Affairs* (May/June 1999): 167-173; T.L. Gift, R. Arnould, and L. Debrook, "Is Healthy Competition Healthy? New Evidence on the Impact of Hospital Consolidation," *Inquiry* (Spring 2002): 45-55; and J.M. Brooks et al., "Hospital-Insurer Bargaining: An Empirical Investigation of Appendectomy Pricing," *Journal of Health Economics* (August 1997): 417-434.
28. M.C. Jaklevic, "Rating Firms See Stability," *Modern Healthcare* (12 August 2002): 16.
29. M. Gaynor and D. Haas-Wilson, "Change, Consolidation, and Competition in Health Care Markets," *Journal of Economic Perspectives* (Winter 1999): 141-164.
30. V. Ho and B.H. Hamilton, "Hospital Mergers and Acquisitions: Does Market Consolidation Harm Patients?" *Journal of Health Economics* (September 2000): 767-791.
31. D. Kessler and M. McClellan, "Designing Hospital Antitrust Policy to Promote Social Welfare," in *Frontiers in Health Policy Research*, vol. 2, ed. A.M. Garber (Cambridge, Mass.: MIT Press, 1999), 53-76.
32. J.A. Alexander and K.A. Schroer, "Governance in Multihospital Systems: An Assessment of Decision-Making Responsibility," *Hospital and Health Services Administration* 30, no. 2 (1985): 9-20.
33. Authors' tabulations from the AHA Annual Survey of Hospitals, 1995 and 2000.
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35. J. Needleman, J. Lamphere, and D. Chollet, "Uncompensated Care and Hospital Conversions in Florida," *Health Affairs* (July/Aug 1999): 125-133; and G.J. Young, K.R. Desai, and C.V. Lukas, "Does the Sale of Non-profit Hospitals Threaten Health Care for the Poor?" *Health Affairs* (Jan/Feb 1997): 137-141.
36. D. Dranove and W.D. White, "Emerging Issues in the Antitrust Definition of Healthcare Markets," *Health Economics* (March 1998): 167-170.
37. S.M. Shortell et al., "Classifying Health Networks and Systems: Managerial and Policy Implications," *Health Care Management Review* (Fall 2000): 9-17.
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39. J.D. Kleinke, "Deconstructing the Columbia/HCA Investigation," *Health Affairs* (Mar/Apr 1998): 7-26.
40. Vita and Sacher, "The Competitive Effects of Not-for-Profit Hospital Mergers"; T.L. Greaney, "Whither Antitrust? The Uncertain Future of Competition Law in Health Care," *Health Affairs* (Mar/Apr 2002): 185-196; and Spetz et al., "The Growth of Multihospital Firms in California."