

Consequences of Organizational Change in U.S. Hospitals

Shou-Yih D. Lee

University of Illinois at Chicago

Jeffrey A. Alexander

University of Michigan

Organizational change has become commonplace among U.S. hospitals. Empirical investigations of the consequences of organizational change, however, are relatively scarce, and findings of existing studies are inconsistent. In this article, the authors review the rationale and performance implications of hospital organizational change in three areas: (1) the development of new multi-institutional arrangements, (2) change in traditional ownership and management configurations, and (3) diversification in organizational products/services and consolidation of organizational scale. Empirical research on hospital change published between 1980 and 1999 in the health services research, social science, and business literatures is reviewed to highlight the potential pitfalls that hospitals may encounter in their effort to remain viable. The article also summarizes the strengths and weaknesses of current hospital change research and provides specific suggestions for future research in this area.

It is certainly not news that organizational change is becoming the norm rather than the exception among U.S. hospitals. The widespread adoption of organizational change reflects a common belief among organizational practi-

The authors would like to thank Stephen Mick, Jane Banaszak-Holl, and two anonymous reviewers for their constructive comments on earlier drafts of the article. Address correspondence to Shou-Yih D. Lee, Ph.D., Department of Sociology (M/C 312), University of Illinois at Chicago, 1007 West Harrison Street, Chicago, IL 60607-7140; phone: (312) 413-2909; fax: (312) 996-5104; e-mail: SYLee@uic.edu. This article, submitted to *Medical Care Research and Review* on June 10, 1998, was revised and accepted for publication on April 17, 1999.



Medical Care Research and Review, Vol. 56 No. 3, (September 1999) 227-276
© 1999 Sage Publications, Inc.

tioners that change is adaptive and beneficial to hospitals. Anecdotal evidence supporting the value of organizational change abounds in trade magazines. Yet, systematic empirical investigations of the consequences of organizational change are surprisingly scarce in the health services literature (Topping and Hernandez 1991). Findings from the few existing studies are frequently inconsistent, providing no clear guidelines to assist hospitals struggling to survive in an increasingly competitive and uncertain environment. Organizational change, thus, remains a pervasive yet understudied phenomenon in the hospital industry.

ORGANIZATIONAL CHALLENGES IN A CHANGING HEALTH CARE ENVIRONMENT

Pervasive organizational change in the U.S. hospital industry began in the mid-1970s. Since then, it has spread to every corner of the industry, affecting every hospital, large and small. The explosion of organizational change is caused primarily by increased competition and uncertainty in the economic conditions confronting hospitals. More important, it also reflects a fundamental shift in the institutional environment surrounding and supporting health care practices and management (Alexander and D'Aunno 1990; Scott 1993).

Several developments have occurred in the health care environment, challenging hospital survival and encouraging hospitals to experiment with various types of organizational change. Foremost has been a shift in the role of the federal government. Once a builder of hospitals and a purchaser of medical services, the federal government in the 1980s began to assume the role of regulator (Fennell and Alexander 1993; Scott and Lammers 1985). This shift has made the federal government a driving force for change in the hospital industry. It has radically altered the structure of local markets and forced hospitals to modify their behavior and structure (Bigelow and Mahon 1989). The introduction of Medicare's prospective payment system (PPS) in October 1983, in particular, marked the federal government's role as a change agent.

Unlike previous cost containment efforts, Medicare PPS radically transformed the hospital payment system, and therefore the incentives, by setting predetermined, fixed payment levels for 468 diagnosis-related groups of conditions for Medicare patients (Office of Technology Assessment 1985). Under this payment system, hospitals must absorb any cost beyond the price limit and are at financial risk for the services they deliver. Since Medicare patients constitute, on average, 40 percent of all inpatients, the payment change has had a dramatic impact on hospital operations. It effectively eliminates a guaranteed flow of resources to hospitals and requires them to contain costs and

provide services as efficiently as possible. Since the implementation of PPS, hospital admissions and inpatient days have decreased and the average length of stay and occupancy rate have dropped rapidly, especially in the first 3 years of the program (Coulam and Gaumer 1991; Dobson and Hoy 1988; Guterman et al. 1988; Kauer, Silvers, and Teplensky 1995). This reduced demand for hospital services has significantly decreased hospital margins. By 1989, 57 percent of hospitals were losing money on Medicare patients (Russell 1989). Declines in profit margins, furthermore, have diminished the credit ratings of hospitals and limited their access to capital markets (Shortell, Morrison, and Friedman 1992).

PPS legislation has also produced a number of side effects (Shortell, Morrison, and Friedman 1992). First, to prevent cost shifting, many private insurers have implemented their own prospective payment programs, further limiting resources for hospital operations (Feinglass and Holloway 1991; Kauer, Silvers, and Teplensky 1995; Shortell, Morrison, and Friedman 1992). Second, private companies and public insurance programs have increasingly adopted managed care plans (e.g., health maintenance organizations [HMOs], preferred provider organizations [PPOs]) to arrest the rapid increase in health costs (Miller and Luft 1993). These plans exercise strict control over hospitalization, which, coupled with strict government regulations, has led to overcapacity in hospitals and forced them to compete fiercely for diminishing resources and patients (Cerne and Montague 1994; Mezey and Lawrence 1995). Furthermore, the health care environment is complicated by social trends such as aging of the population, changes in disease patterns (e.g., chronic diseases, the AIDS epidemic), growth of uninsured populations, technological advances, increased patient expectations, and privatization and corporatization of health care (Alexander and D'Aunno 1990; Fennell and Alexander 1993; Shortell, Morrison, and Friedman 1992; Starr 1982; Stevens 1989). These forces increasingly press hospitals to expand their scope of activity while conserving resources.

In the face of these social, political, and economic changes, many hospitals—public, nonprofit, and for-profit—have reconsidered their mission and modified their structures. They have come to realize that simply conforming to professional norms and practices no longer guarantees survival. Corporate planning and strategy have become standard “institutional” practices of hospital management, and many hospitals have restructured to mimic the features of U.S. mainstream economic enterprises (Alexander and D'Aunno 1990; Mick 1990b; Scott 1993; Starr 1982). The consequences of these changes, however, remain unclear.

NEW CONTRIBUTION

This article provides a critical review of existing literature and suggests useful directions for research on outcomes of organizational change in hospitals. Although recent political, economic, demographic, and technological developments have threatened to reduce hospitals to the margin of the U.S. health care system (Ginzberg 1995; Robinson 1994), the hospitals remain important health care providers and play a key role in facilitating the integration of health services across the spectrum of care (Shortell, Gillies, and Devers 1995). With few exceptions (see, e.g., the study by Ginsberg and Buchholtz [1990], which examines ownership change in HMOs), hospitals overwhelmingly constitute the samples of existing studies that examine the outcomes of organizational change in the health care sector.

In this article, we extend prior reviews on hospitals' strategic decision making (e.g., Bigelow and Mahon 1989; Topping and Hernandez 1991) to focus on the rationale and performance implications of organizational change in hospitals and to highlight the potential pitfalls that hospitals may encounter in their struggle to remain viable. Furthermore, the article summarizes both the strengths and weaknesses of current research and provides specific suggestions for future research in this area.¹

CRITERIA OF REVIEW

The article focuses on organizational change that occurs in hospital ownership, authority structure, administrative arrangements, operational capacity, products/service areas, and scope and composition of services. These structural elements are at the root of hospitals' decision making and performance; they shape the behavior and interpersonal relationships of hospital constituencies and define the boundaries of hospital activity (Mintzberg 1979). Following Fennell and Alexander (1993), we classified organizational change in hospitals into three categories: (1) the development of new multi-institutional arrangements, (2) change in traditional ownership and management configurations, and (3) diversification in organizational products/services and consolidation of organizational scale. In addition to these three categories that define the scope of our review, we used two criteria in the selection of articles for review. First, all articles were empirical studies using either a qualitative or quantitative research approach. Second, all studies addressed the relationship between an organizational change or changes and their outcomes in hospital settings. Studies of other health care organizations (e.g., nursing homes, HMOs) were excluded for the purpose of this review.

On the basis of these criteria, we searched articles published between 1980 and 1999 in health services research, social science, and business journals using the following databases: (1) Medline—containing citations to the biomedical literature; (2) Wilson's Social Science—a citation and abstract database indexing more than 350 key English-language journals in the social sciences; (3) PsychInfo—indexing more than 1,300 journals and dissertations in medicine, psychiatry, nursing, sociology, and education; (4) ABI/Inform—an index of more than 1,000 U.S. and international publications on business and management; and (5) ArticlesFirst—an index to more than 12,500 journals from general-interest publications. In addition, we were able to identify several forthcoming and under-review articles through the assistance of researchers familiar with relevant research topics (e.g., merger).²

The following sections explain the characteristics and rationale of the three categories of organizational change and discuss their implications for hospital performance. After reviewing empirical findings regarding the outcomes of organizational change in hospitals, we summarize the limitations of current studies and provide suggestions for future research. Finally, we conclude the article with specific research questions for further examination.

MULTI-INSTITUTIONAL ARRANGEMENTS

Tightened government regulation and intense market competition have increasingly subjected hospitals' performance and survival to the influence of external resources and constraints. There are two basic ways for hospitals to manage such external dependence (Kotter 1979). First, a hospital can choose to operate in a different domain (e.g., changes from a general acute-care hospital to a specialty hospital) or diversify into nontraditional businesses (e.g., subacute, long-term care), thus decreasing the dependence on environmental elements in the original, acute-care market (Clement 1988).³ Alternatively, a hospital can engage in boundary-spanning activities and establish linkages with key organizational actors in its domain (Fennell and Alexander 1987). Such interorganizational relations buffer the hospital from environmental threats and create a countervailing power that grants the hospital some measure of control over its environment (Miner, Amburgey, and Stearns 1990; Provan 1984).

Several types of interorganizational relations have been explored by hospitals: networking between rural and urban hospitals (Grim 1986), sharing medical services (Simmons 1989), pooling resources through hospital federations (D'Aunno and Zuckerman 1987a, 1987b), creating local strategic alliances or consortia for joint activities among member hospitals (Clement et al.

1997; Christianson et al. 1990), and affiliating with multihospital systems (MHSs) (Erman and Gabel 1984; Morrisey and Alexander 1987b; Shortell 1988; Zuckerman 1979). Among these multi-institutional arrangements, MHS affiliation represents the most prevalent strategy. Recent data indicate that approximately 50 percent of community hospitals (2,524) were members of an MHS in 1991 (Succi 1996). We review two common forms of multi-institutional arrangements—MHS affiliation and local hospital alliances and consortia. The research design and findings of studies examining outcomes of these two organizational changes are summarized in Table 1.

MHS AFFILIATION

MHS affiliation is a formal affiliation between a hospital and a corporate entity that owns, leases, or sponsors two or more hospitals (American Hospital Association [AHA] 1983). Unification of hospitals under corporate management may increase the reputation and political power of member hospitals and protects them from environmental pressures (Dranove and Shanley 1995). The corporate headquarters determine general policies and bear shared administrative responsibilities, thus allowing member hospitals to focus on daily operations and performance (Succi 1996). Efficiency and productivity of member hospitals may increase through economies of scale (e.g., joint purchasing), shared services and personnel (e.g., high-tech diagnostic services, data processing, reimbursement specialists), and improved access to capital and management techniques (Ermann and Gabel 1984; Zuckerman 1979).

Despite the touted advantages associated with multihospital arrangements, research evidence has been decidedly mixed (Ermann and Gabel 1984; Shortell 1988). Other than improved access to capital markets and greater efficiency in hospital staffing (Cleverley 1992; Levitz and Brooke 1985; Watt et al. 1986), many empirical studies have been unable to demonstrate substantial advantages of systems over freestanding hospitals (Becker and Sloan 1985; Berry, Tucker, and Seavey 1987). While some studies showed greater leverage and higher profitability among system hospitals, particularly those owned by for-profit (FP) systems (Coyne 1985a; Renn et al. 1985), others showed evidence of higher costs in system hospitals, whether measured on a per diem or per case basis (Cleverley 1992; Coyne 1982; Watt et al. 1986).

An example of financial analysis was conducted by Levitz and Brooke (1985). Using a total of 36 financial indicators, the study compared performance of system and freestanding hospitals in liquidity, capital structure, financial activity, depreciation, profitability, costs, and productivity. Findings

(text continues on p. 241)

TABLE 1 Empirical Studies Examining the Consequences of Multi-Institutional Arrangements in Hospitals

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|------------------------------|-------------|---|--|--|
| Multihospital systems | | | | |
| Coyne | 1982 | 100 system hospitals from 14 systems, compared with 49 independent hospitals, 1975 | Cross-sectional design; compared the differences between system and independent hospitals in cost and productivity, controlled for length of stay (a proxy for case mix and complexity), hospital size, teaching programs, physician supply, local economy, and market competition | In general, results showed that system hospitals tended to have higher costs than independent hospitals regardless of ownership type; system hospitals also had greater productivity levels, indicated by larger numbers of admissions per bed. |
| Long and Chase | 1984 | 226 community hospitals closed during 1976-1980, compared with three groups of hospitals that were independent, system affiliated, and merged | Retrospective case-control design; closed hospitals were contrasted with other hospitals in terms of hospital and environmental characteristics | Results showed that system hospitals had no better chance of surviving than independent hospitals. |
| Becker and Sloan | 1985 | 2,231 community hospitals participating in the American Hospital Association (AHA) Reimbursement Survey in 1979 | Cross-sectional design; compared cost and profit differences between system and independent hospitals; controlled for size, teaching status, case mix, payer mix, wage, county per capita income, urban location, and census region | System hospitals did not appear to be more efficient than independent hospitals, but among system hospitals, tenure seemed to be correlated with efficiency and profitability—hospitals with longer tenure in the system were more efficient and profitable. |

(continued)

TABLE 1 Continued

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|------------------|-------------|---|--|---|
| Coyne | 1985a | 4,409 AHA member hospitals, 1981 | Cross-sectional design; compared the differences in assets-to-equity, return on equity, and operating margin between hospitals with different ownership and system membership; no controls for hospital and environmental attributes | System and independent hospitals had different capital structures and profitability; system hospitals had both greater leverage and higher profits, particularly in the investor-owned (IO) sector. |
| Coyne | 1985b | A sample of five IO and nine not-for-profit (NFP) system hospitals, 1978-1982 | Compared differences between IO and NFP system hospitals using 5 years of financial indicators for liquidity, activity, composition, capital structure, and profitability; no comparison with independent hospitals; no controls for hospital and environmental attributes | Hospitals in different ownership types of systems displayed distinct patterns of financial performance over time, system hospitals in general showed increasing financial strength during the study period, NFP system hospitals reduced liquidity but increased their productive use of current assets, IO system hospitals showed a significant buildup of cash reserves and a decreasing use of credit, the profit trend remained stable for NFP system hospitals but increased for IO system hospitals, and the leverage trend was similar. |

| | | | | |
|-------------------|------|--|---|---|
| Levitz and Brooke | 1985 | 94 short-term acute-care hospitals in Iowa, 1981 | Cross-sectional design; differences between system and independent hospitals were compared using <i>t</i> -tests | System hospitals had a greater degree of debt leverage, higher costs per case, and a higher markup and revenues from patient services; no differences were observed in liquidity, total profitability, asset turnover, productivity. |
| Renn et al. | 1985 | A random sample of 561 community hospitals, 1980 | Cross-sectional design; controlled for contract management, tenure in system, case and payer mix, competition and regulation, wage index, geographic location, hospital size, occupancy, and medical teaching | Effects of system affiliation on hospital performance varied by the system's ownership type; due to their pricing strategies (higher charges per patient), IO system hospitals were more profitable than independent NFP hospitals, the comparison group; since FP hospitals behaved similarly to IO system hospitals and limited differences were found between independent NFP hospitals and hospitals in an NFP system, the system effects might be largely explained by ownership difference. |

(continued)

TABLE 1 Continued

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|---------------------------|-------------|--|--|--|
| Watt et al. | 1986 | 80 matched pairs of IO chain and NFP hospitals in 8 states, 1978-1980 | Matched nonequivalent control group design; hospitals were matched on location, size, services, and average length of stay; controlled for case mix | Total charges and net revenues per case were higher in IO system hospitals, mainly due to higher charges for ancillary services; there was no difference in patient-care costs, but the administrative overhead costs for IO system hospitals was higher; IO system hospitals were more profitable, had funded more capital through debts, and had higher capital costs; higher profits in IO system hospitals were generated by more aggressive pricing practices rather than greater efficiency. |
| Berry, Tucker, and Seavey | 1987 | Small rural hospitals; 194 system managed, 235 system, and 311 independent and self-managed, before 1983 | Cross-sectional design; different organizational arrangements were used to predict occupancy, quality of care, service range, and resource efficiency; no controls were used when comparing hospitals with different management structures | System hospitals were more likely to be accredited by the Joint Commission on Accreditation of Hospitals (JCAH); system hospitals did not perform better than independent rural hospitals; system hospitals, in fact, had higher costs, displaying higher expenses per patient day. |

| | | | | |
|-------------------------------|------|--|---|---|
| Mullner et al. | 1989 | 161 rural community hospitals that were closed during 1980-1987, matched with a control group of 482 rural hospitals that remained open. | Matched case-control study design | Affiliating with systems significantly decreased the risk of rural hospital closure. |
| Manheim, Shortell, and McFall | 1989 | Short-term acute-care hospitals acquired by the Hospital Corporation of America (HCA) during 1979-1982 | Cross-sectional design; acquired hospitals were compared with competing hospitals in the same market or hospitals matched on bed size and location to control for geographic factors; controlled for service mix, hospital output, competition, and area prices | Acquired hospitals had higher expenses but lower full-time equivalent (FTE) staffing levels than comparison hospitals due to higher expenditure growth and less FTE growth; further analyses indicated that higher expenses might be caused by the acquisition process, while the decrease in FTEs was a system characteristic independent of the acquisition; profitability increased over time since acquisition. |
| Cleverley | 1992 | 5,722 hospitals with complete Medicare Cost Report data in 1986-1989 | Compared the median values of selected financial indicators among IO system hospitals, NFP system hospitals, and all other independent hospitals; no controls for hospital and environmental attributes | Compared with independent hospitals, system hospitals, especially IO ones, had a higher return on equity, higher costs per case mix-adjusted discharge, higher profits through more aggressive pricing strategies, greater capital |

(continued)

TABLE 1 Continued

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|---------------------------------|-------------|--|--|--|
| Halpern, Alexander, and Fennell | 1992 | A panel of 2,705 rural hospitals during 1983-1988 | Longitudinal design; controlled for various hospital attributes | investment, and they served fewer Medicaid patients. System affiliation with IO systems significantly reduced survival of rural hospitals; affiliation with NFP system or contract management by systems did not affect hospital survival; larger system hospitals had higher survival chances. |
| Dranove and Shanley | 1995 | Hospitals owned by local systems in California metropolitan area, 1989 | Cross-sectional design; characteristics and performance of system hospitals were compared to a randomly selected group of independent hospitals in the same standard metropolitan statistical areas (SMSAs); controlled for size, charity, Medicaid, and ownership | System hospitals were no better able to exploit scale economies than were independent hospitals; system hospitals were more homogeneous in service mix and financial profile; the level of homogeneity was positively related to price-cost margins and profits. |
| Alexander, D'Aunno, and Succi | 1996 | All rural community hospitals during 1984-1991 | Pooled cross-sectional time-series design; adjusted for auto-correlation among repeated observations; controlled for size, | Affiliation with a system did not affect closure but significantly increased the likelihood of conversion |

| | | | | |
|---------------------------|------|---|---|---|
| Succi, Lee, and Alexander | 1996 | All rural community hospitals during 1984-1991 | ownership, performance, market conditions, and time trend. Pooled cross-sectional time-series design; adjusted for autocorrelation; controlled for size, ownership, performance, market conditions, and time trend | to a nonhospital facility. Affiliation with a system had no impact on rural hospital closure. |
| Succi | 1996 | All community hospitals during 1984-1991 | Pooled cross-sectional time-series design; examined the contingencies associated with system affiliation; adjusted for autocorrelation; controlled for hospital size, age, ownership, market conditions, and time trend | Hospitals benefited moderately from affiliating with a system, but the improvement in performance was greater when hospitals operated in an uncertain or competitive market; improvement was reduced when the hospital joined a system with incompatible ownership. |
| Menke | 1997 | 2,200 hospitals with complete organizational and financial data in 1990 | Cross-sectional design; used a two-stage estimation model to minimize selection bias; controlled for labor costs, case mix, hospital mortality rate, payer mix, service range, medical school affiliation, ownership, physician supply, hospital competition, urban location, and geographic region | System and independent hospitals had different cost functions, suggesting hospital selection into systems; the costs of system hospitals were lower than those of independent hospitals, but there were no statistically significant differences in costs by ownership among system |

TABLE 1 Continued

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|----------------------------------|-------------|--|---|--|
| Strategic alliances and networks | | | | |
| Clement et al. | 1997 | Close to 2,500 short-term, acute-care, nonfederal urban hospitals with complete financial data for the fiscal year between 10/1/94 and 9/30/95 | Cross-sectional design; controlled for environmental (% elderly population, Medicare wage index, unemployment) and hospital (occupancy, staffed bed size, number of services, teaching status, ownership) characteristics | hospitals; economies of scale and scope occurred at all volumes for system hospitals. Membership in a strategic alliance was positively associated with net patient revenues but had no significant relationship with cash flow or expenses; these results might be attributable to membership in multi-hospital systems. |
| Chan, Feldman, and Manning | 1999 | 335 rural hospitals participating in 85 consortia during 1988-1992 | Longitudinal design; controlled for consortium (degree of formalization, resource disparity among members) and hospital and market (number of affiliated consortia, bed size, ownership, multihospital system (MHS) affiliation, Medicare payment status, patient mix, local economy, census region, time) conditions | Size of the consortium showed a curvilinear relationship with member hospitals' cost, revenue, and profitability; member hospitals benefited from the increase in consortium size, but the benefit decreased as the consortium became too large. |

showed that system hospitals had better access to debt capital and more effective pricing policies than did independent hospitals (similar findings were obtained in Watt et al. 1986 and Cleverley 1992). But limited differences were found among measures of liquidity, receivables management, asset activity, productivity of human resources (including management), and efficient use of plant and equipment assets. Although the study was comprehensive in its comparison, its cross-sectional design and its limited sample (94 acute-care hospitals in Iowa in 1981) constrained the generalizability of the findings. In addition, the study employed simple *t*-test comparisons, thus failing to control for potential confounding effects of organizational and environmental characteristics.

A more sophisticated financial analysis was conducted by Renn et al. (1985). The study investigated the financial differences among hospitals with five types of ownership and system affiliation arrangements—system-affiliated investor-owned (IO), independent IO, system-affiliated not-for-profit (NFP), independent NFP, and government ownership. Of particular interest is the result that effects of system affiliation varied by the system's ownership type. Because of their higher pricing strategies, IO system hospitals were more profitable than independent NFP hospitals, the comparison group. However, the study also found that independent FP hospitals behaved similarly to hospitals owned by IO systems and that there were limited differences between independent NFP hospitals and hospitals in an NFP system. These results raise the question of whether performance discrepancies were caused by ownership type (IO vs. NFP) or system membership.⁴ Similarly, Becker and Sloan (1985) and Berry, Tucker, and Seavey (1987) found that system hospitals did not perform better than independent hospitals. In fact, system hospitals displayed higher expenses per patient day, thus appearing to be less efficient in resource utilization (Berry, Tucker, and Seavey 1987).

Higher expenses may be associated with hospitals in IO systems specifically. Manheim, Shortell, and McFall (1989) found that, relative to competing hospitals in the same market, hospitals acquired by the Hospital Corporation of America (HCA) between 1977 and 1983 had greater expenses but lower full-time equivalent staffing. Lower staffing ratios seemed to be an attribute among all subsidiary hospitals, independent of the acquisition process, and the increase in expenditures was largely due to activities initiated by the IO system to "turn around" *recently* acquired hospitals. The latter finding in particular supported Becker and Sloan's (1985) conclusions that system effects might vary by a hospital's tenure in the system and that assessments need to focus on long-term implications for hospital performance.

Local systems, or systems comprising three or more community hospitals in the same geographic market, may be more able to realize scale economies

because proximity makes it easier to pool clinical and managerial resources and to improve efficiency through administrative coordination (Luke, Ozcan, and Olden 1995). This proposition was tested by Dranove and Shanley (1995) in a study of system hospitals in six California metropolitan areas. Results, however, indicated no significant advantages of system hospitals to exploit scale economies relative to independent hospitals. Contrary to many prior studies, the study found that system hospitals had higher price-cost margins and profits and that such financial advantages were associated with systems' superior marketing strategies in promoting the consistency of their products.

The inconsistent effects in the literature of MHS affiliation may be partly explained by failure to consider organizational, economic, and environmental contingencies present at the time of affiliation (Smith and Piland 1990). In other words, advantages or disadvantages of MHS affiliation are not universal but are sensitive to, for instance, characteristics of the affiliated system (e.g., FP vs. NFP ownership of the system),⁵ conditions in the member hospital's local market that are conducive to the collective action of systems (e.g., uncertainty, scarce resources), and the level of compatibility between the member hospital and the system (Succi 1996). A second problem is that research rarely has taken into account the possibility of systematic selection of hospitals into systems (Alexander and Morrisey 1988). Menke (1997), for example, showed that the cost functions for system and independent hospitals were different and that pooling them could significantly bias the estimation of costs in system hospitals. Controlling for the selection effects with a two-stage estimation model, she found that, contrary to most previous studies, system hospitals were more efficient and had lower costs than independent hospitals.

Another problem of most existing studies is their focus on the short-term impact of MHS affiliation on hospitals. For example, few studies examine survival or other long-range outcomes when comparing system hospitals with independent hospitals. Moreover, findings of these studies are conflicting because of different research designs and a general failure to take into account the possibility that effects of system affiliation may vary across historical periods (Menke 1997). For example, Mullner et al. (1989) showed a negative relationship between system membership and closure risk among rural community hospitals during the period of 1980-1987. On the other hand, Long and Chase (1984) found no such relationship in a group of hospitals that closed from 1976 to 1980, and neither did Alexander and associates in their studies of all rural hospitals in the post-PPS period (Alexander, D'Aunno, and Succi 1996; Succi, Lee, and Alexander 1997).

One interesting study on the consequences of system affiliation was conducted by Halpern, Alexander, and Fennell (1992). Two features differentiate

the study from others. First, the study investigated the long-term survival effect of system affiliation in a panel of hospitals during a 5-year period (1983-1987). Second, relationships between system affiliation and hospital survival were explored in various organizational contexts and during different time periods. Results indicated that (1) affiliation with IO systems significantly increased the risk of hospital closure, whereas affiliation with NFP systems had no effect on closure; (2) among hospitals affiliating with IO systems, larger hospitals and hospitals with private NFP ownership were at a greater disadvantage than smaller hospitals and hospitals with government or IO ownership; and (3) although differences were not statistically significant, affiliation occurring before PPS seemed to improve hospital survival, whereas affiliation subsequent to PPS displayed no difference in hospital survival.

As this study demonstrates, system affiliation can have significant implications for hospital outcomes, but the influence should be considered in specific organizational and environmental contexts. There may also be long-term and time-varying effects of system affiliation. This remains an area in need of further investigation.

LOCAL HOSPITAL ALLIANCES AND CONSORTIA

The potential for achieving operating, purchasing, and market economies has motivated hospitals to join systems. But operating under formally structured interorganizational arrangements also decreases hospitals' autonomy and flexibility (Luke, Begun, and Pointer 1989). The desire for autonomy, coupled with financial losses of systems and the concern of communities that system affiliation may reduce hospital sensitivity to local needs, has diminished the frequency of system affiliation since the late 1980s. As an alternative, loosely coupled interorganizational forms have arisen. Prominent among them are local hospital alliances and consortia. These two arrangements allow hospitals to obtain the benefits of collective action while maintaining greater control over policy, strategy, and operational decision making (Christianson et al. 1990; Clement et al. 1997).

Due perhaps to the recent emergence of local hospital alliances and consortia, the impact of these two organizational changes has yet to be widely investigated. In fact, we were able to identify only two empirical studies. The first, Clement et al. (1997), examined the association of alliance membership with hospital financial performance. Results indicated that (1) alliance membership was positively related to net patient revenues but unrelated to cash flow or expenses; (2) with one exception where higher net revenues were observed in alliances with two equal owners, the structure of alliances was uncorrelated with hospital financial performance; and (3) tenure in alliances showed no

association with hospital performance. Interestingly, the study also found similar results among hospitals that were members of local MHSs. Because the study did not distinguish alliances from systems and did not control separately for system effects, it is unclear whether the findings were attributable to membership in local systems or alliances.

The second study examined factors associated with effective rural hospital consortia in terms of their ability to improve members' financial performance (Chan, Feldman, and Manning forthcoming). Comparisons were made among members of hospital consortia and demonstrated a curvilinear relationship between size of the consortium and member hospitals' cost, revenue, and profitability. Member hospitals benefited from the increase in consortium size, but the benefit decreased as the consortium became larger. Since no comparisons were conducted with hospitals outside consortia, it is unclear if consortium hospitals enjoy any advantage or disadvantage over nonconsortium hospitals. However, an important implication of the study is that characteristics of consortia, such as size, may constitute important contexts that shape the performance of member hospitals.

OWNERSHIP AND MANAGEMENT RECONFIGURATION

Recent changes in hospital ownership and management patterns have transformed the traditional operation of freestanding, nonprofit community hospitals (Fennell and Alexander 1993). Four facets of ownership and management reconfiguration were identified from the literature: (1) consolidation of hospital facilities through mergers; (2) emergence of hospital corporate restructuring; (3) expansion of private, contractual management among nonprofit hospitals; and, because of these changes as well as increased environmental pressures, (4) increase in the frequency of top management succession among hospitals. Table 2 summarizes studies examining these four types of organizational change in hospitals.

MERGERS

Increasing market share, exploiting scale economies, and eliminating competitors to improve patient volume and profitability are primary reasons cited for hospital mergers (Bogue et al. 1995; Dranove 1998; Greene 1990; Lynk 1995). Mergers may reduce costs and improve patient volumes by eliminating excess beds, removing duplicate health services, and consolidating administrative and support services. An early case study by Briggs, Frommelt, and

(text continues on p. 251)

TABLE 2 Empirical Studies Examining the Consequences of Ownership and Management Reconfiguration in Hospitals

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|---|-------------|--|---|--|
| Mergers Briggs, Frommelt, and Roth | 1981 | Two hospital merger cases occurred in 1966 and 1971 | Case study | Improvement was seen in several areas after the merger: broadened medical care programs, upgraded management and physical facilities, increased revenues, stronger capital structures, better debt-equity conditions and enhanced public perception; however, operating costs were higher due to service expansion and staff and facility upgrading. |
| Mullner and Andersen | 1987 | 152 hospitals experiencing merger or consolidation during 1980-1985 | Pre-post nonexperimental design; financial conditions were compared before and after merger or consolidation; no control group was used | Hospitals involved in merger or consolidation were better than the industry averages; the general financial effects of merger or consolidation were |
| small. Greene | 1990 | 36 acute-care hospitals merging into 18 facilities from 1985 to 1987 | Pre-post nonexperimental design; financial and operational performance was compared before and after merger; no comparison group; no control for hospital and environmental | Most hospitals improved their profitability by reducing expenses, increasing gross and net patient revenues, and boosting ancillary services |

(continued)

TABLE 2 Continued

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|-----------------------------|-------------|--|--|---|
| Bogue et al. | 1995 | 60 hospital mergers during 1983-1988 | conditions Use of secondary data and survey to compare the level of similarity between merger entities and examine the market condition prior to merger; followed how acquired hospitals were used after merger | markup rates. Of acquired hospitals, 40.7% converted to nonacute inpatient care (e.g., psychiatric and substance abuse services, rehabilitation, and long-term care); acquired hospitals were closed in 17% of the merger events. |
| Lynk | 1995 | 2 sets: (1) 2 merging hospitals with 4 campuses in 1991-1992; (2) all acute-care hospitals in 1990 | Simulated potential reduction in excess capacity and overstaffing after merger based on data collected from the four merging hospital facilities; tested if excess capacity varied by hospital size | Merger generally reduced the variability of random patient demand and the cost of staffing for peak patient loads; consolidation efficiency varied by hospital scale, with more benefit accrued to mergers of smaller-sized hospitals. |
| Alexander, Halpern, and Lee | 1996 | 92 hospital mergers during 1982-1989 | Multiple time-series design; operating characteristics of merging hospitals were compared with a randomly selected group of nonmerging hospitals | Mergers resulted in improved operating efficiency—measured by occupancy and expenses per adjusted admission—relative to nonmerging hospitals; improvement was particularly salient in later periods characterized by increased pressures from prospective payment system (PPS) and hospital |

| | | | | |
|---|------|---|---|---|
| Connor et al. 1997 | | 3,500 short-term general hospitals, including 122 mergers, between 1986 and 1994 | 122 mergers between 1986 and 1994 constituted the study group, compared with nonmerger hospitals during the same period; changes in hospital costs and prices from 1986 to 1994 were compared by type of market, hospital, and merger | competition. Mergers resulted in average price reductions at about 7%; price reductions were less in markets with higher market concentration but greater in areas with higher HMO penetration; price reductions were higher for low-occupancy hospitals, nonteaching hospitals, nonsystem hospitals, similar-sized hospitals, and hospitals with greater pre-merger service duplication. |
| Guo and Bazzoli | 1998 | 5,518 hospitals between 1989 and 1993 | Used <i>t</i> tests to examine if mergers resulted in hospitals charging higher prices and if merged hospitals generated greater cost savings than nonmerged hospitals; no controls for hospital and market differences | In low HMO penetration markets, no significant difference in the change of prices was found between merged and nonmerged hospitals; when HMO penetration was high, merged hospitals had a smaller price increase than nonmerged hospitals, resulting in substantial cost savings to consumers. |
| Corporate Restructuring Alexander, Morlock, and Gifford | 1988 | 3,189 community hospitals responding to the American Hospital Association (AHA) Governing Board Survey, | Posttest-only design with non-equivalent comparison groups; controlled for size, regional location, multihospital system | Hospital boards under corporate restructuring conformed more to the "corporate" model found |

(continued)

TABLE 2 Continued

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|---|-------------|---|--|---|
| | | 1985 | (MHS) membership, teaching status, rural location, and ownership | in the business/industrial sector and less to the traditional "philanthropic" model among health organizations. |
| Clement, D'Aunno, and Poyzer | 1993b | 57 not-for-profit (NFP) Virginian hospital firms in 1989 | Cross-sectional design; examined whether the total margin of the corporate restructuring was associated with restructuring and the size and number of subsidiaries; controlled for market competition, hospital staffing, payer mix, and proportion of the hospital's inpatient volume | Restructuring had no relationship with performance of the hospital firm; neither were the number and size of nonhospital subsidiaries related to the hospital firm's financial performance. |
| Lee and Alexander | 1999 | The population of community hospitals operating in 1981 | Panel design; changes in hospitals were followed from 1981 to 1994; hospital survival was considered as a function of seven organizational changes (ownership change, specialty change, MHS affiliation, corporate restructuring, addition of a long-term care unit, downsizing, and CEO succession) and the characteristics of hospitals and environments | Corporate restructuring had no impact on hospital survival. |
| Contract Management Biggs, Kralewski, and Brown | 1980 | 32 NFP hospitals under contract management with 32 matched self-managed hospitals | Cross-sectional design; matching was used to control for the confounding effects of bed capacity, geographic location, | No significant differences were found between contract-managed and self-managed hospitals in |

| | | | | |
|-----------------------------------|------|--|--|---|
| | | | control type, teaching status, population base, and per capita income | governance structure, quality, costs of care, and occupancy rates; contract-managed hospitals had a broader range of services and younger and more educated administrators. |
| Wheeler, Zuckerman, and Aderholdt | 1982 | 10 hospitals contract managed by a MHS | Pre-post nonexperimental design; no comparison group was employed; change in performance was examined on the basis of 11 financial indicators related to profitability, liquidity, and capital structure | Contract management significantly enhanced the profitability of the study hospitals; management contracts reversed the trend of operating losses and reestablished the hospitals' financial viability; liquidity and capital structure showed improvement but the change was not significant. |
| Kralewski et al. | 1984 | 20 matched pairs of NFP community hospitals; each pair consisted of a hospital under management contract and a self-managed hospital | Pre-post quasi-experimental design with a matched group of self-managed hospitals; performance was compared before and after contract management and between contract and self-managed hospitals | Contract management increased the markup ratio, net profit, and return-on-assets ratio in contract-managed hospitals relative to their matches; contract management did not improve the hospital's productive efficiency. |
| Rundall and Lambert | 1984 | 10 public hospitals contract managed by an investor-owned (IO) firm during 1972-1980, matched with 10 self-managed public | Pre-post quasi-experimental design; each matched pair of hospitals was followed during a 3-year period to see the change following private management | Privately managed public hospitals were more cost-efficient than self-managed ones; they had lower rates of increase in |

(continued)

TABLE 2 Continued

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|-------------------------------------|-------------|---|--|---|
| | | hospitals | total expenses, payroll | |
| | | expenses, and expenses | | per patient day. |
| Alexander and Rundall | 1985 | Samples of acute-care public hospitals | Cross-sectional design; hospitals under contract management in 1981 were compared to self-managed hospitals and those entering contract management in 1981-1982; controlled for hospital and environmental conditions | Mixed results were found in operating efficiency; contract-managed hospitals had lower payroll expenses and higher operating revenue but showed greater expenses per patient day. |
| CEO Succession Alexander and Lee | 1996 | All rural community hospitals from 1984 to 1991 | Pooled cross-section time-series design; controlled for hospital performance and organizational and market characteristics; adjusted for autocorrelation | CEO succession significantly increased the risk of closure among rural hospitals; this significant effect existed despite the variation in CEO tenure. |
| Lee and Alexander | 1999 | The population of community hospitals operating in 1981 | Panel design; changes in hospitals were followed from 1981 to 1994; hospital survival was considered as a function of seven organizational changes (ownership change, specialty change, MHS affiliation, corporate restructuring, addition of a long-term care unit, downsizing, and CEO succession) | CEO successions were associated with a higher risk of hospital closure. |

Roth (1981) showed improved medical care programs and upgraded management and physical facilities after merger. Lynk (1995) further demonstrated that mergers might create economic efficiencies at the departmental level, by improving hospitals' ability to manage uncertain demand for clinical services with less excess staff, thereby reducing costs even if the merger involves only partial consolidation. More recently, using a national merger sample during 1982-1989, Alexander, Halpern, and Lee (1996) observed improved operating efficiency in terms of higher occupancy and lower expenses per adjusted admission in the postmerger period.

Improved economic efficiencies from merger, however, are not universal and may be sensitive to characteristics of the merging hospitals and market conditions. Connor et al. (1997), for example, found that price reductions after merger were higher for low-occupancy, nonteaching, nonsystem, similar-size hospitals and hospitals with greater premerger service duplication. Furthermore, Lynk (1995) showed that more benefits were associated with mergers of smaller hospitals, and although scale economies exist, they are substantial only for small hospitals (Dranove 1998). Consistent patterns also exist with respect to the contingent effects of market conditions. Several studies have shown that improved efficiency and potential cost savings to consumers are particularly salient in markets with tight price controls and strong competition (Alexander, Halpern, and Lee 1996; Connor et al. 1997; Guo and Bazzoli 1998).

Although greater economic efficiencies are likely after mergers, particularly among small hospitals and among hospitals operating in highly competitive markets, they do not necessarily translate into higher hospital profits (Greene 1990; Mullner and Andersen 1987). Instead, some hospitals may experience financial downturns as a result of merger (Greene 1990). Moreover, because of the incompatibility of organizational cultures and elimination of jobs and services, mergers are likely to decrease employee morale and productivity and strain physician and community relations (Greene 1990). In many cases, the dominant partner in a merger either dramatically transforms or shuts down the acquired hospital (Bogue et al. 1995).

CORPORATE RESTRUCTURING

Corporate restructuring involves the segmentation of assets or functions of the hospital into separate corporations (Alexander, Morlock, and Gifford 1988). Corporate restructuring arises as hospitals respond to increased constraints of cost shifting, lower occupancy rates, decline in philanthropic giving, increased competition, shrinking capital markets, and a general shift to a more "business-like" orientation in the health care sector (Gerber 1983; Hoch

1984; Starr 1982). Potential benefits of corporate restructuring include increased management efficiency, removal of activities that would jeopardize the tax-exempt status of the hospital, creation of a shield from state regulation for activities not directly related to inpatient services, avoidance of state certificate-of-need regulations, more favorable treatment by third-party payers, reduced legal liability, and increased flexibility for diversification in the face of an increasingly competitive health care market (Gerber 1983; Hoch 1984).

Despite the frequency of corporate restructuring—an estimated 1,000 hospitals underwent corporate restructuring between 1979 and 1985—empirical research on the consequences of this change is unusually rare (Alexander and Orlikoff 1987; Fennell and Alexander 1993). We could identify only three studies on this topic, and despite secondary, structural reorganizations in the aftermath of corporate restructuring, evidence does not suggest any advantages of the strategy. Alexander, Morlock, and Gifford (1988) found that restructured hospitals tended to develop corporate-style boards with a business orientation. Both Clement, D'Aunno, and Poyzer (1993b) and Lee and Alexander (1999) found no significant relationship between corporate restructuring and the financial performance or survival of hospitals. Beyond these initial examinations, whether and how corporate restructuring itself or the structural changes engendered by restructuring (e.g., diversification) affect the short-term or long-term performance of hospitals remain unclear.

CONTRACT MANAGEMENT

Contract management describes a situation whereby an external organization is contracted to assume responsibility for day-to-day management of the hospital (Fottler et al. 1982; Richards 1982; Wheeler, Zuckerman, and Aderholdt 1982). While complete ownership resulting from mergers or system acquisition may require significant organizational commitments and internal changes to realize the advantages of cooperative action, contract-managed hospitals enjoy many of the operational benefits of participation in an integrated system without sacrificing organizational autonomy and independence (Alexander and Rundall 1985; Fottler et al. 1982). The benefits include, for example, improved access to management expertise, specialized administrative services, joint purchasing, and capital markets (Biggs, Kralewski, and Brown 1980; Brown and Morey 1976; Richards 1982; Wheeler, Zuckerman, and Aderholdt 1982).

An average of 14 percent of community hospitals were contract managed for some time between 1980 and 1988 (Lee and Alexander 1998). The popularity of contract management has also attracted considerable research effort,

and the literature contains many empirical studies assessing the performance of contract-managed hospitals. In general, contract management has been shown to significantly affect the operation of hospitals, although a clear pattern of results is yet to emerge.

An early study by Biggs, Kralewski, and Brown (1980) found that compared with self-managed hospitals, hospitals under management contracts offered a broader range of services; had younger, more highly educated administrators; and showed lower costs per patient day due to lower employee-to-bed and payroll-to-total expense ratios and shorter lengths of stay. The study, however, lacked precontract data and therefore failed to examine changes resulting from the introduction of contract management.

The problem of precontract comparison was considered specifically by Wheeler, Zuckerman, and Aderholdt (1982). In this study, performance improvement was determined by the change between two periods: 3 years before and 3 years after the management contract. Results showed that contract management significantly improved hospital profitability but increased profitability was associated with higher pricing strategies rather than improved operational efficiency. Similar findings were obtained by Kralewski et al. (1984), who found higher markup ratios, net profits, and return-on-assets ratios in contract-managed hospitals relative to their self-managed matches. No improvement was observed in production efficiency.

Efficiency, however, may be more likely to improve in public hospitals under private management. Rundall and Lambert (1984), for example, showed that public hospitals contract managed by private firms were more cost-efficient than their self-managed counterparts. They displayed lower rates of increase in total expenses, payroll expenses, and expenses per patient day during a 3-year period. These findings, again, illustrate that the advantage of a strategy may be specific to the organizational context of the focal hospital.

It is worth noting that no evidence has linked contract management to long-term outcomes of hospitals. Moreover, existing studies were conducted primarily in the 1970s or the early 1980s. It is unclear if the positive effects of contract management, if any, still hold in recent years when government regulations have become more stringent and hospitals are experiencing greater competitive pressures. Morrissey and Alexander (1987a) pointed out that, from the management firm's perspective, management contracts might be undesirable because the firm cannot exercise enough control over operations of the managed hospital. These constraints may be intensified in an increasingly uncertain and competitive environment and may limit the management firm's ability to extricate distressed hospitals from financial or operational predicaments.

TOP MANAGEMENT SUCCESSION

The succession of top management has become common in hospitals during the last two decades. The average tenure of CEOs among community hospitals was only 5.6 years during 1980-1988; the turnover rate increased dramatically in 1983 and reached its peak of 22.6 percent in 1987 (Lee and Alexander 1998). This pattern seems consistent with management literature that considers CEO succession a "turnaround" strategy, especially for organizations experiencing strategic stagnation or severe financial distress (Wiersema and Bantel 1993). It is assumed that new CEOs have less commitment to existing strategies. They can introduce new perspectives and frames of action and, therefore, can initiate strategies to improve the adaptability and survival of the organization (Finkelstein and Hambrick 1990; Miller 1991, 1993; Tushman and Romanelli 1985).

By contrast, some literature on the hospital industry has expressed concern about the potential negative consequences associated with CEO succession such as the disruption of standard routines and command (Jacobs and Fraser 1987; Sabatino 1987). These discussions, however, tend to be primarily prescriptive. Few studies have examined empirically the organizational consequences of CEO succession in hospitals. One study correlated CEO succession with closure of rural hospitals over the period from 1984 to 1991 (Alexander and Lee 1996). Controlling for hospital performance, CEO tenure, and other organizational and market characteristics, change in the top management position significantly increased the risk of hospital closure. Lee and Alexander (1999) extended the analysis to the population of U.S. community hospitals during 1981-1994 and showed a similar, negative relationship between CEO succession and hospital survival. Further research is needed to investigate if such effects hold under different environmental (e.g., stable vs. uncertain environments) and organizational (e.g., large vs. small hospitals) conditions.

SERVICE DIVERSIFICATION AND OPERATIONAL REDUCTION

The growth and expansion of acute-care hospitals after World War II to the 1970s set the stage for severe overbedding in the hospital industry (Mick 1990b; Stevens 1989). Oversupply of acute, inpatient beds—intensified by regulatory reforms under prospective payment, the emergence of alternative health care organizations, reduced resources for hospital inpatient care, and increased price-based competition—has forced hospitals to modify their functions and scale of operations (Robinson 1994). Two changes are often

employed by hospitals in response to these pressures: service diversification and reduction of operational capacity. Table 3 contains summaries of empirical research investigating the outcomes associated with these two types of organizational change in hospitals.

SERVICE DIVERSIFICATION

Diversification, or hospital entry into nonacute-care lines of business, allows a hospital to mitigate the impact of operating in a declining acute-care market and to avoid overdependence on a single line of services or products (Clement 1988). Additional benefits may include economies of scale; decrease in debt financing costs; creation of multiple revenue sources; diffusion of risk in uncertain environments; and expansion of opportunities in growing, profitable markets (Alexander 1990; Clement 1988; Rumelt 1982). If successfully diversified, a hospital is expected to have lower costs, higher profits, and lower total risks.

However, empirical evidence regarding the consequences of service diversification has thus far been mixed. An early study by Eastaugh (1984) showed a statistically significant relationship between diversification and higher operating ratios in 62 New York hospitals during 1974-1979. On the other hand, using data from California nonprofit hospitals before PPS, Clement (1987) found that diversified hospitals had no better return-on-asset ratios and, contrary to expectation, experienced greater financial risk than their counterparts. Similar negative or nonsignificant findings were obtained in Mullner (1990) and Eastaugh (1992). Mullner (1990) found that the presence of a nursing home or other long-term care units significantly increased the risk of closure among rural community hospitals. Eastaugh (1992), in contrast to his earlier findings, found that hospitals specializing in fewer product lines experienced fewer profit declines and that excess diversification led to a rapid decline in profitability.

A more detailed analysis examining the relationship between types of diversified services and financial performance was conducted by Clement, D'Aunno, and Poyzer (1993a). Results indicated that provision of services related to acute care significantly improved profitability, while unrelated diversification tended to result in poor financial performance. The findings, however, were limited to the subsidiaries of hospitals. It remains unclear if similar improvement applies to the entire hospital. Furthermore, financial benefits—or risks—from diversification usually take time to realize (Clement 1988). Such long-term effects will require longitudinal data to evaluate. Lee and Alexander (1999) provided an example of such longitudinal research. Using data on community hospitals from 1981 to 1994, they investigated

and the characteristics of hospitals
and environments

TABLE 3 Empirical Studies Examining the Consequences of Diversification and Operational Reduction in Hospitals

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|------------------------|-------------|---|---|---|
| Diversification | | | | |
| Eastaugh | 1984 | 62 New York hospitals during 1974-1979 | Pooled time-series design; examined the simultaneous relationship between financial performance and diversification; controlled for reduction in the market supply of hospital beds, percentage of Medicare enrollees, percentage of non-white population, and time trend | Diversification yielded better financial position, measured by operating ratio; better operating ratio provided hospitals the wherewithal to diversify. |
| Clement | 1987 | California short-term general NFP hospitals, 1978-1983 | Pooled cross-sectional time-series design; controlled for competition, payer mix, community characteristics, physician staffing, and hospital size; failed to account for autocorrelation among repeated observations | Diversification (related or unrelated) did not affect the hospital's return on assets; contrary to expectation, diversification increased the financial risk of hospitals; there was no difference in the effects of related versus unrelated diversification on hospital financial outcomes. |
| Mullner | 1990 | Rural community hospitals closed during 1980-1987, matched with a group of hospitals that remained open | Matched case-control design | Among all service and facility variables examined, the presence of a skill nursing or other long-term care unit significantly |

| | | | | |
|------------------------------|-------|--|--|--|
| Eastaugh | 1992 | 232 short-term, acute-care, nongovernment hospitals with more than 75 beds in 1998 | Survey design; CEOs of the hospitals were surveyed about their hospitals' strategies, financial performance, and the change thereof between 1986 and 1990 | increased the risk of hospital closure. Hospitals specializing in fewer product lines experienced less decline in profitability; excess diversification led to the most rapid declines in profitability. |
| Clement, D'Aunno, and Poyzer | 1993a | 162 subsidiaries of hospitals operating in Virginia, 1987 | Cross-sectional design; examined type of diversification and financial performance among subsidiaries of acute-care hospitals; no controls were used; the study differentiated various types of diversification and conditions that potentially affect performance of subsidiary units | Subsidiaries producing health or related products tended to be more profitable than other subsidiaries; subsidiaries that existed longer or were NFP units of NFP hospitals were also more profitable. |
| Lee and Alexander | 1999 | The population of community hospitals operating in 1981 | Panel design; changes in hospitals were followed from 1981 to 1994; hospital survival was considered as a function of seven organizational changes (ownership change, specialty change, MHS affiliation, corporate restructuring, addition of a long-term care unit, downsizing, | Addition of a long-term care unit had no impact on hospital survival. |

(continued)

TABLE 3 Continued

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|---|-------------|---|---|---|
| | | | and CEO succession) and the characteristics of hospitals and environments | |
| Operational Reduction Mick and Wise | 1996 | A national sample of 797 rural community hospitals surveyed in 1989 | Posttest-only design with nonequivalent comparison groups; controlled for market and hospital characteristics | Contrary to expectations, downsizing did not have any significant impact on hospital financial performance. |
| Woodard, Fottler, and Kilpatrick | 1999 | A 596-bed academic medical center in the southeastern United States | Case study, examining the restructuring, job redesign, and downsizing processes of the medical center between 1993 and 1997 | Financial performance of the medical center was improved due to restructuring; jobs were consolidated and work flows redesigned; good communication was the key to the success; despite this, some employees experienced low morale and distrust. |
| Lee and Alexander | 1999 | The population of community hospitals operating in 1981 | Panel design; changes in hospitals were followed from 1981 to 1994; hospital survival was considered as a function of seven organizational changes (ownership change, specialty change, MHS affiliation, corporate restructuring, addition of a long-term care unit, downsizing, and CEO succession) and the characteristics of hospitals | Downsizing showed a positive relationship with risks of hospital closure. |

whether adding a long-term care unit to a hospital's existing acute-care facilities improved hospital survival. No significant effect was found. However, given the variety of diversification undertaken by hospitals, it remains unclear what kind of service change is most beneficial for hospitals. Furthermore, it may be that advantages are associated not with a specific diversification activity but the extent of resulting differentiation between the focal hospital and its competitors in the local market (Succi, Lee, and Alexander 1997).

OPERATIONAL REDUCTION

Facing eroding patient volumes and financial margins, hospitals are downsizing and/or eliminating unprofitable services at an unprecedented rate (Cerne and Montague 1994; Doherty, O'Donovan, and O'Donovan 1986). More excess beds are expected to be cut in the near future. On the basis of a hospital occupancy rate of 67 percent and assuming HMO use rates, the Washington-based AmHS Institute estimated that the nation had 447,545 excess hospital beds, the equivalent of 2,983 hospitals averaging 150 beds (cited in Cerne and Montague 1994). For individual hospitals, reduction of existing, redundant capacity is expected to reduce costs, to increase efficiency, and to enhance the hospital's competitive position (Cascio 1993; Doherty, O'Donovan, and O'Donovan 1986; Freeman and Cameron 1993). Reduction may also release resources for expanding into more profitable markets (Alexander 1990).

Despite its frequency, operational reduction is surprisingly underresearched. Theoretical and prescriptive discussions abound, but little empirical evidence exists that allows hospital decision makers to gauge the impact of such change on their organizations. A recent case study of a medical center indicated positive financial outcomes associated with downsizing (Woodard, Fottler, and Kilpatrick 1999). Yet, in a survey of a national sample of rural hospitals, Mick and Wise (1996) found no relationship between downsizing and hospital financial well-being, whether measured at one time or as change over time. Thus, the true benefits of operational reduction remain unclear.

Worse yet, risks may arise if the elimination of beds and services threatens the scale economies or efficiencies necessary for hospital survival, or if it undermines the configuration or mix of existing facilities, eroding the hospital's mission and service quality (Collins and Noble 1992). Lee and Alexander (1999), for example, found a positive relationship between downsizing—measured by the reduction of more than 15 percent of full-time equivalent employees or hospital beds in a 1-year period—and risk of hospital closure. This finding and the above considerations caution against a sweeping application of

operational reduction, at least in some hospitals, and require careful identification of the organizational or environmental conditions for successful reduction.

SUMMARY OF EMPIRICAL FINDINGS AND SUGGESTION FOR RESEARCH

While most literature assumes that organizational change results in positive outcomes, empirical findings reviewed here are by no means consistent with this expectation. Only limited evidence suggests that hospitals that modify their structures outperform those that do not with respect to a variety of financial and operational indicators. Scott (1990) made similar observations in his review of technical innovations in medical care organizations. He concluded that "such an association [between innovation and positive performance] seems unwarranted in medical care organizations, where new technologies and treatments may be underevaluated, oversold, or too quickly promulgated, or where benefits are likely to be overestimated and costs underestimated" (p. 187). One can apply similar explanations to the lack of clear relationships between organizational change and hospital performance and warn against the danger of "overchange." But it may be equally dangerous to simply disregard any value of organizational change and encourage hospitals to maintain the status quo in an increasingly uncertain health care environment. The solution, instead, may lie somewhere between the extremes and will require examining factors that contribute to the success or failure of organizational change in hospitals—Does organizational change benefit one type of hospitals more than others? Does the type of organizational change matter? What environmental conditions increase the likelihood that organizational change among hospitals will result in positive outcomes? Answers to these questions require research with improved study designs, which may be informed from the problems and weaknesses of existing research.

Tables 1-3 summarize the designs of the studies reviewed in this article. Several problems can be identified from those studies that may account for the mixed findings regarding the relationship of organizational change and hospital outcomes: (1) use of cross-sectional designs, (2) neglect of self-selection, (3) inconsistent conceptualization of organizational change or strategy, (4) limited samples of hospitals, (5) failure to consider contingencies of organizational change, (6) use of short-term performance indicators, and (7) lack of comparative analysis of organizational change. As we will note, many of these problems are interrelated.

CROSS-SECTIONAL VERSUS LONGITUDINAL DESIGNS

Many of the studies reviewed employed a cross-sectional design, in which all measurements were specified at one point in time. This design severely constrains the ability to establish causality between organizational change and hospital performance and, worse yet, might produce biased results. The Biggs, Kralewski, and Brown (1980) study illustrates these shortcomings. The study found no significant difference between contract-managed and self-managed hospitals in quality, cost of care, and occupancy. However, these findings are problematic because cross-sectional data do not permit assessment of performance trends in hospitals. It is possible, for example, that hospitals' entry into management contracts was precipitated by low performance levels. Thus, contract management might have improved the performance of hospitals to the level of their self-managed counterparts, resulting in no performance differences between the two groups.

The limitations of cross-sectional design are further exemplified by the issue of opportunity cost in strategic management (Shortell and Zajac 1990). MHS affiliation, for example, may be risky owing to incompatible organizational cultures, resistance from the community, reorganization pressures from the system headquarters, and the negative feelings among employees of the affiliating hospital (Lee and Alexander 1998). The question, however, must be considered relative to other available options: going it alone, doing nothing, or joining a corporate multihospital entity. MHS affiliation may appear risky when the comparison involves cross-sectional measurement of performance between system and freestanding hospitals. But, when longitudinal data are used to allow assessment of performance change before and after system affiliation, joining a system may stand out as a relatively low-risk decision.

In contrast to cross-sectional designs, longitudinal studies employing a relatively long time frame permit exploration of the dynamics between organizational change and hospital outcomes. For example, with lagged change variables, the researcher can determine if organizational change precedes improvement or deterioration of performance, thus enhancing causal inferences regarding the effects of change on hospitals. It is also possible to examine whether advantages—or disadvantages—of organizational change vary over time or are specific to particular time periods (e.g., before or after PPS), thus improving our understanding of the interactive effect of organizational change and significant policy events on hospitals.

SELF-SELECTION

The example of Biggs, Kralewski, and Brown (1980) also points to an important issue of self-selection in studies that compare outcomes of organizational change among different groups of hospitals. The problem stems from the observation that hospitals may not randomly engage in organizational change; those entering contract management, for example, may differ fundamentally from self-managed hospitals in terms of management skills, cost structures, and financial performance. In particular, self-selection may occur when the change is interorganizational, involving decisions of the focal hospital as well as one or more partner organizations. A case in point is MHS affiliation. While hospitals may be generally attracted to systems' greater political clout and easier access to capital and managerial resources, system acquisitions are more likely in favorable markets, among hospitals with weak and inefficient management, and when the system and the hospital share comparable missions (Alexander and Morrisey 1988).

Failure to account for self-selection may bias research findings or lead to erroneous conclusions, attributing the observed differences, or lack thereof, in hospital outcomes to organizational change rather than more properly to inherent discrepancies in hospital structure and behavior. Dranove and Shanley's (1995) study of system acquisition illustrates such a potential error. In the study, the researchers found a higher level of price-cost margins and profits among system hospitals and attributed such financial advantages to systems' superior marketing strategies and a more homogeneous mix of services. However, as Snail and Robinson (1998) pointed out, the findings may be due to systems' selection of new members based on their structural similarities to existing member hospitals, therefore allowing the implementation of a particular style of management and production processes.

Measures to control for selection effects have been widely discussed in the social sciences literature (e.g., Dubin and Rivers 1989; Heckman 1979; Lee 1982). One common approach is to employ two-stage sample selection models to estimate separately the determinants of organizational change and hospital performance. This produces unbiased estimates of the effects of organizational change on hospital performance (for empirical applications, see Succi [1996] and Menke [1997]). Alternatively, one can focus specifically on whether organizational change improves, or worsens, the performance of hospitals over time. This approach requires the use of longitudinal data that allow the monitoring of change in organizational structure or strategy in association with over-time differences in hospital outcomes (see, e.g., Alexander, Halpern, and Lee 1996). The disadvantage of this alternative is that findings may

have limited generalizability and apply only to the subgroup of hospitals experiencing the change of interest.

CONCEPTUALIZATION OF ORGANIZATIONAL CHANGE

Existing studies diverge in their examination of the *state* (e.g., hospital ownership of a skilled nursing facility) versus *change* (e.g., acquisition of a skilled nursing facility) in hospital structure or activity. These two measurements of organizational change differ on one important dimension: time. Time is an essential element in the measurement of *change*, defined as a shift from one state to another in hospital structure or behavior at one period of the hospital's history. In constructing the measure, one knows when a change occurred and can subsequently examine how it might affect the performance of the hospital, and the length of time for the effect to take place. The study of a *state*, on the other hand, focuses on the static profile of hospitals and does not capture the dynamic relationship between hospital change and performance. One way to address this limitation, as illustrated by Clement et al. (1997), is to incorporate a variable indicating the length of time—that is, tenure—a hospital has engaged in a change. A drawback with this approach, however, is that tenure may be endogenous, influenced by the degree to which the hospital has benefited from the strategy and therefore by the hospital's performance. In other words, hospitals with poor experience with a strategy may drop it early in the game, thus producing a false impression that longer tenure leads to higher performance.

LIMITED SAMPLES

With few exceptions, the reviewed studies were based on small, purposive samples of hospitals, or hospitals located in one particular geographic area (e.g., a state). For example, Levitz and Brooke (1985) and Manheim, Shortell, and McFall (1989) studied, respectively, short-term acute-care hospitals operated in Iowa and hospitals acquired by HCA. Both studies found that system affiliation significantly increased hospital expenses and costs. The results, however, may be specific to Iowa or to that particular FP system and have limited generalizability across geographic areas and multihospital systems.

Future research needs to use larger samples and samples representative of the nation's hospitals to produce results with broad generalizability. Diverse samples will also allow better controls for market conditions and organizational characteristics of study hospitals and provide opportunities to examine

if the type of organizational change beneficial for hospitals differs by hospital characteristics (e.g., size, ownership) and local market situations (e.g., competition, physician supply, population composition).

CONTINGENCIES OF ORGANIZATIONAL CHANGE

Organizational change is assumed to improve the fit of hospital structures and practices to environmental requirements. However, in most of the studies reviewed, effects of organizational change were determined by comparing the performance of hospitals that experienced change with those that did not. This approach assumes uniform impact of organizational change and overlooks contingencies that may affect the benefits or risks associated with organizational change. Two studies that specifically incorporate this perspective are Halpern, Alexander, and Fennell (1992) and Succi (1996). The former focused on the joint effects of MHS affiliation and hospital characteristics on rural hospital survival; the latter examined the environmental contingencies associated with system affiliation and their interactive impact on hospital financial and operational performance. Their findings suggested that the value of MHS affiliation varied as a function of the hospital's size, ownership of the system, and the level of market competition and uncertainty. Thus, the utility of organizational change may be specific to hospitals' particular organizational and environmental milieus. Ignoring such contingencies may lead to inappropriate adaptive responses for significant subgroups of hospitals (Smith and Piland 1990).

To illustrate, consider hospital scale. Scale constitutes an important context in the evaluation of organizational change, particularly in view of the frequent downsizing and merger activities among hospitals. Downsizing may be a beneficial strategy for larger hospitals because they have more slack resources (see, e.g., Woodard, Fottler, and Kilpatrick 1999). Smaller hospitals, on the other hand, may lack the scale economies to absorb such reduction; instead of reducing excess capacity, the cut may hurt the "muscles and bones" of the hospital (Lee and Alexander 1999). On the other hand, studies have pointed that efficiency gains of mergers also vary by hospital scale, with more benefit accruing to mergers of smaller-size hospitals (Dranove 1998; Lynk 1995).

Organizational changes, moreover, are not equivalent. For example, they vary in terms of the problems they are designed to address and may affect different structures of a hospital. More important, change comes with a price tag and the cost that a hospital has to pay may depend on how the change affects the hospital's structure (Fennell and Alexander 1993; Miller and Friesen 1984). Conversion of hospital ownership through merger and acquisition,

elimination of traditional hospital services, and diversification into nonacute-care areas, for example, affect a hospital's mission, authority structure, technology, and market strategy. If adopted inappropriately, these drastic modifications may disrupt existing technical capabilities or core competence and pose a potential threat to the viability of the hospital. By contrast, reducing hospital beds to increase efficiency or creating a corporate holding company to protect the hospital's clinical operation from government regulations may be implemented relatively gradually and thus may be effective when the environment requires minor reconfiguration of hospital structures. Attention to these distinctions and to the degree of fit of organizational changes in different types of hospitals and environments is needed to improve our understanding of the impact of organizational change in hospitals.

MEASURES OF ORGANIZATIONAL OUTCOME

In the main, the research reviewed in this article uses accounting and financial indicators as measures of the success or failure of organizational change. These measures emphasize short-term effects of organizational change and are based on a limited, if not erroneous, assumption of rational action—namely, organizational change is the outcome of deliberate decisions to improve hospital efficiency and effectiveness (Mohr 1992). Hospitals, however, may change to imitate “model” hospitals in the local market or to mirror the dominant corporate practices in the industry. They may do so to select the “right” form of structure to increase their legitimacy and survival, notwithstanding the efficiency or effectiveness implications of such practices (DiMaggio and Powell 1983).

The preference for financial indicators over long-term outcomes such as survival may reflect a concern among investigators that survival may not be sensitive enough as a dependent variable. Hospitals were once “protectively cultured” (Brown 1964); their survival was underwritten by society through tax exemptions, direct subsidies, and exclusion from most federal labor regulation (Somers 1969). Thus, ineffectiveness had to be substantial before a hospital failed. Because such protections no longer exist, the viability of hospitals is increasingly threatened by concerns of escalating health care costs and the resulting cost-control efforts of public and private third-party payers. Between 1976 and 1994, more than 1,200 of the nation's hospitals closed (AHA 1991; Lowe 1994), suggesting the appropriateness and importance of examining hospital survival or failure as an outcome of organizational change.

Moreover, using survival as an outcome offers several advantages. First, in an industry where so few output measures have been operationalized and

standardized (Donabedian 1980), survival is perhaps the most appropriate measure of socioeconomic acceptability (Cannedy, Pointer, and Ruchlin 1973). It transcends the financial viability of hospitals and is equally valid for hospitals with different profit orientations and accounting criteria. Financial indicators, such as profitability, sales volume, and market share, are sensitive to the time span of the study (Coyne 1985b; Hannan and Freeman 1989; Mitchell and Singh 1993). A hospital, for example, may adapt in accordance to its long-term goals at the expense of short-term adjustments. Consequently, results may differ according to the length of time the hospital's performance is followed. This is a particular problem in longitudinal research (Greenhalgh 1983).

COMPARISON OF ORGANIZATIONAL CHANGES

Finally, the reviewed research has generally overlooked the comparative advantages or disadvantages of different organizational changes among hospitals. One exception is Mick et al. (1994). They examined multiple changes among rural hospitals and provided the opportunity to compare the performance consequences of different organizational changes (see Table 4). In their study, however, consequences of these different organizational changes were assessed in separate models. Thus, hospital changes were assumed to be independent, at least as far as their effects on hospitals are concerned.

This assumption is problematic for at least two reasons. First, organizational changes may be implemented simultaneously to achieve a preset, strategic goal. This is evident in a study by Lee and Alexander (1998), showing that hospitals tend to experience high CEO turnover at the time of system affiliation, possibly as a consequence of the system's intention to bring the hospital management in line with its corporate policies. To the extent that organizational changes are not undertaken independently, findings regarding a given change may be biased because of inappropriate controls for the effects of other, simultaneous changes. Second, different organizational changes may yield similar benefits but differ in terms of the costs involved. The contrast between MHS affiliation and contract management provides an example. Although MHS affiliation increases hospitals' access to managerial expertise, similar advantages may be offered to independent hospitals through management contracts with private vendors or hospital associations (Manheim, Shortell, and McFall 1989). The threat to hospital autonomy and the resistance from community groups and employees, however, may render MHS affiliation unfavorable as compared to contract management with respect to hospital performance and survivability.

and environments

TABLE 4 Empirical Studies Comparing the Consequences of Different Organizational Changes in Hospitals

| <i>Author(s)</i> | <i>Year</i> | <i>Sample</i> | <i>Design</i> | <i>Results</i> |
|-------------------|-------------|---|--|--|
| Mick et al. | 1994 | A national sample of 797 rural community hospitals surveyed in 1989 | Posttest-only design with non-equivalent comparison groups; performance consequences of 13 strategic changes were examined; controls used to adjust for the confounding effects of hospital and environmental attributes | No consistent relation between changes and positive financial performance (total margin and current ratio) was found; significant associations between changes and performance were more often negative than positive. |
| Lee and Alexander | 1999 | The population of community hospitals operating in 1981 | Panel design; changes in hospitals were followed from 1981 to 1994; hospital survival was considered as a function of seven organizational changes (ownership changes, specialty change, multihospital system [MHS] affiliation, corporate restructuring, addition of a long-term care unit, | Three organizational changes were found to be associated with hospital closure; specialty change was related to lower risk of closure; downsizing and CEO succession were associated with higher risk of closure. |

Solutions to these problems require simultaneous comparison of multiple organizational changes. An attempt was made by Lee and Alexander (1999), in which the researchers compared the relative impact of seven organizational changes—ownership change, specialty change, MHS affiliation, corporate restructuring, addition of a long-term care unit, downsizing, and CEO succession—on hospital survival in the same models. Of the seven organizational changes examined, three were found to be significantly associated with hospital closure, suggesting differential consequences of organizational changes undertaken by hospitals.

Information on multiple organizational changes is also needed to explore issues such as to what extent organizational changes are orchestrated and concerted by hospitals and whether there exists a joint, synergistic effect of a set of deliberate changes undertaken by hospitals. Examining these questions will require a comprehensive collection of changes in hospitals and analytical techniques (e.g., taxonomy construction) currently uncommon in health services research.

CONCLUSION

Recent social, political, and economic changes have threatened the dominant position of hospitals in the health delivery system. As health care reform and market competition escalate, the health care system is likely to witness more organizational changes among hospitals and other health care organizations as they scramble to ensure their survival and seek to demonstrate their ability to operate according to the latest business strategies (Alexander and D'Aunno 1990; Mick 1990b; Mohr 1992; Stevens 1989).

This article reviewed existing empirical studies that examined the consequences of organizational change in hospitals. The review revealed both limited and inconsistent findings in the current literature, suggesting that we are a long way from understanding the implications of organizational change (Fennell and Alexander 1993; Mick 1990a; Topping and Hernandez 1991). Specifically, a number of questions remain to be explored in future research:

- What is gained and lost by hospitals engaging in various organizational changes? Do organizational changes improve or reduce not only the short-term performance of hospitals but also their long-term viability?
- What organizational and environmental factors determine the success or failure of organizational change in hospitals? In other words, when and under what organizational and environmental conditions can organizational change increase or reduce the performance and long-term viability of hospitals?

- What differences should a hospital expect when it chooses one type of organizational change over another? How does the interaction between type of organizational change and the hospital's specific strategic context affect hospital performance? How does a hospital increase the fit between its strategic choice of organizational change and the environmental conditions under which it operates?
- How can hospitals better handle the increased complexity of organizational change? Is there a way to classify organizational change and guide hospitals in their selection of change that strategically fits their organizational and environmental conditions?
- How do different processes of change (e.g., incremental, piecemeal adjustment versus dramatic, wholesale shift) affect hospitals? Do processes of change vary within or across types of organizational change? How do processes and types of organizational change affect hospital performance differentially?
- Does the temporal pattern of organizational change make any difference in hospital performance? For example, are changes occurring simultaneously more disruptive and harmful than changes taking place in staged fashion during an extended time period?
- To what extent do simultaneous or staged organizational changes reflect a deliberate action by the hospital? Does the joint, synergistic effect of changes matter more than the impact of independent organizational change?

Considering the rapid changes in the hospital industry, the survival game that hospitals are competing in today is much like the croquet game in *Alice in Wonderland*. In the game, every element is in a state of motion—technology, suppliers, customers, employees, corporate structure, government relations—and none can be counted on to remain stable for very long (Barnett and Hansen 1996). To gain a foothold, hospitals probably have to “run at least twice as fast” as their competitors by breaking from their old frames of thinking and fundamentally reconstructing their organizational structures. However bounded the above questions may be, answers to them will provide better information for decision makers of hospitals to develop effective adaptation plans in an increasingly competitive and uncertain environment.

NOTES

1. Snail and Robinson (1998) provided a similar review on hospital diversification from an economic perspective.
2. We are grateful for one anonymous reviewer's calling our attention to an article overlooked in our search.
3. Diversification will be reviewed in a later section.
4. A similar lack of differentiation between ownership and system effects occurred in Watt et al. (1986).

5. Several studies have also indicated different patterns of effects by the ownership type of the system (Cleverley 1992; Coyne 1985a, 1985b; Halpern, Alexander, and Fennell 1992; Renn et al. 1985). The findings, however, are not consistent across studies (for a counterexample, see Menke 1997).

REFERENCES

- Alexander, J. A. 1990. Diversification Behavior of Multihospital Systems: Patterns of Change, 1983-1985. *Hospital & Health Services Administration* 35 (1): 83-102.
- Alexander, J. A., and T. A. D'Aunno. 1990. Transformation of Institutional Environments: Perspectives on the Corporatization of U.S. Health Care. In *Innovations in Health Care Delivery: Insights for Organization Theory*, ed. S. S. Mick and Associates, 53-85. San Francisco: Jossey-Bass.
- Alexander, J. A., T. A. D'Aunno, and M. J. Succi. 1996. Determinants of Profound Organizational Change: Choice of Conversion or Closure among Rural Hospitals. *Journal of Health and Social Behavior* 37:238-51.
- Alexander, J. A., M. T. Halpern, and S.-Y. D. Lee. 1996. The Short-Term Effects of Merger on Hospital Operations. *Health Services Research* 30:827-47.
- Alexander, J. A., and S.-Y. D. Lee. 1996. The Effect of CEO Succession and Tenure on Failure of Rural Community Hospitals. *Journal of Applied Behavioral Science* 32:70-88.
- Alexander, J. A., L. L. Morlock, and B. D. Gifford. 1988. The Effects of Corporate Restructuring on Hospital Policymaking. *Health Services Research* 23:311-37.
- Alexander, J. A., and M. A. Morrissey. 1988. Hospital Selection into Multihospital Systems: The Effects of Market, Management, and Mission. *Medical Care* 26:159-76.
- Alexander, J. A., and J. Orlikoff. 1987. Corporate Restructuring Gains Widespread Acceptance. *Trustee* 40 (1): 16-18.
- Alexander, J. A., and T. G. Rundall. 1985. Public Hospitals under Contract Management: An Assessment of Operating Performance. *Medical Care* 23:209-19.
- American Hospital Association. 1983. *Directory of Multihospital Systems*. Chicago: American Hospital Association.
- . 1991. *Hospital Closure 1980-1990: A Statistical Profile*. Chicago: American Hospital Association.
- Barnett, W. P., and M. T. Hansen. 1996. The Red Queen in Organizational Evolution. *Strategic Management Journal* 17:139-57.
- Becker, E. R., and F. A. Sloan. 1985. Hospital Ownership and Performance. *Economic Inquiry* 23:21-36.
- Berry, D. E., T. Tucker, and J. Seavey. 1987. Efficacy of System Management or Ownership as Options for Distressed Small Rural Hospitals. *Journal of Rural Health* 3 (2): 61-75.
- Bigelow, B., and J. F. Mahon, J. F. 1989. Strategic Behavior of Hospitals: A Framework for Analysis. *Medical Care Review* 46:295-311.
- Biggs, E. L., J. E. Kralewski, and G. D. Brown. 1980. A Comparison of Contract-Managed and Traditionally Managed Nonprofit Hospitals. *Medical Care* 18:585-96.

- Bogue, R. J., S. M. Shortell, M.-W. Sohn, L. M. Manheim, G. Bazzoli, and C. Chan. 1995. Hospital Reorganization after Merger. *Medical Care* 33:676-86.
- Briggs, F. R., J. J. Frommelt, and J. H. Roth. 1981. How Hospital Consolidations Affect Revenues. *Topics in Health Care Financing* 8 (1): 21-37.
- Brown, M., and W. Morey. 1976. Contract Management: Is It for Your Hospital? *Trustee* 29:13.
- Brown, R. E. 1964. The Hospital as an Obligated Enterprise. *Hospitals* 38 (16 July): 72-73.
- Cannedy, L. L., D. D. Pointer, and H. S. Ruchlin. 1973. Viability and Hospital Failure: Methodological Considerations and Empirical Evidence. *Health Services Research* 8:27-36.
- Cascio, W. F. 1993. Downsizing? What Do We Know? What Have We Learned? *Academy of Management Executive* 7:95-104.
- Cerne, F., and J. Montague. 1994. Capacity Crisis. *Hospitals & Health Networks* 68 (19): 30, 32, 34, 36, 38, 40.
- Chan, B., R. Feldman, and W. Manning. Forthcoming. The Effects of Group Size and Group Economic Factors on Collaboration: A Study of Financial Performance of Rural Hospitals in Consortia. *Health Services Research* 34 (1): 9-31.
- Christianson, J. B., I. S. Moscovice, J. Johnson, J. Kralewski, and C. Grogan. 1990. Evaluating Rural Hospital Consortia. *Health Affairs* 9 (1): 135-47.
- Clement, J. P. 1987. Does Hospital Diversification Improve Financial Outcomes? *Medical Care* 25:988-1001.
- . 1988. Corporate Diversification: Expectations and Outcomes. *Health Care Management Review* 13 (2): 7-13.
- Clement, J. P., T. D'Aunno, and B. L. Poyzer. 1993a. The Financial Performance of Diversified Hospital Subsidiaries. *Health Services Research* 27:741-63.
- . 1993b. Hospital Corporate Restructuring and Financial Performance. *Medical Care* 31:975-88.
- Clement, J. P., M. J. McCue, R. D. Luke, J. D. Bramble, L. F. Rossiter, Y. A. Ozcan, and C.-W. Pai. 1997. Strategic Hospital Alliances: Impact of Financial Performance. *Health Affairs* 16 (6): 193-203.
- Cleverley, W. O. 1992. Financial and Operating Performance of Systems: Voluntary versus Investor-Owned. *Topics in Health Care Financing* 18 (4): 63-73.
- Collins, A. L., and R. Noble. 1992. Hospital Rightsizing: In Line with Long-Term Strategies and Economic Realities. *Healthcare Management FORUM* 5 (1): 4-10.
- Connor, R. A., R. D. Feldman, B. E. Dowd, and T. A. Radcliff. 1997. Which Types of Hospital Mergers Save Consumers Money? *Health Affairs* 16 (6): 62-74.
- Coulam, R. F., and G. L. Gaumer. 1991. Medicare's Prospective Payment System: A Critical Appraisal. *Health Care Financing Review* 13 (suppl.): 45-77.
- Coyne, J. S. 1982. Hospital Performance in Multihospital Systems: A Comparative Study of System and Independent Hospitals. *Health Services Research* 17:303-29.
- . 1985a. Assessing the Financial Characteristics of Multi-Institutional Organizations. *Health Services Research* 19:701-15.
- . 1985b. Measuring Hospital Performance in Multi-Institutional Organizations Using Financial Ratios. *Health Care Management Review* 10 (4): 35-42.

- D'Aunno, T. A., and H. S. Zuckerman. 1987a. The Emergence of Hospital Federations: An Integration of Perspectives from Organizational Theory. *Medical Care Review* 44:323-43.
- . 1987b. A Life-Cycle Model of Organizational Federations: The Case of Hospitals. *Academy of Management Review* 12:534-45.
- DiMaggio, P. J., and W. W. Powell. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review* 48:147-60.
- Dobson, A., and E. W. Hoy. 1988. Hospital PPS Profits: Past and Prospective. *Health Affairs* 7:126-29.
- Doherty, V. C., T. R. O'Donovan, and P. D. O'Donovan. 1986. Downsizing Hospital Capacity. *Health Care Strategic Management* 4 (4): 4-7.
- Donabedian, A. 1980. *The Definition of Quality and Approaches to Its Assessment*. Ann Arbor, MI: Health Administration Press.
- Dranove, D. 1998. Economies of Scale in Non-Revenue Producing Cost Centers: Implications for Hospital Mergers. *Journal of Health Economics* 17:69-83.
- Dranove, D., and M. Shanley. 1995. Cost Reductions or Reputation Enhancement as Motives for Mergers: The Logic of Multihospital Systems. *Strategic Management Journal* 16:55-74.
- Dubin, J. A., and D. Rivers. 1989. Selection Bias in Linear Regression, Logit and Probit Models. *Sociological Methods and Research* 18:360-91.
- Eastaugh, S. R. 1984. Hospital Diversification and Financial Management. *Medical Care* 22:704-23.
- . 1992. Hospital Strategy and Financial Performance. *Health Care Management Review* 17 (3): 19-31.
- Ermann, D., and J. Gabel. 1984. Multihospital Systems: Issues and Empirical Findings. *Health Affairs* 3 (spring): 50-64.
- Feinglass, J., and J. J. Holloway. 1991. The Initial Impact of the Medicare Prospective Payment System on U.S. Health Care: A Review of the Literature. *Medical Care Review* 48:91-115.
- Fennell, M. L., and J. A. Alexander. 1987. Organizational Boundary Spanning in Institutional Environments. *Academy of Management Journal* 30:456-76.
- . 1993. Perspectives on Organizational Change in the US Medical Care Sector. *Annual Review of Sociology* 19:89-112.
- Finkelstein, S., and D. C. Hambrick. 1990. Top-Management-Team Tenure and Organizational Outcomes: The Moderating Role of Management Discretion. *Administrative Science Quarterly* 35:484-503.
- Fottler, M. D., J. Schermerhorn, J. Wong, and W. H. Money. 1982. Multi-Institutional Arrangements in Health Care: Review, Analysis, and a Proposal for Future Research. *Academy of Management Review* 7:67-79.
- Freeman, S. J., and K. S. Cameron. 1993. Organizational Downsizing: A Convergence and Reorientation Framework. *Organizational Science* 4:10-29.
- Gerber, L. 1983. *Hospital Restructuring: Why, When and How*. Chicago: Pluribus.

- Ginsberg, A., and A. Buchholtz. 1990. Converting to For-Profit Status: Corporate Responsiveness to Radical Change. *Academy of Management Journal* 33:445-77.
- Ginzberg, E. 1995. Hospitals: From Center to Periphery. *Inquiry* 32:11-13.
- Greene, J. 1990. Do Mergers Work? *Modern Healthcare* 20 (11): 24-34.
- Greenhalgh, L. 1983. Organizational Decline. *Research in the Sociology of Organizations* 2:231-76.
- Grim, S. A. 1986. Win/Win: Urban and Rural Hospitals Network for Survival. *Hospital & Health Services Administration* 31 (1): 33-46.
- Guo, M., and G. J. Bazzoli. 1998. The Incentives and Effects of Hospital Mergers under Managed Care: Theory and Evidence. Paper presented at the 126th American Public Health Association Meetings, 14-19 November, Washington, DC.
- Guterman, S., P. W. Eggers, G. Riley, T. F. Greene, and S. A. Terrell. 1988. The First 3 Years of Medicare Prospective Payment: An Overview. *Health Care Financing Review* 9:67-77.
- Halpern, M. T., J. A. Alexander, and M. L. Fennell. 1992. Multihospital System Affiliation as a Survival Strategy for Rural Hospitals under the Prospective Payment System. *Journal of Rural Health* 8:93-105.
- Hannan, M. T., and J. H. Freeman. 1989. *Organizational Ecology*. Cambridge, MA: Harvard University Press.
- Heckman, J. J. 1979. Sample Selection Bias as a Specification Error. *Econometrica* 47:153-62.
- Hoch, L. J. 1984. Corporate Reorganization: Non-Profit Tax-Exempt Hospitals. *Topics in Health Care Financing* 11 (1): 1-5.
- Jacobs, B., and L. Fraser. 1987. CEO Succession: Who Will Lead. *Healthcare Forum* 30 (4): 39-41.
- Kauer, R. T., J. S. Silvers, and J. Teplensky. 1995. The Effect of Fixed Payment on Hospital Costs. *Journal of Health Politics, Policy and Law* 20 (2): 303-27.
- Kotter, J. P. 1979. Managing External Dependence. *Academy of Management Review* 4:87-92.
- Kralewski, J. E., B. Dowd, L. Pitt, and E. L. Biggs. 1984. Effects of Contract Management on Hospital Performance. *Health Services Research* 19:479-98.
- Lee, L. F. 1982. Some Approaches to the Correction of Selectivity Bias. *Review of Economic Studies* 49:355-72.
- Lee, S.-Y. D., and J. A. Alexander. 1998. Using CEO Succession to Integrate Acquired Organizations: A Contingency Analysis. *British Journal of Management* 9:181-97.
- . 1999. Managing Hospitals in Turbulent Times: Do Organizational Changes Improve Hospital Survival? *Health Services Research*, in print.
- Levitz, G. S., and P. P. Brooke. 1985. Independent versus System Affiliated Hospitals: A Comparative Analysis of Financial Performance, Cost, Productivity. *Health Services Research* 20:315-37.
- Long, D. R., and G. A. Chase. 1984. Structural Determinants of Hospital Closure. *Medical Care* 22:388-402.

- Lowe, J. 1994. Hospital Closure and Access to Hospital Services. In *Geographic Methods for Health Services Research*, ed. T. C. Ricketts, 233-39. Lanham, MD: University Press of America.
- Luke, R. D., J. W. Begun, and D. D. Pointer. 1989. Quasi Firms: Strategic Interorganizational Forms in the Health Care Industry. *Academy of Management Review* 14:9-19.
- Luke, R. D., Y. A. Ozcan, and P. C. Olden. 1995. Local Markets and Systems: Hospital Consolidations in Metropolitan Areas. *Health Services Research* 30:555-75.
- Lynk, W. J. 1995. The Creation of Economic Efficiencies in Hospital Mergers. *Journal of Health Economics* 14:507-30.
- Manheim, L. M., S. M. Shortell, and S. McFall. 1989. The Effect of Investor-Owned Chain Acquisition on Hospital Expenses and Staffing. *Health Services Research* 24:461-84.
- Menke, T. J. 1997. The Effect of Chain Membership on Hospital Costs. *Health Services Research* 32:177-96.
- Mezey, A. P., and R. S. Lawrence. 1995. Ambulatory Care. In *Health Care Delivery in the United States*, 5th ed., ed. A. R. Kovner, 122-61. New York: Springer.
- Mick, S. S. 1990a. Explaining Vertical Integration in Health Care: An Analysis and Synthesis of Transaction-Cost Economics and Strategic-Management Theory. In *Innovations in Health Care Delivery: Insights for Organization Theory*, ed. S. S. Mick and Associates, 207-40. San Francisco: Jossey-Bass.
- . 1990b. Themes, Issues, and Research Avenues. In *Innovations in Health Care Delivery: Insights for Organization Theory*, ed. S. S. Mick and Associates, 1-19. San Francisco: Jossey-Bass.
- Mick, S. S., L. L. Morlock, D. Salkever, G. de Lissovoy, F. Malitz, C. G. Wise, and A. Jones. 1994. Strategic Activity and Financial Performance of U.S. Rural Hospitals: A National Study, 1983-1988. *Journal of Rural Health* 10:150-67.
- Mick, S. S., and C. G. Wise. 1996. Downsizing and Financial Performance in Rural Hospitals. *Health Care Management Review* 21 (2): 16-25.
- Miller, D. 1991. Stale in the Saddle: CEO Tenure and the Match between Organization and Environment. *Management Science* 37:34-52.
- . 1993. Some Organizational Consequences of CEO Succession. *Academy of Management Journal* 36:644-59.
- Miller, D., and P. H. Friesen. 1984. *Organizations: A Quantum View*. Englewood Cliffs, NJ: Prentice Hall.
- Miller, R. H., and H. S. Luft. 1993. Managed Care: Past Evidence and Potential Trends. *Frontier of Health Services Management* 9 (3): 3-37.
- Miner, A. S., T. L. Amburgey, and T. M. Sterns. 1990. Interorganizational Linkages and Population Dynamics: Buffering and Transformational Shields. *Administrative Science Quarterly* 35:689-713.
- Mintzberg, H. 1979. *The Structuring of Organizations: A Synthesis of Research*. Englewood Cliffs, NJ: Prentice Hall.
- Mitchell, W., and K. Singh. 1993. Death of the Lethargic: Effects of Expansion into New Technical Subfields on Performance in a Firm's Base Business. *Organization Science* 4:152-80.

- Mohr, R. A. 1992. An Institutional Perspective on Rational Myths and Organizational Change in Health Care. *Medical Care Review* 49:233-55.
- Morrisey, M. A., and J. A. Alexander. 1987a. Hospital Acquisition or Contract Management: A Theory of Strategic Choice. *Health Care Management Review* 12 (4): 21-30.
- . 1987b. Hospital Participation in Multihospital Systems. *Advances in Health Economics and Health Services Research* 7:59-81.
- Mullner, R. M. 1990. Rural Hospital Survival: An Analysis of Facilities and Services Correlated with Risk of Closure. *Hospital & Health Services Administration* 35:121-37.
- Mullner, R. M., and R. M. Andersen. 1987. A Descriptive and Financial Ratio Analysis of Merged and Consolidated Hospitals: United States, 1980-1985. *Advances in Health Economics and Health Services Research* 7:41-58.
- Mullner, R. M., R. J. Rydman, D. G. Whiteis, and R. F. Rich. 1989. Rural Community Hospitals and Factors Correlated with Their Risk of Closing. *Public Health Reports* 104 (4): 315-25.
- Office of Technology Assessment. 1985. *Medicare's Prospective Payment System*. Washington, DC: Government Printing Office.
- Provan, K. G. 1984. Interorganizational Cooperation and Decision Making Autonomy in a Consortium Multihospital System. *Academy of Management Review* 9:494-504.
- Renn, S. C., C. J. Schramm, J. M. Watt, and R. A. Derzon. 1985. The Effects of Ownership and System Affiliation on the Economic Performance of Hospitals. *Inquiry* 22:219-36.
- Richards, G. 1982. The Growth of Contract Management. *Hospitals* 56 (October): 94.
- Robinson, J. C. 1994. The Changing Boundaries of the American Hospital. *Milbank Quarterly* 72:259-75.
- Rumelt, R. P. 1982. Diversification Strategy and Profitability. *Strategic Management Journal* 3:359-69.
- Rundall, T. G., and W. K. Lambert. 1984. The Private Management of Public Hospitals. *Health Services Research* 19:517-44.
- Russell, L. B. 1989. *Medicare's New Hospital Payment System: Is It Working?* Washington, DC: Brookings Institution.
- Sabatino, F. 1987. The Revolving Door: CEO Turnover. *Hospitals* 61 (19): 80-84.
- Scott, W. R. 1990. Innovation in Medical Care Organizations: A Synthetic Review. *Medical Care Review* 47:165-92.
- . 1993. The Organization of Medical Care Services: Toward an Integrated Theoretical Model. *Medical Care Review* 50:271-302.
- Scott, W. R., and J. C. Lammers. 1985. Trends in Occupations and Organizations in the Medical Care and Mental Health Sectors. *Medical Care Review* 42:37-76.
- Shortell, S. M. 1988. The Evolution of Hospital Systems: Unfulfilled Promises and Self-Fulfilling Prophecies. *Medical Care Review* 45:177-214.
- Shortell, S. M., R. R. Gillies, and K. J. Devers. 1995. Reinventing the American Hospital. *Milbank Quarterly* 73 (2): 131-60.
- Shortell, S. M., E. M. Morrison, and B. Friedman. 1992. *Strategic Choices for America's Hospitals: Managing Change in Turbulent Times*. San Francisco: Jossey-Bass.

- Shortell, S. M., and E. J. Zajac. 1990. Health Care Organizations and the Development of the Strategic-Management Perspective. In *Innovations in Health Care Delivery*, ed. S. S. Mick and Associates, 144-80. San Francisco: Jossey-Bass.
- Simmons, J. 1989. Integrating Federal Health Care Resources at the Local Level. *Hospital & Health Services Administration* 34 (1): 113-22.
- Smith, H. L., and N. F. Piland. 1990. Strategic Adaptations to PPS by Rural Hospitals: Implications for Theory and Research. *Journal of Rural Health* 6:140-60.
- Snail, T. S., and J. C. Robinson. 1998. Organizational Diversification in the American Hospital. *Annual Review of Public Health* 19:417-53.
- Somers, A. 1969. *Hospital Regulation: The Dilemma of Public Policy*. Princeton, NJ: Industrial Relations Section, Princeton University.
- Starr, P. 1982. *The Social Transformation of American Medicine*. New York: Basic Books.
- Stevens, R. 1989. *In Sickness and in Wealth: American Hospitals in the Twentieth Century*. New York: Basic Books.
- Succi, M. J. 1996. Effects of Hierarchical Interorganizational Relationships on Organizational Performance. Ph.D. diss., University of Michigan.
- Succi, M. J., S.-Y. D. Lee, and J. A. Alexander. 1997. Effects of Market Position and Competition on Rural Hospital Closures. *Health Services Research* 31:679-99.
- Topping, S., and S. R. Hernandez. 1991. Health Care Strategy Research, 1985-1990: A Critical Review. *Medical Care Review* 48:47-89.
- Tushman, M. L., and E. Romanelli. 1985. Organizational Evolution: A Metamorphosis Model of Convergence and Reorientation. *Research in Organizational Behavior* 7:171-222.
- Watt, J. M., R. A. Derzon, S. C. Renn, C. J. Schramm, J. S. Hahn, and G. D. Pillari. 1986. The Comparative Economic Performance of Investor-Owned Chain and Not-For-Profit Hospitals. *New England Journal of Medicine* 314:89-96.
- Wheeler, J.R.C., H. S. Zuckerman, and J. Aderholdt. 1982. How Contract Management Can Affect Hospital Finances. *Inquiry* 19:160-66.
- Wiersema, M. F., and K. A. Bantel. 1993. Top Management Team Turnover as an Adaptation Mechanism: The Role of the Environment. *Strategic Management Journal* 14:485-504.
- Woodard, B., M. D. Fottler, and A. O. Kilpatrick. 1999. Transformation of an Academic Medical Center: Lessons Learned from Restructuring and Downsizing. *Health Care Management Review* 24 (1): 81-94.
- Zuckerman, H. S. 1979. Multi-Institutional Systems: Promise and Performance. *Inquiry* 16:291-314.