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Control of Hospital Strategy in Small Multihospital Systems

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This is to certify that the dissertation prepared by Lora Hanson Warner, entitled Control of Hospital Strategy in Small Multihospital Systems, has been approved by her committee as satisfactory completion of the dissertation requirement for the degree of Doctor of Philosophy.

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Abstract

Control of Hospital Strategy in Small Multihospital Systems

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Hospitals are joining multihospital systems (MHSs) with growing frequency. About 80% of MHSs are small, composed of 2-7 hospitals. An important management issue in MHSs is the extent to which member hospitals retain control over their own strategic directions.

Using a contingency framework, this study uses both system and hospital-level determinants to explain the extent to which hospital members of MHSs control their own strategies. Survey and secondary data from 272 member hospitals of 62 small multihospitals systems (size 2-7 hospitals) are analyzed. System dispersion, size, ownership, strategic type, and age along with hospital occupancy, size, relationship to the MHS, and market factors are determinants of hospital control of strategy.

Two types of hospital strategic decisions were revealed by factor analysis: tactical and periodic. For tactical decisions, such as those relating to hospital budgets, service additions, and formulation of strategies, Catholic system ownership is a significant predictor of greater hospital control. Prospector system strategy and older system age are significant predictors of reduced hospital control. For periodic decisions, such as appointment of hospital board members, sale of hospital assets, and changes in

bylaws, older system age is negatively associated with hospital control, and a hospital which is owned by the system has significantly less control.

The results are analyzed using the framework of the Hickson, Butler, Cray, Mallory, & Wilson (1986) typology of strategic decisions. Thus the results of this work can be useful to managers in identifying the nature of a decision and understanding its associated decision process.

CHAPTER 1: INTRODUCTION

Recent changes in the health care delivery system in the United States are well known to consumers, providers, managers, and academics who interact in and observe the industry. One major new development has been the consolidation of previously independent hospitals into corporate organizations and affiliations. Managers of these hospitals often believe that the hospital can benefit from membership in a multi-hospital system (MHS) by having greater access to capital resources, managerial expertise, or market power (Ermann and Gabel, 1985).

While hospitals enjoy numerous benefits from corporate membership, they must pay certain costs, including some loss of autonomy. Upon joining a multihospital system, a hospital may be compelled to surrender control over certain functions to corporate decision-makers. While it is common for hospitals to maintain control over operational, daily decisions, it is less obvious who should make the member hospital's long term, policy-related and strategic decisions. The effective integration of a hospital into a corporate system in large part depends upon successful resolution of this control issue, since a hospital's strategy is the core of its purpose and mission.

The purpose of this study is to explain the amount of control that hospital members of small MHSs hold over their strategies, as

opposed to having them controlled by the system's corporate component. The most important factors which influence this control of decision-making will be identified.

Specifically, a multihospital system is defined as "two or more non-federal, non-state acute care hospitals that are owned, leased, or managed by a single corporate entity" (Morlock, Alexander, & Hunter, 1985). Table 1 illustrates the scope of this consolidation for the year 1985, when approximately 35% of all community hospitals were members of 250 MHSs (American Hospital Association [AHA], 1985). Larger systems, because they are highly visible and active on a national level, have attracted the most media attention. Small systems, despite being in the majority (about 80% of MHSs have fewer than eight hospitals), are often overlooked in descriptions of recent health care delivery system development. Moreover, small systems represent all ownership types, with 90% of the not-for-profit and 55% of the investor-owned systems having less than eight hospitals (AHA, 1985).

Research findings on management in large MHSs cannot necessarily be applied to the management of small systems. Decision-making processes differ greatly, for example, between a system composed of four hospitals operating within the same geographic region and a system of 40 hospitals distributed throughout the United States. Thus the present research will serve to expand the knowledge base that MHS and member hospital administrators can draw upon in managing small multi-hospital systems.

Table 1

Number of Multihospital Systems by Ownership and Size, 1985

SYSTEM SIZE (# member hospitals)	SYSTEM OWNERSHIP				
	Catholic	Church-Other	Not-for Profit	Investor-Owned	TOTALS
2	27	4	41	2	74
3	25	3	18	4	50
4-5	15	4	20	5	44
6-7	7	3	11	6	27
8+	24	7	10	14	55
TOTALS	98	21	100	31	250

Source: American Hospital Association, 1985

Strategy-Making for MHS Hospitals

Strategy-making is broadly viewed as a process of decision-making which occurs at multiple levels within a firm (Mintzberg, 1983). Influence over outcomes can take place at several points in the process. Commonly, subunit managers provide decision-related information to upper level decision-makers, selectively reporting or withholding relevant materials and influencing the decision. These subunits have a unique lower-level, operationally-based perspective of the firm's activities. In contrast, the firm's executives have the perspective of the business' overall performance, and retain the ultimate authority over and responsibility for the decisions (Mintzberg, 1983).

Organizational strategic planning has been defined as "a dynamic interactive process between the environment and the organization" (Shortell, Morrison, & Robbins, 1986). Organizations differ in the extent to which they formalize the process of strategy-making, with some developing a highly structured decision-making process which encompasses a review of goals, mission, internal strengths and weaknesses, and external opportunities or threats to the organization. In other firms, strategies may manifest themselves in a consistent "stream of important decisions over time" (Mintzberg, 1978) rather than being stated explicitly. Common to these approaches are decisions which seek to move the organization in directions which are adaptive given the environmental circumstances.

In hospitals and MHSs, decision-making processes and the organizational structures developed to facilitate them must be examined with recognition of the unique features of the health care industry. Health

care is a heavily regulated industry with atypical consumer demand, insurance-induced incentives, and strong local dominance through the influence of medical staffs. Hospitals, prior to membership in the system, were independent "companies" rather than expansions from a base business. Moreover, hospitals are organizations with long histories and strong traditions of independent functioning, and most are new to multi-institutional forms (Starr, 1982).

The strong independent traditions are reflected in the structuring of many multihospital systems, in which hospitals often are loosely and informally linked to a corporate structure. As Weick (1976) describes such organizations,

> ... loosely coupled organizations are responsive to events in other organizations but preserve their own identities and separateness. The attachment may be circumscribed, infrequent, weak, unimportant, or slow to respond... subcomponents can achieve their own adaptations with local subenvirons.

This structuring promotes flexibility and adaptability for the firm and its subunits. Weick (1976) observes that problems in one subunit do not strongly influence the activities of other subunits: "external events do not ramify throughout the system..."

It is clear that unique strategies must be developed for each component of the MHS, based upon local constraints and opportunities. Yet these individual strategies must provide for the accomplishment of the overall corporate plan. Hospital strategic planning is the key point of integration between a hospital and its corporate leadership. Within a multihospital system, hospital-level strategies must be constructed in such a way as to enact the broader corporate strategies. Hospital strategy-making is the process of reconciling hospital goals and objec-

tives with system-level goals and objectives.

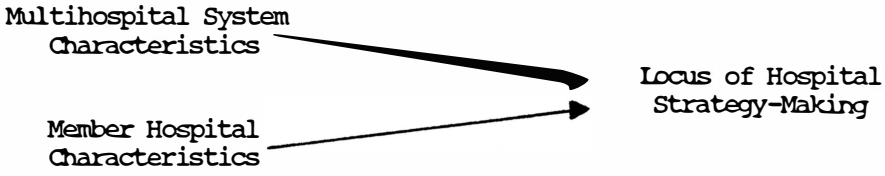
Relatively little research has thoroughly explored hospital strategy-making within a MHS, and most of what has been done has examined the topic tangentially. Alexander and Schroer (1985) and Alexander (1985), using the same AHA data base of 160 hospital systems, each looked at the overall extent of decentralized management within MHSs and then addressed specific decision areas, including the responsibility for hospital strategic decision-making. The results showed a wide variation among systems across system size, age, and ownership, and yielded no conclusive model of decision-making relationships with regard to the strategies for member hospitals. Importantly, no hospital level measures were incorporated in these analyses as determinants of the locus of control over hospital strategy.

In a smaller survey, Kleiner (1984) interviewed 42 administrators in 11 MHSs about their roles and interactions with corporate leaders for various types of decisions, including strategic planning. Kleiner found several differences in strategy-making processes between not-for-profit and investor-owned systems, principally that administrators in not-for-profit MHSs were involved with their local boards to a much greater extent than were investor-owned administrators, who interacted much more extensively with the corporate planning staff.

These studies are the only two which have specifically focused upon control of strategic decision-making for member hospitals in MHSs, and they are not conclusive. More research with specific attention to this issue is necessary to further understand the decision-making processes which exist in these relatively new organizational forms.

Figure 1

Analytical Model



Achieving this improved understanding through the development of explanatory models of control over member hospital strategy is the goal of this research.

Analytical Model

The purpose of this research is to explain the degree to which and the conditions under which a hospital member of a MHS controls its own strategic decision-making. Characteristics of the MHS itself along with characteristics of a hospital member are hypothesized to influence whether or not the hospital retains control over its strategy.

The analytical model for the proposed study appears in Figure 1. The figure illustrates the influence of both hospital and system-level variables upon the control over hospital strategic planning. System-level determinants that are considered include its size, ownership, geographic dispersion, strategic type, and age. Hospital-level predictors include hospital size, occupancy rate, relationship to the MHS, status as "parent" or "child" hospital, and market area factors.

Significance

Specific attention to the functional area of hospital strategic

decision-making distinguishes the proposed study from previous work in measuring overall system decentralization. These studies falter because decentralization is a multi-dimensional concept. The degree of decentralization varies depending upon the specific type of decision which is studied, and decentralization is best analyzed separately for each type of decision. Mintzberg (1978) wrote that "selective vertical decentralization is logically associated with work constellations grouped on a functional basis," which leads to the conclusion that measures of overall system decentralization are inappropriate.

To illustrate, Alexander and Schroer (1985) studied the extent of decentralization in multihospital systems using an AHA data base. They attempted to classify systems by identifying characteristics which were associated with relatively higher or lower degrees of overall decentralization. They concluded that "centralization in MHS governance defies categorical treatment" and suggested that "centralization must be qualified in terms of specific decisions made at corporate and local levels." That is precisely what the present research will accomplish.

Control over hospital strategy has been chosen as the functional area to investigate since it forms a key point of integration between member hospitals and corporate entities. Consistent with this position, in developing hypotheses about the extent to which hospital members of consortia remain autonomous, Provan (1985) chose to look at hospital strategy, arguing that a) the impact of MHS involvement was strongest there; and b) lower-level decisions were likely to be guided by broader decisions, such as hospital strategies.

A second advantage of the present research over most other MHS

studies is that it incorporates hospital-level measures which can influence the relationships between hospitals and corporate leaders within a MHS. Other studies have relied upon system-level determinants of centralized management within a system, neglecting to incorporate information about hospital members or features of their local markets (Alexander & Schroer, 1985; Provan, 1985; Wegmiller, 1985). By including measures of hospital characteristics in the analysis, not only can their unique effects upon the MHS-hospital control relationship be determined, but their importance relative to the importance of system characteristics can be assessed.

Third, the present study will help to clarify certain MHS research findings which appear to be contradictory. For example, Alexander and Schroer (1985) showed that not-for-profit systems were the most centralized in their overall management due largely to their geographic concentration, while Kleiner (1984) showed that not-for-profit systems were the most decentralized in that local boards and administrators were most involved in planning, with relatively little corporate influence. In this instance, geographic dispersion appears to interact with certain hospital-specific variables, and system ownership has ambiguous effects. The current study, by analyzing interactions and by carefully controlling other contingencies, can clarify certain apparently contradictory findings which exist in the literature. The influence of less-obvious or less well-known variables can be observed.

Finally, the current research is significant in that it will employ an analytical framework that is comprehensive yet retains its direct applicability for managers of both multihospital systems and

hospital members of such systems. A contingency perspective leads to findings which should assist managers in designing their organizations more effectively for strategic decision-making within the system. Integration of new hospital members into systems can be facilitated using findings from this study. Moreover, the results of the research will be useful for independent hospitals in assessing whether or not to join a system.

Limitations

The present study will focus upon the nature of the relationship between corporate headquarters and member hospitals, but will not examine the performance implications of variations in the nature of the relationship. Prior to investigating the performance effects of control over hospital strategy, the nature of the relationships must be better understood and contingency variables must be clarified.

The empirical analysis will be limited by the size of the MHS member sample, and generalizations will be limited by the non-random nature of the sample. The composition of the sample is biased towards inclusion of secular not-for-profit systems. It is expected that within this population subgroup the most variation in the extent of control over a member hospital's strategy will occur, and therefore the bias in the sample has distinct advantages. These data-specific limitations will be discussed in more detail in later chapters.

A final limitation of the study is that it is cross-sectional in nature. This unfortunately continues to be a general problem in health services research. The broad range of variables available for inclusion in the analysis somewhat minimizes the effect of static measures.

CHAPTER 2: CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESES

The purpose of this study is to explain the degree to which and the conditions under which hospital members of multihospital systems retain strategic decision-making control. In order to do so, elements of the hospital unit and its environment will be examined along with attributes of its multihospital corporate component. For detailed explanation of the measures which will be used to represent these concepts, the reader is referred to Chapter 3.

Contingency Perspective

The analytical model which has been chosen to frame this analysis is known as contingency theory, or the contingency perspective, as it will be referred to here. Galbraith (1973) has succinctly stated the fundamental premises of the approach: a) there is no one best way to design an organization; and b) any particular way of organizing is not equally effective. An organization will be most effective when its design is aligned with its strategy, technology, size, and environment. The appeal of this perspective is the flexible approach with which it addresses the issue of structuring an organization, taking into consideration its "context."

This perspective is especially useful to the current analysis for several reasons. First, the perspective postulates that organizational strategy is one of the primary contingencies which affect

the design of the organization. Contingency theory explicitly allows for the analysis of the impact of a strategy on the design of the organization, and vice versa, where other potentially useful theoretical models do not.

Second, the contingency perspective provides the most comprehensive model available for framing the analysis. Typical research using the contingency perspective employs variables measuring the organization's strategy, environment, size, and technology in building flexible, adaptable models of organizational behavior. It can lead to the building of predictive models of complex interrelationships, where some of the other potentially useful theories such as population theory and to some extent the market failures approach rely upon post-hoc explanations of the motives and behaviors of organizations.

Third, the contingency perspective is preferable to alternative theoretical models because of the distinctiveness of the health care industry. Since the health sector is one characterized by regulations, atypical demand by consumers, professional dominance, and altered economic incentives due to insurance, market principles often do not hold true and strictly economic-based theories are sometimes inappropriate. Such is the case with the market-failures or transaction cost approach.

Fourth, and possibly most importantly, the concepts can be immediately and readily applied by managers. Where other theories often rely upon more abstract notions of the relationships between variables, the contingency perspective retains relevance and under-

standability for practicing administrators. Findings can be converted into practical administrative principles.

Several important criticisms of the contingency perspective have been made in recent years. One of the harshest attacks was leveled by Schoonhoven (1981), when she wrote that

> . . . contingency theory is not a theory at all, in the conventional sense of theory as a well-developed set of interrelated propositions. It is more an orienting strategy or metatheory, suggesting ways in which a phenomenon ought to be conceptualized or an approach to the phenomenon ought to be explained. . . . Although the overall strategy is reasonably clear, the substance of the theory is not clear (p. 350).

Tosi and Slocum (1984) agreed that the "theory" had some weak theoretical concepts, and that much research which was based upon contingency theory had not clearly specified relationships or interactions between variables and had problems with the measurement of key contingency variables.

These criticisms are based upon valid observations of poor model specification and weak conceptualization. The perspective has often been utilized as a convenient vehicle with which to test relationships between certain variables of interest without necessarily developing a sound conceptual base. The contingency perspective, before it can justify its position as a theory, must polish and improve the development of its concepts and measures. However, the perspective is useful if utilized properly and has numerous advantages over other theories.

Two other theoretical approaches warrant further comparison to the contingency perspective in the context of this study. Specifi-

cally, the market failures model and resource dependence/exchange theory offer potentially legitimate approaches to this analysis. The market failures (also called transaction cost) approach, first introduced by Williamson (1975) suffers in this instance because it is based upon a competitive economic model, and as explained above, health care does not operate solely under competitive market assumptions. Additionally, according to market failures theory, the M-form or multi-divisional form of organization "is non-contingent in the sense that it is argued to enhance efficiency and, therefore to be preferred under all conditions" (Pfeffer, 1982). Size is the only contingency considered as a factor in the choosing of multi-divisional form for organizations. The model is not nearly so broad or comprehensive as that of the contingency perspective.

The resource dependence or exchange theory (Aldrich, 1979; Pfeffer and Salancick, 1978) is in many instances a well-suited approach for research on multihospital systems. Since the purpose of the current research is to explain the strategic decision-making role of hospitals in multihospital systems, the study of dependence or power relationships between the two organizations (which is a fundamental concept in resource dependence theory) would be appropriate. According to this perspective, one organization will have power over another to the extent that it can perform some function which the other organization cannot (Cook, 1981; Provan, 1985). For this research, certain important concepts of dependence theory will be applied within the contingency framework as variables which influence the hospital/corporate strategic planning relationship. The

power held by one entity is important in its ability to influence the control that entity possesses over processes and outcomes within an organization (Lindblom, 1980).

For another reason, though, resource dependence theory is less applicable to the present research than the contingency perspective. Managers are assumed to have a minor role in determining the strategy of their organizations according to resource dependence theory, and the environment takes on the primary role in influencing the behavior of organizations. Contingency theory, to reiterate, allows one the opportunity to build a comprehensive conceptual model which encompasses the organization's strategy, environment, technology, and size. It is the most flexible and is best suited to a study in which the managerial role in determining the organization's strategy takes on primary importance. This is where the other perspectives fall short. Nevertheless, certain concepts from resource dependence theory will be implemented in the contingency framework.

For this research, contingencies are chosen for examination based on their established or hypothesized influence on the extent to which hospitals retain control over their strategic planning function when they become members of a MHS. Variables relating to the strategy, environment, and size of systems and hospitals will be examined as they influence the particular decision-making relationship for hospital strategy.

Contingencies which affect the control of hospital strategic planning in MHSs will be examined at two levels of analysis: system and hospital. Based upon the literature reviewed below, the follow-

ing characteristics of MHSs have been chosen for analysis: the system's geographic dispersion, size, ownership, strategy, and age. The following hospital-level variables are expected to impinge upon the hospital-corporate decision-making relationship: the hospital's occupancy rate, size, status as a "parent" or "child" within the MHS, formal relationship to the MHS, and local market conditions.

Multihospital System-level Contingencies

This research will examine the impact of chosen system-level variables upon the decision-making relationship between an individual hospital and its corporate headquarters. This study is a hospital-level analysis, while most of the research on MHSs which has been conducted previously has addressed system-level factors that influence the behavior and performance of MHSs. The system-level factors should impact upon the decision-making relationship between the system and each hospital in the MHS, in that system-level measures reflect in part the MHS's general policy toward strategy-making in its hospitals. Only one study in the MHS literature addressed system-level variables as they impact upon hospitals (Kleiner, 1984). It will be necessary for the following discussion to draw in relevant organizational literature as well as potentially significant health care literature in developing research hypotheses about the strategic decision-making relationship between an MHS and its hospitals.

Alexander and Schroer (1985), using American Hospital Association (AHA) survey data, have studied the issue of decentralization in MHSs. All 247 MHSs on the 1983 AHA listing were surveyed, and

the final sample of 160 systems was biased slightly toward larger systems. They measured 15 types of decisions made in MHSs by either hospital or corporate managers, and asked whether hospital or system managers had more control over each decision.

Alexander and Schroer then looked at specific decision areas to ascertain the types of decisions over which hospitals were more likely to retain control. These systems reported, not surprisingly, that corporate headquarters retained control over corporate strategic planning functions and system resource allocation. When formulation of strategies and long range plans for subordinated hospitals was examined, these researchers found that 59% of the systems reported that the corporate board made the decisions, while 57%* of the systems said that the responsibility resided with the local hospital boards. They concluded that "hospital strategic planning exhibits wide variation across size, age, and ownership."

This is the only empirical research to address the issue of the locus of hospital strategic decision-making in MHSs; other research reports the decentralization of MHS management in general, without regard to specific decision areas. Due to the different types of managerial decisions which must be made in the management of a MHS, there is a need to distinguish unique decision areas and to examine corporate and hospital administrative roles as they vary depending upon the type of decision under consideration. The present research focuses exclusively upon the hospital strategy decision area.

The sections which follow lead to the development of specific

* Does not total 100% since respondents could indicate both corporate and local responsibility for a decision area.

hypotheses regarding the previously mentioned contingencies. Within each set of contingency variables, existing knowledge will be reviewed, needs for research will be observed, and finally, hypotheses will be presented for testing.

System Geographic Dispersion

Organizations choose to spread geographically for various reasons: growth opportunities, investment, or diversification of financial risk to numerous and varied market areas (Ermann and Gabel, 1985; Kochen and Deutsch, 1981). The geographic dispersion of a MHS is one of the most important concepts relating to the decentralization of strategic decision-making in a system, in large part due to logistical issues.

Literature on multi-divisional organizations asserts that decentralization has many advantages in geographically dispersed organizations (Kochen and Deutsch, 1981), primarily because the costs of communicating grow with increasing distance between corporate headquarters and each division. Feedback time is slower, and headquarters has much less day to day awareness of the activities and problems faced by each division. Rather than relying upon the rich, personal flavor of information about the actions of each division which characterizes geographically proximal systems, headquarters instead must rely more upon objective measures of performance and on indirect feedback (Morlock, Alexander, and Hunter, 1985).

As geographic dispersion increases, the costliness of maintaining an extensive information network increases dramatically and eventually becomes prohibitive. With growing dispersion, the re-

liance upon frequent communication with headquarters declines because of increasing costs and efforts needed to maintain the information flow. Individual hospitals can thus become more autonomous, and would logically be more likely to have control over strategic decisions. However, since hospital strategic decisions form an essential interface between hospital and corporate strategy, the MHS may refuse to yield this decision-making control.

Another reason that decentralization may be a good management policy for geographically dispersed systems stems from the heterogeneity of the local markets in which hospitals in the MHS operate. Local markets reflect varying degrees of uncertainty, risk, competition, and resource munificence and thus uniquely influence the behavior of each hospital positioned in that market. To the extent that this heterogeneity is greater, as it will be with greater geographic dispersion, each hospital will have individual goals and strategies which may be different from the other hospitals. Corporate level management of these varied units must take into account the strong local market influence. This justifies a decentralized approach to their management.

Geographic dispersion has been shown to relate to ownership. Catholic systems employ the most decentralized management of all the systems and are likewise the most geographically dispersed of the systems (Alexander and Schroer, 1985; Ermann and Gabel, 1985). Their decentralized management style probably is due to the mission of Catholic systems (i.e., to fully meet the health care needs of the local community) to a larger extent than to geographic disper-

sion. Thus Catholic system structure supports the hypothesized relationships. Not-for-profit systems, in contrast, are the least dispersed of all ownership types and have the most centralized management structure, a finding which also supports the geographic dispersion hypothesis (Alexander and Schroer, 1985; Ermann and Gabel, 1985).

Finally, in an unpublished work, Alexander (1985) found that geographic dispersion was negatively related to corporate control of decision-making in all decision areas that he investigated, including hospital strategic planning. He argued that hospitals were traditionally established as independent, professional bureaucracies and that systems likewise were loose confederations, already predisposed toward decentralized structures.

While geographic dispersion lends itself to decentralized management, geographic concentration is associated with centralized management. While dispersed systems incur greater costs to communicate and do so at a slower rate, local systems can exchange rich information quickly and with very little effort in most cases. For these reasons, it is logical to develop centralized management structures so that the activities of system hospitals are coordinated.

Reynolds and Stunden (1978) published some observational data about a small group of not-for-profit MHSs. The extent to which a geographically concentrated system controls its local market influences the degree to which management of the MHS should be centralized, according to their observations. Reynolds and Stunden obser-

ved that the geographically concentrated system with a monopoly on the local market has the greatest opportunity for deriving benefits from economies of scale and efficient deployment of resources. They observed and hence recommend a highly centralized structure for these systems.

Geographically concentrated systems where member hospitals face a high degree of competition tend to be somewhat centralized in their management in order to balance the needs of individual hospitals with the corporate perspective. In contrast to the monopolist systems, hospitals in these systems must maintain some decision-making control and thus are not as strongly centralized (Reynolds and Stunden, 1978).

Research Needs

The relationship between geographic dispersion and decentralization is quite well accepted, especially in the business literature. It needs additional replication and confirmation for MHS literature. Effects due to ownership and size must be separated from those due to dispersion. Overall system-level dispersion will cause the MHS to develop a general policy of decentralization or of centralization towards strategy-making in its hospitals. In which instances and whether this corporate policy overrides other factors which affect the strategic decision-making control for hospitals needs further investigation.

Existing research addresses the decentralization issue as a general category, despite the fact that recent research has demonstrated that the management structure differs for different func-

tional decision areas. Specific attention must be given to the decision regarding decentralization of hospital strategy making.

Research Hypotheses

H_1: Hospitals in geographically dispersed systems will control their own strategic planning to a greater extent than will hospitals in geographically concentrated systems.

System Size

The focus of the present research is on small multihospital systems, with size defined by the number of hospitals in the system, for reasons given in Chapter 1. There is variety within this "small" (two to seven hospitals) category: hospitals belonging to a MHS with two hospitals will have different interactions with corporate headquarters than will hospitals that belong to systems of six or seven hospitals.

Most of the research conducted on MHSs has considered the behavior and performance of the largest MHSs, and there is a resulting lack of information available on the implications of size for the smaller organizations. Likewise, business literature has explored overall decentralization of management in divisionalized forms of organizations, but until recently has virtually ignored the link between the strategy of the business unit and decentralization of control to the unit (Govindarajan, 1986).

At the system level of analysis, there are some well-established findings from organization theory which are relevant. In general, as the size of an organization increases, the organization becomes more bureaucratic, has greater specialization within units,

more formalization, a higher administrative/ staff ratio, and importantly for this work, greater decentralization of decision-making control to subunits of the organization (Daft, 1985; Pfeffer, 1982).

As was the case for geographic dispersion, "with increases in size, both financial costs of control and distortions in communication required for control are likely to increase" (Moch and Morse, 1977). At some point top management is compelled to delegate some decision-making control to lower levels in order to maintain overall control.

Although the size of an organization can be expected to have much the same influence that it does in non-health care divisionalized firms, the effect of size must be examined with particular attention to the distinctive incentives which operate in the health care industry. Bureaucracy, formalization, and standardization are characteristics that are less typical of hospitals and hospital systems because of the nature of health care delivery. The notion of increasing formalization and standardization as size increases may apply more to a hospital itself than to a system of hospitals.

Increasing decentralization with increasing size, however, is one relationship which seems to be in accordance with the behavior of MHSs and has been demonstrated by several investigators. Most recently, Alexander and Schroer (1985), in research described in the previous section, looked at 15 decisions made by MHS hospital and corporate leaders. Table 2 shows the results of analysis of variance tests on the relationships between size and decentralization of decisions made within hospital systems. They found that overall,

Table 2

Overall Locus of Decision-making Authority, by System Size

System size	Decisions Made Exclusively by Corporate Board (% of decisions)[a]	Decisions Made Exclusively by Local Board (% of decisions)	Decisions Shared Corporate and Local Boards (% of decisions)
2 hospitals	55%	16%	11%
3-9 hospitals	48	17	20
10+ hospitals	36	17	25
All systems	47	17	19
Results of test of mean differences[b]	1,3 significant	not significant	1,3 significant

[a] Responses do not total 100% since respondents could indicate more than one group having responsibility for a decision.

[b] $p<.05$

Source: Alexander and Schroer, 1985

the larger systems had significantly more decentralization than did the smaller systems in their sample. Specifically addressing the issue of strategic decisions for the hospital units of the MHSs, hospitals in larger MHSs had more control over their strategic planning than did hospitals in medium or small systems.

These results are helpful in the general sense, but fall short in several ways. First, the broad grouping of the medium-sized systems may mask some less noticeable but still important differences between them. The management of a MHS with nine hospitals differs quite substantially from that of a MHS with three hospitals.

Second, the sample from which these results were drawn was biased toward medium and large systems, under-representing very small systems. Fifty-five percent of respondents were in systems with four or more hospitals, while only 35% of non-respondents fell into this category. One could conclude that the results may not be generalizable to MHSs having two or three hospitals.

Based on a literature review on consortium MHSs, Provan (1985) developed (but did not test) some hypotheses about the autonomy of hospitals within such consortia. With regard to size, he postulated that larger consortia would be associated with a more diverse set of hospitals, or greater heterogeneity. This diversity, coupled with the greater number of units with which to interact, would allow less autonomy for individual hospitals within the consortia. The relevance of Provan's research is that hospitals in larger MHSs should have less autonomy, or less decentralization of decision-making.

Provan's reasoning directly contradicts the findings of Alexander

and Schroer (1985) and the expectations generated by an examination of the organizational literature on decentralization and size. His hypotheses appear logical and must be examined further. It is possible that there is a range of size where his concepts hold true.

Research Needs

Organizational literature demonstrates a clear link between increasing size and increasing decentralization of decision-making to subunits. This concept is poorly understood in the health care field and especially in the MHS literature. MHSs are not typical firms: in many cases, hospitals are loosely coupled to the corporate entity and therefore findings which have been demonstrated for divisionalized firms may not apply.

The effect of firm size on the locus of hospital strategic decision-making control has not been researched. Studies have looked at the relationship between size and the general level of decentralization in an organization, but the specific functional area of strategy has not been studied in MHS literature.

Research Hypotheses

H_2: Hospitals which belong to larger MHSs will control their own strategy-making more than will hospitals in smaller MHSs.

System Ownership

Differences in MHSs due to ownership is a frequently studied topic. With regard to geographic dispersion, regional location, strategy, size, and mission, differences due to ownership have been documented to some extent (Ermann and Gabel, 1985; Fottler, Schermerhorn,

Wong, and Money, 1982; Luke and Begun, 1986; Zuckerman, 1981). Other differences, such as those relating to management structures, have been hypothesized but not well supported. Despite the importance of this issue, there has been relatively little research on the effect of ownership on the types or amount of activities over which a hospital in a MHS retains control. Documented information about the differences in the amount of decentralization depending on ownership warrants the inclusion of ownership as a contingency variable in the present research.

In investigating the role of the hospital administrator, Kleiner (1984) interviewed the executives of 29 hospitals which belonged to large investor-owned or not-for-profit MHSs. He asked the question, "Is there corporate guidance that impacts on your responsibility for activity?". Relating to hospital strategic planning, their responses indicated that not-for-profit systems had much more local board involvement in their planning activities as opposed to system-level corporate involvement. Investor-owned systems had much more involvement of the corporate staff in the formulation of strategy and the development of long range plans and objectives in system hospitals (Kleiner, 1984).

Alexander and Schroer (1985) asked MHS executives whether a list of 15 types of decisions were made by the hospital board, corporate board, or by both. Table 3 shows the responses made by leaders of organizations of each type of ownership. Voluntary not-for-profit and public systems were by far the least decentralized overall, with 58% of decisions being made solely at the corporate level and only 10% of decisions made solely at the hospital level. Religious and Catholic

Table 3

Overall Locus of Decision Authority, by System Ownership

Ownership	Decisions made Exclusively by Corporate Board (% of decisions)[a]	Decisions made Exclusively by Local Board (% of decisions)	Decisions shared Corporate and Local Boards (% of decisions)
Catholic	41%	25%	26%
Religious(other)	29	18	34
Voluntary/Public	58	10	12
Investor owned	30	18	10
All systems	47	17	19
Results of test of mean differences[b]	1&3, 2&3, 4&3 significant	1&3 significant	1&3,2&3,1&4,2&4 significant

[a] Responses do not total 100% since respondents could indicate more than one group having responsibility for a decision.

[b] $p<.05$

Source: Alexander and Schroer, 1985

systems ranked the highest in the percentage of shared decisions, and Catholic systems had the highest percentage of decisions which were made locally by hospitals. Investor-owned along with not-for-profit MHSs had lower rates of shared decision-making. Investor-owned systems appear to divide up the decision areas and allocate them to either local or corporate decision makers, while not-for-profit systems give corporate control to more decisions.

It is highly possible that the ownership differences found by Alexander and Schroer were due to the overall geographic dispersion of the system. Not-for-profit systems are for the most part geographically concentrated, while Catholic systems are more commonly located at some distance apart. Control over the effects of geographic dispersion could be helpful in determining the true relationship between ownership and control of hospital strategic decisions.

Alexander and Schroer (1985) addressed the control issues in the aggregate but did not report ownership differences for each specific type of decision. Therefore, which entity has control over the strategic plans of the hospital was not studied in this research.

Another difficulty in the Alexander-Schroer study was the grouping of voluntary not-for-profit hospitals with voluntary public hospitals. Public hospitals and hospital systems, because they are accountable to a state government, have different managerial and structural relationships with their higher authorities than do voluntary not-for-profit hospitals. Thus the effect of MHS ownership

with regard to not for profit systems may not be accurate in the Alexander and Schroer study.

Research Needs

The results of the work of Kleiner (1984) and Alexander and Schroer (1985) contradict, showing opposite ownership effects. Kleiner asserted that not-for-profit hospitals were more decentralized, while Alexander and Schroer indicated their centralized management. This contradiction may be due to measurement, sampling, or grouping differences between the two studies. The true effect of ownership on control of strategic planning for system hospitals must be clarified using clearer measures and better-defined control variables to eliminate spurious differences.

Again, the general issue of decentralization of MHS decision-making has been addressed by Alexander and Schroer, but further follow up on the specific decision areas, i.e., strategic planning for hospitals, has been researched in only one non-experimental survey with inconclusive findings (Kleiner, 1984). As mentioned previously, research on MHSs has been limited to attention to the MHS level of analysis, without emphasis upon the relationship between MHS headquarters and individual hospitals and variables that influence it.

Finally, the reported research relating to decentralization in MHSs has been drawn almost exclusively from American Hospital Association data which were obtained in the late 1970's. More current measures are needed with the influence of prospective payment incentives now at work in the health care industry.

Research Hypotheses

H_3: Not-for-profit MHSs will be no different from other ownership categories on the amount of strategic decision-making control held by hospitals.

System Strategy

The study of business and corporate strategy was popular during the 1960's and 70's, with Chandler (1962) bringing initial attention to the concept. By close observation of a large number of Fortune 500 corporations, he developed a logical sequence of corporate strategies which led to particular corporate structures. He noted that strategies for growth in firms followed three basic patterns: extensions of existing products to new markets, extensions of new products to existing markets, or extensions of new products and new markets (diversification). He observed that with growth in complexity brought on by the third strategy, diversification, firms took on different structures than did firms which grew by extending existing products or markets, which increased in size. A result of this famous work was the well accepted principle that "structure follows strategy."

Specifically, Chandler identified two distinct structures of these firms: functional and divisional. Functional structures, in which firms are divided along the lines of the functions performed by each department, are associated with strategies of size expansion (expansion of existing products or markets). Divisional structures, where firms are divided according to products, with components of each function operating at each product division, were observed with associated strategies of diversification.

Since Chandler's landmark work, numerous other researchers have developed related theories of strategies for growth in organizations (Rumelt, 1974; Scott, 1973). Rumelt (1974) documented the growth in divisional forms in the corporate sector, relating to the need for decentralized management which accompanies diversity. All of these versions of Chandler's original model shared in common the notion that a certain structure will enable a firm to "fit" well with its environment (Miles, 1982). The choice of a particular internal design sought to channel the organization's competencies and resources along a chosen strategy. This concept was explained by Robert Miles (1982):

> organizational effectiveness is largely a function of top management's ability to create and maintain congruence among the factors of the environment and of organizational strategy, structure, and competence.

The study of strategy in the health care industry has lagged behind research in corporate strategy, largely because there was little need for hospital strategy or product positioning under cost-based reimbursement incentives. Recently, however, the health care industry has seen the advent of alternative forms of service delivery and altered economic incentives, leading to competition and uncertainty. Strategic planning has become essential. Luke and Kurowski (1983) stated that the late 1970's began the "early strategic phase" of evolution of the hospital industry and that continued emphasis on strategy is likely.

Because of the newness of the application of business strategic principles in health care, a large literature on it has not evolved.

Little work has focused on the strategic planning of hospitals and the influence of MHS membership. It is expected that the strategy pursued by a MHS will influence its design or structure. As a MHS grows beyond a certain point, it should become decentralized in its management design. However, MHSs begin at a fairly high level of decentralization compared to business firms, due to the nature of the delivery of health care services within a community. A MHS typically has looser linkages than those which characterize the link between a division with its corporate headquarters in a firm from another industry.

One work has addressed the issue of strategy in MHSs. Luke and Begun (1986) applied the strategic typology developed by Miles and Snow (1978) to action orientations taken by small MHSs. Although the work did not examine the relationship between the structure and strategy of the organizations, the testing and validation of the typology is relevant since system strategy will be used as a variable in this research.

Miles and Snow (1978) developed a typology of the action orientations or strategies chosen by organizations based upon their "aggressiveness or willingness to assume risk in pursuing a chosen growth strategy." They identified four patterns of strategic behavior which typified an organization over a long period of time.

> Prospectors are the most aggressive of firms, possessing a flexible structure which allows them to be the leaders in the pursuit of new products and new markets.
>
> Defenders seek stability and efficiency as they develop the products or markets which they have chosen.
>
> Analyzers represent a combination of prospectors and defenders,

as they combine flexibility and control in analyzing new opportunities.

Reactors are the least effective types of organizations, possessing an inconsistent strategy of adapting to the environment.

Luke and Begun (1986) classified systems according to the typology by examining the aggressiveness with which systems undertook acquisitions, using two dimensions of acquisitive actions: the percentage of hospitals acquired since 1975 and the overall number of hospitals acquired through early 1985. These measures were assumed to measure overall aggressiveness in the marketplace. "Prospectors" were defined as having a high percentage of hospitals acquired since 1975, along with a medium to high number of hospitals acquired. This typology was demonstrated to be valid for small multihospital systems by Luke and Begun (1986).

Research Needs

While this research will make use of the strategic typology described above to classify the small MHSs under investigation, there is no research to guide the generation of hypotheses relating to the influence of MHS strategy upon the locus of strategic decision-making for the hospitals belonging to a system. Clearly there is a need to determine whether or not the strategy chosen by a MHS has any influence in the control of the strategies of member hospitals. There is a void in knowledge relating to the relationship between MHS strategy and the organizational design it chooses, specifically relating to decentralization. Since MHSs typically have loose coupling of interorganizational relationships, they must be

assumed to be different from other divisionalized firms not in the health care industry. Different principles may hold true for the study of strategy and design in MHSs.

Because prospectors create flexible organizations designed to be able to move quickly into promising product or market areas, it is expected that in order to retain this flexibility they must be closely in tune to the local market. In contrast, defenders, seeking efficiency, would not need to be as externally focused as they instead fine-tune their technologies to create maximum efficiency. Analyzers develop some of each quality.

Because of their goals to move quickly in local markets, prospector systems are expected to offer their hospitals more autonomy to move in the local market, thus allowing for aggressive posturing.

Research Hypotheses

H_4: Hospitals belonging to systems characterized as prospectors will have more control over their strategies than defenders, analyzers, or reactors.

System Age

The final system level variable which should affect the decision-making relationship between the system and the hospital for hospital strategy is that of the age of the system, measured by the length of time that the MHS has been incorporated. As a firm ages it moves through different stages of development in which organizational needs and goals differ. It implements different forms of management in order to accomplish these goals. Management styles and policies may change with the experience gained from a time

period of involvement in a MHS. Table 4 illustrates.

For newly formed systems, coordination across hospitals is paramount as mechanisms are created to coordinate activities and define the corporate and hospital roles as they are to exist. Concerns at this time are the corporate mission, goals, and authority and how they will interface with the mission, goals, and authority of each member hospital. A balance of power must be established between each hospital andcorporate headquarters concerning the decision-making about actions taken by hospitals. Barrett (1979) calls this period the building and establishing stage and adds that defining a decision-making process is a primary activity during the system's inception. Power struggles are likely to ensue if corporate leaders assume too much control over decisions, especially in not-for-profit facilities with traditions of strong local hospital board control, who must shift to corporate system governance structures (Alexander and Schroer, 1985).

Two studies have shown similar levels of corporate control in young systems. Money, Gillifan, & Duncan (1976), in their survey of 16 hospital systems, observed that younger hospital systems were more formalized and authority was stronger at the corporate level, since coordination across hospitals was essential during the early growth period. In an unpublished study of 160 MHSs, Alexander (1985) found that younger systems were more centralized in their strategic planning structures for member hospitals. In contrast, middle-aged systems were the most decentralized of all: the largest percentage of decisions were left for hospital themselves to make.

Table 4

MHS Development Over Time and
Implications for Decentralization of Hospital Strategy

Age	Activities	Decentralization Issues
Early Years (Formative Systems)	-developing coordinating mechanisms across hospitals -establishing mission, structure, roles, processes of MHS -arranging shared activities	-management of competing interests of system members suggests decentral. -central control necessary to implement unified corporate strategy
Middle Years (Solidifying Systems)	-solidifying interaction patterns between hospitals -elaborating and expanding shared activities	-degree of decentralization depends largely on other variables like size,strategy,dispersion
Later Years (Advanced Systems)	-bureaucratizing system control structures -adjusting to growing size (depending on strategy) -increasing specialization by component units of system	-decentralization favored with growing size -decentralization depends largely on other variables like size, dispersion, strategy

(Adapted from Barrett, 1979; Starkweather, 1981; Wegmiller, 1985)

After a system has moved successfully through the early processes of establishing the system, new issues arise concerning solidifying the arrangements which have been made, further defining and implementing integration among hospitals, elaborating and expanding shared services, and evaluating the performance so far of the whole system (Barrett, 1979; Wegmiller, 1985). Now, the amount of decentralization which is appropriate is contingent largely upon the aggressiveness or expansiveness of the strategy chosen by the MHS and upon other variables such as its size or geographic dispersion. Hospital managers may be more free to decide upon strategies for their hospitals during this stage if they work within the bounds set up by early definition of corporate mission, strategy, and the like.

Concerns are similar for MHSs which have been in existence for many years. In systems, hospitals must cope with the increased bureaucratization of corporate controls. Money, et al. (1976) reported that the older systems which they studied were in fact less formalized and more decentralized, with more authority residing at the hospital level relative to the younger systems. Executives in the older systems in their study evidently felt that their hospital could better cope with the uncertainties in their environments by making their own decisions. This research did not specifically address strategic decisions for hospitals.

In contrast, Alexander, in unpublished research (1985), showed that hospitals in older MHSs had less control over strategic decisions than did hospitals in middle aged MHSs. Alexander surmised that the growth periods of MHS development required more central system control,

and that older systems could be redirecting or consolidating growth using centralized management. Older hospital systems have had opportunities to experiment with various structural arrangements and decision-making relationships and then to decide which elements to retain and which to discard in the operating of a MHS. For mature MHS, either decentralization or centralization of corporate control may be warranted, depending upon other contingency variables at work within a system, such as strategy, size and geographic dispersion.

Research Needs

While several studies have explored the stages of growth of MHSs and implications for decentralized management, no consensus has been reached about the unique effects of system age with other interacting variables held constant. Conflicting results have been obtained, especially in older systems. It is unlikely that the present research will completely fill this gap in the literature, since its sample will be restricted to smaller MHSs which are most likely in the early to middle stage of growth. However some light can be shed upon more youthful systems.

Secondly, once again the attention of researchers to date has been on the aggregate level of decentralization in multihospital systems and has not turned to the relationships between hospitals and corporate headquarters. Much information about intra-system differences may have been lost in the aggregation to the system level of analysis.

Third, the specific decision area relating to hospital strategy-making has not been examined as it relates to decentralized corporate control. It has been documented that the level of decentralization

within a system differs depending upon the particular decision area under scrutiny, and therefore overall generalizations based upon aggregate system level data are inappropriate. A separate focus on the decentralization of hospital strategic decision-making must be undertaken.

Research Hypotheses

H_5: Hospitals belonging to younger systems will have less control over their strategy-making than hospitals in more mature systems.

Hospital-level Contingencies

A fundamental premise in this research is that the locus of hospital strategic decision-making control differs for each hospital within a system—each hospital has a unique relationship with system headquarters which is based largely upon distinct features of the hospital and its local market. It is this perspective which will allow the present study to contribute significantly to the currently sparse literature concerning the relationships between system headquarters and member hospitals.

Published research to date presents information regarding hospital/corporate decision-making relationships aggregated over entire systems, ignoring inherent differences between subunits belonging to the MHS which can alter these relationships. For example, as discussed in the section on MHS-level contingencies above, Alexander (with others) has extensively explored decentralization of system management, looking at specific types of decisions and who makes them within different kinds of systems. He then reports certain levels of decentralization for these systems. When decentralization is aggregated for

an entire system and examined at that level, individual differences in relationships between hospitals and corporate headquarters are masked. Alexander has repeatedly stated in the discussion sections of his papers that the issues he describes are complex and in need of further clarification. The notion that characteristics of a hospital can affect whether or not the hospital chooses its own strategies has largely been ignored in the literature.

Based upon inferences from organizational theory, and to a lesser extent upon published research in health care, the hospital attributes listed below have been selected for inclusion in the present study. The following hospital characteristics are hypothesized to affect whether or not a hospital retains control over its strategic planning within a MHS: its occupancy, its size, whether it is a "parent" hospital, the nature of its relationship to the MHS (i.e., owned, leased, or managed), and features of its local market.

Hospital Occupancy Rate

Hospitals become members of MHSs for a variety of reasons, such as to diversify service mix, to gain market share, or to improve the delivery of health services in the community. In the majority of instances, hospitals become members of MHSs due to their financial distress (Mark, 1984; Starkweather, 1981). "Both for-profit and nonprofit systems have grown largely through the acquisition of financially troubled independent hospitals" (Ermann and Gabel, 1984). One source of financial trouble is a low occupancy rate. For these hospitals, the major benefits to involvement in a hospital corporation are the access to financial resources along with managerial

expertise it can provide.

According to this perspective one could logically conclude that the worse the occupancy rate of a hospital belonging to a MHS, the more dependent the hospital will be upon the corporate system for financial and managerial support. Resource flows that are always in one direction result in power for the giver and dependence for the receiver (Lehman, 1975). The extent to which a hospital depends upon these corporate resources for viability plays a large part in determining the locus of control over decision-making within a system.

This applies to the making of strategic decisions for hospitals. "The more power an organization (e.g., MHS) has, the more influence it has to determine the nature of the interorganizational exchange; i.e., to determine the form of the interaction . . ." (Cook, 1977). Specifically, the more power that one entity has, the more it can control decision-making processes within the organization. Provan (1985) supported this reasoning in his paper when he hypothesized that "the greater dependence of a hospital on its consortium, the greater the liklihood that the hospital's general strategic-level decisions will be influenced by the consortium."

Research Needs

No empirical research could be found to support or refute this line of reasoning specifically regarding hospital strategy making in MHSs. Thus the current study should provide insight into this relatively unexplored area.

Research Hypotheses

H_6: Hospitals with lower occupancy rates will have less control over their strategic planning than will hospitals with higher occupancy rates.

Hospital Size

The concept of hospital size must be viewed from two perspectives for the development of hypotheses about the hospital strategic planning relationship in MHSs. First, the absolute size of the focal hospital, measured by the number of beds, must be considered due to its implications for access to human and financial resources in the organization. Second, hospital bedsize relative to the bedsize of the entire system must be examined because of its expected influence on power in the relationship between a hospital and its corporate headquarters.

Larger organizations in general have more discretionary resources which they are able to divert from one unit to another when necessary when input fluctuations occur (Kimberly, 1976). In contrast, small hospitals have fewer options from which to divert resources in order to cover a shortfall in a certain area. Thus, it follows that a small facility would be more dependent upon corporate headquarters to smooth the fluctuations in resource inputs to the hospital than would a large hospital. A small hospital would have less control over its own decisions about strategy the more it had to rely upon its corporation for resources.

Additionally, as the size of an organization grows, so does its complexity and range of functioning. "Large organizations... engage in more activities, leaving them less at the mercy of destructive

forces working on one localized segment" (Starkweather, 1981). The greater ability to be self-sufficient in conducting these various functions provides large hospitals with a greater degree of autonomy in comparison to small facilities. A small hospital is likely to be more dependent upon system managers to perform functions which it cannot. Marketing is one functional area which can illustrate this difference. A large hospital may employ a staff to conduct regular marketing campaigns, whereas a small hospital may rely upon an assistant administrator to perform the same function. This smaller hospital may be more dependent than the large hospital upon system headquarters for marketing activities. The MHS would therefore be in a position to have greater control over decisions relating to marketing in the hospital.

When the size of a hospital is considered with regard to the proportion of MHS beds it controls, predicted relationships among the variables change. To illustrate, a hospital defined as small in absolute terms may actually control more than half of its system's beds if it belongs to a two-hospital system composed of two small facilities.

Resource dependence theory offers one explanation of how the corporate component of a MHS could become dependent upon a hospital in the system and therefore yield decision-making control to the hospital. This is an important concept, especially when working with small MHSs. The greater the proportion of system hospital beds controlled by a hospital, the more importance that hospital holds in the overall performance of the system. Provan (1985) hypothesized

that the importance of a hospital to its consortium increases with greater relative size. This importance to the system translates into greater power for a relatively larger hospital to participate in decisions affecting it, including its strategy. Again, this increased power translates into greater opportunity for control over decisions.

Research Needs

The relationship of hospital size to its control over its own strategy within a multihospital system has not been reported in the literature.

Research Hypotheses

H_7: Hospitals with larger absolute bedsize will control their strategic planning to a greater extent than hospitals with smaller absolute bedsize.

H_8: Hospitals with a larger proportion of system beds will have more control over their strategic decision-making than hospitals with a smaller proportion of system beds.

Parent Hospitals

Because the present study deals exclusively with small hospital systems, a specific issue must be addressed which would not necessarily hold true for the study of large MHSs. In small hospital systems, the number of potentially divergent viewpoints is limited, thus the influence of each hospital should be stronger in the governance of the small system. In large systems, the larger number of hospitals should increasingly dilute the influence of any individual hospital in the system.

Whether or not a hospital was an originating member of the

small MHS plays a large part in determining the ability it has to conduct its business under the corporate umbrella. By definition, it has been a member of the system longer than any other hospital in the system.

The "parent" hospital was first described by Luke and Begun (1986) in developing their local market model of MHS strategy:

> ... the concept of a 'parent' hospital ... implies that one hospital initiated the system growth and that that hospital exercises dominance and control over smaller family members.

In most instances, corporate leaders come from the ranks of parent hospital executives and corporate offices are physically located at the parent facility. Parents are typically large, successful hospitals (Luke and Begun, 1986).

This distinction between a parent and a "child" hospital has implications for how decisions are made about hospitals within the MHS: it pervades all corporate-hospital interactions, including that of strategic planning for each hospital. Relative to parent hospitals, child hospitals would be expected to control their strategic decisions to a much lesser extent, due to the dominance of the parent.

Research Needs

The theory of parent hospitals within MHSs is newly developed and untested. It is particularly relevant for work dealing with the management and growth in small MHSs.

Research Hypotheses

H_9: Parent hospitals will have more control over their strategy-making than hospitals which are not parents.

Type of Hospital-MHS Relationship

Kleiner (1984) pointed to a need for further research in the differences in management styles for owned, leased, or contract-managed facilities. His interviews with 42 administrators in 11 hospital systems inconclusively suggested differences between administrators in contract-managed vs. owned hospitals within the same systems. Differences in these organizational relationships will determine intangible factors such as the importance of the position held by a hospital in the corporate portfolio or in the minds of MHS strategists.

Fottler, Schermerhorn, Wong, & Money (1982) conceived of these relationships as a continuum which reflected the degree of commitment of a hospital to a MHS. Fottler et al. identified certain variables and postulated the level of commitment present under different organizational relationships (i.e., owned, leased, contract managed in this instance). Table 5 presents the proposed commitment levels under each of these relationships. The importance of the differences by type of commitment shown in Table 5 are that they indicate varying approaches to management of a hospital based upon its relationship to the MHS.

Aldrich (1979) described the notion of commitment as "intensity", or the amount of investment an organization has in its relations with other organizations. This intensity stemmed from two sub-components: the amount of resources involved, i.e., money, number of services, number of people provided to the other organization; and the frequency of the interaction with the other organiza-

Table 5

Hospital Commitment to MHS by Management Category

Selected Managerial Variables	Hospital Relationship to MHS		
	Owned	Leased	Contract Managed
Institutional Autonomy	none	some	some
Resource Commitment	more	some	little
Influence on Policy	yes	some	some

source: Fottler, et al. (1982)

tion. Aldrich showed that relationships and interactions were likely to be different depending upon this intensity.

Research Needs

One organization's level of commitment to another has distinctive implications for various managerial processes, including hospital strategic planning, which was not specifically addressed. Research specifically relating to differences in the hospital-corporate strategic planning relationship has not appeared in the literature.

Research Hypotheses

H_{10}: A hospital that is involved in extensively committed relationship with the MHS (i.e., owned by the MHS), will have less control over its strategy relative to those hospitals in less committed relationships (i.e., leased or contract managed).

Number of Competing Hospital Beds

Like the hospitals themselves, the features of hospital market areas will vary in a MHS with regard to the incentives or uncertainties which they can create for individual units of the system. This

applies to MHS hospitals which each operate in distinctive market areas. Unique market factors affect MHS hospitals differentially and indicate a need for some custom management for hospitals in different locales. The relationship between a hospital and its corporate headquarters will vary to some extent due to local environmental conditions that are unique for each facility in a dispersed system.

Two system hospitals which may otherwise be similar can face completely different local competitive situations. For example, a hospital which operates in an environment with excess capacity of hospital beds faces much greater competitive pressure than does a hospital located in an underbedded market area. System headquarters must develop a strategic planning relationship with each hospital that takes into account the competitive pressures that managers must deal with, while incorporating the system's goals into the plans which are made. Who should control the hospital's strategy may depend upon the extent of the competition faced by a hospital. As the number of competing hospital beds grows, there may be a more pressing need for local control over hospital strategic planning, or vice versa.

Reynolds and Stunden (1978), in addressing the level of centralized management present in not-for-profit systems, argued that hospitals in competitive markets which belong to geographically dispersed systems should have a great deal of autonomy in order to remain competitive:

> ... administrators have wide latitude in program development, medical staff affairs, and operations. The latitude is enhanced in a competitive environment, where the administrator, trying to maintain a high census and a finan-

> cially viable institution, must develop programs which meet the medical staff's desires or face losing admissions to other hospitals. Autonomy ... is fairly well assured.

In contrast, Provan (1985) reasoned that,

> the more competitive the environment faced by the affiliates of a consortium, the greater the role of the consortium management organization in reducing competition, and thus the less autonomy affiliates will have in making strategic-level decisions.

The two statements are contradictory, and neither assertion is supported by empirical evidence. It is possible that Reynolds and Stunden (1978) refer to operational hospital activities where Provan (1985) has focused upon strategic-level decision-making. Reynolds and Stunden specify that the geographic dispersion of the system makes a difference in the management approach, while Provan does not note the effect of geographic dispersion.

Research Needs

There is a need to identify the extent that local environmental factors such as competition can influence the whether or not the system leaders assume control of developing hospital strategies. To the exent that environmental factors can be controlled, further understanding of the explanatory variables which determine the nature of hospital strategic planning in a MHS can be obtained.

Research Hypotheses

H_{11}: Hospitals facing greater numbers of competing hospital beds in their local market will have greater control over their strategies than will hospitals operating in less competitive markets.

Control Variables

Geographic Region

Due to differences in physician practice styles (e.g., preference for or access to outpatient rather than inpatient surgery), regulatory incentives, costs, cultures, and other factors, the delivery of health care varies across the regions of the United States (Schroeder, 1984; Wennberg, 1984). These differences affect where and how patients receive treatment. It follows that managerial approaches will vary by region, with different attitudes, styles, and training characterizing managers at work in the various regions. Hospitals operating in certain geographic regions should have managerial incentives which differ from those in other U.S. regions. For example, some hospitals have traditions of collaboration with others, while others have practiced complete autonomy for a long time period. These expected differences are based simply upon observed variations in medical care delivery across regions, therefore no direction is hypothesized.

For this study, geographic region will serve as a control rather than an explanatory variable. Four regions identified by the AHA will be chosen: Northeast, North Central, West, and South.

Presence of Low Income Population

Hospitals which serve large populations of poor or low income people may have more difficulty meeting bottom-line financial goals than other hospitals. Persons with low incomes are less likely to have health insurance, and may be inefficient users of emergency services. "Both the Sloan study and The Urban Institute study have

indicated that hospitals with high concentrations of uncompensated care have disproportionate numbers of patients who are uninsured and low income" (Wilensky, 1985). Thus median family income has been chosen as a control variable which is somewhat indicative of the wealth of the clientele served by a particular hospital.

Table 6 gives a summary of the variables which have been generated from the preceding discussion, along with the hypothesized direction of their relationship to member hospital control over strategy.

Table 6

Hypothesized Relationship Between Selected Contingencies and Member Hospital Control of Strategy

Contingency Variable	Relationship to Member Hospital Control of Strategy*
MHS Level Variables	
Geographic Dispersion: extensive	+
Size: large	+
Ownership: Not-for-profit	0
Strategic type: Prospector	+
Stage of Growth: early	-
Hospital Level Variables	
Occupancy: low	-
Size: Absolute-large	+
Relative-large	+
Parent Hospital	+
Type of MHS-hospital relationship: owned	-
Market area: competitive	+
Control Variables:	
Regional location in United States	
Median family income	

*Note: 0 No relationship
+ Positive relationship
- Negative relationship

CHAPTER 3: METHODS

Chapter three describes the sample, primary and secondary data, and variable measures used. Next, factor analysis of the dependent variables is addressed. Finally, the methods to be used to analyze these data are presented.

Sample

One hundred sixty-five potential MHSs were identified using an AHA listing of multi-hospital systems prepared for the year 1982. Small multihospital systems were defined as those which possessed seven or fewer hospital members in 1982. The sample was selected to ensure a representative number of MHSs across a wide range of variation, within the size limitation of two to seven hospitals. Two MHS characteristics—size and ownership—were used to stratify the sample on the a priori grounds that the two characteristics are associated with variation in hospital strategic decision-making processes and outcomes.

Out of a population of 165 systems which met the size criterion, 82 were identified for this study. The 82 systems were broken down into four categories: two, three, four to five, and six to seven hospitals. Table 7 compares the sample systems to the population across size and ownership. As shown, the sample includes a larger proportion of systems having four or more hospitals and a

Table 7

Sample and Population of Small Multihospital Systems

# Member Hospitals	System Ownership				
	Church-other	Catholic	Not-for-profit	Investor-owned	Total
2	4/4	5/31	10/25	0/0	19/60
3	2/2	5/26	10/11	3/3	20/42
4-5	5/5	5/12	10/17	5/5	25/39
6-7	3/3	5/11	7/7	3/3	18/24
Total	14/14	20/80	37/60	11/11	82/165

Source: AHA, 1985

smaller proportion of systems having two or three hospitals. This was necessary in order to retain variability when sampling across ownership categories.

The entire population of small investor-owned and church-other systems were included (11 and 14 systems, respectively) since these were less prevalent than other ownership categories. Catholic systems were undersampled, including 20 of 80 small Catholic systems, since these systems are abundant and are historically more uniform in their managerial approaches to system hospitals. Thirty-seven of 60 not-for-profit systems were included in the sample. The not-for-profit systems are often diverse in their managerial approaches and thus a fairly large portion of the population was sampled to allow for the expected variation within this category.

The Chief Executive Officers (CEOs) of each of the 82 systems were contacted by telephone and asked to participate and assist in soliciting the participation of hospital CEOs in a survey of the entire system. The final sample was composed of the 62 MHSs which agreed to participate. When this sample is compared to the population of systems with seven or fewer hospitals, as in Table 8, the final sample underrepresents Catholic systems, overrepresents not-for-profit and church-other systems, and is biased towards MHSs composed of four to seven hospitals.

These biases are a result of the sampling strategy, which was not designed to produce a representative sample. The undersampling of Catholic systems produced the larger size bias, as Catholic systems were more likely to fall in the system size category of two

to three hospitals than were other systems.

Out of the 270 hospitals which composed the 62 systems, 164 (61%) participated in the member hospital CEO survey. These hospitals represented 49 MHSs, or 79% of the systems that agreed to participate. Characteristics of the 164 participating hospitals reflect the MHS sample, as participating hospitals overrepresent not-for-profit and church-other systems and underrepresent Catholic and very small (two and three hospital) systems, as indicated in Table 8.

Data

MHS CEOs were initially contacted by telephone from January to May of 1985. Data were gathered by interview on the system's size, age, birth order of hospitals, and the managerial relationship between the system and each hospital (i.e., owned, leased, sponsored, contract- managed). The CEOs were informed that member hospital CEOs would be receiving a mail questionnaire, and cooperation of the MHS CEO in the project was solicited.

Member hospital CEOs were surveyed by mail between June and September of 1985. A letter accompanied each survey to solicit the hospital CEO's cooperation, explaining that the system leader had participated in the study. One follow-up mailing to non-respondents was conducted.

The instrument, which appears in the Appendix, contained questions that surveyed the hospital CEO's perceptions about hospital and corporate strategies that were likely to be pursued, hospital/corporate culture, the level of conflict between the corporate

Table 8

System Affiliation of Hospital CEO Respondents

By System Ownership and Size

Ownership	System Characteristics of Respondents n	%	Population, 1982 N	%
Church-other	36	22.0	60	9.3
Catholic	41	25.0	282	43.3
Not-for-profit	76	46.3	249	38.2
Investor-owned	11	6.7	60	9.2
Total	164	100.0	651	100.0

Size	n	%	N	%
2 hospitals	15	9.2	180	27.6
3 hospitals	29	17.7	156	24.0
4-5 hospitals	66	40.2	170	26.1
6-7 hospitals	54	32.9	145	22.3
Total	164	100.0	651	100.0

Source: AHA, 1982

office and member hospitals, and the extent of centralized management present within the system.

The 10 questions measuring the degree of corporate influence on hospital decisions are used as dependent variables for this study and are shown in Figure 2. These items were selected from an AHA survey of MHSs conducted in May, 1983 (Alexander & Schroer, 1985) and were modified for the present work.

The original 15 items used by Alexander and Schroer (given in Figure 3) were developed with a focus upon broader, policy-related decisions that hospitals made rather than upon operational decisions. Omitted were items that addressed certain highly hospital-specific decisions, under the assumption that regardless of MHS membership, hospitals retain control over many operational concerns (Alexander, 1987). Therefore of each the 15 items to some extent is strategic in nature.

Alexander (1987) states that the reliability and validity of the scale have been demonstrated during scale development, but that detailed information regarding reliability and validity is unavailable. Regarding reliability, it should be noted that the phrasing of the questions and response categories is straightforward. One must make the assumption that in light of the apparent simplicity of the questions, participants have responded in a manner which would be consistent over time.

While the scale's reliability may be reasonably assumed, its face validity may be suspect. Due to the changing nature of the corporatization of hospitals and of relationships between hospitals

Figure 2

Modified 1983 AHA Survey Items Used in 1985 Survey

Listed below are several types of decisions made about individual hospital operations and management. For each type of decision, how much influence does the corporate office of this multihospital system have? Circle one number.

No Influence						Great Deal of Influence	
1	2	3	4	5	6	7	a. Appointment of local board members
1	2	3	4	5	6	7	b. Appointment of hospital CEO
1	2	3	4	5	6	7	c. Performance evaluation of hospital CEO
1	2	3	4	5	6	7	d. Sale of hospital assets
1	2	3	4	5	6	7	e. Purchase of hospital assets valued greater than $100,000
1	2	3	4	5	6	7	f. Change in hospital bylaws
1	2	3	4	5	6	7	g. Medical staff privileges
1	2	3	4	5	6	7	h. Hospital operating budgets
1	2	3	4	5	6	7	i. Service additions at the hospital level
1	2	3	4	5	6	7	j. Formulation of hospital strategies/long range plans

Figure 3
1983 AHA Survey Items

For each area below circle whether in most cases decision-making responsibility is (1) reserved by the corporate board; (2) delegated to corporate management; or (3) delegated to local hospital boards. If decision-making responsibility is shared, please circle all appropriate responses.

	Responsibility With Corporate Board	Responsibility With Corporate Mgt.	Responsibility With Local Board
a. Appointment of CEO of Subordinate Hospitals	1	2	3
*b. Transfer of Assets	1	2	3
*c. Pledging of Assets	1	2	3
d. Sale of Assets	1	2	3
e. Purchase of Assets Valued Greater than $100,000	1	2	3
f. Change in Bylaws of Subordinate Hospitals	1	2	3
g. Medical Staff Privileges	1	2	3
*h. Formation of New Companies	1	2	3
i. Operating Budgets	1	2	3
*j. Capital Budgets	1	2	3
k. Formulation of Strategies/Long Range Plans of Sub. Hospitals	1	2	3
l. Service Additions at Hospital Level	1	2	3
*m. Service Deletions at Hospital Level	1	2	3
n. Hospital CEO Performance Evaluation	1	2	3
o. Appointment of Local Board	1	2	3

*Note: Not included in VCU Survey, 1985

Source: Alexander, 1985

and corporate headquarters, the items have declined in face validity since 1983 when they were developed. That is, other types of decision areas may now be more appropriate indicators for the assessment of corporate-hospital relationships than those employed in this survey. For example, other strategic moves such as joint ventures, new product development, or service marketing are now areas in which corporate control may play a large role, and these are not addressed in the present survey.

As noted previously, modifications were made to the AHA scale. Several of the original 15 AHA items appeared to overlap (e.g., b, c, & d; l & m), while others were expected to have low variability for the small systems in the sample (eg., h & j). In order to keep the survey as concise as possible to encourage participation, five items were omitted. In addition, a Likert scale replaced the AHA response options to allow for a wider range of responses. Respondents were thus free to indicate the extent to which the corporate office influenced each of the ten different decisions. These selected items were the basis for dependent measures of hospital control over strategic decisions.

Supplemental data sets were obtained to provide measures for the hospital-level independent variables used in the analysis. The geographic coordinates of each sample hospital were plotted to supply information about the distance between hospitals and corporate headquarters and about the overall geographic dispersion of the system. A 1982 AHA data tape provided further information about individual hospitals. The tape contains information collected by

the AHA from hospitals each year, including two variables, bed size and occupancy, which were used in this study.

Finally, 1985 Area Resource File data provided information about local market features which allowed for the measurement of control variables. These data were obtained from the Department of Health and Human Services to analyze the impact of characteristics of local markets on MHS hospitals. The file contains time series data for many variables over the time period 1972-1980.

Measures

Table 9 lists the measures and variable names for each of the independent variables discussed in Chapter Two. As shown, both continuous and dichotomous measures were employed as independent variables in the analysis.

System-level measures will be described first. The measure of system-level geographic dispersion was the average number of miles between hospitals in the system and corporate headquarters, using geographic coordinates. The size of the system is measured by the number of hospitals belonging to the MHS. The indicator of system ownership is a dummy coding of the four-category ownership variable, with a value of one assigned to not-for-profit hospitals and a zero assigned to all other ownership categories. A second dummy variable is employed to indicate the Miles and Snow (1978) strategic type (in this case, prospector) which classifies the system. Prospector systems are indicated by both a high percentage of acquisitions composing the system and a large number of acquisitions.

Table 9

Predictor Concepts and Measures

CONCEPT	MEASURE(S)	VARIABLE NAME
System geographic dispersion	-mean distance between hospitals and corporate headquarters	AVGDIS
System size	-number of hospitals in MHS	NOHOSP
System ownership	-Not-for-profit vs all others	NFP=1 others=0
System strategic type	-Prospector vs all others	PROSPECT=1 others=0
System age	-1985 minus year of system incorporation	AGE
Hospital occupancy	-percent occupancy	OCCPCNT
Hospital size	-number of beds -proportion of system beds	ABSIZE RELSIZE
Parent hospital	-originating member of MHS vs all others	PARENT=1 others=0
Type of MHS-hospital relationship	-owned vs all other types	OWNED=1 others=0
Hospital market area competition	-number of non-MHS hospital beds in area /population, 1980	BEDS_POP
Regional location	-AHA regional codes (4 regions)	REG_NE (ref) REG_NC REG_S REG_W
Wealth of area population	-median family income 1979	INC79

Hospital-level measures include a variable which indicated one dimension of hospital performance, occupancy rate. This measure is the average percent of occupancy for the year 1983. The absolute size of the hospital was the number of beds at the hospital. The second indicator of size, the relative size of the hospital, was measured by the number of focal hospital beds divided by the number of system hospital beds. Whether or not the hospital was the parent (originating) member of the MHS was a dummy variable, with one assigned to parent hospitals and zero assigned to all non-parent hospitals. The MHS-hospital ownership relationship was a dummy variable, with one assigned to owned hospitals and zero assigned to leased, sponsored, and contract-managed hospitals in the system. Last, the competitiveness of the market area was drawn from the Area Resources File and was a ratio of non-MHS hospital beds in the hospital's county to the population in that county.

Regional control variables were incorporated into the analysis using the AHA assignment of hospitals to four regions: the Northeast, North Central, South, and West. Finally, the hospital market area's economic status, a second control variable, was measured by the median family income in the hospital's county for the year 1979.

In order to attempt to derive a unified measure of the extent of corporate control over hospital strategic decisions from the 10 survey items discussed earlier, the items were factor analyzed using principle components factor analysis. Factor analysis is commonly used to simplify the interpretation of a scale and to construct subscales to be employed in subsequent analyses.

Each item on a scale can be viewed as representing an underlying concept or dimension which can be revealed through factor analysis. The technique of factor analysis selects a minimum number of dimensions necessary to statistically approximate the correlation matrix of the original items. It produces "loadings" of variables upon factors which, when high, indicate a strong association of a variable with a factor. For this study, these loadings were rotated along orthogonal axes in order to clarify their interpretation. A "pure" factor structure was sought where an item loads highly on one dimension or factor and loads minimally on all other factors. The empirical association of an item with an underlying dimension must be corroborated by face validity, that is, all of the items that are empirically associated with a dimension must logically relate to the same dimension (Tabachnick and Fidell, 1983).

Factor analytic techniques were applied to items measuring corporate control over 10 decision areas. Two clear underlying dimensions of hospital decisions were revealed by six survey items, indicating that the 10 items were measuring two clearly distinct sets of strategic decisions. The rotated factor loadings for these items are presented in Table 10.

The first dimension accounted for 39% of the variance in the item scores. It has been labeled "Tactical Decisions" and includes the variables relating to hospital budgets, hospital service additions, and formulation of hospital strategies.

The second dimension accounted for 27% of the variance in the items and is entitled "Periodic Decisions." This factor is composed

Table 10

Factor Loadings for Dependent Variable Items

VCU Survey Factor Item Number	Topic of Item	Tactical	Periodic
(8)	Hospital budgets	.756	.066
(9)	Service additions	.873	.069
(10)	Formulation of plans	.785	.073
(1)	Appointment of board	.026	.788
(4)	Appointment of CEO	-.023	.815
(6)	Change in Bylaws	.251	.788
Percent of variance explained		.39	.27
Total variance explained by 2 factors		.66	

of items relating to the appointment of local board members, the sale of hospital assets, and changes in hospital bylaws. As a result of this subscaling process, two dependent variables were created. The three items loading strongly on Tactical Decisions were summed, with each item given an equal weight since the factor loadings are roughly equivalent (Johnson & Wichern, 1982). The same process was applied to the second factor, Periodic Decisions, yielding a score composed of the sum of the three strongest-loading variables.

A bivariate least squares regression analysis was performed, with one factor regressed upon the other to check for shared variance. The two factors are moderately correlated. The regression model is significant, $F(1,1) = 5.47$, $p<.021$, $R^2 = .033$.

In the explanatory portion of the analysis (Chapter 4), an assessment must be made of the impact of the independent variables upon corporate control over two distinct but somewhat-related hospital strategic decisions: tactical decisions which are ongoing, strategic and policy-related, and periodic decisions, i.e., those that are infrequent and longer-term strategic decisions. Separate analyses will be conducted for each of the dependent variables.

Analysis

The extent to which hospitals control their own strategic decisions was analyzed using ordinary least squares regression. The advantages of multiple regression are its appropriateness for use with multiple independent variables and its ability to employ continuous and dichotomous independent variables (Johnson and Wichern, 1982;

Lewis-Beck, 1983). It can effectively eliminate or control the effects of specific variables and allow examination of the influence of one variable with other influences partialed out, giving an indication of the relative importance of a variable in explaining variation in the dependent variable. Another advantage is its resilience, as regression will "tend toward the right answer under any reasonable practical circumstances, even if a great number of the classical postulates are violated" (Achen, 1982). Regression is a highly robust analytical technique and is especially appropriate for research on organizations and people.

Exploratory bivariate regression was conducted by separately regressing each dependent variable on each independent variable, not controlling for the influence of any additional variable. This technique serves to ascertain the preliminary strength of the influence of an independent variable upon the dependent variables.

Next, all variables were simultaneously entered into a regression model for each of the two dependent variables to ascertain the effect of the independent variables with other effects controlled.

Since several of the independent variables possess skewed distributions, secondary analyses were conducted to incorporate the normalized values of these skewed variables.

Additionally, post hoc analysis of variable interactions was conducted by first checking for the bivariate significance of theoretically relevant interaction terms. Interactions which were significant were incorporated into the overall models in order to control for the effects of other independent variables.

CHAPTER 4: RESULTS

This chapter presents descriptive statistics and the results of variable transformations, exploratory analyses, and regression analyses. A final section describes the findings of investigations which were conducted to explore the results of the planned analyses in greater depth.

Descriptive Statistics

The mean and standard deviation for each of the continuous independent variables are given in Table 11. The categorical independent variables, all dichotomous, are shown in Table 12, along with the percentage of hospitals in the sample possessing each attribute.

The extent to which the variables met underlying assumptions for regression analysis was assessed. First, the zero order correlations presented in Table 13 were examined. In only five instances did the correlations equal or exceed .50: system size with system strategic type, .56; system ownership (NFP) with system age, -.50; parent hospital with hospital absolute size, .59; parent hospital with hospital relative size, .65; and hospital relative size with its absolute size, .76.

It appears that hospital relative size is correlated strongly with several other variables and that elimination of this variable from consideration could reduce the multicollinearity and thus,

Table 11

Descriptive Statistics
Continuous Variables

Independent Variable	n	Mean	sd
AVGDIS (System dispersion)	164	145.19	186.4
NOHOSP (System size)	163	6.10	3.1
AGE (System age)	161	29.49	26.4
OCCPCNT (Hospital occupancy)	156	71.48	14.7
ABSIZE (Hospital absolute size)	161	222.88	208.8
RELSIZE (Hospital relative size)	161	0.23	0.2
BEDS_POP (Market competition)	155	0.01	0.0
INC79 (Family income level)	155	19,467.39	3,695.4

Table 12

Descriptive Statistics
Dummy Variables

IV	n	Percent of Cases
NFP (Not-for-profit system ownership)	163	45.40
PROSPECT (Prospector system strategy)	166	28.31
PARENT (Parent hospital)	162	21.61
OWNED (Hospital owned by system)	161	66.46
REG_S (Hospital region- South)	158	30.38
REG_NC (Hospital region- North Central)	158	28.48
REG_W (Hospital region- West)	158	22.15

table 13 correlation matrix

Table 13

Correlation Matrix of Independent Variables
(Pairwise n)

		2	3	4	5	6	7	8	9	10	11	12	13	14	15
TAVGDIS	1	.46*	-.34*	.11	.28*	-.19	-.14	-.29*	-.16	-.13	.05	-.19	-.02	.21*	-.24*
		163	163	164	161	161	161	161	162	161	155	158	158	158	155
NOHOSP	2		.03	.56*	-.02	-.36*	-.20*	-.45*	-.22*	-.12	-.01	-.01	-.05	.06	-.17
			163	163	161	156	161	161	162	161	155	158	158	158	155
NFP	3			.17	-.50*	-.13	-.15	-.03	.01	.09	-.24*	-.16	-.08	.20	.12
				163	161	156	161	161	162	161	155	158	158	158	155
PROSPECT	4				-.45*	-.25*	-.11	-.25*	-.12	-.20*	-.21*	-.07	-.05	.01	-.01
					161	156	161	161	162	161	155	155	155	155	155
AGE	5					.13	.13	-.03	-.04	-.12	.19	.04	.21*	-.12	.08
						156	161	161	161	161	154	157	151	157	154
OCCPCNT	6						.47*	.45*	.28*	.23*	.15	.15	-.04	-.21*	.15
							156	156	156	156	154	156	156	156	152
ABSIZE	7							.76*	.59*	.21*	.17	.17	.01	-.21*	.21*
								161	161	161	154	157	157	157	154
RELSIZE	8								.65*	.22*	.17	.04	.03	-.08	.18
									161	161	154	157	157	157	154
PARENT	9									.17	.12	.04	.01	-.06	.11
										161	155	158	158	158	155
OWNED	10										.01	.09	-.09	.03	.18
											154	157	157	157	154
BEDS_POP	11											.13	.11	-.25*	-.26*
												155	155	155	155
REG_S	12												-.42*	-.35*	-.13
													158	158	155
REG_NC	13													-.34*	.29*
														158	155
REG_W	14														-.07
															155
INC79	15														

* $p < .05$

error variance in the model. Also, relative size appears to contain information which is common to the variables system size, hospital occupancy, hospital absolute size, and parent hospital. Therefore, hospital relative size was dropped from subsequent analyses. The intercorrelations among the remaining variables should not affect the regression results to a significant extent.

To assure that the continuous variables are normally distributed, each was examined for deviation from normality. Median family income and system size possessed essentially normal distributions. While hospital occupancy, system age, and market competition possessed skewed distributions which could not be corrected, logistic transformation greatly improved the distribution of two variables: system geographic dispersion and hospital absolute size. The transformation reduced the skewness of the variables and minimized the impact of extreme high and low values.

In order to assess the impact of the transformations upon the regression models which were developed, separate regression analyses were run using untransformed and transformed values. Inclusion of the transformed values of absolute size did not lower the standard error of the regression model. However, inclusion of logistic values of geographic dispersion substantially lowered the standard error of the regression model. The sign and relative magnitude of the regression coefficient for geographic dispersion remained consistent after transformation. Therefore, subsequent analyses will be reported using transformed values of geographic dispersion. Due to the consistent direction of the effect of the variable,

interpretation remains relatively straightforward.

Categorical variables are skewed and deemed inappropriate for multivariate analysis when too few or too many observations fall into the category of interest. For this analysis, all dummy variables possess acceptable distributions.

Interpretation of the dummy independent variables is as follows. The regression coefficient for a dummy variable represents the mean difference in the dependent variable between a category of interest and the other categories of that variable (Polissar & Diehr, 1982). For example, the regression coefficient for an owned hospital represents the mean difference in the dependent variable between hospitals that are owned and hospitals which are leased, sponsored, or managed.

For the control variable region, the most frequently occurring category, the Northeast region, was used as a reference category. A significant regional impact upon the dependent variable is interpreted as the deviation of other regions from the Northeast region.

Descriptive statistics relating to the dependent variables are given in Table 14. It can be observed that there is virtually no difference in the perceived amount of control that hospitals have over either tactical and periodic decisions. The t-value for the test of the difference between the two means was .349 and was not significant. In general, there appears to be much corporate control over hospital policy decisions of both types. There is greater variance among the responses of hospital CEOs in the extent of hospital control over periodic decisions than over tactical decisions (see

Table 14

Descriptive Statistics for Dependent Variables

Dependent Variable	N	Mean*	sd
Periodic Decisions	162	7.65	4.59
Tactical Decisions	166	7.81	3.65

*Note: The range of scores is 3-21, with higher values indicating greater hospital control.

Table 14).

The relatively small variance in both dependent variables may reduce the predictive power of regression models. The small variances may be due to the nature of the sample, as small systems in general may be substantially controlled by corporate managers.

The two dependent variables are somewhat correlated, F (1,161)= 5.47, $p < .021$, $R^2 = .033$. Although the two decision processes are distinct as evidenced by factor analysis, the processes share common elements which give them some underlying similarity.

Bivariate Analyses

Exploratory analysis of the bivariate relationships between the independent variables and each dependent variable was conducted in order to examine the preliminary nature of the relationships. The intent of this analysis was to provide background information for the subsequent multivariate analysis.

The significance level for hypothesis testing in this study was a one-tailed alpha level of .10. This significance level was chosen

because over-inclusion of variables was preferred to under-inclusion, since few of the variables under investigation had been examined with regard to their impact upon strategic decision-making relationships.

Only the significant bivariate relationships will be discussed below. Later, more scrutiny will be given to the multi-variate models the influence of extraneous variables controlled.

Table 15 gives the outcome of the bivariate analyses for both dependent variables. Only three independent variables were significantly related to hospital control over tactical decisions, as shown in the first three columns. Greater geographic dispersion in the system is significantly related to more hospital control over tactical decisions. Hospitals in prospector systems have significantly less control over tactical decisions than hospitals not belonging to prospector systems. That is, corporate headquarters in the more aggressive, growing systems have more control over the ongoing strategic decisions of their hospitals.

The fourth, fifth, and sixth columns of Table 15 show the relationships between the independent variables and hospital control over periodic strategic decisions. Contrary to the relationship for tactical decisions, hospitals have less control over periodic decisions in dispersed systems. The bivariate analysis shows that in larger systems, hospitals have greater control over their periodic strategic decisions. Hospitals also have more control over their periodic appointments and major strategic moves when they are members of prospector systems. This is opposite to the direction of

Table 15

Bivariate Regression Analyses

Relationship Between Independent Variables and Hospital Control of Strategic Decisions

Independent Variable	Type of Strategic Decision: Tactical B	Tactical Int.	Tactical t		Periodic B	Periodic Int.	Periodic t	
TAVGDIS	.003	5.75	2.02	*	-.003	7.25	-1.65	*
NOHOSP	-.023	7.93	-.25		.271	6.03	2.34	*
NFP	-.583	8.06	-1.02		.868	7.30	1.18	
PROSPECT	-1.105	8.13	-1.77	*	3.284	6.72	4.33	*
AGE	.014	7.41	1.31		-.038	8.82	-2.80	*
OCCPCNT	.002	6.33	1.09		-.005	11.26	-1.95	*
ABSIZE	.002	7.40	1.38		-.003	8.36	-1.69	
PARENT	.572	7.68	.83		-.038	7.68	-.04	
OWNED	-.029	7.85	-.05		-3.082	9.70	-4.17	*
BEDS_POP	105.636	7.25	.97		-94.380	8.28	-.68	
REGION								
REG-S	-.566	8.04	-.90		-1.232	8.11	-1.52	*
REG-NC	-.382	7.98	-.59		.565	7.57	.69	
REG-W	.199	7.83	.29		.379	7.65	.42	
INC79	.00002	7.39	.29		.0001	6.68	.52	

* $p < .10$.

Note. Positive regression coefficients indicate greater hospital control.

the bivariate relationship for tactical decisions. Hospitals in newer systems have more control over their periodic decisions in comparison to the older systems. Again, this correlation between system age and periodic decisions is opposite to the correlation between system age and tactical decisions. Hospitals with higher occupancy have less control over their periodic decisions than do hospitals with lower occupancy. This correlation is opposite to the variable's correlation with tactical decisions. Hospitals which are owned by the system have greater corporate involvement in their periodic decisions, as hypothesized. Finally, larger hospitals have less control over their periodic strategic decisions than do smaller hospitals. This finding is opposite to that for tactical decisions.

The most striking outcome of the bivariate analyses is that many independent variables behave differently depending upon the type of strategic decision to be made. The variables geographic dispersion, prospector strategy, hospital occupancy, and hospital absolute size have opposite effects on each of the dependent variables.

While these results are interesting as an exploratory look at the independent and dependent variable relationships, further analyses are imperative in order to control the effects of other variables. Because the variables share variance with one another, the effects of other independent variables must be partialled out in order to correctly assess the true nature of the relationship between each independent variable and the dependent variables.

Multivariate Analyses

Two separate multiple regression analyses were performed. All independent variables were included simultaneously in each model to control for the effects of independent variables upon the dependent variable and upon each other.

In presenting regression results, four statistics are reported for each independent variable for the purpose of interpretive flexibility. First, the regression weight, B, indicates the amount of change in the dependent variable which is attributed to an independent variable. Second, the t value of that regression weight and its significance evaluated at a one-tailed alpha level of .10 is reported.

Third, the squared semipartial correlation (sr^2) is given. This statistic is "probably the single most useful measure of the importance of an independent variable" (Tabachnick & Fidell, 1982). When independent variables are intercorrelated, regression weights and correlations can carry redundant or misleading information. For each independent variable, the regression weights reflect not only variance shared with the dependent variable but also variance shared with other independent variables. The semipartial correlation gives the "unique contribution of the independent variable as a proportion of total variance of the dependent variable" (Tabachnick & Fidell, 1982). The squared semipartial correlation statistic shows the amount that R^2 or variance accounted for would be reduced if a variable were not entered into the equation (Tabachnick & Fidell, 1982).

Fourth, a more commonly used statistic indicating the impor-

tance of a variable is its standardized beta weight (STB). This gives the regression coefficient when all variables have been standardized. The standardized beta weight is the number of standard deviations that the dependent variable will change when the independent variable changes by one standard deviation (Achen, 1982). Standardization allows for an easy comparison of the size of effects across independent variables.

Additionally, several statistics describing the overall model are provided. The R^2 or proportion of variance explained by the model is given, along with its adjusted value. The unadjusted R^2 can be overestimated, since this statistic can never have negative values (all chance fluctuations in R^2 will be in the positive direction). In adjusting the R^2, correction is made for the expected inflation in R^2 using a sample size adjustment term. This corrects for larger amounts of chance error present with smaller samples.

Significance of Regression Models

As shown in Table 16, The chosen independent variables were able to account for a significant proportion of the variance in hospital control over tactical decisions, $F(14,139) = 1.655$, $p < .072$. The proportion of variance explained (R^2), unadjusted, is .1429 and with the adjustment falls to .0565. This model is significant but not dramatically so. The significance of this model appears to be due to the influence of several strong variables to be discussed individually below.

The independent variables are even stronger in their ability to explain variance in hospital control over periodic or less frequent

Table 16

Regression Estimates for Hospital Control Over Tactical Decisions

Independent Var.	B	t	sr2	STB
TAVGDIS	.747	3.15 *	.061	.33
NOHOSP	.017	.12	.000	.01
NFP	.727	.98	.006	.10
PROSPECT	-2.182	-2.20 *	.030	-.27
AGE	-.010	-.60	.002	-.07
OCCPCNT	.001	.31	.001	.03
ABSIZE	.002	.86	.005	.10
PARENT	.193	.22	.000	.02
OWNED	-.700	-1.01	.006	-.09
BEDS_POP	73.137	.59	.002	.06
REGION				
REG-S	-1.523	-1.32	.011	-.15
REG-NC	-1.594	-1.67 *	.017	-.20
REG-W	-1.335	-1.38	.012	-.15
INC79	.001	1.35	.011	.13
INTERCEPT	-20.976	-7.10	0	0

Overall Model

R^2 = .1429
R^2 (adj.) = .0565
$F(14,139) = 1.66$
$p < .072$

* $p < .10$

Note. Positive regression coefficients indicate greater hospital control.

strategic decisions, shown in Table 17. Although periodic and tactical decisions are somewhat related, periodic decisions are influenced by different environmental and organizational features than tactical decisions, as evidenced by the direction and strength of the effect of independent variables. The regression model is significant, F (14,136) = 3.039, $p < .0004$. The independent variables are able to explain a large portion of the variance, with R^2 =.2383 and adjusted R^2 =.1599. Evidently the independent variables are stronger in their relationship to periodic decisions, as this model explains more variance than does the other. Again, it appears that several strong variables contribute to the strength of the overall model.

Significance of Individual Variables

Geographic Dispersion

It was expected that hospitals in geographically dispersed systems would control their own strategic decisions to a greater degree than hospitals in proximal systems. The results of the regression analyses indicate that for tactical decisions, the hypothesized relationship received support ($t(165) = 3.15$, $p < .0020$). In fact, the variable TAVGDIS is the most important explanatory variable in the model, possessing the largest squared semipartial correlation (.061) and standardized beta (.33) shown in Table 16. Hospitals in dispersed systems retain a significant amount of control over their tactical decisions, showing that distance evidently is a barrier to regular involvement by corporate headquarters. This finding con-

Table 17

Regression Estimates of Hospital Control Over Periodic Decisions

Independent Var.	B	t	sr2	STB
TAVGDIS	.106	.37	.001	.04
NOHOSP	.152	.91	.005	.10
NFP	-.365	-.40	.001	-.04
PROSPECT	.988	.82	.004	.10
AGE	-.042	-2.17 *	.026	-.24
OCCPCNT	.000	.02	.000	.00
ABSIZE	-.003	-1.19	.008	-.12
PARENT	1.461	1.38	.011	.13
OWNED	-3.369	-4.04 *	.092	-.34
BEDS_POP	105.054	.71	.003	.06
REGION				
REG_S	-.022	-.02	.000	-.00
REG_NC	.432	.37	.001	.04
REG_W	.297	.25	.001	.03
INC79	.001	1.84 *	.019	.17
INTERCEPT	-18.941	-5.30 *	0	0

Overall Model

R^2 = .2383
R^2 (adj.) = .1599
$F(14,136) = 3.04$
$p < .0004$

* $p < .10$

Note. Positive regression co-efficients indicate greater hospital control.

firms results documented elsewhere (Alexander & Schroer, 1985; Kochen, 1980).

Interestingly, Table 17 shows that there is no significant relationship between the geographic dispersion variable, TAVGDIS, and the dependent variable for control over periodic, less frequent strategic decisions ($t(165) = .37$, $p < .7111$). Although for the regular decisions, distance plays a clear role in enhancing hospital decision-making control, distance does not seem to affect involvement by corporate headquarters in periodic decisions.

MHS Size

It was hypothesized that hospitals in larger systems would have greater control over their strategic decisions than hospitals in smaller systems. Neither regression analysis confirms this hypothesis. For tactical decisions, the size of the system has no effect on the amount of control held by the hospital ($t(165) = .12$, $p < .9050$). Similarly, size has no relationship with periodic or infrequent strategic decisions, ($t(165) = -.91$, $p < .3655$).

Not-For-Profit System Ownership

For both types of decisions, not-for-profit system ownership is not a significant predictor of hospital control over strategic decisions. The t-value for its relationship with tactical decisions is .98, ($df=165$, $p < .3300$) while the t-value for periodic decisions is -.40 ($df=165$, $p < .6868$). The results of both regression analyses confirm the hypothesis that not-for-profit systems are no different from other ownership types in the amount of control hospitals have

over strategic decisions.

A caution should be made before concluding that not-for-profit systems are no different on this dimension than other systems. Not-for-profit systems are typically smaller, newer, and more proximally located than the others. In contrast, most Catholic systems are widely dispersed and, on the average, have existed for many more years. Ownership may have an impact via these other variables, i.e., system geographic dispersion and age. When the effects of these other variables are removed, however, ownership is not significant in itself.

Prospector Systems

The managers of hospitals in prospector systems were expected to have more control of hospital activities in general due to the corporate focus upon expansion and growth of the entire system. Contrary to this hypothesis, membership in a prospector system is significantly associated with hospitals having less control over their tactical decisions ($t(165) = -2.20$, $p < .0293$). In other words, the corporate headquarters of prospector systems have greater control over the daily, tactical decisions made about hospital strategy and policy.

For periodic decisions, the results fail to support the hypothesis ($t(165) = .82$, $p < .4123$). The aggressiveness of the system in acquiring hospitals does not appear to relate to whether or not the hospital retains control over its periodic strategic decisions. The system headquarters of a prospector system appears to be more concerned with the daily management of a hospital and its tactical

maneuvers and is less involved with its board composition, sale of assets, or changing the hospital bylaws.

System Age

It was expected that hospitals belonging to newer systems would have less control over their strategic decisions than those in more established systems. For tactical decisions, the regression results do not corroborate this hypothesis ($t(165) = -.60$, $p < .5490$). The influence of the age of the system is minimal in determining which entity controls tactical decision-making.

In contrast, the age of the system is significant in the opposite direction than hypothesized for periodic strategic decisions ($t(165) = -2.17$, $p < .0321$). Hospitals in the early stage of system incorporation have more control over their periodic strategic decisions than hospitals belonging to older, more established systems. The effect of age on periodic decisions may be due to bureaucratic controls for the choice of CEO and board membership which have been built up over time. That is, an older system may have developed decision-making processes and roles to govern the choice of CEOs or board members, while newer systems may be involving hospital leadership more extensively as these processes are developed.

Hospital Occupancy

It was expected that hospitals with low occupancy rates would have less control over their strategic decisions than hospitals with higher occupancy rates, since corporate headquarters was expected to be more concerned and involved with less efficient hospitals. For

tactical decisions, occupancy has no impact in this study ($t(165) = .31$, $p < .7589$). Similarly, for periodic strategic decisions, occupancy is not a significant predictor ($t(165) = .02$, $p < .9849$). Occupancy does not appear to be an important factor in the control over strategic decision-making in hospital members of systems in this study.

Hospital Size

It was expected that large hospitals would have more control than small hospitals over all kinds of decisions, in this case strategic decisions. For tactical decisions, the results show no relationship between a hospital's size and its control over tactical decisions ($t(165) = .86$, $p < .3892$). Likewise, there is no support for the hypothesis that larger hospitals have more control over periodic strategic decisions ($t(165) = -1.19$, $p < .2378$).

Parent Hospital

It was hypothesized that originating members of hospital systems, or parent hospitals, would have significantly more control over their strategic decisions than would nonparent hospitals. For tactical decisions, this effect is not demonstrated ($t(165) = .22$, $p < .8266$). There is a moderate but statistically insignificant tendency for parent hospitals to have more control over their periodic decisions ($t(165) = 1.38$, $p < .1697$).

Hospital Owned By System

It was expected that hospitals which were owned by the system

would have less control over their strategic decisions than hospitals which were leased, managed, or sponsored by the system. Although the results are not significant, owned hospitals tend to have less control over their tactical decisions in this study ($t(165) = -1.01$, $p < .3134$). The regression weight is moderate and in the hypothesized direction.

With regard to periodic strategic decisions, system ownership of the hospital is the most important explanatory variable in the model, as it possesses the largest squared semipartial correlation and standardized beta shown in Table 17. The results of the regression lend support to the hypothesis that hospitals which are owned have less control over their periodic strategic decisions ($t(165) = -4.04$, $p < .0001$). The effect on strategic decision-making of hospital ownership by the system is in the same direction for both types of strategic decisions, giving a strong indication that corporate management becomes more invested and involved in hospital strategic management when it owns the facility.

Hospital Market Competitiveness

It was expected that hospitals in more competitive market areas would have more control over their strategic decisions in order to enable them to function quickly and adaptively in their local markets. However, the effect of market area competition on hospital control over its tactical decisions is not significant ($t(165) = .60$, $p < .5534$). Likewise, competition in the market area as measured in this study has no impact upon whether or not hospitals retain control over periodic strategic decisions ($t(165) = .71$,

$p < .4800$).

Control Variables

Region. As expected, variations in the dependent variables can be attributed to regional factors. Hospitals in the North Central region have significantly less control over their tactical decisions than hospitals in the Northeast region in this study ($t(165) = -1.67$, $p < .0968$). Region is not associated with hospital control over periodic decisions.

Family Income. A higher median family income is significantly associated with hospitals having more control over their periodic strategic decisions ($t(165) = 1.84$, $p < .0685$). That is, hospitals located in a more prosperous market area have less corporate involvement with periodic strategic decisions. Family income is not significantly associated with control over tactical decisions ($t(165) = 1.35$, $p < .1793$). It is possible that hospitals in wealthier market areas, with a higher proportion of paying patients, would have less difficulty in meeting bottom-line financial goals in general. Corporate involvement in attempting to improve the hospital's performance would be less necessary.

Analysis of Interaction Terms

In order to explore the possibility of having statistically significant interaction effects, interactions between independent variables were analyzed post hoc in a separate regression model for each of the dependent variables. No first order interaction terms

were significantly related to hospital control over periodic strategic decisions in multivariate regression analyses.

One first order interaction term was found to be significantly related to a hospital's control over tactical decisions as shown in Table 18. The system's age interacts with its geographic dispersion in determining the extent to which a hospital controls tactical decisions ($t(165) = 2.00$, $p < .0477$). The overall model, composed of all the previously described independent variables plus the interaction term AGE * TAVGDIS is significant in explaining hospital control of tactical decisions ($F(15,138) = 1.844$, $p < .0343$). As shown in Table 18, the R^2 is .1669, and the adjusted R^2 is .0764.

In order to ascertain the nature of the interaction effect, the variables age and geographic dispersion were dichotomized at their medians and the data cross tabulated. An analysis of variance was conducted to determine whether or not the cell means were significantly different. Table 19 shows this cross-tabulation. At least two of the cell means were significantly different ($F(3,118) = 3.94$, $p < .0103$). The Scheffe' test of all possible pairwise cell comparisons was then conducted to ascertain which cell means were significantly different. As Table 19 shows, in this study, hospitals in older, dispersed systems have more control over their tactical decisions than any other hospitals ($M = 9.41$), especially in comparison to those in older, proximal systems ($M = 5.89$). The Scheffe' post hoc comparison showed a significant difference in the amount of hospital control between hospitals in older, dispersed systems and hospitals older, proximal systems.

Table 18

Regression Estimates for Hospital Control Over Tactical Decisions (Interaction Analysis)

Independent Var.	B	t	sr2	STB
TAVGDIS	.345	1.12	.008	.15
NOHOSP	-.010	-.07	.000	-.01
NFP	.682	.93	.005	.09
PROSPECT	-1.905	-1.92 *	.022	-.23
AGE	-.077	-2.07 *	.026	-.56
OCCPCNT	.001	.30	.001	.03
ABSIZE	.002	.78	.004	.08
PARENT	.070	.08	.000	.01
OWNED	-.633	-.92	.005	-.08
BEDS_POP	75.381	.62	.002	.06
REGION				
REG_S	-1.136	-1.32	.010	-.14
REG_NC	-1.467	-1.55	.015	-.18
REG_W	-1.392	-1.45	.013	-.16
INC79	.001	1.23	.009	.12
AGE * TAVGDIS	.015	2.00 *	.024	.60
INTERCEPT	-19.018	-6.17	0	0

Overall Model

R^2 = .1669
R^2 (adj.) = .0764
$F(15,138)$ = 1.84
p < .0343

* p < .10

Note. Positive regression coefficients indicate greater hospital control.

Table 19

Mean Level of Hospital Control Over Tactical Decisions by System Age and Geographic Dispersion[a]

System Age	Average Distance Between System Hospitals	
	0-64 Miles	65 + Miles
0-21 Years	7.57 (n=58)	7.38 (n=24)
22 + Years	5.89* (n=28)	9.41* (n=51)

[a] The range of scores is 3-21, with higher values indicating greater hospital control.

* Mean values of cells 3 & 4 are significantly different, $p < .05$ (Scheffe' Pairwise Comparison Test)

Subsequent analysis showed that Catholic system hospitals have a significantly higher mean value of (system age * geographic dispersion) than the combined mean of other ownership categories, 316.1 and 65.7, respectively. The t-test value for the difference in these means is 11.0 and is significant at alpha = .10. This confirms the well-known phenomenon that, in general, Catholic MHSs operate with a great deal of decentralization, giving extensive control to hospital leadership.

Although the variable measuring the aggressiveness of growth in the system, PROSPECT, is still significant in the expanded model ($t(165) = -1.92$, $p < .0564$), the inclusion of the interaction term in the model changes the impact of certain other variables. When the interaction term is included, geographic dispersion is no longer significantly related to hospital control over tactical decisions ($t(165) = 1.12$, $p < .2669$). The direction and magnitude of the regression weight still suggest that when dispersion is higher, hospitals have more control over their tactical decisions. When the combined effects of system age and geographic dispersion are partialled out, the solo effect of distance is weak. It is evident that, *for tactical decisions*, the impact of distance relates largely to the age of the system.

When the effect of the interaction between system age and geographic dispersion is partialled out, age alone is significant ($t(165) = -2.07$, $p < .0408$), while in the previous model it was not. Managers in hospitals belonging to older systems have significantly less control over their tactical decisions than do managers of more

newly incorporated MHSs.

The apparently strong influence of the Catholic system management on the relationship between the independent variables and tactical decisions warranted further inquiry. Thus, an additional regression was conducted, explicitly controlling for Catholic system ownership, excluding the not-for-profit dummy variable, and including all the remaining independent variables, including the first order interaction term.

Table 20 gives the estimates for this regression model. As shown, the model is significant, $F(15, 138) = 2.01$, $p < .0184$. R^2 is improved to .1795 with the adjusted value of .0903. This model appears to be the best one for explaining hospital control over tactical decisions, as the effects of the independent variables have been clarified and R^2 remains strong. Two variables are significantly associated with less hospital control of tactical decisions: hospitals in prospector ($t(165) = -1.96$, $p < .0517$) and in older systems ($t(165) = -2.50$, $p < .0136$). In fact, system age is the strongest variable in the explanatory model ($sr^2 = .037$, STB = -.66). The dummy variable indicating Catholic system ownership, CATH, is significantly associated with more hospital control of tactical decisions ($t(165) = 1.73$, $p < .0863$).

Surprisingly, the interaction term, (system age * geographic dispersion), approaches significance in its association with greater hospital control over tactical decisions ($t(165) = 1.56$, $p < .1202$). With Catholic effects excluded, once again, the greatest difference in the mean value of hospital control over tactical decisions can be

Table 20

Regression Estimates of Hospital Control over Tactical Decisions
Best-fitting Model

Independent Var.	B	t	sr2	STB
TAVGDIS	.241	.81	.004	.11
NOHOSP	.040	.29	.001	.03
PROSPECT	-.1924	-1.96 *	.023	-.24
AGE	-.092	-2.50 *	.037	-.66
OCCPCNT	.001	.28	.001	.03
ABSIZE	.001	.67	.003	.07
PARENT	.019	.02	.000	.01
OWNED	-.628	-.92	.005	-.08
BEDS_POP	69.756	.58	.003	.05
REGION				
REG_S	-.508	-.55	.003	-.06
REG_NC	-.838	-.89	.005	-.10
REG_W	-.955	-1.01	.006	-.11
INC79	.001	1.29	.010	.12
CATH	1.949	1.73 *	.018	.23
AGE * TAVGDIS	.012	1.56	.015	.48
INTERCEPT	-18.694	-6.25	0	0

Overall Model

R^2 = .1795
R^2 (adj.) = .0903
$F(15,138)$ = 2.01
p < .0184

* p < .10

Note. Positive regression co-efficients indicate greater hospital control.

found between hospital members of proximal versus dispersed older systems.

Summary of Important Findings

Table 21 provides a summary of the important findings from the best model for each regression analysis. These findings will be discussed in detail in the final chapter.

Table 21

Summary of Important Regression Results
from Best Regression Models

Contingency Variable	Relationship to Member Hospital Control of Strategic Decisions[a]		
MHS Level	Hypothesized	Tactical Decisions	Periodic Decisions
Geographic Dispersion	++	0	0
Size	++	0	0
Ownership:			
Not-for-profit	0	0	0
Catholic	na	++	0
Strategic Type:			
Prospector	++	--	0
Age	++	--	--
Age * Dispersion	na	+	0
Hospital Level			
Occupancy	++	0	0
Absolute size	++	0	-
Parent Hospital	++	0	+
Type of MHS-Hospital Relationship Owned	--	-	--
Competitive Market Area	++	0	0

[a] ++Statistically significant positive relationship
+ Non-significant but moderate positive relationship
0 No relationship
- Non-significant but moderate negative relationship
--Statistically significant negative relationship

CHAPTER 5: DISCUSSION AND CONCLUSIONS

The purpose of the final chapter is to summarize and discuss the important contributions of this research, to present the management implications of the empirical findings, and, in the context of the findings and limitations of this research, propose needs for future research.

Significant Contributions

There are three areas in which this research can offer significant contributions to the study of multihospital systems. First, through the application of the Hickson, Butler, Cray, Mallory, and Wilson (1986) typology of top organizational decisions, a broader perspective on strategic decision-making within a hospital system is made possible. Second, specific empirical findings can offer advances to the knowledge base relating to effective management in hospital members of MHSs. Third, insights into the application of the contingency perspective are offered.

Strategic Decisions

This section will examine the contributions of this study to the development of a better understanding of strategic decisions in MHSs. The introductory chapter pointed out that, rather than investigating variables which influence the overall level of decentral-

ization in MHSs, research was needed to examine the level of decentralization for specific functional areas, such as strategic planning. This study confirmed the legitimacy of such work, and revealed the multi-dimensional nature of hospital strategic decisions.

Briefly, analysis revealed a two-factor structure to the dependent variable scale: a factor dealing with periodic, less frequent decisions such as local board appointments, sale of hospital assets, and changes in hospital bylaws; and a second factor composed of items more tactical in nature: hospital budgets, service additions, and strategic planning. At first glance, it appears somewhat surprising that hospital strategic planning loaded on the tactical dimension, since strategic planning is often viewed as a function which occurs periodically in a hospital. The assumption must be made that strategic planning loaded on the tactical factor due to its likely manifestation as an incremental "stream of important decisions over time" (Mintzberg, 1978) rather than as a periodic, formal planning process.

The two factors were correlated, indicating that, although there are different levels of hospital control for different types of strategic decisions, strategic decision-making processes in MHSs share certain commonalities, regardless of the type of decision under consideration. Evidently there is a "baseline" level of hospital control over decisions which depends upon specific organizational features.

Based on the results of the present work, it is not possible to make any generalizations about the overall level of control that

hospitals have over their strategic decisions. One must qualify such statements in terms of particular kinds of strategic decisions. Midway through this research, a useful strategic decision-making model was published by a group of British researchers. While the model would have been useful during the design phase of the study, its findings can nevertheless be helpful in understanding the results of the current research.

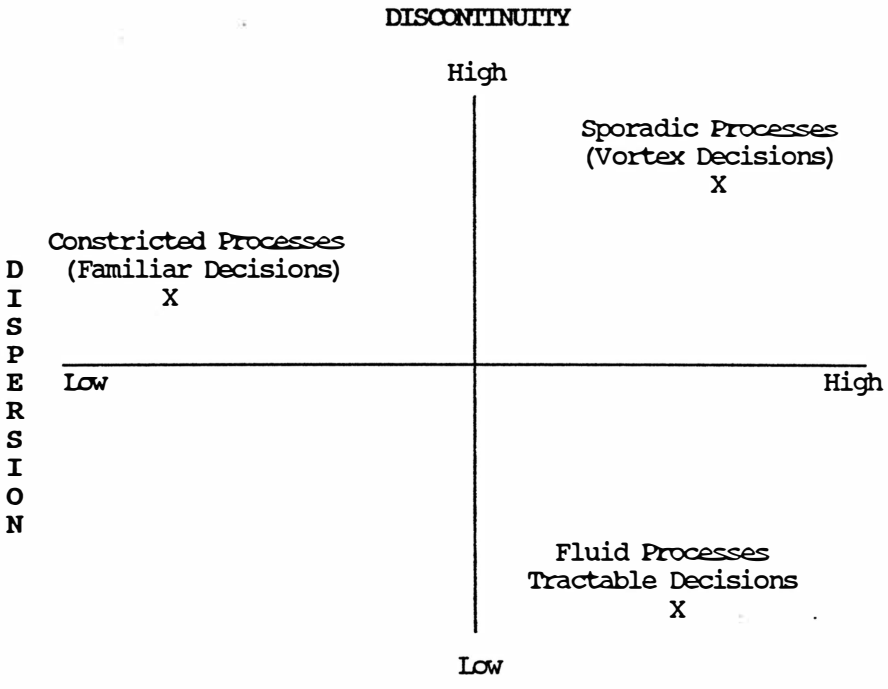
The framework, presented by Hickson et al. (1986) in their book, Top Decisions, examines the nature of different types of strategic decisions. Over a ten year period, this research team gathered data from 150 retrospective case histories of decision-making in 30 British companies, using interviews and examining records of decision-making. By classifying the decisions under investigation, they devised a model of strategic decision processes which were associated with particular types of strategic decisions.

Using cluster analysis, Hickson et al. (1986) grouped the data along two dimensions: discontinuity and dispersion of decision processes. Discontinuity refers to the number of disruptions or delays which characterize the decision-making process. Dispersion refers to the number of people involved in the process, i.e., the more people or organizational subgroups involved, the more dispersed the process.

They uncovered three clearly discernable decision-making processes based on these two dimensions: a) sporadic; b) fluid; and c) constricted. Figure 4 exhibits the positioning of Hickson et al.'s clusters along each of these two dimensions.

Figure 4

Three Modes of Decision-Making Based on
Dimensions of Discontinuity and Dispersion



Source: Hickson, et al. (1986)

A sporadic decision process is "one that is informally spasmodic and protracted (Hickson, et al., 1986)." That is, information comes in with uneven quality, there is much room for negotiation and discussion, and there are disruption, delays, impediments, and resistance. All of these lead to a decision process which becomes quite time consuming.

Decisions which are likely to be processed in a sporadic manner are termed "vortex" by Hickson, et al. (1986). Vortex decisions tend to involve a combination of highly complex and political features, tend to be rare, have serious and widespread consequences, be precedent-setting, involve diverse internal and external influences, and be controversial (Hickson, et al., 1986).

In contrast, fluid processes differ fundamentally from sporadic processes along the discontinuity dimension.

> The contrast between fluid processes and sporadic processes shares something with that frequently made between 'rational' and 'political' decision-making, the rational flowing more evenly and the political more turbulently (Hickson, et al., 1986, p. 121; Miles, 1980, p. 181).

Fluid decision processes take place with regularly occurring meetings, pre-arranged project or work groups, and fewer inputs from internal and external experts. Rather than impeding the decision flow, formally arranged committees seem to facilitate a rapid conclusion of these decision processes.

Fluid decision processes are often triggered by "tractable" decision topics, or those which are unusual but less awkward and more malleable than vortex decisions (Hickson, et al., 1986). Tractable decisions are less deserving of the label "strategic," compared to

vortex, sporadic processes. Consequences of these decisions are less serious, although widespread; the decisions are non-contentious, evenly influenced, less complex, and least political of the decisions under investigation. Tractable decision topics often relate to organizational boundaries and inputs (Hickson, et al.,1986).

Finally, Hickson et al. (1986) identified a third decision process, constricted, which shares aspects of the other two process yet differs from them along the dispersion dimension, being less dispersed with regard to involvement by organizational members. Narrowly channeled, constricted processes share the delays which characterize sporadic processes, involve numerous experts and sources of information, and are less controversial than sporadic, possessing a narrower scope for negotiation. A constricted decision process is "less fluid than the fluids and less sporadic than the sporadics" (Hickson, et al., 1986), not stirring up as much activity as the other two processes.

Constricted processes are triggered by familiar, recognizable, and limited decision topics. These situations have limited consequences and are the least complex of strategic decisions. Thus they are generally low-risk decisions which have been carried out routinely by decision-makers who follow a familiar pattern of established rules and procedures.

The Hickson, et al. (1986) strategic decision typology supports and advances previous work by Miles (1980), Stein (1981), Mintzberg (1983), and others by providing a fundamental explanation for strategic decisions and associated decision processes. A manager who

can describe a decision as vortex, tractable, or familiar can expect that the related decision process will be sporadic, fluid, or constricted, respectively, in the majority of instances.

The Hickson, et al. (1986) model can be applied to the strategic decisions currently under investigation. All three of the decisions represented under the factor, tactical decisions, could be labeled "tractable, fluid" under the Hickson, et al. schema (1986), with tractable describing the difficulty or complexity of the decision, and fluid describing the nature of the process by which the decision is made. Tractable, fluid decisions are characterized by somewhat constricted involvement of decision-makers rather than wide-scale involvement at all levels and units of the organization. These decisions are not routine, yet they are not rare. The decisions are not highly political or controversial, and are often reached through regular committee work in an incremental, continuous process. Tractable, fluid decisions often are precursive in that they set parameters for future decisions and often relate to financial or input matters such as acquisition of resources or funding. Although these decisions are widely felt throughout the organization, they do not have sudden or dramatic effect.

The classification of the items composing the "periodic decisions" factor is less obvious, but they are clearly distinct from the tactical decisions based upon the discontinuity dimension proposed by Hickson, et al. (1986). Appointment of local board members, sale of hospital assets, and changes in hospital bylaws are all decisions which are not routinely made. They most closely match

the category "vortex, sporadic" in Hickson, et al.'s (1986) design, in that the decisions are likely to be controversial and important decisions which are processed in a more sporadic manner. The scope for negotiation is broad, and there is informal contact and on and off discussion involving a diversity of information sources. Vortex, sporadic decisions are often novel and involve greater risk to the organization as a whole, and as such, are often highly political. While periodic decisions may not be as highly risky and controversial as the Hickson, et al. prototype, vortex decisions, they are clearly more political and have greater potential impact upon the organization as a whole than the tactical decisions. Thus the present study supports the thrust of the Hickson, et al. (1986) typology for strategic decisions.

The correlation of the two decision types despite a relatively clean factor structure (high loadings on one factor with very low loadings on the other -- see Table 10) is better understood if viewed from the perspective that the factors share similarities along one dimension of the Hickson et al. typology, but differ on another. That is, both periodic and tactical decisions can be viewed as moderately dispersed decision processes, yet differ in that periodic decisions tend to be more sporadic and tactical decisions more fluid.

This research has also depicted the complexity of the process of organizational decision-making. Mintzberg (1983) has described the process of decision-making as a sequence of events over which diverse subgroups can exert control. Mintzberg goes on to assert

that power over different kinds of decisions rests in different places within an organization, usually based upon control over a specific functional area of information or expertise. This study documented the fact that not only are there vastly different kinds of decisions to be made, but that the involvement of decision-makers depends upon a complex assortment of variables which interact in a given situation.

Important Empirical Findings

Given that this study focuses upon small MHSs, it was expected that fairly strong corporate influence would be found within the system management, since corporate leaders have relatively fewer hospitals to manage. However, the high degree to which hospital CEOs perceived corporate control over hospital decisions was somewhat surprising. On a scale with the value 3 indicating strong system control and 21 indicating strong hospital control, the mean level of perceived control was 7.65 for periodic decisions and 7.81 for tactical decisions. It is evident that, at least in regard to the two decision areas studied, the MHS central office exerts a tremendous influence upon hospital decision-making processes within the small systems sampled.

However, this study illustrates that there are contingencies under which hospitals can exert greater control over certain types of decisions. Because of the differences in strategic decision types, the discussion of significant findings will be organized around each type of decision, i.e., tactical and periodic, and will include comparisons of the current findings to previous work.

Tactical Decisions

Three system-level measures are significant in their association with hospital control over tactical decisions: Catholic system ownership, Prospector system strategy, and system age.

Hospital members of Catholic systems have significantly more control over tactical decisions than other hospitals. The original model sought to test for the effect of not-for-profit system ownership, but the well-documented statistical strength of Catholic ownership overshadowed the effects of other ownership categories. These findings confirm the hypothesis that not-for-profit ownership alone cannot explain variance in the extent of hospital control over strategic decisions.

No previous research had addressed the application of the Miles and Snow (1978) strategic typology to MHS decision-making. This study offered an initial look at the model's application to MHS research. Hospitals belonging to systems which aggressively acquired new member hospitals (prospectors, according to Luke and Begun (1986)) have significantly less control over tactical decisions than hospitals whose corporate component pursued less aggressive strategies, contrary to the hypothesis. It appears that rather than acquiring hospitals rapidly and then gradually integrating them into the system's management structure, prospector systems acquire a hospital and then strongly take control of its tactical management. A plausible explanation for this phenomena is that systems which expand rapidly may do so by acquiring financially or otherwise troubled facilities. Strong management involvement in everyday opera-

tions may be needed to turn these hospitals around.

Hospitals belonging to more recently incorporated systems retain greater control over their tactical decisions than hospital members of relatively older systems. It may require some time before the integration of hospitals into a newly formed system can occur. New systems may take time to test and evaluate the most effective methods of control over their hospitals, in contrast with older systems which have gained managerial experience through years of MHS operation.

Previous research had documented a U-shaped relationship between system age and hospital control over decisions (Alexander, 1985; Barrett, 1979; Money, et al., 1976). Tests did not corroborate the U-shaped relationship in the sample under investigation, as the relationship between age and hospital control over tactical decisions was more linear for this sample. That is, while younger system hospitals (age 1-10 years) have significantly greater control, middle-aged (11-40 years) and older (40+ years) systems are similar in exhibiting a negative and insignificant relationship to hospital control over tactical decisions.

Two variables approached significance in their relationship to hospital control over tactical decision-making. Surprisingly, with Catholic system ownership and system age effects partialed out, hospitals in older, more proximal systems appear to have <u>less</u> control than their dispersed counterparts. It is evident that when concentrated geographically, hospitals in older systems do not possess the extensive control which can be found in dispersed systems in this

sample. The proximity of hospitals to each other and to system headquarters appears to negate the ability of hospitals in older systems to retain a great deal of independence.

Hospitals which are owned by the MHS have less control over tactical decisions, lending support to the hypothesis that corporate headquarters is more invested in the operation of hospitals which are owned. This was the only hospital level variable which had any notable impact on hospital control over tactical decisions.

Periodic Decisions

Although the overall predictive model for periodic decisions was stronger than that for tactical decisions, only one system-level (system age) and one hospital-level variable (hospital owned by MHS) were significantly related to hospital control over periodic strategic decisions. The age of the system appears to be a strong factor in corporate control over periodic hospital decisions: hospitals in younger systems have significantly greater control than those in older systems. The hospitals' previous existence as independent facilities comes strongly to bear as the hospitals retain control of the less frequent strategic decisions. Older systems, in contrast, seem to have achieved a degree of integration of periodic hospital decisions into corporate processes, as hospital members have significantly less control.

As expected, hospitals which are owned by the MHS have less control over periodic strategic decisions. This lends support to the propositions made by Fottler et al.(1982) and Aldrich (1979). It follows logically that systems are more invested from a stand-

point of resources, time, personnel, and potential for financial gain in hospitals which they own as opposed to ones which they lease or manage. The fact that the effect is stronger for periodic than for tactical decisions reflects the longer term and broader impact of periodic decisions.

Three additional variables approached significance in their relationship to hospital control over periodic decisions. Relative to smaller systems, hospital members of larger systems had greater control over periodic decisions. This supports the reasoning of Provan (1985) and is consistent with the relationship which was hypothesized. Although more work is needed to confirm the nature of this relationship, it offers preliminary support for the theory that as MHS size increases, it is less likely that corporate headquarters will become actively involved in periodic strategic decisions of each of its member hospitals.

Interestingly, larger hospitals tend to have less control than smaller hospitals over periodic strategic decisions, although the relationship is not significant. It is probable that the MHS has more to gain or lose from the decisions made relating to larger facilities in comparison to smaller hospitals, thus there is more involvement in the periodic decisions of larger hospitals.

Finally, weak support for the concept of a dominant parent hospital in a system is shown. Parent hospitals have slightly more (but statistically insignificant) control over their periodic decisions than non-originating members of MHSs.

Differential Effects of Independent Variables Across Decision Areas

Two independent variables exerted strong, consistent effects across both tactical and periodic decisions: system age and hospitals owned by the MHS. Younger hospitals retained more extensive control over tactical decisions when the effects of geographic dispersion were controlled. Younger hospitals had greater control over periodic decisions regardless of geographic dispersion. This consistency points to the likelihood that full integration and control in a newly established MHS takes time, and that newly incorporated systems do not seem to acquire a hospital and then seize strong control. A good deal of hospital independence is retained initially.

Consistent effects for both types of decisions were observed for hospital members of systems which are owned by the system as opposed to leased or managed. It appears that system headquarters have greater psychological and resource investment in hospitals that are owned, and therefore system managers become more involved in decisions made regarding these hospitals.

Hospitals belonging to Catholic systems had much greater control over tactical decisions than hospitals in other ownership categories, but the same effect did not hold true for periodic decisions. It appears that the well known Catholic system "hands off" philosophy of management of hospital operations was demonstrated for tactical decisions, but that Catholic system leaders draw the line and become just as involved as non-Catholic system leaders when it comes to decisions having longer term and broader impact, i.e., periodic decisions.

Hospital members of prospector systems had significantly less control over tactical decisions, but were no different than other systems in the amount of control over periodic decisions. This is possibly due to the nature of the measurement of prospector systems, which emphasized recent growth in categorizing a system as a prospector. A recently-expanded system may not have had sufficient time to establish control mechanisms over the periodic decisions of its hospitals that it has made over tactical, shorter-term decisions.

Evaluation of the Usefulness of the Contingency Perspective

In Chapter two, several limitations of the contingency perspective were pointed out. Specifically, that contingency theory is "not a theory at all," (Schoonhoven, 1981) and is a convenient vehicle with which to test relationships between variables rather than a testable "theory."

In this work, the propensity for the contingency perspective to act as a variable testing vehicle became apparent. The analytical model for this research was based upon the orienting framework or "metatheory" (Fry & Smith, 1987) that an organization's structure depends upon its strategy, technology, and environment. Within that framework, a true theory-testing study would have obtained comprehensive measures of organizational strategy, technology, environment, and structure to test the contingency theory.

This research was one step below this level, testing contingent relationships between variables representing aspects of MHS strategy, environment, and structure. Thus it does not provide a clear test of the contingency model as a theory, but instead investigates

the nature of certain contingent relationships. This distinction is important to understand, as it implies that the true worthiness of the contingency model as a theory remains untested in this work.

Two major advantages derived from the use of the contingency perspective as the analytical framework for this study: a) the incorporation and testing of a comprehensive range of independent variables; and b) the direct applicability of results to administrators in the field (a topic addressed in the next section).

While overall, the contingency perspective was useful for this study, the explanatory power of the regression models was lower than expected. Only one hospital-level variable was significantly related to hospital control over strategy (ownership of the hospital by the system). It is believed that these unexpected results are due to measurement problems rather than to the weakness of the analytical framework.

Several variables which have shown clear effects in previous research were not demonstrated to have effects in this study. Geographic dispersion has been shown to be strongly related to decentralized management in MHSs (Alexander, 1985; Alexander & Schroer, 1985; Kochen, 1981). In this study, geographic dispersion exerted influence only through its interaction with the variable system age, in that hospitals in older, dispersed systems have greater control over the decisions than do hospitals in newer, proximal systems.

The size of the MHS did not relate significantly to hospital control over either type of decision. Organizational literature has shown that as size increases beyond a certain point, management de-

centralizes, giving more control to subunits. The failure to demonstrate an effect of size in this study most probably relates to the restricted size range of the sample. An additional possibility is the insensitivity of the measure of size, the number of hospitals in the system, which was incorporated. When studying small MHSs, a more specific measure of size is required.

Higher occupancy was hypothesized to predict greater hospital control over decisions, based on the premise that lower occupancy spelled greater dependence on the MHS and thus less power for the hospital. This was not found. Occupancy is a weak measure of the hospital's power-dependence relationship with the system, as occupancy now has reduced implications for hospital performance under the prospective payment system. Maintiaining a high rate of admissions has become a goal which is often more important than a high occupancy rate, since hospital managers are now reimbursed on a per case basis for many patients.

Finally, the competitiveness of the market area did not relate to hospital control over decisions in this study. A dependent variable which more specifically measures strategic moves taken by the hospital in a competitive local market would make the competitiveness of the market area more relevant as an explanatory variable. As it was employed in this research, the measure of competitiveness -- hospital beds in the area -- did not have any bearing over the broad types of decisions under study.

Policy and Management Implications

The findings discussed above have implications for managers in

MHS hospitals and for their corporate leaders. First, the control retained by hospitals over strategic decisions is contingent upon the type of decision as well as other variables. For example, hospitals in Catholic systems give up more control over tactical decisions than over periodic decisions. Managers must be aware that the nature of the decision to be made is relevant in deciding where to place responsibility for a certain function.

Second, managers of systems in the earlier stages of growth must be aware that it takes time to integrate hospitals into the system and that control mechanisms are unlikely to be implemented quickly. This finding can be viewed from two perspectives: a) that managers of member hospitals in a newly formed system tend to resist system controls or b) that new system leaders do not impose strong controls on member hospitals. There may be an initial period of experimentation with various mechanisms for and levels of system controls over hospital decisions, a period which managers should realistically view as a time for gaining experience in hospital-system relationships.

Third, hospitals which are considering leased, managed, or owned relationships with a system should take into account the finding that owned hospitals, in general, have less control over both kinds of decisions under investigation in this study. If a hospital wishes to retain control over its local market tactics and its periodic decisions, then its managers should find a system to manage or lease the hospital rather than selling the hospital to a system.

Fourth, hospitals which are not originating members of the sys-

tem can expect that they will hold less control over their periodic decisions than their "parent" counterparts. This expectation can help them deal with perceived differential treatment they receive.

Fifth, common wisdom and previous research has led hospital managers to expect to retain a good deal of control over their decisions when they are members of a geographically dispersed system. This study has shown that geographic dispersion is not such a simple phenomenon. System geographic dispersion alone cannot explain the degree of control held by hospitals; however it can alter the effects of other variables, as demonstrated in this study.

Sixth, in this sample, hospital CEOs perceived that corporate headquarters held a substantial degree of control over hospital tactical and periodic decisions. The degree of system control is high even in the small systems examined in this study. The delivery of health care services is unique in the extreme importance of local influences (e.g., medical staffs, insurance arrangements, employer contracting) (Luke & Begun, 1986). Thus the finding of substantial corporate control supports the need for attention to the potential conflict between local hospital and system goals. This area of policy concern is likely to become more crucial as larger numbers of hospitals join systems in the future.

Limitations and Future Research

Limitations of this work revealed specific areas where future research could improve the understanding of the nature of the relationships between hospitals and their corporate headquarters.

Since this research by design was restricted to the investiga-

tion of small MHSs and the sampling strategy over-represented Catholic and not-for-profit systems, generalizability of this research is most appropriate for the management of small, Catholic, and not-for-profit systems.

Use of the contingency framework can offer managers broad guidance as to the contingencies which interact in given managerial situations and effective behaviors given those conditions. If the contingency perspective (or any perspective) is to contribute to future managerial decision-making in health care, however, a better typology of hospital-related decisions must be developed in order to facilitate clearer guidelines for effective management under certain contingencies. An improved dependent variable scale would enhance future research relating to strategic management in MHSs. Although scaling procedures in this study allowed for the discernment of patterns based upon different types of strategic decisions, a scale could be constructed to better address the process, content, and involvement of various personnel in strategic decision-making. The current items composing the dependent variables were a select few chosen from a weakly-validated yet widely used instrument.

Future research would be wise to build upon the work of Hickson, et al. (1986). An improved scale would contain a list of strategic decisions which had been constructed so as to represent each of the three types of strategic decisions identified by Hickson et al. (1986): vortex, sporadic; tractable, fluid; and familiar, constricted. In this way, concrete actions which could be taken by hospitals in competitive situations would be addressed. *Hospital*

managers could be asked to respond to these decisions in terms of a) the frequency of corporate involvement in those specific decisions; and b) the type of control exercised by corporate leaders, such as direct supervision, input control, behavior control, or output control.

In other words, the types of decisions addressed must be much more specific and the measurement scale relating to those decisions must relate to concrete actions taken by the parties involved. In this way, independent variables representing characteristics of the system, the hospital, and the market area could be directly tied to specific types of strategic decisions. By pre-selecting the typology of decisions to be used, statements could be made about the extent of corporate involvement in certain types of decisions.

It is difficult to quantify the process of organizational decision-making using cross-sectional, survey studies. Given the dynamic nature of the decision-making process, it appears that a sophisticated instrument must be devised to measure the decision-making process or that a process-evaluation research design must be implemented in order to successfully reveal the subtleties of the relationships involved. Neither is the case in the present work. This topic is well-suited to the conduct of subjective/case study designs, which would be ideal if used in conjunction with the type of survey instrument described above.

Several of the independent variables in this study were not appropriately specified, in particular the measure of system size, hospital occupancy, and market area competition. The number of hos-

pitals in the system was used as an indicator of size in order to replicate the findings of previous research; however for work with small hospital systems, a more sensitive measure of hospital size must be utilized.

Because there were few previous studies to guide the specification and measurement of hospital level variables relating to decision-making control by hospitals and corporate management, hospital-level variables were given an initial test by this work. Hospital occupancy and the competitiveness of the hospital market area did not show any relationship to control over hospital decision-making as expected. Future research should utilize better indicators of hospital performance; occupancy is a particularly poor performance measure under the prospective payment system.

In addition, the length of hospital involvement in the MHS was not used as an independent variable in this work, in order to reduce the model's multicollinearity. Since system age was such an important variable in this study, the inclusion of duration of hospital participation in the MHS would appear to be strongly warranted for future work.

Finally, in the future it will be important to clarify the impact of decentralized decision-making upon hospital and system performance. While preliminary studies such as this will reveal the best predictors of locus of control over hospital-level decisions, future research must judge the ultimate impact of these management structures on the quality of care delivered by and the financial performance of system hospitals.

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APPENDIX

**********PLEASE RETURN BY_____**********

SURVEY OF HOSPITAL CEOS

MULTI-INSTITUTIONAL SYSTEMS PROJECT
Department of Health Administration
Medical College of Virginia
Virginia Commonwealth University
Box 203, MCV Station
Richmond, VA 23298

June, 1985

C O N F I D E N T I A L

NAME OF HOSPITAL:_____

SECTION I. Please rate each of the following strategies from two perspectives:

-- Circle a number from 1 to 7 which represents the relative importance of the strategy to your hospital's long-term survival; and

-- "X" a number from 1 to 7 which represents the relative importance of the strategy to your corporate organization's long-term survival.

Not Important for Long-Term Survival						Extremely Important for Long-Term Survival		
1	2	3	4	5	6	7	a.	Pursue contracts with HMOs or other insurance systems
1	2	3	4	5	6	7	b.	Pursue contracts with large employers (e.g., wellness programs, industrial medicine, PPOs)
1	2	3	4	5	6	7	c.	Expand the breadth and/or depth of traditional inpatient services
1	2	3	4	5	6	7	d.	Expand clinical services other than traditional inpatient care (e.g., ambulatory, long-term, wellness, substance abuse)
1	2	3	4	5	6	7	e.	Expand non-clinical areas of hospital service, utilizing existing hospital capabilities (e.g., laundry service, contract management, computer services)
1	2	3	4	5	6	7	f.	Expand non-health care businesses (e.g., hotels and restaurants outside of the hospital)
1	2	3	4	5	6	7	g.	Specialize in selected inpatient services
1	2	3	4	5	6	7	h.	Add nearby hospitals to the existing system
1	2	3	4	5	6	7	i.	Add distant hospitals to the existing system
1	2	3	4	5	6	7	j.	Strive for a differentiated identity among competitors

Not Important for Long-Term Survival						Extremely Important for Long-Term Survival		
1	2	3	4	5	6	7	k.	Strive for a position of cost leadership among competitors
1	2	3	4	5	6	7	l.	Gain greater access to capital in order to support new ventures
1	2	3	4	5	6	7	m.	Develop the capacity to move quickly to preempt competitors' movement into existing or potential markets
1	2	3	4	5	6	7	n.	Implement a more participatory management style
1	2	3	4	5	6	7	o.	Increase physician involvement in corporate decision-making
1	2	3	4	5	6	7	p.	Increase physician involvement in hospital decision-making
1	2	3	4	5	6	7	q.	Increase hospital management staff involvement in corporate decision-making
1	2	3	4	5	6	7	r.	Increase corporate control over individual hospital operational decision-making
1	2	3	4	5	6	7	s.	Increase corporate control over individual hospital strategic decision-making
1	2	3	4	5	6	7	t.	Increase resources devoted to the marketing function at the individual hospital level
1	2	3	4	5	6	7	u.	Increase resources devoted to the marketing function at the corporate level
1	2	3	4	5	6	7	v.	Increase resources devoted to the strategic planning function at the individual hospital level
1	2	3	4	5	6	7	w.	Increase resources devoted to the strategic planning function at the corporate level
1	2	3	4	5	6	7	x.	Strengthen the organization's image in the eyes of its "publics" (e.g., community physicians, business community, regulators)

SECTION II. Please rank the following strategic actions according to their importance to the long-term survival of your hospital and the corporate organization to which you belong (1 is the highest ranking, 4 is the lowest).

Rank for Hospital	Rank for Corporation	
_____	_____	a. The most important strategic action our organization could take is to expand the overall scale of our organization.
_____	_____	b. The most important strategic action our organization could take is to achieve a low cost position relative to our competitors.
_____	_____	c. The most important strategic action our organization could take is to achieve a high quality position relative to our competitors.
_____	_____	d. The most important strategic action our organization could take is to broaden the diversity of our service/product mix.

SECTION III. Please rank the following strategic actions according to their importance to the long-term survival of your hospital and the corporate organization to which you belong (1 is the highest ranking, 3 is the lowest).

Rank for Hospital	Rank for Corporation	
_____	_____	a. The most important strategic action our organization could take is to improve its organizational structure.
_____	_____	b. The most important strategic action our organization could take is to improve its internal culture/climate.
_____	_____	c. The most important strategic action our organization could take is to improve its market strategy(ies).

SECTION IV. Please rate the extent to which the following beliefs are predominant in your hospital and in the corporate organization to which you belong, with 1 representing "not at all predominant" and 7 "extremely predominant."

-- Circle a number which represents predominance in your hospital; and

-- "X" a number which represents predominance in your corporate organization.

Not at All Predominant						Extremely Predominant		
1	2	3	4	5	6	7	a.	The belief that health care is a right for all
1	2	3	4	5	6	7	b.	The belief that health care is primarily a business
1	2	3	4	5	6	7	c.	The belief that employee participation in organizational decision-making leads to increased organizational effectiveness
1	2	3	4	5	6	7	d.	The belief that physician participation in organizational decision-making leads to increased organizational effectiveness
1	2	3	4	5	6	7	e.	The belief that a profit motivation leads to increased organizational effectiveness
1	2	3	4	5	6	7	f.	The belief that centralized organizational arrangements lead to increased organizational effectiveness
1	2	3	4	5	6	7	g.	The belief that government must play a significant role in assuring access to health care
1	2	3	4	5	6	7	h.	The belief that hospitals are primarily community service organizations
1	2	3	4	5	6	7	i.	The belief that competition in health care delivery is superior to regulation

SECTION V. Listed below are several types of decisions made about individual hospital operations and management. For each type of decision, how much influence does the corporate office of this multihospital system have? (Circle one number.)

No Influence						Great Deal of Influence		
1	2	3	4	5	6	7	a.	Appointment of local board members.
1	2	3	4	5	6	7	b.	Appointment of hospital CEO
1	2	3	4	5	6	7	c.	Performance evaluation of hospital CEO
1	2	3	4	5	6	7	d.	Sale of hospital assets
1	2	3	4	5	6	7	e.	Purchase of hospital assets valued greater than $100,000
1	2	3	4	5	6	7	f.	Change in hospital bylaws
1	2	3	4	5	6	7	g.	Medical staff privileges
1	2	3	4	5	6	7	h.	Hospital operating budgets
1	2	3	4	5	6	7	i.	Service additions at the hospital level
1	2	3	4	5	6	7	j.	Formulation of hospital strategies/long range plans

SECTION VI. Please answer the following questions about characteristics of this multihospital system. Circle a number from 1 to 7 in response to each question.

Low Degree						High Degree		
1	2	3	4	5	6	7	a.	To what degree is there conflict between the missions of member hospitals and the corporate organization?
1	2	3	4	5	6	7	b.	To what degree is decision-making power concentrated at the corporate organization level?
1	2	3	4	5	6	7	c.	To what degree is there conflict between the strategies of member hospitals and the corporate organization?
1	2	3	4	5	6	7	d.	To what degree do member hospital CEOs have conflicting loyalties between their hospitals and the corporate organization?

SECTION VII. Please provide the following information about this hospital's governing board and the board's executive committee at the end of 1984. Include only members with full voting privileges.

a. What is the size of this hospital's governing board? _____

(1) How many of those members are physicians? _____

(2) How many of those members are appointed by the corporate organization of this system? _____

b. What is the size of the board's executive committee? _____

(1) How many of those members are physicians? _____

(2) How many of those members are appointed by the corporate organization of this system? _____

SECTION VIII. How many years have you been employed in a management position in this organization?

_____ years

THANK YOU VERY MUCH.

Please return in the enclosed, pre-addressed envelope or send to Dr. Roice D. Luke, Chairman, Department of Health Administration, at the address on the front cover.