

Changes in Hospital Competitive Strategy: A New Medical Arms Race?

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Objective. To describe changes in hospitals' competitive strategies, specifically the relative emphasis placed on strategies for competing along price and nonprice (i.e., service, amenities, perceived quality) dimensions, and the reasons for any observed shifts.

Methods. This study uses data gathered through the Community Tracking Study site visits, a longitudinal study of a nationally representative sample of 12 U.S. communities. Research teams visited each of these communities every two years since 1996 and conducted between 50 to 90 semistructured interviews. Additional information on hospital competition and strategy was gathered from secondary data.

Principal Findings. We found that hospitals' strategic emphasis changed significantly between 1996–1997 and 2000–2001. In the mid-1990s, hospitals primarily competed on price through “wholesale” strategies (i.e., providing services attractive to managed care plans). By 2000–2001, nonprice competition was becoming increasingly important and hospitals were reviving “retail” strategies (i.e., providing services attractive to individual physicians and the patients they serve). Three major factors explain this shift in hospital strategy: less than anticipated selective contracting and capitated payment; the freeing up of hospital resources previously devoted to horizontal and vertical integration strategies; and, the emergence and growth of new competitors.

Conclusion. Renewed emphasis on nonprice competition and retail strategies, and the service mimicking and one-upmanship that result, suggest that a new medical arms race is emerging. However, there are important differences between the medical arms race today and the one that occurred in the 1970s and early 1980s: the hospital market is more concentrated and price competition remains relatively important. The development of a new medical arms race has significant research and policy implications.

Key Words. Hospital, competition, strategy, services

The strategies hospitals use to compete provide significant insight into broader health care market developments because hospital strategy is shaped by a variety of external forces. Some of the major external factors shaping hospital strategy include: economic and demographic trends; regulation; public and private purchaser behavior; plan and hospital market characteristics (i.e., number and type of competitors); payment methods; medical technology; and labor supply (Luke, Begun, and Walston 1999).

Hospital strategies also have important health policy implications. Hospitals are a major component of the American health care delivery system and account for a substantial and increasing portion of total national health care expenditures (Levit et al. 2002; Strunk, Ginsburg, and Gabel 2001). Consequently, the strategies they develop and implement to compete have a significant effect on costs, quality, and access to care.

This paper describes recent changes in hospital strategy and their potential health services research and policy implications. Specifically, the paper addresses three questions. First, how have hospitals' competitive strategies changed between 1996–1997 and 2000–2001? We focus on the relative emphasis placed on strategies for competing along price and nonprice (i.e., service, amenities, quality) dimensions. Second, what factors explain any change in hospitals' competitive strategies over this period? In particular, how has the evolution of managed care and hospital markets affected hospital strategy? Finally, what are the implications of these findings for health services research and policy? Specifically, we discuss whether current competitive strategies and dynamics signal the emergence of a new medical arms race (i.e., hospital service mimicking and one-upmanship).¹

We found that hospitals' strategic emphasis changed significantly between 1996–1997 and 2000–2001. In the mid-1990s, hospitals primarily competed on price through “wholesale” strategies (i.e., providing services attractive to managed care plans that contracted for large numbers of enrollees).² By 2000–2001, nonprice competition was becoming increasingly important and hospitals were reviving “retail” strategies (i.e., providing services attractive to individual physicians and the patients they serve). Three major factors explain this strategic shift: less than anticipated selective contracting and capitated payment arrangements; the freeing up of hospital resources previously devoted to horizontal and vertical integration strategies; and, the emergence and growth of hospital competitors (inpatient and outpatient). The current emphasis on nonprice competition and retail strategies, and the service mimicking and one-upmanship that result, suggest that a new medical arms race is emerging. However, there are some important

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differences between the medical arms race today and the one that occurred in the 1970s and early 1980s: the hospital market is more concentrated and price competition remains relatively important. There are several important research and policy implications of these findings, which we discuss.

Before describing the data and methods and our findings in more detail, we briefly review related literature and describe our conceptual framework.

CONCEPTUAL FRAMEWORK

Research conducted during the indemnity insurance and Medicare cost-plus reimbursement era (i.e., pre-1983) showed that for several reasons competition in the hospital industry was quite different from what neoclassical economic theory would predict.³ First, the ultimate purchasers of hospital services were relatively insensitive to cost. Physicians were a primary purchaser of hospital services on behalf of patients, but they were “imperfect agents” because they might benefit financially or nonfinancially (e.g., patient satisfaction and loyalty) from ordering more, relatively expensive, hospital care. In addition, the full cost of hospital care was relatively invisible to patients because of indemnity insurance. Second, private purchasers of hospital services were not organized, so even if they were more concerned about cost they had little leverage with which to negotiate. Relative to hospitals, employers, physicians, and patients had little ability to negotiate hospital service prices and insurers passively paid claims. Finally, employers and patients had little or no information about clinical quality, limiting their ability to search for value and make cost–quality tradeoffs.

In this indemnity insurance and cost-plus reimbursement environment, hospitals largely competed along nonprice dimensions using retail strategies. Hospitals competed for individual physicians and patients by providing services these groups found desirable and considered to be of high quality. These services included highly specialized, inpatient clinical services that utilized the latest technology and “hotel-like” features and amenities (e.g., private rooms, better food, shorter wait times). Hospitals also began advertising to build brand name image and loyalty among physicians and consumers.

The result of this market dynamic and strategic emphasis was a “medical arms race,” or hospital service mimicking and one-upmanship (Robinson and Luft 1987). Hospitals added services when competitors already offered the service, or were expected to in the near future. This resulted in service duplication and excess hospital capacity, particularly in markets with many

competitors. Contrary to neoclassical economic theory, hospitals in more competitive environments exhibited higher costs per case and day than less competitive environments, controlling for other factors.⁴

From the mid-1980s to mid-1990s, three major market and policy responses increased price competition, slowing the medical arms race. First, Medicare began implementing prospective payment (i.e., pre-set reimbursement for services related to diagnosis or procedure) for inpatient services in 1983. Second, private purchasers increasingly organized and turned to managed care plans and products (i.e., HMOs and PPOs) to reduce costs while maintaining or improving quality. Through selective contracting, managed care plans had greater leverage than individual physicians and patients to negotiate better hospital prices. New payment arrangements (e.g., global or shared risk) were also developing, giving hospitals and their affiliated physicians greater incentive to reduce costs. Managed care plans' utilization management techniques also created a counterbalancing force to patients' and physicians' demand for hospital services. Finally, hospitals consolidated and antitrust cases were less aggressively pursued because consolidation was expected to have positive effects in the health care industry (for a discussion of several antitrust cases, see Dranove et al. 1992). If the medical arms race was most pronounced in markets with more competitors, logic suggested it might be slowed if fewer competitors existed.

In this prospective payment and managed care environment, hospitals increasingly competed on price using wholesale strategies. Evidence is limited but shows that managed care, particularly high HMO penetration, resulted in greater price competition and hospital price reductions (Bamezai et al. 1999; Gaskin and Hadley 1997). Hospitals focused on keeping costs in check. Services based on the latest technology or increased amenities were viewed primarily as cost centers rather than revenue generators. Hospitals also sought to provide services attractive to managed care plans that purchased large volumes of services for their enrollees.

However, it was less clear what mix of services hospitals and developing organized delivery systems (ODS) would choose to offer and managed care plans would find attractive. Economies of scale suggest that more intense price competition would lead hospitals to specialize, while economies of scope suggest that hospitals would add a range of complementary services. Hospitals might also attempt to provide "one-stop-shopping" to managed care plans regardless of economies of scope in an effort to reduce the plans' contracting costs and better coordinate and control care for enrollees for which they accepted financial risk. Findings from three studies suggest that hospitals add a

range of services, consistent with the economies of scope and “one-stop-shopping” theses (Friedman et al. 2002; Brown and Morrissey 2000; Baker and Phibbs 2000).

It was also not clear how managed care would affect the adoption of technologies on which many new inpatient and outpatient services are based. Overall, managed care may slow the rate at which technology is adopted by hospitals because of price pressures and utilization management techniques. However, the impact of managed care on technology adoption might vary significantly depending on the nature of the specific technology under consideration. For example, if a technology reduces costs and does not negatively impact clinical quality, managed care plans may increase its rate of adoption. Evidence is limited and somewhat mixed but appears to support the hypothesis that HMO penetration is associated with the decreased availability of new technology (Baker and Phibbs 2000; Cutler and Sheiner 1998; Baker and Wheeler 1998; Cutler and McClellan 1996).⁵

This prior research on hospital competition and strategy suggests that seven general factors affect the extent to which hospitals compete on nonprice dimensions and a medical arms race emerges (see Table 1). The left-hand column of the table lists these general factors, which include:

1. the policy and regulatory environment, of which Medicare is a part;
2. private employers organization and activity;
3. health plan products and payment methods;
4. hospital market structure;
5. hospitals’ relationship with physicians;
6. consumers’ sensitivity to hospital costs and demographics; and
7. information on hospital clinical quality.

The next two columns of the table summarize major developments in each of these seven general areas in two periods (i.e., 1970s to early 1980, mid-1980 to mid-1990s) identified in the literature discussed above. The final column (i.e., late 1990s through 2000–2001) summarizes the most recent findings from the current study that are described in more detail in the results section.

DATA AND METHODS

Data for this paper were gathered through the Community Tracking Study (CTS) site visits, a longitudinal study of a random, nationally representative

Table 1: Factors Explaining Presence and Extent of a Hospital Medical Arms Race

<i>Factors</i>	<i>1970s through Early 1980s: Medical Arms Race</i>	<i>Mid-1980s through Mid-1990s: Medical Arms Race Slowed</i>	<i>Late 1990s through 2000-2001: New Medical Arms Race?</i>
Public policy and regulatory environment	<ul style="list-style-type: none"> • Federal Certificate of Need (CON) program started (1974) 	<ul style="list-style-type: none"> • Federal CON program ended (1984) • Less rigorous antitrust enforcement • Health Security Act (1993) fails 	<ul style="list-style-type: none"> • CON and antitrust the same • Managed care implicit policy but begins to lose its bite
Medicare	<ul style="list-style-type: none"> • Cost-plus reimbursement 	<ul style="list-style-type: none"> • Inpatient prospective payment (1983) 	<ul style="list-style-type: none"> • Outpatient prospective payment (2000)
Employers	<ul style="list-style-type: none"> • Private purchasers unorganized and passive 	<ul style="list-style-type: none"> • Some large employers organized • More active—"value based" purchasing 	<ul style="list-style-type: none"> • Some large employers remain organized • Challenges of "value-based" purchasing recognized later in period
Health plan products and payment methods	<ul style="list-style-type: none"> • Indemnity insurance • No provider network—consumers chooses provider • Fee-for-service payment 	<ul style="list-style-type: none"> • Rise of managed care • Provider networks developed—consumer choice is restricted • Growth of prospective and risk-based payment 	<ul style="list-style-type: none"> • Significant HMO growth anticipated, but slows or declines later in period • Provider networks expand—consumer choice less restricted • Risk-based payment slows or declines
Hospital market structure	<ul style="list-style-type: none"> • Many hospitals ("cottage industry") • Some outpatient competitors emerging 	<ul style="list-style-type: none"> • Consolidation and development of organized delivery systems (ODS) • Outpatient competitors increasing 	<ul style="list-style-type: none"> • Consolidation continues initially, but slows and ODS's retrenched • Outpatient competitors increase and specialty hospital competitors emerge

Hospitals' relationship with physicians	<ul style="list-style-type: none"> • Excess capacity • Hospitals work to attract and retain physicians 	<ul style="list-style-type: none"> • Excess capacity • Develop formal legal and financial arrangements 	<ul style="list-style-type: none"> • Capacity constraints? • Some formal legal and financial arrangements dissolved
Consumers	<ul style="list-style-type: none"> • Relatively insensitive to costs 	<ul style="list-style-type: none"> • PCP's highly valued • Specialists viewed as "cost centers" • Relatively insensitive to costs 	<ul style="list-style-type: none"> • PCP's less valued • Specialists highly valued
Information on clinical quality	<ul style="list-style-type: none"> • None or very little • Few reliable and valid measures developed 	<ul style="list-style-type: none"> • Some efforts to report information on hospital clinical quality to consumers • More reliable and valid measures developed, but still controversial 	<ul style="list-style-type: none"> • Relatively insensitive to costs • Challenge of reporting hospital clinical quality information recognized later in period • Controversy about measures remain • Aging, with long life-spans and baby-boomers in 40s-50s

sample of 12 communities with more than 200,000 people. Research teams visited each of these communities every two years, beginning in 1996, and conducted 50 to 90 semistructured interviews with local health care leaders.⁶ We focus on changes in hospital market conditions and competitive strategy since the CTS site visits began in 1996–1997, highlighting developments identified during the most recent round of site visits.

During the most recent site visits, we interviewed executives at three to four hospital systems and freestanding hospitals (three of the largest and one smaller system) in each of the 12 markets. In the four smaller CTS markets (population less than 1.5 million), typically all major systems or hospitals in the market were interviewed. In the remaining medium to large CTS markets (population greater than 1.5 million), the four systems and/or hospitals interviewed controlled 62 percent of the total market share.⁷ Respondent types included 140 hospital executives, including CEOs, planning and other senior executives, medical directors, and state hospital association executives. We asked a set of detailed questions about current policy, regulatory and market pressures, hospital strategy, changes in hospital strategy since 1998–1999 and the reasons for these changes. Additional current information on hospital strategy and competition was gained through interviews with managed care plan executives, other knowledgeable market observers (e.g., business reporters), and secondary qualitative data (e.g., local newspaper articles, hospital annual reports and web pages).

Following each site visit, interview notes were “written-up” and a synthesis of all interviews was completed. All text passages from the written notes and syntheses were coded for relevant content and analyzed in the qualitative analysis software package (for further detail about the software and coding see Lesser, Ginsburg, and Devers 2003).

There are four major strengths of this study. First, the data is very recent yet provides longitudinal perspective. Most other studies use much older data (from the 1980s or early to mid-1990s); therefore, they are unable to capture important recent changes. Second, the data are gathered from a nationally representative sample of markets, which allows us to identify the most important general trends. There are some striking similarities in hospital competitive dynamics over time despite some local market variation. Third, the study draws on the unique insights and perspectives of hospital executives and other key market actors (e.g., employers, plans) and observers (e.g., local journalists, academics). Interview data is particularly useful for identifying emerging market trends and for understanding key market actors’ interpretations of these changes (Sofaer 1999). Finally, the large and diverse sample of

respondents allows us to triangulate interview data (i.e., assess whether respondents' views converge or diverge). In this paper, diverse respondents agreed on their assessment of key market trends unless specifically stated otherwise.

There is one primary weakness of the study. We were unable to utilize secondary quantitative data to gain further insight into hospital service offerings and how they had changed, characteristics of the patients receiving select services (e.g., insurance coverage, age, sex, comorbidities), and their impact on outcomes. Data on hospital service offerings from the American Hospital Association (AHA) are not detailed enough to detect current service additions and enhancements. Detailed information on hospital service use and outcomes through discharge abstract data in a common format was not available for all CTS markets or for the same years of the site visits.⁸ In addition, there are some weaknesses to hospital discharge data, including the ability to risk adjust service use and outcomes. Finally, data on other hospital competitors (e.g., ambulatory surgery and freestanding diagnostic centers) would be important to consider but are not readily available at the market level.

We now turn to the results. We begin by providing an overview of the major changes in hospital market dynamics and competitive strategies between 1996–1997 and 2000–2001 and the factors driving these changes (see Table 1, column 3 for a summary of 1996–1997 and column 4 for 2000–2001). Evidence that a new medical arms race may be emerging is then provided. Specifically, we describe in more detail the types of service additions and enhancements observed in 2000–2001.⁹ For each type of service, we also describe the major factors driving these service changes as reported by respondents.

RESULTS

1996–1997: Building Organized Delivery Systems

When our site visits occurred in 1996–1997, hospital respondents felt that the primary dimension hospitals were competing on was price and that wholesale strategies were more important than retail strategies. This assessment of market dynamics and the strategies necessary to deal with them stemmed from actual or anticipated managed care growth. The expectation was that HMOs, selective contracting, and full-risk payment arrangements would become predominant. Therefore, hospitals needed to be attractive to HMOs.

The general model for succeeding in this managed care environment was to build an ODS capable of accepting financial risk and managing care for a defined population (see for example Shortell et al. 1996).¹⁰ The ODS's hospitals created varied greatly in terms of structure and functioning, including governance and clinical integration. Despite this variation, the concept of a system that could reduce cost and maintain or improve the coordination and quality of care significantly shaped many hospitals' vision and the services they provided.

First, fewer resources were available for service additions and expansions because hospitals were devoting significant financial and managerial resources to mergers and acquisitions and the development of a risk-contracting infrastructure. Seventeen hospital mergers were underway or had been announced in 10 of our 12 communities (Lesser and Brewster 2000). Most hospitals were also involved in acquiring physician practices (particularly primary care or multispecialty groups) and developing other mechanisms for partnering with physicians. Finally, hospitals were investing in the development of management information systems required for managing risk and care (Kohn 2000).

Second, emphasis was placed on cost-reduction through consolidation and coordination of costly inpatient services and expansion of primary care and outpatient services (e.g., urgent care centers and ambulatory surgery centers).¹¹ Specialized inpatient services were only selectively added in an attempt to maintain market share or achieve plan "must-have" status by providing "one-stop-shopping" (Kohn 2000). For example, hospitals added inpatient services attractive to young managed care plan members (e.g., neonatal intensive care units) or specialized services that would allow merged hospitals to retain volume and avoid referring patients to competing systems or hospitals.

2000–2001: Reviving Traditional Strategies

During our site visits in 2000–2001, hospital executives and other interviewees described a very different market environment. Health maintenance organization enrollment growth was slowing, and had declined or stagnated in 6 of the 12 CTS markets since 1996.¹² In addition, HMO products were becoming less tightly managed (Draper et al. 2002). Broad provider networks had become the norm, diminishing the threat of exclusion from HMO provider panels that hospital executives once feared. Risk contracting was also falling from favor because of providers' perception that payment rates were

too low and inability to manage risk and care (Hurley et al. 2002). Finally, many of the employer coalitions aimed at collecting and providing information on hospital quality and cost ran into a host of difficulties, including provider concerns about valid, reliable, and appropriately risk-adjusted measures (see Hargraves and Trude 2002).

These market changes led hospitals to revive traditional “retail” strategies, focusing on ways to succeed in broad plan provider networks, low to moderate risk environments, and with relatively little information on hospital clinical quality. Once again, it was very important to provide services that were attractive to physicians, and their patients (Lake et al. 2003). Managed care plans’ negotiating leverage with hospitals was declining and hospital competition based primarily on price was diminishing in importance (Devers et al. 2003). Providing highly specialized services was viewed as a critical means of sustaining or increasing market share and improving margins.

Significant financial and managerial resources were freed up as horizontal and vertical integration strategies were de-emphasized. Initiatives designed to put the pieces of an organized delivery system in place were slowed or abandoned. Some additional mergers have occurred over the past two years, but not nearly at the same pace as in the early to mid-1990s. In addition, many systems have retrenched risk-contracting and physician strategies. For example, attempting to use risk-contracting vehicles such as PHOs in new ways (e.g., networks for self-insured employers) and downsizing their owned physician practices (Lake et al. 2003).

Resources—financial and nonfinancial—are being freed up and redirected toward the addition or expansion of services attractive to individual physicians and patients. There is certainly variation in hospitals’ financial health, with some hospitals still experiencing significant financial difficulty. However, some hospitals have enough capital, or are able to raise it, to add and enhance services (Robinson 2002; Silver 2001).

Table 2 summarizes the major service additions, expansions, and enhancements noted by respondents and documented through secondary qualitative data (e.g., newspaper articles, hospital web sites).¹³ As the table shows, there was a great deal of activity around inpatient and outpatient specialty services. Hospitals also reported enhancing, and sometimes expanding, a variety of general acute care services.

In many cases, these service additions, expansions, and enhancements were viewed by respondents as duplicating services in an attempt to compete for physicians and patients. From 1996 to 2000 hospital occupancy rates on average increased in the 12 markets, but remained relatively low (65 percent).¹⁴

Table 2: Hospital Services and Facilities, 2000–2001

<i>Added, Expanded, or Enhanced Services (Planned or Completed)</i>	<i>Number Reported¹</i>	<i>% CTS Hospitals (N = 43)²</i>
Specialty Care		
• Outpatient centers (cancer, cardiology, neurosciences)	20	47
• Hospital–physician joint venture outpatient centers	17	40
• Niche specialty services and centers of excellence	15	35
• Heart hospitals	4	9
General Acute Care		
• Inpatient capacity	19	44
• General hospitals	6	14
• Emergency rooms	5	12

Source: Community Tracking Study site visits.

¹Number of program/facility expansions since 1998–1999 reported during interviews with hospital executives in response to open-ended questions about hospital strategy and obtained through data from secondary sources.

²Percentages do not add upto 100 because a single hospital can add multiple services.

However, some respondents stated these services additions, expansions, and enhancements were meeting community needs, citing capacity constraints marketwide or in geographic submarkets. They stated that several factors had combined to tighten capacity in their markets or smaller geographic submarkets. On the demand side, population growth and rising utilization due to changing demographics (i.e., aging population) and looser managed care products were noted. On the supply side three factors were seen as key: previous misestimates of the need for inpatient services, the need to replace aging or unsafe facilities (e.g., seismic retrofitting in California), and nursing and other health care workforce shortages which prevented them from utilizing existing licensed beds.

We now discuss specific types of service additions, expansions, and enhancements and respondents views of the major factors driving them.

Specialty Care

Hospitals in all 12 markets were using a variety of techniques to increase inpatient specialty service volume, particularly in cardiology, oncology, and orthopedics. They also were adding outpatient centers that can substitute for hospital care or generate additional diagnostic testing and inpatient care.

Many of these inpatient and outpatient specialty care programs were designed to increase revenue and margins and stem specialists' competitive instincts. Higher total revenues and margins might be achieved by focusing on a more limited set of services for which prices were higher. Hospitals also refocused their attention on strengthening their relationships with specialists who still generate the majority of hospital revenues. As one respondent noted, "cement specialists to your hospital or they will become your competitors." Finally, efforts to improve specialty care were also designed to attract consumers who have increased choice due to changes in health plan products and provider networks.

Owned Outpatient Centers

Hospitals in all the CTS markets continued to add outpatient centers for ambulatory surgery, diagnostic testing, and treatment. During the last two years, millions of dollars have been spent or committed to add and expand these facilities. For example, new or upgraded cancer centers are being planned or have been built in ten of our markets, and in six markets, multiple oncology centers are being developed by different hospitals. Advances in cancer therapy, combined with pressure from private payers for lower priced sites of care and patients' preferences for less austere clinical settings, have shifted a high proportion of cancer treatment to outpatient facilities, resulting in an oncology center building boom.

One respondent captured a primary motivation for these expansions noting the "competition is all about access points...to make it easier for patients to use your services." In addition to providing convenience, outpatient centers generate steady streams of patients that require more complex care and referral to the hospitals' main facilities. For example, outpatient centers providing CT heart scans can result in cardiac angioplasties and bypass surgery.

To increase their market presence and flow of referral volume, systems have been extending their outpatient locations across ever-wider geographic areas. Sometimes the new outposts penetrate traditional market boundaries of other hospital systems, causing competition to intensify. In the words of one hospital executive, competition in the market has taken on "a Wendy's or McDonald's mentality" as the major rivaling systems attempt to increase market share by adding outpatient centers in an increasing number of locations.

Outpatient Facility Joint Ventures

During the last two years, hospitals also increasingly turned to joint ventures to keep specialists loyal and motivated (Lake et al. 2003). Seventeen new hospital–physician ventures were reported in our communities since 1999. Ambulatory surgery centers and imaging centers are the most popular hospital–physician enterprises found in our communities. Threatened with the potential loss of volume, hospitals have found innovative ways to share income streams with specialists and comply with Stark laws or other regulations (see Lynk and Longley 2002 for a discussion of potential loss of hospital volume when freestanding ambulatory surgery centers are formed).

Creating Niche Services and Centers of Excellence

A strategy frequently used by teaching hospitals in our sites has been the creation of unique services to attract patients with specific diagnoses to their facilities. These so-called niche services are highly specialized and depend on the capabilities of specialists that few other hospitals have the resources to recruit and retain. Niche services can differentiate hospitals from competitors and be aggressively marketed to smaller, specific consumer or patient segments. For example, teaching hospitals in Boston recently established centers for treating migraines, digestive diseases, and bone disorders.

Similarly, smaller nonteaching hospitals in CTS markets now package treatment for particular diagnoses or patient sub-populations in an effort to differentiate themselves from competitors. Like the academic medical centers, hospitals advertise these services to consumers through traditional media and the internet in an effort to establish brand loyalty and attract more patients to their highest paying services. For example, in Seattle, Phoenix, and Greenville, hospitals have developed programs for treating breast or prostate cancer, while an Orange County hospital has developed and targeted a bloodless surgery program for a large population of Jehovah's Witnesses.

Another closely related strategy described by our respondents is developing and designating certain specialty areas of the hospital or system as a center of excellence (COE). Most often hospitals themselves determine that they have a COE after investing in the service (e.g., new technology, facilities) and marketing. Hospitals in three CTS markets (northern New Jersey, Syracuse, and Orange County) noted they have created COEs recently and have used this designation to claim market and quality leadership in particular specialties. Specialty-focused COEs often develop through

partnerships with affiliated specialists, thus providing ongoing leadership roles for the physicians involved.

In some cases, hospital systems expanded the breadth of services available at affiliated hospitals to feed these even more highly specialized services at flagship hospitals. For example, in Cleveland, a large hospital system expanded cardiac diagnostic services at four of its owned hospitals, added cardiac surgery at two community affiliates, and is currently investing \$300 million in a new heart center at its main facility. A looser regulatory environment in which state certificate of need (CON) laws have been relaxed or phased out has made it easier for community hospitals to add complex services fairly quickly.

Heart Hospitals

Construction of freestanding specialty hospitals had not been observed in prior site visits. However, the fear that other competing hospitals or for-profit specialty firms might lure away specialists who perform relatively lucrative services recently led some hospitals to begin constructing new specialty hospitals. For example, cardiologists in Phoenix convinced a hospital to partner with them in building a freestanding inpatient facility, using discussions with a national company to advance their negotiations. The new joint venture became the second cardiac hospital in Phoenix in which physicians held an ownership stake. Recently in Indianapolis, two competing hospitals' decisions to expand and enhance their cardiology services was motivated in part by the threatened entry of a for-profit company that planned to build an inpatient facility with local cardiologists as equity partners. Already, competition is fierce over which facility will open first.

General Acute Care Services

Respondents also described a variety of general acute care facility enhancements and expansions during our site visits.

Inpatient Capacity

Enhancements and expansions to intensive care units (ICUs) and operating rooms were designed primarily to attract and retain physicians who used these facilities daily, as well as to increase hospital efficiency. Full ICUs in particular can result in elective surgery cancellations and backlogs in the emergency department. Enhancements and expansions to general medical and surgical beds were primarily designed to increase patients' satisfaction with care. For

example, some hospitals were taking out of circulation two- and four-patient rooms and adding new, private rooms.

General Hospitals

A few hospitals (14 percent) were also building new general hospitals. These new facilities were frequently built to replace old inefficient buildings, attract physicians and patients, and maintain or increase market share by expanding into attractive geographic sub-markets (i.e., growing, well-insured population). California's law (S.B. 1953) mandating compliance with earthquake (seismic) building protection standards beginning in 2008 had not yet had a major impact on hospital building plans in Orange County.

Emergency Rooms

Finally, a small number of hospitals (12 percent) were also enhancing and expanding emergency room capacity. In some markets, delayed access to emergency care was a problem in part due to prior emergency room closures and changes in Emergency Medical Treatment and Labor Act (EMTALA) (Brewster, Rudell, and Lesser 2001). Hospitals also sought to improve the "front door" of their facilities and customize the emergency room for important patient subpopulations (e.g., children and their parents). Given the large number of patients that still access care via the emergency room, hospitals sought to make the physical plan more attractive and improve the timeliness and level of services provided.

CONCLUSION AND DISCUSSION

Hospitals are reviving "retail" strategies in an effort to attract and retain specialists and key patient and consumer segments. They are investing in a wide range of high-tech inpatient and outpatient services, many of which our respondents said duplicate existing services in the community. Although occupancy rates increased between 1996 and 2000, they remained low in all 12 markets (65 percent onaverage).

These findings suggest that a new medical arms race is emerging. We use the term "new" here to mean both a rekindling of the medical arms race and one that differs in important ways from that which occurred previously. Service mimicking and one-upmanship appear to be returning in many markets. However, the players and market dynamics are different from when Robinson and Luft (1987) described the phenomenon. First, there are fewer

larger hospital competitors due to significant consolidation. Only 2 of the 12 CTS hospital markets remained “un-concentrated” using the U.S. Department of Justice and Federal Trade Commission guidelines (1997). Four markets were considered highly consolidated and the remaining six were moderately concentrated.¹⁵ It appears that consolidation (i.e., fewer competitors) in and of itself is not sufficient to curb the medical arms race, contrary to previous hypotheses developed during the fee-for-service era. Second, there is greater cost pressure. Hospitals are still under pressure by private and public payers and managed care plans to control costs.

Respondents noted that three major factors have stimulated changes in hospital competitive strategies. The first is less than anticipated selective contracting and capitated payment due to the backlash against more restrictive managed care plans and products (i.e., HMOs). The second is the freeing up of hospital resources previously devoted to horizontal and vertical integration strategies. Significant financial and nonfinancial resources once devoted to the development of ODS are being redeployed in response to changes in the health plan product and payment methods landscape. Finally, inpatient and outpatient hospital competitors (including specialists that traditionally practice in hospitals) have emerged and grown, many of which are focused on high-tech, profitable service lines. These competitors have triggered general acute care hospitals and systems to add, expand, or enhance services and systems in order to retain market share and revenues.

One important rival explanation provided by some respondents was that capacity constraints had developed marketwide or in select geographic submarkets, suggesting that service additions and expansions were needed. While market-wide occupancy rates do not seem to support this conclusion, some plausible hypotheses about why capacity constraints might have emerged were provided.

Other factors mentioned by respondents and noted in Table 1 (far right column) were not viewed as the primary drivers of hospital market dynamics and competitive strategy. These included specific developments in the policy and regulatory environment, developments in the employer and, consumer community, and the provision of information on clinical quality.

The emergence of a new medical arms race would have several important implications for communities, particularly private and public purchasers and consumers. First, it is likely that a new medical arms race will increase hospital costs and total health expenditures. As in the fee-for-service era, costs are likely to rise because of service duplication, the associated excess capacity, and possibly supply-induced demand. Second, increased

competition for physicians and patients through the provision of attractive services may also threaten quality given the volume–outcome relationship (i.e., high volume results in better outcomes, but each hospital might not have sufficient volume because it is dispersed across a large number of providers) (see Chassin et al. 2000 for an overview of quality-related problems regarding supply of services and the impact of volume on outcomes). Finally, a new medical arms race may create financial and service disparities between specialty hospitals and outpatient clinics and general, acute care hospitals. For example, a heart hospital that focuses on fewer, more profitable services may be able to provide many amenities and take market share away from community hospitals struggling to provide and cross-subsidize a wide range of general services.

Further research is required to determine whether our findings about the emergence of a new medical arms race and reasons for its development are supported. Timely studies are needed on inpatient and outpatient service expansions, whether and to what extent they result in unnecessary duplication and inappropriate utilization, and the impact of specialty services on costs and quality. Our qualitative research also suggests ways existing models of hospital competition should be refined. In addition to considering new inpatient and outpatient competitors, researchers might need to draw on theories of competitive behavior (e.g., oligopolies over time) that do not assume perfectly competitive markets (Robinson 2001).

In the face of these emerging hospital service developments, policy-makers and market participants may have to decide how to respond relatively quickly. One major set of approaches is to re-examine the range of federal and state policy interventions designed to ensure hospital competition and prevent excess capacity and over-utilization. First, federal and state government might reconsider their anti-trust policies. As noted, state and local governments have been less aggressive in bringing anti-trust cases because of the idea that hospital competition is different from other industries and that the potential benefits of consolidation outweigh the risk of increased market power. A second policy approach would involve more emphasis on technology assessment. The government currently assesses some new technologies, but cost-effectiveness and cost–benefits analysis are currently not major policy tools. A third, and related approach, is to reexamine federal and/or state certificate of need (CON) policies, although research suggests CON only has modest effects on hospital costs and bed supply (see for example Conover and Sloan 1998). Fourth, policymakers might examine the impact of Medicare payment policy on the supply and utilization of select

inpatient and outpatient services. While Medicare prospective payment gives hospitals an incentive to control costs, there still may be select services with relatively high profit margins that result in an oversupply of some services and undersupply of others. Finally, federal self-referral (i.e., Stark) and state anti-kick-back laws might be reexamined given that some of these new or expanded services are provided by joint ventures between physicians and others organizations.

A second set of major approaches is to make consumers better purchasers through tiered networks and cost-sharing and continued efforts to provide more information on clinical quality. As managed care loses its bite, new approaches to controlling costs and improving quality must be developed. Tiered networks require consumers to pay higher deductibles if they choose to receive care at relatively expensive hospitals in the network, similar to a tiered pharmacy benefit where consumers pay more for brand name versus generic drugs. The potential benefit of this approach is that it provides consumers and patients with an incentive to be cost-conscious when deciding where to receive hospital treatment. However, this may prevent some patients from receiving care at hospitals with better clinical quality, particularly those with low incomes who may be unable to pay. Providing more information on clinical quality is the other important component of the value equation, allowing consumers not only to consider cost but outcomes. Consumers may be willing to pay more for better facilities and services, but they need access to usable outcome data in order to be able to make cost-quality tradeoffs.

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NOTES

1. As we discuss in the theoretical and conceptual framework section, the term “medical arms race” was coined by Robinson and Luft (1987). See also Luft, Robinson, Garnick et al. 1986.

2. Throughout this paper, the term “service” includes the facilities in which the services are provided and amenities that may be added to enhance the provision of the service.
3. See Morrisey (2000) for an overview of the series of articles by Robinson and/or Luft and colleagues and related studies.
4. Some evidence of more complementary competitive behavior (e.g., a hospital less likely to add a service as the number of neighboring hospitals increased) was reported, but only in a few basic service areas such as emergency and maternity care. (Luft, Robinson, Garnick, Maerki, et al. 1986).
5. One study suggests a temporal effect, finding that HMO penetration slowed technology adoption in the early to mid-1980s, but not in the later 1980’s and early 1990s (Baker and Spetz 1999). The authors also found no relationship between measures of hospital competition (i.e., higher or lower) and the growth of technology.
6. The most recent round of site visits were conducted between June 2000 and March 2001.
7. Based on a four firm concentration ratio computed from the American Hospital Association, *Survey of Hospitals*, 2000. Specifically, the percent of total adjusted patient days accounted for by the largest four systems or hospitals.
8. Hospital discharge abstract data for the majority of states in which CTS markets are located from the Agency for Healthcare Quality and Research’s Healthcare Cost and Utilization Project (HCUP) State Inpatient Database distributor (see <http://www.ahrq.gov/data/hcup/hcupsid.htm>). Despite faster processing, the data becomes available about 18 months after the end of the calendar year (e.g., 2000 data available in approximately June 2002). The data are available directly from the states but are time-consuming to gain access to and would not be in a common format, requiring additional time for cleaning and processing.
9. Respondents noted that only a few, less profitable services (e.g., psychiatric, skilled nursing facility) were dropped primarily in response to changes in Medicaid or Medicare payment methods or levels.
10. Horizontal and vertical integration strategies might also increase hospitals’ negotiating leverage with managed care plans, although this rarely was an explicitly stated goal (Devers et al. 2003).
11. Research by Lesser and Brewster (2000) showed that systems made progress in consolidating administrative and support functions, but relatively little progress in consolidating clinical services. The extent of clinical service consolidation initially planned varied by system, and systems often had difficulty implementing planned changes in clinical areas.
12. A recent national survey conducted by the Kaiser Family Foundation and Health Education and Research Trust (2001) reported similar trends, showing that HMO enrollment declined from 29 percent in 2000 to 23 percent in 2001.
13. Respondents mentioned some beds were closed psychiatric and skilled nursing (e.g.) primarily because of changes in Medicaid and Medicare reimbursement.
14. Computed from American Hospital Association, *Survey of Hospitals*, 1996 and 2000.

15. Based on the Herfindahl Hirschman Index (HHI), total adjusted patient days was computed using American Hospital Association, *Survey of Hospitals*, 2000. A market with an HHI of less than 1,000 is considered unconcentrated; those between 1,000 and 1,800 are considered modestly concentrated; and those greater than 1,800 are considered highly concentrated (U.S. Department of Justice and Federal Trade Commission, "Horizontal Merger Guidelines." Issued April 2, 1992; revised April 8, 1997. Section 1.5).

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