Reinventing the American Hospital

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AMERICAN HEALTH CARE IS IN A STATE OF HYPER-turbulence characterized by accumulated waves of change in payment systems, delivery systems, technology, professional relations, and societal expectations. It can be likened to an earthquake in its relative unpredictability, lack of a sense of control, and resulting anxiety. At the epicenter of this earthquake is the American hospital. This institution is being shaken at its core foundations, and its institutional legitimacy is at stake. In some communities, it has already disappeared from the organizational landscape (American Hospital Association 1994). The psychological impact of these changes is significant (aside from the other obvious implications) because for decades most Americans' mental model of the health care system was their local hospital. This viewpoint was understandable because the hospital was often the most visible institution in the community: the largest employer, the tallest or largest building, and the location where most medical care was delivered. However, a new conceptual model of the health care system is emerging that is focused on disease prevention, health promotion, and primary care. In this model, the hospital in relinquishing its role as the traditional hub of

the health care system (Foster 1989; Griffith 1989; Stevens 1989) could serve as the lightning rod for significant change. The likely success of this effort will depend on the hospital's ability to reinvent and, in some respects, "lose" itself within a network of organized, community-oriented health and social service delivery systems focused on broad aspects of health care and chronic disease management (Rosenberg 1979; Goldsmith 1989).

In this article, we will briefly describe the major forces driving the re-invention of the hospital, highlighting the systemic structure within which hospitals exist (Senge 1990). Then, drawing largely on existing research, we will examine various approaches and methods for achieving reinvention as well as the associated challenges and implications. It is important to note that our focus is on "central tendencies," as we recognize that the implications for specific hospitals will differ by such factors as location (e.g., urban versus rural), size, teaching status, type of system or network with which they are affiliated (e.g., for-profit versus not-for-profit), and related variables.

The Drivers of Reinvention

In many respects the hospital is a high-velocity conductor of American social change. It both touches, and is touched by, issues of crime, safety, substance abuse, AIDS, educational reform, welfare reform, legal reform, and a host of related challenges. As hard as the hospital has fought over the years to maintain its comparative advantage in the treatment of acute and life-threatening illness (Starr 1982; Stevens 1989; Rosenberg 1987), it has been overwhelmed both by multiple external demands and by its own desire to broaden its mandate and identity. As a result, hospitals have initiated a diverse range of services embracing outpatient care, primary care, health promotion and wellness services, home health, nursing-home care, rehabilitation care, and hospice care, among others (Robinson 1994). In recent years, some hospitals have gone beyond care delivery by extending themselves into financing and insurance arrangements that increasingly involve capitated payment for providing care to defined populations. Although the forces driving hospitals to reconsider their mission are many, they center on issues of cost containment, new forms of payment, technological developments, consumer preferences, and state and national health reform efforts.

Health care costs in the United States are approaching one trillion dollars, constituting 15 percent of the gross national product and, until recently, increasing at almost twice the rate of the economy at large. As a result, considerable pressures for cost containment have come from both the private and public sector. This is reflected in a shift from first generation managed care initiatives, which relied on price discounts, to second generation managed care, which led to stricter forms of utilization management, to the more recent third generation managed care models, which feature capitated payment that places providers at overall financial risk for the care of enrolled populations. Although only 7 percent of the revenue of hospitals and medical groups is capitated today, growth is projected to reach 17 percent over the next two years (Bader and Matheny 1994). For some hospitals the figure already approaches 20 percent of revenue, and there are medical groups for which capitation represents over 50 percent of revenue. Recent data suggest that first generation models are associated with hospital inpatient days of approximately 450 days per 1,000; second generation models, with use rates approximating 300 days per 1,000; and third generation models, with use rates approximating 175 days per 1,000 (Doyle 1992).

Although it will be some time before capitation becomes a dominant form of payment for many hospitals, it nonetheless signals a fundamental paradigm shift in incentives and internal management, as shown in table 1. In the old world of largely fee-for-service payment, greater volume was associated with more revenue, which resulted in higher earnings and profits at a given level of costs. In the new world of capitated payment, *revenue is earned up front* when the contract is negotiated on the basis of so much per member per month for a defined population of enrollees. In this case, hospitals as well as other provider units become *cost centers*, not revenue centers. The incentives are to contain costs by providing needed care within the fixed revenue budget and to keep the population well. As a result, many providers try to streamline operations and re-engineer clinical processes so that patients are treated at the most appropriate point in the continuum of care where the greatest value is added. For the most part, this point is in settings outside of the hospital. As a result, some hospitals face excess inpatient bed capacity of up to 50 percent, resulting in significant downsizing of both facilities and staff.

The shift away from the hospital as the hub for the delivery of medical care is also reinforced by continued advances in technology that per-

TABLE 1
Transition from Hospital to Health Care Systems

Hospital	Health care system
Acute inpatient care ⟶	Continuum of care
Treating illness ⟶	Maintaining/promoting wellness
Caring for individual patients ⟶	Accountable for the health status of defined populations
Commodity product ⟶	Value added services—emphasis on primary care, health promotion, ongoing health management of chronic illness
Market share of admissions ⟶	Covered lives
Fill beds ⟶	Care provided at appropriate level
Manage an organization ⟶	Manage a network of services
Manage a department ⟶	Manage a market
Coordinate services ⟶	Actively manage and improve quality

mit more care to be delivered in alternative settings. For example, it is estimated that 98 percent of all medical encounters occur in nonhospital settings (Coddington, Moore, and Fischer 1994) and that outpatient surgery as a percent of total surgical procedures is approximating 70 percent (American Hospital Association 1994). Consumers increasingly favor ambulatory and primary care as well as home care and hospice care. These preferences are, of course, reinforced by technological advances and new forms of payment.

Finally, in recent years, both state and federal health reform initiatives have been overlaid on the forces just described. These initiatives call for a substantially different health care delivery system that can simultaneously respond to new challenges of accountability in cost, quality, outcomes, and access to care. The net result is that hospitals are no longer the "core business" of American health care. They are in the process of being replaced by organizations that can provide primary care, health promotion, and chronic disease management services. The numbers tell part of the story. Between 1980 and 1993 alone, 949 hospitals closed (American Hospital Association 1994). Between 1984 and 1992 there was an 11 percent absolute decline in admissions from nearly 38 million to 33.5 million and a 20 percent decline in inpatient days from 355 million to 295 million. Although profit margins in the past year have grown somewhat, this has been caused, in part, by significant down-

sizing of staff. At the same time, the number of group practices, ambulatory care centers, home health agencies, subacute units, and hospices has grown. For example, between 1980 and 1992 there was a 73 percent increase in the volume of outpatient visits (American Hospital Association 1993b). These data and shifting forces indicate that the days of hospital expansion, in either size or number, are over.

There are many theoretical lenses through which to view hospital efforts at reinvention. Resource dependency theory (Aldrich 1979) would emphasize the need for new sources of capital and the advantages of hospital consolidations; population ecology theory (Carroll 1984; Hannan and Freeman 1989; Alexander, Kaluzny, and Middleton 1986) would stress the inability of many hospitals to adapt because of inertial pressures created by bureaucracy and conflicting relations with physicians; institutional theory (DiMaggio and Powell 1983; Meyer and Scott 1983; Scott 1987; Alexander and D'Aunno 1990) would emphasize the requirements of private and public regulatory agencies (e.g., the Health Care Financing Administration; the Joint Commission on Accreditation of Healthcare Organizations), which have called for changes in hospital behavior; and transactions cost economics (Williamson 1989; Robinson 1994) would examine the relative costs of developing and owning the service versus transacting for it in the marketplace. Greater understanding, however, might be achieved by taking a horizontal slice through each of these conceptualizations by employing an overriding framework of strategic change that examines hospital responses in light of new resource dependencies, environmental pressures for extinction, societal demands, and changing incentives for owning components of care versus forging strategic alliances (Shortell and Zajac 1990; Shortell, Morrison, and Friedman 1990; Zuckerman and Kaluzny 1991). A strategic change framework offers an integrative perspective that takes into account environmental pressures, organizational strategies and structures, incentives, and the challenges of implementation. At the heart of strategic change is the need to articulate a new *vision* of the hospital that redefines its role within a newly emerging mental model of American health care delivery.

The Emerging Model: Disease Prevention/Health Promotion

Historically, the responsibility for treating illness and injury has been the province of the personal health services system anchored by physicians

and hospitals. Similarly, the responsibility for preventing disease and injury and promoting wellness has been the province of the public health system, anchored by local and state health departments. In the emerging world of capitated payment and care for populations, incentives are created both for merging public and personal health services and for reaching out to schools, police departments, and social welfare agencies (Rundall 1994). The goal is to organize the entire continuum of care—from health promotion and disease prevention to primary and secondary acute care, tertiary care, long-term care, home health care, and hospice care—so as to maximize its effectiveness across episodes of illness and pathways of wellness. A premium is placed on integration and holistic care, not fragmentation and specialist care. Most hospitals are ill prepared for this assignment, just as the traditional hospital medical staff is ill prepared to enter into economic relations for the provision of care to enrolled lives. This is evidenced by the many diversification failures of hospitals in the late 1980s (cf. Shortell, Morrison, and Hughes 1989; Gray 1991). Interestingly, many hospitals are now developing primary care networks with the expectation that this strategy will help to fill unoccupied hospital beds! These institutions do not understand the fundamental paradigm shift in which effective community-oriented primary care is essential for achieving successful population-based health care under capitated budgets and not for filling hospital beds. These hospitals have not yet discovered their true strategic role within the new health system. That role is a *peripheral* back-stopping role for treating the breakdowns in the lines of offense and defense that promote individual and community wellbeing. In brief, hospitals are the *goal keepers* of American health care—important to have when you really need them, but not someone (or something) around which you build either an offense or defense.

This describes the *functional* role of hospitals in the new world of health care. But hospitals and, more specifically, the leaders associated with them can also play a *leadership* role in helping to create new community-centered, population-based health care delivery models built on integrated systems of care. This idea is not new, having been articulated by such early seminal thinkers as Michael Davis (1916) and Rufus Rorem (1940, 70, 98); the forward-looking report of the Committee on the Costs of Medical Care (1932); and several national commission and policy reports over the past five decades (Sigmond 1995). However, the difference lies in recognizing that most previous conceptualizations still viewed the hospital as the *center* of the expanded health

care system. The present reinvention will require hospitals to make a radical departure from past notions of centrality and dominance in order to become *servant organizations*, giving and receiving empowerment from others. Such organizations recognize people as citizens equipped to help provide for their own health, rather than as "clients" who are controlled (McKnight 1992). Hospitals for too long have "assumed the customer" (Nadler et al. 1992, 257). Instead, hospitals need to increase their collaboration with others, sharing and receiving expertise in a way that strengthens all involved in creating community health and well-being rather than focusing exclusively on illness and disabilities (McKnight 1992). The following sections suggest how hospitals might take up the major strategic challenge of such reinvention.

The Health Systems Integration Study

Many of the lessons learned about hospitals' ability to reinvent themselves come from a four-year longitudinal study of 11 evolving U.S. health systems (cf. Gillies et al. 1993; Shortell et al. 1993; Devers et al. 1994). The systems included Baylor Health Care System, EHS Health Care (now Advocate Health Care), Fairview Hospital and Healthcare Services, Franciscan Health System, Henry Ford Health System, Mercy Health Services, Sentara Health System, Sharp HealthCare, Sisters of Providence, Sutter Health, and UniHealth America. They represent approximately 100 hospitals, over 400 other operating units involved in delivering health services, at least 11 HMOs, and total system assets and revenues ranging from approximately $800 million to over $4 billion. Some are located in heavily penetrated managed care markets like San Diego, Los Angeles, Portland (Oregon), and Minneapolis; others are in less penetrated markets like Dallas and Chicago. A variety of quantitative and qualitative data was collected over the four years, including three rounds of surveys measuring the degree both of functional, physician-system, and clinical integration and of system strategies; a survey measuring system and individual-operating-unit culture; two waves of financial performance data; two waves of physician-system and clinical integration objective indicators; and two waves of in-depth, on-site interviews with system leaders and managers. Response rates to all data collection instruments were consistently above 70 percent, and all measurement scales demonstrated a high degree of internal consistency reliability with alphas above .70. In addition to the Health Systems Inte-

gration Study, we draw on other recent literature in discussing the implications for reinventing the hospital's role.

Dimensions of Reinvention

Reinvention requires pervasive change in the fundamental identity of an organization. Underlying assumptions are challenged in a process of "double loop learning" (Argyris 1982) that cuts across strategic, cultural, technical, and structural dimensions. To be viable in the future, hospitals will need to change their strategies, transform their cultures, invent new "techniques," and reform their structures. Some of the more important dimensions of this reinvention activity are noted below.

From Independence to Integration

With over 50 percent of hospitals belonging to systems (defined as having common corporate ownership) and most of the remaining hospitals being members of alliances of one form or another, the question of the advantages or disadvantages of independent, free-standing hospitals is no longer relevant. The events of the day have overtaken the question and made it moot. The relevant questions are: (1) What types of systems, networks, and alliances are best able to provide cost-effective care to defined populations in different markets throughout the United States?; and (2) What factors are associated with putting together such arrangements? It is important to recognize that there are many ways of organizing systems, networks, and alliances, some of which may be based around physician groups or insurance companies rather than more traditional hospital systems (Shortell, Gillies, and Anderson 1994). The existing literature provides little evidence regarding the performance on the different arrangements (cf. Luke 1992; Moscovice, Christianson, and Wellever 1994; Shortell, Gillies, and Anderson 1994). We do know that the multihospital systems of the 1980s that emphasized administrative economies of scale and engaged in a variety of diversification activities did not seem to add value on almost any dimension of performance (Shortell 1988), primarily because they tended to represent loose collections of hospitals and engaged in relatively unrelated diversification of services. They lacked "systemness," in that they did not behave as a system in which each operating unit understood its strategic role relative to other

operating units of the system. It may have been that the market and environmental pressures at that time were not severe enough to require more integrative behavior. In most parts of the country, this has changed with the increased pressure of managed care, the growth of capitated payment, and state and national health reform initiatives. As a result, many systems have come to a new realization of what it means to be a system — not a collection of pieces enjoying administrative economies of scale, but, rather, an integrated, clinical continuum of care for defined populations with an ability to provide cost, quality, and outcome data for purposes of accountability.

In coming to this realization, the systems studied and others around the country have typically progressed through four stages. In the first stage, acute inpatient care is the "core business" of health care, and two or more hospitals affiliate, consolidate services, or merge within a given market typically to achieve economies of scale. In the second stage, the core hospital activities begin to branch off into both forward vertical integration activities, by building relations with physicians, and backward vertical integration activities, for example, by owning pharmacies and durable medical equipment companies. This occurs at each hospital location, but typically with relatively little coordination of activities across a given system. In stage 3, which began in the late 1980s, efforts were made to coordinate and optimize physician primary care networks, satellite clinics, home health care agencies, and other components of the continuum of care. Nonetheless, the core business remained acute inpatient care, and these other activities were still largely viewed as feeding or supporting the acute care business. The fourth stage represents a radical departure from the previous three stages. In stage 4, acute inpatient care is replaced as the core business by primary care, disease prevention, and health promotion. The goal of the new core business is to accept risk for the health status of populations served with incentives to keep the population well. In the new world of health care, acute inpatient care becomes a backward vertical integration strategy designed to provide cost-effective care during the acute stages of illness and to position the patient for optimal recovery during the posthospitalization stage. Based on our study and experience to date, we believe that most systems in the United States are in stages 2 and 3, and that relatively few have "broken through" to stage 4.

Although intuitively it may seem that those providers and associated insurance entities under a common ownership umbrella would be more

likely to provide the required cost-effective continuum of care, the re-
search on this issue is still in the formative stages (Mick and Conrad
1988; Luke 1992; Gillies et al. 1993; Shortell, Gillies, and Anderson
1994; Dranove and Shanley 1995). It may be that loosely organized net-
works and selected strategic alliances are more effective, particularly
in less mature managed care markets (Kaluzny 1992; Zuckerman and
D'Aunno 1990; Kaluzny, Ricketts, and Zuckerman 1995). It is also im-
portant to recognize that in many cases these organizational arrange-
ments are nested within each other. In fact, many integrated health care
systems have comingled ownership, network, and alliance components as
interacting parts of an evolving Venn diagram. Further, hospitals that
are owned by systems headquartered in other states may find that they
are members both of that more distant system and of a local system or
network of hospitals with other corporate parents.

Although little is known about the specific types of systems that are
most cost effective, the Health Systems Integration Study has provided
some insights into what it takes to construct integrated systems (Devers
et al. 1994; Gillies et al. 1993; Shortell et al. 1993) and the associated
changing role of the hospital. This includes new management and gov-
ernance structures; population-based planning; new ways of working
with physicians; efforts at clinical reengineering; implementation of con-
tinuous quality improvement/total quality management (CQI/TQM)
processes; and more emphasis on patient outcome and health status
measurement. We will discuss each of these in turn.

New Management and
Governance Structures

It is difficult for any institution to face the fact that economic, political,
and social forces may lead to great decline unless significant changes are
made. One need only to look at the experience of many savings and loan
agencies, General Motors, and IBM to find analogies in the corporate
world. To the extent that hospitals *as acute care institutions with an
illness paradigm* attempt to maintain their role as the "hub," they will
hasten their demise and weaken their partnership with affiliated or-
ganizations. This will be a particular problem for financially successful
hospitals that have enjoyed "cash cow" reputations (i.e., generated the
greatest amount of profit) within their affiliated systems. These institu-
tions will have great difficulty giving up services they have traditionally

provided or consolidating services with others in order better to serve an overall regional population. They will also have difficulty taking on new services that, left to their own devices, they would probably not provide. In brief, these hospitals will find it hard to accept a new strategic role within a regional, population-based community health care delivery model. Considerable governance, managerial, and physician leadership will be needed to deal with this challenge.

One cannot ask physicians and nurses fundamentally to change the way in which patient care is delivered across a continuum of care to defined populations (e.g., through the use of teams, protocols, pathways, case managers, etc.) while maintaining old management and governance structures, steeped in institutional autonomy, that still emphasize the management of departments, protection of turf, and filling of beds. Based on study experience to date, a guiding principle of effective reinvention is that clinical, managerial, and governance structures must be aligned with and supportive of each other. Delivery of cost-effective care across the continuum requires that management and governance structures be established across the continuum of care.

We have learned much about how this might be accomplished from our current research with 11 integrated health systems (Shortell et al. 1993). For example, five systems have established regional management teams responsible for primary care, acute care, or specific clinical service lines such as cardiovascular and oncology. In the process, three systems have eliminated hospital CEO positions. In addition to its functional advantages, this change sends a powerful symbolic message to others throughout the system that the hospital is no longer the "hub" of the wheel. Other systems have not gone as far, but have instead redefined existing hospital CEO roles to include 50 percent responsibility for the hospital and 50 percent for managing systemwide initiatives in areas like primary care and group practice development. Financial incentives throughout the system have been changed to emphasize achievement of systemwide objectives in addition to completing individual institutional goals. In one system, the two largest hospitals are managed by a single physician–nurse team, with appropriate staff support provided by the system office. Another system has established an eight-person management council, four of whose members are physicians.

Changes are also beginning to occur at the second and third levels of management as managers are no longer charged with running individual departments, such as pharmacy, laboratory, and radiology, but are, in-

stead, members of interdisciplinary teams responsible for managing se-
lective services across the continuum of care for a given group of patients.
This seems particularly appropriate given that many of the major dis-
eases of the 1990s — AIDS, Alzheimer's, cancer, trauma, and behavioral
problems — are not *diseases that single departments* can handle but,
rather, illnesses that require an entire *system of care*. For many systems,
the application of CQI/TQM has also reinforced the cross-divisional,
cross-institutional approach to managing services. In brief, some hospital
executives and managers are beginning to break down the "silos" as they
learn to manage care across boundaries.

Sweeping changes are also occurring at the governance level (Pointer
and Ewell 1995). Many systems are finding individual hospital policy-
making boards, however well intentioned, to be barriers to system integra-
tion because they are understandably committed to their own hospital,
which limits their vision and often obstructs programmatic consolidation
and restructuring. Further, hospital policy-making boards have often
slowed a system's ability to make decisions by "ping-ponging" issues
back and forth between the hospital and system board. As a result, some
systems have replaced hospital operating-unit, policy-making boards with
a single regional governance structure aligned with the regional manage-
ment structure. In the process, hospital boards have become advisory in
nature, assisting in identifying community needs, monitoring progress
in meeting these needs, and overseeing the quality of care provided.
Some systems have established community advisory councils, and others
have placed former board members on cross-system service line advisory
groups.

Students of the increased "systemization" of American health care
have expressed legitimate concern that the centralization and corporat-
ization of these systems might lead to a lack of responsiveness to local
interests (Starr 1982). What appears to be occurring, however, is *simul-
taneous* centralization and decentralization, resulting in an *intermediate*
level of centralization of governance and managerial authority. This var-
ies as a function of geography and system evolution. For example, smaller
systems with operating units located near each other tend to centralize
many of the administrative support services because of the ease with which
their services can be made available to the units. Larger systems typically
operating across markets or with several subregions tend to decentralize
more services. Also, systems that have evolved primarily through owning
their own hospitals tend to decentralize more services, reflecting the tra-

ditional autonomy and expertise of the hospital staff, whereas systems that have evolved through merger and acquisition have attempted to provide more standardized support services to the newly aligned units. Also, at the same time that individual hospital boards are losing some of their traditional authority to regional boards, system corporate offices are delegating more authority to the regional boards. What appears to be driving this simultaneous centralization and decentralization is the realization that caring for a population is best done within a defined geographic regional market and that management and governance structures are probably best located at these sites. It is also important to note that several systems were bringing additional resources to rural areas and helping to reconfigure delivery systems there.

Population-Based Community Health
Status Needs Assessment

Consistent with the change to community advisory boards is a new emphasis on population-based planning models focusing on community health status needs assessment. Capitated payment for a defined number of enrolled lives provides powerful incentives to assess the needs of those populations in order to determine the appropriate number and mix of personnel, capital resources, and specific programs and services to be offered. In doing so, many hospitals and health systems have found that they have too many hospital beds, too many specialist physicians, too few primary care physicians, and not enough home health and aftercare services. To illustrate the point: in 1873 the nation had one hospital bed for approximately 800 citizens; in 1994 there is one hospital bed for approximately every 200 citizens. Even the most generous estimates suggest that only one bed for every 900 persons is needed (Kronick et al. 1993). In short, when it comes to hospital bed capacity, one might facetiously argue that we need to go back to the future and return to the health system of 1873. Of course, in the late 1800s hospitals did not possess the scientific arsenal to make their use appropriate. Today, scientific and technological progress has in effect bypassed the hospital so that more treatment can be offered in out-of-hospital settings, diminishing the need for inpatient hospital services.

To assess communitywide health status needs, systems will have to go beyond analysis of existing secondary data on population demographics and disease trends to include primary data collection, information on

prevention and health promotion services, interviews and focus groups with citizens and community leaders, and linkage of "illness" and "community well-being" data similar to that collected by environmental health agencies and related units. This is particularly necessary for the hospitals and health systems whose location and/or mission have involved them in caring not only for enrolled lives, but also for others in need of care who may not be among the hospital's or system's contracted lives (Kovner 1994; Sigmond and Seay 1994). The goal is to develop a community health database that can be used to manage populations of patients and community members over time rather than an acute care database that captures sporadic episodes of illness after the fact.

Taking a broad, population-based view of the continuum of care is essential to the hospital's ability to reconfigure resources. Thus, it must utilize more primary care physicians, nurse practitioners, and physicians' assistants as well as public health epidemiologists, community health educators, and community health organizers. For example, three study systems have added, or are in the process of hiring, an epidemiologist/ demographer or "medical" sociologist in the coming year. This person's job will be to better assess and interpret the needs of populations served and to monitor progress over time. In brief, in some communities the union of medicine, management, and public health is beginning to emerge.

In some respects, this "union" represents a return to an older, more community-oriented system that existed before the rise of the medical profession and the development of modern treatment technologies (Rosenberg 1979). The changes involved in bringing medicine, management, and public health together today, however, are likely to be more disruptive than those associated with the emergence of the modern hospital. In the early 1900s a consensus existed that medicine could solve health problems, and in the 1950s and 1960s there was general agreement on the need for better management of hospitals as complex organizations (Rosenberg 1979). However, given the ongoing debate over financial, payment, and health reform in general, there is less consensus today on how medicine, management, and public health might go forward. Reinventing the hospital thus becomes a more challenging task.

New Relations with Physicians

Hospital–physician relations have been extensively studied (Alexander, Morrisey, and Shortell 1986; Burns, Andersen, and Shortell 1993;

Derzon 1988; Harris 1978; Pauly and Redisch 1973; Roemer and Fried-man 1971; Shortell 1985, 1990, 1991; Shortell, Morrisey, and Conrad 1985). Unfortunately, in the brave new world of health care in the 1990s the *hospital*–physician relation is the *wrong* unit of analysis. The more relevant unit of analysis is the physician's relation to, and position within, an integrated *system* of care. Physician–system integration (PSI) is defined as the extent to which physicians identify with and use the system and the degree to which they are involved in its management and governance. By shifting the unit of analysis, hospitals and physicians may each be able to achieve objectives that neither could achieve alone under the old model based on the voluntary hospital medical staff. As Starr (1982) cogently notes, in the past the relative institutional autonomy of hospitals could be used by physicians (through the medical staff organization structure) to promote their own professional autonomy as well. As the institutionalized autonomy of hospitals breaks down within the context of integrated health care systems, however, physicians are exposed and their autonomy is threatened. As a result, incentives are created for each party to deal with common market pressures and to either develop new approaches to collaboration or go their separate ways. A variety of collaborative approaches exist, ranging from loosely structured independent practice associations (IPAs) and group practices without walls to more structured physician hospital organizations (PHOs), management service organizations (MSOs), and foundation, staff, and equity models (Health Care Advisory Board 1993). Field interviews from the Health Systems Integration Study and related research (Coddington, Moore, and Fischer 1994) suggest that providing an adequate foundation of physician leadership programs, ongoing practice management support services, and extensive involvement of physicians in management and governance is critical. Without these building blocks in place, the specific organizational arrangements of whatever form tend to unravel. Given the lack of a consistent set of shared incentives and the different socialization experiences and backgrounds of the participants, achieving a greater degree of physician–system integration is a difficult task. This was indicated in the Health Systems Integration Study by relatively low physician–system integration average scores of 2.31 in 1991, 2.25 in 1992, and 2.5 in 1994 (using a scale of 1 to 5, in which 1 is low and 5 is high). Further, objective measures indicate that over 25 percent of the hospitals associated with the Health Systems Integration Study still do not involve physicians in administrative or governance activities of any note; only 17 percent of

active staff physicians receive practice management support services; only 7 percent participate in a system-managed or affiliated practice; few physicians have administrative responsibilities that cut across the system; and over 50 percent of physicians are still practicing in solo or small partnerships rather than in groups (Devers et al. 1994). Although difficult to achieve, the importance of PSI is indicated by its strong correlation with a composite measure of clinical integration regarding the extent to which protocols, clinical support services, outcomes data, and clinical service lines are shared across a system's operating units ($r = .68$; $p \leq .001$) (Gillies et al. 1993).

The speed with which physicians become more closely linked with systems of care will depend greatly on the economic incentives in local markets throughout the country. As managed care contracting and capitated payment expand, physicians, hospitals, and all elements of the continuum of care will have common incentives to become more closely aligned with each other. The major trigger for this may well be the expansion of Medicare HMO risk contracting at the federal level and Medicaid HMO risk contracting at the state level, in addition to private sector employer initiatives and state/national health care reform legislation. In the meantime, the systems we have studied are becoming more "physician centered" through the implementation of many of the initiatives described here.

Re-engineering Clinical Processes

> Services and programs have largely replaced hospitals as the basic organizational framework with each service having an epidemiologically defined responsibility for the provision of integrated personal and public health services for the population it services. (Malcolm 1993)

At the heart of reinventing the hospital as an organization is the fundamental restructuring of care-giving processes. Sometimes referred to as "clinical re-engineering," it is defined as planned activities to reorganize patient care in order to enhance the cost effectiveness of the care provided. It involves "starting over" by challenging commonly accepted assumptions such as the necessity to centrally locate clinical support functions (e.g., lab, radiology) to promote efficiency rather than dispersing them to patient care units. It includes the physical redesign of patient care units; the analysis of core clinical processes, using CQI/TQM

tools to identify variation from desired outcomes and acting to correct undesired variation; the development of protocols and pathways and of case manager and care management systems; and the improvement of clinical information systems. The goal is to reduce the time it takes to make patients well, to improve patient and family member satisfaction, to increase the coordination of care across the continuum, to increase clinical outcomes and functional health status, and to reduce the cost of treatment. This is a tall order for an institution that has traditionally organized itself around highly specialized provider interests and convenience, generally focusing on the acute inpatient portion of a given episode of illness.

The biggest challenge to clinical re-engineering lies in managing multiple, complex chronic illnesses that cut across the continuum of care and require multiple treatment and rehabilitative settings. Current research suggests few examples of true re-engineering that affect the entire continuum of care. Major obstacles include the acute care orientation of providers ("My job is done once the patient leaves my area"), entrenched professional roles that are threatened by cross-training and further development of multiskilled professionals, and the lack of relevant clinical data for use in both assessing treatment effectiveness and monitoring patient progress across treatment settings. As a result, patients and their families are frequently asked the same questions three or four times as they bounce from hospital to home care to the physician's office. The challenge is to conceptualize clinical re-engineering efforts broadly enough to encompass the entire continuum of care for relevant episodes of illness and pathways of wellness.

The systems studied were beginning to address these issues by turning their attention to clinical integration issues. Clinical integration is defined as the extent to which patient care activities are coordinated across the continuum of care so as to increase the probability of providing maximum value to the patient. This is difficult work because it challenges so many established practices and philosophies of current caregivers and institutional beliefs. Study respondents rated it among the lowest areas of integration with a mean of 2.57 in 1991, 2.46 in 1992, and 2.49 in 1994 (on a scale of 1 to 5). Additional objective measures revealed that efforts to integrate services clinically across the continuum of care were only beginning to emerge. For example, only 11 percent of the operating units affiliated with the study systems had a common patient identifier between inpatient and outpatient units; only 16 percent ($n = 2$)

of 15 possible clinical outcome measures were collected and shared among operating units within the system; only 18 percent of nine possible clinical support services (e.g., radiology, laboratory, pharmacy) were shared; and only 15 percent of 10 possible clinical service lines (e.g., cardiovascular, oncology, behavioral) were shared across the system (Devers et al. 1994).

Four systems, however, were beginning to make progress by organizing patient care around clinical service lines that *extend beyond the acute inpatient care setting*. This appears to be occurring most frequently in the areas of cardiovascular care and behavioral medicine. In the area of cardiovascular medicine, one system uses home health nurses to abstract information and treatment plans three days prior to a patient's hospital discharge and then provides follow-up home care using protocols. Another system has initiated a communitywide heart watch program designed to educate the community about symptoms and signs of heart disease and to promote preventive practices. Common features in these efforts include physician, nursing, and administrative leadership that views care from a broad perspective; incentives and performance appraisal systems based on achieving cross-system clinical service line objectives; budgeting based on service lines rather than hospital departments; cross-functional training; use of CQI/TQM; and actions based on reliable, timely clinical data. The need for a comprehensive integrative re-engineering approach that uses multiple interventions rather than a single one is also suggested by a study of the New England Medical Center in Boston (O'Brien, Shortell, and Hughes 1994). In this demonstration, interventions were fashioned to retrain nurses, develop protocols and pathways, educate patients about their care using videos and other communications technologies, and draw on patient satisfaction and outcome data to reorganize care. Findings suggest both significant improvement in the continuity and coordination of patient care and reduced nurse turnover.

Continuous Quality Improvement/ Total Quality Management

There are different viewpoints as to whether or not CQI/TQM can make a lasting contribution to improving the cost effectiveness and quality of health care services. Some view CQI/TQM as simply another in a long list of health care managerial fads, whereas others regard it as a "savior"

for health care organizations caught between the cost containment pressures and increased consumer and public demand for quality (Shortell, Levin, O'Brien, et al. 1995). At present, 69 percent of U. S. hospitals claim to have adopted CQI/TQM, but this has mostly occurred in the past two years (Barsness et al. 1993). Also, most of the applications to date have been in nonclinical areas (Lohr 1990). While there are a number of case studies and individual examples documenting the impact of CQI/TQM (*Quality Letter for Health Care Leaders* 1991; Joint Commission on Accreditation of Healthcare Organizations 1992), there is little in the way of systematic comparative evaluation. The only comparative evaluative study to date suggests that the degree of implementation of quality improvement work depends largely on the hospital's culture (Shortell, O'Brien, Carman, et al. 1995). Hospitals with cultures that emphasize teamwork and encourage the individuals closest to providing patient care to make decisions were further along in their quality improvement work (using independent measures based on the Baldrige Award criteria) than hospitals with cultures organized along more hierarchic lines. In addition, hospitals that were ahead in quality improvement efforts had consistently lower charges and shorter lengths of stay for six clinical conditions: chronic obstructive pulmonary disease, pneumonia, acute myocardial infarction, congestive heart failure, total hip replacement, and stroke, after controlling for differences in severity.

Part of the reason for the lack of a systematic pervasive impact of CQI/TQM in hospitals may be the fact that important strategic, cultural, technical, and structural barriers to its effective utilization have not yet been addressed (O'Brien et al. 1995). To be effective, hospitals are learning that quality improvement efforts must focus on strategically important clinical issues relevant to the organization, supported by a true culture of empowerment and delegation, reinforced by extensive training and performance and reward systems that are aligned with quality improvement efforts, and utilizing new task forces and related mechanisms for diffusing the learning from one part of the organization to another. In addition, considerable work needs to be done on expanding physician involvement in quality improvement efforts (Blumenthal 1995). There is an urgent need to expand quality improvement efforts to out-of-hospital services that emphasize primary care and the continuum of care. The increased focus on developing clinical protocols and pathways across the continuum of care for conditions like congestive heart failure is an important step in this direction. Finally, although

there is little systemic evidence on the *clinical outcomes* of CQI/TQM efforts, there is widespread agreement that they constitute an important force for promoting greater system integration (Shortell et al. 1993).

Focus on Health Outcomes

The move to capitation-based payment and the care of enrolled populations brings with it the need to measure outcomes and patient satisfaction for purposes of both external accountability and internal continuous improvement. Although early efforts have focused on outcomes of traditional acute inpatient care, such as risk-adjusted mortality rates and various measures of morbidity, momentum is growing for measures that evaluate the end points of overall patient treatment like measures of functional health status (Ware 1993) at 6 months and 12 months post hospitalization for procedures like coronary artery bypass graft surgery and total hip replacement. There is also growing interest in the development of community health status measures such as immunization rates and the incidence of domestic violence and child abuse (Nerenz, Zajac, and Rosman 1993; Institute for Health Care Quality Improvement 1994). Led by the National Committee for Quality Assurance (1993), employers are also developing a set of community-based outcome measures, entitled Healthplan Employee Data Information Set (HEDIS). On other fronts, a group of HMOs is trying to develop quality report cards that will include measures of patient satisfaction with care (Kenkel 1994).

In order to be able to produce such outcome information effectively, hospitals and health systems are investing heavily in their managerial and clinical information systems, sometimes exceeding $100 million over a three-year period. There is a great need to develop common patient identifiers, to link patients and providers across the continuum of care, to provide real-time information to clinicians so they can take corrective action on the spot, to link financial and clinical data in order to conduct cost–benefit analyses, and to provide data to quality improvement teams for purposes of altering clinical processes and developing clinical protocols and pathways.

The Community Health Care Management System

The cumulative impact of these "reinvention" processes is the emergence of a community (not just patient or enrollee) health care management
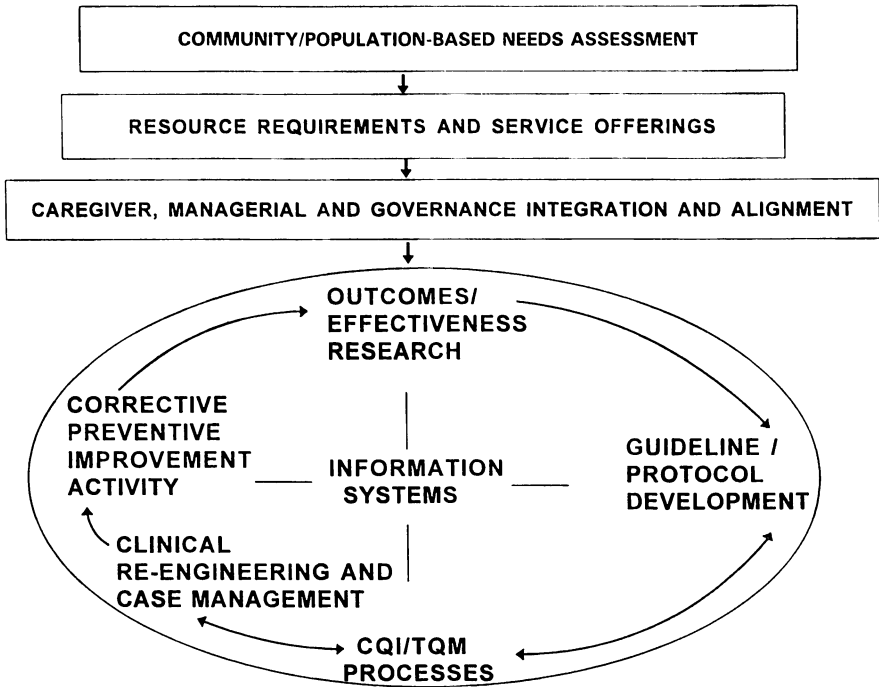
FIG. 1. The community health care management system.

system that takes seriously the responsibility for maintaining and enhancing the health status of populations. The primary elements of a community health care management system are shown in figure 1. After assessing the needs of the populations to be served, developing the resources that are necessary to meet those needs, and installing the necessary caregiver, management, and governance systems in a workable, coordinated fashion, the process would then require a continuous cycle of outcomes measurement, the development of guidelines and protocols, and the use of CQI/TQM processes, clinical re-engineering, corrective and preventive activity, and reassessment of the outcomes of one's efforts. The complete circle is anchored by information systems.

The Henry Ford Health System in Detroit, Michigan, for example, describes the vision behind the community health care management system:

Integrated health systems are reevaluating the responsibility of the health care industry and taking seriously the notion that an integrated health system's mission is *health* not services. This does not

mean that health systems need become leaders in the fights against the diseases of urban blight, poverty, homelessness, and ignorance — though they participate in those fights in very tangible ways — but that they understand the boundaries of their broad mission and accept responsibility to do what no other organizations can do better: screen and educate individuals about their personal health risks, help them avoid disease, and treat them effectively, economically, and with coordination and customer orientation when it is needed. (Warden 1994)

It is significant to note that the statement makes no mention of hospitals.

Success Requirements

The requirements for hospitals to reinvent themselves successfully are derived from the above discussion. All of them center around the hospital's need to understand its new strategic role within integrated systems of care that focus on defined populations and communities. Hospitals that succeed will do the following:

- "Right size" the delivery system in line with the health needs of the community — in many cases this will mean downsizing acute inpatient bed capacity by up to 50 percent.
- Develop a primary care network emphasizing disease prevention, health maintenance, and health promotion built around primary care physicians, physician assistants, nurse practitioners, and related providers.
- Be able to assume risk. Doing so requires the integration of physicians into systems of care and achievement of clinical integration across the continuum. In addition, the necessary supportive infrastructure of information systems and quality improvement must be put into place.
- Provide relevant cost, quality, and clinical outcome data to purchasers.
- Align caregiver, managerial, and governance structures to reinforce the delivery of care to defined populations.

These steps will require fundamental changes in the culture of most hospitals. Existing research suggests that the cultures of most hospitals —

particularly the larger ones – are still primarily hierarchic and financially oriented, leading to an emphasis on rules and regulations and the achievement of efficiency-based objectives (Shortell, O'Brien, Carman, et al. 1995). Building the new hospital will require a shift to cultures that promote empowerment, horizontal relations, team building, management across boundaries, and willingness to take risks. Changing such cultures will require hospitals to do the following:

1. Change their performance appraisal, budgeting, and reward systems to emphasize group and team achievement, to meet multidisciplinary service line objectives, and to attain systemwide goals.
2. Expand the development of middle and lower management leadership and team-building skills.
3. Promote interdependence among groups and departments by breaking down the "silos" that separate people and refusing to tolerate "turfism."
4. Use the organization's values and mission statement as a guide in making difficult "trade-off" decisions.
5. Expand the application of CQI/TQM to clinical and health promotion processes that embrace the entire continuum of care.
6. Monitor the extent to which the organization's culture is changing through periodic systematic assessments at all levels of the organization and across all units of the delivery system.

The hospital hierarchy must be replaced by a "heterarchy" (Handy 1994), which recognizes multiple centers of power and actively works to increase everyone's power and influence within the organization.

This, of course, will require new leadership from managers, governing board members, physicians, and nurses alike. These new leadership requirements call for managers who understand the business of providing clinical and health care services, physicians who understand the need for a greater emphasis on primary care, increased cross-training of people at every level of the organization, and more energy focused on building partnerships and managing change.

These changes will not and should not occur in the same degree of magnitude or speed across all hospitals or markets. The magnitude and pace of change are likely to be driven primarily by managed care and capitation payment pressures. Further, intensive care services, emergency care, and inpatient maternity care, as well as treatment of serious episodic

"flare-ups" of chronic disease, will always be needed. Hi-tech tertiary and quaternary services (e.g., transplants) will continue to be centered largely in academic, medical-centered, affiliated teaching hospitals. These hospitals, however, are unlikely to succeed unless they are part of a larger system or network of care. Teaching hospitals face perhaps the toughest reinvention challenge because, in addition to the pressures of the marketplace, they must balance commitments to education and research — both of which face increasing resource constraints.

Conclusion

The reinvention process will be ongoing but will become *noticeable* when the hospital becomes relatively *invisible* — hidden within the context of more integrated health systems operating as part of community care networks (American Hospital Association 1993a) that offer services to defined populations. In accepting this changed role, hospitals may rediscover what it means to be part of a community, to be voluntary (and for-profit), and to add value (Stevens 1989; Sigmond and Seay 1994). In this new role, hospitals will be discussed and written about less often. There will be no need for special articles or issues devoted to them.

For students of organizations, this reinvention process represents a fascinating example of neither organizational decline nor turnaround, but rather, of organizational integrity (i.e., a willingness and ability to commit to a *changing* mission) and humility, which permits new organizational forms to grow in order to serve identified community needs in response to changing market and societal forces. The extent to which hospitals can reinvent themselves may be the most critical implementation factor in the evolving journey of reforming America's health care system.

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