

Rationale, Principles, and Educational Approaches of Organizational Transformation

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Weaving through the drama we call managed care are three distinct plots that are playing out against a backdrop of escalating health care costs, uneven access to care, and a delivery system that frequently aggravates its users. The first plot concerns money and ownership: What will be the respective roles of the for-profit and not-for-profit sectors in providing the capital needed to rebuild the health care system? Who will own the system? What form of ownership leads to the best system performance? The second plot concerns the control of medical management: Will it be payers or providers who make the ultimate decisions about what care is given, how, and by whom? Although these two plots are of great importance, and certainly receive most of the public's attention, they cannot be adequately addressed without a thorough understanding of the third plot: the reorganization of health care delivery into integrated systems. It is this third plot that is the most revolutionary and the most fundamental; it is also the most obscure.

Many, perhaps even most implementations of managed care fail to attend adequately to the restructuring of health care delivery. Rather, they superimpose new financial arrangements and external control mechanisms on the traditional, nonintegrated structures of fee-for-service medicine. In short, they manage costs, not care. Not only are such internally inconsistent efforts doomed to fail, but the stress and frustration they create for both patients and clinicians poison the waters for more sincere, creditable implementations.

For precisely this reason, it is vital that we understand the organizational transformation that is at the heart of managed care, that we know how to distinguish the real thing from inadequate or even disingenuous implementations, that we not lose the baby with the bath water. Equipped with such understanding, we can help steer the changes in health care in a favorable direction, toward the emergence of new and more capable approaches

to health care delivery that make it easier for clinicians to provide higher-quality, more efficient care.

In this article, we describe the rationale and mechanisms for the creation of integrated health care systems. We also present ideas for educators about how to prepare future physicians for their roles in integrated systems. Finally, we reconsider the themes of money and control, and find that they are but subplots of the theme of reorganization. New forms of financial and medical management will be judged by their contribution to the performance of integrated systems and, ultimately, to improvements in the health of the community.

FROM FRAGMENTATION TO INTEGRATION

Figure 1 depicts the state of the health care system before managed care. It shows a variety of individual and institutional providers caring for haphazardly assembled, slightly overlapping groups of individual patients. Providers can be accountable only for the clinical outcomes, costs, and quality of the care they provide directly. No matter how conscientious the individual provider may be, no provider has a system-wide view. No provider can be accountable for issues of care that cross the domains of other providers (for instance, a primary provider cannot, by herself, organize and deliver comprehensive services for patients with type I diabetes). No provider alone can see or meet the health needs of a population, even though all can see evidence of needs that are not being met (for example, anesthesiologists frequently observe but rarely respond to carious teeth). No provider has the resources or authority to address the problem of inadequate information transfer, with all of its implications for poor quality and duplication of effort. It is not possible even to assess the effectiveness of health care except with the crudest of epidemiologic measures.

The radical transformation at the heart of managed care is to change the basic unit of health care delivery from the individual provider to the integrated health care system. Consistent with principles from general systems theory, this shift reflects an adaptive reorganization of a system to create a higher level of complexity that features fresh qualities not found at the level of its component parts.¹ Just as the capacities and behaviors of a human being transcend the properties of its component organs (for example, neither a muscle nor a brain can tap dance), new performance capabilities can emerge when health care systems integrate their fragmented parts into a cohesive and functional whole.²

Figure 2 depicts the structure of an idealized integrated health care system. Several features deserve comment.

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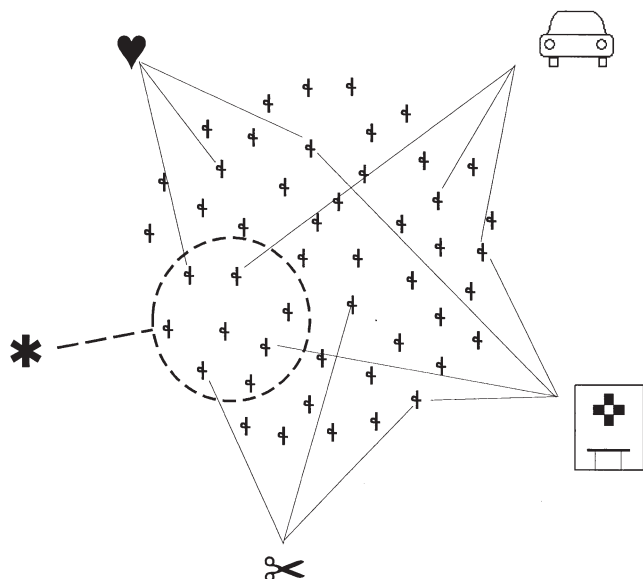


FIGURE 1. A schematic diagram of the current health care system illustrating the lack of definition of a population and the inability of any one individual or institutional provider to achieve a system perspective. The asterisk indicates a primary care physician; the scissors, a surgeon; the heart, a cardiologist; the square building, a hospital, and the car, a visiting nurse.

First, the various providers are grouped together as an integrated network, one that comprises a specific subset of all the individual and institutional providers in a given geographic region. Second, there is a specific, identifiable population for which the integrated system is responsible and accountable (symbolized in Fig. 2 by the circle delimiting the group of patients). The members of this population can be identified by name. Before the formation of integrated systems, all the providers in a particular locality were vaguely and generally responsible for the health of everyone in their region (represented by the unbounded and undefined group of patients in Fig. 1), but it was not possible to know who the individuals were who formed that population or which providers, exactly, were responsible for which individuals. Third, at the interface between the provider network and its population there are new infrastructural elements that allow individual providers to function as one system and to implement population-based care. These tools, discussed in more detail below, allow the system to perceive itself as a system, to align the incentives of all participants, to identify needs within the specific population for which it is responsible, to respond to those needs in a coordinated and efficient fashion, and to assess how well it is performing, thereby enabling it to improve itself.³

DUAL PERSPECTIVES IN DECISION MAKING

The formation of integrated systems with responsibility for specific populations of patients formalizes the population-level perspective on health care, and makes it

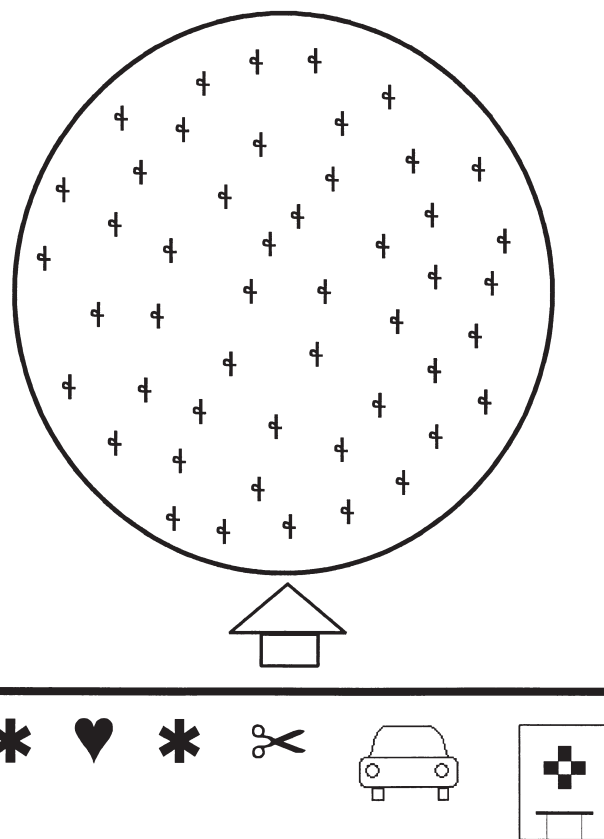


FIGURE 2. A schematic diagram illustrating an integrated, interdisciplinary team that is responsible for the health of a clearly defined population. The asterisk indicates a primary care physician; the scissors, a surgeon; the heart, a cardiologist; the square building, a hospital; and the car, a visiting nurse.

more tangible than before. The system must coordinate and prioritize decisions about treatment goals, methods of care, and allocation of resources to meet the needs of its population. As the population perspective gains more effective representation, there is increased potential for conflict between the perspectives of the population and the individual patient. Historically, physicians were accountable only to the individual; as long as they held patient's interests foremost in mind, they were granted considerable autonomy in applying their clinical skills and judgment. The first generation of managed care organizations put system-level decisions in the hands of administrators who then sought to control the activity of physicians. This splitting of individual and system perspectives between two different professional groups produced intense polarization with each profession discrediting the perspective of the other. Physicians tend to regard administrators as heartless, bottom-line-oriented, and insensitive to the needs of patients. Administrators see physicians as egotistical, sanctimonious, and lacking any capacity for teamwork.

The successful integration of health care will require an end to this segregation of the individual and system perspectives. Rather than simply adopting one perspective

or the other, physicians must learn to embrace both (Fig. 3). This radically transformed role for physicians is well characterized by the term "holon."⁴ A holon is an entity with a dual nature: it is both a whole, complete in and of itself, and at the same time a part of a larger whole. It is autonomous (self-regulating), yet its activity also must contribute to the successful function of the higher-order entity. Practitioners in an integrated system are self-regulating in exercising their best clinical judgment to diagnose, advise, and treat. Their activity is an essential and irreplaceable part of the health care system. At the same time, they are called on to carry out these activities not in an arbitrary or idiosyncratic fashion but rather in a way that is responsive to the collective needs of all the providers in the system and the population they serve. Their work must be done in a way that facilitates the sharing of information and the smooth coordination of their own activity with the work of others.

It should not be surprising that physicians would initially perceive the adoption of a system-level perspective as a threat to their autonomy. When one has had absolute autonomy, anything less is perceived as a loss. However, the creation of a higher-order system can bring important advantages to physicians: new resources and services to improve the quality of care and clinical outcomes, solutions to perennial communications problems, the return to clinicians of decision-making authority regarding care, and new opportunities for leadership.

TOOLS FOR INTEGRATION

Infrastructural elements enable an integrated health care system to attain a level of function that exceeds the sum of its parts. If we think of the system as an organism, it requires a delimiting structure — analogous to skin or a cell membrane — to define its identity and bind its parts together. It also needs new kinds of sensory, associative, and motor functions. What follows is a partial list of and

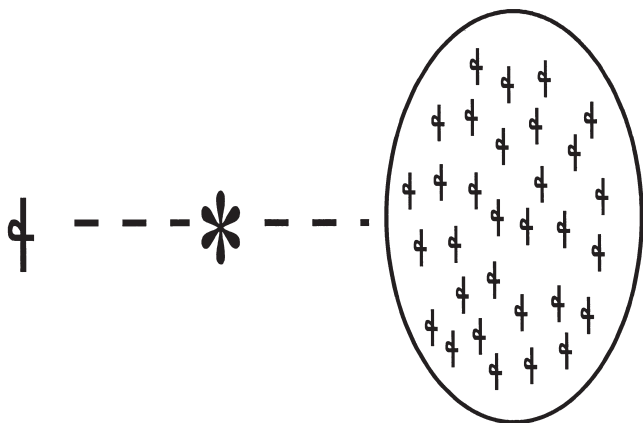


FIGURE 3. The two, simultaneous perspectives — individual and population — that a clinician must maintain in an integrated system.

rationale for the tools that integrate the parts of a health care system into a greater whole.

Shared Information

In a fragmented system, each provider gathers a separate set of information and stores it in a unique way. Information exchange between providers is slow, costly, and unreliable. The sharing of registration and clinical information eliminates redundant work and improves clinical decision making and outcomes (for example, reduction of adverse drug interactions). Computer networking technology may prove to be one of the most powerful tools for system integration, provided it is used to support the other tools described in this section (a computer network alone will not accomplish much.)

A shared registration, scheduling, and referral system creates greater system awareness for both patients and providers and concentrates care within the system, increasing the opportunities for teamwork, alignment, and efficiency.⁵ Integration increases when increasing amounts of clinical information are shared, starting with problem lists, medication lists, and test results and progressing ultimately to a complete electronic medical record.⁶

Pooled information enables reporting on systemwide performance (for example, adequacy of screening, costs-versus-expenses per member per month, or trends in admission and referral rates).⁷ Periodic health status surveys allow a system to assess the health of its population and the effectiveness of its care. Longitudinal tracking of the health status of specific groups within the population (for example, diabetics) can lead to quality improvement efforts and innovations in clinical methods.

No technologic advance comes without a price. In the case of information systems, the price is confidentiality. Although there are now sophisticated processes to grant differential access on a need-to-know basis and to record when information is accessed and by whom, no process is foolproof. Security violations also occur with written records, although they require physical proximity.

Case Management

Integrated systems can use information to offer new types of clinical support that are beyond the means of most individual practitioners. For example, health status screening performed when patients are first enrolled allows early recognition of at-risk patients.⁸ Case managers, working closely with the patients' primary care physicians, can plan proactive interventions to prevent more serious health problems that require more expensive care.⁹ For example, early detection of high-risk pregnancies followed by intensified efforts to provide prenatal care may reduce deliveries of low birth weight infants. Also, case managers, using claims data or system-wide information systems, can identify patients with patterns of intensive resource use, for example, frequent emergency department

visits or repeated hospital admissions, and initiate more effective plans of care, which usually are interdisciplinary.

Disease Management

For certain chronic diseases, for instance, congestive heart failure, asthma, and diabetes, special services can be designed or dedicated interdisciplinary teams can be created.¹⁰ These new approaches may lead to higher levels of functional status, fewer acute exacerbations, and delayed progression of disease as a result of close tracking of symptoms, active recall and reminder systems, and educational programs that help patients make more of the day-to-day medical management decisions.¹¹

Practice Guidelines

Practice guidelines are clinical algorithms that remind clinicians and patients about the timely and effective use of preventive, diagnostic, and treatment strategies.¹² Guidelines help the medical community formalize its thinking about the best approach to a given clinical situation. They can raise practice to the highest standard of quality and enhance both patient outcomes and professional satisfaction. Guidelines distribute the work of staying current across the medical community and avert duplicative and less-effective individual efforts. By standardizing and synchronizing the work of the health care team, guidelines also may reduce the confusion, inefficiency, and errors associated with unnecessary variability.

Demand Management

Most health care decisions are made by patients and their families, not by medical professionals. Therefore, demand management programs have been created to provide decision support to patients.¹³ A typical program consists of a call center where patients can seek advice, either to support their self-management of a problem or to help them access the health care system at the most appropriate site, for example, the emergency department, urgent care center, or doctor's office, and at the right time, for example, immediately, tomorrow morning, or within the next week. Self-help books,¹⁴ proprietary Internet sites, and courses for patients and families are also being developed for this purpose.

Evidence-Based Medicine

One goal of managed care is to avoid providing services with little or no value. This goal has catalyzed the practice of "evidence-based medicine" — the close scrutiny and synthesis of published reports (sometimes using methods of meta-analysis) to assess the effects of interventions on clinical outcomes.¹⁵ Insurers or other payers use such assessments to determine what services will be offered. They usually reserve for themselves the final deci-

sion, thus removing it from physicians and even from integrated provider systems (unless the integrated systems are also insurers). In the case of an unapproved treatment, the burden of proof is on the physician to justify the service. Included in this scope of activity is the work of technology assessment committees that examine evidence regarding new technologies to see if they are less expensive, less risky, or more effective than conventional treatments.

Provider Contracts and Bylaws

For an integrated system to succeed, there must be mutual and reciprocal mechanisms of accountability between the system and its provider members. The practitioner relinquishes some autonomy in agreeing to abide by the system's procedures and policies, but the agreement standardizes administrative and certain clinical processes. In return, the system provides access to its patients, enhanced resources to improve care, and payments, possibly including a share in any financial success. Contracts articulate these expectations, the means of redress when expectations are not fulfilled, and provisions for renewing, terminating, or modifying the agreement. Depending on the organizational structure of the system, bylaws may stipulate further mechanisms by which the members can hold the organization accountable.

Financial Integration

Some of the most important tools for integrating independent providers into a single system are financial.¹⁶ Typically, the providers in an integrated system seek contracts with payers that allow them to take some or all of the risk for the care of a defined population. In global risk contracts, the system receives a predetermined payment (capitation) in return for providing all the services needed by the covered population. As an intermediate form of risk sharing, the payer and the integrated system may share the surpluses or losses of actual expenses relative to budgetary targets.

Risk contracting has several important implications. First, by accepting financial responsibility, the integrated system acquires the right to make its own decisions regarding medical management and incentives. Second, the providers in the integrated system become financially interdependent; the fact that each person's behavior influences everyone's compensation is a strong inducement to initiate collaborative planning and systems of personal accountability. Third, the integrated system can design its own approaches for internal financial alignment. For example, some part of everyone's compensation might depend on the overall performance of the system. The specific form of such arrangements will depend on the nature of the organization. Group practices may use salaries and bonuses and individual practice associations may withhold a portion of a practitioner's fees and distribute it at

the end of the year according to individual and organizational performance. If hospitals also participate in the integrated system, the array of options for financial integration is more complex,¹⁷ but the need for alignment is even greater. For example, physicians and hospitals are more likely to collaborate in reducing admissions if the resulting savings are shared than if they accrue entirely to one entity at the expense of the other.

When an integrated system accepts financial risk for a population, it will experience financial results that are a direct result of its own behavior, unaffected by the behavior of providers who are not part of the system. To protect itself from the adverse financial effects of factors beyond its control, such as an unexpectedly large number of complicated cases, the system must also make other arrangements such as obtaining reinsurance to limit financial losses or excluding ("carving out") from the contract those services it cannot provide or control, for example, burn unit admissions or transplants.

Physician Profiling and Incentivization

For individual physicians to exercise their clinical autonomy in a way that is also accountable to the goals and needs of the integrated system and the population it serves, they must have clear expectations and feedback about their own performance. Physician profiling involves collecting data of various types to allow these assessments. The reference standards ("benchmarks") may be the performances of their local peers or more general standards.¹⁸ Incentivization rewards individuals for behaviors that contribute to organizational objectives. Profiling and incentivization can address such diverse behaviors as the adequacy of preventive services, the number of services provided, the cost of services ordered, clinical outcomes, patient satisfaction rates, patient disenrollment rates, the use of out-of-network services, rates of variance from practice guidelines, attendance at educational sessions, and participation on committees.

Sometimes profiling data are used only for feedback to the individual; often, they are used for determining financial incentives or even for determining which practitioners may participate in a managed care plan. Incentives that reward low utilization are more problematic ethically than incentives based on clinical outcomes, quality, satisfaction, and ease of access for patients, particularly if utilization measures are not accompanied by quality indicators.

EDUCATION FOR MANAGED CARE

To succeed in a managed care environment, physicians need to understand how to work as part of integrated systems and to hold simultaneously the perspectives of the population and the individual patient. They need to understand what managed care organizations expect of them and why. The optimal learning opportunity

would consist of supervised experience with each of the approaches described above. Residency programs would serve their trainees well by providing such experiences.

One exercise that can help students or residents understand population-based thinking is to ask them to design a health care plan. This exercise starts with the distribution to small groups of learners of a random assortment of various kinds of beans and pasta representing the various combinations of age, gender, health status, and risk factors in a population. The groups are asked to systematically evaluate the health status and needs of their population using some basic demographic and epidemiologic approaches. They are then given more information about their specific community — its socioeconomic status and the types of problems it faces — and about available services and their costs. Finally, they are given a budget and asked to prioritize the treatments they will provide to their population. Because the small groups will each have a different population, contrasting their approaches will highlight the importance of population-based, epidemiologic, systems thinking to make best use of a fixed budget. This basic, entry-level exercise in health care planning can be completed within an hour or two.

Residents also can design, collect, and disseminate measures of their utilization patterns in their own practices. Depending on the available information systems, they may be able to collect information about admissions, prescribing practices, return visit rates, use of laboratories and imaging studies, productivity, patient satisfaction, or other aspects of their practices. They can also establish performance goals and design incentives to support behavior change. Although financial incentives would not be appropriate, other incentives may be used, such as reduction of on-call nights, other time off, books, medical equipment, or support for travel. The residents' participation in data collection and analysis will bring home in a powerful way the importance of clear, complete, and legible documentation, particularly if incentives are at stake. A related activity is to share with residents actual measures of their organization's capitated plans and the hypothetical (or perhaps actual) impact of that performance on program resources under a variety of incentive or credentialing scenarios. This exercise will demonstrate the importance of accurate coding on encounter forms, of billing at appropriate levels of service, and of providing only medically necessary services for capitated patients.

Residents must understand the application of principles of evidence-based medicine in establishing clinical policies to maximize outcomes and efficiency. They can learn about the development of practice guidelines either by joining existing institutional efforts or by forming their own teams to develop guidelines for use in their practice. They can also participate in evidence-based medicine seminars in which they conduct focused literature reviews on clinical issues that arise in their practice — for example, the appropriate treatment for acute sinusitis or the use of routine urine cultures for diabetics. What may

begin as an educational seminar can become a very useful and productive source of practice guidelines that are likely to have the acceptance of all participants in the seminar.

Similar educational benefits may derive from residents' participation in continuous quality improvement programs within their institutions. They will observe firsthand the interdependence of the various members of the health care team and realize that the past medical tradition of absolute autonomy must yield to collaboration and teamwork. They can learn to think in a customer-focused manner by gathering customer satisfaction data and using them to make improvements in the care process. By making follow-up telephone calls to learn why patients left their practice, residents can become attuned to patient concerns and understand the role they can play in addressing the causes of patient disenrollment.

In addition to the discrete activities described above, residents can learn about managed care principles during the day-to-day operations of their clinic. There are teachable moments related to almost every patient encounter—opportunities to explore the population and health system implications of each medical decision. Modeling by the faculty is crucial, but this requires that faculty members have cultivated their own skills and knowledge. Faculty development programs may be needed, particularly if the faculty have been relatively insulated from the business aspects of practice.

CONCLUSIONS

We have examined in detail the most fundamental yet obscure theme in the managed care revolution: the shift from individual providers to integrated health care systems as the basic unit of health care delivery. We have considered how systems of higher-order complexity have performance capabilities that cannot exist within their component parts. We have looked at several tools that allow individual providers to come together as a higher-order entity, and at several potential learning opportunities to help future providers prepare for their roles in integrated systems.

With a clear understanding that the current turmoil in our health system is actually the birth struggle of a new order of organization, we can now reevaluate the significance of the other two themes: money and control of medical management. The reorganization of health care into integrated systems—the redesign of care processes and facilities and the acquisition of information technology in particular—is very expensive. It is questionable whether existing nonprofit organizations, whose only sources of capital are their slim operating margins, loans, and philanthropic contributions, can raise the needed resources on their own; some will, many will not. Private capital is stepping into the breach, but with expectations of a return on investment (and an adequate share of the governance to make sure this happens). Critics of private

enterprise tend to overlook two important facts: first, private enterprise has been an unparalleled source of innovation and motivation, and second, the market has a tendency toward self-correction (albeit delayed and not uniform). Managing costs by denying care, a strategy that is widely attributed to for-profit managed care and the source of highly visible abuses, may produce short-term profit, but is not a viable long-term strategy. It is likely to result in poor clinical outcomes and low patient and provider satisfaction. The health care organizations that succeed in the long run will be those that achieve functional integration and actually change the process of clinical care.² It remains to be determined whether it is the for-profit or not-for-profit sectors, or a partnership of both, that can best accomplish this change. Meanwhile, one can assess the values, goals, and long-term prospects of a managed care plan by whether it commits significant resources to systems integration and process redesign or only to managing costs.

Similar arguments can be made about the issue of care management. Physicians in the intensely competitive, heavily managed regions of the United States are exhausted and demoralized from the efforts of managed care organizations, both for-profit and nonprofit, to control their activity. Such heavy-handed review methods are the same antiquated methods of piecemeal inspection that the manufacturing sector rejected long ago. More sophisticated approaches encourage learning, facilitate access to information, provide feedback, and establish performance-based incentives, all with the objective of enhancing, not limiting, autonomous decision making. Integrated systems that are committed to the principles of proactive decision support, process redesign, and continuous improvement have the potential to be far more capable, adaptable, and resilient than command-and-control organizations.

It is important to acknowledge that some important problems cannot be solved even by integrated systems—particularly the lack of access to care by the uninsured and chronically ill. Also, for many people, the market responds to the payer rather than to the insured individual, who in many cases has only one plan to choose from. A plan may meet the needs of its healthy subscribers quite well, but serve its chronically ill subscribers, who are much fewer in number, poorly. The self-correction of the market does not occur until a sufficient number of people become sufficiently unhappy. The problems of access will most likely require solutions at the level of government; the problem of insensitivity to the few may also be solved by governmental activity in the form of new regulations, or by more comprehensive measures of health plan quality. The market does seem to be responding to the problem of individual disempowerment: closed panel plans, which have the most restricted choice of providers, are giving way to point-of-service plans, which offer more choice; and gatekeeping, which creates barriers to specialty care by requiring authorization from primary care providers, is beginning to decline.

The present chaos is ripe for Darwinian mechanisms: it seems likely that those systems that have achieved successful integration will be the ones to produce superior results and will ultimately prevail. Already there have been many false starts with considerable anguish along the way. However, from all the chaos can emerge a higher level of organization that can lead to better outcomes for patients and a more satisfying work environment for clinicians. Those of us in general internal medicine and our sister disciplines would do well to focus our attention on the clinical, educational, research, and administrative processes necessary for building integrated health care systems. In so doing, we can help to write the next act in the health care drama, bringing it to a more satisfying resolution.

The authors thank the participants in our three workshops on the physician-organization relationship at the 1997 annual meeting of the Society of General Internal Medicine for sharing their experiences pertaining to managed care organization strategies and their educational innovations, many of which are described here.

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