Introduction of Dr Denton by Richard P. Anderson, MD

So you already have a clinical database. Perhaps you have been maintaining one for years. Do you sometimes think, as I do, that you should be getting more out of it for the energy and resources that you are expending? Our next speaker, Timothy Denton, MD, is going to tell you how you can do it. Doctor Denton is associate cardiologist in the Division of Cardiothoracic Surgery and Cardiology and director of the Cardiothoracic Surgery Database Program at Cedars-Sinai Medical Center, Los Angeles.

Optimizing Cardiothoracic Surgery Information for a Managed Care Environment

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The rapid change occurring in American healthcare is a direct response to rising costs. Managed care is the fastest growing model that attempts to control escalating costs through limitations in patient choice, the active use of guidelines, and placing providers at risk. Managed care is an information intensive system, and those providers who use information effectively will be at an advantage in the competitive healthcare marketplace. There are five classes of information that providers must collect to be competitive in a managed care environment: patient satisfaction, medical outcomes, continuous quality improvement, quality of the decision, and financial data. Each of these should be actively used in marketing, assuring the quality of patient care, and maintaining financial stability. Although changes in our healthcare system are occurring rapidly, we need to respond to the marketplace to maintain our viability, but as physicians, we have the singular obligation to maintain the supremacy of the individual patient and the physician-patient relationship.

In October 1993 the Clinton Administration presented its plan for a major revision of the United States healthcare system [1]. The proposal called for a restructuring of our present system to one called "managed competition." It was heavily opposed by medical organizations, insurance companies, and large corporations concerned about its potentially high cost. Given the results of the recent midterm elections, it seems to have had little support from the American populace. Thus, Washington continues to play little or no role in the evolution of our healthcare system.

Yet change is rampant in American healthcare. Because of market forces, mostly through concerns of business regarding rising healthcare costs, our healthcare system is being restructured in an analogous fashion to the automobile industry of the 1970s. We now see active competition between hospitals, medical groups, and even individual physicians. There is a move toward market consolidation, with buy-outs, mergers, and cooperative networks. The energy center for this activity is shifting from the providers to the consumers of medical care; consumers are driving our healthcare system.

How providers manage this evolution to a more competitive environment will be key to their survival. For the first time the entire medical profession is being forced to think in a businesslike fashion. The lexicon of medicine is changing such that the terms marketing, quality control, competitive pricing, and customer satisfaction are becoming as common as bypass and angioplasty. A key feature of competitive systems (business or otherwise) is the appropriate and timely use of information. The new healthcare system will be information based, and those providers who optimize their use of information will be the survivors.

We will first discuss the characteristics of managed care and its impact on patients and providers. Thereafter, we review the information necessary to effectively compete in a managed healthcare environment.

Managed Care Definitions and Characteristics

Managed care is not easily defined. There are a wide range of methods to "manage" patient care, but the fundamental characteristics of most managed care systems are as follows [2, 3]:

- Patient incentives to use specific providers
- Provider utilization and quality standards
- Provider financial incentives and risks

First, patients are encouraged to use specific providers. Analogous to a preferred provider organization, patients...
who use select physicians incur lower healthcare costs. If they choose not to use select providers, they must pay additional fees for their care. Other plans (such as health maintenance organizations) further restrict choice by requiring that all care originate from a primary care physician. In this case, the primary care physician is the coordinator of care and originator of all consultations. Thus, the primary care physician becomes the gatekeeper for access to high technology and specialty care.

Second, all providers—from primary care physician to subspecialist—must meet utilization and quality standards as defined by the health plan. The healthcare plan (or even primary care group) may require that all referrals to specialty care be approved by a committee or other designee. This additional layer of bureaucracy is an attempt to maximize appropriate referrals and limit costs by reviewing all consultations and expensive procedures. In addition, the health plan may perform audits of primary care physicians and specialists to determine whether their care meets the defined standards.

Finally, providers are offered the potential for significant financial benefits if they are willing to undertake financial risks. Speciality providers can participate financially in managed care systems at multiple levels. First, a provider may contract with a primary care group (or insurer) to do a particular procedure at a specified price—sometimes referred to as a “carve-out” or “global.” This is different from a typical fee-for-service arrangement in that the provider is not paid per individual service (writing a note, inserting a Swan-Ganz catheter, or performing a thoracentesis) but rather is paid a global fee for an entire procedure including follow-up care (hospital and professional). If the provider can give efficient care at low cost, then the global fee will cover all costs and more, thus the financial incentive. But the financial risk is that a patient may have a complication, or the provider will not be efficient, and the payment will not cover the costs. The extreme example is capitated specialty care, where the physician is paid a small fee every month to provide all specialty services to a large population. To increase risk further, some payers use set-asides or risk pools so that a provider’s income can increase as a function of high patient satisfaction or excellent quality assessments.

From a patient point of view, managed care means significantly lower insurance premiums compared with full indemnity plans, and much less paper work. But it also means that they have fewer choices regarding their healthcare—they have a limited selection of primary care physicians, specialists, and hospitals.

The outlook for the specialty providers is more complex. They must be willing to abide by pathways, protocols, and guidelines, while at the same time taking measurable financial risks for potential financial gains.

To make the complex decisions necessary in a managed care environment and to be a competitive player, systems of care—from single physician to large hospital networks—must have access to relevant data to make the best decisions. This requires a significant investment in data systems and data analysis personnel. A clear focus on what data are necessary will minimize costs and maximize utility.

### The Pentad of Managed Care Information

The five types of information necessary to compete in a managed care system are as follows:

- **Patient satisfaction**
- **Medical outcomes**
- **Continuous quality improvement**
- **Quality of the decision**
- **Financial information**

Providers who implement systems to collect, analyze, and respond to the data will be at an advantage in the new healthcare marketplace.

Patient satisfaction has been identified as one of the most important outcomes of interest to payers [4]. Some insurers measure patient satisfaction without the knowledge of providers, and if there is sufficient patient dissatisfaction, this may affect the ability to maintain a contract, or may directly affect total payments to the provider. Providers can measure and report patient satisfaction informally, but there is an advantage to a formal method for measuring satisfaction so it can be tracked over time, responded to proactively, and used in marketing efforts [5].

Medical outcomes in cardiothoracic surgery have generally focused on surgical mortality because of its ease of measurement and importance in giving informed consent. A few national and state organizations have published surgical mortalities for providers under their purview [6–8], but the move to managed care has broadened the data needs with respect to medical outcomes. Payers are interested in postoperative complications and readmission rates because they tend to increase costs and they reflect the quality of the process of care. For cost and quality reasons, payers are interested in all aspects of medical care, not just the procedure and a few days postoperatively. Thus, providers must also take the broader view of looking at the long term.

The long-term goals of surgical therapy are improvement in survival and quality of life. The assessment of long-term survival and quality of life by published, validated instruments [9] not only gives the provider information regarding their outcomes, but also a marketing advantage. Because the future of healthcare is the care of an entire period of disease (coronary artery disease or valvular heart disease for extended periods), a long-term view of outcomes is imperative.

Continuous quality improvement is a process of gathering outcome data, making a change in the process of care, and reevaluating the outcome to determine if it has improved [10–12]. A formal, prospective data acquisition system makes this process easy to implement. A provider with an active continuous quality improvement program should be able to attain excellent outcomes and, in addition, use the continuous quality improvement process to improve cost-effectiveness. Many payers are re-
Table 1. Example of Capitated Contract

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of covered lives</td>
<td>55,000</td>
</tr>
<tr>
<td>Monthly rate of reimbursement</td>
<td>$0.35 PMPM</td>
</tr>
<tr>
<td>Total monthly reimbursement</td>
<td>$19,250.00</td>
</tr>
<tr>
<td>Total annual reimbursement</td>
<td>$231,000.00</td>
</tr>
<tr>
<td>Number of procedures</td>
<td>62</td>
</tr>
<tr>
<td>Required reimbursement rate</td>
<td>$8,000.00</td>
</tr>
<tr>
<td>Total annual need</td>
<td>$496,000.00</td>
</tr>
<tr>
<td>Shortfall</td>
<td>$265,000.00</td>
</tr>
</tbody>
</table>

PMPM = per member per month.

Table 2. Models of Incremental Estimated Costs for Bypass Operation

<table>
<thead>
<tr>
<th>Preoperative Characteristic</th>
<th>Incremental Cost</th>
<th>Postoperative Complications</th>
<th>Incremental Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVD</td>
<td>$6,381</td>
<td>New dialysis</td>
<td>$66,436</td>
</tr>
<tr>
<td>Nonprivate patient</td>
<td>$5,283</td>
<td>Prolonged intubation</td>
<td>$24,535</td>
</tr>
<tr>
<td>Widow(er)</td>
<td>$4,908</td>
<td>Pneumonia</td>
<td>$20,847</td>
</tr>
<tr>
<td>Non-use of ITA</td>
<td>$4,842</td>
<td>Neurologic</td>
<td>$13,333</td>
</tr>
<tr>
<td>Age (cost/decade)</td>
<td>$1,950</td>
<td>Leg infection</td>
<td>$5,055</td>
</tr>
<tr>
<td>CHF class</td>
<td>$293</td>
<td>SVT</td>
<td>$2,670</td>
</tr>
<tr>
<td>Angina class</td>
<td>$195</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

CHF = congestive heart failure; PVD = peripheral vascular disease; ITA = internal thoracic artery; SVT = supraventricular tachycardia.
tions. New dialysis adds a dramatic increase to cost when it occurs. But the small incremental cost of supraventricular tachycardia, although only $2,670, has a greater impact because it occurs in more than 30% of patients. Using these data, we hope to identify high-cost patients and intervene prospectively to minimize those costs.

Who Needs the Data?

Because of the competitive environment, the medical community can no longer count on a steady stream of patients from their usual referral sources. Successful groups will need to undertake active marketing programs to obtain contracts with large organizations that control many lives. These organizations will not be limited to insurance companies. Other opportunities will include large self-insured corporations [19], business coalitions (groups of corporations), trade unions, retired persons organizations, and even direct patient marketing.

When approaching each of these organizations, different sets of data will be needed. Those with primary financial interest will focus on financial outcomes, pricing, guidelines, protocols of care, and all other measures to reduce costs to a minimum. Self-insured corporations will be interested in the same data, but may focus more on return to work. Others may be more interested in medical outcomes—mortality, morbidity—to choose the “best” care, not necessarily the least expensive. Healthcare organizations with excellent documentable outcomes will have the advantage.

Finally, not only must individual providers address issues of cost and efficiency, providers must cooperate in the development of networks of care to allow economies of scale [20–22]. This new system will be data driven, such that all members of the healthcare team—patients, providers, and payers—will have access to the relevant data needed to make optimal medical and financial decisions.

A Future in Managed Care

In the business world, change is considered an opportunity. As the stewards of healthcare, we have the opportunity to rethink our assumptions regarding the efficient provision of care. There is little doubt that our healthcare system will become more competitive, less expensive, and hopefully, more cost-effective. The objective reality is that market forces will continue to dominate for a time, and government will not play a major role in the restructuring. We can respond appropriately by making a distinction between the market forces affecting reimbursement and the provision of the best medical care to an individual patient. We have an obligation to Hippocratic ideals, such that we must reassert our core philosophy of placing the patient first and maintaining the fundamental importance of the physician-patient relationship.

References