A Method for Defining Value in Healthcare Using Cancer Care as a Model

Thomas W. Feeley, MD, vice president, Medical Operations, and Helen Shafer Fly Distinguished Professor of Anesthesiology, University of Texas MD Anderson Cancer Center, Institute for Cancer Care Excellence; Heidi Albright, MHA, project director, clinical operations, University of Texas MD Anderson Cancer Center, Institute for Cancer Care Excellence; Ronald Walters, MD, MBA, associate vice president, Medical Operations and Informatics, and professor, Breast Medical Oncology, University of Texas MD Anderson Cancer Center, Institute for Cancer Care Excellence; and Thomas W. Burke, MD, executive vice president and physician-in-chief and professor, Gynecological Oncology, University of Texas MD Anderson Cancer Center, Institute for Cancer Care Excellence

EXECUTIVE SUMMARY

Value-based healthcare delivery is being discussed in a variety of healthcare forums. This concept is of great importance in the reform of the US healthcare delivery system. Defining and applying the principles of value-based competition in healthcare delivery models will permit future evaluation of various delivery applications. However, there are relatively few examples of how to apply these principles to an existing care delivery system. In this article, we describe an approach for assessing the value created when treating cancer patients in a multidisciplinary care setting within a comprehensive cancer center. We describe the analysis of a multidisciplinary care center that treats head and neck cancers, and we attempt to examine how this center integrates with Porter and Teisberg’s (2006) concept of value-based competition based on the results analysis. Using the relationship between outcomes and costs as the definition of value, we developed a methodology to analyze proposed outcomes for a population of patients treated using a multidisciplinary approach, and we matched those outcomes to the costs of the care provided. We present this work as a model for defining value for a subset of patients undergoing active treatment. The method can be applied not only to head and neck treatments, but to other modalities as well. Public reporting of this type of data for a variety of conditions can lead to improved competition in the healthcare marketplace and, as a result, improve outcomes and decrease health expenditures.

For more information on the concepts in this article, please contact Dr. Feeley at tfeeley@mdanderson.org.
INTRODUCTION
The healthcare delivery system in the United States has reached a critical turning point. Following decades of scientific and clinical innovations, we have developed a system that can provide some of the finest healthcare in the world, but a number of obvious deficiencies must be addressed. The costs of delivering care are too high and are rising at an unacceptable rate (Lee, Berenson, and Tooker 2010). Currently, US health expenditures represent approximately 17 percent of our gross national product (GNP), with projections reaching over 20 percent of GNP in the not-so-distant future. As a nation, we represent the world’s highest per capita spending on healthcare, at $7,290 per person per year, exceeding the next-highest-spending country by over $1,000 per person per year (Levin-Scherz 2010). Despite this tremendous expenditure, we continually lag behind other developed nations in key health outcomes, such as life expectancy and infant mortality.

Variability in care delivery and payment systems is apparent at many levels. We have created a system in which the variability in access to care for broad segments of our population is unacceptable, due in large part to inequities in our payment system. The problems of the uninsured and underinsured populations further highlight the flaws in our fragmented system. Even for those with access and the ability to pay for care, unacceptable variability exists in the quality, safety, and effectiveness of care (Institute of Medicine 2000, 2001). At the core of the variability problem lies the current healthcare reimbursement system, which rewards providers for the volume and intensity of services provided rather than for quality, safety, effectiveness, or value.

Since the early 1990s, attempts have been made at the national level to reform the healthcare delivery and reimbursement systems, culminating with the passage of the recent healthcare reform bill in March 2010 (Patient Protection and Affordable Care Act 2010). This expansive bill attempts to address the problems of access, quality, and cost control through numerous measures. The most clearly defined measures will decrease but not eliminate the number of uninsured Americans over the next several years. Other aspects of the reform are designed to address quality of care and rising costs, but their capability to fix our system is uncertain.

Throughout the recent healthcare debate, statements were made about the need to improve the value of our healthcare system while improving the value of care for individual patients. The current bill uses the term “value” over 200 times yet never defines the term. In this analysis, we will examine the term value as it applies to healthcare. We use the field of cancer care to demonstrate how the concept can be used in reforms for the future. We specifically endeavored to develop a model that tests Porter and Teisberg’s (2006) value proposition for healthcare that could be applied throughout our cancer center and that others might be able to use to examine value in various healthcare delivery systems.

WHAT IS VALUE?
Merriam-Webster defines value as “a fair return or equivalent in goods, services,
or money for something exchanged; the monetary worth of something; market price; or the relative worth, utility, or importance” (Merriam-Webster 2010). In healthcare delivery, the Agency for Healthcare Research and Quality (2010) refers to improving value by reducing unnecessary costs (waste) and increasing efficiency while maintaining or improving healthcare quality. In Great Britain, where the National Health Service attempts to control costs, the National Institute for Clinical Excellence (NICE) has defined value of treatment as being based on scientific value judgments, including clinical and economic evaluations, and social value judgments, including considerations of efficiency and effectiveness (Rawlins 2004; Rawlins and Culyer 2004).

The Institute of Medicine recently held a symposium on the topic of value in cancer care. The outcome of the symposium was a consensus position outlining the elements that constituted value in the delivery of care to cancer patients. Outcome attributes were first described and included survival, quality of life, adverse events, tumor response, and time to progression.

The second major attribute was cost. Additional attributes included aspects of care delivery, such as access, quality, communication, and social equity, and patient-centered attributes, which included compassion, respect, choice, hope, and opportunity for treatment benefit. Finally, the concept was introduced that value also implies opportunity for innovation and future discovery (Schickendanz 2009).

In 2006, Michael Porter and Elizabeth Teisberg, experts on competition in world markets, published a book entitled Redefining Health Care: Creating Value-Based Competition on Results. The book outlines the application of the business concept of value-based competition to healthcare delivery. The authors reinforce the point that value is not simply code for cost reduction, but means achieving the best possible outcomes as efficiently as possible (Lee 2010). Porter and Teisberg (2006) define value in healthcare as “the health outcome per dollar of cost expended.” In a subsequent paper, they place the responsibility for health reform on physicians and maintain that the purpose of the healthcare system is not to minimize costs, but to deliver value to patients—in other words, to deliver better health per dollar spent (Porter and Teisberg 2007).

THE SEVEN PRINCIPLES OF VALUE-BASED COMPETITION: THE VALUE PROPOSITION

Porter and Teisberg outline seven essentials of value-based competition in healthcare delivery, which, if implemented, can potentially address the major deficiencies in our current system. This concept has frequently been called “the value proposition in healthcare delivery.” The first principle is to make the goal value for patients—not access, equity, volume, convenience, or cost containment.

The second principle is that quality improvement is the key driver of cost containment and value improvement, where quality equals health outcomes. With many diseases, the ultimate outcome of care could be something as broad as survival. However, over time, the quality metrics that have been
developed have focused on the processes of care, because these are relatively simpler to measure.

The third principle states that care delivery should be organized around medical conditions over the full cycle of care. The basic tenet of this principle is that care should be provided at the medical condition level rather than at the traditional medical specialist level. Porter and Teisberg (2006) argue that care providers need to be organized around the patient’s condition in integrated practice units (IPUs).

The fourth principle asserts that provider experience, scale, and learning at the medical condition level drive value improvement. If care is centered on the medical condition, provider experience will increase and outcomes will improve. This aspect of care delivery has been reinforced numerous times with demonstrations that illustrate where high-volume providers often have superior outcomes. However, our current delivery system does not direct patients with certain conditions to those high-volume providers (Gruen et al. 2009).

The fifth principle is that care must be integrated across facilities and geography, rather than duplicating services within stand-alone units. Regionalization of care, especially specialist care, has not been developed extensively in our care delivery system but could serve to eliminate duplicate and redundant services, which would drive down costs of care.

The final two principles are perhaps the most important factors in this model and the ones that represent the greatest deviation from our current delivery and reimbursement system. The sixth principle states that one must measure and report outcomes and costs for every provider for every medical condition. Outcome reporting drives competition to improve results. An outstanding example of this principle comes from the field of in vitro fertilization. When in vitro programs began publically reporting specific outcomes, this process drove progressive improvement in those outcomes over several years (Porter, Rahim, and Tsai 2008). Centers with the highest volume of cases consistently had the best outcomes.

The seventh principle of developing a value-based system is that reimbursement must be aligned with value. Furthermore, innovation needs to be rewarded. Aligning of reimbursement must relate to the treatment provided at the medical condition level and not to individual services provided in an uncoordinated and fragmented manner. Redesigning a payment system around the medical condition involves a process often referred to as “bundling.” Bundled payments reimburse for cycles of care for medical conditions, not discrete services or short episodes. They can also represent time-based reimbursements for managing chronic conditions and reimbursements for defined prevention, screening, and wellness or health maintenance services. Porter and Teisberg (2007) stress that providers and health plans must be proactive in driving new reimbursement models and not wait for government intervention.

Nevertheless, not all healthcare delivery experts agree that the Porter and Teisberg model is a practical solution to our delivery system problems. Reinhardt (2006) has expressed concern that the
definitions of medical conditions and other aspects of the seven principles are oversimplifications of healthcare delivery and do not accurately represent the world of healthcare. For that reason, these theories need to be critically evaluated in clinical care environments.

**TESTING THE VALUE PROPOSITION IN THE DELIVERY OF CANCER CARE**

**MD Anderson as a Value-Based Delivery Model**

Porter and Teisberg (2006) cite several examples of prominent US healthcare organizations where providers maintain attributes of a value-based system. Unfortunately, the literature includes relatively few actual descriptions of applications of this model of delivery. Porter, Rahim, and Tsai (2008) describe the Cleveland Clinic’s experience with an in-vitro fertilization clinic, demonstrating that reporting outcomes drove competition to improve outcomes. Porter, Baron and Wang (2009) describe a breast cancer program in Taiwan that used the Porter and Teisberg model to improve outcomes over the national average and develop a bundled pay-for-performance reimbursement program aligned with the model. In cancer care, the University of Texas MD Anderson Cancer Center (MD Anderson) was identified as one of the few specialty centers using key elements of a value-based system. In 2008, in a joint effort with the Harvard Business School, we conducted an analysis of the care provided in MD Anderson’s Head and Neck Center as a case study of a value-based system (Porter and Jain 2008). The study focused on the multidisciplinary care center concept of our clinic system, in which patients are treated at the medical condition level. These clinics are staffed by a variety of medical specialists focused on the patient’s disease rather than on the form of treatment being offered.

The case study offered our organization an opportunity to collaborate with Michael Porter and the Harvard Business School to critically examine the value proposition as it relates to cancer care delivery. MD Anderson has many of the attributes described in Porter and Teisberg’s seven principles (see Exhibit 1). Aligning with their first principle, we make value a goal for our care delivery. We have provided research-driven patient care for over 60 years in Texas to individuals from all parts of the world who have cancer. The opportunity for our patients to participate in leading clinical trials distinguishes our care and drives our value emphasis.

The second principle focuses on quality improvement. MD Anderson has developed one of the largest quality improvement organizations focused on safety, improvement, measurement, and quality improvement education in the nation. The team now includes more than 40 individuals with a range of skills including safety analysis, data management, industrial engineering, and education. The growth of the program was accomplished by reinvesting clinical margin in the development of a performance improvement team.

The third principle suggests organization around the medical condition, which is as an area MD Anderson has pioneered since the early 1990s. MD
Anderson care is organized around 14 multidisciplinary care centers that provide care at the disease level. Our Breast Center, Brain and Spine Center, Thoracic Center, and Gynecology Center bring specialists from surgical oncology, medical oncology, and radiation oncology and disease-focused pathologists and radiologists together to plan and carry out treatments agreed on by the multidisciplinary team. This model of care is an excellent example of the IPUs Porter and Teisberg (2006) describe as essential in value-based care delivery.

The fourth principle relates to provider experience that is gained on a daily basis through continued growth. We have experienced this volume growth over four years, at rates ranging from 7 to 36 percent depending on the indicator used (see Exhibit 2). Large patient volumes in all the types of cancers we treat translates to increased individual and collective provider experience, resulting in optimal outcomes, especially in high-technology areas of care,

<table>
<thead>
<tr>
<th>E X H I B I T  1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comparison of Porter and Teisberg’s (2006) Value Principles with MD Anderson’s Structure and Function</strong></td>
</tr>
<tr>
<td><strong>Value-Based Competition Principles</strong></td>
</tr>
<tr>
<td>Set the goal as value for patients</td>
</tr>
<tr>
<td>Quality improvement is the key driver of cost containment and value improvement</td>
</tr>
<tr>
<td>Care delivery should be organized around medical conditions over the full cycle of care</td>
</tr>
<tr>
<td>Provider experience, scale, and learning at the medical condition level drive value improvement</td>
</tr>
<tr>
<td>Integrate care across facilities and geography</td>
</tr>
<tr>
<td>Measure and report outcomes and costs for every provider for every medical condition</td>
</tr>
<tr>
<td>Align reimbursement with value and reward innovation</td>
</tr>
</tbody>
</table>
such as complex surgery for pancreatic and esophageal cancer. This was also seen in the study by Porter, Rahim, and Tsai (2008). The relationship between volume and outcome in surgical oncology practice is well described. However, the actual factors responsible for those improved outcomes vary by tumor type. For example, with some tumors, the skill of the surgeon is a key factor, while with others the skill of the postoperative nursing care or other characteristics of the multidisciplinary team caring for the patient have a greater effect on the outcome.

Principle 5 involves expanding outcome improvement geographically. MD Anderson is accomplishing this goal through the development of regional satellite centers called affiliates that use the MD Anderson–approved clinical practice algorithms of care and the application of evidence-based order sets for clinical treatment planning.

Outcome reporting, the sixth principle, is difficult for most cancer centers. To drive improvement, an organization must have reasonable comparative data readily available to assist patients and healthcare payers in decision making. While we have collected stage-based survival outcomes through our tumor registry continuously since 1944, it remains difficult to represent these outcomes in an understandable manner for patients, given that appropriate comparative information is difficult to find. Nevertheless, tumor registry data and initiatives designed to examine other key aspects of cancer outcomes represent an opportunity for all cancer treatment facilities. Here, the opportunity is to define specifically, by tumor type, what outcomes are most important to patients. Clearly, patients with cancer want to be survivors, and that can be measured by duration of survival. However, other outcomes related to quality of life need to be defined and measured. For example, survival is an important outcome for patients with larynx cancer, as is the preservation of the ability to speak. For breast cancer survivors, the cosmetic result

### Exhibit 2

**Growth in MD Anderson Clinical Activity 2005–2009**

<table>
<thead>
<tr>
<th>Clinical Activity</th>
<th>FY05</th>
<th>FY09</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital admissions</td>
<td>20,728</td>
<td>23,277</td>
<td>12%</td>
</tr>
<tr>
<td>Hospital patient days</td>
<td>153,615</td>
<td>174,740</td>
<td>14%</td>
</tr>
<tr>
<td>Average number of hospital beds</td>
<td>475</td>
<td>507</td>
<td>7%</td>
</tr>
<tr>
<td>Outpatient clinic visits, treatments, procedures</td>
<td>831,025</td>
<td>1,055,092</td>
<td>27%</td>
</tr>
<tr>
<td>Pathology/laboratory medicine procedures</td>
<td>7,465,264</td>
<td>10,112,244</td>
<td>36%</td>
</tr>
<tr>
<td>Diagnostic imaging procedures</td>
<td>384,872</td>
<td>519,150</td>
<td>35%</td>
</tr>
<tr>
<td>Surgery hours</td>
<td>50,442</td>
<td>62,587</td>
<td>24%</td>
</tr>
<tr>
<td>Total active clinical research protocols</td>
<td>951</td>
<td>1,073</td>
<td>13%</td>
</tr>
</tbody>
</table>
of treatment and hormonal health are important outcomes.

The final principle of realigning reimbursement with quality outcomes and rewarding innovation rather than volume and intensity of services offers an opportunity for the cancer community to examine bundled pricing for episodes of care. MD Anderson has been exploring different payment mechanisms to prepare for changes in reimbursement structures.

**EXAMINING VALUE IN THE TREATMENT OF HEAD AND NECK CANCER**

To begin the development of methodology to examine value in our multidisciplinary care centers, we chose to evaluate the care provided in a single center. This would allow us to develop methods for gathering appropriate data and a frame of reference for studying other centers in our institution with respect to defining and reporting our outcomes and, subsequently, defining and reporting our costs. Additionally, this information could serve as a model for others wishing to examine value in their own care delivery settings.

We chose the Head and Neck Center because we had previously examined this center for the Harvard Business School case study (Porter and Jain 2008) and, more important, because we had strong faculty advocates for supporting value-based care in the center. We studied three common head and neck cancers: laryngeal cancer, oropharyngeal cancer, and cancer of the oral cavity. We selected a cohort of patients who were treated at MD Anderson between 1997 and 2006 to ensure that we had data on time from completion of treatment that would be sufficient to examine survival as an outcome. We only chose patients referred to as “analytic cases” in our tumor registry because they represented persons who had not previously been diagnosed with this cancer and who had received all treatment at MD Anderson, which is important for cost analysis.

**Outcome Measurement**

The first task was to identify outcomes measures in addition to survival that were important in the treatment of these diseases. Information provided by our tumor specialists indicated that the ability to speak and the ability to swallow were the two essential secondary outcomes to head and neck cancer patients (Lefebvre, Ang, and the Larynx Preservation Consensus Panel, 2009). These three outcomes formed the basis for what Porter and Teisberg (2006) describe as Tier 1 outcomes—survival and degree of recovery based on major quality of life indicators. We then selected several care process outcomes that addressed whether multidisciplinary care was delivered and the time from diagnosis to completion of treatment. In head and neck cancer, outcomes improve when all treatment is completed within the first 100 days of treatment start. Thus, we examined the time to evaluation and completion of treatment as important process metrics. These time-to-complete-treatment metrics represent important efficiency of care measures in cancer. We recognized that this would be a simple descriptive study since comparative metrics for these outcomes were not available in large databases.
We received approval from our institutional review board to carry out the study and proceeded to analyze the outcomes of care for 2,467 patients. We obtained survival outcomes at two and five years following diagnosis and staging information from our tumor registry. The abilities to speak and swallow were determined by a retrospective chart review of each patient. These outcomes were defined by the absence of a tracheostomy and the absence of a feeding tube, both standard indicators in the head and neck surgery community for the preservation of these functions. Despite the fact that we have an electronic medical record, this type of information is not easily searchable or extracted from any database or report; therefore, a trained data abstractor examined each case manually. This same scenario applied to gathering data on each of the process metrics. This labor-intensive effort revealed and reinforced some of the defects in many electronic health records, which may capture data effectively at a user interface level but do not allow reporting of this data in a usable format. The manual chart abstraction process is difficult, and it supports the argument for needed improvements in electronic health records if they are to be helpful in reforming our healthcare delivery system.

For all the diseases studied, over 75 percent of patients were alive at two years following treatment. In the entire cohort, over 90 percent of patients were speaking and swallowing normally at one year. Of the process metrics, we found that all patients were evaluated by the multidisciplinary planning committee and completed treatment within 100 days.

**Measuring Costs: The Road to Episode-Based Payments**

**Defining Costs**
In any discussion regarding the cost of healthcare, it is extremely important to define whose costs are being analyzed. One could measure a variety of costs, and they all vary depending on who bears the costs described. One category is the cost to the healthcare provider. In general, healthcare provider organizations have knowledge about their global costs but have difficulty ascribing costs to the disease level, because providers track what they charge for procedures, not actual costs for procedures. Charges exist for various supply items and are combined with facility charges for technical services allocated for either episode use (e.g., room charges) or on a time basis (e.g., operating rooms). Overhead costs are indirect allocations and include a variety of support functions, such as research and education in academic practice environments. Professional fees are usually managed and billed separately and are broken down by cognitive services (evaluation and management codes) and procedure charges. Time-based services are rare in medical professional billing, with the exceptions of anesthesiology and some aspects of critical care medicine.

**Determining Costs**
The ideal system for determining actual costs incurred by patients for certain conditions would measure the cost for each patient over the entire care cycle. In other words, the system would be based on the patient’s condition and not the
services received. The cost structure should reflect the costs of the resources utilized. The optimal way to determine cost is to capture the actual time spent by providers and other support services to provide treatment. This type of time-driven, activity-based costing is used in many industries (Kaplan and Anderson 2007). In healthcare, this form of cost accounting is not widespread due to lack of resources, cost of implementation, and complexity of reimbursement situations. As a result, the healthcare industry tends to track charges and not costs with the understanding that cost shifting is considerable.

MD Anderson has developed a cost accounting system in an effort to determine the costs for treating certain conditions. Three primary drivers were the impetus for this initiative. The first driver reflects the need to ensure that managed care contracts cover the costs of treating patients. Second, we require similar estimates to make informed business decisions regarding the product lines offered. Finally, because many international patients pay for their care out of pocket, it is essential that we provide accurate estimates of the cost of treatment. While we are currently not using a time-driven, activity-based costing system, due to the nature of cancer treatment we can determine the professional and technical costs (including all indirect allocations) for individual patients for an episode of care. Our cost accounting methodology uses charge data plus allocations of indirect costs. Episodes of care were divided into a pretreatment phase, a treatment phase, and a posttreatment phase. We found that for all three diseases studied, 89 percent of costs were incurred in the first year of treatment. Average costs within the first year of treatment were greater with advanced tumor stage at presentation, and most of the costs were tightly clustered. Patients who had costs above the 75th percentile range were those who had significant complications of care. Not surprisingly, the majority of the costs were incurred during the treatment period.

**DISCUSSION**

We describe a method of testing the Porter and Teisberg (2007) value proposition in a specific care setting. We employ this theoretical framework as a means to examine outcomes and costs of care. Individual providers will need to assess how well their care provides value by determining the appropriate outcomes to measure and how to designed to reduce healthcare costs, bundling payments for episodes of care had the greatest potential (Hussey et al. 2009).

**Costs in MD Anderson’s Pilot Study**

In our pilot study of 2,467 patients with head and neck cancer, we employed the described cost accounting methodology to each patient, then analyzed the costs based on the disease category and stage of disease. Our costs included all physician costs, including salary and benefits (MD Anderson utilizes a full employment model for 100 percent of our physicians), all direct costs associated with the treatment, and allocated indirect costs. Episodes of care were divided into a pretreatment phase, a treatment phase, and a posttreatment phase. We found that for all three diseases studied, 89 percent of costs were incurred in the first year of treatment. Average costs within the first year of treatment were greater with advanced tumor stage at presentation, and most of the costs were tightly clustered. Patients who had costs above the 75th percentile range were those who had significant complications of care. Not surprisingly, the majority of the costs were incurred during the treatment period.
determine costs. Only as our healthcare delivery system becomes more transparent will we see whether the value proposition is correct. This article presents our method and defines and measures outcomes and costs in a set of three specific head and neck cancers.

In carrying out this study, we found that it was important to engage providers to learn what outcomes were important for given conditions. In most cancers, survival is the most important outcome. However, other outcome measures will likely differ from cancer to cancer. While tumor registries and other registries are excellent sources of survival data for patients receiving primary treatment in a given organization, methods of obtaining data about other outcomes is more difficult. We lacked databases containing nonsurvival outcome indicators and had to obtain these from chart abstraction of the electronic medical record. It is also possible that critical outcomes information is located in databases that are not integrated into registries or medical records. Therefore, it is imperative that, in the future, electronic medical records integrate all repositories of information and have the ability to extract key data for analysis.

We also learned that our current payment system does not allow administrators to easily determine true costs of care at the disease treatment level. Additional work needs to be done to access this essential information as we move away from our current payment system toward episode-based payment mechanisms. Administrators must be familiar with their own cost structures and prospectively design systems to permit an in-depth understanding of their true costs of care for specific conditions.

Although some providers publish information about cost and others publish information about outcomes, these pieces of information are rarely found in a single source. We have demonstrated that it is possible to use existing systems and registries to develop, for a given condition, outcome measures of importance to patients and providers. Once more sophisticated methods for obtaining data are developed, it will be vital for healthcare providers to publicly report these outcome measures. Such public reporting has already been shown to improve outcomes (Porter et al. 2008), and it is reasonable that such transparency might also result in greater efficiency and, thus, lower costs. Similarly, it will be necessary to determine, using modifications of time-driven activity-based cost accounting, whether the methods we have described here provide accurate estimates of true costs before we report costs. Consumers (our patients and healthcare payers) can then use the market forces of competition to seek the best outcome at a reasonable cost. Competition should drive providers to improve outcomes and limit costs. Our model can be used to evaluate the value proposition in the treatment of other cancers with the understanding that outcomes beyond survival vary with disease and patient preference. The recently passed healthcare reform bill contains a provision mandating that by 2014 the 11 prospective payment system (PPS) exempt cancer centers must publicly report metrics of outcomes, costs, processes of care, structure, efficiency, and patients’ perceptions of care (Patient Protection and Affordable
Care Act 2010; Medpac 1999). Competition among these centers will likely alter outcomes and costs. Similar mandatory reporting of health outcomes and costs will likely follow in a variety of pilot programs outlined in the legislation. Healthcare organizations may wish to use models such as ours to develop profiles of outcomes and costs that are meaningful to consumers of healthcare.

In the broader context of healthcare management, administrators must understand the components of value and how to develop methods within their own organizations for testing the value of the care provided. In defining outcomes, it is essential to learn what providers and patients see as most important and to devise methods for obtaining data. The challenge on the cost side is to develop methods for obtaining accurate information about the costs of delivering care to patients for the specific condition being treated.

**Conclusion**

Value in healthcare can be described as the balance between outcomes and costs. We sought to outline a way to assess value in a delivery system using an analysis of outcomes and costs. We described the development of the model in the treatment of three common head and neck cancers in a multidisciplinary treatment setting. Survival is the primary health outcome, followed by quality of life and process of care indicators. Each of these outcomes needs to be determined at the medical condition level. Costs of care need to be carefully examined at the equivalent level to provide meaningful information to consumers and payers of healthcare services. In the future, competition and market forces will likely be major drivers in changing our healthcare delivery system.

**References**


The authors of this article provide unique insight into the definition and assessment of value-based healthcare delivery using the example of a multidisciplinary cancer care setting. They approach value-based competition as a potential avenue to improving clinical outcomes and decreasing overall healthcare costs. This study is valid, particularly as healthcare entities begin looking at ways of controlling the rise in healthcare expenses while maintaining the highest levels of patient care.

The authors began the article by discussing the variability of care in our current healthcare delivery system. It is easy to accept that care is not always delivered equitably in terms of quality, safety, or effectiveness. By understanding that variability exists, we can come to accept the author’s notion of value-driven healthcare through outcome and cost analysis.

The definition of value-based competition through the use of the Porter and Teisberg value proposition for healthcare and its application in a cancer center aimed at assigning a compromise between cost reduction and the best possible clinical outcomes. As is true in the business world, healthcare can achieve best clinical quality
outcomes in a cost-effective manner. Not only that, it seems more than plausible to assume that the healthcare industry can take on a competitive economic model based on value-based competition.

The authors reviewed the seven principles of Porter and Teisberg’s value-based competition in healthcare delivery and immediately applied them to a practical example in an MD Anderson Head and Neck Cancer Center multidisciplinary clinic model. The benefits of looking at this model in this particular clinic setting come from the multimodality approach to care that is required for this particular medical condition. The authors show how cancer care delivery for head and neck patients at MD Anderson supports the principles of value-based care. The crossover not only makes sense, it also makes me more of a believer in multidisciplinary cancer care models as the best modality for cancer treatment.

MD Anderson, the leading cancer center in the nation, found the outcome-based benefits of applying these principles to their cancer care delivery. The authors show these results in the outcomes portion of the article, measuring not only survival data but also various quality-of-life indicators. Additionally, the authors attempt to measure the costs of the care delivery by use of charges, overhead, and professional fees.

In my opinion, the assumption of cost reduction in this value-based care model could use additional discussion and research, particularly because this method of accounting is rarely used in healthcare. Nevertheless, I am swayed by the authors’ argument that quality of care is greater for patients receiving care in a multidisciplinary setting than those obtaining care in more fragmented systems. And, even though the approach to cost accounting as a means of measuring the financial value seems difficult to digest in this article, their overall concept seems justified. If followed further, this model could provide the basis for competitive driven, value-based healthcare delivery.