The Clinical Application of Outcomes Assessment

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To my family, Brigid, Adam, Rachel, and Abigail.
Without your love, patience, and understanding,
this project would still only be a dream.

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Preface

In the mid-1980s, I found myself frustrated with the challenge of tracking patient progress in the care I provided. Typically, patients appreciated the efforts provided through treatment but were not very helpful when I tried to establish firm endpoints of care, particularly for those with chronic, permanent conditions. I had been exposed to a few outcome assessment tools and found the data derived from these tools quite meaningful, especially when the results were compared to previously completed tools. My interest soon after turned to objective tools that could guide me in a similar manner, but on a more functional level rather than only through subjective measures.

In the late 1980s, I was asked to present a course on the use of outcome assessment tools to a group of health care providers (HCPs) in a postgraduate program. When I performed a literature search, it became apparent that while many tools were available, how to implement them into a clinical setting was far from clear. In fact, so many of the tools seemed to gather the same or similar information that it became very confusing as to which were considered "the best" or the "gold standard."

I noticed that many of the studies that introduced a new outcome-gathering tool compared the new tool to previously published and validated instruments. A consistent pattern emerged from the literature review, allowing me to identify what seemed to be considered the "gold standards"—tools that were being used as the standard to which a new tool was compared. In this text, I have tried to relay this information, while realizing full well that the "gold standard" of today may not remain the gold standard in years to come. Therefore, I must caution the reader that a particular instrument may fit much better into a certain type of clinical practice—better, perhaps, than one of the identified "gold standards." In that scenario, I recommend using the instrument(s) that best apply to your needs in your specific clinical setting.

This project was further stimulated by the obvious lack of a resource in which to access various tools that might be applied in a clinical setting. During interviews that I conducted with staff at over 25 rehabilitation facilities throughout the midwestern United States in 1996, it became apparent that few centers were using outcomes assessments with their patient population. When I asked the directors if they would find value in determining baseline functional deficits, implementing the rehabilitation approaches, and then following up with the same functional assessment to determine the success of the program, I received a unanimous affirmative response. No one, however, knew where to find such a protocol, and interest in locating and utilizing this type of program was significant.

In today's increasingly competitive healthcare market, it is often difficult to obtain insurance preauthorization for rehabilitation services. The use of specific protocols to track the changes that occur over time before and after treatment and rehabilitation has proven to be an essential part of securing the economic return for this service. The subjective tools quantify the patient's disability, while the objective tools or tests quantify the patient's functional losses or impairment. Quantifying this information initially allows the HCP to provide third-party payers with information that supports "medical necessity" or the need for the service. In addition, by readministering the same tests, for example, a month later, the successes or failures in remedying the abnormal disabilities and functional impairment can be easily identified and, if available, alternative rehabilitation approaches can be implemented or discharge from the program can be supported.

As a bonus of utilizing objective physical performance tests, specific rehabilitation prescriptions or goals can be identified based on the subnormal test results and the rehabilitation program established can then be tailored specifically to address those deficiencies. When this information is shared with the patient, compliance in performing the rehabilitation protocols is greatly enchanced. In addition, the clinical information gained from the assessment gives the HCP a heightened level of confidence in promoting the rehabilitation concept to both the patient and third-party payers. The preponderance of today's literature shows that rehabilitation of the locomotor system is an essential part of the long-term success of patient management and patient satisfaction. Applying outcomes management to that process benefits the patient, the HCP, and the third-party payer; thus, everyone wins.

This text is divided into five sections, each of which is designed to introduce the HCP to a practical approach to the use of outcome measures and the implementation of outcomes management in a clinical setting. The popular SOAP-note form of reporting is used to divide the text

into sections. Thus, the text begins with an initial introduction and overview of outcomes assessment, followed by a discussion of the outcomes measures in the respective categories of subjective and objective tools. The process of how to apply the tools in the clinical setting is next addressed, followed by the practical aspects of outcomes management. The closing chapter describes how outcomes data can be utilized to enhance patient satisfaction as well as to secure a niche in the managed health care system in the future.

On a personal note, since implementing an outcomes-based model into my practice, I have observed many benefits of this approach. Most notable is my ability to identify *with confidence* endpoints of care. As a result, prompt decision making to change my treatment approach, obtain additional tests or consults, or discharge the patient—sometimes with residuals—occurs on a much more timely manner. Patient education has also been enhanced, because sharing the outcomes data with the patient as a portion of the report of findings puts us both on track with realistic goals and allows for an appreciation of what has transpired as the result of care (ie, what goals have been met). In addition, when submitting records to third-party payers, it is much easier to communicate whether an end of healing or a plateau has been reached; hence, the ability to prove "medical necessity" has been greatly enhanced. Another benefit of outcomes management involves medical–legal enhancement. I have served as an expert witness in many malpractice claims, and those providers who utilized outcomes management were the most successful in proving benefit from care, which usually resulted in a determination of no award and no court appearance. In other words, it was much easier to defend the actions of the HCP when outcomes management was followed.

My objective in compiling the information in this text is to offer to all HCPs a singular location in which to obtain methods to enhance confidence when making clinical decisions. As presented in the last section of the text, the step after collecting the data—or the "big picture" and goal of outcomes management—is to take the outcomes information and, from it, identify the most efficacious way in which treatment can be implemented. More specifically, for a given diagnosis, outcomes management can facilitate a determination of the "value" (sometimes expressed as the ratio between cost divided by the number of visits *and* patient satisfaction, equaling outcome) of a treatment protocol. Using this approach, a "best-practice" assessment can be performed and the information disseminated to HCPs, which can then stimulate the HCP to implement the new approach into practice. To this end, however, data must be collected in order to fulfill the ultimate goal of establishing best-practice protocols. Therefore, a second major focus of this text is to provide the HCP with the necessary tools for data collection. Once collected, data can be pooled, decisions can be derived from the results, and improvements can be made in how we approach patient care.

Steven G. Yeomans

Acknowledgments

In my 20 years of practice, I have had the great fortune to have been guided by many gifted and talented people. In this educational journey, my first and finest educational experience has been with my father, a man who provided me with 15 years of guidance and from whom I still learn; a man who continues to be a reassuring source of information. He combines the skill of a great manual practitioner with the wisdom that only his 50 years of practice experience could teach. Since my initial exposure to manipulation at the age of 14, I have continued to utilize some of the key concepts my father taught me at that time. I have also had the honor to learn from as well as lecture with Dr Joseph Janse, who was president of National College at the time of my attendance in the late 1970s. This chiropractic father and pioneer taught me to extend myself to the fullest and to pass nothing by. My appreciation and deepest respect next turns to Dr Dennis Skogsbergh, who guided me during my orthopedic residency. The growth and maturation that resulted during this period made me aware of how little I truly know, opening many doors to continue the never-ending process of investigation. I owe my formal exposure to rehabilitation concepts to perhaps the greatest catalyst of self-motivation I have known, Dr Craig Liebenson, who continues to prod me to further my love of research and who was instrumental in making this project a reality. During professionally based learning experiences in France, the People's Republic of China, and the Czech Republic, I have been further humbled by the great healers and health facilitators with whom I have come in contact. In part, these individuals have included Vladimir Janda, MD, Chief of the Department of Rehabilitation Medicine in Prague, and Karel Lewitt, MD, DSc, Professor, Charles University, Prague, whose invaluable information will forever be a significant part of my daily practice. Perhaps most importantly, my deepest and most sincere thanks go to all of my colleagues who gave of their valuable time to contribute to this project. Without their participation, this text would not have become a reality. I also want to recognize the chapter reviewers who offered their perspective and guidance. This book also would never have been possible without the support, encouragement, and trust of my editors at Appleton & Lange, especially Lin Marshall, who originally conceived this entire project. I also wish to thank my righthand woman, Elena Mauceri, for the many hours spent making this text readable, and Sharon Rounds, for her perseverance in locating authors and publishers while securing the many permissions that were needed to complete this practical guide.

Foreword

The priests of Asklepios took an oath to put their patients' needs before their own and provide the best recommendations to their patients and colleagues. They did so to avoid the fate of Asklepios, slain by Zeus for becoming greedy and presumptuous. This became the basis for the Hippocratic oath, which physicians today take to protect themselves from the wrath of society or the gods in the event of bad results. The present-day oath is defined further by the 1910 medical report of Abraham Flexner, which urged that medical recommendations be based upon science rather than a "mysterious process." Both of these historical issues still define the modern health care provider (HCP) and his or her link to being protected by being a good Samaritan.

Unfortunately, today's professional faces a great challenge to balance the many aspects of what is considered appropriate care. The HCP must provide care that enhances the patient's self-reliance, while maintaining quality in a cost-conscious way. This dual goal not only opens the door but makes imperative the need for evidence-based practice to become a reality. Health care delivery and financing, not to mention the expectations of the HCP by both patients and health purchasers, seem to be in an overwhelming, continuous state of flux. As the administrative side of practice requires more resources than ever before, the HCP sees reimbursement shrinking. Consumers demand the latest and greatest in care. HCPs desire to be as accurate as possible in diagnosis while anxiety over professional liability can often be at odds with the current state of the literature, payer policies, or government regulation.

Traditionally, HCPs have relied upon assumption-based science, which provides so-called "objective" indicators of physiology and function, only to learn that many of these tests and examination findings have limited value, are not reproducible, and at times even fail to accomplish what is expected. Our understanding is further complicated by new, more expensive medical technologies that are evolving at breakneck speed, based on either intuitive thinking or assumptions that require great leaps of faith to be applicable to our patients. According to our oath, however, we must continue to try to guard against the possibility that our fascination with technology will lead us to further mysterious processes.

Only outcomes management can provide particular attention to patient response in innovative and meaningful ways. Paying attention to a patient's health status, changes in his or her functional ability and physiological indicators, as well as the patient's satisfaction, are becoming second nature to being a modern professional. However, in the state of today's health care system, it can be difficult to systematically balance all of these components. A reasonable use of outcomes assessment appears to be the only way to live within our oath and the expectations of our patients and society.

Outcomes can provide needed tools to more effectively focus patients on meaningful treatment goals. Moreover, outcomes tracking can be integral to assuring the quality and relevance of the work we do with our patients. Outcomes management is essentially a toolbox that helps HCPs focus on what is important to the patient's life, rather than just the indirect clinical indicators we have been trained to rely upon for making many of our treatment decisions.

I hope you will find this book helpful in your professional practice. A section on pain-driven (self-report) outcomes is complemented by a section on provider-driven (including examination) outcomes, and pulled together with a section on applying outcomes management in the real world of practice. This book is timely and brings the issue of outcomes management into focus within a single resource that has utility for any HCP who works with musculoskeletal disorders.

The information comes from a multidisciplinary cast of contributors who have been developing outcomes management in real-world situations. There are clinical, academic, and policy perspectives to consider, and while scholarly, the book remains relevant and practical. Its principal aim is to help newcomer and experienced HCP alike to enhance clinical efficiency. There is an emphasis on simple and economic tracking mechanisms, with the goal of returning patients to self-reliance as quickly as possible (something that is important to both patients and "the system" in general) being underscored.

Although outcomes management has a learning curve, it is not a steep one. I think you will find this book a resource that helps ease the transition from business-as-usual

Contents

SECTION

I

Outcomes Assessment Overview

This first section serves as an introduction to the concepts of outcomes assessment (OA) and outcomes management (OM). The objective of this section is to lay the foundation necessary to facilitate the reader's understanding and appreciation of terminology commonly utilized when addressing the subject of OM. The first chapter discusses the utility of OA and brings into perspective the concepts surrounding the reasons why OA is important. The second and third chapters address terminology commonly utilized in outcomes-oriented literature, which will help the reader more fully appreciate the information being reviewed. This section concludes with Chapter 4, which offers a practical classification system for categorizing the various outcome tools. This classification approach also serves as the foundation for the next several sections.

CHAPTER 1

Why Outcomes? Why Now?

DANIEL T. HANSEN, SILVANO MIOR, & ROBERT D. MOOTZ

INTRODUCTION

Consumerism is in the midst of change all over the world. At the heart of that change is the new relationship between the "consumer" and the supplier. Some observers swiftly reduce this phenomenon to the basic theories of economics, such as supply and demand. But even economists and trend analysts are quick to remind us that the more important factors driving this change have to do with the recognition of, and response to, customer needs and expectations. Competition in the manufacturing and service industries focuses on this very issue. Automobiles, airplanes, homes, furniture, entertainment systems, and telecommunication systems are now being built in response to needs and expectations of their ultimate customer, the consumer.

Service companies and manufacturers are touting that they are the industry leaders in "quality" and "customer satisfaction." And how do they know that? Very simply, they measure it. They measure it through telephone surveys or mail-in surveys usually using recognized public survey vendors. They also operationally measure and track customer complaints, flaws in product quality, employee productivity, and system productivity, often referred to as throughput. After collecting data, they compare their results against recognized industry benchmarks and the results of their competition. They then respond to those quality appraisals by improving their internal systems and customer service. Awareness of quality and value in products and services is now at the forefront of the consumer-centered transaction.

The health care industry has also recognized this recent phenomenon of consumerism. A consumer-centered philosophy is what created and continues to drive *outcomes assessment* and *outcomes management* strategies and initiatives in the increasingly competitive health care arena. Gone are the days when physicians would dictate what they felt patients needed for health care without any consumer scrutiny. Gone are the days when we could merely say "this is what our patients need" without actually doing the measurements and displaying the data for public consumption and analysis. And gone are the days when the supplier–customer interaction was just between the physician and the patient.

CLINICAL TIP 1–1
Outcomes Definitions

For the clinical setting to become outcomes-based, it is essential that the following two elements take place:

- **Outcomes Assessment**—collection and recording of information relative to health processes.
- **Outcomes Management**—using information in a way that enhances patient care.

THE ERA OF OUTCOMES ASSESSMENT

There is now a social challenge to the importance of outcomes assessment as the fundamental supportive framework for monitoring an effective clinical practice. **Outcomes in clinical practice provide the mechanism by which the health care provider (HCP), the patient, the public, and the payer are able to assess the end results of care and its effect upon the health of the patient and society.** Assessment of various patient health outcomes is achieved by developing and utilizing tools that measure health status and analyze the effectiveness of specific treatment procedures (Andersson and Weinstein, 1994).

Outcomes assessment has emerged from economic and therapeutic concerns to become a practical reality in today's clinical practice. Federal, state, provincial, and private third-party payers; patients; and consumer organizations are requiring that HCPs provide objective evidence of the outcomes of therapeutic interventions (Hinderer and Hinderer, 1993). To respond to these new times of accountability, processes must be implemented that will allow for the evaluation and assessment of all procedures in the delivery of health care. However, outcome assessment strategies are not merely reactions to the needs of accountability. As this book conveys, outcomes management can be a pro-active tool, enabling the HCP to stay on top of patient progress, identify the needs of a patient, and obtain a larger view of his or her practice that can help the provider remain competitive.

An increasing number of existing diagnostic and treatment procedures are coming under scrutiny, as are nearly all new technologies. This trend seems likely to continue and it can be expected that convincing scientific evidence of validity, reliability, and clinical utility will have to be available. Routine incorporation of clinical and administrative measures of quality will be another expectation of all HCPs. The health care system is positioned and poised to assess the efficiency of individual practitioners and their ability to deliver efficient, cost-effective, quality health care. **To survive, in fact to flourish, in this era of accountability HCPs must be prepared to maintain and be able to provide appropriate documentation and patient records in a clinically efficient and economical manner** (Hansen, 1994).

SO, WHAT HAPPENED AND WHY OUTCOMES?

By the end of the 1960s and well into the 1970s, the health care industry was in a boom era. Medical schools were graduating increasing numbers of physicians, the medical specialties grew at alarming rates, hospitals grew and flourished, and even with all that growth the demand continued to be stronger than the supply. Health insurance payments replaced more and more of the family's health expenditure and at the same time health benefits became part of the worker's earnings. Health care reimbursement was essentially a "retail" transaction (Fig. 1–1). There were no discounts to speak of, nor volume purchasing agreements. Hospitals and physicians got paid what they billed for. The health care industry's sovereignty relied on restricted competition, limited government regulation, and the authority to define and interpret standards of medical care (Enzmann, 1997).

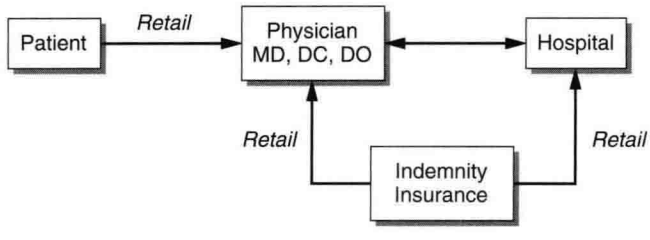

Figure 1–1. Retail health transactions. The protected fee-for-service market in which physicians largely controlled the distribution channel.

(Adapted from Enzmann, 1997. Used with permission.)

Since the mid-1980s there has been increasing study and awareness of what occurred in that era of "retail" health care. Investigators found significant differences in how patients were cared for between communities and even within the same community (eg, Shekelle and Brook, 1991). Expensive technologies found their way into health care communities, resulting in utilization with no clear medical necessity. Additionally, hospital length of stay has been, and continues to be, scrutinized.

The success realized in the decades of the 1970s and 1980s was indeed dangerous for the industry. Increased health care costs resulted from the public's ravenous appetite for health care and the profession's eagerness to feed it. Individuals and families could no longer bear their portion of the costs, which required more involvement by third-party payers. At the same time, health care facilities, institutions, and academic centers of excellence were expanding, requiring increasingly higher levels of capital. Add to that the increasing importance of broad health care coverage for employees to U.S. business and industry, and health care finally was pulled into the capitalistic orbit. Medicine's ability to stand apart from business ended (Enzmann, 1997).

Since the mid-1980s, changes in society, customer expectations, and health care markets have weakened medicine's control of its competition, government regulation, and its "cultural authority" over health care. The key manifestations of this shift are: (1) movement away from "physician-centeredness" to "customer centeredness"; and (2) movement away from "retail" purchase of health care to the "wholesale" systems we have seen in the 1990s (Fig. 1–2). Presently, volume purchasing, discounted prices, true competition in the market, and outside scrutiny over many medical necessity decisions are the norm. Health care futurist Dieter Enzmann defines this "cultural authority" as empowering the medical professions to define truth and fact in medicine. He suggests that cultural authority grants HCPs the right to define illness and health (Enzmann, 1997).

In those old days, training and licensing were sufficient to demonstrate a level of competence that validated physicians' cultural authority over health care. This is no longer true. Validation now requires credible data. And competence in the eyes of the consuming public will be verified by the very same credible data. **With the dawning of the "era of accountability," there are new social mandates directed toward HCPs and health-related facilities. Measurements of quality, satisfaction, efficacy, and effectiveness now serve as essential elements for health care decisions and matters of health policy.**

The interface between the patient/employer and health plan in Figure 1–2 is manifested by agreements and acknowledgments that the health care purchased will be as economical as possible, even as a retail transaction. To meet that need, the health plan warrants that the health care consumed will be "necessary," by eliminating wastes in health resource consumption. The other way the health plan can enhance its value is to purchase health care at discounted or "wholesale" prices. Thus, there is some recognition of quality and cost controls at the customer interfaces on each side of the health plan. Mature health care systems in several markets are working toward eliminating the "middle man" health plan by establishing direct relationships between employer coalitions and accountable HCP networks (including hospitals). Incumbent on this arrangement is the need to assure controls on quality and resource consumption.

Enzmann opines that "the current emphasis on outcome assessment and analysis is not only warranted but crucial for the health professions. Physicians must base their practice on science and evince its impact on outcome. Markedly different practice patterns for the same disease process in various parts of the country weakens competence" (Enzmann, 1997). This professional flaw is now displayed in vivid color maps, such as the Dartmouth Atlas of Health Care in the United States, and in numerous discipline-specific studies (Wennberg and Gittelsohn, 1973; Shekelle and Brook, 1997). Even our language is inconsistent. A recent study revealed 49 spine surgeons used 53 different terms to describe 8 conditions causing low back pain (Fardon et al, 1993). Enzmann further states, "Believe it or not, standardization is to the benefit of the

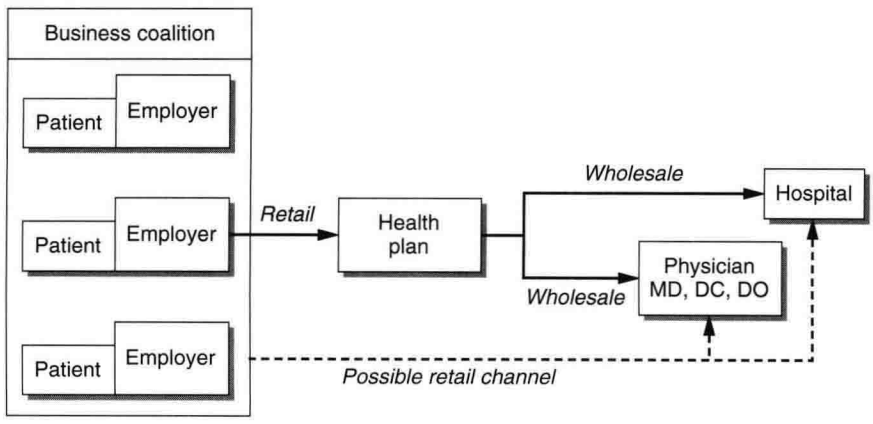

Figure 1–2. Wholesale health transactions. The distribution channel is now controlled by the health plan. The insurance entity now resides between patients and physicians and hospitals. A possible direct relationship exists between physicians or hospitals and business coalitions.

(Adapted from Enzmann, 1997. Used with permission.)

doctors. Rather than interpreting this as cookbook medicine, it should be seen as living up to peer validation of competence. To the extent that medicine is an art, the artistic component will also be measured by outcome. Bad art will not survive" (Enzmann, 1997).

There is growing evidence, very persuasive evidence, that health care has now shifted to a customer-driven market. What is important is what matters to the "customer." Customers in the health transaction can now be patients, employers, governments, managed care organizations, insurance companies, other HCPs, or society as a whole (Enzmann, 1997; Hansen and Vernon, 1997). This evidence also shows that customers want choice and value and they tend to seek data to calculate those equations (Magnusson and Hammonds, 1996; Enzmann, 1997). With advancing information technologies, extensive health-related data can be collected and warehoused to later be collapsed and analyzed. Currently, sophisticated systems that collect and synthesize data in "real time" and then generate useful systems reports are being beta-tested in large and small health care facilities alike. Future competencies of HCPs likely will depend on their ability to work with these new information systems. **The methods of outcomes assessment, even in their currently evolving form may help provide tools HCPs can use to learn to focus on important attributes of care that not only meet accountability demands, but enhance efficiency, quality, and patient satisfaction.**

THE "VALUE" EQUATION

Society assesses value by considering quality and costs. In the past, quality was recognized as minimizing mistakes and excesses. Currently, quality in health care is taking on a multifaceted look ranging from the credentials and competencies of the providers to comparison of clinical behaviors and facility attributes against recognized benchmarks. **Determining the price of health care services now involves complicated formulas that factor cost issues such as provider work, including cognitive value, practice overhead, professional liability, and time spent.** The *value* of the health care transaction is directly proportional to the *quality*, whereas the *cost* (price) has an inverse relationship to value. Currently, quality of health care is best assessed by total outcomes, not just favorable clinical components (Fig. 1–3).

$$\text{Value} = \frac{\text{Quality}}{\text{Cost}}$$

$$\text{Health care value} = \frac{\text{Change in patient health status + satisfaction measure}}{\text{Costs (indirect + direct)}}$$

Figure 1–3. The "value" equation.

Although the formula is simple, it highlights the parameters that define market interactions. Costs of care are allowed to be the driving force in health care market decisions in the absence of outcome measurements. Value requires an outcome measure. For HCPs to regain some power in the marketplace, they must quickly develop and incorporate outcome measures to demonstrate value.

Many segments of health care have generated little in the way of outcome measures. Historically, the pharmaceutical industry has led the way in clinically based outcomes research, and outcomes assessment for certain integrated disease management systems is maturing at a rapid pace. But for care of neuromusculoskeletal conditions such as back pain, few measures have been reported. More can be expected to evolve. This is particularly true in the management of nonmusculoskeletal conditions by alternative and complementary medicine practitioners. The process of outcomes measurement and management may be the single most useful tool to address these issues in a timely manner.

QUALITY MEASURES: PATIENT SATISFACTION AND CLINICAL OUTCOMES

Perhaps the easiest customer-oriented outcome HCPs can collect is *patient satisfaction*. Such measures are relatively straightforward to obtain using survey instruments and have provided reliable data in other service industries (Ware et al, 1978; Coulter et al, 1994). **Measures of this kind are essential to any service industry, but they do not reflect health outcomes.**

The second key measure is *medical or clinical outcome*. It is the other factor in the numerator of the value equation and **is measured as a change in health status after exposure to a health care delivery system.** It can easily be seen by the *value equation*, that the numerator can largely be driven by the customer's perception—not the HCP's. Much of the current application of outcomes assessment is based on patient self-assessment of clinically related measures and assessment of the various domains of patient satisfaction.

Much of health care is aimed at reducing disability, disfigurement, and discomfort. As described in this text, several useful outcome instruments are available to assess and monitor the response of those *three-D's* to the care provided. Some success has been attained on those fronts, yet many benefits have been difficult to measure so their value is not easily gauged or understood. Measurement must be made, however, because only then will society be able to properly allocate resources for this social service. Unmeasurable health benefits run the risk of being lumped together with other unmeasurable social services that suffer fluctuating, politically driven support. Mental health faces this risk (Starr, 1982). There are areas where chiropractors now have increased legitimacy. Results of recent critical study into the appropriateness of spinal manipulation and mobilization have elevated public support of chiropractic management at least for acute and chronic neck and back