

# Measuring ROI in Healthcare

Tools and Techniques  
to Measure the  
Impact and ROI in  
Healthcare Improvement  
Projects and Programs

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# Healthcare Performance Improvement Trends and Issues

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Few topics stir emotions to the extent that healthcare does. The mention of the topic often elicits strong feelings and opinions about costs, quality, access, and a host of other issues. Healthcare touches everyone, and it represents one of the largest expenditures in almost any economy, particularly in the United States. The cost to provide healthcare is growing much faster than the cost of other goods and services. Although the quality of healthcare has improved, safety and consistent quality outcomes still remain a concern. Access to quality healthcare is still an issue (particularly for those individuals who cannot afford it), as is the patient experience, which is rarely addressed appropriately.

Because of its tremendous cost and importance, the healthcare industry has been a target for many types of measurement efforts. Healthcare (the treatment of the health of people) is one of the most highly regulated and measured of all industries. All types of monitoring, recording, and measuring have entered into the healthcare arena, some with success and others not as successful due to the “practice of medicine.” The practice of medicine is not an exact science, but one of discovery. Meanwhile, all types of healthcare performance improvement projects have been undertaken, and unfortunately, many of them have failed to live up to expectations. What is

needed is a systematic approach to improving the healthcare industry, using a proven measurement process that generates credible outcomes.

These important challenges must be addressed for a sustainable healthcare system in the United States and around the world. This opening chapter describes the issues and challenges that the healthcare industry faces and builds the case for major changes in the ways that healthcare improvement projects are initiated, delivered, and evaluated. The following opening stories highlight the dramatic changes that are occurring in healthcare and what healthcare organizations must do to survive in the future. Scripps has spent years preparing for the future and they will be able to address the tremendous changes that will occur. Metropolitan Foundation Hospital more than likely will not be able to survive and will be a candidate for consolidation, merger, or acquisition.

## OPENING STORIES

### **METROPOLITAN FOUNDATION HOSPITAL**

Metropolitan Foundation Hospital has enjoyed a successful 30 years of service in a major metropolitan area. With several locations in the city, the nonprofit healthcare provider is operating at a modest but manageable deficit. Executives are active in their community as part of their corporate social responsibility program. The hospital only accepts patients who do not have health insurance to meet the minimally acceptable legal requirement. Fees charged are based on the cost of services.

As the top executives plan for the future, they see substantial changes in the healthcare area as Medicare switches from *pay for services* to *pay for value* or bundled payments for service (capitation). Commercial payers are also migrating in the same direction. One analysis shows that based on Medicare reimbursement rates, the hospital would have to reduce prices by \$1,200 per average case rate, which obviously would be devastating financially for the healthcare firm.

As the top executives address this issue, they have reviewed the current status with some of the key areas. Although they have collected patient satisfaction data, they have not taken any particular actions because of them. Further, identifying the cost of processes and procedures has not been routine and systematic. Although patient quality and outcomes are loosely tracked, little effort has been made to show related cost of that

patient quality. Efforts to improve physician and nurse engagement have been limited at best. Top executives recognize that too much waste occurs and the staff seems to be inefficient, but they struggle with commitment to make changes. These challenges present executives with some critical obstacles in the future of healthcare.

## SCRIPPS HEALTH

Scripps Health is a not-for-profit, San Diego-based healthcare system that is successful on any dimension. The system, which includes five hospitals and 23 outpatient facilities, treats almost 2 million patients annually. Scripps employs more than 13,000 employees and has been named one of “America’s 100 Best Companies to Work For” every year since 2008. The system also includes clinical research and medical education programs.<sup>1</sup>

Having enjoyed success over the past 80 years, Scripps is a financially sound and stable organization with AA-rated bonds, one of only four healthcare organizations in California to hold this distinction. The “people” part of their process is managed extremely well, enabling Scripps to provide efficient, quality healthcare. Scripps regularly appears on lists of admired organizations, the best places to work, and the best employer for certain groups. Executives place specific emphasis on corporate social responsibility with more than \$370 million contributed to community service and charity care. Scripps is considered among the top providers of healthcare. For example, Scripps was named by Thomson Reuters as one of the Top 10 health systems in the nation for providing high quality, safe and efficient patient care.

The success of Scripps rests on the quality of its leadership and the systems and processes in place to make it an outstanding healthcare delivery organization. Scripps focuses significant efforts on sound financial processes, process improvement projects, and a variety of initiatives to improve the quality of healthcare. Among the processes used by Scripps is the ROI Methodology, a process that shows the success of healthcare improvement projects using six types of data with standards and a process model. At least 20 of Scripps professional team members have achieved the designation of Certified ROI Professional as they continue to conduct ROI studies on a variety of processes to ensure that they are delivering value and quality healthcare and achieving a positive financial outcome.

## **NEW ERA IN HEALTHCARE**

Healthcare reform is front and center in American society, the economy, and political arenas. Costs have grown annually, outpacing general inflation for decades, compounding the healthcare concern. The weight of this cost trend on Medicare has led Congress to pass landmark legislation that may, in fact, be the legacy of the Obama Administration. The legislation addresses coverage for the uninsured, affordable health insurance for small businesses, and coverage for minors and preexisting conditions. This legislation is sweeping in nature and has far-reaching implications.

## **SUBSTANTIAL COST IMPACT**

To pay for expanded coverage for the millions of uninsured Americans, a series of cuts in Medicare reimbursement to hospitals, physicians, and other providers from current levels will be used as “prepayment” for this coverage. The expanded coverage and payments for the uninsured will forestall the current practice of cost shifting by hospitals to commercial carriers to cover the uninsured. Hospitals have used the shifting of the cost of providing uninsured care to commercially insured payers via increased pricing.

Healthcare reform also allows employers and individuals to purchase coverage through state-run insurance exchanges that bid competitively at lower prices to offer coverage. These declining prices toward Medicare rates, which generally do not cover costs in most hospitals, will have a devastating impact on the viability of healthcare operations. As illustrated by Figure 1.1, hospitals of all sizes will need to reduce costs by as much as 17 percent to break even on Medicare reimbursement.

## **CHANGING THE RULES OF THE GAME**

Payment for services has traditionally been based on a fee for service model in healthcare. Healthcare reform includes modification to the model by shifting to pay for value added via value-based purchasing, penalties for readmissions, and prices that do not cover excessive utilization but instead reward providers for managing population health. The overall concept of the “triple aim” focuses on the following:

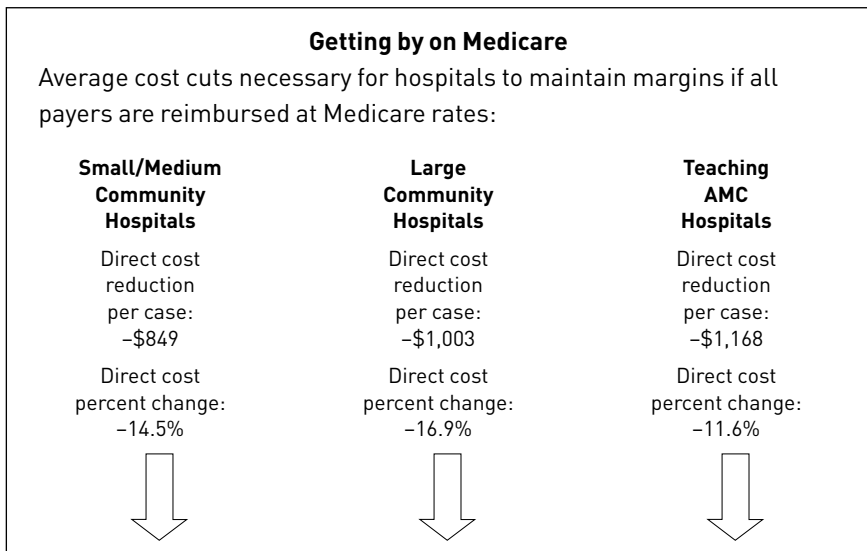
1. Decreased costs
2. Higher value through improved outcomes and services
3. Expanded coverage to care for a population or communities' health<sup>2</sup>

The “triple aim” approach is a radical modification of the current model for the healthcare enterprise. The healthcare model will shift accordingly with emphasis on accountable care as described in Figure 1.2.

## RETHINKING ORGANIZATION OF CARE

Currently, analysts claim \$365 billion of waste occurs in the system today.<sup>3</sup> This waste is largely avoidable; however, it is difficult to avoid in the current fragmented system. This system is characterized with payers that cover the cost of care for users (patients) provided by an independent fragmented market of providers (physicians and hospitals) that are not integrated with care models, information, or costs. The system is full of redundancies and inefficiencies of over- and undertreatment due to excessive,

**FIGURE 1.1** Percent of Costs That Must Be Cut Due to Medicare



Source: Adapted from Sg2 INSIGHT database, CY 2010, Sg2 Analysis (2010).

**FIGURE 1.2** Emphasis on Accountable Care

**Accountable Care Organizations**

				Post-Acute Care Episode Bundling			
	Acute Care Episode with PAC Bundling						
Primary care physicians	Specialty care physicians	Out-patient hospital care and ASCs	Inpatient hospital acute care	Long-term acute hospital care	Inpatient rehab hospital care	Skilled nursing facility	Home health-care
	Acute Care Bundling						
Medical Home							

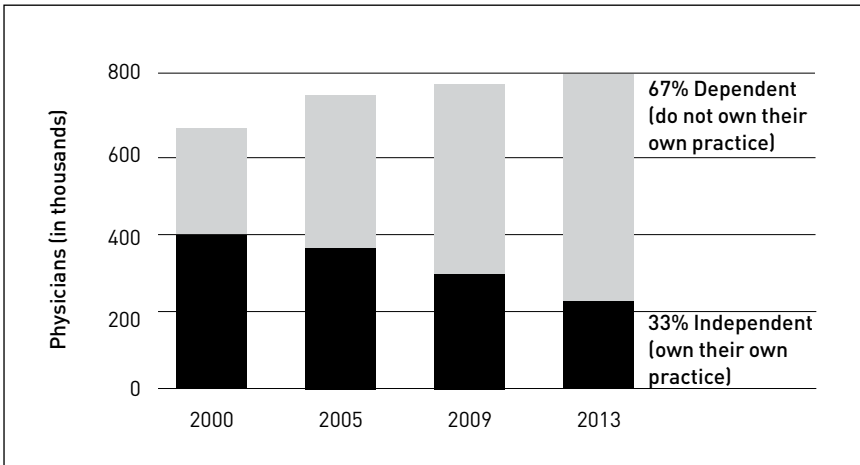
Source: American Hospital Association.

overlapping, and nonintegrated processes, tests, and treatments. Decisions for improvement are made in today’s current environment incrementally by fragmented groups (physicians, hospitals, insurers, ambulatory centers, etc.), each maximizing returns at the expense of the others and at the expense of the patients in the system. Each exploits the other at the expense of the whole to maximize individual gains. This action drives costs of care up in a never-ending spiral. Each group also seeks larger scale to leverage negotiations, again at the expense of the others and the patient.

Generally, the system is comprised of tax-exempt organizations complemented with public institutions and independent physicians. Physicians are, however, rapidly moving away from independent practice and joining larger groups as shown in Figure 1.3.

These larger groups focus on the patient with a “do no harm” perspective with little or no business acumen in decision making. This process, therefore, makes limited use of financial or mathematical models to determine value added even when investments are made with financial objectives.



**FIGURE 1.3** Independent and Dependent Physicians

Source: Adapted from Accenture, Medical Group Management Association, and American Medical Association.

## POST HEALTHCARE REFORM

As noted previously, healthcare reform legislation creates an industry with a “triple aim” driven by a new reimbursement model. Increasing value via the “triple aim” mandates lower costs through entirely new systems and processes that produce better patient quality, outcomes, and experiences. This three-pronged approach helps executives lead quality initiatives by improving the health of the population, enhancing the patient care experience, and reducing or controlling per capita costs. In essence, the industry will not survive in its current form and must reinvent itself with new business models, systems of care, and processes. The system will evolve from care per incident, or pay for procedure, to care for a population and pay for value.<sup>4</sup> This evolution will require a model with lower cost structures, medical management of care, intelligent information systems, and integrated networks of care and physicians, all accountable for population health.

## The Challenges

Marshall Goldsmith's book titled *What Got You Here Won't Get You There: How Successful People Become Even More Successful* is especially appropriate for the healthcare industry.<sup>5</sup> This industry must transform fundamentally during a time when demand will increase significantly due to aging baby boomers who are turning 65 in unprecedented numbers each year. This aging population puts enormous pressures on federal Medicare programs and radically shifts the mix of payers in the healthcare industry. As the baby boomers age, they enter the phase of life where the average individual consumes the majority of medical resources a person uses in a lifetime. They also demand high quality of care.

More demand, lower prices, and higher expected outcomes and experiences require new skills in leadership and tools to permit the industry to determine added value of initiatives, interventions, and new methods. The American Hospital Association, among others, has highlighted topics and key skills for success, including physician relations, community health, critical thinking, financial and quality integration, and risk assumption. At the organizational level, boards of directors and trustees must apply knowledge and skills in healthcare delivery and performance, business and finance, and human resources. After all, success is achieved through people, and the cost of employees is the largest healthcare expenditure. To misjudge the impact and importance of these critical skills will negatively affect an organization's ability to survive during this time of accelerated transition.

## HOW THIS BOOK WILL HELP

This book serves as an important tool and describes a process that will help meet these challenges. It offers a results-based methodology that focuses on how to make healthcare improvement projects successful by achieving proper alignment of organizational outcomes, delivering value following a step-by-step process, and using conservative standards in the collection and analysis of data. With these elements, projects are successful in meeting the needs of various stakeholders including the CEO, CFO, and a variety of payer networks.

## THE VALUE EVOLUTION

“Show me the value.” There’s nothing new about the statement, especially in business. Organizations of all types want value for their investments. What’s new is the method that organizations can use to get there. While “showing the money” is the ultimate report of value, organization leaders recognize that value lies in the eye of the beholder; therefore, the method used to show the money must also show the value as perceived by all stakeholders. Just as important, organizations need a methodology that provides data to help improve investment decisions. This book presents an approach that does both: it measures the value that organizations receive for investing in programs and projects, and it develops data to improve those programs.

But first, a discussion about the evolution of value—moving from activity-focused value to the ultimate value, return on investment (ROI).

## THE VALUE SHIFT

“Show me the money” represents the newest value statement. In the past, program, project, or process success was measured by number of patients served, number of procedures, length of stay and money spent, activities and processes. Some consideration was given to patient outcomes, but little consideration was given to the monetary benefits derived from these activities. Today the value definition has shifted: value is defined by outcomes versus activity. More frequently, value is defined as monetary benefits compared with costs. Although the methodology to “show the money” described in this book had its beginnings in the 1970s, it has expanded in recent years to become the most broadly comprehensive approach to demonstrating the value of project investment.

Even as projects, processes, and programs are implemented to improve the social, environmental, and economic climates, the monetary value is often sought to ensure that resources are allocated appropriately and that investments reap a return. No longer is it enough to report the number of procedures performed, equipment used, technology employed, number of participants or volunteers, or the money generated through a fundraising effort. Stakeholders at all levels—including executives, shareholders,

managers and supervisors, taxpayers, project designers, and participants—seek the outcomes and, in many cases, the monetary values of those outcomes.

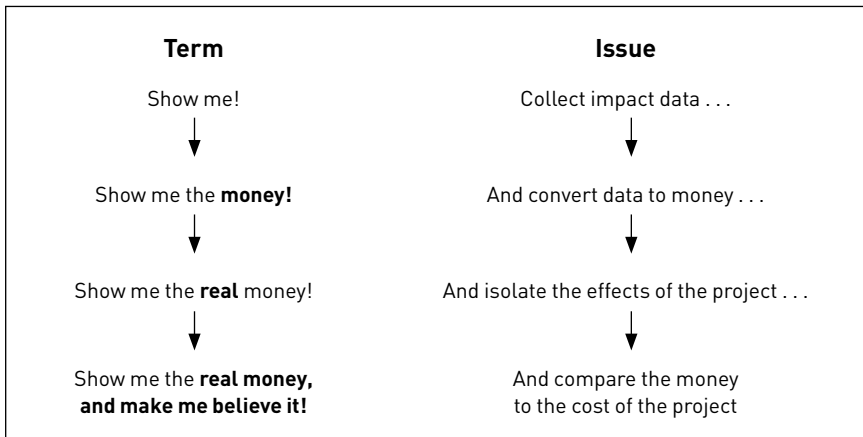
## THE IMPORTANCE OF MONETARY VALUES

While some people are concerned that too much focus is placed on economic value, it is economics, or money, that allows organizations and individuals to contribute to the greater good or continue to meet community health needs. Monetary resources are limited, and the goal is to put them to best use rather than under- or overusing them. Organizations, governments, and individuals have choices about where they invest these resources. To ensure that monetary resources are put to best use, they must be allocated to programs, processes, and projects that yield the greatest return.

For example, if a healthcare improvement initiative is implemented to improve efficiencies, and it does improve efficiencies, one might assume that the initiative was successful. But if the initiative costs more than the efficiency gains are worth, has value been added to the organization? Could a less-expensive process have yielded similar or even better results, possibly reaping a positive ROI? These questions and others like them are, or should be, asked on a routine basis. No longer will activity suffice as a measure of results. A new generation of decision makers is defining value in a new way.

## THE “SHOW ME” GENERATION

Figure 1.4 illustrates the requirements of the new “show me” generation. “Show me” implies that stakeholders want to see impact data (i.e., numbers and measures). This concept accounted for the initial attempt to see value in programs, which evolved into “show me the money,” a direct call for financial results. But financial results alone do not provide the needed evidence to ensure that projects add value. Often, a connection between a healthcare project and value is assumed, but that assumption soon must give way to the need to show an actual connection. Hence, “show me the real money” was an attempt at establishing credibility. This phase, though critical, still left stakeholders with an unanswered question: “Do the monetary benefits linked to the project outweigh the costs?” This question is the mantra for the new “show me” generation: “Show me the real money, and make me believe it.” This new generation of project sponsors also

**FIGURE 1.4** The “Show Me” Evolution

recognizes that value is more than just a single number: value is what makes the entire organizational system tick—hence the need to report value based on various definitions.

In the past, managers, directors, and administrators of many support functions in government, nonprofit, and private healthcare organizations had no business experience. Today things have changed. Many of these managers have a business background, a formal business education, or a business focus. Mike Warren, for example, the CEO of Children’s Hospital in Birmingham, Alabama, had a successful career as CEO of an energy company prior to becoming involved in the healthcare industry. These new, enlightened executives are more aware of bottom-line issues in the organization and are more knowledgeable of operational and financial concerns. They often take a business approach to their processes, with ROI being a part of that strategy. Because of their background, ROI is a familiar term. They have studied the use of ROI in their academic preparation, where ROI was used to evaluate purchasing equipment, building new facilities, or buying a new company. Consequently, they understand and appreciate ROI and are eager to apply it in other areas.

## EVIDENCE-BASED OR FACT-BASED MANAGEMENT

A recent important trend indicates a move to fact-based or evidence-based management. Although many key decisions are still based on instinctive input and gut feelings, more managers are now using sophisticated and

detailed processes to show value. Quality decisions must be based on more than gut feelings or the blink of an eye. With a comprehensive set of measures, including financial ROI, better organizational decisions regarding people, services, projects, and processes are possible. When taken seriously, evidence-based management can change how every manager thinks and acts. It is a way of seeing the world and thinking about the craft of management. Evidence-based management proceeds from the premise that using better, deeper logic and facts to the extent possible helps leaders do their jobs better. It is based on the belief that facing the hard facts about what works and what doesn't work, and understanding and rejecting the nonsense that often passes for sound advice, will help organizations perform better.<sup>6</sup> This move to fact-based management makes expanding measurement to include ROI easier.

## VALUE DEFINED

The changes in perspective on value and the shifts that are occurring in healthcare have led to a new definition of value. Value is not defined as a single number or single category of data, rather it's composed of a variety of different types of data, often collected within different time frames, and representing both qualitative and quantitative data.

## THE VALUE EQUATION

The focus on paying for value from Medicare and other providers leads to a simplified definition for value. Experts and organizations suggest that the value equation shown in Figure 1.5 is the most accurate way to reflect value. In this equation, value is quality divided by payment. Quality is a composite of patient outcomes, safety, and experiences, while payment is the cost of healthcare from the perspective of all purchasers. It is, in essence, the way that Medicare and others define value, in that it must pay for the quality delivered. This concept applies to anyone wanting to receive value in proportion to the cost for specific purchases. For example, if the cost of a club sandwich is \$35, the purchaser can certainly deduce that the value is not represented accurately by the cost. Conversely, if the club sandwich cost \$5, the purchaser can probably say that its value is equal to its cost. The difficulty with this equation is in calculating the monetary value of quality.

**FIGURE 1.5** The Value Equation Reconsidered for Healthcare

$$\text{Value} = \frac{\text{Quality}^1}{\text{Payment}^2}$$

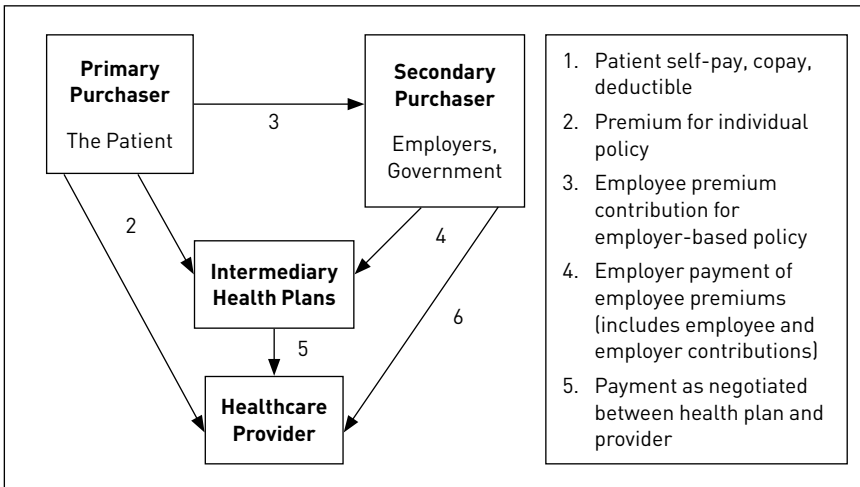
1. A composite of patient outcomes, safety, and experiences
2. The cost to all purchasers of purchasing care

Source: Adapted from Healthcare Financial Management Association, "The Value in Healthcare: Current State and Future Directions" (2010).

Medicare has not defined every quality indicator that should be included. Limited definitions have included the outcome metrics that are currently employed as the ultimate indicators of quality, emphasizing either mortality or readmission rates within a certain time frame. These indicators come with a cost regardless of whether the rate is higher or lower than expected standards. This equation will evolve in terms of what providers define as the value. The challenge is to develop this numerator so that it is credible and represents the true definition of value.

## COST

When the cost of healthcare is considered, including the amount paid by the patient, the employer, or government purchases, the numbers are staggering. From the macro perspective, the primary problem with the payment is the current state of the purchasing/payment streams. The purchaser who initiates the purchase of healthcare (the patient) will often have little or no sense of the total price of the services purchased. Figure 1.6 shows the healthcare payment streams.<sup>7</sup> For the provider of healthcare, the services rendered must have a cost equal to or less than the payment received in order to survive. From the perspective of the healthcare provider, the costs are the fully loaded costs in all categories to deliver a certain type of service or healthcare. This figure highlights the different perspectives from which the value must be developed. For example, an ROI calculation must be based on this perspective because of the different purchasers in the stream. In a purchaser-centered value equation, the provider's cost is relevant to the

**FIGURE 1.6** Defining Value: Healthcare Payment Streams

Source: Data from The Healthcare Financial Management Association, *The Value in Healthcare: Current State and Future Directions* (2010).

purchaser only to the extent that it drives the amount of the payment. From the provider perspective, the total costs must be absorbed. Ideally they should receive payments in excess of the cost for survival and sustainability.

At the micro level, for individual projects, the message is clear. All of the costs must be included. When a new medical procedure is established, a new IT project is implemented, or a new scheduling system for overtime is initiated, it must reap benefits that cover all of the fully loaded costs of the project, program, or initiative.

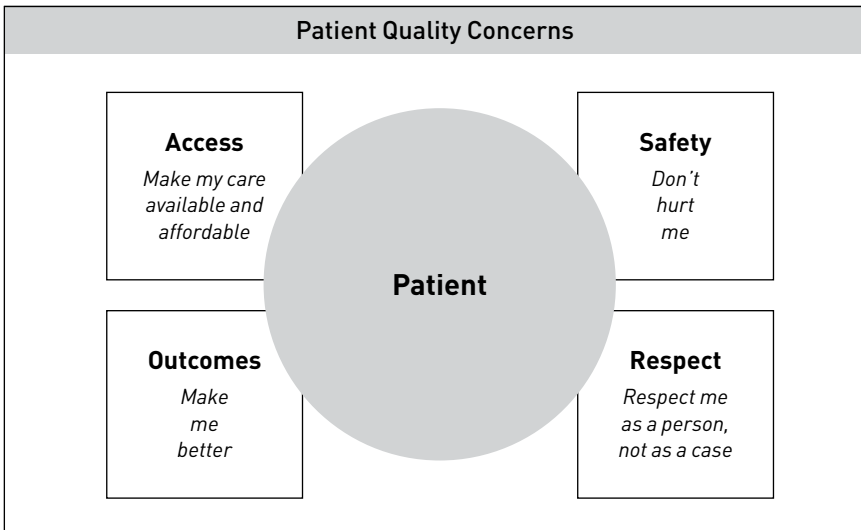
## BENEFITS

Benefits can be defined in a variety of ways, such as access and availability; perception; knowledge and capability; actions, processes, and implementation; impact; and determination of financial benefit.

### ACCESS AND AVAILABILITY

Access to healthcare is the first concern for patients according to the Healthcare Financial Management Association (HFMA) as depicted in



**FIGURE 1.7** Defining Value: Patient Perspectives on Quality

Source: Data from Healthcare Financial Management Association, "The Value in Healthcare: Current State and Future Directions" (2010).

Figure 1.7. Making healthcare both available and affordable to the individual are the baseline requirements for bringing the patient into the healthcare delivery process. According to HFMA, during the healthcare delivery process, the patient has three primary concerns with the quality of care: safety, outcomes, and respect. Essentially, access and availability of healthcare define the input to the process. They do not reflect outcomes of the healthcare delivery system.

#### PERCEPTION

Before outcomes can be generated in healthcare processes, those processes must receive proper reactions from those directly involved in them. When a new healthcare initiative is implemented, such as a new system, a new procedure, a new technique, or new equipment, the reaction to the process is the first set of outcome data. If the reaction is negative, then the project will likely be unsuccessful. The reactions of the various stakeholders, particularly those who are charged with making the process work, represent an important part of value. When these data are collected and adjustments are made, it can make a world of difference in the success of a project.

### KNOWLEDGE AND CAPABILITY

To improve processes in an organization, the individuals involved must know how to make it work and have the capability to carry through with the processes to achieve results. This value stream is largely ignored with most projects and programs. Value in terms of knowledge and capability determines the extent to which those involved actually have the ability and the appropriate skills to deliver what the project intends. Knowledge and capability represent value from the perspective of those who organize the project and for those who are actually involved in it.

### ACTIONS, PROCESSES, AND IMPLEMENTATION

Actions, processes, and implementation needed to make a project work are the greatest areas of measurement and together form an important category of value. They consist of the specific activities and actions that individuals undertake to deliver efficient, effective healthcare. As a new procedure is implemented, this category of value indicators measures the degree to which the users are using the procedure properly. As a new procedure is implemented, these measures determine the extent to which the procedure is being followed. As a new scheduling system is implemented, these measures gauge the extent to which the system is being utilized. These important value streams indicate whether things are working properly and moving in the right direction, and whether participants are doing what they are supposed to be doing.

### IMPACT

Perhaps the most powerful and significant value category is the impact of the healthcare initiative. Most of these measures focus directly on patient outcomes and cover the three measures of quality care shown in Figure 1.7: outcomes, safety, and respect. In fact, this category can be subdivided as tangible and intangible data. The tangibles are those measures that can be easily and credibly converted to money and the end results will enter into the financial calculation. Tangibles are the healthcare outcomes in which patients improve faster and with better results, as well as outcomes of minimizing, reducing, or eliminating incidents or accidents that could derail the process or have an adverse effect on patients. Intangibles are those outcomes that are more challenging to convert to money, but are important just the same. They include measures such as patient satisfaction, nurse

engagement, teamwork, employee satisfaction, and physician engagement. They may also consist of measures such as reputation, image, stress, brand awareness, and other softer processes.

#### DETERMINATION OF FINANCIAL BENEFIT

The ultimate measure of accountability is the financial ROI, which is the measure of the costs versus the benefits. Financial ROI can be described in two different ways. One is the benefit/cost ratio and the other is the ROI expressed as a percent. The benefit/cost ratio is the benefits divided by the costs, and the ROI is the net benefits (benefits minus the costs) divided by the costs, times 100. These are accepted measures in the financial community and can be applied to any healthcare project.

#### **CRITERIA**

When these values are developed in healthcare organizations, they must meet certain criteria. First, they should be balanced; no project should be evaluated with only a single measure such as ROI. The balanced set of data, representing a variety of different qualitative and quantitative measures, both financial and nonfinancial should be used. A balanced profile is consistent with the use of ROI in finance and accounting. In fact, more than 200 years ago, the original developers of ROI suggested that an ROI calculation for capital expenditure is an imprecise measure and it should not be used alone to make a decision. Other types of measures must be examined, especially in today's healthcare organizations.

The value presented must be credible for those who respect and need it. These individuals must see the value as coming from people or processes that are accurate, conservative, and reliable. Also, it must be efficient in terms of its collection and use. If the process is inefficient or takes too much effort, it will not be used.

The data in these different categories must represent both tactical and strategic issues. Tactical data provide the bases for making changes and improvements along the way. Strategic measures show how projects or programs are linked to strategy and important outcomes. Finally, the data and the calculation must represent different perspectives. In healthcare delivery, the many perspectives include not only the variety of individuals who pay for the program, but others who are involved in various other aspects as

**TABLE 1.1** Value Defined

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<p><b>Value is defined as:</b></p> <ul style="list-style-type: none"><li>• access and availability</li><li>• perceptions</li><li>• knowledge and capability</li><li>• actions, processes, and implementation</li><li>• impact, tangible and intangible</li><li>• financial benefit</li></ul> <p><b>When value is developed, it must be:</b></p> <ul style="list-style-type: none"><li>• balanced</li><li>• credible</li><li>• efficient</li><li>• tactical and strategic</li><li>• representative of different perspectives</li></ul>
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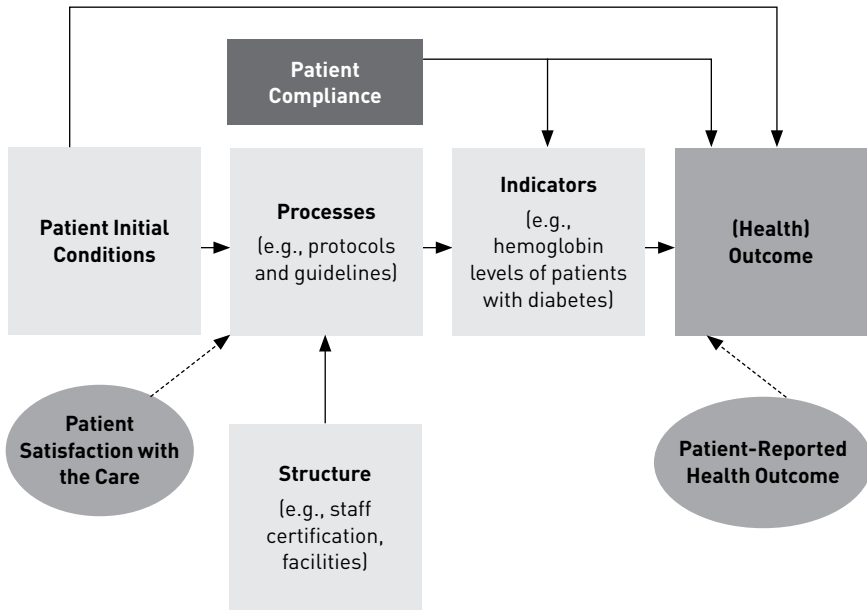
well. Table 1.1 shows the definition of and the criteria for developing measures of value.

## **MODELS**

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When the different categories of value are considered, they must be linked in some way. Dozens of models have been developed to show connection between different types of data. Michael Porter, in his classic work, *Redefining Healthcare*, developed the model shown in Figure 1.8. In this model, Porter indicates the initial condition of patients that leads to processes, which lead to indicators and, in turn, to health outcomes.

This model is important because it shows the chain of impact that occurs through the process. The indicators are the actual measures that define the outcomes. The inputs and access are assumed for this particular model. Porter's model can be refined to insert two other important data sets, perceptions (reaction) and learning (knowledge and capability). As mentioned earlier, these issues can make a difference in the success or failure of the project's outcome. In other words, an adverse reaction, or failure to develop capability to make the project successful, will mean the project does not deliver appropriate value. When measured and used to make improvements, these issues can enhance the success of a project.

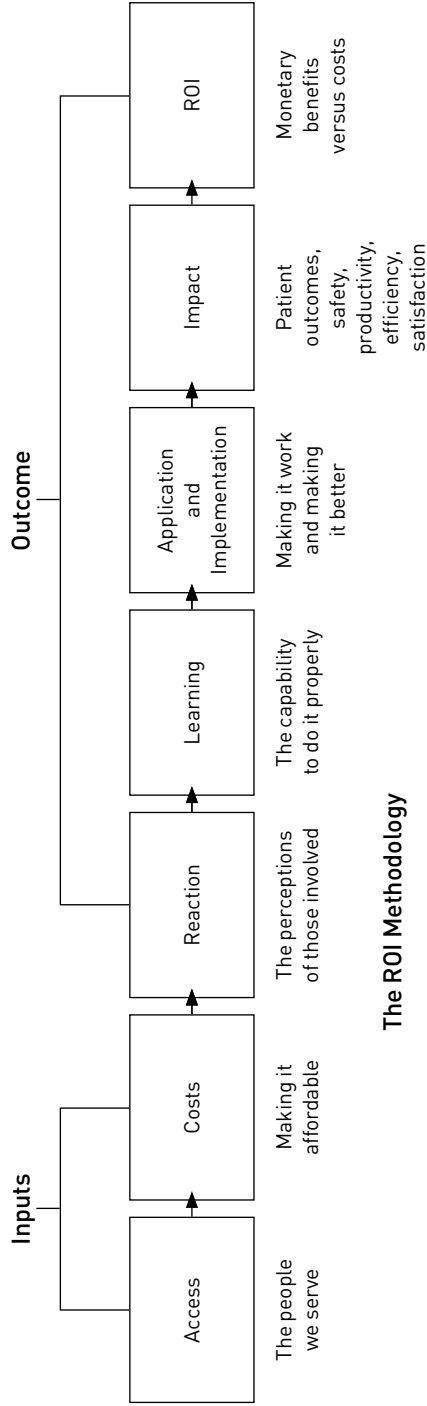
**FIGURE 1.8** Measuring Value in Healthcare

Source: Data from Michael E. Porter, "What Is Value in Healthcare?" *The New England Journal of Medicine* 363 (2010): 2477–480.

When these adjustments are made, the chain of impact is refined to reflect the model shown in Figure 1.9. In this model, two categories of input data and five types of outcome data are represented. This shows the chain of impact that must exist as patients have access to the system. Services are provided at a reasonable cost, and a positive reaction is developed along the way. Individuals who are delivering the service develop the capability to make it work, and the project is implemented properly. When the impact has occurred, it results in a variety of patient and organizational outcomes. Finally, the ROI can be developed, which is the ultimate level of accountability.

This enhanced model of Porter's chain of impact is the basis for the ROI process model presented in this book. It is a modification of the classic logic model applied in many government, science, education, and healthcare systems. In this case, the outcomes on the logic model are enhanced to show five different outcome categories, whereas most of the logic model presentations show immediate outcomes, intermediate outcomes, and impact.

**FIGURE 1.9** Defining Value as a Chain of Impact



**The ROI Methodology**

## **CHALLENGES ALONG THE WAY**

The journey to increased accountability and the quest to show monetary value, including ROI, are not going unchallenged. This movement represents a tremendous cultural shift for employees, a systemic change in processes, and often a complete rethinking of the initiation, delivery, and maintenance of improvement processes in organizations.

### **COMMITMENT**

Commitment is the key to successful implementation of ROI. Many hope to obtain an immediate ROI using the ROI Methodology, but it is, as previously mentioned, more than a simple calculation. To achieve success, commitment to making changes when the data reveal that the change needed is imperative, as is commitment to using the information the process provides. Executives in the healthcare field often know what they should be doing to improve outcomes and show the value of programs, but accepting accountability to move through the process is a challenge for them.

### **PREPARATION AND SKILLS**

Although interest in showing value and measuring ROI is now heightened and much progress has been made, these issues still challenge even the most sophisticated and progressive functions. The problem often lies in the lack of preparation and skills necessary to conduct these types of analyses. Rarely do the curricula in degree programs or the courses in a professional development program include processes and techniques to show accountability at this level. Consequently, these skills must be developed by the organization, using a variety of resources, so that they are in place for successful implementation.

### **FEAR OF ROI**

Few topics stir up emotions to the degree that ROI does. For a few narrowly focused executives, the conclusion behind the ROI value is simple: if it is negative, they kill the program; if it is an extremely positive value, they do not believe it. The potential for this response from executives causes some

healthcare professionals to avoid the issue altogether. A familiar reaction emerges: “If my project or program is not delivering value, the last thing I want to do is publish a report for my principal sponsor.” Unfortunately, if the project is not delivering value, the sponsor probably already knows it, or at least someone in the organization does. The best thing to do is to show the value using a systematic, credible process, in advance of a request.

Another fear is of abuse of the data. Will the data be used to punish some people, reward others, or improve processes? Ideally, results should be used to improve processes. The challenge is to ensure that data are not misused or abused. The fear of ROI can be minimized when the individuals involved understand the ROI Methodology, how it is designed and delivered, and the value that it can bring from a positive perspective.

### **TIME FOR ANALYSIS**

Thorough analysis takes time. Many practitioners and some sponsors are restless and do not want to take the time to do the appropriate analyses. In a fast-paced work environment where decisions are often made quickly and with little input or data, some executives question the time and the effort involved in this type of analysis. What must be shown, however, is that this effort is necessary and appropriate, and will ultimately payoff. When the process is implemented, the individuals involved usually see that the value of the increased effort and activity far outweighs the cost of the time.

### **POWER AND POLITICS**

Having appropriate data represents power to many individuals. How that power is used is important. If used for constructive purposes or to improve processes, data are perceived as valuable. If data are used for destructive or political purposes, they may be seen as less valuable. The important issue is that if the information is based on credible facts, then it generates power. If it is based on opinions or gut feelings, then the person who provides those opinions is more influential than the opinions themselves. Essentially, facts create a level playing field for decision making. As one executive said, “If a decision is based on facts, then anyone’s facts are equal as long as they are



relevant; however, if it must be based on opinions, then my opinion counts a lot more.” This underscores the power of having credible data for making decisions.

## SUSTAINABILITY

The final challenge is sustaining such a radical shift in accountability. The implementation of the ROI Methodology must consist of more than just conducting one or two studies to show the value of healthcare projects or programs. It must represent a complete change in processes so that future projects and programs focus on results. This change will require building capability, developing consistent and compelling communication, involving stakeholders, building the process into projects, creating expectations, and using data for process improvements. This approach is the only way to sustain any change for the long term; otherwise, it becomes a one-shot or short-term project opportunity.

## SO MANY TOOLS, NOT ENOUGH TIME

The healthcare field has enjoyed the application and use of many tools to monitor costs, control quality, and understand the financial aspects of the organization. Here is a brief review of some of the important tools that have entered this field.

## MEASUREMENTS AND MONITORING

Perhaps no other industry has enjoyed measurement processes as much as healthcare. Almost every facet of healthcare is monitored, documented, recorded, and ultimately reported. This scrutiny starts with the patient record, which includes full recording of a patient’s condition and concludes with documentation for billing to demonstrate effective delivery of care. A measurement culture generates a tremendous database of all types of data, including patient satisfaction, patient medical histories, supplies, procedures, billing, financial, outcomes, risks, and other data. Tables 1.2 and 1.3 illustrate the vast amount of data that is recorded and made available. Table 1.2 represents measures categorized as hard

**TABLE 1.2** Examples of Hard Data in Healthcare Organizations

<b>Output</b>	<b>Costs</b>
Inpatient revenue	Operating expense
Outpatient revenue	Treatment costs
Bed occupancy	Expense per discharge
Capacity	Budget variances
Clinician productivity	Unit costs
New patients	Cost by account
Forms processed	Variable costs
Discharges	Fixed costs
Screenings	Overhead cost
Inventory turnover	Operating costs
Patients served	Accident costs
ER visits	Program costs
Inpatient surgeries	Marketing expense
Tasks completed	Bad debts
Output per hour	Cost per case
Productivity	Supply chain savings
Reimbursements	
Work backlog	<b>Time</b>
Births	Length of stay
Project completions	Cycle time
	Equipment downtime
<b>Quality</b>	Overtime
Payment denials	On-time schedules
Nurse turnover	Time to project completion
Risk-adjusted mortality	Processing time
Risk-adjusted complications	Time to proficiency
Unplanned readmission rate	Assessment time
Medication event rate	Time to bill
Unscheduled returns	Response rate
Nosocomial infections	Patient wait times
Bloodstream infections	Efficiency
Error rates	Work stoppages
Accidents	Order response
Rework	Chart time
Shortages	Late reporting
Deviation from standard	Lost-time days
Inventory adjustments	
Incidents	
Compliance discrepancies	
Agency fines	

data. Table 1.3 represents data categorized as soft data. For the most part, these data sets are impacts—consequences of particular actions and activities. For this reason, lack of data is not necessarily an issue in the health-care field.

**TABLE 1.3** Examples of Soft Data in Healthcare Organizations

<b>Work Climate/Satisfaction</b>	<b>Customer Service</b>
Grievances	Patient complaints
Discrimination charges	Patient satisfaction
Employee complaints	Market share
Employee satisfaction	Patient loyalty
Physician satisfaction	Patient retention
Organization commitment	
Employee engagement	<b>Employee Development/Advancement</b>
Nurse engagement	Promotions
Physician engagement	Capability
Employee loyalty	Intellectual capital
Intent to leave	Requests for transfer
Stress	Performance appraisal ratings
	Readiness
<b>Initiative/Innovation</b>	Networking
Creativity	
Innovation	<b>Image</b>
New ideas	Brand awareness
Suggestions	Reputation
New products and services	Leadership
Trademarks	Social responsibility
Copyrights and patents	Environmental friendliness
Process improvements	Social consciousness
Partnerships/alliances	Diversity
	External awards
	Community awareness

## BALANCED SCORECARD

The Balanced Scorecard was created by Kaplan and Norton.<sup>8</sup> This measurement system shows managers how to use data to mobilize people to fulfill an organizational mission. The balanced scorecard was championed as a management system that can channel the energies, abilities, and specific knowledge held by people throughout the organization into achieving long-term strategic goals. The measurement system divides data into four categories: financial performance, customer knowledge, internal business processes, and learning and growth. These four categories were designed to align individual, organizational, and cross-departmental initiatives and to identify entirely new processes for meeting customer and shareholder objectives. Table 1.4 shows the typical scorecard for a hospital.

A concern about the balanced scorecard is that it was created initially for banking, oil, insurance, and retail companies, although it has since

**TABLE 1.4** Typical Balanced Scorecard for a Hospital

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**Organizational Health**

- Turnover rate as a percentage of the national average
- Vacancy rate as a percentage of the national average
- Physician satisfaction percentile
- Med/surg 1:6 nursing ratio maintained

**Quality and Process Improvements**

- Patient satisfaction percentile—inpatient
- Patient satisfaction percentile—emergency department patients
- Nosocomial pressure ulcers
- Emergency department treat and release patients <120 minutes
- Emergency department patients admitted <4 hours
- Percentage of physician orders entered electronically

**Volume and Market Share Growth**

- Volume
- Market share

**Financial Health**

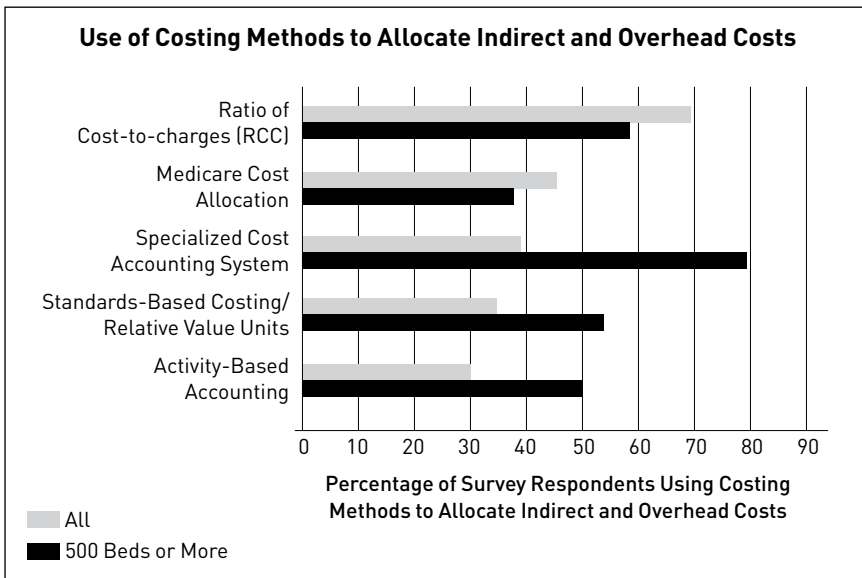
- Operating margin
- 

worked its way into healthcare. Healthcare has modified the balanced scorecard under the concept of strategic pillars; however, the scorecard lacks precise measurement or alignment to business needs. Its typical use has been to track the measures that matter in these four categories, but sometimes without the efforts to improve the measures. Tracking the measures alone provides little value because unless effort is made to improve the measures, the needed changes in healthcare will not happen. The most important value comes from these efforts to improve the measures or to continue measures that are already exceptional. Although Kaplan and Norton focus much of their attention on performance improvement, organizations did not necessarily follow through in these efforts.

## COSTING MODELS

Because of the significant cost of healthcare, much focus goes into capturing, monitoring, controlling, and properly allocating cost. A variety of

**FIGURE 1.10** Current State: Business Intelligence Differences in Costing Methods



Source: Data from *Value in Healthcare: Current State and Future Directions* (Westchester: Healthcare Financial Management Association, June 2011. Accessed from [www.hfma.org](http://www.hfma.org), January 19, 2012).

costing processes such as activity-based costing have been implemented. Activity-based costing provides a more accurate assignment of both direct and indirect costs of hospital procedures and services. Figure 1.10 shows the current state of business intelligence differences in costing models, based on a survey conducted by the Healthcare Financial Management Association (HFMA). In this example, 69 percent of respondents report using the ratio of cost to charges (RCC); in contrast, only 30 percent report using activity-based costing. The difference narrows for larger facilities, where almost 50 percent are using activity-based costing.<sup>9</sup>

## PROCESS IMPROVEMENT

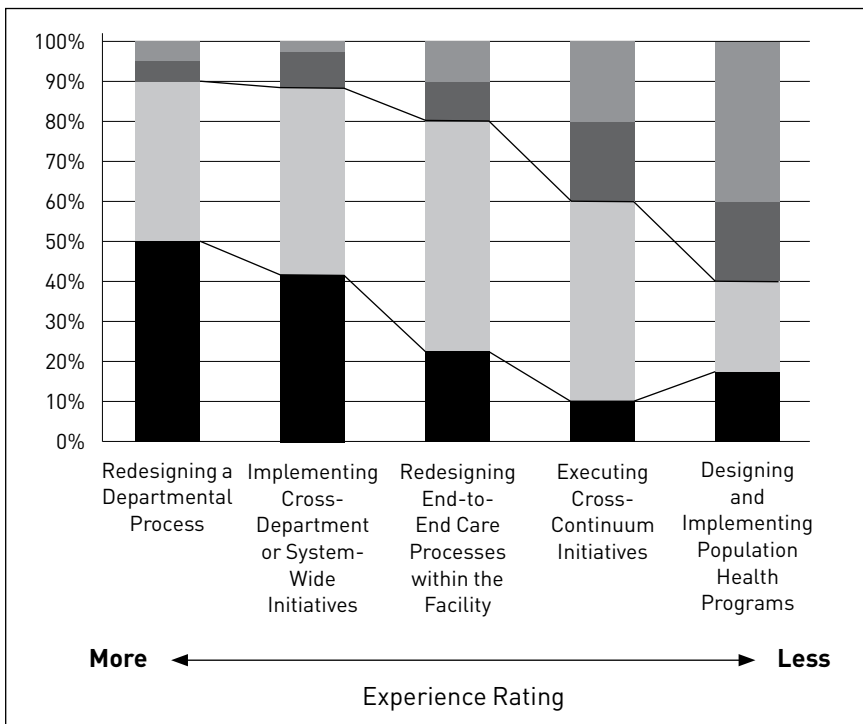
All types of organizations have been bombarded with process improvement techniques, tools, and approaches. Sometimes labeled *reengineering*, *process improvement*, *reinventing*, *transformation*, or simply *performance improvement*, a proliferation of tools have been developed, all aimed at making projects, departments, functions, and organizations better. Most of

the tools use a systematic process to analyze needs, recommend solutions, and implement those solutions to achieve results. These techniques have shown tremendous promise if they are managed properly, supported sufficiently, and adjusted regularly.

These projects are sometimes implemented on a departmental, cross-department, or system-wide basis, depending on the situation. Still others have used them to redesign care processes from end-to-end. Figure 1.11 shows the status of performance improvement in healthcare organizations.

As the figure shows, most efforts are taken at the departmental level with more than 90 percent having some experience with departmental studies. Slightly fewer than 90 percent report significant or some experience in implementing cross-departmental or system-wide initiatives. Experience levels drop off significantly, however, for care redesign that moves beyond facilities' walls to the cross-continuum initiative. Although healthcare extensively measures activity, defining the right things to measure has yet

**FIGURE 1.11** Current State of Performance Improvement



Source: Data from HFMA Value Project Survey (January 2011).

to be accomplished. Few facilities are working with designing and implementing population health programs.

## VARIATION IN HEALTHCARE

The variation in healthcare is ironic considering that it is set in an industry driven by a scientific process that exists to discover and identify issues concerning the human body and to create solutions for or treat the identified pathology that causes the issues. This paradox is driven by the scientists themselves and the variation that exists with each human body. The scientists (physicians) gather volumes of data about the human body that is driven by a unique combination of DNA for each person. These data for all individuals, whether outcome measures or from prior observation, do not reside in a single database; therefore, discovery or recall is dependent upon the expertise or knowledge of each individual physician. It is literally impossible for physicians to individually retain such a database. The physicians themselves are subject to human error due to fatigue, distraction, or other factors. Variation is even further complicated when one considers that no standard approaches or methods exist to guide the discovery and treatment processes.

A second major cause of variation occurs with the human subjects themselves. Humans, by their very nature, communicate differently due to individual motivation. Therefore, the subjects themselves do not always disclose full information, or comply with directives provided, due to their own self-interest. They will often seek input from others for treatment and not disclose any of this to the physician.

On a third level, the environment itself is fragmented with each department, treatment unit, hospital, or care setting using unique and differing systems, processes, equipment, or technology, all causing variation. Comparisons of outcomes from unit to unit are difficult to say the least. As a result, healthcare is a target-rich environment for improvement with as much as 30 percent of all expenditures viewed as waste, redundant, or even unnecessary or inappropriate.

## QUALITY AND WASTE

Because of concerns about quality, particularly patient care quality, an abundance of quality processes have entered the healthcare area. These

processes have been implemented under the names of continuous quality improvement, total quality management, patient quality, Six Sigma, and even Lean Six Sigma. These processes focus on quality and often begin with calculating the cost of mistakes, errors, and waste. The processes are aimed at improving quality and minimizing waste.

In healthcare environments, waste exists in abundance. Waste in supplies, waste in excess procedures, waste in inappropriate procedures, waste due to redundancies by physicians and other providers who are unable to tap databases of patient information concerning prior procedures, treatments, and outcomes are all areas of excessive waste. It is common for each physician to have his or her own workup of a patient in related treatments that are not available to other physicians unless they practice together and/or have a common electronic medical record.

Outcomes due to poor and virtually nonexistent information systems can cause readmissions due to uncoordinated and unplanned care or even noncompliance by the patient. Wrong-site surgery, medication errors, and other “never” events concerning patient care occur, again, from a lack of common practice, procedures, and processes.

Costs of healthcare and medical errors, along with consumer expectations and expectations of large purchasers of healthcare like employers and the government, all demand that the system change. The “system” must change to reduce costs. It must change to deliver error-free outcomes and produce a reliable result. It must change to improve overall services and add value to the patient experience.

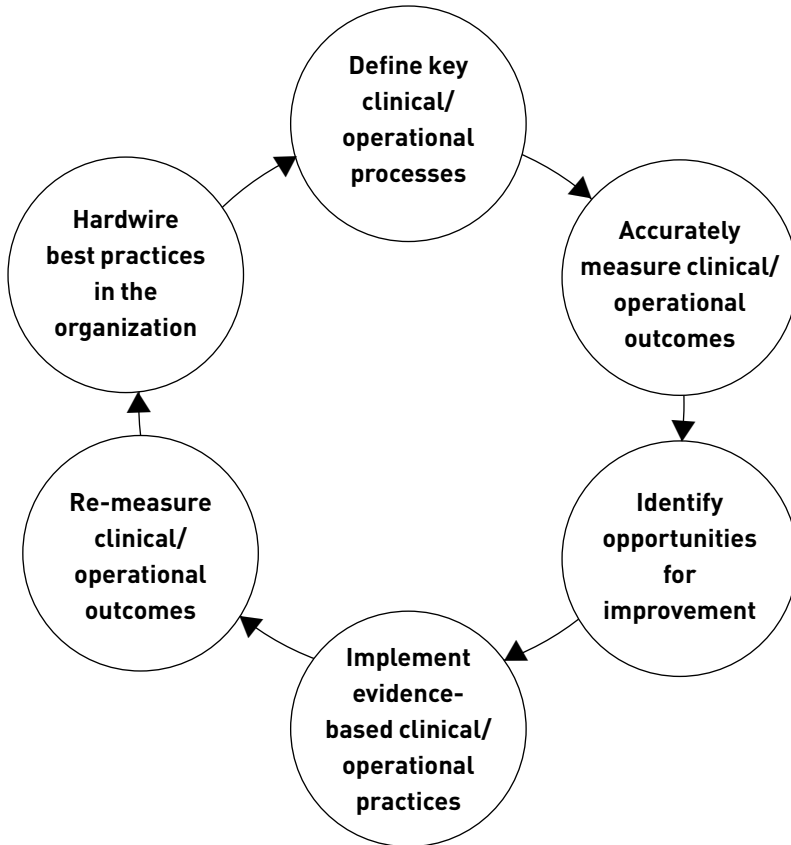
### **TOO MANY TOOLS, TOO MUCH INFORMATION: WHAT’S A LEADER TO DO?**

The tools available within the healthcare setting are vast. Performance improvement tools such as techniques used in Lean or Six Sigma efforts abound. Scientific methods and metric-driven scorecards all produce information overload with insufficient intelligence to take action. The time required to use these tools, each time, is overwhelming. Even in business planning processes, tools such as computing internal rate of return or the capital asset pricing model used for capital allocation are helpful, but lack quantifiable information of “true value.” Assumptions, incremental/differential accounting, and anecdotal information are



compiled to influence decisions. Little from these data determines actual value, rather most of this information is directional in nature. Applying clinical process improvement to operation processes is meaningful for best practice development and dissemination as described in Figure 1.12, but it has limitations. We may know things get better or worse, but we do not always know whether process improvement initiatives “make a difference” that actually matters to the decision makers and others.

**FIGURE 1.12** Applying Clinical Process Improvement to Operational Process Improvement



Source: Adapted from American Hospital Association Committee on Performance Improvement, Jeanette Clough, Chairperson. *Hospitals and Care Systems of the Future* (Chicago: American Hospital Association, September 2011).

## ENTER ROI

The ROI Methodology provides a standard approach through which data are collected and analyzed following a set of principles that ensure reliable information. This information represents actionable intelligence. Actionable intelligence provides the decision-making information to determine whether and how value is created from the action. Using this process provides healthcare executives intelligence to prioritize their focus on the highest value efforts to achieve the aspirations of the “triple aim” required to survive the next decade.

Determining the ROI of projects and programs permits decision makers to deal with four forces shaping future margins. Figure 1.13 provides descriptions of these forces as provided by the Healthcare Advisory Board. Payoff from using ROI will come from investments in new models of care. These models will use new skill sets in financial and health delivery integration to create value for the system and not suboptimize for the components.

## ISSUES WITH HEALTHCARE IMPROVEMENT INITIATIVES

As mentioned earlier, a wealth of healthcare improvement processes have been aimed at making healthcare organizations more productive, efficient, and quality-focused. These processes are often initiated by interdepartmental or cross-functional projects.

Unfortunately, too many healthcare projects and initiatives fail. They fail for a variety of reasons. Understanding those reasons helps us to have success with our own projects. The methodology introduced in this book is a way to measure the success of improvement projects throughout the healthcare life cycle. When things are not working as well as they should, data are available to make necessary adjustments. When they are working well, data are available to explain why. The ROI Methodology focuses on results of the project, ensuring that the project delivers the appropriate value for the client. This approach helps ensure that projects will not fail in the future. But what causes failure? Here are a few reasons.

### LACK OF BUSINESS ALIGNMENT

Unfortunately, too many projects are “fuzzy” when it comes to their alignment with specific business measures. This fuzziness seems odd when

**FIGURE 1.13** Four Forces Shaping Future Margins

<b>Dramatic Shifts Within Financial and Clinical Profiles:</b>	
<p><b>Decelerating Price Growth</b></p> <ul style="list-style-type: none"> <li>• Federal and state budget pressures constraining public payer price growth</li> <li>• Payments subject to quality, cost-based risks</li> <li>• Commercial cost shifting stretched to the limit</li> </ul>	<p><b>Continuing Cost Pressure</b></p> <ul style="list-style-type: none"> <li>• No sign of slower cost growth ahead</li> <li>• Drivers of new cost growth largely nonaccretive</li> </ul>
<p><b>Shifting Payer Mix</b></p> <ul style="list-style-type: none"> <li>• Baby boomers entering Medicare rolls</li> <li>• Coverage expansion boosting Medicaid eligibility</li> <li>• Most demand growth over the next decade comes from publicly insured patients</li> </ul>	<p><b>Deteriorating Case Mix</b></p> <ul style="list-style-type: none"> <li>• Medical demand from aging population threatening to crowd out profitable procedures</li> <li>• Incidence of chronic disease, multiple comorbidities rising</li> </ul>

Source: Adapted from Healthcare Advisory Board interviews and analysis.

one considers that most projects start with a business need (e.g., improve patient outcomes). Even still, the alignment between the business need and the project is often vague. Examples of projects might be the implementation of a leadership development program, a medical conference, a new system for automating physician records, a new hospital department, or a wellness and fitness program for the staff. The specific business measures these projects target may be unclear. Without a clear connection to the business, their success in terms of driving business value may be limited or nonexistent. Therefore, one of the first steps to improving key outcomes is to ensure that the project is connected to those outcomes, driving specific business measures. For example, in many healthcare organizations today, acquisition of physician practices is important because the physicians are hospital admitters. However, acquisitions of practices that do not align with business needs make little sense and have no ROI. If a hospital acquires an obstetrics group when the labor and delivery unit is already full and cannot

**FIGURE 1.14** Lack of Alignment

<b>Measurement and Use of Business Intelligence</b>			
To what extent does your organization measure and use business intelligence related to value in the following areas?			
	None	Measure	Manage
<b>Costs of Adverse Events</b>	43%	37%	20%
<b>Margin Impact of Readmissions</b>	38%	42%	20%
<b>Cost of Waste in Care Processes</b>	50%	29%	21%

**None:** We do not measure.  
**Measure:** We have measured the impact, but do not manage the metrics.  
**Manage:** We manage to these measures (e.g., data drives actions to reduce costs or improve margin).

Source: Data from HFMA Value Project Survey (January 2011).

assume any more volume, that acquisition would be a decision that is not aligned to the business.

Unfortunately, all too many healthcare organizations are not taking steps to identify the needs of their business and act accordingly. Figure 1.14 demonstrates this fact. Results of the HFMA survey show that 43 percent do not measure the cost of adverse events, and 37 percent measure it but do not act on it. Only 20 percent of respondents calculate the cost of adverse events and act on them. Likewise, only 20 percent are measuring and acting on the calculations involving the margin impact of readmissions. Fifty percent are not calculating the cost of waste in care processes, and only 21 percent are calculating the cost and using the data. These data indicate a lack of business alignment in healthcare organizations, due in part to failure to gather and use the intelligence necessary to identify the real business needs.<sup>10</sup>

## INAPPROPRIATE SOLUTION TO A PROBLEM

Some improvement projects are designed to implement a particular solution to a problem. It may involve an existing solution, the purchase of new software, the implementation of a new quality system, or the installation of a workforce management system. These prepackaged solutions may not always be appropriate to address the problem (i.e., the solution

itself will not drive the business measures that must change). For example, many healthcare organizations implement solutions to reduce premium pay and outside labor. However, by doing so, sometimes they slow down throughput of patients and increase length of stay. It may be an improper solution because when length of stay is increased, more errors are introduced, patient satisfaction is reduced, and costs are increased.

## **PARTICIPANTS ARE NOT ENGAGED**

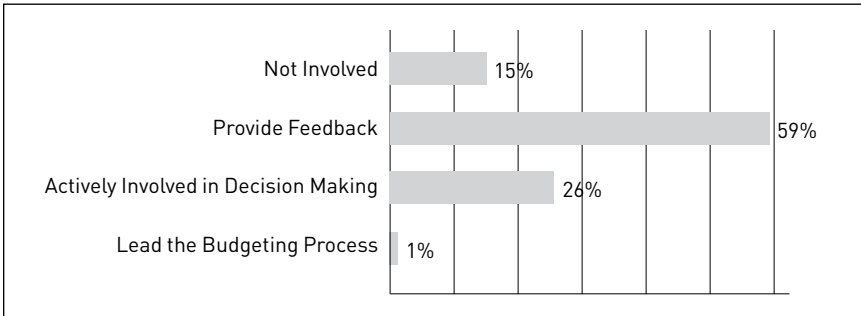
To be successful, participants in programs and projects must be fully engaged. The participants are the individuals who must make the project work. They must clearly understand the need and rationale for the project. Lack of explanation or lack of persuasion can create an adverse reaction to the project in the early stages, dooming it to failure. Expectations must be clearly outlined so that the engagement occurs early. At each stage of the process, participants are involved, their inputs are respected, and they are held accountable for results. In many circumstances, healthcare is so complex, with so many concurrent activities, that having someone's full attention and active engagement is a challenge. The lack of a clear agenda causes healthcare professionals to struggle with engagement. For example, in the midst of community disaster, a large part of the organization will focus on the task at hand, but doctors and nurses in specific disciplines must stay focused on their daily work (OB doctors will still have babies to deliver so their attention is diverted and routine or scheduled surgeries must still be performed).

Figure 1.15 shows the extent of engagement in organizations, taken from the HFMA survey. Only 26 percent of the responding organizations actively engage the physician in decision making with regard to department budget and resource allocation. If the same level of engagement exists with healthcare improvement projects, it is no wonder so many projects fall short.

## **LACK OF FOCUS ON BUSINESS RESULTS**

Participants sometimes lack a clear vision of the ultimate objective for a project. The reason for their involvement in the project is unclear. Business measures and their targets for improvement should be translated into impact objectives. Process and action steps should be reflected in application objectives. Communicating these objectives to all stakeholders

**FIGURE 1.15** Engaging Physician Leaders in Department Budgeting/Resource Allocation Processes



Source: Data from HFMA Value Project Survey (January 2011).

provides focus throughout the project, ensuring that business alignment exists. Routinely monitoring the success with these objectives provides information useful in making adjustments—better positioning the project for success.

### **FAILURE TO PREPARE THE ENVIRONMENT FOR THE PROJECT**

Projects are usually implemented in the work environment. Implementation often involves change, and change must be accepted and supported in that work unit. An important part of a project is to understand the environment in which it is implemented. Any impediments to the success of the project or barriers to implementation must be addressed early and often. Ideally, part of project planning will be the identification of inhibiting factors to the success of the project and tackling those issues before they become barriers to success.

### **LACK OF ACCOUNTABILITY WITHIN THE PROJECT**

Too often, project participants and other stakeholders do not feel that success is their responsibility. If no one accepts responsibility, then no one is

accountable, and the project will fail as a consequence. Ideally, every person involved must understand his or her responsibility, clearly defined with expectations and specific objectives at different levels. It should be apparent to the healthcare project manager and other stakeholders that the participants are meeting the objectives, standards, and expectations. Without that commitment, the project can easily drift and ultimately fail.

One of the problems with accountability is that pay is not tied to many of these projects. When executives receive bonuses or incentives or their overall pay is connected to the performance of these projects and processes they may take more responsibility for results. Although a trend of linking pay to performance is growing, it is not yet common. In the last few years, hospitals have connected executive pay to patient satisfaction, clinical outcomes, employee satisfaction, or physician satisfaction. Still, not enough organizations use this connection.<sup>11</sup>

### **FAILURE TO ISOLATE THE EFFECTS OF THE PROJECT**

Often, factors apart from the healthcare project end up influencing the impact measures linked to the project. External factors can also influence success of the impact measures linked to the project. An important challenge is to sort out what has caused the results, isolating the success to individual factors. This step provides the sponsors, who fund the project, a clear understanding of how well the project contributed to improvement in key measures. The good news is that this step can be achieved credibly in any project setting. The disappointing news is that it frequently is not addressed appropriately in most projects, leaving the success of the project in doubt.

### **LACK OF INVOLVEMENT WITH KEY MANAGERS**

Other managers, outside the project team, also support the project and make it successful. Sometimes they are the managers of the participants involved in the project. At other times, they are the managers of the support team for the project. In either case, their support and reinforcement are essential for the project's success. These managers must be identified early and steps must be taken to ensure that they live up to their roles and responsibilities, providing the proper reinforcement and support

needed to make the project successful. Without their support, the project could fail.

Perhaps no executive is more important than the chief financial officer. The HFMA study shows that most of a CFO's time is spent on volume, revenue growth, cost reduction, and efficiency (60%), leaving 40 percent for clinical outcomes, quality improvement, and patient satisfaction. Experts suggest that these figures should be reversed, with perhaps a vast majority of effort focused on clinical outcomes and patient satisfaction. The involvement of this key manager in projects targeting clinical outcomes and patient satisfaction, as well as others, can position any project for success.

## **FAILURE TO TAKE THE PROJECT TO MONEY**

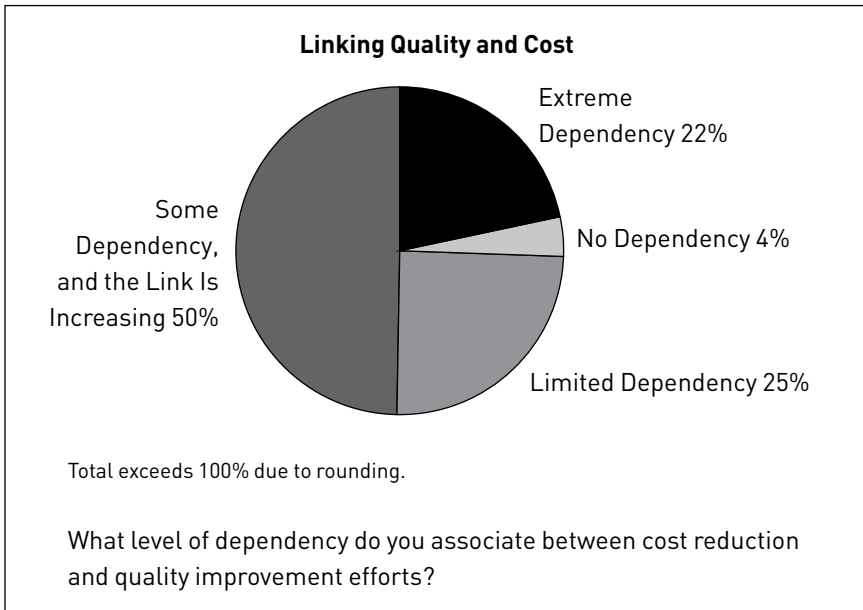
Top executives sometimes fixate on the monetary value of measures. They want to see the value of contribution in terms of revenue, costs, or costs avoided. They need to see money because money can clarify the extent of the problem. Monetary values normalize measures, so they are weighted in a manner less subjective than when left as intangibles. Figure 1.16 shows data from the HFMA study that indicate most survey respondents see only some or limited connection between quality improvement and cost. Only 22 percent see this connection clearly. More process improvement projects need to clearly show the connection between working on quality, waste, and patient outcomes, and their relative costs. Such clarification requires that measures of quality, waste, and patient outcomes be converted to money so that the opportunities for improvement are evident.

## **THE CHAIN OF IMPACT FOR HEALTHCARE PROJECTS**

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Sometimes it is helpful to think about the success of a healthcare project in terms of a chain of impact (or chain of value) that must occur if the project is successful in terms of business contribution. After all, without a business contribution, it is unlikely the project will be implemented. The chain of impact includes the five categories of outcomes discussed in general terms previously. These categories, also referred to as levels are: Reaction (Level 1), Learning (Level 2), Application and Implementation



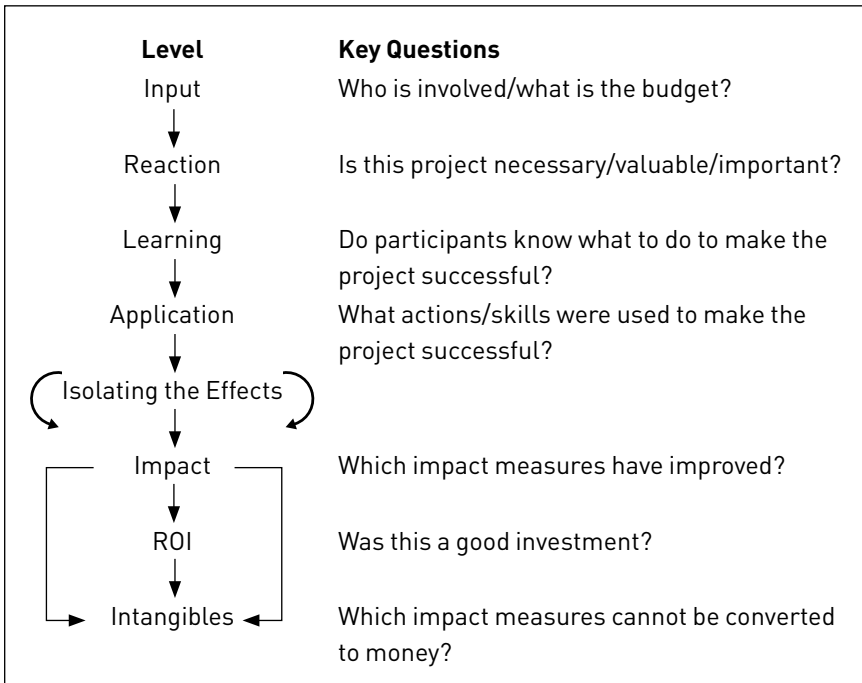
**FIGURE 1.16** Making the Quality/Cost Connection

Adapted from: HFMA Value Project Survey, January 2011.

(Level 3), Impact (Level 4), and ROI (Level 5). Together, these five levels form a chain of impact that occurs as projects are implemented. Figure 1.17 illustrates this chain of impact that occurs through the implementation of healthcare projects and key questions asked at each level.

This chain of impact begins with the inputs to the process. Inputs, referred to as Level 0, define the people involved in the project, how long it will take it to work, the cost, resources, and efficiencies. Obviously, these data are essential to move forward with a project, but they do not represent the success of the project. It is through reaction, learning, and application of knowledge, skill, and information that a positive impact on business measures will result.

Reaction is the first level of outcomes. Participants involved in the project must see the value in it. They must perceive the project is important, necessary, useful, and practical. If the reaction is adverse, the project will not likely deliver business value.

**FIGURE 1.17** The Chain of Impact for Healthcare Projects

Next is Learning (Level 2). With any project, learning must occur for the project to be successful. Acquisition of knowledge, skill, or information is necessary when implementing most new technology, systems, procedures, processes, and regulations. Participants must understand the issue itself, they must know what they need to do and what is involved in the project, and they must be aware of the project's potential success.

Level 3 is Application and Implementation, which represents action on the part of the participants involved in the project. They must change their habits, take action, use new technology, or change procedures. This activity (i.e., tasks, action, behavior) is essential for the project to be successful. Unfortunately, it is at this level that projects usually fail. Participants often do not do what they need to do to make the project successful. The many barriers to success with application must be identified and either removed, minimized, or circumvented. In addition to barriers, enablers exist to support successful

application. These also must be identified and then enhanced to allow participants to fully engage in projects and have success with them.

Level 4 is Impact. What participants know and what they do with what they know lead to a consequence, or impact, on key measures. When participants are involved in healthcare improvement projects, they want to know why they should participate. What will be the impact? Will a cost savings result? Will waste be reduced? What improvement can be realized? How will it help patient care? As project implementation succeeds, changes should occur in productivity, efficiencies, healthcare quality, process times, and cost reduction or avoidance. In addition, long-term impacts, such as patient satisfaction, job engagement, and job satisfaction, should improve. These impact measures, which are available in organizational record systems, represent the most important data set for top executives, leaders, and administrators. It is at this level that a step is always taken to isolate the effects of the project from other influences.

Finally, Level 5, ROI, the ultimate evaluation, is a comparison of the costs versus benefits. If the monetary benefits exceed the costs of the project it is perceived as a good investment, economically. Positive economic returns are critical to the continuation of many projects.

Another data set (not level) that is critical in this chain of impact is the intangibles. Even though they are not a new level of outcome measures, intangibles are the impact measures that cannot be converted to money credibly with minimum resources. They are important and often provide the rationale for many of the early projects an organization selects. Image, reputation, and brand are powerful measures, even without the monetary value tied to them.

## **PROBLEMS WITH CURRENT MEASUREMENT SYSTEMS IN HEALTHCARE—AND HOW TO IMPROVE THEM**

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For the most part, the current systems of measuring and evaluating healthcare projects fall short of providing the proper system for accountability, process improvement, and results generation. As we examine the ways in which projects are evaluated, ten areas for improvement surface. Table 1.5 lists each problem or issue and presents what is needed for improvement. It also shows how the ROI Methodology presented in this book addresses all ten of these areas.

**TABLE 1.5** Problems and Opportunities with Current Measurement Systems

Topic	Problem or Issue	What Is Needed	ROI Methodology
<b>Focus of use</b>	Audit focus; punitive slant; surprise nature	Process improvement focus	The number one use for the ROI Methodology
<b>Standards</b>	Few, if any, standards exist	Standards needed for consistency and credibility	Twelve standards accepted by users
<b>Types of data</b>	Only one or two data types	Need a balanced set of data	Six types of data representing quantitative, qualitative, financial, and nonfinancial data
<b>Dynamic adjustments</b>	Not dynamic; does not allow for adjustments early in the project cycle	A dynamic process with adjustments made early and often	Adjusts for improvement at four levels and at different time frames
<b>Connectivity</b>	Not respectful of the chain of impact that must exist to achieve a positive impact	Data collected at each stage of the chain	Every stage has data collection and a method to isolate the project's contribution
<b>Approach</b>	Activity based	Results based	Twelve areas for results-based processes
<b>Conservative nature</b>	Analysis not very conservative	A conservative approach is needed for buy in	Very conservative: CFO and CEO friendly
<b>Simplicity</b>	Not user friendly; too complex	User friendly, simple steps	Ten logical steps
<b>Theoretical foundation</b>	Not based on sound principles	Should be based on theoretical framework	Endorsed by hundreds of professors and researchers; grounded in research and practice
<b>Acceptance</b>	Not adopted by many organizations	Should be used by many	More than 5,000 organizations using the ROI Methodology

## FOCUS OF USE

Sometimes evaluation looks like auditing. Usually during a surprise visit, someone checks to see whether the project is working as planned, and a report is generated (usually too late) to indicate that a problem exists.

Evaluation of many capital expenditures, for example, is often implemented this way. The project is approved by the board, and after it is completed, a board-mandated follow-up report is produced by internal auditors and presented to the board. This report points out how things are working and/or not working, often at a point that is too late to make any changes. Even in government, social sciences, and education, the evaluations are often structured in a similar way. For example, our friends in the British government tell us that when new projects are approved and implemented, funds are set aside for evaluation. When the project is completed, an evaluation is conducted and a detailed report is sent to appropriate government authorities. Unfortunately, these reports reveal that many of the programs are not working, and it is too late to do anything about them. Even worse, the people who implemented the project are either no longer there or no longer care. When accountability issues are involved, the evaluation reports usually serve as punitive information to blame the usual suspects or serve as the basis for performance review of those involved.

It is not surprising that auditing with a punitive twist does not work with healthcare projects. These project evaluations must be approached with a sense of process improvement—not performance evaluation. If the project is not working, then changes must take place for it to be successful in the future.

## STANDARDS

Unfortunately, many of the approaches to evaluate healthcare projects lack standards unless the project is a capital expenditure, in which case the evaluation process is covered by Generally Accepted Accounting Principles (GAAP). However, most healthcare projects are not capital expenditures. In these instances, standards must be employed to ensure consistent application and reliable results. Overall, the standards should provide consistency, conservatism, and cost savings as the project is implemented. Use of standards allows the results of one project to be compared to those of another and the project results to be perceived as credible.

## TYPES OF DATA

The types of data that must be collected vary. Unfortunately, many projects focus on impact measures alone, showing cost savings, less waste, improved

productivity, or improved patient care. These measures will change if this project is implemented. The types of measures also include intangibles.

What is needed is a balanced set of data that contains financial and nonfinancial measures as well as qualitative and quantitative data. Multiple types of data not only show results of investing in healthcare projects, but help explain how the results evolved and how to improve them over time. To effectively capture the return on investment, six types of data are needed: reaction, learning, application, impact, ROI, and intangible benefits.

## DYNAMIC ADJUSTMENTS

As mentioned earlier, a comprehensive measurement system must allow opportunities to collect data throughout project implementation rather than waiting until it has been fully completed (perhaps only to find out it never worked from the beginning). Reaction and learning data must be captured early. Application data must be captured when project participants are applying knowledge, skills, and information routinely. All these data should be used to make adjustments in the project to ensure success, not just to report postprogram outcomes at a point that is too late to make a difference. Impact data are collected after routine application has occurred and represent the consequences of implementation. These data should be connected to the project and must be monitored and reviewed in conjunction with the other levels of data. When the connection is made between impact and the project, a credible ROI is calculated.

## CONNECTIVITY

For many measurement schemes, such as the balanced scorecard, it is difficult to see the connection between a healthcare project and the results. It is often a mystery as to how much of the reported improvement is connected to the project or even whether a connection exists.

Data need to be collected throughout the process so that the chain of impact is validated. In addition, when the business measure improves, a method is necessary to isolate the effects of the project on the data to validate the connection to the measure.

## APPROACH

Too often, the measurement schemes are focused on activities. People are busy. They are involved. Things are happening. Activity is everywhere. However, activities sometimes are not connected to impact. The project must be based on achieving results at the impact and ROI levels. Not only should the project track monetary results, but also, the steps and processes along the way should focus on results. Driving improvement should be inherent to the measurement process. By having a measurement process in place, the likelihood of positive results increases. A complete focus on results versus activity improves the chances that people will react positively, change their attitude, and apply necessary actions, which lead to a positive impact on immediate and long-term outcomes.

## CONSERVATIVE NATURE

Many assumptions are made during the collection and analysis of data. If these assumptions are not conservative, then the numbers are overstated and unbelievable, which decreases the likelihood of accuracy and buy in. The results, including ROI, should be CFO and CEO friendly.

## SIMPLICITY

Too often, measurement systems are complex and confusing for practical use, which leaves users skeptical and reluctant to embrace them. The process must be user-friendly, with simple, logical, and sequential steps. It must be void of sophisticated statistical analysis and complicated financial information, at least for the projects that involve participants who lack statistical expertise. It must be user-friendly, even to those who do not have statistical or financial backgrounds.

## THEORETICAL FOUNDATION

Sometimes measurement systems are not based on sound principles. They use catchy terms and inconvenient processes that make some researchers and professors skeptical. A measurement system must be based on sound

principles and theoretical frameworks. Ideally, it must use accepted processes as it is implemented. The process should be supported by professors and researchers who have used the process with a goal of making it better.

## ACCEPTANCE

A measurement system must be used by practitioners in all types of organizations. Too often, the measurement scheme is presented as theoretical but lacks evidence of widespread use. The ROI Methodology, first described in publications in the 1970s and 1980s (with an entire book devoted to it in 1997<sup>12</sup>), now enjoys more than 5,000 users. It is used in all types of projects and programs from technology, quality, marketing, and human resources, among others. In recent years it has been adopted for green projects and sustainability efforts.

The success of the ROI Methodology will be highlighted in detail throughout this book with examples of applications. It is a comprehensive process that meets the important needs and challenges of those striving for successful healthcare projects.

## THE ELUSIVE ROI

Without a doubt, the concept of ROI has entered the healthcare field. In recent literature, it is mentioned regularly, and often with a lot of passion, but some issues coincide with ROI. Sometimes individuals and executives use the term *ROI* to reflect a benefit or value instead of the financial definition of ROI. In other terms, they are using cost effectiveness to show that if they lower costs, they have positive ROI. In other cases, it is considered cost recovery, which may help the ROI definition, but sometimes does not. Sometimes terms such as *return on expectation* or *return on inspiration (ROE/ROI)* are used, which have dramatically different meanings for finance and accounting executives than they do for those who make up such acronyms.

Profits can be generated through increased revenue or cost savings. In practice, more opportunities can be found for cost savings than for increased revenue. Cost savings can be realized when improvements in productivity, quality, efficiency, cycle time, or actual cost reduction occur. In a review of



almost 500 studies, the vast majority of which were based on cost savings, approximately 85 percent of the studies used a payoff based on cost savings from output, quality, efficiency, time, or a variety of soft data measures. The others used a payoff based on revenue increases, where the earnings were derived from the profit margin. Cost savings are important for non-profits and public-sector organizations, where opportunities for profit are often unavailable. Most projects or programs are connected directly to cost savings; ROI can still be developed in these settings.

The formula should be used consistently throughout an organization. Deviations from, or misuse of, the formula can create confusion, not only among users, but also among finance and accounting staff. The chief financial officer (CFO) and the finance and accounting staff should become partners when evaluating programs for ROI. The staff must use the same financial terms as those used and expected by the CFO. Without the support, involvement, and commitment of these individuals, widespread use of ROI will be unlikely.

Table 1.6 shows some financial terms that are misused in literature. Terms such as *return on intelligence (or information)*, abbreviated as ROI, do nothing but confuse the CFO, who assumes that ROI refers to the return on investment as described earlier. Sometimes *return on expectations* (ROE), *return on anticipation* (ROA), and *return on client expectations* (ROCE) are used, also confusing the CFO, who assumes the abbreviations refer to return on equity, return on assets, and return on capital employed, respectively. The use of these terms in the payback calculation of a project will also confuse and perhaps lose the support of the finance and accounting staff. Other terms such as *return on people*, *return on resources*, *return on technology*, *return on web*, *return on marketing*, *return on objectives*, and *return on quality* are often used with almost no consistency in terms of financial calculations. The bottom line: don't confuse the CFO. Consider this person an ally, and use the same terminology, processes, and concepts when applying financial returns for projects.

## **NEEDED: RESULTS-BASED LEADERSHIP**

What makes a healthcare project successful? When the issues described in this chapter are addressed throughout the healthcare life cycle, success is almost guaranteed. To achieve success is to avoid the pitfalls that cause

**TABLE 1.6** Misused Financial Terms

<b>Term</b>	<b>Misuse</b>	<b>CFO Definition</b>
ROI	Return of information Return of intelligence	Return on investment
ROE	Return on expectation	Return on equity
ROA	Return on anticipation	Return on assets
ROCE	Return on client expectation	Return on capital employed
ROP	Return on people	?
ROR	Return on resources	?
ROT	Return on technology	?
ROW	Return on web	?
ROM	Return on marketing	?
ROO	Return on objectives	?
ROQ	Return on quality	?

failure, understanding those issues and making sure that they are working with the project instead of against it.

Strong leadership is necessary for this to work. Leaders must ensure that healthcare improvement projects are designed to achieve results. Table 1.7 shows the twelve actions necessary to provide effective, results-based management, which is critical to delivering results at the ultimate level, ROI. However, only one of the items involves data collection and evaluation (number 11). The remaining leadership areas represent steps and processes that must be addressed throughout the healthcare process and project cycle. These actions were developed after observing, studying, conducting, and reviewing thousands of ROI studies. We know what keeps projects, programs, and systems working and what makes them successful. Following these twelve leadership rules can ensure project success.

**TABLE 1.7** Leadership for Results

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1. Allocate appropriate resources for healthcare improvement projects and programs.
  2. Assign responsibilities for projects and programs
  3. Link projects to specific business needs.
  4. Address performance issues involving the key stakeholders for the project identifying the behavior/actions that must change.
  5. Understand what individuals must know to make projects successful, addressing the specific learning needs.
  6. Develop objectives for the projects at multiple levels including reaction, learning, application, impact, and ROI.
  7. Create expectations for success of the project with all stakeholders involved, detailing roles and responsibilities for the project's success.
  8. Address barriers to successful projects early in the project so that they can be removed, minimized, or diminished.
  9. Establish the level of evaluation needed for each project at the beginning so that participants will understand the focus.
  10. Develop partnerships with key administrators and managers who can make the project successful. (For many, this is the manager or the person who is the participant in the project.)
  11. Ensure that measures are taken and the evaluation is complete with collection and analysis of a variety of data.
  12. Communicate project results to the appropriate stakeholders as often as necessary to focus on process improvement.
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## THE APPROACH OF THIS BOOK

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The remainder of this book focuses on the proper use of the ROI Methodology. The following issues about the approach will provide additional insight as to what you can expect in the book.

## AUDIENCE

The primary audience for this book includes managers and executives concerned with the valuation of projects, programs, processes, and people.

Executives generally are strongly committed to their projects; however, they need to see value in terms they can appreciate and understand—money.

This book is also intended for professionals, analysts, and practitioners who are responsible for evaluating the success of a project. It shows how the various types of data are collected, processed, analyzed, and reported.

## **PROFESSIONAL APPLICATIONS IN WHICH ROI HAS BEEN MEASURED**

The ROI Methodology is geared toward a variety of professional areas in healthcare organizations. These areas include (but are not limited to) the following:

- Human resources, human capital
- Learning and development, performance improvement
- Technology, IT systems
- Medical meetings and events
- MD practice acquisition
- Medical equipment evaluation and replacement
- Clinical process redesign
- Sales, marketing
- Public relations, community affairs, government relations
- Project management solutions
- Quality, Six Sigma
- Medical procedures
- Medical process improvements
- Compliance, ethics
- Logistics, distribution, supply chain
- Public policy initiatives

- Social programs
- Charitable projects

## THE DIFFERENCE

Although other books attempt to address accountability in these and other functional areas, *Measuring ROI in Healthcare* presents a methodical approach that can be replicated throughout an organization, enabling comparisons of results. The process described in this book is the most documented method in the world, and its implementation has been phenomenal, with more than 4,000 organizations currently using it in one function or another. Many books tackle accountability in a certain function or process, but this book shows a method that works across all types of processes, ranging from new procedures to the implementation of new technology and from educational programs to public policy initiatives.

## TERMINOLOGY: PROJECTS, PROGRAMS, SOLUTIONS

In *Measuring ROI in Healthcare*, the terms *project* and *program* are used to describe a variety of processes that can be evaluated using the ROI Methodology. This issue is important because readers may vary widely in their perspective. Healthcare professionals involved in technology applications may use the terms *system* and *technology* rather than *program*. In public policy on the other hand, the word *program* is prominent. For a medical meetings and events planner, the word *program* may not be particularly pertinent, but in human resources, *program* fits quite well. Finding one term that fits all these situations would be difficult. Consequently, the terms *project* and *program* are used interchangeably. Table 1.8 lists these and other terms that may be used to refer to an initiative undergoing evaluation using the ROI Methodology.

## FINAL THOUGHTS

So what? What does all this mean? Given the dramatic changes in healthcare and the need to lower costs, improve patient quality, increase access,

**TABLE 1.8** Terms and Applications

<b>Term</b>	<b>Example</b>
Program	Leadership development for senior administrators
Project	A workforce management project for the sleep center
System	A new portal for physicians
Initiative	A faith-based effort to reduce infant mortality
Policy	A new policy for physician engagement
Procedure	A new procedure to reduce bloodstream infections
Event	A medical trade show
Meeting	Innovations in healthcare conference
Process	A quality control process
People	Staff additions in the patient care center
Tool	A new values-based selection tool for the nursing staff

and enhance care, substantial changes are essential. This chapter makes the case for having a more comprehensive, credible process to show the value of healthcare projects. Some important stakeholders are demanding, requiring, or suggesting more accountability up to and including ROI. “Show me the money” has become a common request—and is being made now more than ever. A variety of forces have created this current focus on results, leaving healthcare planners with only one recourse: to step up to the accountability challenge, create a process that can measure success, develop data that please a variety of important stakeholders, and use a process that improves projects and programs in the future. The remainder of the book will focus directly on the ROI Methodology and how it is being applied in the healthcare field.