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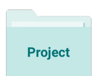

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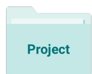

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Original Article

A Balanced Scorecard for Canadian Hospitals

by G. Ross Baker and George H. Pink

Managing a health care organization on the basis of one set of information alone (e.g., financial information) does not give a full view of the impact of changes on the organization. A balanced scorecard approach can provide management with a comprehensive framework that turns an organization's strategic objectives into a coherent set of performance measures. This approach has been used extensively in industry, but seldom in health care organizations. By developing a scorecard approach, these organizations could obtain feedback providing a balanced view of organizational performance, letting them see if improvements in one area may have been achieved at the expense of another. It also demands that managers translate their general mission statement on customer service into specific measures that reflect the factors that really matter to customers.

Health care organizations today face increased pressures from government, taxpayers and patients for greater accountability. Managers and clients require better measures of organizational performance that can be used to orient their efforts to improve performance.[1,2] These external and internal needs have both prompted considerable interest in "report cards," "dashboards" and other approaches for analyzing organizational performance. In the United States, much of this work has been fostered by insurance companies and employers which feel they have limited means to compare the services and outcomes offered by different providers. Better performance measures are also sought by health care organizations which recognize that attempts to mobilize their staff and physicians to improve quality are futile unless measures of performance are readily available. There is also increasing interest in developing measures that can be interpreted easily and tracked by boards and which provide senior managers with an efficient, yet reasonably comprehensive means to examine how well their organizations are performing. Too often organizational performance goals are stated in terms that are difficult to operationalize and communicate to middle managers and staff.

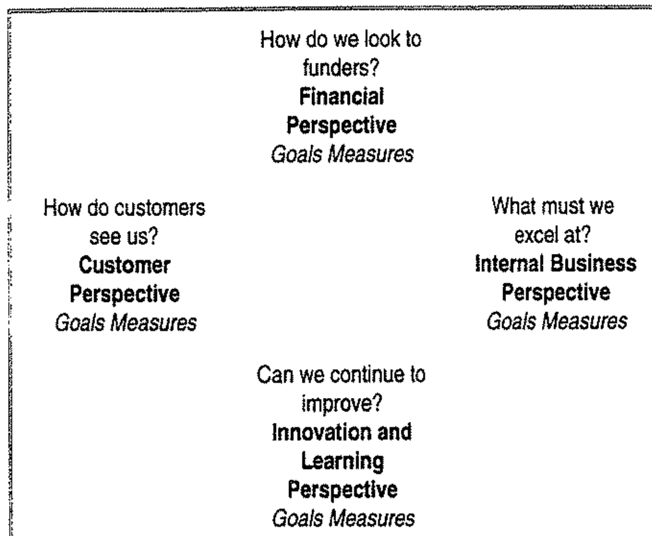
The balanced scorecard developed by Kaplan and Norton[3,4] is one approach to organizational performance measurement. The balanced scorecard provides executives with a comprehensive framework that translates an organization's strategic objectives into a coherent set of performance measures. Recognizing that reliance on financial measures of performance alone does not provide a full understanding of the effectiveness of organizations, Kaplan and Norton urged organizations to develop complementary sets of measures that span a variety of dimensions relevant to an organization's strategic directions.

Balanced scorecards have been developed by companies in a variety of industries, but there has been only limited work applying this approach to health care organizations. For Canadian hospitals, if one adapted the Kaplan and Norton model, a balanced scorecard would provides answers to four basic questions (Figure 1):

- How do customers see us? (customer perspective)
- What must we excel at? (internal business perspective)
- Can we continue to improve? (innovation and learning perspective)
- How do we look to funders? (financial perspective)

By creating measures in each of these four areas, health care organizations could obtain feedback providing a balanced view of organizational performance. These measures enable managers to see the trade-offs incumbent in their strategic and operational decisions. For example, attempts to reduce the costs of providing service may increase waiting times and lower physician satisfaction. Managing on financial information

Figure 1: A Balanced Scorecard Framework for Canadian Hospitals



alone does not provide a full view of the impact of changes on the organization.

Although the scorecard gives senior managers information from four perspectives, it minimizes information overload by limiting the number of measures used. In creating the scorecard, managers must deal with the dilemma that many organizations face as they develop better information systems: the increased ability to measure organizational activity often comes at the expense of being able to identify what information needs to be carefully monitored and used to adjust operations. The balanced scorecard approach requires deliberate selection of a limited number of indicators in each perspective.

The scorecard could meet several hospital management needs. First of all, the scorecard brings together in a single management report many of the seemingly disparate elements of a hospital's agenda: becoming customer oriented, improving quality, emphasizing teamwork, controlling costs, and managing for the long term. Second, the scorecard guards against suboptimization. By forcing senior managers to consider all the important operational measures together, the balanced scorecard lets them see whether improvement in one area may have been achieved at the expense of another. For example, management can improve a hospital operating margin quite easily by closing beds, but such action may also result in a higher average cost per weighted case, fewer referrals, lower patient satisfaction and unhappy employees. Third, the balanced scorecard can serve as the clear means to translate organizational goals, defining and communicating priorities, to managers, employees, funders and even customers. Thus, the scorecard offers a tool for deploying organizational strategic objectives into departmental or program goals, and it promotes the alignment of organizational efforts toward those goals.

Each of the four perspectives requires that managers select a set of measures to monitor. Data for these measures must be valid, reliable and available in a reasonable time period. The data must reflect crucial activities (the "core process") and important results ("key process measures"). Data must be collected on a ongoing and periodic basis, analyzed over time and, where possible, compared with results from other organizations, particularly leaders in the field. The specific measures selected must be relevant to organizational goals. Ideally, they should be based on sound research to ensure that they are valid and reliable.

Customer perspective: how do customers see us?

The balanced scorecard demands that managers translate their general mission statement on customer service into specific measures that reflect the factors that really matter to customers. Although hospitals have many different customers, the primary ones are patients and their families.

Patients' concerns tend to fall into five categories: time, process quality, service, outcome and cost. Did the patient receive service promptly? Was the service provided free of error? Was the service provided in a comfortable and respectful manner? Did the service alleviate the patient's problem? Was the service provided in such a way as to minimize cost and inconvenience to the patient and family?

Depending on patients' evaluations to judge a hospital's performance forces the hospital to view its performance through the patients' eyes. Patient satisfaction surveys remain the most frequently used tool for assessing the patient perspective, and interest in such surveys appears to be growing among Canadian hospitals. Still, many managers and clinicians remain skeptical about the value and meaning of patient views on their care. Even for those who see this information as valuable, there are important issues regarding the content of these surveys and the best methods for surveying. Several valid and reliable instruments have been developed, but only a few hospitals are using them.

Interpreting patient feedback poses several challenges. What level of patient satisfaction denotes acceptable or desirable service? Hospitals undertaking repeated patient surveys can analyze trends in patient views over time. Benchmarking against other hospitals offers a more rigorous method for comparing performance against best practices. There has been only rudimentary progress in benchmarking patient views across health care organizations. Recently, however, some Canadian hospitals have begun to use a Canadianized version of "The Inpatient Viewpoint," a survey developed by American researchers and used for years by many U.S. hospitals. Also, a team headed by

Dr. Peter Norton of Sunnybrook Health Science Centre, Toronto, and Dr. Michael Murray of the University of Toronto, has developed a long-term care patient satisfaction instrument now being used by several organizations.

Once data have been collected, the interpretation and use of this information also poses problems. Many organizations carry out patient satisfaction surveys only once a year which limits their ability to assess changes over time. Use of the survey results is often delayed by prolonged data collection and analysis so that when the results are obtained, the information is already more than six months old. Although new technologies, such as optically coded scoring, and new approaches, such as sampling smaller waves of patients each month, have been adopted in some facilities, most organizations still view customer feedback as an episodic exercise, not an area for continuous monitoring. The usefulness of these reports is greatly increased if they can be done regularly (monthly or quarterly); but this requires adopting new methods to minimize the cost of surveying.

Choosing an instrument also raises trade-offs: while shorter questionnaires may reduce some data collection costs, they limit the information available. Some instruments ask general questions about patients' experiences with different services and providers (e.g., nursing, admissions). Other instruments (e.g., the Picker Commonwealth survey[5]) provide more detailed reports on patient experiences, but require more effort to complete. To compare results between organizations, measures must be standardized.

Despite these difficulties, many health care organizations recognize that meeting the needs and expectations of patients and their families is crucial to ensuring long-term support for the hospital's mission.

Internal business perspective: what must we excel at?

Excellent performance derives from processes, decisions and actions occurring throughout an organization. Managers need to focus on those critical internal operations that enable them to satisfy patient and other customer needs, and provide effective care. Internal business measures for the balanced scorecard should stem from the clinical and business processes that have the greatest impact on patient outcomes, patient health and satisfaction with care. For example, they should include factors that affect quality of care, staff skills and productivity. Hospitals should also attempt to identify and measure their core competencies and the critical technologies and skills needed to ensure progressive patient care.

Measures in this dimension ideally should include both process and outcome components. The process measures could include both traditional utilization measures (e.g., volumes of services and average length of stay) and systems measures, such as cycle time (e.g., how long does it take to process laboratory tests or radiological films), as well as key process variables, such as operating room preparation time, which have been identified as the result of process improvement efforts. Adverse occurrence indicators can also be used as measures of process quality, but there are often questions about the completeness and validity of such measures.

To achieve goals on quality, productivity and cost, managers must select measures that are influenced by employees' actions. Since much of the action takes place at the department and nursing unit level, managers need to deploy overall quality, productivity and cost measures to local levels. That way, the measures link top management's judgment about key internal processes and competencies to the actions taken by individuals that affect overall hospital objectives. This linkage ensures that employees' activities will contribute to the hospital's overall mission. If one of the key goals for the organization is to reduce waiting times, then measures can be developed at a program or unit level where major waits occur. Often, waiting is seen as solely an issue for patients. However, waits have other organizational effects, including the need for increased space and staffing. Delays in receiving test results or other information may have other negative consequences, including requests for duplicate tests or the deferral of treatment.

Clinical processes are the core business of health care organizations but, until recently, few standard measures of clinical outcomes have been available. Developing a strategy for ongoing monitoring in this area is quite challenging, but recent efforts to develop valid and reliable measures, and the experiences of some hospitals in collecting this information, demonstrate the feasibility of such efforts. One approach is to develop condition-specific indicators. These are now available for many clinical conditions and procedures. Alternatively, one can use a general health status assessment measure. The SF-36 instrument, developed by John Ware and others in the Medical Outcomes Study,[6] is frequently used for this purpose. (An even shorter instrument, the 10 question SF-10 is now available.) This instrument can be used to assess outcomes for samples of patients for specific diseases or conditions (e.g., pediatric asthma), or those undergoing specific procedures (e.g., knee transplantation.). Effective use of such indicators demands risk adjustment, so that changes in outcomes resulting from differences in patients' severity of illness are not confused with changes that result from effectiveness of different treatments.

A balance needs to be struck between measures of process (e.g., procedure time) and measures of clinical outcomes (e.g., patient health status 30 days after discharge). Both types of measures are necessary, and need to be monitored carefully. As James Reinertsen[7] noted, outcomes measures and process measures offer complementary perspectives: outcomes measures assess how well work is being done; process measures indicate how the work is done and where it might be improved. The former provides a "compass"; the latter offers the "rudder" necessary to change direction.

Lastly, while hospitals have traditionally been concerned with the outcomes of their patients, they also need to consider the impact of their activities on the communities they serve. In this broader perspective, the effectiveness of the organization is measured in terms of contributions to community health and responsiveness to community needs. This issue has come into sharp focus in the United States where the rapid growth of managed care and vertically integrated health systems has shifted perspectives from organizational-level outcomes to system-level outcomes. For example, population health and community benefit measures are an important component of the consortium research on indicators of system performance (CRISP), a performance measurement system being developed by 23 vertically integrated health systems in the United States.[8] Similar issues are also pertinent to the regional health care systems emerging in several Canadian provinces.

Innovation and learning perspective: can we continue to improve?

Innovation and learning is the most challenging area in which to develop measures, but these measures are important since they assess organizational capacity for improvement and change. Hospitals must make continual improvement to their existing services and have the ability to implement new services with expanded capabilities if they are to prosper in the competitive health care environment. Among the measures often included in this dimension in other industries are those that indicate the extent to which companies derive profit from new services or technologies. For hospitals, technology is generally viewed as a cost instead of a revenue source. But other measures (e.g., measures of capital spending and equipment acquisition) could be included in this category.

Measures of employee training and skills could also be relevant in this dimension of the balanced scorecard. Such measures should be linked to strategic objectives. For example, for a hospital implementing patient-focused care, what percentage of employees have received relevant training? What has been the investment in this training? How useful was it? Other measures could assess organizational improvement efforts: how many quality improvement teams have reported making improvements? What are the estimated savings from these efforts?

Some organizations have included measures of employee attitudes in their assessment of innovation and learning. For example, it would be useful to develop measures of the extent to which organizational cultures of hospitals support learning and change. One tool for measuring critical aspects of organizational culture is "Quality in Action,"[9] an organizational survey developed by researchers at the Department of Health Administration, University of Toronto.

Financial perspective: how do we look to funders?

Financial performance measures indicate whether the hospital's strategy, implementation and execution are contributing to the bottom line. Ideally, hospitals should specify how improvements in quality, productivity and service will lead to a higher operating margin, lower average cost per weighted case, or greater variable revenue. Financial indicators have been used extensively by hospital managers for many years. Current ratio, quick ratio and times interest earned are examples of accounting ratios that hospitals and government have used to compare hospital performance over time and with industry standards.

Many provinces are now adopting new approaches to funding. In Ontario, where rate-based funding is being developed, probably the most important financial indicator for hospitals is average cost per weighted case, currently defined as acute adult and newborn inpatient and day surgery cost divided by total weighted cases. Under rate-based funding, the current global budgets will be replaced by prospectively negotiated budgets equal to the product of the number of weighted cases and a revenue per weighted case (which is adjusted for variations in teaching activity and other factors). It will be critical for Ontario hospitals to compare their cost per weighted case with their revenue per weighted case (to avoid short-term cash flow problems), their cost per weighted case over time (to identify trends that might result in long-term financial problems), the cost per weighted case of local hospitals (to remain competitive), and the cost per weighted case of all peer hospitals (to compare performance with industry benchmarks).

A second important financial indicator is operating margin, defined as operating income divided by net operating revenues. A positive operating margin indicates that the Ministry of Health, preferred accommodation and other patient-related income exceeds the cost of patient services — the hospital is providing care within its patient-related budget. A negative operating margin indicates that patient-related income falls short of the cost of patient services, possibly

Workshop Participants

Organizations represented included the Canadian Council on Health Services Accreditation, the Joint Policy and Planning Committee (Ontario), the Ontario Ministry of Health, University of Alberta Hospitals, Royal Alexandra Hospital, Mount Sinai Hospital, Peel Memorial Hospital, West Park Hospital, Women's College Hospital, Baycrest Hospital and the Department of Health Administration, University of Toronto.

because the hospital relies on investment or other non-patient related income to fund operations. Because non-patient-related income tends to be variable and thus risky, a negative operating margin means that a hospital faces financial risk from unforeseen contraction of this income.

A third financial indicator is the percentage change in the value of foundation financial assets, defined as a one-year change in the value of the financial assets divided by the value of the financial assets in the previous year. In a health care environment of deteriorating physical plants, escalating construction costs and expensive technology, an adequate supply of capital for new and replacement assets is critical. Because many Canadian hospitals rely on foundations to provide capital, it is important that foundations maintain a financial asset base that will yield the required revenue stream. A positive percentage change in foundation financial assets indicates that the foundation has enhanced its ability to provide for future financial requirements and a negative change means a diminished ability.

These financial measures can be viewed both on a programmatic basis as well as from an organization-wide perspective. The ability to "roll up" financial performance measures offers hospital senior managers the means to assess performance across the range of activities; while the ability to "drill down" and examine performance on a program or unit basis offers the means to decentralize control to managers and clinicians within those programs and units.

The experience of Canadian hospitals with scorecards

In October 1994, representatives of several Ontario and Alberta hospitals, government and policy groups, and the University of Toronto explored the use of the balanced scorecard to measure hospital performance (Box). Working group members identified key criteria for each of the four perspectives: the financial perspective, customer perspective, innovation and learning perspective, and the internal business perspective, and discussed what specific measures might be useful in each area.

Workshop participants found it relatively easy to identify criteria that could be used to measure hospital performance, but the effort to develop specific measures that could easily be developed and used was seen as more challenging. An initial list of such measures was developed. However, based on the discussion at the meeting and the experience of many with such measures, most Canadian hospitals face considerable challenges in adapting instruments, creating a capacity for collecting and organizing this information, developing databases and deploying the information that could provide a balanced scorecard.

Despite the challenges, some hospitals are implementing "scorecards" and related "dashboards" and "report cards" which report multidimensional views of organizational performance. Women's College Hospital, Toronto, has developed a set of measures based on its assessment of the key issues for the major stakeholders in the hospital. Each of these issues is related to key processes in the hospital, including patient care processes, "academic" processes, community outreach, organizational change and development, materials management, resource utilization, work force support and the "hospital as a hotel." For each key process area, performance is judged in terms of six key quality characteristics: customer satisfaction, efficiency, efficacy (outcomes), cycle time, response time and error rate.

A different approach has been used at the University of Alberta Hospitals where senior managers developed an organizational "dashboard" which identified key indicators for major case mix groups (CMGs*). These indicators include financial measures (e.g., average cost per case); utilization measures (e.g., volumes and average length of stay); outcome measures (e.g., mortality rates, numbers of adverse occurrences and readmissions; access measures (e.g., average wait times for selected services; and satisfaction measures (e.g., numbers and percentage of very good and excellent ratings on patient surveys and numbers and percentages of physicians who rate the organization as very good or excellent).

Based on the assessment in the October workshop and the experiences of Canadian and U.S. hospitals in developing and using such performance measures, there seem to be several key issues that will influence the development and use of these management tools.

First of all, it is clear that the development of reliable, valid and comparable data elements will require a major investment of resources. Current efforts to develop such measures in the United States reinforce the view that many existing measures cannot be used directly for performance without first addressing such issues as data quality and the consistency of reporting. The CRISP group in the United States has worked for more than two years to develop measures that will accurately reflect performance. Similarly, the Joint Commission on Accreditation of Health Care

Figure 2: Some Sample Measures for a Balanced Scorecard for Canadian Hospitals

Financial Perspective		**Customer Perspective**	
Goals	*Measures*	*Goals*	*Measures*
Survive	Operating margin	Patient satisfaction	Complaints Referrals Patient satisfaction survey
Succeed	Average cost per weighted case	Community satisfaction	Community survey
Prosper	Foundation revenue		

Internal Business Perspective		**Innovation and Learning Perspective**	
Goals	*Measures*	*Goals*	*Measures*
Technology capability	MRI referrals	Clinical learning	Percentage day surgery cases
Quality of care	Nosocomial infections Patient falls	Organizational learning	CQI projects
Patient outcomes	SF-36 measures of health status	Employee satisfaction	% rating hospital as excellent *and* % rating poor/fair
Productivity	Nursing hours per weighted case	Physician satisfaction	% rating hospital as excellent *and* % rating poor/fair
Resource utilization	Average length of stay % change in service volumes	Skill development	% of budget supporting training *and* development
Cycle time	Routine lab test turnaround time Routine X-ray turnaround time CT turnaround time		
Population health	Key health status indicators (e.g., neonatal mortality)		

Organizations has worked for nearly a decade on indicator measures of health outcomes. At the same time, these and other large consortium efforts are developing measurement tools and strategies that may be useful for other organizations. The key to rapid use of such measures will be the ability to transfer this knowledge to other organizations, rather than trying to develop measures locally.

Second, even if Canadian hospitals are able to adapt existing tools and measurement strategies, there will be a continued need for investment in their information management capabilities beyond the use of standard budget systems. This investment will include upgrading the skills of clinicians and managers to use information, and developing the capacity to collect new types of data on patient satisfaction, process measures, health outcomes and skill development, to name just a few areas.

Third, and perhaps most important, hospitals will have to learn how to link this new information to action. What are acceptable and desirable levels of performance? How can we learn from other hospitals which are achieving higher scores? What trade-offs may be necessary in the different performance dimensions? How can we engage all staff in activities that promote improvement in patient satisfaction, reduce costs or improve outcomes? Can organizations develop a measurement approach that encourages accurate reporting of these data, if the data are then used to assess and reward the performance of individuals and teams?

A balanced scorecard should focus organizational activities on goals and assist in deploying these goals through the organization. Kaplan and Norton[3,4] warned that some companies have become diverted from the purpose of the scorecard. In some environments, scorecards become simply a record-keeping exercise or an elaborate reporting system with thousands of measures. The crucial tests on the success of the scorecard approach are whether the scorecard

information becomes a cornerstone for decision-making, and whether managers can link their broader organizational goals to changes in performance measures.

*** CMG is a registered trademark of the Canadian Institute for Health Information.**

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