# Strategic Performance Management: Development of a Performance Measurement System at the Mayo Clinic

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## EXECUTIVE SUMMARY

Managing and measuring performance become exceedingly complex as healthcare institutions evolve into integrated health systems comprised of hospitals, outpatient clinics and surgery centers, nursing homes, and home health services. Leaders of integrated health systems need to develop a methodology and system that align organizational strategies with performance measurement and management. To meet this end, multiple healthcare organizations embrace the performance-indicators reporting system known as a "balanced scorecard" or a "dashboard report." This discrete set of macrolevel indicators gives senior management a fast but comprehensive glimpse of the organization's performance in meeting its quality, operational, and financial goals.

The leadership of outpatient operations for Mayo Clinic in Rochester, Minnesota built on this concept by creating a performance management and measurement system that monitors and reports how well the organization achieves its performance goals. Internal stakeholders identified metrics to measure performance in each key category. Through these metrics, the organization links Mayo Clinic's vision, primary value, core principles, and day-to-day operations by monitoring key performance indicators on a weekly, monthly, or quarterly basis.

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The literature extensively chronicles the rapid and accelerating changes that affect U.S. healthcare. Healthcare systems face strong pressures to improve clinical quality, enhance service, expand access, and reduce costs. Competitive pressures in the marketplace require healthcare systems to measure, monitor, and report system performance to maintain and expand a market base. Thus, those healthcare systems that are capable of clearly articulating and demonstrating the value of services provided enjoy a competitive advantage.

As healthcare institutions evolve into integrated health systems comprising hospitals, outpatient clinics and surgery centers, nursing homes, and home health services, the task of measuring performance increases in complexity. Leaders of these institutions need to develop a methodology and system that align organizational strategies and core principles with performance measurement and management indicators.

The leadership of Mayo Clinic's outpatient operations realized that its current performance measurement systems were based largely on financial indicators (e.g., total expense and expense per unit of service) and clinical productivity (e.g., number of surgical patients and number of outpatient visits). The leadership therefore undertook a systematic approach to identify a performance management and measurement system representative of the outpatient practice. The system creates a building block for medical center–wide performance monitoring across outpatient, hospital, regional health system, and managed care operations.

This article describes (1) the environmental forces driving performance measurement and management, (2) the systematic process used by Mayo Clinic leadership to develop the performance management and measurement system, (3) the initial direct and indirect outcomes of this effect, (4) the lessons learned from this process, and (5) the future directions of this performance system.

## THE ENVIRONMENTAL FORCES DRIVING HEALTHCARE PERFORMANCE MEASUREMENT AND MANAGEMENT

### A Healthcare Management Imperative

Creating a system to measure and manage organizational performance is an imperative for healthcare management. A strategic performance management system is essential to enhance a wide range of organizational competencies, including

- Clinical quality to maintain and expand market share;
- Organizational agility in creating and responding to market forces;
- Organizational focus on critical performance metrics; and
- Timely, accurate management information to improve and predict performance.

### Corporate Business Trends

The new performance measurement models incorporate financial figures as one among a broader set of measures

(Eccles 1991). Many companies recognize that long-term success cannot be predicted by short-term measures such as quarterly earnings figures. For example, a Wharton School study of 317 companies found that 36 percent were using nonfinancial indicators to set executives' compensation (Wharton School 1997).

The need to assess performance across both financial and operational indicators necessitates the development of a measurement framework. Kaplan and Norton's (1996; 1993; 1992) conceptual framework, known as the "balanced scorecard," is a potential solution to this complex management and measurement issue. The balanced scorecard, a reporting tool with a discrete set of macro-level indicators, provides senior management with a quick yet comprehensive glimpse of organizational performance in meeting its strategic goals. Kaplan and Norton (1992) envisioned a balance between

- Operational indicators, which measure performance in planning and implementing organizational strategies. Operational indicators such as internal and external customer satisfaction, quality metrics, internal processes, internal innovation, and continuous improvement efforts tend to drive future financial performance.
- Financial indicators, which are traditional financial measures that report results of past actions. These indicators include net operating income, earnings per share, and return on equity.

The threat of organizational myopia arises if management overemphasizes one set of indicators. Thus, organizations need to link strategic goals to a limited set of indicators that measure performance across a broad spectrum of categories.

## Trends in the Healthcare Industry

National accrediting bodies, such as the National Committee for Quality Assurance (NCQA) and the Joint Commission on the Accreditation of Health Care Organizations (Joint Commission), request that managed care plans and hospitals prove the clinical quality and cost effectiveness of the care they provide (Denton and Matloff 1995; Ellwood and Enthoven 1995; Solberg, Mosser, and McDonald 1997). Examples from both bodies are described in this article.

The NCQA's Health Plan Data and Information Set (HEDIS) incorporates more than 60 performance indicators that cover quality of care, access to and satisfaction with care, resource utilization, finances, and organizational management. More than 300 managed care plans measure their performance according to the HEDIS measures and report their results to employers. Further, private and public employers such as Allied Signal, General Electric, GTE, Xerox, and the states of New York and Ohio require that health plans obtain NCQA accreditation before bidding to provide medical services to their employees (Iglehart 1996; Schroeder and Lamb 1996).

The Joint Commission's ORYX system asks that hospitals measure performance in the following broad

**TABLE 1**
**Description of Mayo Clinic Rochester**

| | |
|---|---|
| Mayo Clinic | 1,147 staff physicians and medical scientists |
| | 16,851 allied health employees |
| St. Mary's Hospital | 1,157 beds available for service |
| | 45 operating rooms |
| Rochester Methodist Hospital | 794 beds available for service |
| | 34 operating rooms |
| Mayo Regional Health System | 351 physicians |
| (Iowa, Minnesota, and Wisconsin) | 6,063 allied health employees |

Source: Mayo Foundation. 1999. [Online article. Retrieval 3/3/99.] http://www.mayo.edu/location/rst/MHS/MHS.html.

domains: clinical quality, health status of patients, patient satisfaction, and financial strength. In addition, organizations must choose two clinical quality measures that will have an effect on at least 20 percent of their patient population (Morrissey 1997).

The NCQA and the Joint Commission promote performance accountability among managed care organizations and hospitals by asking them to prove, with quantifiable data, the quality of the care provided.

## CASE STUDY

### Description of the Mayo Foundation and the Mayo Clinic Rochester

To better understand the nature of this performance measurement and management initiative, a description of Mayo Foundation and Mayo Clinic Rochester (Mayo Clinic) is provided. Mayo Foundation, an integrated academic healthcare system, bases its operations in three locations: Jacksonville, Florida; Rochester, Minnesota; and Scottsdale, Arizona. The three primary locations provide subspecialty and primary clinical care, educate residents, and perform basic and clinical research.

### Mayo Clinic Rochester (Mayo Clinic)

The Foundation's oldest and largest practice, located in Rochester, includes an outpatient multispecialty group practice, tertiary-care hospitals, and a regional health system of community physician group practices and hospitals in Iowa, Minnesota, and Wisconsin (Table 1). This article describes efforts undertaken at the Rochester practice.

Mayo Clinic has seen major changes in the past ten years as it merged with St. Mary's Hospital and Rochester Methodist Hospital. Mayo affiliated with many providers in surrounding hospitals and clinics in Iowa, Minnesota, and Wisconsin, creating the Mayo Regional Health System. Because of these changes, Mayo Clinic leadership reorganized its clinical organizational structure.

Mayo Clinic's Board of Governors serves as the senior governing body

**FIGURE 1**
**Structure of Mayo Clinic's Board of Governors and Standing Committees**

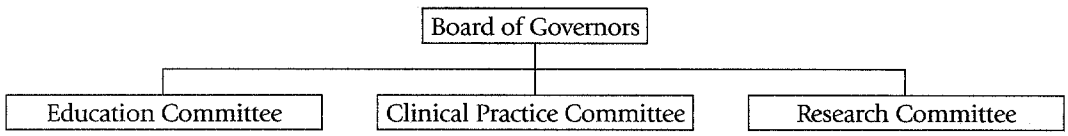
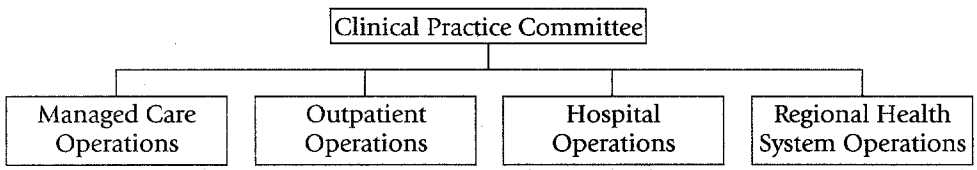



**FIGURE 2**
**Structure of Mayo Clinic's Clinical Practice Committee and Subcommittees**




and bears responsibility for the institution's educational, research, and clinical missions. The board delegates the governance of these activities to the three main standing committees: education, clinical practice, and research (see Figure 1).

The outpatient practice, hospital activities, regional health system affiliations, and managed care programs compose Mayo's clinical practice. On the basis of the breadth of organizational responsibility, the clinical practice committee (Figure 2) appointed physician vice chairs and administrators responsible for the managed care operations, outpatient operations, hospital operations, and regional health system operations. Further, the Board of Governors directed the clinical practice committee to further integrate these distinct entities into a seamless healthcare system.

To help meet this end, the vice chair and administrators for the outpatient operations and its supporting committee, the outpatient operations group (OOG), initiated an effort to create a performance management system that provides a more comprehensive view of the organization's performance in meeting its outpatient mission. The system enhances integration of inpatient operations, regional health system operations, and managed care operations through the clinical practice committee vice chairs and administrators managing the performance of key metrics in identified categories.

## Creating the Conceptual Framework

Inundated with data on financial outcomes and patient volumes, Mayo's leaders receive limited information on the performance of the organization's internal operations (i.e., quality, access, communication, productivity, cycle times, and efficiency). After researching the literature on the subject and benchmarking Mayo's management information systems against those of peer healthcare institutions, the

OOG developed a report of critical performance indicators. The goal was to devise a comprehensive report with clinical, operational, and financial measures of performance.

What would be the cornerstone categories for the report? The report's structure and information needed to ensure that reviewers received a general feel for the pulse of Mayo's performance. For example, when General Electric developed this type of reporting mechanism in 1951, it determined that market share, productivity, employee attitudes, public responsibility, and profitability were the key categories around which to devise critical performance indicators (Eccles 1991).

To benchmark Mayo against peer academic healthcare centers, we gathered data from published articles on dashboard frameworks created by Allina Health System, Kaiser Permanente, Henry Ford Health System, Group Health Northwest, and Lahey Hitchcock Clinic (Bushick 1996; Kennedy 1996; Nelson et al. 1995). We also commissioned a healthcare research and consulting firm to study performance measurement systems used by other leading academic healthcare centers.

We further studied the literature on performance frameworks devised by leading organizations in multiple industries (Kaplan and Norton 1993). In addition, we researched performance measurement frameworks devised by business school academics. These sources identified common themes and approaches. Conceptually, we found many commonalties to the key domains of organizations' performance measurement frameworks, including (Eccles 1991; Kaplan and Norton 1992; Bushick 1996; Advisory Board Company 1997):

- Customer satisfaction: internal and external customers
- Internal business processes: efficiency of operations
- Quality of service or products
- Continuous improvement efforts
- Public responsibility and social commitment
- Financial performance

After analyzing the common themes and models identified in the literature and in research performed, the outpatient operations leadership decided to integrate these key common themes with Mayo's vision, primary value, and core principles (see Figure 3).

Since its inception, Mayo has attributed its growth and prosperity to adherence to its mission and values. Further, it is internally consistent for physician and administrative leaders to base performance management and measurement on these fundamental principles. Quite simply, Mayo's success as an integrated academic health center depends on its alignment with its core principles.

### Linking Performance Categories with Performance Indicators

The next step in the process entailed the identification of performance indicators that measure performance in each of the categories. To identify proper performance indicators, the group determined the best performance

**FIGURE 3**
**The Mayo Vision, Primary Value, and Core Principles**

| | |
|---|---|
| Mayo's vision | Mayo aspires to provide the highest quality, compassionate care at a reasonable cost through a physician-led team of diverse people working together in clinical practice, education, and research in a unified multicampus system. |
| Mayo's primary value | The needs of the patient come first. |
| Mayo's core business principles | • Clinical practice<br>• Education<br>• Research<br>• Mutual respect<br>• Continuous improvement<br>• Work atmosphere and teamwork<br>• Social commitment<br>• Sustain practice financially |

indicators without constraining the selections to readily available data and existing management information systems (Eccles 1991).

The effort to identify the core set of performance indicators consisted of five steps:

1. The outpatient leadership team identified significant performance indicators.
2. Currently available reports received by the outpatient leadership were compiled. These reports helped confirm our assumptions that financial and clinical volume indicators generally drive performance measurement.
3. Each member of the outpatient operations leadership team submitted, in writing, the key performance indicators that should be included on the report according to their judgment.
4. Members were given a comprehensive list of the suggested indicators and asked to individually identify the indicators to include on the initial version of the performance measurement report.
5. Members articulated the basis for their choices to the OOG.

These steps reduced the initial comprehensive list to a more manageable group of performance indicators. Table 2 shows the performance indicators included in the initial version of the performance management and measurement system.

## Operationalizing the Report

After gathering the data and analyzing the results on the selected indicators,

**TABLE 2**
**First Iteration of Performance Management and Measurement System**

| Performance Category | Performance Indicator |
|---|---|
| Customer satisfaction | Rating of primary care provided<br>Rating of subspecialty care provided |
| Clinical productivity and efficiency | Clinical productivity per physician per workday<br>Outpatient visits per physician per workday |
| Financial | Expense per relative value unit (unit of service) |
| Internal operations | General examination average itinerary length in days<br>Patient complaints per 1,000 patients<br>Patient waiting times—access to appointments |
| Mutual respect and diversity | Percentage of staff from underrepresented groups<br>Employee satisfaction surveys |
| Social commitment | Mayo's contribution to society |
| External environmental assessment | Board of Governors' environmental scan<br>Market share |
| Patient characteristics | Patient mix by geography and payor group |

we determined how to disseminate the information. The group concluded that the Mayo intranet provided the broadest medium for this communication. The intranet allows Mayo employees access to these data with "three clicks of their mouse."

## CURRENT DIRECT AND INDIRECT OUTCOMES

This effort produced several direct and, perhaps more significantly, indirect outcomes. First, Mayo Clinic measured outpatient access in its most recent budgeting and planning process according to the measure developed for the performance management and measurement report. The institution continues to work hard to balance the demand for and capacity of the outpatient services. Thus, the Board of Governors asked each department chair how each department would improve access to services and measure its performance in meeting its access targets.

Second, the OOG intranet site and performance management and measurement report now acts as a tool for obtaining additional information. For example, if access was an issue, then institutional leaders could use the OOG intranet site as a direct linking mechanism to determine the actual number of physicians seeing patients in any given week in selected

departments. This eliminates the need for the creation of multiple manual reports because the data are now available in an electronic format on the intranet in one location.

Third, this overall effort acted as a catalyst for the development of an institution-wide clinical practice data set. These data are available to the clinical practice committee and other institutional leaders. The data set is an evolution of the original performance management and measurement system, but this new report draws on the same concepts of measuring performance in multiple domains.

Finally, the institutional leadership is expressing increasing interest in measuring performance in areas beyond the traditional financial and clinical productivity indicators. For example, one department has created a monthly report that includes indicators for patient and staff satisfaction, patient access, clinical productivity, and finances. Can we say that this departmental change was a direct result of our efforts? No, but we can say that our efforts represent one of the first reports to operationalize and disseminate expanded operational performance measurements at the institutional level. Thus, the OOG's efforts broadened the focus of how the organization defines and measures operational performance.

## LESSONS LEARNED

Mayo Clinic's leadership in outpatient operations learned many invaluable lessons from the development of a performance management system.

### Time, Commitment, and Critical Thought

Development of a performance management system takes time and requires a sustained commitment by senior management. Development and implementation demand critical thought and analysis by organizational leadership. What key pieces of information help the management of the outpatient operations? This question arose repeatedly in the development of the performance measurement and management system.

### New Information Systems

Many performance indicators, although ideal, remain unavailable in either a manual or an automated format. The design and development of a performance measurement system, with meaningful indicators, requires the development of new methods of capturing relevant data elements.

### Multiple Audiences

Historically, the design of performance measurement reporting systems targeted an internal audience of senior managers and the board of directors. Contemporary performance measurement reporting systems include senior managers, the board of directors, and all levels of management and staff in the organization. Increasing competition and the growing sophistication of the healthcare consumer now demand clear information to help the payor and consumer make informed decisions. The public at large, patients, and payors expect healthcare provider systems to articulate and demonstrate, in clear and understandable terms, the value of services provided. Information systems developed for measuring and reporting

healthcare system performance need to produce reportable results easily understood by the patient. For example, the Buyer's Health Care Action Group, a healthcare purchasing alliance of Minneapolis employers, broadcasts physician-specific information on appointment access, customer satisfaction, and clinical fees via the Internet (O'Reilly 1998).

### Evolving Process

Regardless of the time commitment, critical thought applied, new systems developed, or multiple audiences served, the overarching lesson proves that the development of a performance management system is an ongoing, evolving, and iterative process.

## FUTURE DIRECTIONS

### Improve Prospective Forecasting Capabilities

Health systems need to improve forecasting capabilities for both operational and planning purposes. A reporting system with the ability to provide information on both retrospective and prospective organizational performance creates an invaluable management tool. The performance management and measurement system helps fill this management information need at the Mayo Clinic.

### Demonstrate Clinical Quality and Cost Effectiveness to External Stakeholders

Today and in the future health systems capable of articulating and demonstrating clinical quality and cost effectiveness of services provided gain a competitive advantage in the marketplace. The performance management and measurement system aids Mayo with its external accreditation process and demonstration of clinical quality to purchasers of healthcare services.

### Tool of Clinical Integration

The first iteration of this evolving report focuses on Mayo's outpatient operations. Future versions may include data on inpatient operations, managed care operations, and regional health system operations. Management of the processes and technology driving these indicators facilitates the continued integration of disparate healthcare entities into a more seamless continuum of care for the patient.

## CONCLUDING THOUGHTS

The comprehensive process of studying the performance measurement and management process began as and continues to be an excellent learning tool for the physicians and administrators involved. The process aligned the concept of measuring organizational performance with meeting Mayo's vision, primary value, core principles, and operational strategies. As an organization we have a long way to go in meeting this ideal; however, we believe this is a worthy journey in support of the organization's primary value: the needs of the patient come first.

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