Role of Performance Measurement in a Major Redevelopment Project

The Case of the McGill University Health Centre Transition Support Office

Alain D. Biron, Michel Vézina, Carole St-Hilaire, Mélanie Lavoie-Tremblay and Marie-Claire Richer
Abstract
Healthcare is currently in the midst of a construction boom. An increasing number of hospitals are being constructed using the principles of evidence-based design to improve the quality and safety of patient care while at the same time maximizing efficiency. As the McGill University Health Centre embarks on a redevelopment journey, performance measurement has been deemed to be a key requirement for monitoring progress toward established objectives. This article discusses the role played by performance measurement in supporting the redevelopment project. Specifically, the importance given to performance measurement, the need for a performance evaluation framework, a description of the framework and the measurement process are presented.

Background
The McGill University Health Centre (MUHC), located in Montreal, Quebec, is undergoing a major redevelopment project. The construction of a new building and major renovations to two of its current sites will reduce the number of sites where care is provided from six to three. MUHC is not alone in embarking in such an endeavour. Healthcare is currently in the midst of a construction boom (Healthcare Financial Management Association 2008). These major initiatives have enormous potential to reduce waste, improve quality and save money but are fraught with risks (Ovretveit 2009). How to best support healthcare organizations in their organizational transitions while at the same time avoiding some of the pitfalls is a crucial question considering the enormous resources invested in these redevelopment/renovation projects.

This was the question faced by the management team as MUHC planned the redevelopment. The redevelopment project involves the relocation and reorganization of six hospital sites into three. One new “mega-hospital” – the Glen Campus – will be constructed to merge the Royal Victoria Hospital, Montreal Chest Institute and Montreal Children’s Hospital, as well as the MUHC Research Institute and the Montreal Neurological Hospital. Major renovations will also be done at the Montreal General and Lachine-Camille Lefebvre Hospitals. This major project is viewed by the chief executive officer and senior management team as not merely an exercise of new bricks and mortar but a transformative process, based on principles of concentrated expertise, interdisciplinarity, harmonized best practices, integration of education and research and the strategic use of technology and information.

The solution proposed to ensure that the redevelopment objectives were met was the creation of the Transition Support Office (TSO) in 2008. The TSO is a project management office with the mandate to help key players coordinate the organizational transition, support improvement in care processes and create a culture of innovation. In healthcare, project management offices are usually created to support information technology projects. Thus, the TSO represents an innovation, which is believed will help the organization to redeploy its activities more efficiently. Three intervention axes enable the TSO to accomplish its mandate: axis one, harmonization of clinical and administrative practices; axis two, supporting change and process review; and axis three, evaluation. This third intervention axis is deemed essential to track the success of this major endeavour.

The main objective of this article is to describe the role performance measurement plays in this redevelopment venture. To meet this objective, a discussion of why evaluation is a main component of all TSO interventions is first presented. Then, the TSO evaluation framework and its components are discussed. Finally, the process of performance measurement is outlined, along with some limitations.

Importance of Performance Measurement in the TSO
Performance measurement – the use of both outcome and process measures to understand organizational performance and effect positive change to improve care (Nadzam and Nelson 1997) – is not a new phenomenon in healthcare, but its emphasis has shifted over the years (Loeb 2004). The increasing attention now being focused on healthcare performance evaluation is believed to be the result of a greater demand for accountability in a context of growing healthcare expenditures (Adair et al. 2006).
The need for accountability was, not surprisingly, the primary driver in the development of a performance measurement framework at MUHC. The TSO is funded as part of the redevelopment project by the Ministère de la santé et des services sociaux du Québec (MSSS). The TSO budget represents approximately 1% of this $1.6 billion redevelopment initiative. The MSSS is expecting a demonstration of the added value of financing the TSO; this required rethinking the way the organization manages its project portfolios to obtain valid and reliable information on its performance from a project perspective.

The greater need for accountability, although the primary driver for the development of performance measurement capacity, is not the only reason why performance measurement is judged essential to the activities performed at the TSO. Performance measurement for quality improvement and for research represent, with internal and external accountabilities, the other two important drivers of performance measurement in the TSO. These differing and simultaneous needs pose a fundamental challenge in relation to designing measurement systems (Solberg et al. 1997).

Performance measurement for quality improvement has different characteristics than performance measurement undertaken for accountability purposes. Measurement from a quality improvement point of view usually involves metrics. These enable managers and others to better understand work processes and their outcomes. Quality improvement metrics are indicated to determine when improvement is needed, whether improvements are successful and if improvements are sustained over time.

The third objective of performance measurement within the TSO is to support knowledge development through research. The TSO constitutes a unique laboratory in which to study organizational change. Collaborations with healthcare services researchers have been established to take advantage of this unique opportunity. The synergy between clinicians, decision-makers and researchers contributes to the transfer of knowledge about different aspects of performance measurement. The evidence produced in the context of this research collaborative is readily used to evaluate the effects of the interventions implemented by project teams.

The differing objectives of performance measurement in the context of the TSO represent a unique challenge. The audience, the rationale, the what and the how of measurement vary across the three uses of performance measurement (Solberg et al. 1997). Despite these varied objectives, performance is what is being measured. Tools are required to ensure that the different actors share a common vision of what is to be measured. The TSO Evaluation Framework is among the tools developed to meet this objective and is presented in the next section.

**The MUHC TSO Evaluation Framework**

One of the main reasons underlying the adoption of a performance evaluation framework by the TSO is to ensure coherence across MUHC as a whole (Groene et al. 2008). The adoption of a performance evaluation framework supports this integration by guiding the evaluation of specific performance dimensions that are important to the organization. Each dimension provides an area for assessment by the project teams. The adoption of a common performance evaluation framework also supports teams by organizing and thus facilitating the use of data systems available at MUHC (e.g., by integrating data from clinical databases, human resources and databases used for billing of services rendered in the hospital) (Kelley et al. 2006). A framework also ensures that a balanced set of measures are selected by project teams (Nelson et al. 2007).

A multitude of performance frameworks exist (Arab et al. 2003). Each framework has its own set of important performance dimensions to consider. The most common measurement areas include, not surprisingly, clinical effectiveness, patient centredness and patient safety (Groene et al. 2008). At the same time, a performance framework should be tailored to the strategic orientation of the organization (Chan 2004). Thus, the performance evaluation framework adopted by our organization is reflective of our particular context. It should not be viewed as prescriptive for other healthcare organizations.

The TSO Evaluation Framework emerged as a combination of the vision of quality developed at MUHC over the years and current literature on healthcare performance. The framework (Figure 1) emphasizes the main objective of every initiative undertaken, which is to improve our efficiency. This objective is met by intervening on the quality and safety of care provided in maintaining or improving our productivity. The potential improvement of the system’s quality and safety as well as productivity (value-added components) is brought about by each team involved in projects aimed at making a smooth transition to the new and renovated buildings. The work of the project teams is facilitated by input from the TSO. The inter-relationships between productivity, quality and safety, project teams, the TSO and the more macroscopic socio-political and economic environments are depicted in the evaluation framework and presented below.

**Quality and Productivity: Two Key Dimensions of Healthcare Efficiency**

A shared understanding of the meaning of healthcare system efficiency is necessary before its dimensions can be identified. The perspective adopted by the TSO is that quality, safety and productivity are all necessary to improve the system’s efficiency (Ozcan 2008). Efficiency is the “relationship between a specific product of the healthcare system (also called an output) and the resources used to create that product (also called inputs)” (Hussey et al. 2009: 787). Measuring true efficiency gains achieved through the various projects is challenging and seldom
accomplished even in most published reports (Hussey et al. 2009). Often when authors refer to efficiency, only the costs of care are taken into consideration, without putting these costs in the context of quality of care. Our efforts to overcome this challenge involve ensuring that both quality and productivity indicators are collected for each project. This provides some information on the possible impact of any change in our productivity on the quality of care we provide.

Resources such as a cost accountant and tools to anticipate financial impacts of projects have been developed to support project teams’ measures of productivity. However, accessing quality administrative and financial data is not an easy task. The accounting systems currently used by the organization do not easily provide financial data from a project perspective. Different cost centres are used for various parts of the project, a fact that complicates how efficiency gains can be attributed to each project. Despite these odds, monitoring the cost-effectiveness of the projects supported by the TSO is possible. But while measuring efficiency per se is important, it is even more important to determine whether these same interventions have a positive impact on the quality and safety of the care provided to patients and their families.

In the development of the Organisation for Economic Co-operation and Development (OECD) performance framework (Arah et al. 2006), the most common quality dimensions included clinical effectiveness, patient centredness and patient safety (Groene et al. 2008). These dimensions were integrated into the TSO evaluation framework. From the 14 other dimensions identified by Arah et al. (2006), those dimensions that were aligned with the strategic direction of MUHC as a whole were selected for the TSO framework. Each dimension of the quality domain is presented and defined in Table 1. In addition, these key dimensions were embedded in Donabedian’s structure-process-outcome (SPO) frame-

![FIGURE1. Transition Support Office evaluation framework](image)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Safety</td>
<td>The reduction and mitigation of unsafe acts within the healthcare system, as well as through the use of best practices shown to lead to optimal patient outcomes</td>
</tr>
<tr>
<td>Clinical effectiveness</td>
<td>The degree of achieving desirable outcomes, given the correct provision of evidence-based healthcare services to all who could benefit but not to those who would not benefit (Arah et al. 2006)</td>
</tr>
<tr>
<td>Work life</td>
<td>A work setting that takes a strategic and comprehensive approach to providing the physical, cultural, psychosocial and work/job design conditions that maximize health and wellbeing of health providers, quality of patient/client outcomes and organizational performance (Quality Worklife Quality HealthCare Collaborative 2007).</td>
</tr>
<tr>
<td>Patient centredness</td>
<td>The degree to which a system actually functions by placing the patient/user at the centre of its delivery of healthcare and is increasingly being measured using patient experiences of healthcare with an emphasis on caring (Arah et al. 2006)</td>
</tr>
<tr>
<td>Continuity</td>
<td>The degree to which each series of discrete healthcare events is experienced as coherent and connected and consistent with the patient’s medical needs and personal context (Haggerty et al. 2003)</td>
</tr>
<tr>
<td>Accessibility</td>
<td>The ease with which health services are reached (Arah et al. 2006)</td>
</tr>
</tbody>
</table>
work (Donabedian and Bashshur 2003), highlighting the importance of both process and outcomes in the evaluation of the multiple dimensions of quality of care.

Using Performance Measurement to Drive Improvement

The MUHC TSO evaluation framework provides guidance on what should be evaluated for each project. However, measuring performance along the dimensions set forth by the evaluation framework and then using these data to drive improvement constitute the real challenge. All project team members play a role in meeting this challenge. The two key success factors are (1) project teams and their role in performance measurement and (2) the measurement process.

While measuring efficiency is important, it is even more important to determine whether these interventions have a positive impact on the quality and safety of the care provided.

Project Teams and Their Role in Performance Measurement

Project teams are the most important players, and a successful redevelopment initiative relies on them. The composition of these teams at the TSO has evolved from its initial conception. Currently, project teams are composed of a project manager, a quality advisor, a process expert, a change management expert, knowledge broker, clinical practice expert, clinicians and managers and an evaluation advisor.

The focus and importance placed on project teams underline a number of assumptions endorsed by our organization about how change and innovation are brought about in healthcare. These assumptions mirror those put forward by Nelson et al. (2007) about the structure of the healthcare system. One of those assumptions is that bigger systems (macro-systems) are made of smaller systems (micro-systems) that produce quality, safety and cost outcomes at the front line of care. Ultimately, a macro-system’s outcomes can be no better than the outcomes of its micro-systems (Nelson et al. 2007).

Each project is owned by its respective team, and so is its associated performance measurement. Project managers are ultimately responsible for overseeing the measurement process. As such, the project managers coordinate, participate in and oversee the evaluation process with the designated resources and the clinical teams.

The quality advisors within the project teams are experts in performance measurement. They have extensive methodological and practical knowledge and can identify sources of data within our organization, which makes them key allies in ensuring success. For example, the quality advisor supporting the team introducing the electronic patient record in our emergency departments was instrumental in determining which indicators could be extracted from the patient database, which indicators were currently monitored and how the data could be presented to facilitate subsequent intervention. In this particular project, nurses, managers, quality advisors and students were all involved in the data collection.

The work of the evaluation advisors is complementary to that of the quality advisors. The evaluation advisors serve as liaisons with the quality improvement experts to make the best use of the metrics for improvement. The liaisons are jointly appointed by the TSO and the Quality Department, enabling the development of a common vision of the role of performance measurement for the projects supported by the TSO and the quality improvement projects occurring throughout the organization. These best practices are shared on a day-to-day basis with project managers.

The Measurement Process

The measurement process involves the use of performance indicators or metrics to capture a variety of trends and factors related to health and the health system (Arah et al. 2003). First and foremost, project team members need to have an understanding of the aim pursued. Once the scope of the project has been established, a measurement subcommittee is created to propose a set of potential indicators to the project team. The use of a subcommittee is considered to improve the efficiency of this step. This sub-team does the preliminary work, which is systematically presented to the project team for discussion and approval.

The first task of the measurement subcommittee within a quality improvement perspective is to identify improvement opportunities. Multiple sources of data exist within the current organization. The measurement subcommittee, with the help of the evaluation advisor, taps into these data sources. One tool used during this phase to organize the information is the clinical micro-system profile (Nelson et al. 2007). This tool organizes information under the five Ps – patients, professionals, processes, patterns and purpose. The organization of the data in this manner ensures that all aspects of the micro-system are considered and analyzed. Benchmarking is another technique employed at this stage using data from the unit care profile to identify improvement opportunities.

Once the goals for improvement have been identified, the evaluation shifts in its objectives and methods. Only a subset of the indicators selected in the opportunity for improvement identification phase is used by the project teams once measurable objectives have been set. Other process and outcome metrics more specific to the project can be added at this stage. Fortunately, many criteria exist for guiding the selection of
indicators in a quality improvement project; Kelley, Arispe and Holmes (2006) propose the following:

- Data reliability and availability
- Ability to track data for multiple groups and at multiple levels
- Sensitivity to change/evidence-based process measures favoured over outcomes
- Ease of interpretation and methodological simplicity
- Ability to link data to established indicator sets

The evaluation framework is then used to ensure that all dimensions of performance are evaluated. Each proposed indicator is summarized in a standard evaluation plan tool. This tool was adopted by the TSO to facilitate the development of the project evaluations. The evaluation plan lists all the indicators and outlines the objectives, the dates of data collection, the data sources and the individual who is responsible for obtaining the data. Solberg et al. (1997) have issued several recommendations to make good use of measurement in improvement projects:

1. Limit the number of metrics.
2. Pick metrics that are important to clinicians (and patients), ideally by having the users do the selection.
3. Make the data collection easy enough and the time frames short enough so that data collection can be repeated frequently to allow for the observation of trends over time.
4. Do not try to have the measurements serve both accountability and research purposes at the same time as improvement.
5. Build in baseline measurements before implementing any changes.
6. Provide training, tools and examples to those in clinical settings who are not used to data and this type of measurement.

Once the data have been collected, the project managers summarize the results and ensure that recommendations are formulated and presented to appropriate committees for approval. The project manager then also has to ensure that quality improvement plans are in place with the appropriate designated responsibility and accountability. These improvement plans are subsequently implemented. Thus, an interesting question arises. How much time should pass between the end of an improvement initiative and the start of follow-up evaluation? Sustainability of changes within healthcare is among the least understood and addressed organizational need (Buchanan et al. 2007). Strategies to address this challenge have yet to be fully operationalized.

Conclusion
Healthcare performance measurement in the context of a project management office offers the potential to produce fundamental organizational change. MUHC is undergoing a major transformation, offering a unique opportunity to develop a culture of measurement. Dedicated resources have laid the foundation for this measurement culture to fully emerge. The evaluation framework and numerous tools have been adopted to facilitate this culture change. These tools facilitate the systematic use of performance measurement, which ultimately helps to identify opportunities for improvement and whether improvement actually occurs after interventions are implemented. Improvement at the project level will directly influence organizational-level (big dot) indicators that demonstrate the value added by the TSO. Ultimately, this added value means that patients receive better care.

About the Authors
Alain D. Biron, RN, PhD, is the senior evaluation advisor, Transition Support Office, assistant to the director of Quality, Patient Safety and Performance at the McGill University Health Centre (MUHC), and assistant professor in the School of Nursing, McGill University in Montreal, Quebec. For more information about this project contact him at: alain.biron@muhc.mcgill.ca.

Michel Vézina, DSc, MSc, CA, is professor in the École des Hautes Études Commerciales in Montreal, Quebec.

Carole St-Hilaire, PhD in public health (healthcare management), is an economist and associate director of Quality, Patient Safety and Performance at McGill University Health Centre (MUHC) in Montreal, Quebec.

Mélanie Lavoie-Tremblay, RN, PhD, FRSo Junior 2 Career Award, is an associate professor and joint coordinator of the FERASI program in the School of Nursing at McGill University in Montreal, Quebec.

Marie-Claire Richer, RN, PhD, is director of the Transition Support Office, McGill University Health Centre and assistant professor and joint coordinator of FERASI program at the School of Nursing at McGill University in Montreal, Quebec.

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References


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