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Health reform monitor

# Measuring and improving quality in university hospitals in Canada: The Collaborative for Excellence in Healthcare Quality<sup>☆</sup>

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## ABSTRACT

Measuring and monitoring overall health system performance is complex and challenging but is crucial to improving quality of care. Today's health care organizations are increasingly being held accountable to develop and implement actions aimed at improving the quality of care, reducing costs, and achieving better patient-centered care. This paper describes the development of the *Collaborative for Excellence in Healthcare Quality (CEHQ)*, a 5-year initiative to achieve higher quality of patient care in university hospitals across Canada. This bottom-up initiative took place between 2010 and 2015, and was successful in engaging health care leaders in the development of a common framework and set of performance measures for reporting and benchmarking, as well as working on initiatives to improve performance. Despite its successes, future efforts are needed to provide clear national leadership on standards for measuring performance.

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## 1. Introduction

The aim of this paper is to describe the successes and the challenges in the development of the Collaborative for Excellence in Healthcare Quality (CEHQ), an initiative to achieve higher quality of care in university hospitals in Canada.

Measuring and monitoring overall health system performance is a complex and challenging task, but is crucial to improving quality of care. Organizations now have greater

accountability when developing and implementing actions to improve the quality of care, reduce costs, and achieve patient-centered care. Performance measurement is not a new concept in health care [1], but notable developments, such as the introduction of Donabedian's outcome evaluation framework, as well as the balanced scorecard methodology [2], have brought increased focus to quality improvement and benchmarking among health care organizations. While scorecards allow you to set targets and track improvement internally, they are much less effective at allowing for performance comparison across multiple organizations unless all organizations share a common framework and common measures.

## 2. Context

There is growing interest by policy makers, the public, and the media to better understand health system

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performance. At the international level, the Organisation for Economic Co-operation and Development (OECD) has focused their efforts on the comparison of health systems across various countries and has developed a framework of indicators to measure health care quality [3]. At the national level, many frameworks have emerged to measure overall health system performance for accountability and for quality improvement [4–8]. In the United States, the University Health System Consortium (UHC) has specifically focused on the benchmarking of academic medical centers. Nearly all academic medical centers in the United States now participate in the UHC. This organization's mandate has evolved to include hosting and supporting a large database of hospital performance metrics to drive performance improvement, benchmark development and hypothesis testing across member organizations [9–11]. A salient feature of the UHC is that membership is limited to academic medical centers. Resources in teaching hospitals allow for advances in care to be made that cannot be made elsewhere, and teaching hospitals often see patients requiring more complex treatment approaches than non-teaching hospitals [12,13]. Consequently, patients in teaching hospitals may appear to have worse outcomes if there is no adjustment for these effects [12,13]. This difference in patient population between academic and non-teaching hospitals is just one example that underscores the importance of selecting appropriate peers when conducting comparisons of quality and performance.

In Canada, academic health sciences centers also known as university hospitals represent the majority of the country's medical teaching capacity. These hospitals, which are university affiliated hospitals, combine the teaching, health care provision and health research activities of some of the largest hospitals and regional health authorities in the country [14]. Pan-Canadian public reporting practices for these organizations are under-developed and require improvement to obtain meaningful data for use by health system leaders, decision-makers, and the public.

The Canadian context presents unique challenges for national-level reporting, with health care service delivery largely the responsibility of the provinces and territories. Examination of the Canadian experience may be instructive for organizations worldwide. As with many health care systems, in the majority of cases Canadian university hospitals are broadly distributed across the country and data collection and reporting is difficult to standardize across jurisdictions. As well, agreement on what indicators to report is often dependent on a number of different factors including: political and/or operational priorities, data availability, data accuracy and data reliability. The Canadian Institute for Health Information (CIHI) manages several large databases, such as the Discharge Abstract Database (DAD) summarizing all hospital encounters [15], and reports on a variety of health system performance indicators. Since Canada-wide healthcare performance reporting is not mandated by all provinces; it is difficult to obtain comparable health system performance data against which to benchmark.

### 3. The Collaborative for Excellence in Healthcare Quality

In 2010, recognizing the scope of the obstacles faced in pan-Canadian hospital performance reporting and the limited options for national-level comparisons between hospitals, and in particular between university hospitals for the purpose of improving performance, the *Collaborative for Excellence in Healthcare Quality (CEHQ)* was formed. This promising reform consisted of the collaboration among health care leaders on an agreed common framework and a set of performance measures for peer comparisons, on the use of sound analytical techniques for benchmarking, and on identifying data-driven recommendations for improvement activities related to their organizations. This bottom-up initiative was needed to engage health care leaders in identifying the most important and relevant indicators that best reflect quality of care in their respective organizations.

This 5-year initiative consisted of provincial representation from university hospitals across Canada, who made the commitment to work together with the ultimate goal of achieving a higher quality of patient care. A total of 12 health regions or organizations (representing 18 out of approximately 52 teaching hospitals) were invited to participate in the Collaborative. These hospitals represent 43.4% of all acute-care beds in Canadian teaching hospitals and 17.5% of all acute-care beds in Canada [16]. The CEHQ, which officially got underway in June 2010, had four main objectives:

1. To agree on a framework and set of performance measures for reporting and benchmarking among the participating organizations, to create a "CEHQ Quality Scorecard";
2. To learn from each other by sharing leading practices;
3. To work on initiatives to improve performance in the CEHQ organizations; and
4. To share the learning from the Collaborative with other organizations.

The CEHQ had also secured partnerships and support from the Canadian Institute for Health Information (CIHI), the Canadian Patient Safety Institute, the Canadian Foundation for Health Improvement, and Accreditation Canada. The aim of this paper is to describe the successes and the challenges in the development of the CEHQ.

### 4. Preliminary outcomes

#### 4.1. Achievements of the CEHQ

The CEHQ made substantial progress toward its objectives, including the development of a CEHQ quality scorecard for university hospitals. In addition, a framework mechanism was developed to allow sharing of leading practices as well as a strategy for decreasing emergency department (ED) wait times. The strategies for decreasing ED wait times were the focus of one key objective: 'to improve performance in the CEHQ

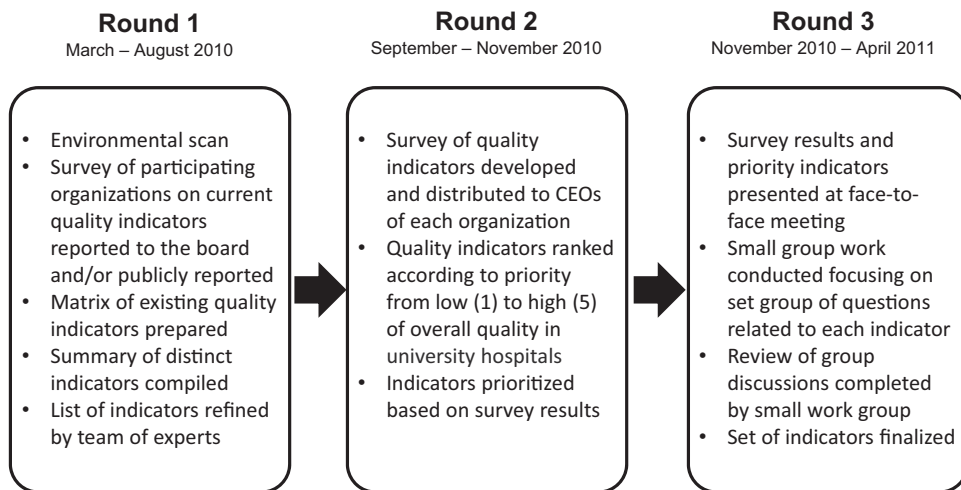


Fig. 1. Selection of quality indicators.

organizations'. Over the course of the CEHQ, member organizations have participated in two face-to-face meetings per year to exchange strategies on performance improvement and best practices. The CEHQ has also obtained visibility by engaging with pan-Canadian Deputy Ministers of Health on the CEHQ's progress and on the development of an in-patient experience survey. Additionally, the CEHQ has also produced a *Guide to Developing and Assessing a Quality Plan* to facilitate organizational quality plan development (Available at: <https://www.longwoods.com/articles/images/Guide-Developing-and-Assessing-a-Quality-Plan.pdf>).

#### 4.1.1. Development of a quality scorecard for university hospitals

The CEHQ members agreed to a set of 17 indicators reflecting five dimensions of care: (1) access, (2) effectiveness, (3) efficiency, (4) safety, and (5) satisfaction/patient experience. The CEHQ worked closely with the Canadian Institute for Health Information (CIHI) to develop the scorecard, and has reported on 8 of the 17 selected indicators. CIHI is working to develop the remaining indicators from the performance measures framework. CEHQ members have supported this work by providing feedback and clinical expertise to the iterative development process. The indicator selection process consisted of a modified Delphi approach (Fig. 1).

Round One included an environmental scan and a participant survey on publicly reported or board level performance indicators. From the results of Round One, a total of 521 performance indicators were identified. Duplicates were removed and narrowed down to 292 distinct indicators in five domains (access, efficient, effective, safety and satisfaction).

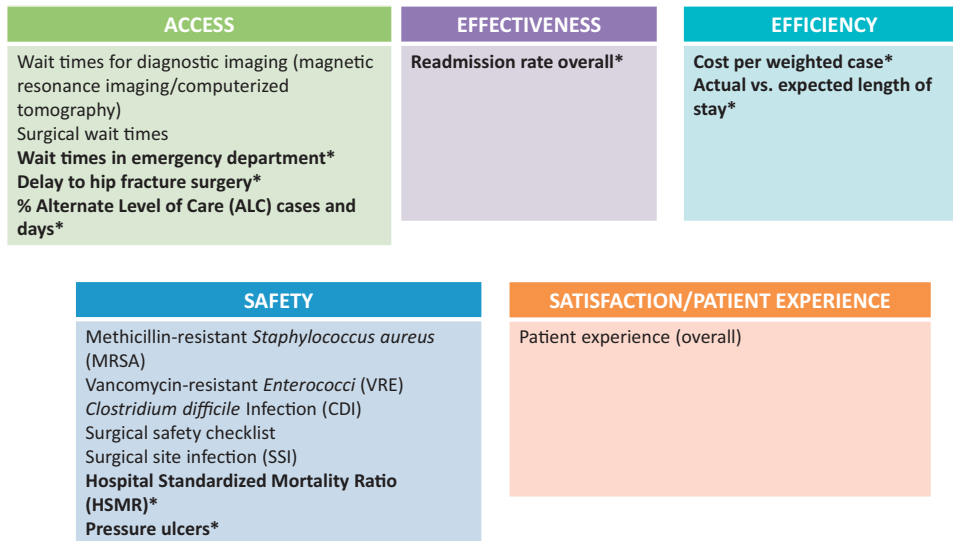
In Round Two, CEOs of each organization were asked to participate in a survey. The survey was based on each organization's quality indicators (board level and/or publicly reported) and the review of provincially mandated and/or other nationally reported indicators (CIHI, CPSI, Accreditation Canada). It consisted of ranking each of the quality

indicators according to their priority from low (1) to high (5) for overall quality in university hospitals. The survey and ranking process prioritized the initial set down to 47 indicators.

In Round Three, CEHQ organizations participated in a structured small group exercise to review the results of the previous rounds in order to determine the final set of performance measures. Information on the survey results and on each of the top priority indicators from one of the five domains was assigned to each group. For each of the indicators, the participants were asked to answer the following questions:

1. Do you agree it is an important measure of quality? Please describe why and why not?
2. Is there consistency in reporting across collaborative members in terms of indicator definitions or data sources?
3. If there is a lack of consistency:
  - a) Do you think it would make sense to increase consistency of reporting?
  - b) Are there national standards and data sources to enable greater consistency?
  - c) Would you be willing to contribute institutional resources to make this happen?

The participants were then asked to identify if there were any other indicators that should be considered and also rank the order of the indicators in terms of the groups' preference for each indicator based on the indicators' importance and data availability. Round Three in the process further redacted this list of indicators down to a final set of 17 indicators. The final indicators were chosen based on their appropriateness for quality measurement across five key domains: accessibility, effectiveness, safety, efficiency, and patient experience. The majority of the indicators that were dropped were those (1) for which data were not readily available, (2) that were too specific to a sub-population, (3) where the methodology used was not consistent and indicators were calculated in a non-



**\* Performance indicators reported by the CEHQ**

**Fig. 2.** Final framework and performance indicators.

standard way across organizations. The final framework and performance indicators can be found in Fig. 2.

To further solidify the usefulness of these indicators, the strong partnership with CIHI was leveraged to contribute toward the development of a mobile CEHQ scorecard application that allows member organizations to access current performance data directly from a mobile device. The primary purpose of this performance information was to monitor and benchmark the results against other CEHQ organizations in order to drive improvement efforts.

#### 4.1.2. Improving performance in the CEHQ organizations

Using the common 'CEHQ Quality Scorecard' that was developed, members acknowledged variability in the emergency department (ED) wait times between the CEHQ organizations and agreed to focus on a quality improvement initiative to improve ED wait times. As part of this initiative, administrative data were analyzed to evaluate factors contributing to ED wait times. In addition, member organizations were surveyed regarding their current practices and approaches to ED wait times management. This work identified key factors that impact ED wait times (e.g., unavailability of consultants, hospital discharge rate) and, significantly, the variability of these factors by jurisdiction. For example, one organization's key ED wait time issue was the 'time to decision'. The results showed that this organization should focus on interventions related to physician staffing models or interventions related to improving consultant availability in order to improve ED wait times. Alternatively, another organization's challenge related to the 'time to disposition' and based on the findings, the key factor identified that caused the increases in ED wait times was the hospital discharge rate. Thus, the recommended intervention was not focused on improvements in the ED but improvements to address factors delaying the

discharge on the inpatient service. Overall, these findings helped to determine which organizational-level strategies were most needed to effectively manage ED wait times in each respective organization.

#### 4.2. Challenges for the CEHQ

The main challenges faced by the CEHQ included differences in provincial mandates, and in indicator development priorities.

##### 4.2.1. Differences in provincial mandates

Differences in provincial priorities were identified among the CEHQ organizations. For example Saskatchewan's focus was on achieving better value for money, and thus that province invested in system-wide quality improvement work (e.g., LEAN) whereas other provincial jurisdictions were focused on improving safety across their health system following critical, high profile adverse events in Nova Scotia and Alberta. In Ontario, legislation (i.e., Excellent Care for All Act) was introduced to increase health care organizations' accountability to deliver high quality care through mandated yearly quality improvement plans, publicly reported performance measures and funding reforms (e.g., quality based procedures). Furthermore, some provinces had committed to an open access model for their aggregate data where others had not.

##### 4.2.2. Differences in indicator development priorities

The differences in provincial mandates directly led to each of the CEHQ organizations having differences in their indicator priorities. Some organizations had a clear focus on improving their patient experience scores and thus were advocating for a standardized pan-Canadian patient

experience survey whereas other organizations focused on improving patient safety and these organizations advocated for the development of patient safety measures.

To overcome these challenges, we worked closely with CIHI to help identify a feasible plan to prioritize indicators on which the CEHQ members agreed. The plan was based on several factors such as data availability, cost of collecting the data, and the readiness of the organizations. We also engaged organizations to describe their improvement efforts using a more consistent approach, which allowed member organizations to better learn from one another.

## 5. Conclusion

There is a significant appetite for publicly reported healthcare performance and quality data from Canadian hospitals. This pan-Canadian approach was essential to maximize opportunities for peer-comparison, which helped to ensure valid representation from quality performance leaders across the country. Making CEHQ data publicly available would provide an opportunity to improve pan-Canadian performance reporting. To do this, strategies and best practices to increase efficiencies need to be further explored in order to improve the timeliness of reporting. As well, data from across all university hospitals must be generated on a comparable basis and it must accurately reflect quality of care. Continuing efforts supported by collaboration with CIHI are needed to ensure accurate, reflective, useful and timely data for benchmarking and for improvement work on overall health system performance.

Overall, CEHQ's efforts have influenced the advancement of pan-Canadian reporting and benchmarking. Since the start of this collaborative, CIHI has continued their extensive work in this area, and has engaged CEHQ members in their consultation process on a variety of health system performance indicators. This has contributed to CIHI's more recent launch of their public reporting tool (<http://yourhealthsystem.cihi.ca/>).

As shown by OECD data, from an international perspective, improving quality of care is also an ongoing priority faced by national healthcare organizations worldwide. Our hope is that this pioneering work started here in Canada with the CEHQ, can be modified to suit the realities of other countries' health care systems and provide a road map on how to address complex system wide issues, with the goal of improving the overall health care system for all.

## Conflict of interest

No conflict of interest to declare.

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