A Study of Publicly-Reported Acute-Care Quality Indicators Across Canada.

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Executive Summary

Introduction

The focus on healthcare quality as a key priority for Canada can be exemplified by a number of pieces of evidence. Government spending on healthcare in Canada was over $215 billion in 2014, a significant portion of provincial budgets. The establishment of multiple provincial health quality councils, the development of new quality-based funding formulas and the development of quality-focused legislation indicate that quality of healthcare is a key priority for governments. In terms of Canadian citizens, survey data suggests that Canadians are concerned about the quality and sustainability of healthcare (Soroka, 2007; Mendelsohn, 2002). Moreover, at the organizational level, much work and attention is being paid to quality and safety of care as well as programs to monitor healthcare performance. Quality can be defined as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Institute of Medicine, 2001, p.232).

Performance indicators are measurement tools that enable the evaluation of an organization or activity against defined targets or objectives. The results of performance measures can *indicate* potential opportunities for further analysis and dialogue to understand the results and act on them as necessary. While there is no doubt that important and impactful work is being done at the local and organizational levels with respect to the development and use of performance indicators, the goal of this project is to find out if there is adequate public reporting occurring and if publicly reported performance measures are consistent and comparable across the country. This report will therefore clarify whether this is true, and if so, the reasons for any variation found. Moreover, the project will seek to identify whether provincial quality councils are having a positive impact on public reporting. The report will discuss any potential methods that could be employed to advance nationally consistent and meaningful public quality reporting where gaps exist. Finally, the focus of the inventory and discussion will be on indicators that are publicly reported, so as to highlight the importance of public accountability and patient-centred healthcare.

The research conducted for this project involved a pan-Canadian scan of public reporting by acute care organizations and national organizations, to provide context for discussion and related recommendations to the client, which is HealthCare*CAN* and its members. This resulted in the identification of key themes, gaps and challenges for public reporting and quality of care monitoring that can inform further work by

HealthCare*CAN*, in order to support and promote enhanced interprovincial collaboration and the consistent monitoring of quality of care across Canada.

Methodology and Methods

The methods employed in this project involved three segments of research: first, a literature review to assess key trends and perspectives on public quality of care reporting in Canada. Second, an environmental scan was conducted to assess the national and provincial contexts that influence quality of care reporting. Lastly, a primary data collection and analysis was done to assess publicly reported quality measures by acute care organizations from provinces and territories across Canada.

Findings

Literature Review

The conceptual review of scholarly literature confirmed wide interest in the measurement of healthcare performance, including quality of care, by researchers and the public. This review validated the importance of consistent measurement, monitoring and benchmarking of indicators for a variety of purposes, including: as a means to assist with the evaluation of care improvement strategies and value for money spent in the system; to ensure accountability for decision-making; to assess sustainability of programs and services; to gauge quality, safety and experience of care. The literature also notes the inconsistency and evolving nature of such measurement strategies across Canada at present.

The works on this topic also highlighted the importance of, and challenges with, indicators selection and development, including a siloed, local approach to prioritization and a narrow focus on safety and mortality related indicators. There also exists confusion and lack of understanding about the systematic selection and use of effective performance indicators. This has led to “indicator chaos” and there is a need for coordinated national efforts to guide capacity-building and standardization of conceptual frameworks, measurement techniques, and reporting structures to facilitate the measurement and monitoring of both process and outcome measures.

In terms of public reporting, the literature verified the necessity of transparent reporting of healthcare organization performance, and several possible positive outcomes of doing so, such as increased involvement of leadership in quality of care work, increased accountability for performance, and a heightened awareness of performance measurement internally and externally, as well as the potential for improved care outcomes. The importance of benchmarking as a powerful quality improvement tool was also indicated.

Conversely, some key sources highlighted a lack of alignment between the values and priorities of Canadians and the information currently being reported publicly across the country. A number of challenges with public reporting must be overcome, including the assurance of data quality, education of both decision-makers and the public about the interpretation and use of indicator data, and a need for more public engagement in early phases of indicator development.

Environmental Scan

The environmental scan found three national organizations acting as key players doing work around the development and use of performance indicators in Canada: the Canadian Institute for Health Information (CIHI), Statistics Canada, and Health Canada. These organizations, working partly in collaboration, have developed models for organizing system and health performance that are helpful for thematic representation of characteristics of quality of care. The Canadian Institute for Health Information is also the major national leader in health data collection, use and monitoring and directs health indicator development and use in Canada. Recommendations in this report reflect the need to involve CIHI in next steps.

The environmental scan found significant variation in provincial and territorial health system structures, legislative mandate and priorities for quality of healthcare influence performance reporting at the regional level.

Data Collection & Analysis

The data analysis found dissimilarity in the amount and type of performance indicators being publicly reported by acute healthcare organizations within and across jurisdictions in the following themes: safety, patient-centeredness, patient experience, accessibility, and continuity and appropriateness of care. Very few consistent trends were found in the specific indicators chosen to represent the themes, but even where similar measures were chosen, they were often measured differently.

In addition, characteristics of reporting including timeliness, regularity, trending, definition and stated purpose were evaluated and it was determined that further inconsistencies exist in the manner and extent to which information is provided to the public. Organizations did not consistently report on the purpose of the indicator being reported, or provide definitions or explanations; some did not even provide current data. Many, but not all, provided trended results, as well as reported on actions being undertaken to improve performance.

The data analysis showed more progressive, consistent public performance reporting in provinces where mandated quality councils or provincially-led reporting initiatives exist.

Actions for Consideration

The following five actions were presented to HealthCare*CAN* for consideration:

Action 1: Seek consensus on a common national indicator framework.
HealthCare*CAN* could convene its members to discuss and reach consensus on the need for consistent public reporting of acute care quality indicators across Canada in priority areas.

Action 2a: Partner with CIHI to develop a full spectrum of national quality indicators.
HealthCare*CAN* could spearhead formal collaboration with CIHI and, on behalf of its members and the health system, work with CIHI to develop additional indicators of interest where current gaps exist, and further develop the public reporting capacity in a consistent manner.

Action 2b: Identify education needs. HealthCare*CAN* and CIHI could together, in consultation with members, determine the need for education of users of healthcare indicator information, including decision-makers and the public, to ensure meaningful and accurate use.

Action 3: Convene a discussion about public reporting of quality indicators.
HealthCare*CAN* could convene its members and lead a discussion about the benefits, costs and barriers related to publicly reporting quality indicator results.

Action 4: **Investigate the impact of provincial quality councils on performance and promote the spread of innovation.** HealthCare*CAN* could look to provinces which have formal quality councils established to assess the impact the councils have had on performance, and help to spread innovation, successes and lessons learned about the use of councils to other provinces and territories.

Action 5: Advocate for a single patient experience measurement framework.
HealthCare*CAN* could advocate for and recommend that patient experience be consistently measured across Canada and advocate for funding for the provinces and territories to implement this. HealthCare*CAN* could consider the Canadian Patient Experiences Survey for Inpatient Care (CPES-IC) as the tool of choice.

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Figures and Tables

1. Introduction

1.1. Purpose & Impetus for the Report

The purpose of this report is to investigate the current state of publicly reported quality-related performance monitoring amongst acute care organizations across Canada. This information and associated recommendations will be intended to assist the client, HealthCare*CAN,* to do further research and advance advocacy efforts in improving the state of public quality performance reporting.

In 2012, the Canadian Healthcare Association (now HealthCare*CAN*), recommended that policy makers investigate and implement incentive-based funding frameworks to promote accountability for accessible, appropriate, evidence-based, high quality health services which has appropriate resources to operate. Furthermore, the backgrounder recommended that quality indicators be identified and monitored as part of such a funding model (Canadian Healthcare Association, 2012). This report, therefore, will take the established viewpoint of the organization, and determine the actual current state today.

The focus on healthcare quality as a key priority for Canada can be exemplified by a number of pieces of evidence, including the documented fact that Canadians are concerned about quality of care and the sustainability of the health system (Soroka, 2007; Mendelsohn, 2002). Quality can be defined as “The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Institute of Medicine, 2001, p.232).

In 2012, Snowdon, Schnarr, Hussein and Alessi looked at the publicly posted mission, vision and values of 125 acute care hospitals in Canada, contending that this provided insight into what Canadians value in their health services (p.21). They identified that “excellent care” was the most prevalent theme found throughout the mission, vision and value statements (Snowdon et al, 2012; p. 22). The report also found that quality of care, and organizations’ accountability for providing it, was one of the key elements of “excellent care” (Snowdon et al, 2012; p. 23).

In addition to Canadians’ perspectives on healthcare, the vast amount of money spent on healthcare in Canada leads to scrutiny of the value being obtained for money spent. In 2014, Canadian governments spent nearly $215 billion, which translates to over $6000 per capita. (CIHI, 2014, p.41). Of this expenditure, 29.6% of those funds were spent on hospitals in 2014 (CIHI, 2014, p.41). Given this enormous healthcare budget, it

is imperative that governments and healthcare leaders understand the services and quality thereof that are purchased with these public funds.

With the need for accountability established, acute care organizations across Canada are doing a great deal of work developing quality of care measures and monitoring the effectiveness and efficiency of health services (Snowdon et al, 2012; p. 47). As health quality councils are established, and new quality-based funding formulas and legislation are developed, the measurement of quality is of great importance. Organizations normally measure and monitor performance internally to strategically and effectively provide high quality health services, but no requirement currently exists for them to report publicly, as is the case with financial reporting under the Canada Health Act's principle of public administration (Snowdon et al, 2012). The argument could be made that organization-level public reporting of data related to the quality and safety of care being provided to patients would support the same accountability to taxpayers who are themselves the recipients of care.

Performance indicators are measurement tools that enable the evaluation of an organization or activity against defined targets or objectives. The results of performance measures can *indicate* potential opportunities for further analysis and dialogue to understand the results and act on them as necessary. While there is no doubt that important and impactful work is being done at the local and organizational level with respect to the development and use of performance indicators, the goal of this project is to find out if there is adequate public reporting occurring and if publicly reported performance measures are consistent and comparable across the country. This report will therefore clarify whether this is true, and if so, the reasons for any variation found. Moreover, the project will seek to identify whether provincial quality councils are having a positive impact on public reporting. Finally, the report will discuss any potential methods that could be employed to advance nationally consistent and meaningful public quality reporting where gaps exist.

An environmental scan was used to identify the provincial environments within which the evaluated organizations are operating, and any relevant contextual factors that may impact what they are or are not reporting publicly. In addition, national indicator frameworks by major actors such as the Canadian Institute for Health Information, Statistics Canada and Health Canada were investigated.

With the identification of key themes, gaps and challenges in quality of care monitoring and further policy work of HealthCare*CAN* in this area, it is hoped that enhanced interprovincial collaboration, greater consistency and ultimately quality improvement will result.

1.2. Project Client

HealthCare*CAN* is the national voice of healthcare organizations across Canada. The organization fosters informed and continuous, results-oriented discovery and innovation across the continuum of healthcare. They act with others to enhance the health of the people of Canada; to build the capability for high quality care; and to help ensure value for money in publicly financed, healthcare programs. (HealthCare*CAN*, 2015) The members of HealthCare*CAN* represent the healthcare providers, both funders and direct service providers, in all provinces and territories across Canada. This work is not only intended to serve the organization, but also their members.

Based on the needs identified by the healthcare community of practice across Canada, HealthCare*CAN's* Strategic Plan focuses on three Key Result Areas (KRAs):

1. Advancing Science and Technology in Service of Health
2. Supporting Service Excellence
3. Developing People
   (HealthCare*CAN*, 2014)

The work proposed in this project is intended to inform future work of the organization with the goal to support healthcare organizations to improve healthcare through evidence-based decision-making. This in particular meets the KRA of Supporting Service Excellence, whereby the organization intends to advance the generation, dissemination and adoption of knowledge and innovative practice by convening health system stakeholders (HealthCare*CAN*, 2015). This translates to the advancement of development and use of system performance indicators, knowledge exchange and collaborative improvement. This process begins with consistent and comparable healthcare data, and the ability to measure the impacts of improvement work. Moreover, the work herein supports the third KRA of Developing People, which has a strong focus on providing education in the areas of healthcare quality and safety. HealthCare*CAN* is uniquely positioned to use the results of this work to advocate for national collaboration.

1.3. Research Questions

The research will aim to address the following questions:

- Is there a lack of consistency and comparability in publicly reported quality indicators?
  - If so, what are the gaps and challenges that currently exist?
  - What could be done to improve?

- What are the dimensions of quality that being measured?
  - Where are the gaps and inconsistencies in each dimension?

1.4. Project Objectives

The objectives of this project are to provide a baseline for further work as follows:

1. To conduct an environmental scan of publicly reported Canadian acute care quality indicators currently in use;
2. To develop a comprehensive and organized inventory of publicly reported acute care quality indicators currently in use across Canada;
3. To summarize important themes, gaps, and challenges in the measurement of quality of care in the acute care environment at a nationally comparable level, for public reporting and accountability; and
4. To provide baseline data and recommendations *for further work* that would promote:
    a. Consistent measurement of care quality across the country;
    b. Standardization and comparability across the provinces and territories; and
    c. Public accountability for transparent quality of care reporting.
    d. Enhanced use of indicator data for health service improvement, accountability and incentive-based funding models.

1.5. Report Structure

There are six main sections contained within this report, as follows:

- **Background:** This purpose of this section is to review the history of healthcare quality improvement practices in Canada and the importance of measurement and monitoring of quality within this milieu. The impetus for a focus on public accountability and reporting will also be established here.

- **Methodology and Methods:** This section will outline how the project was conducted, including the environmental scan and data analysis. Inclusions, exclusions and other analytical or contextual notes will be provided here.

- **Literature Review:** The literature review is meant to delve into the complex and growing subject of public performance reporting. The Canadian landscape respecting national reporting of healthcare performance data will be examined here as well. Following this, a summary of important contextual factors affecting organizations in each of the provinces and territories will be presented.

- **Findings:**

    - **Environmental Scan –** This scan will identify national and provincial/territorial contexts that may impact the findings of the data collection and analysis.

    - **Data Analysis –** In this section of the report, the data collection findings and analysis will be presented, according to jurisdiction and theme.

- **Discussion:** A discussion of the findings from the data collection and analysis process will be examined, including significant implications, challenges and opportunities.

- **Actions for Consideration:** Based on the data collection, analysis and discussion, recommended actions will be presented to HealthCare*CAN* for review.

2. Background

This section provides an overview of the history and emergence of interest in quality of care in Canada, and the impetus for measuring and monitoring quality. There is also a brief overview of Canadians' views on healthcare and public reporting in Canada according to surveys which have been conducted by researchers. Collectively, these sections provide the context for this project.

2.1. Quality of Care in Canada

The 1950s was an era in which great attention began to be paid to the operations and quality of services within the Canadian healthcare system. In 1953, the then-named Canadian Hospital Association (which later became the Canadian Healthcare Association and is now HealthCare*CAN*), along with the Canadian Medical Association, the Royal College of Physicians and Surgeons and l'Association des médecins de langue française du Canada established the Canadian Commission on Hospital Accreditation (Accreditation Canada, 2013). This organization evolved over time to eventually become Accreditation Canada, and was tasked with hospital accreditation and the assurance of compliance with hospital standards. Not until 1995 did this accreditation program begin to include the reporting of select performance indicators. In 1999, Accreditation Canada completed the pilot testing of its first six acute care indicators (Accreditation Canada, 2013).

Also around the mid-20th century, political support for a federal medicare system was beginning to be sought. In 1958, Prime Minister Lester Pearson's government supported the idea that Canadians "should be able to obtain health services of high quality according to their need" (Canadian Museum of History, 2010). It wasn't until 1985 that this desire became a reality with the passing of The Canada Health Act, which set out its five criteria for provincial health insurance plans, which represent pillars of care quality (Canadian Museum of History, 2010).

Around the turn of the 20th century, several groundbreaking reports were published in the United States, which drew tremendous attention to significant concerns respecting the quality and safety of healthcare (e.g., the Institute of Medicine's *To Err is Human* (1999) and *Crossing the Quality Chasm* (2001)). This interest in healthcare safety spread across the border where in 2002, the Canadian Patient Safety Institute was created by the federal government. In 2004, the Canadian Adverse Events Study was published in the Canadian Medical Association Journal (2004) by a group of prominent researchers including Dr. Ross Baker and Dr. Peter Norton. It reported on the incidence of adverse events (AE), defined as "unintended injuries or complications resulting in death, disability or prolonged hospital stay that arise from health care management"

(Baker, Norton, Flintoft, Blais, Brown, Cox, Etchells, Ghali, Hébert, Majumdar, O'Beirne, Palacios-Derflingher, Reid, Sheps & Tamblyn, 2004, p.1678). The rate of AEs in hospitalized patients was 7.5% or nearly 185,000 adverse events per year out of 2.5 million admissions (Baker et al, 2004; p.1681). Since then, the investment in quality improvement and patient safety work across the country has grown exponentially, with countless publications, research programs, grant opportunities, education programs, provincial oversight bodies, national improvement initiatives and local projects targeting healthcare improvement being launched.

2.2. Impetus for Measuring Quality of Care

There is recognition that in order to improve quality, organizations must first measure both the baseline level of quality and the impact of change. Plan-Do-Study-Act (PDSA) is a common tool used in healthcare improvement and highlights the need to study or test changes to assess whether quality improvements actually had the desired effect (The W. Edwards Deming Institute, 2016).

Measurement of quality and safety allows organizations to assess areas of risk or opportunities for improvement, and to benchmark against standards or peer organizations. It is difficult to identify such areas for improvement without first measuring current performance in key areas of interest. Furthermore, as organizations identify objectives for improvement, they must measure, monitor, and evaluate their ability to meet those objectives. All of this is highlighted by Harrington and McNellis (2006) who identified that "measurement is the first step that leads to control, and, eventually, to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it." (p.1). Having access to benchmarks, peer comparators and trend data allows organizations to more meaningfully assess their performance and identify challenges and opportunities.

In 1998, the Health Information Roadmap project, a collaboration of CIHI, Health Canada and Statistics Canada, emphasized the need for pan-Canadian health system reporting (CIHI, 2013, p.4). Following this in 1999, the Health Indicators project was launched in partnership between CIHI and Statistics Canada, a significant undertaking for national and public health data reporting. This project will be detailed more specifically later in this report, but these projects highlight the national interest in healthcare performance monitoring.

In addition to organizational and national aggregate reporting of health and health service data, funding models are starting to focus on performance-based incentives. Funders have been facing pressure to include quality indicators as part of healthcare payment models (Forster & Van Walraven, 2012).

The literature supports the client's view that benchmarking of healthcare performance is a powerful quality tool and is a continual and collaborative method of assessing organizational performance (Pantall, 2001; Lovaglio, 2012). Thus, this report focuses on the need for organizations to not only monitor their performance locally but also regionally and nationally against appropriate peers and/or established performance targets.

2.3. Canadians' Views on Healthcare and Public Reporting

Several studies and reports have indicated what Canadians' views on healthcare are. Due to such an interest and focus on health services, healthcare is also of continuous political interest.

In 2004, former Prime Minister Paul Martin set in place a ten year, forty-one billion dollar health accord to improve healthcare and reduce wait times (Globe & Mail, 2011), and Canada's First Ministers agreed to reduce wait times in five priority areas. CIHI was mandated to collect and report provincial wait times information and benchmarks (CIHI, 2012). More recently, in 2013-14, the Health Care in Canada Survey was conducted, and of all healthcare issues surveyed on, wait times remained the most significant concern (Canadian Foundation for Healthcare Improvement, 2014).

In addition, the survey identified that only 58% of Canadians surveyed felt that the system was providing quality healthcare. A majority of those surveyed felt that access to care and affordability of the healthcare system worsened over the previous five years (Canadian Foundation for Healthcare Improvement, 2014). In 2003, when a previous series of Health Care in Canada Surveys was initiated, 47% of Canadians surveyed were somewhat or very satisfied with the level of reporting on healthcare system performance to the public (Soroka, 2007, p.52).

A study done by Mendelsohn in 2002 as part of the Commission on the Future of Health Care in Canada identified that Canadians are worried about the state of the healthcare system and that they are aware of the inefficiencies in the system. In 2000, only 29% of Canadians felt the healthcare system was excellent or very good (Mendelsohn, 2002, p.1). The report also found that Canadians are willing to pay for quality of care. Furthermore, Mendelsohn confirmed that the key principles of importance to Canadians are quality and accessibility of care (p.10). Finally, the report identifies that Canadians are supportive of accountability and performance measurement to promote efficiency. (Mendelsohn, 2002). In another national study done by CIHI in February 2013, Canadians identified access to care as their top priority as well as pinpointing quality of care, health promotion and disease prevention, health outcomes and value for money and equity as other top concerns (Wright, Veillard & Lawand, 2013, p. 2).

In 2015, HealthCare*CAN* commissioned an Ipsos-Reid poll on Canadians' expectations of the healthcare system (2015). Healthcare was rated the top Federal issue for Canadians surveyed. Results of this poll further indicated that Canadians are worried about a fragmented health system and the impacts of an aging demographic (p.1). Seventy percent are concerned about falling through the cracks (p.3). Two thirds of Canadians said they are worried about the Canadian health system falling behind other countries' (p.3). Canadians believe the healthcare system is not only responsible for treating disease, but also for implanting strategies that improve the health of overall Canadians (Snowdon, et al, 2012; p.).

Public reporting promotes accountability for quality and safety of care and the effective and efficiency use of resources. Patients and communities have a vested interest in health system performance and the performance of their local hospitals. The public needs high quality information in order to make informed choices about where to receive their care, as well as to understand how public funds are being spent on health services. It is also believed that public reporting not only encourages transparency and accountability, but also encourages organizations to seek continuous improvement in care and service as well as achieving value for money. It is for these reasons that public reporting is important.

In the United States and Australia, legislation mandates regular public reporting on health system performance (Veillard, Tipper & Allin, 2015). In Canada, however, public reporting by individual organizations is still in its infancy (CIHI, 2013, p.1).

More information about the current availability of public information in Canada will be addressed in the literature review and data analysis.

3. Methodology and Methods

3.1. Methodology

The methodology of this project was designed to effectively answer the research questions:

- Is there a lack of consistency and comparability in publicly reported quality indicators?
  - If so, what are the gaps and challenges that currently exist?
  - What could be done to improve?

- What are the dimensions of quality that are being measured?
  - Where are the gaps and inconsistencies in each dimension?

In order to achieve this, first, a literature review was conducted to provide a summary of knowledge in this subject area specific to quality of care performance indicator reporting and the public reporting of performance results. The second phase of the project involved the collection and subsequent analysis of data, from organizations across Canada. The objective of the data collection was to assess the actual current state of public reporting of quality indicators across Canada, and to identify important findings and themes for evaluation.

3.2. Methods

3.2.1. Literature Review

A conceptual literature review was conducted to build a better understanding of the body of knowledge available on the topic. The literature review is organized into two key areas:

1. Healthcare quality performance measurement and indicator development including trends, challenges, best practices or advice; and

2. Public reporting of healthcare performance, including challenges and recommendations.

Where possible the literature was also subdivided into Canadian and international sources.

A review of literature on the subject of public reporting of healthcare quality indicators provided foundational context to guide the rationale and methods for the data collection phase of the research. In addition, the literature informed the thematic organization of quality indicators in the data collection and subsequent presentation. Finally, the literature review served to provide context about current practices, challenges and opportunities in the Canadian healthcare system with respect to quality of care measurement, monitoring and reporting.

3.2.2. Data Collection

Data was obtained using only publicly-accessible information found on organization websites. All available information about the indicators were collected, including the indicator name, definition, purpose, date ranges reported, targets or benchmarks identified, and any actions being taken to address indicator results. An electronic workbook was utilized to record all verbatim data and information published on the organization's website.

In order to obtain a meaningful, reasonable and representative sample of data to analyze for this project, it was determined that data would be collected from each of the 13 provinces and territories since HealthCare*CAN* is a national organization representing each. From each of these, an attempt would be made to collect data from three (3) organizations providing general acute care services in that province or territory. Organizations chiefly providing specialty services were excluded, such as mental health or paediatrics.

Wherever possible, an effort was made to select member organizations of HealthCare*CAN* at the request of the client and in order to provide further value to the client and its members. Where more than three possible organizations could be included in the study, an attempt was made to select organizations to represent even geographic distribution within the province or territory (e.g.: south, central, and north).

3.2.3. Identification of Themes and Organization of Data

At the outset of the project, definitions of quality and quality indicators needed to be established to ensure consistency and validity of the data collection and subsequent thematic representation. A review of both Canadian and international literature resulted in generally similar ideas about the definition of healthcare quality, but some differences appeared around the characteristics of quality found to be fundamental to different organizations or groups. The below definitions were agreed upon in consultation with the client based on the results of this literature review.

Quality: “The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.” (Institute of Medicine, 2001, p.232)

The traits underpinning quality of care and services were assessed in order to determine thematic organization of indicators. These were selected based on three important Canadian sources:

1. Accreditation Canada’s quality framework, since Accreditation Canada accredits the majority of acute care organizations in Canada and is renowned as a leader in the stewardship of quality and safety of care. The framework includes the following dimensions with respective definitions:

    - Population focus: Working with communities to anticipate and meet needs
    - Accessibility: Providing timely and equitable services
    - Safety: Keeping people safe
    - Worklife: Supporting wellness in the work environment
    - Client-centred services: Putting clients and families first
    - Continuity of Services: Experiencing coordinated and seamless services
    - Effectiveness: Doing the right thing to achieve the best possible results
    - Efficiency: making the best use of resources

    (Accreditation Canada, 2014)

2. The Health Indicators Framework developed by Statistics Canada and CIHI outlines health system performance indicators which are categorized into the following themes:
    - Acceptability
    - Accessibility
    - Appropriateness
    - Continuity
    - Effectiveness
    - Safety

    (Statistics Canada, 2011)

3. The Canadian Institute for Health Information’s *Your Health System* website, which reports an assortment of indicators to the public, categorizes them into the following themes:
    - Access
    - Safety

- Appropriateness & Effectiveness
- Efficiency

(CIHI, 2015)

After a review of the source materials with the client, it was decided that the following elements of quality identified above would be *excluded:*

- Worklife – at this time, HealthCare*CAN* wishes to focus on indicators involving the populations that care is being provided to, rather than human resource indicators. More work could be done around human resource and worklife indicators at a later date.

- Efficiency – indicators related to efficiency specifically targeting financial performance are out of scope for this study, since the measurement and monitoring of financial performance and waste is a large and complex enough topic to be studied on its own. There is also a lack of consensus on the relationship between quality and efficiency; whether they are distinct concepts that must be balanced (efficiency is an enabler of quality) or whether efficiency is actually a necessary component *of* quality.

Based on the aforementioned review and consultation with the client, five themes were identified to help organize the data being collected. The themes are as follows:

Safety – Indicators that measure the safety of care, service and the care environment. This theme includes indicators related to infection control. Occupational safety is not in scope for this study.

Patient-Centeredness/Experience – Indicators that measure patient, family or community perceptions or satisfaction with care, or assess patient experience generally or specifically. Also included in this theme are measures of patient, family or community engagement in care and service planning. Measures of care equity will be considered a measure of patient-centeredness for this study. Indicators referred to as measures of *acceptability,* would also fit in this category. Acceptability, as defined by Statistics Canada, means that “all care/service provided meets the expectations of the client, community, providers and paying organizations, recognizing that there may be conflicting or competing interests between stakeholders, and that the needs of the clients/patients are paramount” (Statistics Canada, 2011, p.2).

Effectiveness/Clinical Outcomes – Indicators that assess the compliance with evidence-based methods of care provision and the degree to which outcomes of care are positive or expected. This theme also captures indicators of inappropriate or unexpected outcomes for selected patient populations or service groups. Readmission rates

reported under effectiveness were in some cases interpreted by organizations as continuity of care indicators.

Accessibility – Indicators that evaluate patients' ability to access necessary care in a timely fashion. Wait time indicators, for example, will be captured under this theme.

Continuity and Appropriateness of care – Indicators that assess whether patients received appropriate care in the appropriate setting or indicate whether patients received suitable transition planning. Use of alternative care media, such as telehealth, will also be captured here, though this could relate to access to care as well.

3.2.4. Reporting Characteristics

In addition to looking at the types of indicators being reported in each area of quality, a number of characteristics of reporting were examined. The characteristics were chosen after reviewing the CIHI Data Quality Framework (2009) as a starting point, shown in Figure 1 below:

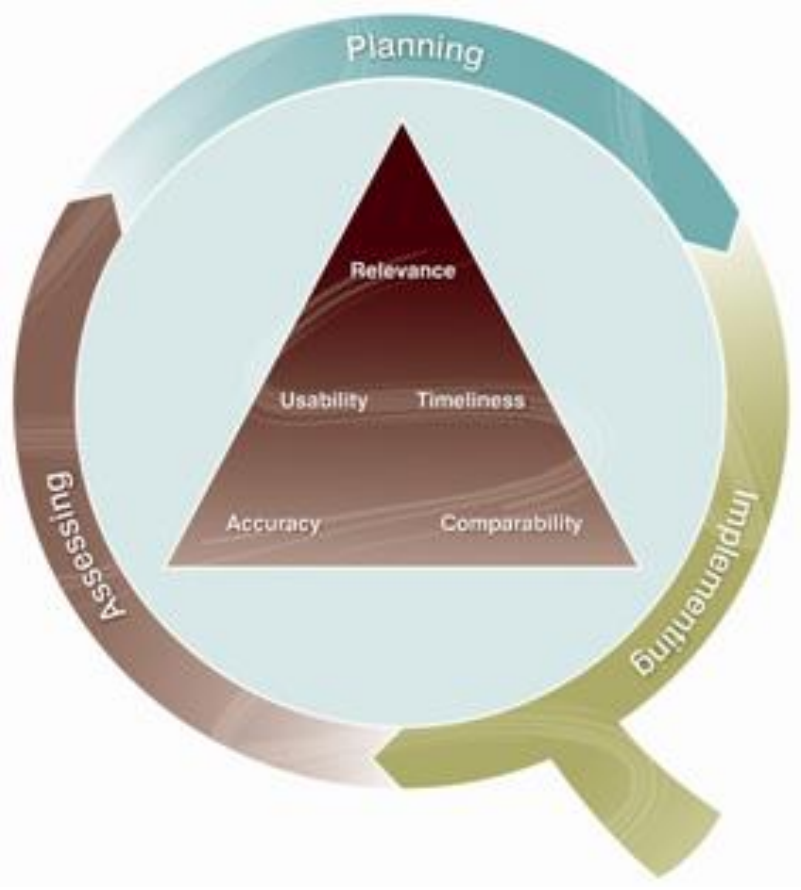

Figure 1: CIHI Data Quality Framework (2009)

Using this foundation and a discussion with the client, seven reporting characteristics were defined by the following questions:

1. Is the purpose of reporting indicators outlined for readers? (relevance)
2. Is current data available (no less recent than 18 months)? (timeliness)
3. Is the organization reporting results at least quarterly? (timeliness, relevance, comparability)
4. Are the indicators defined for the reader? (usability)
5. Are targets documented for measures? (comparability)
6. Is the organization trending any of its indicator results where appropriate? (comparability)
7. Does the organization publicly report actions it is taking to address the results or meet targets? (transparency)

The characteristic of transparency was added to capture public reporting.

3.2.5. Data Analysis

After the comprehensive collection of data, it was summarized thematically in three ways, to assist in the identification of themes and facilitate analysis and discussion of the findings. The visual representations, decided on in consultation with the client, organize the data in the following ways:

- A high level summary, by jurisdiction and organization, of the existence or absence of quality indicators for each of the 5 themes, as well as key characteristics of the data
- A detailed summary, by jurisdiction and organization, of the specific indicators being measured and publicly reported in each of the 5 themes
- A summary, by theme, of the similarities and differences in the way in which comparable indicators are being measured by each jurisdiction and organization

A narrative analysis of the findings in each of the sections was provided to clearly outline how conclusions were drawn.

3.3. Project Limitations and Delimitations

3.3.1. Limitations

In consultation with the client, it was determined that the research would not focus on organizations providing general acute care services as opposed to specialty services. The analysis in this project and conclusions drawn therefore cannot be generalized to describe the reporting practices of other types of healthcare organizations.

In order to be included in the study, an organization must have results of quality indicators available to the public on their external websites. Where fewer than three acute care organizations in a province or territory met this criterion, available data at a regional or provincial level was included, such as results reported by a ministry of health, health council, or other body, if available. If unavailable, fewer than three data sets were included.

The structure of provincial or territorial healthcare systems and resulting public communication methods made it impossible in some cases to obtain more than one set of data. In Alberta, both Alberta Health Services and Covenant Health were included even though Covenant Health reports no indicators on their website, as these are the only two health authorities in the province. The jurisdictional contexts will be further discussed in the findings section of this report.

3.3.2. Delimitations

In consultation with the client, the scope of the research was narrowed, to ensure specificity and actionable results. The research was therefore focused on acute care organizations providing a broad range of services, and therefore excludes specialty hospitals and non-acute care organizations. Where no local organization data was available publicly, data was captured from regional bodies, where available. The client also wanted to focus on publicly reported information in order to highlight the importance of public accountability and patient-centred healthcare.

The research does not include internally-reported quality indicators, though there is likely a wealth of information to study here. The rationale here is that the focus of this research was on information being transparently reported to the public.

3.4. Conceptual Framework

The conceptual framework below is a visual model of how the research question will be answered through this project. It provides an overview of the process and direction of the study, as well as illustrating the relationship between components of the research methodology.

Upon consultation with stakeholders in the client organization to narrow the scope of desired information, it was determined the focus of the research would be on publicly reported acute care quality indicators amongst member organizations (wherever possible) across all provinces and territories.

A literature review facilitated understanding of the history of healthcare performance reporting and was used to identify current themes and challenges, and evidence to support the importance of the research as well as to guide analysis.

Data was collected from three organizations in each province and territory to compare and assess the actual current state of actual publicly reported quality of care indicators on the websites of general hospitals across Canada.

The data collected was analyzed and key themes, gaps and challenges summarized for discussion, together with insights gained from the literature review. The discussion provides an understanding of where further work may be required to improve.

Based on the analysis and discussion, options for consideration and key recommendations will be provided to HealthCare*CAN* on ways to improve interprovincial collaboration and use of consistent, meaningful and comparable public quality reporting across Canada.

4. Literature Review

4.1. Outline

A conceptual literature review was conducted to synthesize currently available scholarly knowledge on the topic of quality of care performance measurement and, specifically, those indicators being reported publicly.

This literature review was focused on two themes to guide the new research of this project by identifying already-established knowledge:

1. Healthcare performance reporting and indicator development, generally focused on quality of care including trends, challenges, best practices or advice. Literature from Canada was considered the most relevant, but important knowledge from other countries was also examined.

2. Public reporting of healthcare performance, including any documented challenges and recommendations.

The review was focused only on scholarly, healthcare-related publications, such as medical and healthcare journals, acquired from the following databases:

- EBSCOhost
- PubMed
- The National Centre for Biotechnology Information (NCBI)
- Science Direct
- Springer
- Emerald Insight
- Wylie

4.2. Findings: Quality of Care Performance Measurement and Indicator Development

The search terms employed in this section of the literature review were the following:

- Healthcare performance measurement
- Quality of care measurement
- Healthcare indicators
- Healthcare indicator selection and development
- Comparable healthcare quality indicators
- Challenges measuring healthcare quality/performance

- Healthcare data reporting
- Quality of care data
- Balanced scorecards in healthcare
- Performance management OR measurement frameworks healthcare

Quality of Care Measurement & Monitoring

The improvement of healthcare quality has been a topic of substantial concentration and investment in the last two decades (Elg, Palmberg-Broryd and Kollberg, 2012; Teare, 2014; Kelley, Rispe and Holmes, 2006). Also, the literature highlights the importance of quality of care measurement and monitoring. For example, Goldenberg, Trachtenerg and Saad have said that "validated and clinically relevant quality indicators have huge potential to substantially improve the quality and efficiency of patient care" (2009; p.435). Brown and Veillard (2008) stressed the potential for performance indicators to have substantially positive impacts as well as challenges, so cite the need for further appreciative inquiry into the successful use of indicators and continue to invest purposefully in their collection, analysis and use (p.52).

In November 2012, Snowdon et al published a white paper entitled *Measuring what matters: The cost vs. values of health care,* for the Ivey International Centre for Health Innovation. This white paper discusses the values and priorities associated with excellent healthcare as identified by Canadians and acute care organizations. In the chapter which discusses key performance measures, the authors suggest that much effort is being put into performance measurement, in part to support funding decisions, with performance-based funding models driving up competition amongst organizations (p.47). Leaders and decision-makers must therefore find ways to effectively measure effectiveness and performance against value (Snowdon et al, 2012; p. 47). However, the authors do underscore the fact that healthcare performance measurement is still evolving, and trends across the country are not consistent (p.47).

Brown and Veillard (2008) explain that indicators are increasingly being included in accountability agreements between funders and healthcare providers and that they signal the importance of transparency, accountability and fiscal responsibility to the public (p.50). They discuss the need for performance indicators to help governments and organizations assess performance against standards, evaluate sustainability of programs and services, and ensure there is value for tax dollars (Brown & Veillard, 2008; p.51).

The literature indicates consensus that quality measurement is important, and could lead to improved performance and outcomes. Goldenberg, Trachtenberg and Saad (2009), discuss the importance of the implementation of local and national standards of quality assurance (p.436). On the other hand, there is also support for the critical evaluation of the investments made so far in quality and safety to determine their actual value and impact (Teare, 2014).

Benchmarking, or the "continual and collaborative discipline of measuring and comparing the results of key work processes with those of the best performers in evaluating organizational performance" (Lovaglio, 2012; p.2), can be used to improve quality of care in an organization, identify poor performers for public safety, or to inform consumers' healthcare choices (Lovaglio, 2012; p.2). Although internal performance monitoring is imperative and local efforts to measure, monitor and improve will continue to be critical, external benchmarking against peers, best practices and evidence-based performance targets is a powerful tool that drives quality improvement (Pantall, 2001). There is even increasing interest in comparing Canada's health system internationally to enhance accountability and promote mutual learning and improvement (CIHI, 2013).

Indicator Selection & Development

Quality indicators, according to Boulkedid, Abdoul, Loustau, Sibony & Alberti (2011), should be developed based on evidence from rigorously conducted studies, but in reality, evidence seldom exists in sufficient quantities; indicators are therefore selected based on experience or anecdotal evidence (p.5). Jones, Shepherd, Wells, Le Fevre and Ameratunga (2011; p113) concur that quality of care indicators are often chosen haphazardly, though they deem indicator selection to be very important There has been a shortage of performance indicators in Canadian healthcare in the past decade, and uncoordinated reporting initiatives have led to confusing differences in measurement strategies and practices (Teare, 2014; p.45). Snowdon et al (2012) go on to convey a crucial message, that there is currently misalignment between Canadians' values respecting healthcare and how health system performance is measured (Snowdon et al, 2012; p.54).

Snowdon et al (2012) exclusively put forward CIHI's health system performance indicators as "key national performance measures" in their report (p.48-49). The authors express that, at a provincial level, each develops performance measures that reflect their priorities and accountability structures for both process and outcome measures (p.50). Finally, institutional performance measures are described as being often too narrowly focused, measuring in-hospital adverse events, for example (p.5). Snowdon et al (2012) do highlight CIHI's Canadian Hospital Reporting Project as a key framework for national acute care organization performance reporting, though they argue that there remains a gap with respect to reporting on outcomes such as wellness, quality of life and satisfaction (p.52).

In 1995, an influential article was published by Ross Baker and George Pink, which identified a balanced scorecard for use by Canadian Hospitals. The idea was that a Canadian balanced scorecard would provide hospitals with answers to four questions, with goals and measures established in each category:

- 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)
  (Baker & Pink, 1995)

While some of these questions may well need to be updated to reflect the current paradigm of healthcare performance and priorities, such as the more current focus on patient-centred care and experience, a balanced scorecard approach may still be a relevant solution to help organizations establish key measures with reason and strategy. At the time, organizations surveyed expressed that they had challenges with the selection of indicators, development of adaptation of instruments and databases, and the capacity required to collect and report performance data (Baker & Pink, 1995). The authors identified some vital issues that were influencing hospitals' ability to use tools like balanced scorecards, namely: the development of reliable, valid and comparable data elements required major resource investments; the need for enhanced ability by hospitals and their staff to use the information collected to assess performance and make decisions; and the need for hospitals to learn *how* to translate the information into actionable improvement strategies (Baker & Pink, 1995; p.11-12)). Another argument made by Baker & Pink (1995) which remains relevant today is that the means of achieving the rapid use of effective measures is the transfer of knowledge to other organizations rather than continuous development of unique, and therefore incomparable, local measures (p. 12).

More recently, Veillard, Tipper and Allin (2015) provide further evidence as to the need for more consistent methods of public performance reporting. The authors confirm that there remains "indicator chaos" in Canada, with multiple participants shaping the landscape of health system performance reporting (p. 16). They describe CIHI's efforts to build the *Your Health System* website for the Canadian public and the process it undertook to develop the indicators it would use to report healthcare performance publicly on behalf of organizations. The steps included clarifying the intended audience, engaged with users of the information in developing a conceptual framework, selected key themes for reporting to the public, selecting performance measures (using scientific methods as well as the results of engagement processes), and developing a prototype of the website (Veillard et al, 2015). In short, CIHI's team involved decision-makers and the public (the users) in this process, while ensuring due scientific process. One of the key points in this development was that the resulting framework and reporting processes would be pan-Canadian, with organization-level reporting that allowed comparison.

The process of engagement and multidimensional collaboration is even more important in the face of the reality that the needs of different stakeholder groups (policy-makers, administrators and healthcare professionals or service providers) varies, as is emphasized by Elg, Palmberg-Broryd and Kollberg (2012).

There is no shortage of challenges cited in international literature with respect to developing and using healthcare quality indicators. This is corroborated by van den Heuvel, Niemeijer and Does (2011; p269) who indicate that, in the Netherlands, "current health care quality performance indicators appear to be inadequate to inform the public to make the right choices". Goldenberg, Trachtenbert and Saad (2011; p. 435) also note the difficulty of "defining and quantifying meaningful quality indicators".

Kelley at al (2006), summarized lessons learned by the Organization for Economic Cooperation and development (OECD) around the development of healthcare performance reporting systems. These lessons, discussed in their publication are quoted below:

1. *Conceptual frameworks should be established to guide the selection of indicators.*
2. *Choices should be made early on in the process to focus on a wide range of clinical conditions or to report on a few priority areas.*
3. *Methods should be developed to add and subtract indicators while maintaining a stable set of indicators to track over time.*
4. *Resources should be allocated to communication strategies and how to best present data results to diverse audiences.*
5. *Mechanisms should be put in place to maintain project momentum.* (p.214)

In the OECD report, criteria are established to help countries select core measures for consistent reporting, such as the importance of the measure, the availability of reliable data, ease of use and interpretation, comparability, utility in public policy development, wide applicability, and linked to already-established indicator sets (Kelly et al, 2006; p.48). They discuss the strategy of drawing on existing initiatives and using established criteria to find consensus between local, provincial and national stakeholders on goals, objectives and measures (Kelly et al, 2006; p.47).

In short, the difficulties encountered with the selection, development and use of performance indicators in healthcare is not unique to Canada, but certainly we might learn from other countries' experiences. However, the literature also validates the opportunity for much learning and innovation right here in Canada. Either way, the literature confirms that further investment is required to increase capacity and effectiveness of the measurement of quality of care and healthcare performance in general; still, the achievement of that goal may be contingent upon standardization led by national, independent bodies (van den Heuvel, Niemeijer & Does, 2011).

4.3. Findings: Public Reporting in Healthcare

The search terms employed in this section of the literature review were:

- Public reporting healthcare performance Canada
- Public accountability healthcare
- Quality of care information public
- Public interest healthcare performance
- Public and quality of care

Canadians want to be more empowered and to have personal autonomy in their healthcare choices, according to the Snowdon et al (2012; p.37). They value accountability and standards (Snowdon et al, 2012; p.20; Morris & Zelmer, 2005; p.1). They want to be engaged in decisions about healthcare and quality of outcomes (Snowdon, 2012; p.21). Canadians are concerned about the quality and sustainability of healthcare (Soroka, 2007; Mendelsohn, 2002). Not surprisingly, then, this was evident even in 2003 when the First Ministers' Accord on Health Care Renewal included a commitment to use comparable indicators and inform Canadians on progress (Health Council of Canada, 2012; p.18). The First Ministers agreed that "Canadians are entitled to better and more fully comparable information on the timeliness and quality of health care services" (Health Council of Canada, 2012; p. 18). Quebec developed its own plan. In sum, the public reporting of performance data is important to Canadians, and a right.

Snowdon et al, in their 2012 white paper, make the point that while public reporting occurs in all jurisdictions across Canada, the level and detail of reporting differs considerably (p.47). The Health Council of Canada, in its 2012 *Progress report 2012: Healthcare renewal in Canada* likewise highlighted that "provinces and territories have developed their own reporting mechanisms tailored to their own needs, whether for planning, measuring performance, or accountability (p.19).

It is astounding, according to Veillard et al (2015) that the objectives and motivators for public reporting are unclear, despite the work and attention being paid to this agenda (p. 16). Morris and Zelmer (2005) also discussed this fact: that the objectives and methods of public performance reporting are quite diverse (p.7).

There are a number of challenges with public reporting cited in the literature, which may be barriers to implementation. One is hospital staff members' own perception of the impact of public reporting (Hafner, Williams, Koss, Tschurtz, Schmaltz and Loeb 2011; p.702). Indeed, one of the key concerns of staff surveyed in this study was the question about the level of understanding the public has of performance data. Morris and Zelmer added that general literacy, health literacy and consumer understanding of statistical information may all be barriers to the effective use of publicly reported performance information (2005; p.11-12). This same concern was expressed by Hader, in 2006, who identifying that education is necessary, about the meaning of the data being reported (p.88). Moreover, the same survey of hospital staff found that staff were concerned about the quality of the data being reported publicly (Hafner et al, 2011; p.702).
On the other hand, Hafner et al (2011) did find that a number of staff-perceived positive impacts of public reporting, including "increased involvement of leadership" (p.700), "accountability to both internal and external customers" (p.700), "re-focused priorities" including making quality and outcomes priorities (p.701), and a "heightened awareness of performance measurement data" throughout the organization and thus more staff involvement in improvement processes (p.701).

Leadership-level perspectives about performance and quality improvement were collected in a 2011 survey done for the National Health Services Research Foundation. The survey found that Canadian health leaders themselves were interested in

expanding public reporting, but felt that there was “an urgent need for clear, evidence-informed measurement strategies and tools” (p.6) and that “indicators, targets and benchmarks were inconsistent across organizations” (p.6). The health leaders surveyed were also concerned about data quality, and inappropriate interpretation of the data being used. Finally, the leaders emphasized the importance of “aligning indicators across organizations and systems” (p.6).

Totten, Miake-Lye, and Vaiana (2011) concluded that while they found relatively few studies on the impact of public reporting on quality improvement activities, those studies that were conducted found positive impacts on quality and safety outcomes (p.2). Humphreys and Cunney (2008; p.892) as well as Morris and Zelmer (2005; p.14) also concurred that there is presently little evidence to support the link between public reporting and improved patient care. In summary, further study is required to understand the actual impacts of public reporting on performance.

More research and public engagement, particularly in Canada, are required to understand the reporting needs of Canadian healthcare consumers and to ensure that publicly reported indicators not only reflect the public’s values and priorities about healthcare, but that data and information are presented and explained in a way that is clear and meaningful. After this, education will also be necessary to help the public understand how to interpret and use the data that is shared (Magee, Davis & Coulter, 2003).

4.4. Summary

The review of the literature validates the immense importance of healthcare performance measurement, benchmarking and public reporting in Canada. It indicates that there is indeed a need to learn more about current practices and how to achieve greater national collaboration, effectiveness, and consistency in the selection and development of effective indicators that aim to enable performance improvement. The current state of performance measurement has been described as “chaos”.

The literature also supports the importance, and indeed the expectation, that such performance results be reported publicly to all stakeholders, including not just funders and decision-makers, but users of the healthcare system. This not only means sharing information, but developing indicators and reporting methods with the perspectives of healthcare consumers in mind, and designing communication approaches that facilitate understanding, engagement, and effective use of results.

There is further need for research, development and policy in these areas. The outstanding research questions remain: how much consistency and comparability exists when an organization-by-organization review is conducted; what are the current gaps in consistency and comparability; and what could be done by HealthCare*CAN* and its members to improve the state of public reporting and use of quality indicators across Canada.

5. Findings: Environmental Scan

This section provides a summary of the national and provincial/territorial contexts which impact the results of the data collection and analysis. Key organizations that have spearheaded work in measurement of quality of care, and have influenced the performance measurement work of individual care provision organizations will be outlined here. In addition, this scan includes a review of the provincial and territorial structures and legislative requirements which impact organizations that exist within them.

5.1. National Context

Before exploring the regional and local reporting patterns, it is important to first understand how healthcare performance data are being reported and impacted nationally. There are several national organizations that are at the forefront of healthcare and health system performance reporting, which will be the focus of discussion here. They are: the Canadian Institute for Health Information, Health Canada, Statistics Canada, the Canadian Patient Safety Institute, and Accreditation Canada.

Health Canada

Canada's 'Medicare', our national health insurance program, is intended to ensure that all Canadians have access to essential medical care, and the health insurance plans and health services are managed, organized and delivered by the provinces and territories (Health Canada, 2010). The Canada Health Act includes principles intended to ensure equitability from jurisdiction to jurisdiction. The roles and responsibilities governing healthcare are distributed between the Federal and Provincial or Territorial governments, which means both are also accountable to ensuring healthcare is delivered according to the principles of the Canada Health Act: universality, comprehensiveness, accessibility, portability and public administration.

Health Canada's website lists programs related to quality of care in Canada. The primary topic addressed here is wait times, which has received much attention at the Federal level with access related challenges across the Country. Access is also one o the principles of the Canada Health Act. Health Canada's primary focus in reporting indicators to the public are those related to population health. Health Canada is also a relevant player in their direct funding and delivery of health services to some groups, for example: First Nations people living on reserves, members of the Canadian Forces, and veterans.

Statistics Canada

Statistics Canada is involved in healthcare reporting on a variety of levels, which are illustrated through the Health Indicators Framework, developed and maintained in partnership with the Canadian Institute for Health Information (CIHI). The framework includes eighty indicators, categorized into four sections:

- Health status of Canadians
- Non-medical determinants of health
- Health system performance
- Community and health system characteristics

The indicator data reported by Statistics Canada is sourced from numerous Statistics Canada databases such as vital statistics, results from the National Population Health Survey, the Canadian Community Health Survey, labour force data, the Canadian Cancer Registry and external data collected by CIHI (Minister of Industry, 2013). This broad framework is intended to provide comparable information based on standard definitions and methods, at the health region and provincial/territorial levels, with the primary audience being health regions themselves (Minister of Industry, 2013). For the purposes of this project, the indicators reported within the health system performance category are most relevant, and these are outlined in Table 1 below.

Table 1: Health Indicators Framework indicators reported within the health system performance category (Minister of Industry, 2013).

Theme	Indicator
Acceptability	• Patient satisfaction and quality rating
Accessibility	• Influenza immunization • Mammography • Pap smear • Colorectal cancer screening • Regular medical doctor • Wait time for hip fracture surgery
Appropriateness	• Caesarean section rate • Patients with repeat hospitalizations for mental illness
Continuity	• 30-day readmission rate for mental illness
Effectiveness	• Ambulatory care sensitive conditions • 30-day in-hospital mortality • 30-day obstetric readmission rate • 30-day pediatric readmission rate • 30-day surgical readmission rate • 30-day medical readmission rate • Self-injury hospitalization rate • Potentially avoidable mortality for preventable and treatable causes
Safety	• Hospitalized hip fracture event rate

Canadian Institute for Health Information (CIHI)

A national leaders and independent not-for-profit organization, CIHI collects data from a huge number of sources, conducts sophisticated analytics and research, and translates its data into public information about Canadians' health and the health system (CIHI, 2015). Included in the work of CIHI is the management of the 28 databases (at the time of this report), some pan-Canadian, populated by healthcare organizations across Canada according to strict data standards. All jurisdictions report hospital data to CIHI including data about the patients they are caring for and the services being provided, though there is still some inconsistency between jurisdictions in terms of what is being reported to CIHI. The data and information collected, analyzed and presented by CIHI serves many stakeholders including governments, health authorities, health service organizations, researchers and academics and the public and is used for many purposes, including the assessment of quality and outcomes of care. Moreover, in partnership with Statistics Canada, CIHI publishes a library of over 80 health indicators. (CIHI, 2015)

One of the areas of emphasis for CIHI is health system performance, which includes information related to access and wait times, quality of care and outcomes, and integration and continuity of care. The goal of their performance reporting is to "support jurisdictional efforts to improve care and the health of Canadians" and to "provide more transparency for Canadians and more clarity for the system" (CIHI, 2015, p.1).

In 2010, the Canadian Hospital Reporting Project (CHRP) was begun by CIHI, a national quality improvement tool for peer comparison of clinical and financial indicators (CIHI, 2012). This project was launched publicly in 2012, with 21 clinical indicators available to the public, including facility-level results. In 2013-14, CIHI launched the *Your Health System* website, which replaces the CHRP and provides health providers and the public with an interactive tool to browse performance on 37 quality and health status indicators at the local, regional, provincial/territorial and national levels (CIHI, 2015). The *Your Health System* site presents a simpler to use, more easily understandable indicator dashboard for the general public. The indicators reported on the site were selected in consultation with system stakeholders and the public and some are not yet being reported. The indicators currently being reported on are shown in Table 2 below:

Table 2: Indicators reported on CIHI's Your Health System site (CIHI, 2015).

Theme	Indicator
Access	• ER wait time for physician initial assessment • Total time spent in ER for admitted patients

	• Hip fracture surgery within 48 hours
Safety	• In-hospital sepsis • Obstetric trauma
Appropriateness & Effectiveness	• 30-day Hospital readmissions • 30-day Medical readmissions • 30-day Surgical readmissions • 30-day Obstetric readmissions • 30-day readmission rate for patients < 19 years old • Hospital deaths (HSMR) • Hospital deaths following major surgery • Low-risk caesarean sections
Efficiency	• Administrative expense • Cost of a standard hospital stay

In 2012, CIHI published a report outlining a proposed Health System Performance Framework, which cited four areas of performance:

- Social determinants of health
- Health system inputs and characteristics
- Health system outputs
- Health System outcomes
  (CIHI, 2012)

Within each of the areas above, a number of more specific themes are identified for performance measurement. This framework is related to the Health Indicators Framework described previously and the relationship is documented in CIHI's report on the proposed new Framework. It is not clear when the proposed new Health System Performance Framework will be implemented formally, and whether it will replace the Health Indicators Framework, or be used in conjunction. The indicators presented on the *Your Health System* website, appears to include indicators related primarily to the *Health System Outputs* section of the aforementioned CIHI-proposed framework, and the *Health System Performance* section of the CIHI-Statistics Canada Health Indicators Framework.

The Canadian Patient Safety Institute

The Canadian Patient Safety Institute (CPSI) has been heavily involved in leading and coordinating efforts across Canada to improve the quality and safety of healthcare since its establishment in 2003 by Health Canada. One of CPSI's flagship programs is the *Safer Healthcare Now!* program, which establishes evidence-based improvement priorities, provided best practice tools in those priority areas, as well as data submission and reporting for enrolled organizations in the following broad areas:

- Prevention and management of delirium
- Acute myocardial infarction management
- Prevention of central-line associated bloodstream infection
- Infection prevention and control
- Reduction of falls and resulting injury
- Prevention of surgical site infection
- Prevention of venous thromboembolism
- Prevention of ventilator-associated pneumonia
- Rapid response teams for codes (critical medical incidents in hospital such as cardiac arrest)
- Medication reconciliation

CPSI's work in these areas has encouraged many organizations to improve safety, and as a result monitor and report indicators established by the *Safer Healthcare Now!* program.

Accreditation Canada

Another leader in healthcare quality and safety is Accreditation Canada, which sets national standard for health delivery organizations electing to be accredited. There are over 70 sets of standards, as well as specific quality and patient safety requirements. In addition, Accreditation Canada publishes reports and tools focused on the quality of care and service in Canada. Accreditation Canada's focus on quality and safety is extremely influential across the country. Their Required Organizational Practices (ROPs) are evidence-informed practices addressing high-priority areas and are essential practices organizations must demonstrate compliance with in order to achieve accreditation (Accreditation Canada, 2015). Some of the ROPs echo the areas of focus of other influential organizations as well as indicators being reported by some Canadian healthcare organizations, such as antimicrobial stewardship, hand hygiene compliance, falls prevention, pressure ulcer prevention, venous thromboembolism prophylaxis, safe surgery checklist usage, medical reconciliation, and adverse event reporting. In some cases, the ROPs require that organizations report evaluative measures.

Collaborative for Excellence in Healthcare Quality

In 2011, the Collaborative for Excellence in Healthcare Quality (CEHQ) was formed voluntarily by concerned and invested health system parties. The mandate of this national consortium was partly to bring consistency to hospital quality reporting. The collaborative included participation by numerous organizations, including: the Canadian Institute for Health Information, the Canadian Patient Safety Institute, The Canadian Health Services Research Foundation and Accreditation Canada and eleven healthcare

organizations from across Canada. In April 2011, the CEHQ agreed upon a scorecard that included 15 indicators.

Again, there are similarities in the themes established and in some of the indicators chosen, but variation exists from those established by CIHI, Statistics Canada and others. It is not clear why the variation exists from framework to framework. The objective of the CEHQ did not come to fruition in the form of common national reporting standards, which underscores the systemic challenges and the need for further national, coordinated efforts. Some of these national indicators will be summarized in the appendices and compared against local findings.

5.2. Relevant Provincial/Territorial Influences on Reporting

Each province and territory must be compliant with the Canada Health Act. However, each has jurisdiction over how it provides and evaluates healthcare services. As a result, the provincial or territorial oversight for quality and safety of care differs across Canada, including the existence and format of related legislation, mandating of quality reporting and whether or not a provincial oversight body exists. The table below summarizes this information.

Table 3: Summary of Provincial and Territorial Governance with Influence on Public Quality Reporting

Province/ Territory	Governance Structure	Health Quality Body	Mandated Quality Reporting	Legislation Governing Quality of Care	Notes
British Columbia	5 regional health authorities	BC Patient Safety and Quality Council	No	Patient Care Quality Review Board Act, 2008 (governs complaints only)	BCPSQC collects indicator data but not publicly reported. Wait times reported provincially on the government Surgical Wait Times site.
Alberta	1 provincial health authority and 5 zones.	Health Quality Council of Alberta	No	Health Quality Council of Alberta Act, 2011 (governs responsibilities of HQCA)	Indicator data reported by AHS for all zones of Alberta in a single location. Wait times reported by the government of Alberta online.
Saskatchewan	12 regional health authorities	Saskatchewan Health Quality Council	No	Bill 41 – An Act respecting the Health Quality Council	Quality Insight reports 100 indicators for all health authorities. Data derived from variety of sources including CIHI and Statistics Canada. While not mandated by law, comprehensive indicator results provided for all health regions and organizations. This includes wait times on the same site.
Manitoba	5 regional health authorities	Manitoba Institute for Patient Safety	No	None	Wait times reported by Manitoba Health and shown by RHA and Facility.

Ontario	14 Local Health Integration Networks	Health Quality Ontario (HQO)	Yes	Excellent Care for All Act, 2010 Commitment to the Future of Medicare Act, 2004 (provided for the quality council)	The Excellent Care for All Act requires organizations to create and make publicly available annual quality improvement plans (QIPs) that include reporting a minimum set of indicators and submit to HQO. HQO reports hospital-specific results of patient safety indicators on its website. Wait times reported provincially.
Quebec	18 regional health and social service agencies	Health and Welfare Commission	No	An Act Respecting the Health and Welfare Commissioner, 2005	The Health and Welfare Commission site reports selected indicators by health region, available only in French.
New Brunswick	2 regional health authorities plus Hospital Services Branch	New Brunswick Health Council	No	New Brunswick Health Council Act, 2008	Data reported by the council on their website, via a health system report card, provides indicator results for the province overall on a variety of indicators. Wait times are reported provincially.
Nova Scotia	1 single health authority (as of April 2015) plus the IWK Health Centre. Health System Quality Branch of the Department of Health and Wellness is responsible for quality of care.	Quality and Patient Safety Advisory Committee (not a quality agency)	Yes	Patient Safety Act, 2012	The Act mandates reporting of hand-hygiene adherence rates and other patient safety indicators. The Act does not specifically say this needs to be reported at a granular level or to the public. Wait times are reported provincially.

Prince Edward Island	1 provincial health authority	None	No	Health Services Act, 1988	No public reporting mandated by law but Health PEI has performance indicator results posted publicly in the annual report. Wait times are reported provincially.
Newfoundland & Labrador	4 regional health authorities	None	No	None	No public reporting mandated.
Northwest Territories	8 health and social services authorities	None	No	None	No public reporting mandated.
Yukon Territory	Department of Health and Social Services and the Yukon Hospital Corporation	None	No	None	No public reporting mandated
Nunavut	Department of Health	None	No	None	No public reporting mandated

5.3. Provinces with Quality Oversight

British Columbia

The BC Patient Safety & Quality Council (BCPSQC) was formed in 2008 by the provincial government with a mandate to improve patient safety, reduce errors, support transparency and steward best practices for clinical improvement (BCPSQC, n.d.). The BCPSQC has done work to promote collaboration, spread best practices and improvement. Data is collected by the BCPSQC in key priority areas, which are available to organizations upon request, but primarily used to fuel provincial improvement efforts, and not reported publicly.

Alberta

Healthcare in Alberta is primarily delivered by Alberta Health Services (AHS), the single health authority for the province as of 2008, which is legally established by the Regional Health Authorities Act. The act dictates that AHS is responsible for ensuring reasonable access to health services that are responsive to the needs of individuals and communities (Alberta Health Services, 2014). Because of the single authority model, AHS has set up common provincial performance measures and dimensions of quality and reports results centrally as well. The specifics of this will be reported on in ensuing sections of this report.

Under the mandate of the Health Quality Council of Alberta Act, 2011, The Health Quality Council of Alberta (HQCA) was established and priorities set. The HQCA works collaboratively to promote and improve patient safety and health services quality in Alberta (HQCA, 2015). The HQCA also established a quality matrix, establishing quality dimensions for the province. Included in the council's mandate is to collect, analyze and report on the quality and safety of health services in the province.

Covenant Health is Alberta's Catholic health authority, providing service across the province. Covenant Health is not governed by Alberta Health Services although is partially funded by them.

Saskatchewan

The 2015-16 plan for the Saskatchewan Ministry of Health and Health System reports that the government will measure performance in a number of areas and the annual report for 2014-15 does indicate that high-level results have been reported to the public.

Quality Insight is a website developed by a collaborative between the health regions, the Saskatchewan Cancer Agency, eHealth Saskatchewan and the Ministry of Health

which is Saskatchewan's "dashboard" of all quality measures being tracked (Saskatchewan Health Quality Council, n.d.).

Manitoba

The Manitoba Institute for Patient Safety was created in 2004 by the provincial government to promote and share patient safety improvement activities. They do not report any performance data, but are rather a resource portal for healthcare providers and the public.

Ontario

Health Quality Ontario (HQO), in their Common Quality Agenda (2014), established a series of performance areas for monitoring in a number of key areas. The council also conducts public reporting in the areas of hospital care, primary care, patient safety, home care, long-term care. The HQO Quality Monitor report published online, reports on the quality of care in Ontario's health system, including aggregate reporting of provincial results, progress and strategies for improvement, by sector. For the hospital sector, thirteen key areas are reported on publicly.

All hospitals in Ontario must submit annual quality improvement plans (QIPs) to HQO, which includes indicator reporting. Health Quality Ontario publishes a list of priority and additional indicators for each sector, including hospitals. Hospitals must review the list of priority indicators and determine which are relevant to their organization and include them in their plan (HQO, 2014, p.6). Each of the indicators is clearly defined and data sources are identified. The QIP requirements likely influence the publicly reported being chosen by Ontario hospitals. There are currently 16 indicators established for hospitals in Ontario.

Quebec

In Quebec, the Health and Welfare Commissioner is primarily responsible for evaluating and improving the quality of health services for the province. Through the site, performance indicators are reported for all health regions. Unfortunately, results are only available in French. Although this data is reported by health region, it is not reported by hospital site. The hospitals in each health region operate under independent boards and have the choice to report their own performance indicators; hence, the provincial data from Quebec was not included in the data collection and analysis for this project.

New Brunswick

The New Brunswick Health Council (NBHC) is mandated by the Government of New Brunswick to promote healthcare quality in the province, and report findings and

recommendations to the Minister of Health and the public. Their publicly reported provincial report card, produced each year since 2010, looks at the quality dimensions of accessibility, appropriateness, effectiveness, efficiency, safety and equity. In total, there are thirty one indicators being reported. The published results are aggregated for the whole province. An acute care patient experience survey is conducted annually, with results reported by site on the NBHC website.

The Department of Health is in the process of developing a monitoring framework to evaluate the healthcare system's effectiveness and efficiency (New Brunswick Department of Health, 2014).

Nova Scotia

In April, 2015, the health authorities of Nova Scotia were consolidated into one, the Nova Scotia Health Authority, now responsible for healthcare services across the province. While there is no quality council in Nova Scotia, the Department of Health has a division called the Health System Quality Branch, responsible for quality of care and patient safety. Through the Department of Health website, selected quality and safety indicators are reported, as per the data analysis found later in this report. In addition the province has a Quality and Patient Safety Advisory Committee that advises the government and healthcare organizations on how to improve quality and safety of care. The Patient Safety Act, 2012, mandates reporting of hand hygiene compliance and unidentified patient safety indicators, but it does not mandate public reporting.

5.4. Provinces Without Quality Oversight

The following provinces and territories have no structures in place to govern or support health quality or reporting.

- *Prince Edward Island*
- *Newfoundland & Labrador*
- *Northwest Territories*
- *Yukon Territory*
- *Nunavut*

5.5. Wait Times

All of the provincial governments have dedicated wait time reporting sites. The territories do not.

6. Findings: Data Collection & Analysis

This section includes a review of the data collected and provides an analysis thereof. A high level overview of the key findings of the data collected is provided prior to a specific examination of the indicators being reported, organized by quality theme.

With the exception of the Yukon Territory and Nunavut, all other provinces and territories had some publicly reported performance indicator results available to study. The Yukon and Nunavut were therefore excluded from the analysis. The data tables illustrate a wide variation in the performance indicators being used by those organizations included in the study, both in terms of the thematic focus of the monitoring and the specific indicators being reported within each theme.

6.1. High Level Analysis

The high level overview presented in Appendix 1 presents available indicators and reporting characteristics by region and organization. The colour coding indicates clear patterns, and the analysis of these patterns is presented below. Overall, the analysis of high level results indicates variation in both reporting content and characteristics of reporting methods, within and across provinces and territories.

Availability of Indicator Results

There were 27 organizations included in this study, and results were as follows:

- 74% of organizations reported safety-related indicators
- 55% of organizations had patient experience indicator results posted publicly
- 59% of organizations reported indicator results which fit into the effectiveness and clinical outcomes theme
- 74% of organizations reported accessibility indicators
- 59% of organizations reported continuity and appropriateness of care results
- British Columbia, Alberta, Saskatchewan and Ontario were found to have the most comprehensive and consistent availability of publicly reported performance information. These provinces are the only ones that have formalized agencies (councils) focused entirely on healthcare quality and safety.

Reporting Characteristics

While reviewing the publicly reported quality data for the 27 included organizations, seven key characteristics were examined in Appendix 1:

1. Is the purpose of reporting indicators outlined for readers?
2. Is current data available (no less recent than 18 months)?
3. Is the organization reporting results at least quarterly?
4. Are the indicators defined for the reader?
5. Are targets documented for measures?
6. Is the organization trending any of its indicator results where appropriate?
7. Does the organization publicly report actions it is taking to address the results or meet targets?

The results of the analysis of the aforementioned characteristics were as follows:

- 50% of the organizations studied provided current data.
- 52% of organizations reported their results at least quarterly.
- Conversely, challenges with both data currency and reporting frequency were observed in Quebec, New Brunswick, PEI, Newfoundland and Labrador, and the Northwest Territories.
- 67% of organizations provided performance targets for some of their indicators, including all organizations examined in BC, Alberta, Saskatchewan, Ontario, and Nova Scotia.
- 67% of the organizations provided trend data, data from more than one time period, which demonstrates positive or negative changes in performance. This gap makes it difficult to assess whether organizations have achieved their stated objectives or made improvements over time.
- The organizations in British Columbia, Alberta, Saskatchewan and Ontario were the most transparent in providing contextual information about their indicators, helping the public understand the purpose and definitions of indicators being reported and actions being undertaken in order to improve. Again, only these provinces all have agencies exclusively focused on healthcare quality.
- In PEI and the Northwest Territories, results are aggregated for the whole province or territory. In some organizations, results were found only in the annual report, rather than a separate part of the website devoted to performance reporting. This was true for Vitalité in New Brunswick, Health PEI, and the Winnipeg Regional Health Authority, excepting their wait-time data which is posted separately.
- Accountability for performance includes not only the reporting of current performance, but also extends to communication of actions aimed at improving that performance. Sixty-three percent (63%) of hospitals studied chose to report the actions being undertaken to address the need for improvement. The depth of reporting on actions varied from very brief to very comprehensive and transparent. This seemed to correlate with the amount of explanation the

organization provides regarding the purpose of the indicator and analysis of performance.

6.2. Specific Indicators Being Reported by Theme

As is illustrated in the data tables in Appendices 2 through 7 (which summarize indicators found within each theme), there is very little consistency in the way that organizations are measuring indicator types. The results by theme are presented below.

Safety

The safety theme is the one in which organizations most consistently have indicators being reported, with 74% reporting safety-related results. The greatest concentration of reported indicators are related to adverse event reporting and infection control. Even within these subgroups, however, there is little consistency in the way in which the indicators are being defined and measured. For example, there are 15 different indicators related to adverse events and incidents, many of which are similar but cannot be compared to one another because of slight differences in definitions or measurement methodology. Where a common definition does exist, few organizations are reporting results, such as with rates of inpatient falls, where only 15% of organizations have reported results. The variation in definition and reporting prevents comparison between similar organizations or population groups.

Similarly in the infection control category, some organizations are measuring the overall infection rate of antibiotic-resistant organisms (AROs), others are measuring the rate for specific organisms and still others are specifically capturing those which were hospital acquired. Hand hygiene appears to be the only consistently-defined indicator in this category, but only 41% of organizations examined are measuring it.

Patient-Centeredness & Experience

Within the theme of patient centeredness and experience, fifteen or just over half of the organizations studied reported related indicators. All organizations examined in BC and Saskatchewan reported results within this theme. Alberta Health Services and the Government of the Northwest Territories also reported regional satisfaction indicators. To obtain results, patient surveys are most often used to assess patient experience.

In some organizations, only high-level indicator results were reported: overall patient satisfaction or experience of care. In others, detailed results of multiple indicators, measuring patient perceptions of care and service were reported publicly. Examples include patient perception of caregiver communications, pain control, or wait time until call bell was answered. Examples of strong reporting practices in this theme include New Brunswick, Saskatchewan and Fraser Health Authority in BC. Perhaps, this shows

that these organizations are truly concerned about their patients' experiences and are transparent in reporting the outcomes of these assessments.

Effectiveness & Clinical Outcomes

In this study, it was found that 59% of organizations reported indicators related to effectiveness of care and clinical outcomes. The organizations in British Columbia, Saskatchewan, Manitoba, Ontario and Alberta Health Services all reported such indicators. Forty-eight percent of organizations assessed were found to report readmission rates, and a lack of common reporting methods was also observed. Variations include overall readmissions to hospital, readmission for specific clinical groups such as paediatric or obstetrical cases, and readmissions for particular diagnoses like myocardial infarction (heart attack). Most of these organizations track readmissions to hospital within 30 days of discharge, but some monitor those readmitted within 7 and 28 days as well. This dissimilarity in definition and reporting inhibits effective comparison across organizations or against benchmarks where they exist.

Twelve organizations, or 44%, were identified as reporting hospital standardized mortality ratio, a standardized measure of hospital mortality developed and also reported by CIHI. Since this is a nationally-standardized indicator, it is being measured consistently by those reporting it, however it is unclear why 56% of organizations are not reporting this available data publicly. This may point to fears of reputational impact. Other mortality indicators, on the other hand, are not being consistently reported, such as hospital deaths following major surgery (2 organizations reporting) or mortality after heart attack (2 organizations reporting). Some organizations adjust their mortality indicators for age, gender and other risk factors and some do not; this makes comparison impossible.

Surprisingly, only 26% of organizations reported on indicators related to length of stay, and within those, 4 different indicators were found.

Seven organizations, or 26%, were found to be publicly reporting indicators related to compliance with best practices. It is in this category that some of the Canadian Patient Safety Institute's Safer Healthcare Now (SHN) associated indicators are found; despite the importance and national notoriety of the SHN program, only one organization reports their performance on delivery of timely prophylactic antibiotic usage for surgical patients, and two organization reports their compliance with standards for the prevention of venous thromboembolism. Similarly, only 18% of all included organizations reported on the unexpected, preventable complication of ventilator-acquired pneumonia, and only 15% reported on central line blood stream infections,

both of which are SHN prevention initiatives. Overall, the number of organizations public reporting complication rates was very low at 26%.

In Ontario, the presence of Health Quality Ontario, the mandatory quality improvement plan submissions and the QIP indicators within them has impacted the reporting in this theme. All three Ontario hospitals studied reported their rate of ventilator-acquired pneumonia and central line blood stream infections. Additionally in Ontario, all hospitals with an ICU report data to the Critical Care Information System and reporting of ventilator-associated pneumonia is mandatory, so this information is already widely available in that province.

Accessibility

Wait times were one of the most consistently reported indicators for organizations across Canada. This is not surprising given the previously discussed focus on wait times at the federal level. In fact, 74% of the groups assessed report at least one wait time measure on their own website. Fifteen organizations, or 55%, reported indicators related to surgery or other specific type of care. Eleven organizations report indicator results related to wait times in the Emergency Room.

The fact that not all organizations are publicly reporting wait times on their own websites is, in some cases, a function of this being reported provincially, and therefore organizations may not choose to duplicate the information on their own sites. However, those organizations did not very often refer the public to provincial sites to review such results.

Wait times are not consistently defined and calculated. This has been confirmed by the Wait Time Alliance in their 2014 report on wait times in Canada (p. 3). In addition, the Canadian Medical Protective Association (2007, p.5) in its report on medical liability related to wait times, corroborated that both wait time calculation and approaches to improve performance are inconsistent across the health system. The data collected in this study further validates this conclusion.

Continuity and Appropriateness of Care

In this theme, the most consistently reported indicator relates to alternate level of care (ALC) days, but nevertheless, only 37% of organizations report this measure. This accounts for patients in hospital who are awaiting a bed at another level of care, and therefore taking up a bed defined for another use, typically more acute cases. The indicator named “ambulatory care sensitive conditions” is one which is defined by CIHI and is reported by 18.5% of studied organizations. This indicator looks at the number of patients receiving inpatient care who, given evidence-based criteria, could likely be cared for in an ambulatory setting. These important indicators have wide-reaching

impacts both in terms of the appropriateness of care provided to patients, but also wait times in other parts of the system, such as the Emergency Department or community.

There is a small smattering of other indicators reported in this theme, most of which are only reported by a single organization. In other words, much work is required to report measures of continuity and appropriateness across Canada. The downstream impacts of poor continuity or appropriateness of care are immense and may include access to care, clinical and health outcomes, and negative financial impacts as it may comparatively be much more costly to care for a patient in a less appropriate setting.

7. Discussion: Challenges & Opportunities

This section will provide a discussion of the results of the data analysis, and consider the challenges identified and subsequent opportunities for further advancement of public reporting of quality of care indicators.

7.1. Challenges

The results of the data collection and analysis clearly show a lack of agreement about the priorities of acute care organizations in the area of quality of care and the measurement thereof. Even for indicators where data is widely available, or where data collection and reporting to CIHI is mandated, not all organizations are reporting results publicly. For example, all occurrences and diagnoses must be collected about an inpatient visit; falls in hospital would be captured and submitted to CIHI via the Discharge Abstract Database. Why, then, are not all organizations in the sample reporting their falls rate? Other similar examples exist and highlight the divergence of public performance reporting of healthcare quality indicators across and within Canadian jurisdictions. This indicates a problem that requires future examination to understand why organizations are reporting so little publicly.

CIHI, in its backgrounder discussing the need for enhanced pan-Canadian performance reporting, echoes eloquently the challenges of public reporting:

> Many countries are now regularly releasing public reports on the performance of their health system, with an increased emphasis on measuring outcomes and value for money. In Canada, however, public reporting on health system performance is still a work in progress. A large number of organizations reporting concurrently and in an uncoordinated fashion on health system performance at various levels has led to confusion for health system decision-makers and Canadians alike. All of these factors have contributed to what some are describing as a state of “indicator chaos”. (CIHI, 2013, p.1)

According to Forster and Van Walraven (2012), most indicators are chosen by organizations on the basis of what data is available for measurement, rather than what should meaningfully be monitored; this is an obstacle to effective performance monitoring and accountability (p.3). Indicators being reported may also reflect local priorities.

7.2. Opportunities

The challenge of choosing meaningful and comparable indicators could be overcome, in light of the fact that work has and continues to be done at the national level by CIHI to standardize performance indicators. Having data holdings for acute care for the entire country, CIHI works extensively on data quality, accuracy, consistency, timeliness and other characteristics necessary to ensure useful and comparable data, but also to develop indicators based on its knowledge of high quality data availability.

In addition to the indicators being reported on the *My Health System* site, the CIHI indicator library includes 80 indicators, 69 of which are related to health system performance. Not all of these relate to acute care but, nonetheless, research and development has already been done to ensure statistical relevance, data availability and quality and comparability. Why, then, are organizations not using these indicators as their basis for selection of publicly reported data and collaborating nationally with CIHI to develop indicators where gaps exist? Similar collaborative processes as were used to develop the *My Health System* site (Veillard et al, 2015) and its indicator framework could be used to continue to build more and more robust pan-Canadian performance reporting systems.

In provinces where a health quality council exists that has made measuring, monitoring, and reporting of quality a priority, the analysis shows there has been positive impact on the consistency of measures and availability of results. Reporting of indicators is fairly uniform in most provinces where a provincial quality council exists: BC, Ontario, and Saskatchewan. It is difficult to draw this conclusion in Alberta without further examination because of the provincial healthcare structure, despite the existence of its health quality council. In New Brunswick, the impact of the health quality council is not as clear, as is evidenced by the data which points to inadequate public reporting. This province's health council, however, is not exclusively focused on quality. Ontario is the only province in which the legislation gives the quality council the power to mandate reporting, and Health Quality Ontario has done a lot of work to create consistency, such as through their standardized quality improvement plans. This has, it seems, impacted the data being voluntarily reported to the public. One could theorize, then, that provinces may need legislation and a provincial oversight body to provide regulation over mandated reporting of performance, to facilitate consistent, transparent reporting. One province may not be enough to make this conclusion, so further study would be required to prove this theory. In Saskatchewan, another approach was taken, where reporting is not mandated, however the quality council has nurtured a province-wide culture of transparent reporting, resulting in the collaborative development and populating of the Quality Insight website and extensive accessibility to detailed results by the general public. The development of similar structures in each of the provinces

and territories would likely have a positive impact on the culture and activity of public, health-quality, performance reporting.

The presence of health authority models does not appear to have a positive impact on reporting versus provinces where organizations are independent, except where there is only a single health authority, as with Alberta Health Services, because consistency is inherent in there being only one organization with many sites and thus more control over and access to the necessary data.

While this report focuses on externally-reported performance data, future work could be done to assess the consistency of internally-reported indicators being used for performance improvement. The results of the research in this report suggest that there could likely be discrepancies in how different organizations define and measure indicators locally as well.

In addition, there is a future opportunity to further understand and tackle the barriers to public reporting. This may point to apprehensiveness on the part of organizations to be completely transparent about performance results, or perhaps is related to a lack of human resources to develop and present indicators and reports. Certainly, with enhanced performance reporting there is also an important opportunity to educate decision-makers and the public on how to understand, interpret and use healthcare indicators.

7.3. Summary

There is no doubt that organizational initiatives will continue to be necessary to foster local performance improvement and address specific population needs and local challenges. Nevertheless, there is a demand for national agreement on quality of care expectations and collaboration on measurement techniques, targets and reporting mechanisms. This kind of cooperation could enhance the capacity for improvement through learning (Pantall, 2001), the consistency of care quality, and the accountability for organizational and regional performance.

The results of this study indicate wide variation in public quality performance measurement methods and availability to the public. This suggests there are significant barriers to public transparency and the ability to nationally compare performance and collaboratively monitor and improve performance of the health system. Future study is required to understand what barriers may exist to transparent public reporting.

Over the past several years, attention paid to prioritizing surgical wait times has led to an investment in wait time reporting across Canada, with all provinces -though no territories- reporting their wait times online. This type of dedication and concerted effort needs to be applied to other aspects of care quality. Despite the large number of

Canadian healthcare indicators identified, there are still gaps that need to be filled, including more indicators to paint a meaningful picture about the state of patient safety, patient experience and patient outcomes in acute care organizations.

The public is entitled to information about the quality of care being provided by organizations locally and beyond, both so they can make choices about where to receive care if choices are available and to understand how publicly funded organizations are performing. They should also be empowered to understand what is being measured and why. Feedback about CIHI's *Your Health System* site, which includes such explanations to educate the public, has been extremely positive (Wright, Veillard & Lawand, 2013). What an organization or a system chooses to report publicly influences what they focus on improving, thus it is important that organizations consider this thoroughly (Petch, Palmer & Tierney, 2013, p.3).

8. Actions for Consideration

Based on the research and literature review conducted in this project, one of the key deliverables is to provide HealthCare*CAN* with actions it could consider which would help the organization move forward further work to improve public reporting of quality indicator results by its members and beyond. HealthCare*CAN*'s role as advocate on behalf of its members and the larger health system, the following six actions are offered for consideration. In some cases, HealthCare*CAN* may require input and/or approval from their board of directors prior to implementing some recommendations. It is recommended that as many of the actions as possible be implemented, based on appetite and resource availability.

Action 1: Seek consensus on a common national indicator framework. HealthCare*CAN* could convene its members to discuss and reach consensus on the need for consistent public reporting of acute care quality indicators across Canada in priority areas. It is suggested that HealthCare*CAN* consider endorsing the use of the Health Indicators Framework for health system performance indicators as a starting point and thematic structure to foster consistent reporting, comparability, benchmarking and transparency. In discussions, the group could determine priority areas of measurement, jointly reviewing the current indicators reported on the yourhealthsystem.ca site and in the CIHI indicator library, and identify 5 in each theme or identify gaps in established priority areas where no indicators currently exist. It is recommended this process involve broad stakeholder engagement, including the public, providers and policy-makers. HealthCare*CAN* may need to lead discussions around obstacles and fears respecting inter-organizational comparisons as well as ensuring that national frameworks and public reporting mechanisms address material differences between organizations which may impact results.

Rationale: Consensus around a common national indicator framework and set of indicators to draw from would promote uniform reporting. This consistency would lead to an ability to truly compare and benchmark against targets and best practices, thereby fostering enhanced improvement and a common set of indicators the public could recognize.

Action 2a: Partner with CIHI to develop a full spectrum of national quality indicators. HealthCare*CAN* could spearhead formal collaboration with CIHI and, on behalf of its members and the health system, work with CIHI to develop additional indicators of interest where current gaps exist, and further develop the public reporting capacity in a consistent manner. The greatest gaps currently appear in the public

reporting of patient centeredness and experience, effectiveness and clinical outcomes, and continuity and appropriateness of care.

Action 2b: Identify education needs. HealthCare*CAN* and CIHI could together, in consultation with members, determine the need for education of users of healthcare indicator information, including decision-makers and the public, to ensure meaningful and accurate use.

Rationale: HealthCare*CAN* and CIHI are national organizations with a common interest: health system performance. The organizations have unique strengths and could be a powerful force for engagement and change, using HealthCare*CAN's* members as an initial focus group, as they represent pan-Canadian perspectives.

Action 3: Convene a discussion about public reporting of quality indicators. HealthCare*CAN* could convene its members and lead a discussion about the benefits, costs and barriers related to publicly reporting quality indicator results. This would provide a better understanding of whether public reporting should become an expectation across the country, and what support would be required for jurisdictions or organizations to implement this.

If it is determined that public reporting is a feasible and desired goal, then HealthCare*CAN* can do further research and provide recommendations on the most appropriate mechanisms to fulfill the goal of consistent, comparable public reporting.

Rationale: HealthCare*CAN* has membership from across Canada, and by convening this diverse group, it can gain valuable perspectives on this important issue. It also regularly partners with other national organizations which have other stakeholder perspectives to contribute. HealthCare*CAN* can therefore bring key perspectives and messages forward and support further research and advocacy where required to foster change.

Action 4: Investigate the impact of provincial quality councils on performance and promote the spread of innovation. HealthCare*CAN* could look to provinces which have formal quality councils established to assess the impact the councils have had on performance, and help to spread innovation, successes and lessons learned about the use of councils to other provinces and territories.

Rationale: It appears, based on the data analysis, that provinces which have a quality council and oversight over quality of care and performance reporting have more uniformity in the quality indicators being reported publicly. It is not yet known if the

existence of these councils and the work they are doing to standardize reporting has had a direct and measurable impact on performance. Since HealthCare*CAN* is a national organization, it is well-positioned to lead these discussions, and help to spread innovation across the country. HealthCare*CAN* is also positioned to make recommendations to the provinces and territories and the federal government based on evidence and the input of its members.

Action 5: Advocate for a single patient experience measurement framework. HealthCare*CAN* could recommend that patient experience be consistently measured across Canada and advocate for funding for the provinces and territories to implement this. HealthCare*CAN* could consider the Canadian Patient Experiences Survey for Inpatient Care (CPES-IC) developed by CIHI in consultation with national stakeholders (2014) as the standard tool it would recommend for use across Canada to ensure consistency and comparability. In order to facilitate implementation nationally as well as indicator and report development, HealthCare*CAN* could convene members to validate this tool for national use, and if accepted, advocate for Federal funding to support implementation.

Rationale: HealthCare*CAN,* as the national voice of healthcare organizations, is in a position to lead national discussions about the need for common data, and better understand the needs of each of the provinces and territories in order to implement the CPES-IC across Canada. This survey, used nationally, will feed data into the Canadian Patient Experiences Reporting System, and lead to the monitoring and reporting of comprehensive and meaningful indicators. This information can be taken forward on behalf of HealthCare*CAN* members, as part of the organization's advocacy priorities. Together with CIHI, HealthCare*CAN* can help advocate for funding to support an important national database and source of information about the health system.

9. Conclusion

Performance indicators can be regarded as ‘canaries in the mineshaft’ for organizations and health systems. They are not the solution to improving healthcare quality and performance, but are instead stimuli which encourage us to stop and ask meaningful questions about the challenges and improvement opportunities that exist in the health system, both locally and across the nation. They are also tools that help promote accountability to stated performance objectives.

The results of this project are clear: there has been much interest in ensuring the quality of healthcare in Canada for a very long time, and much progress has been made. However, there remains significant inconsistency in the transparent reporting of healthcare quality data by health provision organizations. This is true not only across provinces and territories, but also within them.

In some provinces, the work being done to measure, monitor and report on quality of care has been evident and impressive; the existence of provincial quality councils with strong mandates and clear spans of control, or provincially-led, collaborative reporting initiatives seem to be the only mechanisms which currently guaranteed progressive, consistent, ongoing performance reporting.

In consultation with the client on the findings of this project, HealthCare*CAN* raised the question as to the ‘elephant in the room’: “What is the real return on investment or cost-benefit formula for the quality improvement work being done across the healthcare system in Canada?” Unfortunately, this question is outside the scope of this project, but the results of this report do indicate something critical and relevant: that until there is validation and standardization of the methods used to measure, monitor and report quality-related performance information such a question cannot be answered accurately. Organizations cannot evaluate how they are performing relative to their historical performance, their peers, established best practices, or whether the work they are doing is having a positive impact *if they are not measuring indicators effectively*. Nor can the public know how public funds are being invested, or make informed choices about where they will go for health services if they do not have access to clear, current, comparative information.

While there is undoubtedly great work occurring at local levels, Canadians are entitled to universally safe, high quality, accessible healthcare. The only way to truly understand the state of healthcare quality *across* Canada is to collaborate on developing standards of care, but also standards of measurement, and to compare like organizations against each other and these established standards. The purpose of this should not be to criticize one another, but rather to learn from each other.

To achieve a consistent and accountable system of public quality reporting requires a champion to steward pan-Canadian collaboration. HealthCare*CAN* could be the organization to act in this capacity and bring all key stakeholders together to determine what should be measured, compared and reported all across the country, and how. Without this, we remain in the state Harrington and McNellis described: “if you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it.” (2006, p.1)

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Appendices

Appendix A: High Level Summary of Provincial Quality Indicators by Theme and Characteristic

Appendix B: Detailed Summary of Indicators by Theme

Appendix C: Specific Indicators by Theme - Safety

Appendix D: Specific Indicators by Theme - Patient Centeredness and Experience

Appendix E: Specific Indicators by Theme – Effectiveness and Clinical Outcomes

Appendix F: Specific Indicators by Theme - Accessibility

Appendix G: Specific Indicators by Theme – Continuity and Appropriateness of Care

Appendix A: High Level Summary of Provincial Quality Indicators by Theme and Characteristic

Jurisdiction		Theme					Reporting Characteristics							
Province	Organization/Health Authority	Safety	Patient-Centeredness / Experience	Effectiveness/ Clinical Outcomes	Accessibility	Continuity and Appropriateness of Care	Purpose Stated	Current Data Available*	Reporting >= Quarterly	Indicator Defined	Targets Documented	Trended	Actions Reported	Comments
British Columbia	Island Health	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
	Providence Health	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	Many indicators reported but not current
	Fraser Health Authority	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	Comprehensive Scorecard. Available indicators by hospital site
Alberta	Alberta Health Services	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	Comprehensive reporting. Results available by Zone. ER wait times reported in real time.
	Covenant Health	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	Bundled in with AHS reports - no individual reporting on site
Saskatchewan	Saskatoon Health Region	YES	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	In annual report only
	Cypress Health Region	YES	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	In annual report only
	Provincial	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	Interactive site with ability to report by hospital
Manitoba	Manitoba Health	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	Mostly Wait Times data
	Winnipeg Regional HA	YES	NO	YES	YES	YES	NO	YES	YES	YES	NO	NO	YES	Current ER wait time only reported indicator on website. Annual report contains others.
Ontario	Thunder Bay RHC	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	
	St. Michael's	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	Targets set and actions reported only for QIP indicators
	The Ottawa Hospital	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	Targets set and actions reported only for QIP indicators
Quebec	MUHC	YES	NO	NO	YES	YES	NO	NO	NO	NO	YES	YES	YES	Most recent reporting for 2012-13
	Mount Sinai	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	
	Jewish General	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES	YES	frequency and currency depends on indicator
New Brunswick	NB Health	YES	YES	YES	YES	YES	YES	NO	NO	YES	NO	YES	NO	
	Horizon Health	YES	YES	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	Data available by site
	Vitalité	NO	NO	YES	NO	YES	NO	NO	NO	NO	YES	NO	NO	Reported only in annual report
Nova Scotia	Central Zone	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
	IWK	YES	NO	NO	YES	NO	YES	NO	YES	YES	YES	YES	NO	Targets for wait time only
	Nova Scotia Department of Health & Wellness – Health System Quality Branch	YES	NO	NO	YES	NO	YES	YES	YES	YES	YES	YES	YES	Reported aggregate data for NS except for infection control related indicators reported by zone. Surgical wait times available on over 75 procedures.
Prince Edward Island	Health PEI	NO	YES	YES	YES	YES	YES	NO	NO	YES	YES	YES	NO	PEI reported provincially aggregated data only via annual report
Newfoundland & Labrador	Central	NO	NO	NO	YES	NO	YES	NO	NO	NO	NO	NO	YES	Reporting is narrative and difficult to review for member of public. Most wait times not actually reported by Central Health but refers to provincial reporting. No link found on CH website.
	Eastern	YES	NO	YES	YES	YES	YES	NO	NO	YES	NO	YES	YES	
	Labrador Grenfell	YES	YES	YES	YES	NO	YES	NO	NO	YES	NO	NO	YES	Reporting is narrative and difficult to review for member of public. In some cases no actual statistical results reported, only actions.
Northwest Territories	Overall	YES	YES	NO	YES	YES	YES	NO	NO	YES	YES	NO	YES	Reported territorial aggregate only - few indicators in each category
Yukon Territory	Yukon Hospital Corp	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	No public reporting of hospital or health system performance. Website notes that indicators are measured but none publicly reported. Future reporting of patient satisfaction noted.
Nunavut	Overall	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	No public reporting of hospital or health system performance

Appendix B: Detailed Summary of Indicators by Theme

Jurisdiction	Theme					
Province	**Organization/Health Authority**	**Safety**	**Patient-Centeredness/ Experience**	**Effectiveness/ Clinical Outcomes**	**Accessibility**	**Continuity and Appropriateness of Care**
British Columbia	Island Health	• Care Sensitive Adverse Events • Patient safety events • Hospital acquired C-Diff Rate • Hand Hygiene Compliance • Surgical Safety Checklist	• ER patient experience • Hospital experience by site • Patient experience of communications • Wait time for call bell • Patient recommendation	• Readmission rate • Surgical Site Infections • Acute Length of Stay • Patient Care Documentation • Hospital Standardized Mortality (HSMR) • Return to ICU in less than 7 days	• Acute Care Occupancy • Wait times for cataract surgery • Wait times for CT and MRI • Wait times for hip and knee replacement • Wait times for hip fracture surgery • Wait times for elective surgery • Wait times for medical detox • ER length of stay for admitted patients • ER length of stay for non-admitted patients	• Access to Acute Rehab Beds • Ambulatory Care Sensitive Conditions • Residential Care Admissions from Hospital within 30 days • Alternate Level of Care (ALC) • Wait time for home care services
	Providence Health	• % patients with >=1 adverse event • % acute patients whose medications are reconciled at admission • PHC-associated rate of MRSA • PHC-associated rate of VRE • PHC-associated rate of CDI • Hand hygiene compliance • % inpatient falls with 3, 4, 5 degree of harm	• ER patient satisfaction • Acute inpatient satisfaction • Mental health patient satisfaction	• COPD Readmission • % COPD inpatients with antibiotics ordered on admission • % COPD inpatients with corticosteroids ordered on admission • % adult patient receiving appropriate VTE prophylaxis • % surgical cases compliant with checklist • % acute LOS compared to ELOS • HSMR	• % of admitted patients leaving ER within 10 hours of triage	• % ALC census days
	Fraser Health Authority	• Care sensitive adverse events per 1000 hospitalization over age 55 • Facility associated C-Difficile infection incidence • Facility associated MRSA incidence • Hand hygiene compliance (%)	• ER patient experience overall care • ER patients recommendation • Respect for patient preferences • Patient perception of care coordination and continuity • Information, communication and education • Physical comfort • Emotional support • Access to care	• Average length of stay • Long stay patients staying over 30 days • % hip fracture fixations completed within 48 hours • Average LOS vs. ELOS • Readmission rates (emergent/urgent)	• ER Patients admitted to hospital within 10 hours • Number of admitted patients awaiting inpatient bed placement	• ALC Days • Ambulatory Care Sensitive Conditions hospitals admissions rate
Alberta	Alberta Health Services	• Hospital-acquired infections per 10,000 patient days • Hand hygiene compliance rate	• Satisfaction with hospital care	• Mental health readmissions within 30 days • Surgical readmissions within 30 days • Heart attack mortality within 30 days • Stroke mortality within 30 days • HSMR	• ER wait to see a physician (median) • ER length of stay for admitted patients • ER Length of stay for discharged patients • Access to radiation therapy • Percentage of patients treated and discharged from	• Continuing care placement

Appendix B: Detailed Summary of Indicators by Theme

Jurisdiction	Theme					
Province	**Organization/Health Authority**	**Safety**	**Patient-Centeredness/ Experience**	**Effectiveness/ Clinical Outcomes**	**Accessibility**	**Continuity and Appropriateness of Care**
					ER within 4 and 8 hours	
	Covenant Health	• None available	• None available	• None available	• None available	• None available
Saskatchewan	Saskatoon Health Region	• Hand hygiene compliance • Patient falls	• None available	• None available	• ER patients waiting for inpatient bed • Wait time for cancer surgery • Wait time for surgery overall	• # patients awaiting long term care
	Cypress Health Region	• Surgical safety checklist use	• None available	• None available	• ER wait time from order to admit to arrival on unit • Wait time for cancer surgery • Wait time for surgery overall	• # patients awaiting long term care
	Provincial (Quality Insight)	• Surgical safety checklist compliance • Medication reconciliation at admission complete	• Patient perception of communication • Patient experience – courtesy and respect • Patient and family participation in care planning • Patient perception of cleanliness • Patient perception of food quality • Patient experience overall	• 30-day medical readmission • 30-day surgical readmission • HSMR	• Surgical wait times • Oncology wait time	• Provider continuity
Manitoba	Manitoba Health	• None available	• None available	• Mortality rate for heart attack	• Wait time for cardiac surgery • Wait times for radiation therapy • # communities using telehealth	• # communities using telehealth
	Winnipeg Regional HA	• C-Diff rate per 10,000 patient days • MRSA rate per 10,000 patient days	• None available	• ALOS vs ELOS ratio • HSMR	• Left without being seen	• % ALC Days
Ontario	Thunder Bay RHC	• Hand hygiene compliance	• None available	• Ventilator acquired pneumonia rate per 1000 ventilator days • Rate of central line blood stream infections per 1000 central line days • Rate of 5-day in hospital mortality rate following major surgery • HSMR	• ER wait time for admitted patients • Occupancy Rate	• % ALC Days
	St. Michael's	• Hospital acquired C-Diff infection • Hospital acquired MRSA infection • Hospital acquired VRE infection • Hand Hygiene	• Patient satisfaction • Inpatient recommendation	• Ventilator acquired pneumonia • Central line blood stream infections • Inpatient readmission • HSMR	• Wait time cancer surgeries • Wait time hip and knee replacement • Wait time MRI and CT scan • Length of stay in ER for admitted patients • Length of stay in ER for non-admitted patients	• ALC rate

Appendix B: Detailed Summary of Indicators by Theme

Jurisdiction	Theme					
Province	**Organization/Health Authority**	**Safety**	**Patient-Centeredness/ Experience**	**Effectiveness/ Clinical Outcomes**	**Accessibility**	**Continuity and Appropriateness of Care**
	The Ottawa Hospital	• Nosocomial C-Diff rate per 1000 patient days • Nosocomial MRSA rate per 1000 patient days • Nosocomial VRE rate per 1000 patient days • Hand hygiene compliance • Surgical safety checklist compliance	• Overall rating of care • Pain control	• 30-day readmission for selected Case Mix Groups • Central line infections • HSMR • Surgical site infections • Ventilator-associated pneumonia	• ER wait time for admitted patients • Patients waiting in ER for bed on nursing unit • Occupancy rate • Surgical cancellations due to lack of beds	• ALC patients days • ALC days
Quebec	MUHC	• Incidents and accidents reported • Rate of incidents and accidents per 1000 patient days • Percentage of incidents and accidents reported per category	• None available	• None available	• Percentage of patients waiting for planned surgery operated on within 6 months • Average length of stay in ER for patients on stretchers • Average length of stay in ER for patients under observation	• None available
	Mount Sinai	• Medication errors • Falls • Nosocomial infections	• % Patient recommendation	• None available	• None available	• None available
	Jewish General	• Compliance rate for surgical safety checklist • Total reported incidents and accidents by type • Reported medication errors • Reported patient falls by consequence type	• Patient satisfaction overall • Patient recommendation	• % patients with appropriate venous thromboembolism prevention • Prevalence of hospital-acquired pressure ulcers • Rate of ventilator-associated pneumonia	• None available	• None available
New Brunswick	NB Health Council	• Error rate during acute care hospitalization (patient-reported) • % compliance with hand hygiene before patient contact (patient-reported) • Inpatient fall rate • In-hospital hip fracture in elderly patients • Adverse events for medical and surgical patients • C-Diff infection rate • MRSA infection rate • VRE infection rate	• Overall hospital rating • Patient perception of safety • Patient perception of communication • Patient care experience (cleanliness, pain control, responsiveness) • Equity of service in preferred language • Care transitions • Intention to recommend	• Use of coronary angiography following acute myocardial infarction • Risk-adjusted rate for myocardial infarction readmission • Risk-adjusted rate of 30-day myocardial infarction in-hospital mortality • Risk-adjusted rate of 30-day stroke in-hospital mortality • 5-day in-hospital mortality following major surgery • 30-day readmission – surgical, medical, obstetric, mental illness, hip and knee replacement • Age-standardized average length of stay • HSMR	• Wait times for hip fracture surgery within 48 hours • Wait time for hip and knee replacement • Wait time for cataract surgery • Wait time for coronary artery bypass graft • Wait time for radiation therapy	• % ALC days • Care transitions measure • Hysterectomy age-standardized rate • C-section rate
	Horizon Health	• Hand hygiene compliance • Nosocomial C-Diff rate • Nosocomial MRSA rate	• Overall hospital rating • Patient perception of safety • Patient perception of	• None available	• None available	• None available

Appendix B: Detailed Summary of Indicators by Theme

Jurisdiction	Theme					
Province	**Organization/Health Authority**	**Safety**	**Patient-Centeredness/ Experience**	**Effectiveness/ Clinical Outcomes**	**Accessibility**	**Continuity and Appropriateness of Care**
		• Medication reconciliation on admission • In-hospital hip fracture in elderly patients	communication • Patient care experience (cleanliness, pain control, responsiveness) • Equity of service in preferred language • Intention to recommend • Involvement in care decisions • Quality of food • Length of time waiting for inpatient room (patient perception)			
	Vitalité	• None available	• None available (Vitalié included in NB Health Council survey but results are not posted on the Vitalité site)	• 0-30 day readmission for mental illness	• None available	• % admissions for conditions conducive to ambulatory care
Nova Scotia	Central Zone	• Infection rates (MRSA, VRE, C-diff) • Hand hygiene compliance • Patient safety culture • Completion of patient safety training by staff	• Patient experience • Customer service • Patient & community involvement in managing care	• Length of stay – number of conservable days • HSMR	• Surgery cancellation rate • Wait times MRI and CT • Wait times – radiotherapy • Wait time hip fracture surgery within 48 hours • Wait time for hip and knee replacement • Wait time for cataract surgery • Wait time open heart surgery • Wait time for ER – triage to admission • Wait time for ER – triage to seen by physician • Occupancy rates • Emergency Department – Left without being seen	• Compliance with care transitions
	IWK	• Rate of adverse event reporting for actual and near misses, by severity and program	• None available	• None available	• Wait times for elective surgery - % of patients seen within identified window for selected services	• None available
	Nova Scotia Department of Health & Wellness – Health System Quality Branch	• Hand hygiene compliance • Hospital acquired C-Diff rate (by zone) • Serious Surgical events • Serious product or device related events • Serious patient protection events • Serious care management events	• None available	• None available	• Wait times – addictions services • Wait times – cancer care • Wait times –cardiac care • Wait times – diagnostics • Wait times – mental health • Wait times – referral to surgeon • Wait times – 75+ surgeries	• None available

Appendix B: Detailed Summary of Indicators by Theme

Jurisdiction	Theme					
Province	**Organization/Health Authority**	**Safety**	**Patient-Centeredness/ Experience**	**Effectiveness/ Clinical Outcomes**	**Accessibility**	**Continuity and Appropriateness of Care**
		• Serious environmental events • Serious criminal events				
Prince Edward Island	Health PEI	• None available	• Client, patient and family satisfaction with services in acute care	• % unplanned readmissions for same condition within 7 and 8-28 days of discharge to same acute facility • Acute average length of stay compared to expected • HSMR	• Wait times for CT & MRI • Wait time for hip and knee replacement • Wait time for cataract surgery	• Ambulatory care sensitive conditions
Newfoundland & Labrador	Central	• None available	• None available	• None available	• Wait time for echocardiogram • Wait time for CT scan • Percentage patients in ER seen by a nurse practitioner in less than 30 minutes • Percentage clients spending less than 60 minutes in the ER • Hemodialysis capacity	• None available
	Eastern	• Rate of MRSA infections • Rate of hand hygiene compliance • Percentage medication reconciliation implementation on inpatient units	• None available	• % unscheduled readmissions 7 and 8-28 days post discharge • Rate of central line blood stream infections per 1000 central line days • % of acute myocardial infection perfect care (evidence-based care) • Surgical site infections per 100 procedures for C-section and colorectal surgery • Ventilator-acquired pneumonia per 1000 ventilator days	• Wait times for hip fracture • Wait time for hip and knee replacement • Wait time for cataract surgery • Wait time for Coronary Artery Bypass Graft • Wait time for cancer treatment & surgery • Wait time for select diagnostics • Rate of ER patients who left without being seen	• ALC days as percent of total adult patient days
	Labrador Grenfell	• Hand hygiene compliance • Rate of C-Diff and MRSA healthcare acquired infections • Medication reconciliation upon admission	• Client satisfaction with dietary services	• Timely prophylactic antibiotic administration and discontinuation rate • Appropriate hair removal for surgery • 30-day post-operative infection rate •	• Wait times for endoscopy/colonoscopy	• None available
Northwest Territories	Overall	• Prevalence of falls resulting in injury	• Patient satisfaction surveys by health authority	• None available	• Clinical telehealth usage	• % ALC bed days
Yukon Territory	Yukon Hospital Corporation	• None available	• None available	• None available	• None available	• None available
Nunavut	Overall	• None available	• None available	• None available	• None available	• None available
National	CIHI (Your Health System website)	• In-hospital sepsis rate • Obstetric trauma rate	• None available	• 30 day Hospital readmissions	• ER wait time for physician initial assessment	• Low-risk caesarean sections

Appendix B: Detailed Summary of Indicators by Theme

Jurisdiction	Theme					
Province	**Organization/Health Authority**	**Safety**	**Patient-Centeredness/ Experience**	**Effectiveness/ Clinical Outcomes**	**Accessibility**	**Continuity and Appropriateness of Care**
				• 30 day Medical readmissions • 30 day Surgical readmissions • 30 day Obstetric readmissions • 30 day readmission rate for patients < 19 years old • Hospital deaths following major surgery • HSMR	• Total time spent in ER for admitted patients • Hip fracture surgery within 48 hours	
	Statistics Canada-CIHI*	• Hospitalized hip fracture event rate	• Patient satisfaction with care • Quality of hospital care received	• Patients with repeat hospitalizations for mental illness • 30-day readmission rate for mental illness • 30 day in-hospital mortality • 30-day obstetric readmission rate • 30-day pediatric readmission rate • 30-day surgical readmission rate • 30-day medical readmission rate	• Wait time for hip fracture surgery	• Ambulatory care sensitive conditions • Caesarean section rate

*Only indicators that are acute-care related have been reported in this comparison.

Appendix C: Specific Indicators by Theme - Safety

			British Columbia			Alberta		Saskatchewan			Manitoba		Ontario			Quebec			New Brunswick			Nova Scotia			PEI	Newfoundland & Labrador			Northwest Territories	Yukon Territory	Nunavut	National	
Theme	Indicator Type	Indicator	Island Health	Providence Health	Fraser Health Authority	Alberta Health Services	Covenant Health	Saskatoon Health Region	Cypress Health Region	Provincial (Quality Insight)	Manitoba Health	Winnipeg Regional HA	Thunder Bay RHC	St. Michael's	The Ottawa Hospital	MUHC	Mount Sinai	Jewish General	NB Health Council	Horizon Health	Vitalité	Central Zone	IWK	Nova Scotia Department of Health & Wellness – Health System Quality Branch	Health PEI	Central	Eastern	Labrador Grenfell	Overall	Yukon Hospital Corp	Overall	CIHI*	Statistics Canada-CIHI
Safety	Incidents/ Adverse Events	Incidents/Adverse events	✓													✓		✓	✓				✓										
		% patients with 1 or more adverse events		✓																													
		adverse events for seniors			✓																												
		Incidents and accidents reported																															
		Rate of incidents and accidents per 1000 patient days														✓																	
		Patient safety event	✓																														
		Patient reported error rate																	✓														
		Medication errors															✓	✓	✓														
		Falls						✓									✓	✓															
		Prevalence of falls resulting in injury or harm		✓																										✓			
		In-hospital hip fracture in elderly patients																	✓	✓													✓
		Rate of adverse event reporting for actual and near misses by severity																															
		Obstetric trauma																														✓	
		Serious product or device events																						✓									
		Serious patient protection events																						✓									
		Serious care management events																						✓									
		Serious environmental events																						✓									
		Serious criminal events																						✓									

Appendix C: Specific Indicators by Theme - Safety

			British Columbia			Alberta		Saskatchewan			Manitoba		Ontario			Quebec			New Brunswick			Nova Scotia			PEI	Newfoundland & Labrador			Northwest Territories	Yukon Territory	Nunavut	National	
Theme	Indicator Type	Indicator	Island Health	Providence Health	Fraser Health Authority	Alberta Health Services	Covenant Health	Saskatoon Health Region	Cypress Health Region	Provincial (Quality Insight)	Manitoba Health	Winnipeg Regional HA	Thunder Bay RHC	St. Michael's	The Ottawa Hospital	MUHC	Mount Sinai	Jewish General	NB Health Council	Horizon Health	Vitalité	Central Zone	IWK	Nova Scotia Department of Health & Wellness – Health System Quality Branch	Health PEI	Central	Eastern	Labrador Grenfell	Overall	Yukon Hospital Corp	Overall	CIHI*	Statistics Canada-CIHI
	Infection Control	Rate of C-Difficile Infection										✓							✓			✓											
		Rate of MRSA Infection										✓							✓			✓					✓							
		Rate of VRE Infection																	✓			✓											
		Hospital-acquired C-Difficile Infection	✓	✓	✓									✓	✓					✓				✓				✓					
		Hospital-acquired MRSA Infection		✓	✓									✓	✓					✓								✓					
		Hospital-acquired VRE infection		✓										✓	✓																		
		Hospital-acquired (nosocomial) infections				✓											✓																
		Hand hygiene compliance		✓	✓	✓		✓					✓	✓	✓				✓	✓		✓		✓			✓	✓					
		In-hospital sepsis rate																														✓	
	Surgical Safety	Surgical Checklist Compliance	✓						✓	✓					✓			✓									✓					✓	
		Serious surgical events																						✓									
	Medication Safety	Medication errors															✓	✓	✓														
		Medication reconciliation								✓										✓							✓	✓						
	Training	Patient safety culture																				✓											
		Completion of staff patient safety training																				✓											

Appendix D: Specific Indicators by Theme – Patient Centeredness and Experience

Theme	Indicator	British Columbia			Alberta		Saskatchewan			Manitoba		Ontario			Quebec			New Brunswick			Nova Scotia			PEI	Newfoundland & Labrador			Northwest Territories	Yukon Territory	Nunavut	National	
		Island Health	Providence Health	Fraser Health Authority	Alberta Health Services	Covenant Health	Saskatoon Health Region	Cypress Health Region	Provincial (Quality Insight)	Manitoba Health	Winnipeg Regional HA	Thunder Bay RHC	St. Michael's	The Ottawa Hospital	MUHC	Mount Sinai	Jewish General	NB Health Council	Horizon Health	Vitalité	Central Zone	IWK	Nova Scotia Department of Health & Wellness – Health System Quality Branch	Health PEI	Central	Eastern	Labrador Grenfell	Overall	Yukon Hospital Corp	Overall	CIHI	Statistics Canada-CIHI
Patient Centeredness/ Experience	Patient experience	✓		✓					✓												✓											
	Patient satisfaction		✓		✓				✓				✓	✓			✓	✓	✓					✓				✓				✓
	Patient willingness to recommend	✓		✓									✓			✓	✓	✓	✓													
	Quality of care received																															✓
	Patient perceived access to care			✓																												
	Customer service																				✓											
	Patient & community involvement in care decisions or planning								✓										✓		✓											
	Patient satisfaction with dietary/food services								✓										✓								✓					
	Patient perception of safety																	✓	✓													
	Patient perception of care coordination and continuity			✓																												
	Patient experience - communication, information, education			✓					✓									✓														
	Patient experience - pain control													✓				✓	✓													
	Patient perception - cleanliness								✓									✓	✓													
	Equity of service in preferred language																	✓	✓													
	Courtesy & respect			✓					✓																							
	Physical comfort			✓																												
	Emotional support			✓																												
	Patient reported effectiveness of care transitions																	✓														
	Patient experience - waiting for care or service	✓																✓	✓													

* CIHI indicators as reported on the My Health System website

Appendix E: Specific Indicators by Theme – Effectiveness and Clinical Outcomes

Theme	Indicator Type	Indicator	British Columbia			Alberta		Saskatchewan			Manitoba		Ontario			Quebec			New Brunswick			Nova Scotia			PEI	Newfoundland & Labrador			Northwest Territories	Yukon Territory	Nunavut	National	
			Island Health	Providence Health	Fraser Health Authority	Alberta Health Services	Covenant Health	Saskatoon Health Region	Cypress Health Region	Provincial (Quality Insight)	Manitoba Health	Winnipeg Regional HA	Thunder Bay RHC	St. Michael's	The Ottawa Hospital	MUHC	Mount Sinai	Jewish General	NB Health Council	Horizon Health	Vitalité	Central Zone	IWK	Nova Scotia Department of Health & Wellness – Health System Quality Branch	Health PEI	Central	Eastern	Labrador Grenfell	Overall	Yukon Hospital Corp	Overall	CIHI*	Statistics Canada-CIHI
Effectiveness & Clinical Outcomes	Readmissions	Readmission Rates	✓											✓																			
		Readmission rate for urgent/emergent care			✓																												
		Readmission within 30 days													✓																	✓	
		Surgical readmissions within 30 days				✓				✓									✓													✓	✓
		Medical readmission within 30 days								✓									✓													✓	✓
		30-day readmission after hip and knee replacement																	✓														
		30-day readmission for paediatric cases																															✓
		30-day readmission for obstetrical cases																	✓													✓	✓
		30-day readmission for patients <19 years old																														✓	
		Mental health readmissions within 30 days				✓													✓		✓												✓
		% unplanned readmission within 7 days of discharge to same facility																							✓		✓						
		% unplanned readmissions within 8-28 days of discharge to same facility																							✓		✓						
		Return to ICU in less than 7 days	✓																														
		Readmission for COPD		✓																													
		Readmission after myocardial infarction																	✓														
	Length of stay	Average LOS	✓		✓														✓														
		Average LOS vs. Expected		✓	✓							✓													✓								
		Length of stay - conservable days																				✓											
		Long stay patients staying over 30 days			✓																												
	Unexpected Complications	Surgical site infection	✓												✓																		
		30-day post-operative infection rate																										✓					
		Hospital-acquired pressure ulcers																✓									✓						
		Ventilator-associated pneumonia											✓	✓	✓			✓									✓						
		Central line blood stream infection											✓	✓	✓												✓						
	Mortality	Hospital Standardized Mortality Ratio (HSMR)	✓	✓		✓				✓		✓	✓	✓	✓				✓			✓			✓							✓	
		Hospital deaths following major surgery																														✓	
		Heart attack mortality rate									✓																						
		30 day in-hospital mortality rate																															✓

Appendix E: Specific Indicators by Theme – Effectiveness and Clinical Outcomes

Theme	Indicator Type	Indicator	British Columbia			Alberta		Saskatchewan			Manitoba		Ontario			Quebec			New Brunswick			Nova Scotia			PEI	Newfoundland & Labrador			Northwest Territories	Yukon Territory	Nunavut	National	
			Island Health	Providence Health	Fraser Health Authority	Alberta Health Services	Covenant Health	Saskatoon Health Region	Cypress Health Region	Provincial (Quality Insight)	Manitoba Health	Winnipeg Regional HA	Thunder Bay RHC	St. Michael's	The Ottawa Hospital	MUHC	Mount Sinai	Jewish General	NB Health Council	Horizon Health	Vitalité	Central Zone	IWK	Nova Scotia Department of Health & Wellness – Health System Quality Branch	Health PEI	Central	Eastern	Labrador Grenfell	Overall	Yukon Hospital Corp	Overall	CIHI*	Statistics Canada-CIHI
		5-day in hospital mortality following major surgery											✓						✓														
		Stroke mortality within 30 days				✓													✓														
		Heart attack mortality within 30 days				✓													✓														
	Compliance with best practice	Patient care documentation	✓																														
		Surgical cases compliant with checklist		✓																													
		Appropriate hair removal before survey																										✓					
		Appropriate venous thromboembolism prevention		✓														✓															
		Timely prophylactic antibiotic use																										✓					
		% hip fractures repaired within 48 hours			✓																												
		Use of coronary angiography following acute myocardial infarction																	✓														
		% acute myocardial infarction perfect care																									✓						
		COPD patients with antibiotics ordered on admission		✓																													
		COPD patients with corticosteroids ordered on admission		✓																													

Note: COPD = Chronic Obstructive Pulmonary Disease * CIHI indicators as reported on the My Health System website

Appendix F: Specific Indicators by Theme - Accessibility

Theme	Indicator Type	Indicator	British Columbia			Alberta		Saskatchewan			Manitoba		Ontario			Quebec			New Brunswick			Nova Scotia			PEI	Newfoundland & Labrador			Northwest Territories	Yukon Territory	Nunavut	National	
			Island Health	Providence Health	Fraser Health Authority	Alberta Health Services	Covenant Health	Saskatoon Health Region	Cypress Health Region	Provincial (Quality Insight)	Manitoba Health	Winnipeg Regional HA	Thunder Bay RHC	St. Michael's	The Ottawa Hospital	MUHC	Mount Sinai	Jewish General	NB Health Council	Horizon Health	Vitalité	Central Zone	IWK	Nova Scotia Department of Health & Wellness – Health System Quality Branch	Health PEI	Central	Eastern	Labrador Grenfell	Overall	Yukon Hospital Corp	Overall	CIHI*	Statistics Canada-CIHI
Accessibility	Wait Times - Emergency	ER length of stay for admitted patients	✓			✓							✓	✓	✓																	✓	
		ER length of stay for non-admitted patients	✓			✓								✓																			
		Wait time in ER from triage to admission																				✓											
		Average length of stay in ER for patients on stretchers														✓																	
		Average length of stay in ER for patients under observation														✓																	
		Number of admitted patients awaiting inpatient bed placement			✓			✓	✓						✓																		
		ER wait to see a physician				✓																✓				✓						✓	
		Percentage clients spending less than 60 minutes in ER																								✓							
		% patients treated and discharged within 4 hours				✓																											
		% patients treated and discharged within 8 hours				✓																											
		% patients leaving ER within 10 hours of triage		✓	✓																												
		ER patients admitted to hospital within 10 hours																															
	Wait times - Other	Wait time for surgery overall								✓														✓									
		% patients operated on within 6 months														✓																	
		Wait time for diagnostic imaging												✓								✓		✓	✓		✓	✓					
		Wait time for elective surgery	✓					✓	✓														✓	✓									
		Wait times for cataract surgery																	✓			✓		✓	✓			✓					
		Wait time for hip replacement																	✓			✓		✓	✓			✓					
		Wait time for knee replacement	✓											✓					✓			✓		✓	✓			✓					
		Wait time for hip fracture surgery	✓																✓			✓						✓				✓	✓
		Wait time mental health																						✓									
		Wait time for medical detox	✓																														
		Wait time for cardiac surgery or care									✓													✓									
		Wait time for cancer surgery						✓	✓					✓										✓				✓					
		Wait time for radiation therapy									✓								✓			✓											
		Wait time for additions services																						✓									
		Wait time referral to surgeon																						✓									

Appendix F: Specific Indicators by Theme - Accessibility

Theme	Indicator Type	Indicator	British Columbia			Alberta		Saskatchewan			Manitoba		Ontario			Quebec			New Brunswick			Nova Scotia			PEI	Newfoundland & Labrador			Northwest Territories	Yukon Territory	Nunavut	National	
			Island Health	Providence Health	Fraser Health Authority	Alberta Health Services	Covenant Health	Saskatoon Health Region	Cypress Health Region	Provincial (Quality Insight)	Manitoba Health	Winnipeg Regional HA	Thunder Bay RHC	St. Michael's	The Ottawa Hospital	MUHC	Mount Sinai	Jewish General	NB Health Council	Horizon Health	Vitalité	Central Zone	IWK	Nova Scotia Department of Health & Wellness – Health System Quality Branch	Health PEI	Central	Eastern	Labrador Grenfell	Overall	Yukon Hospital Corp	Overall	CIHI*	Statistics Canada-CIHI
		Wait time coronary artery bypass graft																	✓					✓			✓						
		Wait time open heart surgery																				✓												
		Wait time echocardiogram																								✓								
		Wait time endoscopy/colonoscopy																										✓						
		Oncology/cancer care wait time								✓														✓			✓							
	Occupancy	Occupancy rate	✓										✓		✓							✓												
	Access (other)	Access to radiation therapy				✓																												
		Hemodialysis capacity																								✓								
		Telehealth usage									✓																		✓					
		Surgical cancellation rate																				✓												
		Surgical cancellation due to lack of beds													✓																			
		Patients left without being seen										✓										✓					✓							

* CIHI indicators as reported on the My Health System website

Appendix G: Specific Indicators by Theme – Continuity & Appropriateness

Theme	Indicator Type	Indicator	British Columbia			Alberta		Saskatchewan			Manitoba		Ontario			Quebec			New Brunswick			Nova Scotia			PEI	Newfoundland & Labrador			Northwest Territories	Yukon Territory	Nunavut	National	
			Island Health	Providence Health	Fraser Health Authority	Alberta Health Services	Covenant Health	Saskatoon Health Region	Cypress Health Region	Provincial (Quality Insight)	Manitoba Health	Winnipeg Regional HA	Thunder Bay RHC	St. Michael's	The Ottawa Hospital	MUHC	Mount Sinai	Jewish General	NB Health Council	Horizon Health	Vitalité	Central Zone	IWK	Nova Scotia Department of Health & Wellness – Health System Quality Branch	Health PEI	Central	Eastern	Labrador Grenfell	Overall	Yukon Hospital Corp	Overall	CIHI*	Statistics Canada-CIHI
Continuity & Appropriateness of Care	Appropriateness	Ambulatory care sensitive conditions	✓		✓																✓				✓								✓
		ALC Days as percentage of total patient days		✓	✓							✓	✓		✓				✓									✓		✓				
		ALC rate	✓											✓																				
		# patient awaiting LTC						✓	✓																									
		# communities using telehealth									✓																							
		Hysterectomy rate																	✓															
		C-section rate																	✓														✓	✓
	Continuity	Access to rehab beds	✓																															
		Residential care admissions from hospital within 30 days	✓																															
		Wait time for home care	✓																															
		Continuing care placement				✓																												
		Provider continuity								✓																								
		Care transition measure																	✓			✓												

* CIHI indicators as reported on the My Health System website