CIHI's Information Quality Plan

Cette publication est aussi disponible en français sous le titre *Plan d'assurance de la qualité de l'information de l'ICIS*.

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Introduction

Quality is at the heart of everything the Canadian Institute for Health Information (CIHI) does. It is embedded in our vision — Better data. Better decisions. Healthier Canadians. — and mandate. Our [strategic plan](#) is focused on providing stakeholders with the information they need. This includes a specific goal to be a trusted source of standards and quality data.

Trust in the information we produce is paramount to CIHI's ongoing success and relevance. As the scope and magnitude of the decisions that are informed by CIHI information expand to include public reporting on health system performance and large-scale health system funding allocations, the requirements and pressures on quality continue to grow.

Building on an existing strong quality foundation (see Appendix A), this Information Quality Plan outlines 3 quality-specific objectives that will support the achievement of CIHI's overall strategic goals. Further, this plan aims to

- Ensure that CIHI continues to be a trusted source of health information;
- Ensure that our information is fit for and meets the broadening needs of our stakeholders;
- Ensure that our quality improvement initiatives are focused in the right areas; and
- Evolve and improve the effectiveness and efficiency of our quality management practices.

What is quality?

CIHI uses the term **fit for use** to define quality, in line with international standards and best practices.[1] This defines quality in the context of the users and their needs. Data does not need to be perfect, nor can it be; that's an unattainable goal. However, with appropriate knowledge about a given data set or product, users can make an informed decision about whether it may be confidently used to answer their business or research questions.[2]

CIHI uses 5 dimensions to assess quality relative to users' needs.

5 dimensions of quality

Relevance — Does the information meet users' current and potential needs?

Accuracy and reliability — Does the information correctly and consistently describe what it was designed to measure?

Comparability and coherence — Is the information consistent over time and across providers, and can it be easily combined with other sources?

Timeliness and punctuality — Is the information current and released on schedule?

Accessibility and clarity — Is the information and its supporting documentation easily accessed and clearly presented in a way that can be understood?

These dimensions are not mutually exclusive and need to be balanced against one another to best meet users' needs. Sometimes improvements in one dimension can lead to a deterioration in another (e.g., changing the data collected within a data holding would increase its relevance but affect the ability to compare over time). Trade-offs between dimensions are often made (e.g., to improve timeliness, a reduction in accuracy may be acceptable). Other considerations such as cost, response burden, privacy, confidentiality and security also need to be taken into account, as they can impact overall information quality or may influence decisions about potential improvement initiatives.[2]

Data and information quality

The focus of this plan is **information quality** — looking at the entire life cycle of creating and acquiring data, processing it and transforming it into information products. Information quality encompasses the data quality of the data sources, and also incorporates how the information is presented and accessed, and can be understood; how information fits together to paint a coherent picture; and the quality management of all the processes involved across the life cycle.

Approach to developing the plan

To develop this plan, CIHI

- Conducted an extensive review of internal quality processes and practices;
- Conducted a scan of external best practices;
- Consulted internally with CIHI management across the whole organization; and
- Reviewed external stakeholder feedback from the consultations that supported the development of the corporate strategic plan.

Common themes and drivers for change were identified; from these, priority quality-focused business objectives and a plan of activities to achieve them were developed.

Quality objectives

This information quality plan consists of the following 3 main objectives. Specific initiatives related to each objective can be found in Appendix B.

Objective 1: Develop and launch an information quality framework that brings together and enhances CIHI's quality management practices

Historically, CIHI's corporate quality program has focused on the data quality of its data sources, and needs to evolve to also encompass the production and release of its information products. Common approaches to information quality management need to be developed and best practices more easily shared. CIHI's commitment to quality needs to be continually reinforced. Within CIHI, quality is a shared responsibility across the organization and every employee needs to understand his or her role. CIHI also needs to continue to support quality stewardship among the many other organizations and people involved in supplying data to CIHI.

Objective 2: Improve the accuracy, comparability and coherence of CIHI's data and information

There is a need to combine information from multiple data holdings to produce more valuable system-level indicators and information. Understanding how CIHI's data fits (and does not fit) together is becoming increasingly important for users.

Identifying issues and providing relevant, timely information to data providers about the quality of their data are key processes in maintaining and improving overall quality. Streamlining, standardizing and, where feasible, automating these processes will help improve the quality and timeliness of data and CIHI's operational efficiency.

Objective 3: Improve the information (metadata) about CIHI's data sources and information products

A consistent theme that arose during the consultations for this plan was difficulty in finding and using the reference materials and metadata (e.g., user manuals, standards, data dictionaries, indicator libraries, data quality documentation) that are required to understand CIHI's data sources and information products. Data providers need easy access to this type of information to ensure high-quality collection and submission of data, and users need it to ensure they use the data and information appropriately. Transparency around the quality of data sources and methodologies used to create the information will build trust and prompt information quality improvement.

Appendix A: CIHI's Data Quality Program

Since CIHI's inception, data and information quality has been considered essential to the organization's mandate. Data quality activities are designed to support the prevention, detection, reporting and resolution of data issues through a continuous improvement process; this entails documentation of the strengths and limitations of the data for users.

There is a distributed model for the management of data and information quality. CIHI relies on many data providers to supply the data that it reports on, and it collaborates with these organizations along the data supply chain to foster a sense of stewardship and accountability for the data quality.[2]

Within CIHI, each program area responsible for a data holding is accountable for the maintenance and continuous improvement of the holding's quality. Analytical areas ensure the quality of the analysis and indicators they develop and release. The corporate Data Quality department is responsible for corporate policies, tools and processes to assess, document and improve quality, and it provides support to CIHI staff in the identification and resolution of data quality issues.

Data quality efforts at CIHI have evolved over the years as the organization and its data holdings have grown, as well as in response to changes in the health systems, technology, and the policy and privacy landscape.

In 2003, CIHI developed its first corporate data quality strategy to promote data quality both internally and in the health care systems more generally.[3] This new corporate strategy was successful in creating a "data quality culture" at CIHI and institutionalizing key data quality processes. At a time when CIHI was expanding in size and budget, significant investments in data quality were made, including expanding the size of the data quality department and conducting a series of special data quality studies.

A corporate data quality framework was introduced in 2001 and has been a cornerstone of CIHI's Data Quality Program. The framework contains a standardized assessment tool that the program areas use to assess the quality of each data holding along CIHI's 5 quality dimensions and to identify areas for improvement. The framework and the assessment tool have undergone various enhancements over the past 15 years, evolving to meet the changing needs of CIHI's data holdings.

In 2005, following several client requests, CIHI made the framework publicly available. It has since been used by many other organizations within Canada and internationally and is recognized for its comprehensiveness and high standards.

Appendix B: Initiatives related to objectives

Objective 1 initiatives

Develop and launch an information quality framework that brings together and enhances CIHI's quality management practices

1. Create an information quality framework

   - Develop an overarching, high-level information quality framework to describe CIHI's quality management practices

   - Identify and develop high-priority "information quality" components (processes, tools, standards, products) to integrate into the new framework

   - Pilot and release a data source quality assessment tool (based on the existing Data Quality Framework Assessment)

   - Develop an indicator life cycle to streamline and create a common approach to the process of indicator development, maintenance and evaluation

   - Develop new corporate reporting mechanisms to strengthen knowledge and accountability of strategic quality issues

2. Evolve and standardize data evaluation tools/processes

   - Develop efficient and effective procedures and tools for evaluating different types of data

3. Reinforce CIHI's quality culture

   - Enhance internal and external knowledge-sharing opportunities

   - Develop standard internal and external education

Objective 2 initiatives

Improve the accuracy, comparability and coherence of CIHI's data and information

1. Streamline internal processes to identify and manage quality issues

   - Implement a corporate tool to track and manage operational quality issues

   - Create a corporate action plan for high-priority/strategic quality issues

2. Improve and streamline data quality reporting to data providers

   - Enhance Provincial/Territorial Data Quality reports for government audiences

   - Streamline and automate routine data quality monitoring and dissemination of feedback to data providers

3. Undertake targeted projects to improve the quality of CIHI's data and information

   - Undertake targeted data quality projects, including but not limited to validation studies, to assess source data quality

   - Investigate the application of data mining techniques for monitoring quality as it relates to activity-based funding and health system performance reporting

   - Undertake quality analysis in emerging areas such as the use of electronic medical records (EMRs) and patient experience data

   - Produce cross-database quality indicators and analyses to support the integration of data

Objective 3 initiatives

Improve the information (metadata) about CIHI's data sources and information products

1. Improve the consistency and availability of metadata on CIHI's data holdings, indicators/statistics and information products

   • Develop summaries of CIHI's current data regarding the priority populations identified in *CIHI's Strategic Plan, 2016 to 2021*

   • Develop detailed metadata user requirements (for different types of users) for the development, management and dissemination of metadata

   • Develop an organization-wide metadata framework, incorporating existing metadata (such as the Indicator Library and external data holding metadata)

   • Enable efficient collection, maintenance and use of priority metadata and quality documentation through the use of appropriate technology

2. Publish Data Quality indicators and metrics

   • Publish provincial/territorial Data Quality indicators (for contributing data holdings) on CIHI's website

   • Develop and publish "core" Data Quality indicators for all other data holdings

3. Improve the transparency and consistency of quality processes, standards and methodologies

   • Develop a consistent approach to the disclosure of data limitations in our data and information products

   • Develop a consistent approach to revising and documenting revisions to data/information

References

1. United Nations Statistics Division. *Guidelines for the Template for a Generic National Quality Assurance Framework (NQAF)*. 2012.

2. Richards H, White N. Ensuring the quality of health information: The Canadian experience. In: Sadiq S, ed. *Handbook of Data Quality*. 2013.

3. Office for National Statistics. *Guidelines for Measuring Statistical Output Quality*. 2013.

4. Canadian Institute for Health Information. *Earning Trust: Key Findings and Proposed Action Plan From the Data Quality Strategies Study*. 2003.

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