

QUALITY STANDARDS

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# Measurement Guide

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**Ontario  
Health**

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# How to Use the Measurement Guide

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This measurement guide has been designed to support the implementation of Ontario Health's quality standards. Quality standards inform health care professionals, patients, and caregivers about what high-quality health care looks like for aspects of care that have been deemed a priority for improvement in Ontario. They are intended to guide quality improvement, monitoring, and evaluation.

This guide is intended for use by those looking to implement quality standards, including health care professionals working in regional or local roles.

This guide has dedicated sections for each of the two types of measurement within quality standards:

- Provincial measurement: how progress being made to improve care on a provincial level can be monitored using existing provincial data sources
- Local measurement: what you can do to assess the quality of care that you provide locally

# Quality Standard Indicators

Measurability is a key element in developing and describing quality standards and the quality statements within each quality standard. Each quality standard contains two types of indicators:

- Indicators to measure the overarching goals of the quality standard, called *measures to support improvement*
- Indicators to measure the quality statements within a quality standard, called *statement-specific indicators*

The following sections describe the measurement principles behind the quality indicators and describe the types of indicators included in quality standards. Measurement is necessary to demonstrate whether a quality statement has been implemented effectively and is improving care for patients. This is a key part of the [Plan-Do-Study-Act](#) improvement cycle.

## Measurement Principles

The process, structure, and outcome indicator framework was developed by [Avedis Donabedian](#) in 1966. These three types of indicators play essential and interrelated roles in measuring the quality of health care and the impact of implementing quality standards. The framework applies to both the *measures to support improvement* and the *statement-specific indicators*.

The indicators provided in each quality standard are suggestions. Not every health care professional, team, or organization needs to measure all indicators included in a quality standard. Rather, they should identify the indicators that best capture areas that they would like to focus on in their quality improvement efforts and that can be measured using available data sources.

For educational resources to support measurement, see Statistics Canada's [Data Literacy Training Products](#).

## Process Indicators

Process indicators evaluate care provided by measuring the percentage of individuals, episodes, or encounters for which a specific activity is performed within a defined time frame. The numerator establishes this time frame based on evidence or expert consensus. The denominator reflects the appropriate subgroup(s) for a quality statement, which represents a subset of the Ontario population. Indicator specifications include exclusions or stratifications where appropriate.

Process indicators are crucial for assessing improvement, and almost all quality statements include at least one process indicator. The numerator and denominator may be derived from the language within the quality statement, while additional parameters such as time frame may be found in the rationale or definitions section. If the indicator cannot be measured with available data, a proxy indicator may be provided to measure the process indirectly.

While most quality statements focus on a single concept with a corresponding process indicator, some statements include multiple related concepts. In such cases, multiple process indicators may be needed to measure the quality statement. For instance, a quality statement may require a comprehensive assessment consisting of several components, each of which may have its own process indicator.

An example of a process indicator is the percentage of people who receive the treatment of interest in the recommended time frame.

## Structural Indicators

Structural indicators assess structures and resources that influence and enable the delivery of care. These can include equipment, systems of care, the availability of resources, teams, programs, policies, protocols, licences, or certifications.

Structural indicators are binary or categorical and do not require the definition of a numerator and denominator. However, in some cases it can be useful to specify a denominator defining an organizational unit such as a hospital, primary care practice, or local region. In many cases, existing administrative data to measure structural indicators are not readily available. In such cases, local data collection may be used to fill data gaps, which might necessitate the development of data collection systems at the regional or provincial level.

Structural indicators are defined for individual quality statements or for the quality standard as a whole when there is strong evidence that a particular resource, capacity, or characteristic is needed to deliver effective care. Theoretically, it should be feasible for these structural elements to be implemented across Ontario.

Examples of structural indicators include the availability of the required equipment for the treatment of interest and the existence of a relevant care protocol.

## Outcome Indicators

Outcome indicators assess the end results of care provided. They are arguably the most meaningful measures to collect, but many health outcomes – such as mortality and unplanned hospital readmissions – are often the product of a variety of related factors and cannot be reliably attributed to a single process of care. Therefore, relatively few quality statements are directly measured by an outcome indicator. Rather, a set of overall measures, the *measures to support improvement*, include key outcome indicators. These measures are defined for each quality standard as a whole, reflecting the combined intended effect of all quality statements in a quality standard. Similar to process indicators, outcome indicators are specified using a defined denominator and a numerator that in most cases includes a clear time frame.

Examples of outcome indicators include mortality rate, improvement (or decline) in function, and patients' experience of care.

# Other Indicator Considerations

Balancing measures can help determine downstream and potentially unintended consequences resulting from the implementation of a quality standard or quality improvement initiative. For example, improvement in a specific domain might cause a rebound effect or poorer performance in another area of the system. Balancing measures are not typically part of quality standards indicators.

Ontario Health's quality standards do not include benchmarks or targets because they may not be practical or applicable for the entire province. Health care professionals, teams, and organizations are encouraged to develop their own local targets appropriate to their unique context.

# Provincial Measurement and Data Access

In its quality standards, Ontario Health strives to incorporate measurement that is standardized, reliable, and comparable across providers so that the impact of quality standards can be assessed provincially. Where possible, indicators are measurable using provincial data sources. However, in many instances provincial administrative data are unavailable for indicator measurement. In these cases, the data source is described as local data collection.

For more information on provincial data sources relevant to quality standards, please see the appendix.

Through the following data platforms, you may view or request performance results or create custom analyses to calculate results for identified measures in order to monitor your quality improvement efforts:

## eReports

[eReports](#), from the Canadian Institute for Health Information (CIHI), offer at-a-glance comparisons at the organizational level for a variety of data sources including the Continuing Care Reporting System (CCRS). The tool also provides ways to manipulate the preformatted look and feel of the reports. It provides many choices to compare an organization's data with those of other organizations. With these customizable reports, you can view data by different attributes and for multiple organizations.

## ICES

[ICES](#) is a provider of data and information for clinical and population health research in Ontario, including studies of health care delivery and outcomes. Its research and analysis are disseminated via a variety of products including infographics, dashboards, journal articles, and reports. As a health services research institute that holds Ontario's administrative data, ICES receives core funding from the Ontario Ministry of Health and also performs custom analysis for Ontario's health services sector on a cost-recovery basis.

## IntelliHealth Ontario

[IntelliHealth](#), from the Ontario Ministry of Health and Ministry of Long-Term Care, is a knowledge repository that contains clinical and administrative data collected from various sectors of the Ontario health care system. IntelliHealth enables users to create queries and run reports through easy web-based access to high-quality, well-organized, integrated data.

## Your Health System

The [Your Health System](#) "In Brief" and "In Depth" platforms from CIHI, provide interactive tools to access various indicators at the provincial, regional, and organizational levels. Data are presented via infographics, customizable graphs, and downloadable data tables.

# Local Data Collection and Measurement

*Local data collection* refers to data collection at the level of the health care professional or health care team for indicators that cannot be assessed using provincial administrative or survey databases (e.g., databases held by CIHI or ICES). Examples of local data include data from electronic medical records, clinical patient records, regional data collection systems, and locally administered patient surveys. Indicators that require local data collection may signal an opportunity for local measurement, data advocacy, or improvement in data quality.

In each quality standard, specific indicators are identified for each quality statement to support the measurement of quality improvement efforts.

Concrete next steps for measuring quality improvement efforts in a selected topic area include the following:

- Reviewing the list of identified indicators for each quality statement (provided in Appendix 2 of each quality standard) and determining which ones you will use as part of your implementation planning, given your knowledge of current gaps or variation in care
- Determining the availability of data related to the indicators you have chosen
- Identifying a way to collect local data for your chosen indicators (e.g., through clinical chart extraction or by administering local surveys)
- Documenting the proposed indicators and keeping track of the process as your measurement plan evolves

The earlier you complete these steps, the more successful your quality improvement project is likely to be.



# Tools and Resources

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Measurement-related tools and resources to support you in your quality improvement efforts accompany each quality standard. The quality standard itself provides background information on the health topic and definitions of key terms, as well as the numerators and denominators for the *measures to support improvement* and the *statement-specific indicators*. Each quality standard is also accompanied by several online resources to help you:

- The “case for improvement” slide deck provides data explaining why a quality standard has been created, including the burden of disease and variation in care and outcomes
- Some quality standards are accompanied by data tables that can be used to examine variations in indicator results across the province
- The technical specifications explain how to define the scope of the population of interest and the methodology to calculate the *measures to support improvement*
- The Quality Standard eReport Dashboard, where applicable, is a dynamic online tool for organizations to view their own data and compare them with those of other organizations

# Questions?

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If you have any questions, please contact [QualityStandards@OntarioHealth.ca](mailto:QualityStandards@OntarioHealth.ca). We are happy to provide advice on measuring quality standard indicators or to put you in touch with other health care professionals who have implemented quality standards.

You can also visit [Quorum](#), an online community for health care professionals dedicated to working together to improve the quality of health care across Ontario. Quorum also offers a [Frequently Asked Questions](#) page about implementing quality standards.

# Appendix: Provincial Data Sources

Ontario Health uses a number of data sources for provincial measurement. In each quality standard, the data sources for each indicator are provided within the individual indicator specifications. The following data sources may be used to produce quality standard indicators measurable at the provincial level.

## Better Outcomes Registry & Network

The [Better Outcomes Registry & Network](#) (BORN Ontario) is Ontario's pregnancy, birth, and early childhood registry and network. Established in 2009 and funded via the Ontario Ministry of Health, BORN Ontario manages the BORN Information System, which provides reliable, secure, and comprehensive information on each child born in the province, maternal care, and pediatric care.

## Canadian Community Health Survey

The [Canadian Community Health Survey](#) (CCHS), conducted by Statistics Canada, is a nationally representative, cross-sectional survey of the Canadian community-dwelling population. It collects information related to the health status, health care use, and health determinants of the Canadian population.

## Continuing Care Reporting System

The [Continuing Care Reporting System](#) (CCRS) was developed by CIHI to enhance the collection of standardized information on facility-based long-term care and complex continuing care for national comparative reporting. The clinical data are collected using the Resident Assessment Instrument Minimum Data Set Version 2.0 standard (RAI-MDS 2.0). All long-term care homes in Ontario have submitted data to the CCRS on a quarterly basis since 2009 but are now transitioning to the newer Integrated interRAI Reporting System (see below).

## Discharge Abstract Database

The [Discharge Abstract Database](#) (DAD), maintained by CIHI, contains information abstracted from hospital records that captures administrative, clinical, and patient demographic data on all hospital inpatient separations, including discharges, deaths, sign-outs, and transfers. CIHI receives Ontario data directly from participating facilities, from their respective regional health authorities, and from the Ontario Ministry of Health.

## Health Care Experience Survey

The [Health Care Experience Survey](#) is a voluntary telephone survey from the Ontario Ministry of Health conducted to collect the views of people living in Ontario aged 16 years and older about their experiences with Ontario's health care system.

## Home Care Data

Ontario's [Home Care Database](#) (HCD) contains information on home care client intake, assessment, admission, diagnostic and surgical procedures, and service delivery. Home care assessment data are complementary to the administrative data available within the HCD. These assessment data were previously housed within CIHI's [Home Care Reporting System](#) (HCRS) but are being transitioned to the newer Integrated interRAI Reporting System (see below).

## Integrated interRAI Reporting System

The [Integrated interRAI Reporting System](#) (IRRS) was launched in 2019–2020 by CIHI. It manages data captured with interRAI's integrated suite of assessments of people's encounters with and across health care organizations and sectors. The IRRS captures standardized, client-specific clinical, demographic, administrative, and resource use information in a single reporting framework. Home care and long-term/continuing care data are transitioning from the HCRS and CCRS to the IRRS.

## National Ambulatory Care Reporting System

The [National Ambulatory Care Reporting System](#) (NACRS) contains data collected, maintained, and validated by CIHI. It provides data for all hospital- and community-based emergency and ambulatory care, including day surgeries, outpatient clinics, and emergency departments. Data are sent directly to CIHI from participating facilities in Ontario and their respective regional health authorities and from the Ontario Ministry of Health.

## National Health Expenditure Database

The [National Health Expenditure Database](#), maintained by CIHI, collects, processes, and analyzes summary data on all health spending in Canada. The database provides data by spending category (e.g., hospitals, drugs, physicians) and source of funding (i.e., public or private sector).

## National Rehabilitation Reporting System

The [National Rehabilitation Reporting System](#) (NRS) collects data on adult inpatient rehabilitation clients. Data are submitted to CIHI from facilities that provide rehabilitation services, including specialized rehabilitation facilities and general hospitals with rehabilitation units, programs, or designated beds. The submission of NRS data by all facilities with designated adult inpatient rehabilitation beds is mandated in Ontario.

## Ontario Drug Benefit Database

The [Ontario Drug Benefit \(ODB\) database](#), maintained by the Ontario Ministry of Health, provides information related to recipients, payments, claims, pharmacies, and practitioners. The ODB Program provides drug benefits for Ontario residents aged 65 years and older; residents of long-term care homes or homes for special care; and recipients of professional home services, social assistance, or

the Trillium Drug Program. The program also covers Ontario residents aged 24 years and younger who are not covered by a private health insurance plan.

## Ontario Health Insurance Plan Claims Database

The [Ontario Health Insurance Plan \(OHIP\) claims database](#) covers all reimbursement claims to the Ontario Ministry of Health made by physicians, community-based laboratories, and radiology facilities. The database contains patient and physician identifiers, codes for services provided, service dates, associated diagnoses, and fees paid. The OHIP claims database is maintained by the Ontario Ministry of Health, but an anonymized version with encrypted identifiers is also housed at [ICES](#).

## Ontario Laboratory Information System

The [Ontario Laboratory Information System](#) (OLIS) is an information repository maintained by the Ontario Ministry of Health that houses lab test orders and results from hospitals, community labs, and public health labs. As patients move between care settings, OLIS allows authorized health care providers to view current and past test results and enables treatment decisions to be made at the point of care.

## Ontario Mental Health Reporting System

The [Ontario Mental Health Reporting System](#) (OMHRS), maintained by CIHI, collects information about individuals admitted to designated adult mental health beds in Ontario. OMHRS includes information on admissions and discharges as well as clinical information. Clinical data are collected using the Resident Assessment Instrument for Mental Health (RAI-MH), a standardized assessment instrument for inpatient mental health care. OMHRS includes information about mental and physical health, social supports, and service use, as well as care planning, outcome measurement, and quality improvement.

## Registered Persons Database

Maintained by the Ontario Ministry of Health, the [Registered Persons Database](#) (RPDB) is a registry of people registered under OHIP and those eligible for the ODB Program. The RPDB includes the date from which someone is no longer eligible for OHIP and the reason why, including date of death where applicable.

# Looking for More Information?

Visit [hqontario.ca](https://hqontario.ca) or contact us at [QualityStandards@OntarioHealth.ca](mailto:QualityStandards@OntarioHealth.ca) if you have any questions or feedback about this measurement guide.

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