

QUALITY STANDARDS

# Chronic Pain

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Care for Adults, Adolescents, and Children

Measurement Guide

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# 1 How to Use the Measurement Guide

This document is meant to serve as a measurement guide to support the adoption of the Chronic Pain: Care for Adults, Adolescents and Children quality standard. Care for people with chronic pain is a critical issue, and there are significant gaps and variations in the quality of care that people with chronic pain receive in Ontario. Recognizing this, the Quality business unit at Ontario Health released this quality standard to identify opportunities that have a high potential for quality improvement.

This guide is intended for use by those looking to adopt the Chronic Pain: Care for Adults, Adolescents and Children quality standard, including health care professionals working in regional or local roles.

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

- **Local measurement:** what you can do to assess the quality of care that you provide locally
- **Provincial measurement:** how we can measure the success of the quality standard on a provincial level using existing provincial data sources

## Important Resources for Quality Standard Adoption

Ontario Health (Quality) has created resources to assist with the adoption of quality standards:

- A *Getting Started Guide* that outlines a process for using quality standards as a resource to deliver high-quality care. It includes links to templates, tools, and stories and advice from health care professionals, patients, and caregivers. You can use this guide to learn about evidence-based approaches to implementing changes to practice
- A *Quality Improvement Guide* to give health care teams and organizations in Ontario easy access to well-established quality improvement tools. The guide provides examples of how to adapt and apply these tools to our Ontario health care environments
- An online community called *Quorum* that is dedicated to working together to improve the quality of health care across Ontario. Quorum can support your quality improvement efforts

## 2 Quality Indicators in Quality Standards

Quality standards inform providers and patients about what high-quality health care looks like for aspects of care that have been deemed a priority for quality improvement in the province. They are intended to guide quality improvement, monitoring, and evaluation.

Measurability is a key principle in developing and describing the quality statements; each statement is accompanied by one or more indicators. This section describes the measurement principles behind the quality indicators, the process for developing these indicators, and the technical definitions of the indicators.

An effective quality statement must be measurable. Measurement is necessary to demonstrate if a quality statement has been properly implemented, and if it is improving care for patients. This is a key part of the [Plan-Do-Study-Act](#) improvement cycle. If measurement shows there has been no improvement, you need to consider a change or try something different.

### 2.1 Measurement Principles

Ontario Health (Quality) uses the process, structure, and outcome indicator framework developed by [Donabedian](#) in 1966 to develop indicators for quality standards. The three indicator types play essential and interrelated roles in measuring the quality of health care and the impact of introducing and using quality standards.

The indicators provided are merely suggestions. It is not expected that every provider, team, or organization will be able to measure all of them (or even want to measure all of them), but they can identify which indicators best capture areas of improvement for their care and what can be measured given existing local data sources.

### 2.2 Process Indicators

Process indicators assess the activities involved in providing care. They measure the percentage of individuals, episodes, or encounters for which an activity (process) is performed. In most cases, the numerator should specify a timeframe in which the action is to be performed, established through evidence or expert consensus. When a quality statement applies to a subset of individuals rather than the total population, the denominator should reflect the population of the appropriate subgroup, rather than the entire Ontario population. If exclusions are required or stratifications are suggested, they are reflected in the indicator specifications.

Process indicators are central to assessing whether or not the quality statement has been achieved; nearly all quality statements are associated with one or more process indicators. In most cases, the numerator and denominator for process indicators can be derived from the language of the quality statement itself; additional parameters (such as a timeframe) can also appear in the definitions section. In some cases, a proxy indicator is provided that indirectly measures the process. Proxy indicators are used only when the actual indicator cannot be measured with currently available data.

While most quality statements focus on a single concept and are linked with a single process indicator, some statements include two or more closely related concepts. In these cases, multiple process indicators can be considered to capture all aspects of the quality statement. For example, a quality

statement might suggest the need for a comprehensive assessment with several components, and each of those components might have a process indicator.

Examples of process indicators include the percentage of patients with hip fracture who receive surgery within 48 hours, or the percentage of patients with chronic obstructive pulmonary disease who are offered clozapine after first- and second-line antipsychotics have been ineffective. Please refer to the published [quality standards](#) for more examples.

### 2.3 Structural Indicators

Structural indicators assess the structures and resources that influence and enable delivery of care. These can include equipment; systems of care; availability of resources; and teams, programs, policies, protocols, licences, or certifications. Structural indicators assess whether factors that are in place are known to help in achieving the quality statement.

Some quality statements have structural indicators associated with them. Structural indicators are binary or categorical and do not require the definition of a numerator and denominator. However, in some cases it could be useful to specify a denominator defining an organizational unit, such as a hospital, a primary care practice, or a local region. In many cases data to measure structural indicators are not readily available using existing administrative data, so local data collection might be required. This local data collection might require regional or provincial level data collection systems to be developed.

Structural indicators should be defined for a quality statement or for the quality standard as a whole when there is strong evidence that a particular resource, capacity, or characteristic is important for enabling the effective delivery of a process of care. It should be theoretically feasible for these structural elements to be implemented across Ontario, even if adoption is aspirational in some cases. In rare instances, a quality statement might have two or more associated structural indicators, if the quality standard advisory committee decides that multiple factors are crucial to the delivery of the quality statement.

Examples of structural indicators include the availability of a stroke unit, the existence of discharge planning protocols, or access to a specialized behavioural support team. Please refer to the published [quality standards](#) for more examples.

### 2.4 Outcome Indicators

Outcome indicators assess the end results of the care provided. They are crucial and are arguably the most meaningful measures to collect, but many health outcomes—such as mortality or unplanned hospital readmissions—are often the product of a variety of related factors and cannot be reliably attributed to a single process of care. For this reason, although relatively few quality statements are directly linked to an outcome indicator, a set of overall measures—including key outcome indicators—is defined for the quality standard as a whole, reflecting the combined effect of all of the quality statements in the standard. Similar to process indicators, outcome indicators should be specified using a defined denominator and a numerator that, in most cases, should include a clear timeframe.

Examples of outcome indicators include mortality rates, improvement (or decline) in function, and patients' experience of care. Please refer to the published [quality standards](#) for more examples.

## 2.5 Balancing Measures

Balancing measures indicate if there are important unintended adverse consequences in other parts of the system. Examples include staff satisfaction and workload. Although they are not the focus of the standard, the intention of these measures is to monitor the unintended consequences.

## 3 Local Measurement

As part of the Chronic Pain: Care for Adults, Adolescents and Children quality standard, *specific* indicators were identified for each of the statements to support measurement for quality improvement.

As an early step in your project, we suggest that your team complete an *initial assessment* of the relevant indicators in the standard and come up with a draft measurement plan.

Here are some concrete next steps:

- Review the list of identified indicators (in the quality standard), and determine which ones you will use as part of your adoption planning, given your knowledge of current gaps in care
- Determine the availability of data related to the indicators you have chosen
- Identify a way to collect local data related to your chosen indicators
- Develop a draft measurement plan

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

### 3.1 Local Data Collection

Local data collection refers to data collection at the health provider or team level for indicators that cannot be assessed using provincial administrative or survey databases (such as databases held by the Institute for Clinical Evaluative Sciences or the Canadian Institute for Health Information). 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 can signal an opportunity for local measurement, data advocacy, or data quality improvement.

Local data collection has many strengths: it is timely, can be tailored to quality improvement initiatives, and is modifiable on the basis of currently available data. However, caution is required when comparing indicators using local data collection between providers and over time to ensure consistency in definitions, consistency in calculation, and validity across patient groups.

### 3.2 Measurement Principles for Local Data Collection

Three types of data can be used to construct measures in quality improvement: continuous, classification, and count data. For all three types of data, it is important to consider clinical relevance when analyzing results (i.e. not every change is a clinically relevant change).

#### 3.2.1 Continuous Data

Continuous data can take any numerical value in a range of possible values. These values can refer to a dimension, a physical attribute, or a calculated number. Examples include patient weight, number of calendar days, and temperature.

### 3.2.2 Classification Data

Classification (or categorical) data are recorded in two or more categories or classes. Examples include sex, race or ethnicity, and number of patients with depression versus number of patients without depression. In some cases, you might choose to convert continuous data into categories. For example, you could classify patient weight as underweight, normal weight, overweight, or obese.

Classification data are often presented as percentages. To calculate a percentage from classification data, you need a numerator and a denominator (a percentage is calculated by dividing the numerator by the denominator and multiplying by 100). The numerator includes the number of observations meeting the criteria (e.g., number of patients with depression), and the denominator includes the total number of observations measured (e.g., total number of patients in clinic). Note that the observations in the numerator must also be included in the denominator (source population).

Examples of measures that use classification data include percentage of patients with a family physician and percentage of patients who receive therapy.

### 3.2.3 Count Data

Count data often focus on attributes that are unusual or undesirable. Examples include number of falls in a long-term care home and number of medication errors.

Count data are often presented as a rate, such as the number of events per 100 patient-days or per 1,000 doses. The numerator of a rate counts the number of events/nonconformities, and the denominator counts the number of opportunities for an event. It is possible for the event to occur more than once per opportunity (e.g., a long-term care resident could fall more than once).

*Rate of 30-day hospital readmission =*

$$\frac{\text{Number of hospital readmissions within 30 days of discharge [numerator]}}{\text{Number of discharges from hospital [denominator]}}$$

### 3.2.4 Benefits of Continuous Data

It is common practice in health care to measure toward a target instead of reporting continuous measures in their original form. An example would be measuring the number of patients who saw their primary care physician within 7 days of hospital discharge instead of measuring the number of days between hospital discharge and an appointment with a primary care physician. Targets should be evidence-based or based on a high degree of consensus across clinicians.

When a choice exists, continuous data sometimes are more useful than count or classification data for learning about the impact of changes tested. Measures based on continuous data are more responsive and can capture smaller changes than measures based on count data; therefore, it is easier and faster to see improvement with measures based on continuous data. This is especially true when the average value for the continuous measure is far from the target. Continuous data are also more sensitive to change. For example, while you might not increase the number of people who are seen within 7 days, you might reduce how long people wait.

### 3.3 Benchmarks and Targets

Benchmarks are markers of excellence to which organizations can aspire. Benchmarks should be evidence-based or based on a high degree of consensus across clinicians. At this time, Ontario Health (Quality) does not develop benchmarks for quality standards indicators. Users of these standards have variable practices, resources, and patient populations, so one benchmark might not be practical for the entire province.

Targets are goals for care that are often developed in the context of the local care environment. Providers, teams, and organizations are encouraged to develop their own targets appropriate to their patient populations, their current performance and their quality improvement work. Organizations that include a quality standard indicator in their quality improvement plans are asked to use a target that reflects improvement. Timeframe targets, like the number of people seen within 7 days, are typically provided with process indicators intended to guide quality improvement.

In many cases, achieving 100% on an indicator is not possible. For example, someone might not receive care in a wait time benchmark due to patient unavailability. This is why it is important to track these indicators over time, to compare results against those of colleagues, to track progress, and to aim for the successful implementation of the standard.

For guidance on setting benchmarks and targets at a local level, refer to:

- [Approaches to Setting Targets for Quality Improvement Plans](#)
- [Long-Term Care Benchmarking Resource Guide](#)

## 4 Provincial Measurement

In its quality standards, Ontario Health (Quality) strives to incorporate measurement that is standardized, reliable, and comparable across providers to assess the impact of the standards provincially. Where possible, indicators should be measurable using province-wide data sources. However, in many instances data are unavailable for indicator measurement. In these cases, the source is described as local data collection. For this standard, there are no provincially measurable indicators that can be used as measures of success, so all measurement requires local data collection.

## 5 How Success Can Be Measured for This Quality Standard

This measurement guide accompanies the Chronic Pain: Care for Adults, Adolescents and Children quality standard. Early in the development of each quality standard, a few performance indicators are chosen by the Quality Standards Advisory Committee to measure the success of the entire standard. These indicators guide the development of the quality standard so that every statement within the standard aids in achieving the standard's overall goals.

This measurement guide includes information on the definitions and technical details of the indicators listed below which were selected as the overall measures of success for this standard:

### Process indicators:

- Percentage of people with chronic pain who receive non-opioid pharmacotherapy as first-line pharmacological treatment for pain

### Outcome indicators:

- Percentage of people with chronic pain who experience an improved quality of life
- Percentage of people with chronic pain who experience improved functional status

Indicators are categorized as:

- Provincially measurable (the indicator is well defined and validated) *or*
- Locally measurable (the indicator is not well defined, and data sources do not currently exist to measure it consistently across providers and at the system level)

For more information on statement-specific indicators, please refer to the quality standard.

### 5.1 Quality Standard Scope

This quality standard uses the commonly accepted definition of “chronic pain” as pain that typically lasts longer than 3 months or that continues past the time of normal tissue healing. Some common examples of chronic pain include musculoskeletal, neuropathic, and postsurgical pain, but chronic pain is also associated with many other underlying conditions. Chronic pain can also be considered a disease in itself when the underlying cause is unknown but the pain has a significant impact on a person's physical, emotional, and psychological well-being, with detrimental effects on the person's functional, social, and economic status, and quality of life. People with chronic pain may also experience mood disorders, sleep disturbances, and impaired social interactions.

This quality standard addresses care for people with chronic pain lasting longer than 3 months, and where any signs of serious underlying pathology (i.e., “red flags,” such as cancer, infection, or fracture) or other treatable conditions requiring medical or surgical management have been ruled out. It addresses care for adults, adolescents, and children, but excludes infants. It applies to care for chronic pain delivered in outpatient settings, including primary care, community pain clinics, and

interprofessional pain programs. This quality standard does not specifically address headache, pain from active cancer, or pain experienced during end of life.

## **5.2 Cohort Identification**

Local data collection, such as through clinical data, may also be used to identify patients with chronic pain to establish a local cohort

## **5.3 How Success Can Be Measured Provincially**

The overarching goals for this quality standard are mapped to indicators that may be used to assess quality of care provincially. At this time, no indicators identified by the Quality Standard Advisory Committee are currently measurable in Ontario's health care system using available data sources. Further data advancement, specifically a consistent and reliable method to identify people with chronic pain using administrative data, is needed for the collection of data for these indicators at the provincial level.

## **5.4 How Success Can Be Measured Locally**

You might want to assess the quality of care you provide to your patients with chronic pain. You might also want to monitor your own quality improvement efforts. It can be possible to do this using your own clinical records, or you might need to collect additional data. We recommend the following list of indicators, which can be captured using local data collection.

- Percentage of people with chronic pain who receive non-opioid pharmacotherapy as first-line pharmacological treatment for pain
- Percentage of people with chronic pain who experience an improved quality of life
- Percentage of people with chronic pain who experience improved functional status

Methodologic details are described in the tables below.

**Table 1: Percentage of people with chronic pain who receive non-opioid pharmacotherapy as first-line pharmacological treatment for pain**

GENERAL DESCRIPTION	Indicator description	This indicator measures the percentage of people with chronic pain who receive non-opioid pharmacotherapy as first-line pharmacological treatment for pain  Directionality: A higher percentage is better.
	<b>Measurability</b>	<b>Developmental</b>
	Dimension of quality	Safe, Effective, Patient-centred
	Quality statement alignment	Quality statement 7: Pharmacotherapy Quality statement 2: Setting Goals for Pain Management and Function Quality Statement 3: Supported Self-Management and Education
DEFINITION & SOURCE INFORMATION	Calculation: General	<b>Denominator</b> People with chronic pain in your population who are receiving pharmacological treatment for pain.  <b>Numerator</b> Number of people in the denominator who were prescribed non-opioid pharmacotherapy as first line pharmacological treatment
	Data Source	Local data collection
ADDITIONAL INFORMATION	Comments	Chronic pain is defined as pain that has lasted longer than 3 months and where any signs of serious underlying pathology or other treatable conditions requiring medical or surgical management have been ruled out  For additional information on managing chronic pain, please see the <a href="#">Opioid Prescribing for Chronic Pain Quality Standard</a>

**Table 2: Percentage of people with chronic pain who experience an improved quality of life**

GENERAL DESCRIPTION	Indicator description	This indicator measures the percentage of people with chronic pain who experience an improved quality of life  Directionality: A higher percentage is better.
	<b>Measurability</b>	<b>Developmental</b>
	Dimension of quality	Effective, Patient-centred
	Quality statement alignment	All statements will impact this outcome.
DEFINITION & SOURCE INFORMATION	Calculation: General	<b>Denominator</b> People with chronic pain in your population  <b>Numerator</b> Number of people in the denominator who experience an improved quality of life
	Data Source	Local data collection
ADDITIONAL INFORMATION	Comments	Chronic pain is defined as pain that has lasted longer than 3 months and where any signs of serious underlying pathology or other treatable conditions requiring medical or surgical management have been ruled out  There is no standardized tool to measure quality of life and functional status for people living with chronic pain and their caregivers. Several quality-of life tools are examined in the literature, such as the SF-36, SF-12, EQ-5D, FACT-G, and WHOQOL-100. There are also some pain assessment tools that have components of quality of life measurement including the Brief Pain Inventory ( <a href="#">BPI</a> ) or Patient Health Questionnaire ( <a href="#">PHQ-9</a> ) that are referenced in the standard (quality statement 8)

**Table 3: Percentage of people with chronic pain who experience improved functional status**

GENERAL DESCRIPTION	Indicator description	This indicator measures the percentage of people with chronic pain who experience improved functional status  Directionality: A higher percentage is better.
	<b>Measurability</b>	<b>Developmental</b>
	Dimension of quality	Effective, Patient-centred
	Quality statement alignment	All statements will impact this outcome
DEFINITION & SOURCE INFORMATION	Calculation: General	<b>Denominator</b> People with chronic pain in your population  <b>Numerator</b> Number of people in the denominator who experience improved functional status
	Data Source	Local data collection
ADDITIONAL INFORMATION	Comments	<p>Chronic pain is defined as pain that has lasted longer than 3 months and where any signs of serious underlying pathology or other treatable conditions requiring medical or surgical management have been ruled out</p> <p>Functional status refers to a person’s ability to perform activities of daily living, including work, play, and socialization. Examples include being able to attend school, participating in personal hygiene, driving, and managing medications. The assessment of functional status should be performed using a validated assessment tool; for example, the Brief Pain Inventory.</p> <p>There is no standardized tool to measure quality of life and functional status for people living with chronic pain and their caregivers. Several quality-of-life tools are examined in the literature, such as the SF-36, SF-12, EQ-5D, FACT-G, and WHOQOL-100. There are also some pain assessment tools that have components of quality of life measurement including the Brief Pain Inventory (<a href="#">BPI</a>) or Patient Health Questionnaire (<a href="#">PHQ-9</a>) that are referenced in the standard (quality statement 8)</p>

## 6 Resources and Questions

### 6.1 Resources

Several resources are available for more information:

- The **quality standard** provides information on the background, definitions of terminology, numerators and denominators for all statement-specific indicators
- The **Getting Started Guide** includes quality improvement tools and resources for health care professionals, including an action plan template
- The **slide deck** provides data on why a particular quality standard has been created and the data behind it

### 6.2 Questions?

Please contact [qualitystandards@hqontario.ca](mailto:qualitystandards@hqontario.ca). We would be happy to provide advice on measuring quality standard indicators, or put you in touch with other providers who have implemented the standards and might have faced similar questions.

Ontario Health (Quality) offers an online community dedicated to improving the quality of health care across Ontario together called [Quorum](#). Quorum can support your quality improvement work by allowing you to:

- Find and connect with others working to improve health care quality
- Identify opportunities to collaborate
- Stay informed with the latest quality improvement news
- Give and receive support from the community
- Share what works and what doesn't
- See details of completed quality improvement projects
- Learn about training opportunities
- Join a community of practice

## QUALITY STANDARDS

# Looking for more information?

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

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