Quality Standards

Low Back Pain

Care for Adults With Acute Low Back Pain

Measurement Guide

January 2019





Contents

1	Ho	w to Use the Measurement Guide3				
2	Qu	ality Indicators in Quality Standards	4			
	2.1	Measurement Principles	4			
	2.2	Process Indicators	4			
	2.3	Structural Indicators	5			
	2.4	Outcome Indicators	5			
	2.5	Balancing Measures	5			
3	Loc	cal Measurement	7			
	3.1	Local Data Collection	7			
	3.2	Measurement Principles for Local Data Collection	7			
	3.3	Benchmarks and Targets	8			
4	Pro	ovincial Measurement	10			
	4.1	Accessing Provincially Measurable Data				
5	Ho	w Success Can Be Measured for This Quality Standard	11			
	5.1	Quality Standard Scope	11			
	5.2	Cohort Identification	12			
	5.3	How Success Can Be Measured Provincially	13			
	5.4	How Success Can Be Measured Locally	26			
6	Re	sources and Questions	31			
	6.1	Resources	31			
	6.2	Questions?	31			
7	App	pendix: Data Sources Referenced in This Quality Standard	32			
8	Ref	eferences				

1 How to Use the Measurement Guide

This document is meant to serve as a measurement guide to support the adoption of the Low Back Pain Quality Standard. Care for people with low back pain is a critical issue, and there are significant gaps and variations in the quality of care that people with low back pain receive in Ontario. Recognizing this, Health Quality Ontario 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 Low Back Pain 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

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

- A <u>Getting Started Guide</u> 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 <u>Quality Improvement Guide</u> 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 <u>Quorum</u> 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 <u>Plan-Do-Study-Act</u> improvement cycle. If measurement shows there has been no improvement, you need to consider a change or try something different.

2.1 Measurement Principles

Health Quality Ontario uses the process, structure, and outcome indicator framework developed by <u>Donabedian</u> 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 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 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 <u>quality standards</u> 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 the quality statements in the standard. Like 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 <u>quality standards</u> 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

ocus of the standard, the intention of these measures is to monitor the unintended onsequences.		

3 Local Measurement

As part of the Low Back Pain 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
- 2. Determine the availability of data related to the indicators you have chosen
- 3. Identify a way to collect local data related to your chosen indicators
- 4. 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 based on 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 =

Number of hospital readmissions within 30 days of discharge [numerator]

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. Currently, Health Quality Ontario does not develop benchmarks for the 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 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. Therefore, 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, Health Quality Ontario 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 more information on the data sources referenced in this standard, please see the appendix.

4.1 Accessing Provincially Measurable Data

Provincial platforms are available to users to create custom analyses to help you calculate results for identified measures of success. Examples of these platforms include IntelliHealth and eReports. Please refer to the links below to determine if you have access to the platforms listed.

4.1.1 IntelliHealth—Ministry of Health and Long-Term Care

IntelliHealth is a knowledge repository that contains clinical and administrative data collected from various sectors of the Ontario healthcare system. IntelliHealth enables users to create queries and run reports through easy web-based access to high quality, well organized, integrated data.

4.1.2 <u>eReports—Canadian Institute for Health Information</u>

Quick Reports offer at-a-glance comparisons for the organizations you choose. The tool also provides some ways to manipulate the pre-formatted look and feel of the reports. Flexible or Organization Reports offer you many choices to compare your organization's data with those of other organizations. With these customizable reports, you can view data by different attributes and for multiple organizations.

4.1.3 Applied Health Research Questions (AHRQ) — Institute for Clinical Evaluative Sciences

ICES receives funds from the Ministry of Health and Long-Term Care to provide research evidence to organizations from across the Ontario health care system (Knowledge Users). This knowledge is used to inform planning, policy and program development. Knowledge Users can submit an Applied Health Research Question (AHRQ) to ICES. As a health services research institute that holds Ontario's administrative data, ICES is well positioned to respond to AHRQs that directly involve the use of ICES data holdings.

5 How Success Can Be Measured for This Quality Standard

This measurement guide accompanies Health Quality Ontario's Low Back Pain 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 who seek physician or emergency department care for acute low back pain who undergo diagnostic imaging (x-ray, CT, MRI, bone scan) of the spine within 90 days and 180 days of the date of the index visit
- Percentage of people who seek physician or emergency department care for acute low back pain who are prescribed an opioid medication within 7 days and 90 days of the date of the index visit
- Percentage of people with acute low back pain who have surgeon or specialist consultations within 90 days of a low back pain diagnosis

Outcome indicators:

- Percentage of people who seek physician or emergency department care for acute low back pain who subsequently present to the emergency department for low back pain within 30 and 90 days of the date of the index visit
- Percentage of people with acute low back pain who report an improvement in their quality of life
- Percentage of people with acute low back pain who rate their interaction with their health care professional as "definitely helping them feel better able to manage their low back pain"

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 addresses care for adults aged 16 years and older who have a first episode of acute low back pain, or who have recurrent episodes of acute low back pain that last less than 12 weeks. The standard addresses mechanical low back pain with or

without associated leg symptoms,^{1,2} such as radiculopathy caused by compression of a spinal nerve root (a pinched nerve) and neurogenic claudication (painful cramping or weakness in the legs with walking or standing).

Although it applies to care in all settings, this quality standard focuses on primary care and community-based care that can be provided by an interprofessional team of health care providers. It includes the assessment and management (including pharmacological and nonpharmacological interventions) of acute low back pain with or without leg symptoms, as well as physical activity, education, self-management, and psychosocial support for people with low back pain. This standard includes referral to nonsurgical and surgical speciality care providers for patients who require additional medical care for their low back pain, but it excludes information on specialty-based interventions.

This quality standard does not address the management of chronic low back pain (lasting more than 12 weeks). It also excludes low back pain in pregnancy; and the diagnosis and treatment of specific causes of low back pain, such as inflammatory conditions (e.g., ankylosing spondylitis), infections (e.g., discitis, osteomyelitis, epidural abscess), fracture, neoplasm, and metabolic bone disease (e.g., osteoporosis, osteomalacia, Paget's disease), nonspinal causes of back pain (e.g., from the abdomen, kidney, ovary, pelvis, bladder), chronic pain syndromes,³ and surgical interventions (e.g., fusion and disc replacement, discectomy, laminectomy).¹

5.2 Cohort Identification

Working with the Institute for Clinical Evaluative Sciences and using information from previous cohorts created by the Canadian Institute for Health Information⁴ and the Institute for Clinical Evaluative Sciences⁵, and guidance from Health Quality Ontario and the Low Back Pain Quality Standards Advisory Committee, we identified individuals with acute low back pain using the following administrative databases:

- Discharge Abstract Database (DAD)
- National Ambulatory Care Reporting System (NACRS)
- Ontario Health Insurance Plan (OHIP) Claims Database
- Registered Persons Database (RPDB)

People who present to a physician with low back pain can be identified in administrative databases using OHIP diagnosis codes for physician visits and ICD-10-CA (International Statistical Classification of Diseases and Related Health Problems, 10th Revision) codes for emergency department visits (confirmed and suspected diagnoses). Diagnoses of low back pain included those classified as:

- Intervertebral disc disorders
- Other and unspecified disorders of back
- Sprains and strains of other and unspecified parts of back
- Thoracic, thoracolumbar, and lumbosacral intervertebral disc disorders
- Dorsalgia
- Dislocation and sprain of joints and ligaments of lumbar spine

In alignment with the scope of the Low Back Pain Quality Standard, individuals with the following characteristics were excluded from the analyses:

- Age less than 16 years or greater than 120 years on the date of the index visit
- Scheduled visits to the emergency department (in NACRS records)
- Vacated the emergency department without being seen (in NACRS record)
- Admitted to hospital following a visit to the emergency department (in NACRS records)
- Prior low back pain visits within the 5 years prior to the date of the index visit
- Red flags that appeared within the 5 years prior to and including the date of the index visit or that appeared within the 90 days after the date of the index visit
- Deaths that occurred within the 90 days after the date of the index visit
- Congenital anomalies (based on visit codes that occurred within the 5 years prior to and including the date of the index visit)
- Spinal surgery within the 5 years prior to and including the date of the index visit

In this quality standard, the term "red flag" indicates a sign or symptom of a serious underlying pathological disease that may require tests or investigations.⁶ Red flags included:

- Cancer/history of cancer
- Neurological problems
- Arthritis
- Vertebral compression fracture

5.3 How Success Can Be Measured Provincially

The following indicators are currently provincially measurable in Ontario's health care system:

Process indicators:

- Percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who undergo diagnostic imaging of the spine (x-ray, CT, MRI, bone scan) within 90 days and 180 days of the date of the index visit
- Percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who are prescribed an opioid medication within 7 days and 90 days of the date of the index visit

Outcome indicators:

 Percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who subsequently present to the emergency department for low back pain within 30 and 90 days of the date of the index visit

Methodologic details for the provincially and locally measurable indicators are described in the tables below.

Table 1: Percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who undergo diagnostic imaging of the spine (x-ray, CT, MRI, bone scan) within 90 days and 180 days of the date of the index visit

GENERAL DESCRIPTION	Indicator description	This indicator measures the percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who undergo diagnostic imaging (x-ray, CT, MRI, bone scan) of the spine. Directionality: A lower percentage is better.
ESC	Measurability	Measurable at the provincial level
ERAL D	Dimension of quality	Effective, Efficient
GEN	Quality statement alignment	QUALITY STATEMENT 2: Diagnostic Imaging People with acute low back pain do not receive diagnostic imaging tests unless they present with red flags that suggest serious pathological disease.
DEFINITION & SOURCE INFORMATION	Calculation: General	Denominator Number of people (aged 16 years and older) who presented to a physician (OHIP Claims Database) or the emergency department (NACRS) for a first episode of acute low back pain Inclusions Any visit to a physician for low back pain Intervertebral disc disorders • OHIP diagnosis code: 722 Other and unspecified disorders of back • OHIP diagnosis code: 724 Sprains and strains of other and unspecified parts of back • OHIP diagnosis code: 847 Any visit to an emergency department for low back pain Thoracic, thoracolumbar, and lumbosacral intervertebral disc disorders • ICD-10 code: M513 Dorsalgia • ICD-10 codes: M543, M544, M545, M548, M549 Dislocation and sprain of joints and ligaments of lumbar spine • ICD-10 codes: S335, S337
		 Age less than 16 years or greater than 120 years on the date of the index visit No valid health insurance number No Ontario residence Sex not recorded as male or female Missing date of birth

- Invalid admissions date/time, discharge date/time (in NACRS records)
- Scheduled visits to the emergency department (in NACRS records)
- Vacated the emergency department without being seen (in NACRS records)
- Admitted to hospital following a visit to the emergency department (in NACRS records)
- Prior low back pain visits (*defined above*) within the 5 years prior to the date of the index visit
- Red flags (*defined below*) that appeared within the 5 years prior to and including the date of the index visit or that appeared within the 90 days after the date of the index visit
- Deaths that occurred within the 90 days after the date of the index visit
- Congenital anomalies (defined below) (based on visit codes that occurred within the 5 years prior to and including the date of the index visit)
- Spinal surgery (*defined below*) within the 5 years prior to and including the date of the index visit
- Spinal imaging (x-ray, CT, MRI, bone scan) (defined below) within the 5 years prior to the date of the index visit
- Other spinal imaging (other tests on spine, EMG) (*defined below*) within the 5 years prior to and including the date of the index visit

Red Flags

Cancer/history of cancer

OHIP diagnosis codes: 140-239

Neurological problems

OHIP diagnosis codes: 320-359

Arthritis

• OHIP diagnosis codes: 714, 716, 720, 730

Vertebral compression fracture

OHIP diagnosis code: 733

Congenital Anomalies

Nervous system:

OHIP diagnosis codes: 740-742

Musculoskeletal system:

OHIP diagnosis codes: 754-756

Spinal Surgery

OHIP fee codes: E533, E534, E535, E536, E548, E549, E554, E562, E565, E566, E567, E568, E570, E573, E574, E897, E901, E909, E910, E913, E914, E915, E920, E924, E926, E928, E929, F103, F105, F107, M137, N126, N182, N185, N186, N192, N194, N195, N196, N197, N248, N313, N314, N317, N318, N319, N320, N321, N323, N324, N329, N330, N331, N332, N333, N334, N335, N336, N337, N338, N339, N340, N341, R234, R251, R252, R254, R264, R270, R271, R274, R275, R296, R303, R310, R336, R346, R348, R350, R356, R357, R358, R359, R361, R362, R368, R369, R370, R371, R373, R374, R397, R419, R447, R450, R451, R452, R455, R457, R459, R461, R464, R493, R494, R634, R635, R636, S312, Z215, Z219, Z226, Z228, Z236, Z241, Z244, Z662, Z800, Z810, Z817, Z823, Z868

Spinal Imaging

X-Ray

- OHIP fee codes: X028, X205, X206
- NACRS incodes: 3.SC.10.[^], 3.SC.12.[^], 3.SE.10.[^], 3.SE.12.[^], 3.SF.10.[^], 3.SF.12.[^]

CT

- OHIP fee codes: X415, X416, X128
- NACRS incodes: 3.SC.18.[^], 3.SC.20.[^], 3.SF.18.[^], 3.SF.20.[^]

MRI

- OHIP fee codes: X490, X492, X493, X495, X496, X498
- NACRS incodes: 3.SC.40.^{^^}, 3.SF.40.^{^^}

Bone Scan

OHIP fee codes: J619, J650, J651, J819, J850, J851

Other Spinal Imaging

Other tests on spine

OHIP fee codes: X057, X058, X080, X081, X164, J006, J030, X173, J011, J038, J020, Z454, G368, G386

EMG

 OHIP fee codes: G455, G456, G457, G458, G459, G465, G466, G467, G469

Numerator

Number of people in the denominator who had a diagnostic image (x-ray, CT, MRI, bone scan) of the spine within 90 days and 180 days of the date of the index visit

- By any scan (overall rate)
- By type of scan (x-ray, CT, MRI, bone scan)

Inclusions

Spinal imaging (x-ray, CT, MRI, bone scan) (defined above)

Data source: OHIP Claims Database, NACRS

		Method
		Numerator divided by the denominator times 100
		Data sources NACRS, OHIP Claims Database
	Limitations	In order to accurately capture people with acute low back pain, we were limited to capturing the first occurrence of low back pain only. Some of the people captured will eventually develop chronic low back pain.
		We have chosen to limit our look-back period to 5 years, so we may not necessarily be excluding everyone that has a history of low back pain that may reflect a chronic condition.
ATION		This indicator underestimates the number of people with low back pain because some people with low back pain do not seek physician care. Individuals seeking care through nurse practitioners, physiotherapists, chiropractors and other health care professionals are not captured in administrative data.
ADDITIONAL INFORMATION		Additionally, low back pain visits may not be captured in administrative data for patients who visit a primary care physician for multiple conditions during one visit, as only one diagnosis is captured in OHIP claims data. Therefore, the occurrence of low back pain-related visits should not be used as an estimate for the incidence of low back pain.
ADDITIC		Red flags were excluded from all indicators to the best of our ability, in order to attempt to capture only inappropriate diagnostic imaging for low back pain. However, some red flags identified in the Low Back Pain Quality Standard could not be excluded using administrative data. This may result in an overestimate of inappropriate diagnostic imaging.
		For some patients, spinal imaging following a low back pain visit may be for a condition other than low back pain.
		The overall rate for diagnostic imaging may not necessarily be equal to the combined rates for each type of diagnostic image (x-ray, CT, MRI, bone scan) as one individual may undergo multiple types of diagnostic images within the prescribed time period.

Abbreviations: CT: computed tomography, EMG: electromyography, ICD-10: 10th revision of the International Statistical Classification of Diseases and Related Health Problems, MRI: magnetic resonance imaging, NACRS: National Ambulatory Care Reporting System, OHIP: Ontario Health Insurance Plan

Table 2: Percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who are prescribed an opioid medication within 7 days and 90 days of the date of the index visit

	Indicator description	This indicator measures the percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who are prescribed an opioid medication.
		Directionality: A lower percentage is better.
N O	Measurability	Measurable at the provincial level
CRIPTI	Dimension of quality	Effective, Safe
GENERAL DESCRIPTION	Quality statement alignment	QUALITY STATEMENT 6: Pharmacological Therapies People with acute low back pain whose symptoms do not adequately improve with physical activity, education, reassurance, and self-management support are offered information on the risks and benefits of nonopioid analgesics to improve mobility and function.
		QUALITY STATEMENT 7: Additional Nonpharmacological Therapies People with acute low back pain whose symptoms do not adequately improve with physical activity, education, reassurance, and self-management support are offered information on the risks and benefits of additional nonpharmacological therapies to improve mobility and function.
DEFINITION & SOURCE INFORMATION	Calculation: General	Denominator Number of people (aged 16 years and older) who presented to a physician (OHIP Claims Database) or the emergency department (NACRS) for a first episode of acute low back pain Inclusions Any visit to a physician for low back pain Intervertebral disc disorders • OHIP diagnosis code: 722 Other and unspecified disorders of back • OHIP diagnosis code: 724 Sprains and strains of other and unspecified parts of back • OHIP diagnosis code: 847 Any visit to an emergency department for low back pain Thoracic, thoracolumbar, and lumbosacral intervertebral disc disorders • ICD-10 code: M513 Dorsalgia • ICD-10 codes: M543, M544, M545, M548, M549 Dislocation and sprain of joints and ligaments of lumbar spine • ICD-10 codes: S335, S337

Exclusions

- Age less than 16 years or greater than 120 years on the date of the index visit
- No valid health insurance number
- No Ontario residence
- Sex not recorded as male or female
- · Missing date of birth
- Invalid admissions date/time, discharge date/time (in NACRS records)
- Scheduled visits to the emergency department (in NACRS records)
- Vacated the emergency department without being seen (in NACRS records)
- Admitted to hospital following a visit to the emergency department (in NACRS records)
- Prior low back pain visits (defined above) within the 5 years prior to the date of the index visit
- Red flags (defined below) that appeared within the 5 years prior to and including the date of the index visit or that appeared within the 90 days after the date of the index visit
- Deaths that occurred within the 90 days after the date of the index visit
- Congenital anomalies (defined below) (based on visit codes that occurred within the 5 years prior to and including the date of the index visit)
- Spinal surgery (*defined below*) within the 5 years prior to and including the date of the index visit
- Palliative care claim (defined below) within the 365 days prior to the index date (including the date of the index visit) (to exclude people who may be receiving opioids as part of palliative care)
- Opioid prescription filled within the 180 days prior to the index date (to exclude people who have recently been prescribed an opioid)

Red Flags

Cancer/history of cancer

• OHIP diagnosis codes: 140-239

Neurological problems

• OHIP diagnosis codes: 320-359

Arthritis

OHIP diagnosis codes: 714, 716, 720, 730

Vertebral compression fracture

OHIP diagnosis code: 733

Congenital Anomalies

Nervous system:

• OHIP diagnosis codes: 740-742

Musculoskeletal system:

OHIP diagnosis codes: 754-756

Spinal Surgery

OHIP fee codes: E533, E534, E535, E536, E548, E549, E554, E562, E565, E566, E567, E568, E570, E573, E574, E897, E901, E909, E910, E913, E914, E915, E920, E924, E926, E928, E929, F103, F105, F107, M137, N126, N182, N185, N186, N192, N194, N195, N196, N197, N248, N313, N314, N317, N318, N319, N320, N321, N323, N324, N329, N330, N331, N332, N333, N334, N335, N336, N337, N338, N339, N340, N341, R234, R251, R252, R254, R264, R270, R271, R274, R275, R296, R303, R310, R336, R346, R348, R350, R356, R357, R358, R359, R361, R362, R368, R369, R370, R371, R373, R374, R397, R419, R447, R450, R451, R452, R455, R457, R459, R461, R464, R493, R494, R634, R635, R636, S312, Z215, Z219, Z226, Z228, Z236, Z241, Z244, Z662, Z800, Z810, Z817, Z823, Z868

Palliative Care Claims

OHIP fee codes:

A945, B966 (billed with B998/B996), B997, C882, C945, C982,
 G511, G512, K023, K700, W872, W882, W972, W982

CIHI-DAD:

ICD-9 code: V66.7ICD-10 code: Z51.5PATSERV = 58

• PRVSERV[1-8] or INSERV[1-20] = 00121

Numerator

Number of people in the denominator who had an opioid prescription dispensed within 7 days and 90 days of the date of the index visit

Exclusions

- Prescriptions filled for methadone maintenance therapy or buprenorphine/naloxone
- Prescriptions filled for cough
- Prescriptions filled for injectable cassettes
- · Prescriptions filled for medical assistance in dying
- Prescriptions filled for antidiarrheals

Data source: NMS

Method

Numerator divided by the denominator times 100

Data sources

NACRS, NMS, OHIP Claims Database

Limitations

In order to accurately capture people with acute low back pain, we were limited to capturing the first occurrence of low back pain only. Some of the people captured will eventually develop chronic low back pain.

We have chosen to limit our look-back period to 5 years, so we may not necessarily be excluding everyone that has a history of low back pain that may reflect a chronic condition.

This indicator underestimates the number of people with low back pain because some people with low back pain do not seek physician care. Individuals seeking care through nurse practitioners, physiotherapists, chiropractors and other health care professionals are not captured in administrative data.

Additionally, low back pain visits may not be captured in administrative data for patients who visit a primary care physician for multiple conditions during one visit, as only one diagnosis is captured in OHIP claims data. Therefore, the occurrence of low back pain-related visits should not be used as an estimate for the incidence of low back pain.

Red flags were excluded from all indicators to the best of our ability, in order to attempt to capture only inappropriate diagnostic imaging for low back pain. However, some red flags identified in the Low Back Pain Quality Standard could not be excluded using administrative data. This may result in an overestimate of inappropriate diagnostic imaging.

The percentage of people with low back pain who newly start on an opioid may be overestimated for those with acute low back pain, as people could be receiving an opioid prescribed for another condition. This overestimate is more pronounced for the longer follow-up period (90 days after the index date). Additionally, we may be underestimating the percentage of people with low back pain who newly start on an opioid, as we have excluded all people who filled an opioid prescription within 180 days prior to the index date. Some of those people may have filled an opioid prescription for reasons other than low back pain.

Abbreviations: ICD-10: 10th revision of the International Statistical Classification of Diseases and Related Health Problems, MAID: medical assistance in dying, NACRS: National Ambulatory Care Reporting System, NMS: Narcotics Monitoring System, OHIP: Ontario Health Insurance Plan

ADDITIONAL INFORMATION

Table 3: Percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who subsequently present to the emergency department for low back pain within 30 and 90 days of the date of the index visit

	Indicator description	This indicator measures the percentage of people (aged 16 years and older) who seek physician or emergency department care for a first episode of acute low back pain who subsequently present to the emergency department for low back pain. Directionality: A lower percentage is better.
	Measurability	Measurable at the provincial level
	Dimension of quality	Effective
GENERAL DESCRIPTION	Quality statement alignment	QUALITY STATEMENT 3: Patient Education and Self-Management People with acute low back pain are offered education and ongoing support for self-management that is tailored to their needs. QUALITY STATEMENT 4: Maintaining Usual Activity People with acute low back pain are encouraged to stay physically active by continuing to perform activities of daily living, with modification if required. QUALITY STATEMENT 5: Psychosocial Information and Support People with acute low back pain who have psychosocial barriers to recovery (yellow flags) identified during their comprehensive assessment are offered further information and support to manage the identified barriers. QUALITY STATEMENT 6: Pharmacological Therapies People with acute low back pain whose symptoms do not adequately improve with physical activity, education, reassurance, and self-management support are offered information on the risks and benefits of nonopioid analgesics to improve mobility and function. QUALITY STATEMENT 7: Additional Nonpharmacological Therapies People with acute low back pain whose symptoms do not adequately improve with physical activity, education, reassurance, and self-management support are offered information on the risks and benefits of additional nonpharmacological therapies to improve mobility and function.
DEFINITION & SOURCE INFORMATION	Calculation: General	Denominator Number of people (aged 16 years and older) who presented to a physician (OHIP Claims Database) or the emergency department (NACRS) for a first episode of acute low back pain

Inclusions

Any visit to a physician for low back pain

Intervertebral disc disorders

• OHIP diagnosis code: 722

Other and unspecified disorders of back

• OHIP diagnosis code: 724

Sprains and strains of other and unspecified parts of back

• OHIP diagnosis code: 847

Any visit to an emergency department for low back pain

Thoracic, thoracolumbar, and lumbosacral intervertebral disc disorders

ICD-10 code: M513

Dorsalgia

ICD-10 codes: M543, M544, M545, M548, M549

Dislocation and sprain of joints and ligaments of lumbar spine

• ICD-10 codes: S335, S337

Exclusions

- Age less than 16 years or greater than 120 years on the date of the index visit
- No valid health insurance number
- No Ontario residence
- Sex not recorded as male or female
- Missing date of birth
- Invalid admissions date/time, discharge date/time (in NACRS records)
- Scheduled visits to the emergency department (in NACRS records)
- Vacated the emergency department without being seen (in NACRS records)
- Admitted to hospital following a visit to the emergency department (in NACRS records)
- Prior low back pain visits (defined above) within the 5 years prior to the date of the index visit
- Red flags (defined below) that appeared within the 5 years prior to and including the date of the index visit or that appeared within the 90 days after the date of the index visit
- Deaths that occurred within the 90 days after the date of the index visit
- Congenital anomalies (defined below) (based on visit codes that occurred within the 5 years prior to and including the date of the index visit)
- Spinal surgery (*defined below*) within the 5 years prior to and including the date of the index visit

Red Flags

Cancer/history of cancer

OHIP diagnosis codes: 140-239

Neurological problems

OHIP diagnosis codes: 320-359

	T	
		Arthritis
		 OHIP diagnosis codes: 714, 716, 720, 730
		Vertebral compression fracture
		OHIP diagnosis code: 733
		Congenital Anomalies Nervous system: OHIP diagnosis codes: 740-742 Musculoskeletal system:
		OHIP diagnosis codes: 754-756
		a dim diagnosis souss. For Fos
		Spinal Surgery
		 OHIP fee codes: E533, E534, E535, E536, E548, E549, E554, E562, E565, E566, E567, E568, E570, E573, E574, E897, E901, E909, E910, E913, E914, E915, E920, E924, E926, E928, E929, F103, F105, F107, M137, N126, N182, N185, N186, N192, N194, N195, N196, N197, N248, N313, N314, N317, N318, N319, N320, N321, N323, N324, N329, N330, N331, N332, N333, N334, N335, N336, N337, N338, N339, N340, N341, R234, R251, R252, R254, R264, R270, R271, R274, R275, R296, R303, R310, R336, R346, R348, R350, R356, R357, R358, R359, R361, R362, R368, R369, R370, R371, R373, R374, R397, R419, R447, R450, R451, R452, R455, R457, R459, R461, R464, R493, R494, R634, R635, R636, S312, Z215, Z219, Z226, Z228, Z236, Z241, Z244, Z662, Z800, Z810, Z817, Z823, Z868
		Numerator Number of people in the denominator who presented to the emergency department for low back pain within 30 days and 90 days of the date of the index visit
		Inclusions Any visit to an emergency department for low back pain (defined above)
		Data source: NACRS
		Method
		Numerator divided by the denominator times 100
		<u> </u>
		Data sources
		NACRS, OHIP Claims Database
IONAL 1ATION	Limitations	In order to accurately capture people with acute low back pain, we were limited to capturing the first occurrence of low back pain only. Some of the people captured will eventually develop chronic low back pain.
ADDITIONAL INFORMATION		We have chosen to limit our look-back period to 5 years, so we may not necessarily be excluding everyone that has a history of low back pain that may reflect a chronic condition.

This indicator underestimates the number of people with low back pain because some people with low back pain do not seek physician care. Individuals seeking care through nurse practitioners, physiotherapists, chiropractors and other health care professionals are not captured in administrative data.

Additionally, low back pain visits may not be captured in administrative data for patients who visit a primary care physician for multiple conditions during one visit, as only one diagnosis is captured in OHIP claims data. Therefore, the occurrence of low back pain-related visits should not be used as an estimate for the incidence of low back pain.

Red flags were excluded from all indicators to the best of our ability, in order to attempt to capture only inappropriate diagnostic imaging for low back pain. However, some red flags identified in the Low Back Pain Quality Standard could not be excluded using administrative data. This may result in an overestimate of inappropriate diagnostic imaging.

In certain areas of the province where resourcing is reduced, patients rely on the emergency department for comprehensive care. Therefore, in these areas, the directionality suggested for this indicator (a lower percentage is better) may not necessarily reflect high quality care.

Abbreviations: ICD-10: 10th revision of the International Statistical Classification of Diseases and Related Health Problems, NACRS: National Ambulatory Care Reporting System, OHIP: Ontario Health Insurance Plan

5.4 How Success Can Be Measured Locally

You might want to assess the quality of care you provide to your patients with low back 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. In addition to the provincially measurable indicators, we recommend the following list of indicators, which cannot be measured provincially using currently available data:

- Percentage of people with acute low back pain who have surgeon or specialist consultations within 90 days of a low back pain diagnosis
- Percentage of people with acute low back pain who report an improvement in their quality of life
- Percentage of people with acute low back pain who rate their interaction with their health care professional as "definitely helping them feel better able to manage their low back pain" (response options: definitely; for the most part; somewhat; not at all)

Methodologic details are described in the tables below.

Table 4: Percentage of people with acute low back pain (aged 16 years and older) who have surgeon or specialist consultations within 90 days of a low back pain diagnosis

GENERAL DESCRIPTION	Indicator description	This indicator measures the percentage of people with acute low back pain (aged 16 years and older) who have surgeon or specialist consultations. Directionality: A lower percentage is better.
ESC	Indicator status	Developmental
ERAL D	Dimension of quality	Effective
GENI	Quality statement alignment	QUALITY STATEMENT 1: Clinical Assessment People with acute low back pain who seek primary care receive a prompt and comprehensive assessment.
	Calculation: General	Denominator Number of people (aged 16 years and older) with acute low back pain
DEFINITION & SOURCE INFORMATION		Red flags (defined below) that appeared prior to the diagnosis (including the date of the diagnosis) or that appeared within the 90 days after the diagnosis Red Flags Cancer/history of cancer Neurological problems Arthritis Vertebral compression fracture Numerator Number of people in the denominator who have a surgeon or specialist consultation within 90 days of a low back pain diagnosis Method Numerator/denominator × 100
ADDITIONAL	Data source Comments	In some cases of acute low back pain, surgeon or specialist consultation may be appropriate. In general, surgeon or specialist consultations early in an acute low back pain episode are unlikely to be helpful.

Table 5: Percentage of people with acute low back pain (aged 16 years and older) who report an improvement in their quality of life

	Indicator description	This indicator measures the percentage of people with acute low back pain (aged 16 years and older) who report an improvement in their quality of life.
		Directionality: A higher percentage is better.
	Indicator status	Developmental
	Dimension of quality	Patient-centred
	Quality statement alignment	QUALITY STATEMENT 3: Patient Education and Self-Management People with acute low back pain are offered education and ongoing support for self-management that is tailored to their needs.
GENERAL DESCRIPTION		QUALITY STATEMENT 4: Maintaining Usual Activity People with acute low back pain are encouraged to stay physically active by continuing to perform activities of daily living, with modification if required.
GENERAL D		QUALITY STATEMENT 5: Psychosocial Information and Support People with acute low back pain who have psychosocial barriers to recovery (yellow flags) identified during their comprehensive assessment are offered further information and support to manage the identified barriers.
		QUALITY STATEMENT 6: Pharmacological Therapies People with acute low back pain whose symptoms do not adequately improve with physical activity, education, reassurance, and self-management support are offered information on the risks and benefits of nonopioid analgesics to improve mobility and function.
		QUALITY STATEMENT 7: Additional Nonpharmacological Therapies People with acute low back pain whose symptoms do not adequately improve with physical activity, education, reassurance, and self-management support are offered information on the risks and benefits of additional nonpharmacological therapies to improve mobility and function.
OURCE	Calculation: General	Denominator Number of people (aged 16 years and older) with acute low back pain
DEFINITION & SOURCE INFORMATION		Numerator Number of people in the denominator who reported an improvement in their quality of life
DEF		Method Numerator/denominator × 100

	Data source	Local data collection.
		The EQ-5D 3L may be used where available. Link: https://euroqol.org/eq-5d-instruments/eq-5d-3l-about/
ADDITIONAL INFORMATION	Comments	The data for this indicator should be collected at regular intervals (e.g., every six weeks) to be able to assess changes in quality of life including improvement and declines The EQ-5D-3L is one of many possible tools available to collect this data.

Table 6: Percentage of people with acute low back pain who rate their interaction with their health care professional as "definitely helping them feel better able to manage their low back pain"

GENERAL DESCRIPTION	Indicator description	Name: This indicator measures the percentage of people with acute low back pain who rate their interaction with their health care professional as "definitely helping them feel better able to manage their low back pain". Directionality: A higher percentage is better.
DES	Indicator status	Developmental
NERAL	Dimension of quality	Patient-centred
GE	Quality statement alignment	All statements align
DEFINITION & SOURCE INFORMATION	Calculation: General	Denominator Number of people (aged 16 years and older) with acute low back pain Numerator Number of people in the denominator who answered "definitely" to the question: "When thinking about your interaction with your health care professional, how much better would you say that you feel in being able to manage your low back pain? • Definitely • For the most part • Somewhat • Not at all" Method Numerator/denominator × 100
	Data source	Local data collection.
ADDITIONAL INFORMATION	Comments	The data for this indicator can be collected at one point in time.

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
- The **data tables** provide data that can be used to examine variations in indicator results across the province

6.2 Questions?

Please contact <u>qualitystandards@hqontario.ca</u>. 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.

Health Quality Ontario 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

7 Appendix: Data Sources Referenced in This Quality Standard

Within this quality standard, there are several data sources used for provincial measurement. The data source(s) for each indicator are listed within the individual indicator specifications. More details on the specific data sources that Health Quality Ontario used to produce the indicators are noted below.

Discharge Abstract Database (DAD)

The DAD is a database of information abstracted from hospital records that captures administrative, clinical and patient demographic information on all hospital inpatient separations, including discharges, deaths, signouts and transfers. CIHI receives Ontario data directly from participating facilities or from their respective regional health authorities or the MOHLTC. The DAD includes patient-level data for acute care facilities in Ontario. Data are collected, maintained and validated by CIHI. The main data elements of the DAD are patient identifiers (e.g. name, health care number), administrative information, clinical information (e.g. diagnoses and procedures) and patient demographics (e.g. age, sex, geographic location).

National Ambulatory Care Reporting System (NACRS)

The NACRS contains data for all hospital-based and community-based emergency and ambulatory care, including day surgeries, outpatient clinics and emergency departments. Data are collected, maintained and validated by CIHI. CIHI receives Ontario data directly from participating facilities or from their respective regional health authorities or the MOHLTC. Data are collected, maintained and validated by CIHI. Data elements of the NACRS include patient identifiers (e.g. name, health care number), patient demographics (e.g. age, sex, geographic location), clinical information (e.g. diagnoses and procedures), and administrative information.

Narcotics Monitoring System (NMS)

The NMS collects dispensing data on opioids, controlled substances, and other monitored drugs from pharmacies and other dispensaries across Ontario. The information collected in the NMS includes prescriber identification, patient identification, pharmacy and pharmacist identification, date the drug was dispensed, drug identification number and the amount of drug dispensed. The NMS does not include information about monitored drugs dispensed to an in-patient of a public hospital or to prisoners or inmates (i.e., prescriptions written for people confined to correctional institutions, penitentiaries, prisons or youth custody facilities). The MOHLTC maintains the NMS, which began collecting data in April 2012.

Ontario Health Insurance Plan (OHIP) Claims Database

The OHIP claims database covers all reimbursement claims to the MOHLTC made by fee-for-service physicians, community-based laboratories and radiology facilities. The OHIP database at ICES contains encrypted patient and physician identifiers, codes for services provided, date of service, the associated diagnosis and fee paid. Services which are missing from the OHIP data include: some lab services; services received in provincial psychiatric hospitals; services provided by health service organizations and other alternate providers; diagnostic procedures performed on an inpatient basis and lab services performed at hospitals (both inpatient and same day). Also excluded is remuneration to physicians through alternate funding plans (AFPs), which could distort analyses because of their concentration in certain specialties or geographic areas.

8 References

- (1) National Institute for Health and Care Excellence. Low back pain and sciatica in over 16s: assessment and management [Internet]. London (UK): The Institute; 2016 [cited 2017 Oct]. Available from: https://www.nice.org.uk/guidance/ng59/resources/low-back-pain-and-sciatica-in-over-16s-assessment-and-management-pdf-1837521693637
- (2) Maher C, Underwood M, Buchbinder R. Non-specific low back pain. Lancet. 2017;389(10070):736-47.
- (3) Toward Optimized Practice. Evidence-informed primary care management of low back pain. Clinical practice guideline [Internet]. Edmonton (AB): Institute for Health Economics; 2015 [cited 2017 May]. Available from: http://www.topalbertadoctors.org/download/1885/LBPguideline.pdf? 20170428143409
- (4) Canadian Institute for Health Information. *Unnecessary Care in Canada: Technical Report*. Ottawa, ON. CIHI; 2017.
- (5) Iron K, Jaakkimainen L, Rothwell DM, Ping L, Laupacis A. Investigation of acute lower back pain in Ontario: Are guidelines being followed? ICES, Toronto, Ontario, 2004.
- (6) Centre for Effective Practice. Clinically Organized Relevant Exam (CORE) back tool [Internet]. Toronto (ON): The Centre; 2016 [cited 2017 Aug 31]. Available from: https://www.thewellhealth.ca/wp-content/uploads/2016/04/CEP CoreBackTool 2016-1.pdf

Health Quality Ontario

130 Bloor Street West, 10th Floor Toronto, Ontario M5S 1N5

Tel: 416-323-6868

Toll Free: 1-866-623-6868

Fax: 416-323-9261

Email: QualityStandards@hqontario.ca

Website: www.hqontario.ca

ISBN 978-1-4868-2881-4 (PDF)

© Queen's Printer for Ontario, 2019