

Quality-Based Pathway Clinical Handbook for Non-Emergent Integrated Spine Care

Ministry of Health and Long-Term Care

Version: February 22, 2016

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List of Abbreviations

ADL	Activities of Daily Living
CACS	Comprehensive Ambulatory Care Classification System
CBT	Cognitive Behavioural Therapy
CCI	Canadian Classification of Health Interventions
CES	Clauda Equina Syndrome
CIHI	Canadian Institute of Health Information
CORE	Clinically Organized Relevant Exam
DAD	Discharge Abstract Database
ECFAA	Excellent Care for All Act
EMR	Electronic Medical Record
Expert Panel	Non-Emergent Integrated Spine Care Clinical Advisory Expert Panel
FSCO	Financial Services Commission of Ontario
HBAM	Health-Based Allocation Model
HIG	HBAM Inpatient Grouper
HSFR	Health System Funding Reform
ICD-10-CA	International Classification of Diseases, 10th Revision (Canadian Edition)
ISAEC	Inter-professional Spine Assessment and Education Clinic
LBP	Low Back Pain
LOS	Length of Stay
MRDx	Most Responsible Diagnosis
NACRS	National Ambulatory Care Reporting System
NAD	Neck Pain and its Associated Disorders
OCCI	Ontario Case Costing Initiative
OCDM	Ontario Cost Distribution Model
OHIP	Ontario Health Insurance Plan
PCP	Primary Care Practitioner
PNO	Provincial Neurosurgery Ontario
QBP	Quality Based Pathway
RIW	Resource Intensity Weight

Quality-Based Pathway Clinical Handbook: Non-Emergent Integrated Spine Care

1.0 Purpose

This Clinical Handbook has been created to serve as a compendium of the evidence-based rationale and clinical consensus driving the development of the policy framework and implementation approach for the care of non-emergent spine disorders. Best practice evidence and expert consensus guided the development of the recommendations made by the expert panel. This QBP is intended for patients with neck or low back pain and related symptoms for common degenerative conditions of the spine and does not include cancer, trauma, or emergent spine care.

This document has been prepared for informational purposes only.

This document does not mandate health care providers to provide services in accordance with the recommendations included herein. The recommendations included in this document are not intended to take the place of the professional skill and judgment of health care providers.

2.0 Introduction

The Ministry of Health and Long-Term Care (Ministry) established Health System Funding Reform (HSFR) in Ontario in 2012 with a goal to develop and implement a strategic funding system that promotes the delivery of quality health care services across the continuum of care, and is driven by evidence and efficiency. HSFR is based on the key principles of quality, sustainability, access, and integration, and aligns with the four core principles of the **Excellent Care for All Act** (ECFAA):

- Care is organized around the person to support their health;
- Quality and its continuous improvement is a critical goal across the health system;
- Quality of care is supported by the best evidence and standards of care; and
- Payment, policy, and planning support quality and efficient use of resources.

Since its inception in April 2012, the Ministry has shifted much of Ontario's health care system funding away from the current global funding allocation (currently representing a large portion of funding) towards a funding model that is founded on payments for health care based on best clinical evidence-informed practices.

Principles of ECFAA have been further reinforced first by Ontario's Action Plan for Healthcare in January 2012, and recently with Patients First: Action Plan for Healthcare in February 2015, which signals positive transformational activity which will require adaptive responses across sectors and organizational levels at a time of accelerated change. The Ministry's commitment is to make Ontario the best healthcare system in the world.

The 2012 Action Plan identified HSFR as a lever to advance quality and ensure that the right care gets provided at the right place and at the right time. HSFR focuses on delivering better quality care and maintaining the sustainability of Ontario's universal public health care system. Ontario is shifting the focus of its health care system away from one that has primarily been health care provider-focused, to one that is patient-centred. The 2015 Action Plan continues to put patients at the heart of the health care system by being more transparent and more accountable to provide health care in a way that maximizes both quality and value.

HSFR comprises of 2 key components:

1. Organizational-level funding, which will be allocated as base funding using the Health-Based Allocation Model (HBAM); and
2. Quality-Based Pathway (QBP) funding, which will be allocated for targeted activities based on a "(price x volume) + quality" approach premised on evidence-based practices and clinical and administrative data.

2.1 'Money follows the patient'

Prior to the introduction of HSFR, a significant proportion of hospital funding was allocated through a global funding approach, with specific funding for select provincial programs, wait times services and other targeted activities. However, a global funding approach may not account for complexity of patients, service levels and

costs, and may reduce incentives to adopt clinical best practices that result in improved patient outcomes in a cost-effective manner. These variations in patient care evident in the global funding approach warranted the move towards a system where 'money follows the patient'.

Under HSFR, provider funding is based on: the types and quantities of patients providers treat, the services they deliver, the quality of care delivered, and patient experience/outcomes. Specifically, QBPs encourage health care providers to become more efficient and effective in their patient management by accepting and adopting clinical best practices that ensure Ontarians get the right care, at the right time and in the right place.

QBPs were initially implemented in the acute care sector, but as implementation evolves, they are being expanded across the continuum of care, including into the community home care sector, in order to address the varying needs of different patient populations.

Internationally, similar models have been implemented since 1983. Although Ontario is one of the last leading jurisdictions to move down this path, this positions the province uniquely to learn from international best practices and pitfalls, in order to create a sustainable, efficient and effective funding model that is best suited for the province and the people of Ontario.

2.2 What are Quality-Based Pathways?

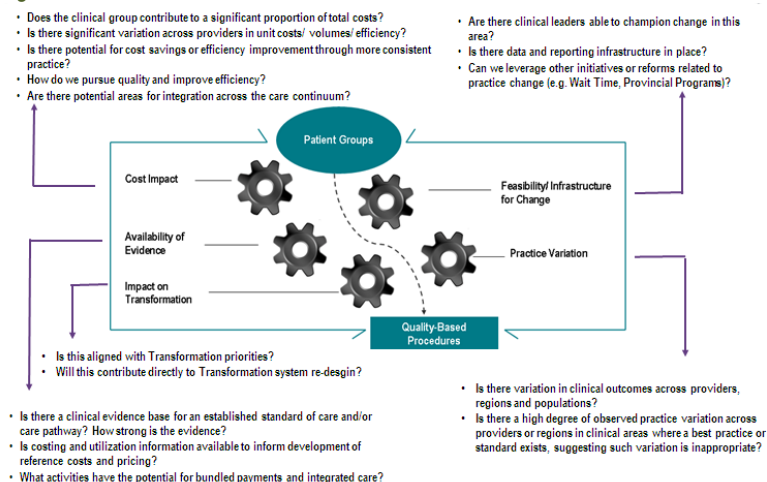
QBPs are clusters of patients with clinically related diagnoses or treatments that have been identified using an evidence-based framework as providing opportunity for process improvements, clinical re-design, improved patient outcomes, enhanced patient experience, and potential health system cost savings.

Initially developed in the acute (hospital) sector, QBPs were defined as “procedures.” However, as implementation evolved since the introduction of QBPs in 2012, so too has the approach. Currently, the expanded focus is on care provided in other parts of the health care sector with a focus on a more functional/programmatic/population-based approach. As a result, the definition of QBPs is expanding to include Quality-Based Pathways, Programs and Populations.

QBPs have been selected using an evidence-based framework. The framework uses data from various sources such as, but not limited to: the Discharge Abstract Database (DAD) and National Ambulatory Care Reporting System (NACRS) adapted by the ministry for its HBAM repository. The HBAM Inpatient Groupers (HIG) groups inpatients based on the diagnosis or treatment responsible for the majority of their patient stay. Additional data has been used from the Ontario Case Costing Initiative (OCCI), and Ontario Cost Distribution Methodology (OCDM). Evidence published in literature from Canada and international jurisdictions, as well as World Health Organization reports, have also assisted with the definition of patient clusters and the assessment of potential opportunities (e.g. reducing variation, improving patient outcomes, sustainability).

The evidence-based framework assesses patients using five perspectives, as presented in Figure 1. It is this evidence-based framework that has identified QBPs with the potential to improve quality of care, standardize care delivery across the province and show increased cost efficiency.

Figure 1: Evidence-Based Framework



2.2.1 Practice Variation

Practice variation is the cornerstone of the QBP evidence-based framework. A demonstrated large practice or outcome variance across providers or regions in clinical areas, where a best practice or standard exists, represents a significant opportunity to improve patient outcomes through focusing on the delivery of standardized, evidence-informed practices. A large number of 'Beyond Expected Length of Stay' and a large standard deviation for length of stay and costs were flags to such variation.

2.2.2 Availability of Evidence

A significant amount of research has been conducted and collected, both nationally and internationally, to help develop and guide clinical practice. Working with clinical experts, best practice guidelines and clinical pathways can be developed for QBPs and establish appropriate evidence-informed indicators. These indicators can be used to measure the quality of care and help identify areas for improvement at the provider level, and to monitor and evaluate the impact of QBP implementation.

2.2.3 Feasibility/ Infrastructure for Change

Clinical leaders play an integral role in this process. Their knowledge of the identified patient populations, and the care currently provided and/or required for these patients, represents an invaluable element in the assessment of much needed clinical delivery and clinical process improvements. Many groups of clinicians have already developed care pathways to create evidence-informed practice. There is now an opportunity for this knowledge to be transferred provincially.

2.2.4 Cost Impact

The provincial footprint from a financial perspective also impacts the selection of the QBP. This may include QBPs that are high volume and low-cost, as well as those that are low-volume and high costs (i.e. specialized procedures that demonstrate opportunity for improvement).

A selected QBP should have, as a guide, no less than 1,000 cases per year in Ontario and represent at least one percent of the provincial direct cost budget. For patient cohorts that fall below these thresholds, the resource requirements to implement a QBP can be restrictive. Even where the patient cohorts represent an opportunity for improvement, it may not be feasible, even if there are some cost efficiencies, to create a QBP.

2.2.5 Impact on Transformation

The **Action Plan for Health Care** was launched in January 2012 and is already making a difference to Ontarians and our health care system:

- We've bent the cost curve since 2011/12
- We're improving the health of Ontarians
- We're enhancing the experience of Ontarians when they use the health system
- We're working with our health sector partners to improve the quality of health care

The next phase of Transformation will build on and deepen implementation of the Action Plan. HSFR is a key element of the Health System Transformation Agenda by ensuring sustainability and quality.

Selected QBPs should, where possible, align with the government's transformational priorities. In addition, the impact on transformation of certain patient populations hitherto not prioritized by the framework can be included as QBPs. This will ensure that QBPs are wide ranging in their scope e.g. paediatric patient populations or patients requiring community care. QBPs with a lesser cost impact but a large impact on the provincial health care system may still be a high priority for creation and implementation.

2.3 How will QBPs encourage the delivery of high quality, evidence-based care and innovation in health care delivery?

The QBP methodology is driven by clinical evidence and best practice recommendations from the Clinical Expert Advisory Groups (Expert Panels). Expert Panels are comprised of cross-sectoral, multi-geographic and multi-disciplinary membership, including representation from patients. Members leverage their clinical experience and knowledge to define the patient populations and recommend best practices.

Once defined, these best practice recommendations are used to understand required resource utilization for QBPs and will further assist in the development of evidence-informed prices. The development of evidence-informed pricing for the QBPs is intended to encourage health care providers to adopt best practices in their care delivery models, maximize their efficiency and effectiveness, and engage in process improvements and/or clinical re-design to improve patient outcomes.

Best practice development for QBPs is intended to promote standardization of care by reducing inappropriate or unexplained variation and ensuring that patients get the right care, at the right place and at the right time. Best practice standards will encourage health service providers to ensure that appropriate resources are focused on the most clinically and cost-effective approaches.

QBP's create opportunities for health system transformation where evidence-informed prices can be used as a financial lever to encourage providers to:

- Adopt best practice standards;
- Re-engineer their clinical processes to improve patient outcomes;
- Improve coding and costing practices; and
- Develop innovative care delivery models to enhance the experience of patients.

An integral part of the enhanced focus on quality patient care is the development of indicators to allow for the evaluation and monitoring of actual practice and support on-going quality improvement.

In addition, the introduction of additional QBP's such as outpatient and community-based QBP's will further help integrate care across sectors and encourage evidence-based care across the continuum.

3.0 Description of Non-Emergent Integrated Spine Care QBP

3.1 Description of Spine Symptoms

Spinal pain is the most common spine symptom that can occur at any point of the spine and present with a range of associated or independent symptoms including muscle tension or stiffness, or symptoms in the upper or lower extremity often described as a 'burning', 'tingling', 'numbing' sensation, and/or weakness. Low back pain (LBP) occurs in the lumbar region of the spine, whereas neck pain occurs in the cervical region of the spine. The annual prevalence of activity-limiting LBP is estimated at 38% and most (50–80%) adults will experience LBP in their lifetime.¹ The exact source of axial neck and low back symptoms is often not apparent. In most patients, no specific cause of the pain can be identified.²

The high prevalence of chronic but non-urgent neck and low back symptoms places significant burden on patients and on the health system.³ It is the primary cause of years lived with disability⁴ with 25% of patients responsible for 75% of direct health care costs associated with neck and low back symptoms.^{5 6 7} Most visits for neck and low back symptoms are to primary care practitioners (PCPs).^{8 9 10} These conditions are also the most common reason for referrals to orthopaedic surgeons and neurosurgeons.^{8 11 12}

3.2 Current Management Approach

Current care paradigms are suboptimal due to a 'one-size fits all' approach to manage patients with neck and low back symptoms.¹³ By way of contrast, best approaches to care and treatment for neck and low back symptoms are patient dependent and range from simple education to complex interdisciplinary care.^{14 15} Because no one provider can optimally manage all aspects of spine care, an interdisciplinary shared care approach is required.

For majority of neck and low back patients, symptoms can be improved by self-managing pain symptoms, and by keeping active and working in a temporarily modified manner.^{16 17 18} In many patients, recurrence within 12 months is not uncommon.¹⁹ Current models of care are ineffective in managing these patients given the episodic and fragmented nature of care provided as well as focus on biological aspects of pain with little or no attention given to psychosocial and chronic components.²⁰ Consequently, messaging is inconsistent with respect to the nature of pain. System wide there is a need to change messaging to convey that neck and low back pain is a common condition that is manageable, largely incurable, and likely to recur, i.e. this is a chronic condition for majority.

For patients who require specialist care, there is wide variation in access and timeliness for referral to specialists and follow-up care if indicated. Patients depend on their PCPs to appropriately refer and coordinate their care needs. Management options can include observation, self-management strategies, unsupervised or supervised exercise or therapy, referral to multidisciplinary rehabilitation programs, surgery and/or other specialist care. An integrated approach is needed to best use the skills and knowledge of a range of health professionals who jointly share responsibility to manage the patient's care.

To improve care and ensure patients with neck and low back symptoms in Ontario are being managed appropriately using an interdisciplinary approach, the Ministry has taken the leadership through its Low Back Pain Strategy (LBP Strategy) by:

- Developing education tools to enhance the knowledge of providers and patients and to give them access to approaches and tools that support high quality care for patients with low back complaints: http://health.gov.on.ca/en/pro/programs/ecfa/action/primary/lb_edutools.aspx
- Launching the Inter-professional Spine Assessment and Education Clinics (ISAEC) pilot to improve quality of care and timely access to appropriate interdisciplinary and specialist low back pain care for appropriate patients: <http://www.isaec.org>
- Amending Schedule of Benefits to improve appropriateness of diagnostic referrals for LBP: http://health.gov.on.ca/en/pro/programs/ecfa/action/primary/lb_sob.aspx

The next step is to create a QBP that integrates this work across the entire continuum of care, extending from primary care and patient self-management to specialist care, spine surgery, and outpatient and inpatient rehabilitation, when indicated.

This QBP builds on the Ontario LBP Strategy to create an integrated Non-Emergent Spine Care Pathway that outlines processes of care and system redesign opportunities to improve outcomes in patients with spine complaints in Ontario and to achieve value for money spent.

The QBP is built on the following key considerations:

- Engaging patients as active partners in managing their care to prevent them from developing persistent and chronic spine problems.
- Developing an interdisciplinary model that uses shared care approaches to provide effective assessment, appropriate access, and patient-centered spine management.

3.3 QBP Patient Groups

This QBP is intended for patients with neck or low back pain and related symptoms for common degenerative conditions of the spine.

3.3.1 Non-surgical patient group

The non-emergent integrated spine care clinical pathway outlined in [Section 4.1](#) offers share-cared best-practices for providers across the entire continuum of care to support management of patients who experience non-emergent persistent (episode is \leq 12 months) or recurrent spine symptoms.

3.3.2 Patient groups having spine surgery

The funded portion of this QBP focuses only on inpatient and day surgery spine surgery procedures performed in hospitals for common degenerative conditions of the spine.

There are robust data sources (DAD and NACRS) that capture delivery of inpatient and day surgery spine surgery in hospitals and support measurement and monitoring of QBP performance indicators. Therefore, the Expert Panel has defined patient groups undergoing inpatient and day surgery spine surgery for inclusion in the QBP. The Expert Panel reviewed various types of patients with degenerative spine disorders who require spine surgery and their characteristics.

This section outlines the included degenerative spine disorder patient groups for spine surgery care.

Group A1: Non-instrumented spine day surgery

1. Lumbar Discectomy

This QBP procedure includes surgery with:

- Intervention attribute location either at: Lumbar, Lumbosacral.
- Day surgery: 1 Level, 2 Levels

2. Lumbar Laminectomy

This QBP procedure includes surgery with:

- Intervention attribute location either at: Lumbar, Lumbosacral,
- Day surgery: 1 Level, 2 Levels
- Includes unilateral or bilateral Laminotomy or non-instrumented Laminoplasty spine surgery

Group A2: Non-instrumented spine inpatient surgery

3. Lumbar Discectomy

This QBP procedure includes surgery with:

- Intervention attribute location either at: Lumbar, Lumbosacral.
- Inpatient surgery: >2 Levels or medical co-morbidities or other circumstances that prevent day surgery consideration for 1-2 Levels.

4. Lumbar Laminectomy

This QBP procedure includes surgery with:

- Intervention attribute location either at: Lumbar, Lumbosacral,
- Inpatient surgery: >2 Levels or medical co-morbidities or other circumstances that prevent day surgery consideration for 1-2 Levels.
- Includes unilateral or bilateral Laminotomy or non-instrumented Laminoplasty spine surgery

5. Cervical Laminectomy Surgery

This QBP procedure includes surgery with:

- Intervention attribute location either at: Cervical, or Cervicothoracic
- Inpatient surgery: 1 or more levels
- Includes unilateral or bilateral Laminotomy or uninstrumented Laminoplasty spine surgery

Group B: Instrumented spine inpatient surgery

6. Anterior Cervical Discectomy and Fusion Surgery

This QBP procedure includes surgery with:

- Intervention attribute location either at: Cervical, or Cervicothoracic
- Inpatient surgery: 1 or more Levels
- Includes Laminotomy with instrumentation or instrumented Laminoplasty spine surgery

7. Anterior Cervical Vertebrectomy and Fusion Surgery

This QBP procedure includes surgery with:

- Intervention attribute location either at: Cervical, or Cervicothoracic
- Inpatient surgery: 1 or more Levels

8. Cervical Posterior Decompression and Fusion Surgery

This QBP procedure includes surgery with:

- Intervention attribute location either at: Cervical, or Cervicothoracic (Laminectomy alone not recommended at the cervicothoracic junction)
- Inpatient surgery: 1 or more Levels
- Includes Laminectomy/Laminotomy with instrumentation or instrumented Laminoplasty spine surgery

9. Lumbar Decompression and Fusion Surgery

This QBP procedure includes surgery with:

- Intervention attribute location either at: Lumbar, Lumbosacral, Thoracolumbar
- Inpatient surgery: 1 or more Levels
- Includes Laminectomy/Laminotomy with instrumentation or instrumented Laminoplasty spine surgery

The following table illustrates the included (✓) patient care groups described above.

SPINE SURGERY PROCEDURE	DAY SURGERY	INPATIENT
Lumbar Discectomy	Group A ₁ : Non-Instrumented ✓	Group A ₂ : Non-Instrumented ✓
Lumbar Laminectomy	✓	✓
Cervical Laminectomy	X	✓
Anterior Cervical Discectomy and Fusion	X	Group B: Instrumented ✓
Anterior Cervical Vertebrectomy and Fusion	X	✓
Cervical Posterior Decompression and Fusion	X	✓
Lumbar Decompression and Fusion	X	✓

3.4 Inclusion and Exclusion Criteria: Spine Surgery

This section defines the inclusion and exclusion criteria for the hospital-funded portion of the QBP related to inpatient and day surgery spine procedures for Ontario patients with neck or low back pain and related symptoms for common degenerative conditions of the spine.

3.4.1 Inclusion Criteria

All adult acute elective inpatient discharges (cases recorded in CIHI Discharge Abstract Database) and day surgery encounters (cases recorded in CIHI National Ambulatory Care Reporting System) are subject to:

1) General Inclusion Criteria:

- Adults 18 years and older
- The health card issuing province is Ontario i.e., Province issuing hcn= "ON"
- Ontario is responsible for payment i.e., Responsibility for payment= "01"
- Elective inpatient admissions (admission category 'L') and outpatient day surgeries (patient category 'DS')

2) AND Case Mix Groups:

Includes spine cases from inpatient case mix groups (HIGs):

- **HIG 7: Thoracic/Major Intervention on Spine/Spinal Canal/Vertebra**
- **HIG 8: Other Site/Non-Major Intervention on Spine/Spinal Canal/Vertebra**
- **HIG 312: C1/C2/Thoracic Spine Intervention**
- **HIG 313: Spinal Vertebrae Intervention**
- **HIG 314: Other Intervention on Back/Neck**

Includes spine cases from outpatient case mix groups (CACS):

- **C003: Spinal Vertebrae/Intervertebral Disc Intervention**
- **C007: Spinal Canal/Cord Intervention**

3) AND Most Responsible Diagnosis (MRDx):

The QBP focuses on common degenerative conditions of the spine and includes spine cases with the following most responsible diagnosis codes recorded in the abstract:

- **M43: Other deforming dorsopathies**
- **M47: Spondylosis**
- **M48: Other spondylopathies (EXCEPT FOR: Traumatic spondylopathy [M48.3]; Fatigue fracture of vertebrae [M48.4]; Collapsed vertebrae, not elsewhere classified [M48.5]; Malunion, stress or pathological fracture, other site [M84.^8])**
- **M50: Cervical disc disorders**
- **M51: Other intervertebral disc disorders**
- **M53: Other dorsopathies, not elsewhere classified**
- **M54: Dorsalgia**

4) AND Elective Spine Surgery Procedures for Degenerative Spine Disease:

The QBP focuses on common degenerative conditions of the spine. It includes:

- 1) Spine cases with the following spine procedure codes in Table 1 are recorded as a main procedure in the abstract
- 2) We have also included spine cases when 1.AW.72 [Release, spinal cord open approach with extradural incision (e.g. for decompression) with device NEC] is coded as the main procedure and the following spine procedures in Table 1 are coded at any occurrence in the abstract.

Table 1: Description of included elective spine surgery QBP procedures

Group	Spine Surgery Procedure	Procedure Type	Intervention Location	Main Procedure CCI Code	Considerations Identified by Expert Panel
Group A1: Non-Instrumented Day Surgery	1. Lumbar Discectomy Surgery	Day Surgery (NACRS) 1 Level, 2 Levels	Intervention attribute location either at: <ul style="list-style-type: none"> Lumbar Lumbosacral 	<p>Cases where the main procedure is:</p> <ul style="list-style-type: none"> 1.SE.87.^ (Excision partial, intervertebral disc) or 1.SE.89.^ (Excision total, intervertebral disc) <p>Cases with 1.AW.72 as the main procedure when the following procedures are also coded in the abstract:</p> <ul style="list-style-type: none"> 1.SE.87.^ (Excision partial, intervertebral disc) or 1.SE.89.^ (Excision total, intervertebral disc) 	Procedure code 1.SE.89.^ has been discontinued in 2015/16. It has remained in the definition for historical comparative purposes.

Group	Spine Surgery Procedure	Procedure Type	Intervention Location	Main Procedure CCI Code	Considerations Identified by Expert Panel
	2. Lumbar Laminectomy Surgery (includes unilateral or bilateral laminotomy or non-instrumented laminoplasty)	Day Surgery (NACRS) 1 Level, 2 Levels	Intervention attribute location either at: <ul style="list-style-type: none"> Lumbar Lumbosacral 	Cases where the main procedure is: <ul style="list-style-type: none"> 1.SC.80.^^(Repair, spinal vertebrae) Cases with 1.AW.72 as the main procedure when the following procedures are also coded in the abstract: <ul style="list-style-type: none"> 1.SC.80.^^(Repair, spinal vertebrae) 	
Group A₂: Non-Instrumented Inpatient Surgery	3. Lumbar Discectomy Surgery	Inpatient Surgery (DAD) >2 Levels	Intervention attribute location either at: <ul style="list-style-type: none"> Lumbar Lumbosacral 	Cases where the main procedure is: <ul style="list-style-type: none"> 1.SE.87.^^(Excision partial, intervertebral disc) or 1.SE.89.^^(Excision total, intervertebral disc) Cases with 1.AW.72 as the main procedure when the following procedures are also coded in the abstract: <ul style="list-style-type: none"> 1.SE.87.^^(Excision partial, intervertebral disc) or 1.SE.89.^^(Excision total, intervertebral disc) 	Procedure code 1.SE.89.^^(Excision total, intervertebral disc) has been discontinued in 2015/16. It has remained in the definition for historical comparative purposes.

Group	Spine Surgery Procedure	Procedure Type	Intervention Location	Main Procedure CCI Code	Considerations Identified by Expert Panel
	4. Lumbar Laminectomy Surgery (includes unilateral or bilateral laminotomy or non-instrumented laminoplasty)	Inpatient Surgery (DAD) 1 or more Levels	Intervention attribute location either at: <ul style="list-style-type: none"> Lumbar Lumbosacral 	Cases where the main procedure is: <ul style="list-style-type: none"> 1.SC.80.^^(Repair, spinal vertebrae) Cases with 1.AW.72 as the main procedure when the following procedures are also coded in the abstract: <ul style="list-style-type: none"> 1.SC.80.^^(Repair, spinal vertebrae) 	
	5. Cervical Laminectomy Surgery (includes unilateral or bilateral laminotomy or uninstrumented laminoplasty)	Inpatient Surgery (DAD) 1 or more Levels	Intervention attribute location either at: <ul style="list-style-type: none"> Cervical Cervicothoracic 	1.SC.80.^^(Repair, spinal vertebrae)	93% of all cervical laminectomies in Ontario are performed as inpatient procedures.

Group	Spine Surgery Procedure	Procedure Type	Intervention Location	Main Procedure CCI Code	Considerations Identified by Expert Panel
Group B: Instrumented Inpatient Surgery	6. Anterior Cervical Discectomy and Fusion Surgery (includes Laminotomy with instrumentation or instrumented Laminoplasty)	Inpatient Surgery (DAD) 1 or more Levels	Intervention attribute location either at: <ul style="list-style-type: none"> • Cervical • Cervicothoracic 	<p>Cases where the main procedure is:</p> <ul style="list-style-type: none"> • 1.SC.74.LL.^ (Fixation, spinal vertebrae, open anterior approach) or • 1.SC.75.LL.^ (Fusion spinal vertebrae, open anterior approach) <p>Cases with 1.AW.72 as the main procedure when the following procedures are also coded in the abstract:</p> <ul style="list-style-type: none"> • 1.SC.74.LL.^ (Fixation, spinal vertebrae, open anterior approach) or • 1.SC.75.LL.^ (Fusion spinal vertebrae, open anterior approach) 	<p>93% of all anterior cervical discectomy and fusion surgeries in Ontario are performed as inpatient procedures.</p> <p>Implantation of internal device, intervertebral disc, open anterior approach [1.SE.53.LL.^] may increase in the future.</p>
	7. Anterior Cervical Vertebrectomy and Fusion Surgery	Inpatient Surgery (DAD) 1 or more Levels	Intervention attribute location either at: <ul style="list-style-type: none"> • Cervical • Cervicothoracic 	1.SC.89.LL.^ (Excision total, spinal vertebrae, open anterior approach)	

Group	Spine Surgery Procedure	Procedure Type	Intervention Location	Main Procedure CCI Code	Considerations Identified by Expert Panel
	8. Cervical Posterior Decompression and Fusion Surgery (includes Laminectomy /Laminotomy with instrumentation or instrumented Laminoplasty)	Inpatient Surgery (DAD) 1 or more Levels	Intervention attribute location either at: <ul style="list-style-type: none"> Cervical Cervicothoracic 	Cases where the main procedure is: <ul style="list-style-type: none"> 1.SC.74.PF.^A (Fixation, spinal vertebrae, open posterior approach) or 1.SC.75.PF.^A (Fusion spinal vertebrae, open posterior approach) Cases with 1.AW.72 as the main procedure when the following procedures are also coded in the abstract: <ul style="list-style-type: none"> 1.SC.74.PF.^A (Fixation, spinal vertebrae, open posterior approach) or 1.SC.75.PF.^A (Fusion spinal vertebrae, open posterior approach) 	98% of cervical posterior decompression and fusion surgeries in Ontario are performed as inpatient procedures.
	9. Lumbar Decompression and Fusion Surgery (includes Laminectomy/Laminotomy with instrumentation or instrumented Laminoplasty)	Inpatient Surgery (DAD) 1 or more Levels	Intervention attribute location either at: <ul style="list-style-type: none"> Lumbar Lumbosacral Thoracolumbar 	Cases where the main procedure is: <ul style="list-style-type: none"> 1.SC.74.^A (Fixation, spinal vertebrae) or 1.SC.75.^A (Fusion spinal vertebrae) Cases with 1.AW.72 as the main procedure when the following procedures are also coded in the abstract: <ul style="list-style-type: none"> 1.SC.74.^A (Fixation, spinal vertebrae) or 1.SC.75.^A (Fusion spinal vertebrae) 	99% of procedures lumbar decompression and fusion surgeries in Ontario are performed as inpatient procedures.

Note to physicians: Bilateral canal enlargement procedure is defined in CIHI as decompression of spinal cord. CIHI captures this procedure under CCI code 1.SC.80^A and is included in Groups A₁ and A₂ above. CIHI coding requirements are used to describe QBP cases.

3.4.2 Exclusion Criteria:

General Exclusions:

- Emergent/urgent spinal admission
- Paediatric cases (patients under 18 years of age) and procedures performed in children's hospitals

The QBP funded portion focuses only on common inpatient and day surgery spine surgery procedures performed in hospitals for degenerative conditions of the spine. Therefore, the QBP does not include:

Cancer tumours (e.g. cancers and benign tumours of the neck and back) as Most Responsible Diagnosis (MRDx) C or D diagnosis codes (C00 to D48)

Trauma cases as Most Responsible Diagnosis (MRDx) S diagnosis codes

Infection cases as Most Responsible Diagnosis (MRDx) codes:

- **G06.1: Intraspinal abscess and granuloma**
- **M86.08: Acute haematogenous osteomyelitis, other site**
- **T81.4: Infection following a procedure, not elsewhere classified**
- **T84.23: Pain due to internal orthopedic prosthetic devices, implants and grafts**
- **T84.58: Infection and inflammatory reaction due to other joint prosthesis**
- **T84.68: Infection and inflammatory reaction due to internal fixation device of bones at other site**
- **T85.7: Infection and inflammatory reaction due to other internal prosthetic devices, implants and grafts**

Unrelated spinal diagnosis and spinal fractures diagnosis as Most Responsible Diagnosis (MRDx) codes:

- **M40: Kyphosis and lordosis**
- **M41: Scoliosis**
- **M42: Spinal osteochondrosis**
- **M45: Ankylosing spondylitis**
- **M46: Other inflammatory spondylopathies**
- **M48.3: Traumatic spondylopathy**
- **M48.4: Fatigue fracture of vertebrae**
- **M48.5: Collapsed vertebrae, not elsewhere classified**
- **M84.^8: Malunion, stress or pathological fracture of the bone for other site**

How will clinical documentation change to support QBP implementation?

For spine surgery, the complexity of and resource use associated with the procedure is determined by the number of spinal vertebrae levels involved in the surgical intervention. Currently coding for spine levels is optional in NACRS and DAD reporting systems.

Mandatory coding by hospitals of the number of spinal vertebrae levels involved in spine surgical interventions is recommended by the Expert Panel.

3.5 MOHLTC Evidence-Based Framework for Spine Care

The evidence-based framework in [Figure 1](#) was used to identify a QBP for non-emergent spine patients that has the potential to improve quality of care, standardize care delivery across the province and show increased cost efficiency. The following five perspectives of the framework were considered:

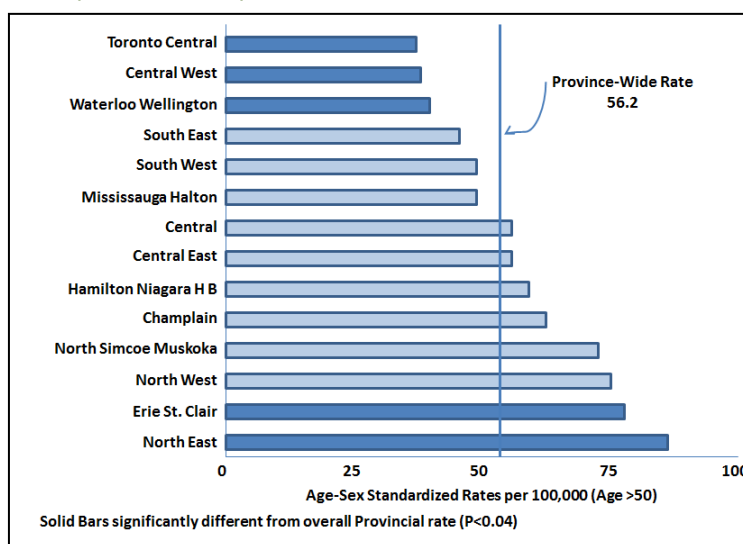
3.5.1 Practice Variation

Current models for spine care in Ontario are fragmented. An integrated approach to assessment, treatment, and management for spine pain and other associated spine symptoms is lacking despite the roles of providers and referral guidelines being well understood.^{14 16 17 21 22 23 24}

It is known that:

- Referral patterns to specialists for spine surgery as well as advanced imaging poorly reflect current clinical practice guidelines.^{25 26 27 28}
- The efficacy and outcomes of increasing available tests and treatments for spine symptoms is unclear.^{29 30 31 32}
- Wide variations exist in spine interventions.^{33 34} Disease prevalence and community resources have not been found to be related to surgical rates.³⁵ In Ontario, surgical rates for degenerative disease of the lumbar spine show significant variability across LHINs and do not correlate with disease prevalence or community resources. (see [Figure 2](#))

Figure 2: Surgical rates for degenerative disease of lumbar spine by LHIN (Year 2002-2006)



3.5.2 Availability of Evidence

This QBP is built on the existing practice evidence base in Ontario and involves a broad range of practitioners across the full continuum of care. It expands on the following work:

- The Ministry has endorsed the [Clinical Practice Guidelines for Evidence-Informed Primary Care Management of Low Back Pain](#) for Ontario primary care physicians. The guideline offer evidence-informed decisions about care of patients with non-specific, non-malignant low back pain. It provides PCPs recommendations on prevention, assessment and management of acute, subacute, and chronic low back symptoms.¹⁷

- The Centre for Effective Practice has developed the [Clinically Organized Relevant Exam \(CORE\) Back Tool](#) which guides the PCP to recognize common mechanical back pain syndromes and screen for other conditions where management may include investigations, referral and specific medications. This is a focused examination for clinical decision-making in primary care.³⁶
- An online "[Primary Care Focus on Low Back Pain](#)" education course was developed by the Ministry and Centre for Effective Practice, with the goal of improving patient outcomes, decreasing unnecessary resource utilization and increasing capacity for comprehensive care. The course includes the following modules:
 - Module 1: Low Back Pain Status Report
 - Module 2: Clinical Assessment of Low Back Pain
 - Module 3: Patient Self Management
 - Module 4: The Clinical Tool Kit
- The Ministry has endorsed the [a Low Back Pain Toolkit](#) developed by the Centre for Effective Practice to assist with the assessment and management of patients with low back pain in primary care settings. It includes a new tool designed to meet the needs of PCPs by bringing together existing tools and evidence into a one-page easy to use summary/charting tool (see link to CORE Back Tool above).
- The [Financial Services Commission of Ontario \(FSCO\) Minor Injury Guideline](#) has been recently developed by the Ontario Protocol for Traffic Injury Management (OPTIma) Collaboration to prescribe evidence-based treatment for common injuries after motor vehicle accident for use by insurers and health care providers. Evidence included review of neck pain beyond non-motor vehicle accidents. Therefore the guidelines are broadly applicable to neck pain.

3.5.3 Feasibility/Infrastructure for Change

Established groups in Ontario can champion implementation of this QBP. Implementation of the QBP will be supported by the Provincial Neurosurgery Ontario, the QBP Clinical Expert Advisory Group, and the Bone and Joint Health Network

The QBP is built on the Ontario Ministry's Low Back Pain Strategy,³⁷ which aims to improve access and quality of care through:

- [Primary care education tools](#) to enhance the knowledge of providers and patients, and give them access to approaches and tools that will support high quality care for patients with low back pain.
- [Inter-professional Spine Assessment and Education Clinic](#) (ISAEC) pilot program to offer a more streamlined and evidence-based access to specialists and diagnostic imaging services where it is deemed appropriate. Patients will be better supported to effectively manage their spine symptoms and receive targeted and effective therapies as needed.
- [Primary care low back pain pilot program](#) to support inter-professional primary care teams to provide better patient care through more effective treatment and management of their symptoms.
- Evidence-based amendments to the [Schedule of Benefits](#), improving access to patients with lower back complaints who are in most need of diagnostic services.

The QBP leverages data sources to support implementation.

- OHIP data was used to examine primary care practice utilization patterns for non-urgent spine disorders and identify patient groups appropriate for the integrated non-emergent spine pathways. Diagnostic codes were identified by the Expert Panel to capture spine symptoms in primary care and in emergency departments. These codes can be found in [Appendix 1](#).
- DAD and NACRS data sources can be used to identify inpatient and outpatient surgical spine procedures provided in hospital settings.

3.5.4 Cost Impact

The burden on the Ontario health system is significant due to delays in accessing care, inappropriate referrals and testing, and unresolved symptoms for patients.

In Canada, the annual medical expenditure related to low back complaints is estimated to be up to \$12 billion.³⁸ Low back pain is the 3rd leading cause of disability adjusted life years in North America.³⁹

In 2013/14, there were over 800,000 patients who presented to primary care with a diagnosis code for neck or low back symptoms (OHIP diagnosis codes 722, 724, 847).

- This represents 9.6% of the adult Ontario population. In addition, these visits for neck and low back complaints in primary care represent 3.3% of all primary care visits recorded.
- These volumes are felt to under represent the burden of neck or low back complaints. The volumes reflect scenarios where the diagnosis codes were utilized to identify neck and low back complaints as the primary reason for visit. It does not reflect the scenario where a patient presents with multiple conditions including spine complaints where the spine aspects of the visit are not coded.
- It is believed that for subsequent primary care visits, neck or low back symptoms may not be captured as the primary cause for the visit.

The wait times for spinal surgery are not meeting provincially set targets.

- For lumbar laminectomies/discectomies in 2014/15, 22% of patients did not receive surgery within the Wait 2 target [Combined Priority 3 of 8 weeks and Priority 4 Wait 2 target of 26 weeksⁱ].

ⁱ Wait 2 is the wait time from decision to treat by the care team until the surgical intervention is performed.

Priority 3 patients have moderate pain symptoms; symptoms moderately impact ability to perform usual work day; there is low probability that treatment delay will adversely affect physical or cognitive abilities; occasional unscheduled health care encounters. The target Wait 2 time for these patients is 8 weeks.

Priority 4 patients have mild or occasional pain symptoms; elective indication for surgery; symptoms have minimal impact ability to perform usual work day; there is low probability that treatment delay will adversely affect physical or cognitive abilities. The target Wait 2 time for these patients is 26 weeks.

- Similarly, for anterior cervical discectomy and fusions 15% of patients did not receive surgery within the Wait 2 target, and 24% of patients did not receive care within Wait 2 target for other spinal surgeries [Combined Priority 3 of 8 weeks and Priority 4 Wait 2 target of 26 weeks].

In Ontario, new models of care to improve referral practices and associated pre-surgical consultation imaging are expected to result in a savings of up to \$25 million annually.⁴⁰

- In Ontario, there is a move to standardize practice for diagnostic test ordering (e.g. x-ray, CT, MRI) for low back patients (See MOHLTC [Schedule of Benefits](#) ⁴¹ and Low Back Pain Imaging Pathway in the Appendix). This work will increase appropriateness and access to imaging tests by defining clear indications for diagnostic testing for low back complaints.
- The first two years of the ISAEC pilot has resulted in a 32% reduction in spine-related imaging from PCPs involved in the pilot compared to their peers over the same time period.⁴²

3.5.5 Impact on Transformation

This QBP will support appropriate resource utilization through the development of protocols for appropriate primary care and community-based management, diagnostics, day surgery and inpatient surgery, and specialist referral for spine care.

The QBP uses shared-care principles across the entire continuum of spine care to support delivery of the right care by the right people at the right time and to engage patients as active partners in care to improve their outcomes.

Implementation of best practices through the QBP clinical pathways will standardize care delivery, support appropriate referrals from primary care to specialists (e.g. surgeons, rheumatologists, pain specialists, psychologists/ psychiatrists) and reduce unnecessary wait times for services (e.g. MRI).

3.6 Objectives of the Non-Emergent Integrated Spine QBP

The objectives of this QBP are to:

- Provide an integrated pathway for non-emergent spine care that extends from primary care to specialist, spine surgery and rehabilitation care
- Define shared-cared principles necessary for management of spine symptoms to provide the right care at the right time to the right patient
- Ensure the active role of patients and define self-management best-practices to support them in self-managing their spine symptoms.
- Provide protocols for PCPs to support effective assessment, appropriate investigation (laboratory and imaging), referral, and management of spine patients.
- Define best practice surgical protocols for common elective spinal procedures to improve outcomes for patients with degenerative spine disorders.

3.7 Clinician and Patient Engagement

3.7.1 Clinician Engagement

A Clinical Expert Advisory Group (Expert Panel) was convened to develop the Non-Emergent Integrated Spine Care QBP Clinical Handbook.

The Expert Panel membership included primary care physicians, nurse practitioners, physiotherapists, chiropractors, radiologists, spine surgeons, physiatrists, anesthesiologists, rheumatologists, psychologists, health system researchers, hospital administrators, health coding and costing experts and Ministry representatives. Members provided clinical, administration, and provincial perspectives on spine care.

The Expert Panel sought input from stakeholders in the field when appropriate.

- The Provincial Neurosurgery Ontario Advisory Board (PNO) provided provincial perspectives to guide considerations for QBP implementation. PNO is comprised of representatives from each of the province's adult and paediatric neurosurgical centres, as well as representatives from Critical Care Services Ontario, CitiCall Ontario, Rehabilitation Services, Local Health Integration Networks, and Health Quality Ontario.
- Focus groups with PCPs from across Ontario were held to understand primary care perspective on best practices outlined in the QBP. Participants included family physicians, chiropractors, physiotherapists, and nurse practitioners who offered both urban and rural geographic perspectives on the provision of care for neck and low back complaints.

3.7.2 Patient Engagement

To support a patient-centred approach for best practice pathway development, patients were asked about their experience receiving neck and low back care via patient surveys and focus groups.

- See [Appendix 2](#) for Patient Survey
- See [Appendix 3](#) for Focus Group Guide

Patients were recruited from a broad range of primary care settings including:

- ❖ Center for Effective Practice
- ❖ Ontario Nurse Practitioner Led Clinic Leads
- ❖ Canadian Memorial Chiropractic College
- ❖ ISAEC referral network
- ❖ QBP Expert Panel member network

The patient survey asked about patients' experiences living with neck or back pain symptoms, treatments received and outcomes, and ability to access care. Survey responses were received from 203 patients from

across Ontario: 35% of responses were received from chiropractic clinics, 25% from family practices, and 20% from surgical practices. Provider settings for 20% of responses were unknown. Focus groups were conducted with 16 survey respondents (7 male; 9 female). Half were 65 years of age or younger.

Findings from survey responses and focus groups showed the following:

Neck and low back symptoms greatly impacted patients' ability to perform activities of daily living (ADL) and their overall quality of life. Because of their symptoms, patients were unable to walk short distances, had limited activity, dressed more slowly, and had worrying thoughts about safely engaging in physically active, the ability for their pain to improve and taking part in things that they used to enjoy.

Patients try a variety of treatment options including: self-management care, supervised exercise programs, over the counter medications, allied health professionals (chiropractor, physiotherapists), alternative providers (e.g. acupuncture), prescription medication, steroid injections, surgery etc.

Patients rely more on advice from a health care provider compared to a friend/relative or web, print, and media. Patients seek advice from their health care provider on the following: expected length of time to recover, when to seek medical help, ways to reduce and control pain, and activities that they should be doing or avoiding.

Patients value:

- ❖ The need for OHIP coverage for chiropractic, physiotherapy, and massage therapy services. Patients expressed concern that the lack of coverage and costs for non-OHIP insured services was a barrier to effective treatment.
- ❖ An interdisciplinary approach to care for their neck and low back symptoms.
- ❖ Shared communication between health care professionals across the care continuum to avoid the patient acting as the messenger
- ❖ Focus on patient education: patients need to better understand their condition, to have a plan ('road map') of their treatment and to "take ownership" of managing their symptoms
- ❖ Reduction in waiting time for spine treatment. Patients felt that wait times were too long for imaging, spine surgery, and specialist pain treatment.

These survey and focus group findings were used to incorporate the patient's perspectives into the development of the best-practice pathways.

4.0 Best Practicesⁱⁱ Guiding the Implementation of Non-Emergent Integrated Spine Care

The QBP is intended to reduce the risk of chronicity in patients with non-emergent and persistent symptoms for common degenerative conditions of the spine. This can be achieved through the appropriate assessment and management of these patients within the first 12 months of symptom onset. It is for this reason, that the integrated pathway supports a patient-centered approach to spine care for patients presenting with non-emergent persistent spine symptoms experienced for no more than 12 months. Although, it is expected that referral to a specialist, when appropriate, will be initiated within this timeframe, patients may acceptably receive specialist-based interventions beyond 12 months of symptom onset.

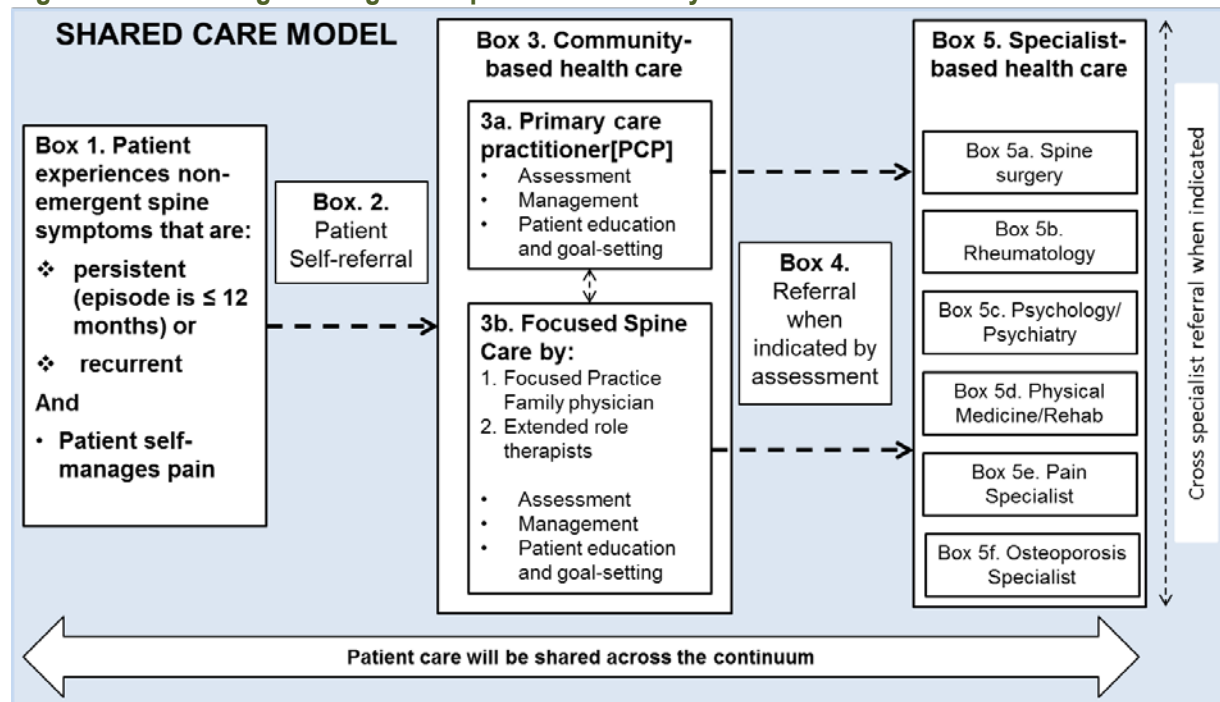
4.1 Non-Emergent Integrated Spine Care Pathway

To effectively manage spine symptoms, an interdisciplinary approach with the following share-cared principles is required:

- Bi-directional communication between health care providers to actively share responsibility for managing patients with spine symptoms.
- Partnership between the patient and their health care provider to enable self-management and seamless goal setting.

Several aspects of treatment may be required during the typically variable and chronic course and presenting clinical spine symptoms. Patient care must be shared across the continuum.

Figure 3: Non-Emergent Integrated Spine Care Pathway



ⁱⁱ Best practice refers to a combination of best available evidence and clinical consensus as recommended by the Clinical Expert Advisory Groups

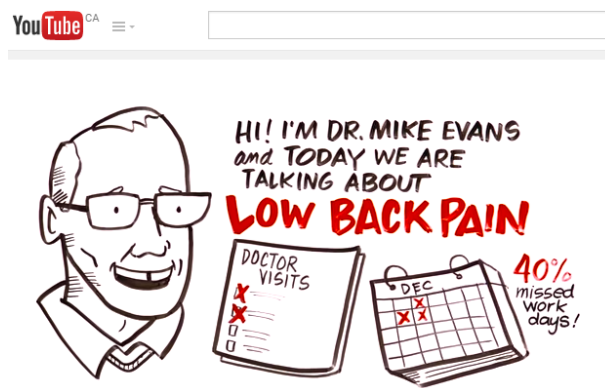
Box 1. Patient Self-Management:

The pathway begins with the patient experiencing non-emergent spine symptoms that are persistent or recurrent in nature. Prognosis for managing these symptoms is largely favourable. Majority are not caused by any serious underlying injury or disease. Patients can benefit from lifestyle changes and increased mobility rather than diagnostic tests. Assessment and support from a PCP is recommended to effectively support patients in managing their non-emergent spine symptoms.

Education tools are currently available to help patients to understand and to self-manage their low back symptoms (The same self-management principles apply to patients with neck pain):

- A self-management video to educate and increase awareness of self-management tools and techniques in patients experiencing low back symptoms. The video is created by Dr. Mike Evans (Health Design Lab) and developed in collaboration with the Centre for Effective Practice and the Institute for Work & Health.

Available online: <https://www.youtube.com/watch?v=BOjTegn9RuY>



- Patient Education inventory that provides useful links on general patient education and mechanical pain management.

Available online: http://www.health.gov.on.ca/en/pro/programs/ecfa/docs/lb_tk_edu_bw.pdf

Box 2. Patient Self-Referral:

Patients, for whom symptoms do not resolve, will seek a PCP.

- 1) Patients will be able to identify appropriate symptoms (early identification of red flagsⁱⁱⁱ)
- 2) Patients will not fully respond to self-management
- 3) Patients will identify new or escalating symptoms

ⁱⁱⁱ Red flag conditions are a result of serious medical disorders that require emergent, urgent and /or specialized assessment and management by a health care professional.

Box 3. Community-based Health Care:

The expectation is that most patients presenting with spine symptoms will be managed by a PCP. The PCP should undertake careful clinical assessments prior to referring for imaging investigations and/or to specialist. Share-cared principles outlined above should be applied to actively engage the patient in self-managing their spine symptoms. The PCP should maintain responsibility for the ongoing management of the patient and participate in bi-directional communication between health care providers involved in managing patients with spine symptoms.

Box 3a. Assessment:

Spine Complaints - Low Back

The Clinically Organized Relevant Exam Back Tool (CORE Back Tool) assists PCPs with assessing patients who present with low back complaints to support risk stratification for appropriate screening, referral, and management.

The tool guides the PCP through questions that assist with the following assessments and/or management strategies:

- History taking and physical examination to determine whether the causes of pain are benign mechanical, or more threatening
- Screening for red flags that identify secondary causes of low back symptoms that may warrant further diagnostic work-up and/or immediate referral and treatment
- Screening of yellow flags to facilitate psychosocial assessment to determine the patient's risk of chronicity
- Identification of back complaint pattern
- Patient education, goal setting and patient self-management.
- Referral, treatment recommendation (includes goal-specific rehabilitation, specialist referral, and medication), and follow-up time frame

The CORE Back Tool is available through the Centre for Effective Practice at:

http://www.effectivepractice.org/site/ywd_effectivepractice/assets/pdf/2_core_tool_eng.pdf

An educational guide on appropriate use of the CORE Back Tool is also available to PCPs:

http://www.effectivepractice.org/site/ywd_effectivepractice/assets/pdf/3_core_guide_eng.pdf

See [Appendix 4](#)

Spine Complaints - Neck

The Expert Panel encourages the Centre for Effective Practice (<http://www.effectivepractice.org/>) who holds the intellectual property/copyright licence of the tool to develop a CORE tool to support appropriate screening, referral, and management of neck complaints. The Expert Panel used the CORE Back tool framework to develop considerations in assessing neck complaints in primary care. See [Appendix 5](#) for neck assessment considerations developed by the Expert Panel.

The assessment of neck complaints should follow the same principles outlined for patient presenting with low back related complaints. The importance and implications of assessing for red flags in the low back, is also critical in patients with neck complaints. In addition neck conditions (as well as those affecting the thoracic spine) may result in compression of the spinal cord leading to myelopathy, which is more common

then Cauda Equina Syndrome (CES) and can range in its clinical presentation from subjective neurological complaints such as hand numbness to progressive tetraplegia. Screening for myelopathy in patients with neck complaints, like CES in the low back is mandatory for all practitioners.

Box 3a. Management:

A summary of the Guideline for Evidence-Informed Primary Care Management of Low Back Pain has been endorsed in Ontario. The guideline outlines evidence-informed decisions about care for low back complaints and support:

- Use of evidence-informed conservative approaches to the prevention, assessment, diagnosis, and treatment in primary care patients with low back symptoms
- Appropriate specialist referrals and use of diagnostic tests in patients with low back complaints
- Engagement of patients in appropriate self-care activities

- ❖ A Summary of the Guideline for the Evidence-Informed Primary Care Management of Low Back Pain is available online:
http://www.topalbertadoctors.org/download/573/LBPSUMMARYnov24.pdf?_20150426202451
- ❖ A clinically focused online accredited course can support PCPs with assessing and managing low back pain is available online:
http://www.health.gov.on.ca/en/pro/programs/ecfa/action/primary/lower_back.aspx
- ❖ An evidence-based guideline for the management of neck pain is available online:
<https://www.fscs.gov.on.ca/en/auto/Documents/2015-cti.pdf>.
Although this guideline aims to inform the management of neck pain resulting from traffic collision; the recommendations were informed by the entire body of literature on neck pain (regardless of etiology).

Box 3a. Patient Education and Goal-setting:

PCPs should recognize a patient's active role in their care. Patients must be engaged as partners in self-managing their spine symptoms, treatment, physical and social consequences, and lifestyle changes.⁴³

PCPs should facilitate self-management strategies with a patient during clinic office visits. Effective facilitation of patient self-management requires the following:

- ➡ Teaching self-management skills to solve patient-identified problems
- ➡ Implementing self-management skills that are generalizable
- ➡ Building patient self-confidence to yield better outcomes (e.g. decrease pain and increase function)
- ➡ Increasing patient's self-efficacy

Enabling patient self-management requires at least 1-3 primary care office visits ([See Table 2](#))

Table 2: Office visits to enable patient self-management

Visit 1: <input checked="" type="checkbox"/> Assessment, <input checked="" type="checkbox"/> Reassurance, <input checked="" type="checkbox"/> Pain symptom, and <input checked="" type="checkbox"/> Activity Management	<ul style="list-style-type: none"> • Primary care driven during the office visit • Patient responds in office to movement, education and exercise
Visit 2: <input checked="" type="checkbox"/> Advanced Pain Symptom Management, <input checked="" type="checkbox"/> Home Exercise, and <input checked="" type="checkbox"/> Reassurance and Return to Activities	<ul style="list-style-type: none"> • Referral to rehab provider for education and exercise • Needs consistency in implementing exercise and education given in 1-2 (30-45 minute) sessions
Visit 3: <input checked="" type="checkbox"/> Referral for Goal Specific Therapy	<ul style="list-style-type: none"> • This is the person who has concurrent or recurrent episodes, presence of myofascial triggers, high demand work, poorer coping skills • Referral for goal-oriented therapy: Short course sessions (e.g. 4-6 sessions) using manual therapy, education, progressive exercise, motivational counselling. • Please see rehabilitation criteria in section Box 5d below.

Box 3b. Extended Role Practitioner:

A PCP can also consider referring a non-emergent spine patient to an extended role practitioner for a focused spine assessment. These practitioners undertake similar focused examination for clinical decision-making as outlined in the section above ([Box 3a](#): Assessment, Management, and Patient education and goal-setting). In addition to these assessments, these practitioners offer greater spine expertise and should provide more comprehensive focused spine care assessment and specific management plans linked to coordinated patient goal setting for spinal conditions.

Focused spine assessments can be completed by two practitioner types:

1. **Focused Practice Family Physician:** Family physicians with a *Focused Practice Designation* who can offer specialized services to manage patients with neck and low back symptoms. The scope of specialization for these physicians includes addiction medicine, pain management, sports medicine, physical medicine and rehabilitation, or psychotherapy.

A list of family physicians with a *Focused Practice Designation* can be obtained from the Ontario Medical Association.

<https://www.oma.org/About/Pages/default.aspx>

2. **Extended Role Therapists:** Rehabilitation professionals with advanced clinical practice training in spine related musculoskeletal/ arthritis care can also offer specialized services to manage patients with neck and low back symptoms.

Box 4. Referral Criteria to Specialist:

PCPs can refer to specialists for further assessment or treatment of patient with spine symptoms. Any one of the specialists in [Box 5](#) can also identify the need to refer to another specialist. Ideally, the communication should be sent to the patient's family physician and/or other referring PCP to support shared-care communication and responsibility.

Box 5. Specialty Care:

Criteria to support PCPs with the referral of patients with spine symptoms to respective specialists have been defined by the Expert Panel. The referral criteria were assessed for feasibility of implementation through focus groups with PCPs across Ontario. The criteria are also relevant to specialists who can also refer to one another as appropriate.

Box 5a. Spine Surgery Referral Criteria

Prior to referral to a spine surgeon for treatment the following diagnostics and assessments should be completed by the referring provider:

- CORE Back Tool/or similar assessment of the neck (See [Appendix 5](#) for neck assessment considerations recommended by the Expert Panel)
- Imaging (See [Appendix 6](#) for *Low Back Pain Imaging Pathway* developed by the Provincial Diagnostic Imaging Appropriateness Panel for MSK and Spine; See [Appendix 5](#) for Neck Pain Radiography Criteria)

Based on findings, the following patients (see [Table 3](#)) are appropriate for referral to a spine surgeon.

The findings from the assessment should be shared by the referring provider with the spine surgeon at the time of referral.

The criteria are based on the assumption that patients have typically failed a 6-12 week course of appropriate non-operative treatments (see rehabilitation criteria in [Section Box 5d](#)). For patients who are deteriorating, referral to a spine surgeon should be considered sooner.

Table 3: Referral Criteria to Spine Surgeon

Appropriate for Office Referral to Spine Surgeon (any of)	
Low Back	Neck
<p>Any of:</p> <ol style="list-style-type: none"> 1. Leg dominant pain (Constant/Intermittent) 2. Major structural pathology (e.g. spondylolisthesis or scoliosis / kyphosis) 3. Functionally significant neurological deficit(s) related to spinal pathology 	<p>Any of:</p> <ol style="list-style-type: none"> 1. Arm dominant pain (Constant / Intermittent) 2. Major structural pathology (e.g. spondylolisthesis or scoliosis / kyphosis) 3. Functionally significant neurological deficit(s) related to spinal pathology or patient presents with stable or slowly progressive myelopathy regardless of functional significance
<u>Not Appropriate</u> for Referral to Spine Surgeon (any of)	
Low Back	Neck
<p>Any of:</p> <ol style="list-style-type: none"> 1. Non-mechanical pain (e.g. pain not associated with movement or activity). <ul style="list-style-type: none"> ○ If there is uncertainty regarding red flags – seek surgical referral. 2. Uncomplicated persistent back dominant pain in the absence of major structural pathology (e.g. degenerative disc disease, and/or facet arthrosis is not considered major structural pathology). 3. Inflammatory back pain 	<p>Any of:</p> <ol style="list-style-type: none"> 1. Non-mechanical pain (e.g. pain not associated with movement or activity). <ul style="list-style-type: none"> ○ If there is uncertainty regarding red flags – seek surgical referral. 2. Uncomplicated persistent neck dominant pain in the absence of major structural pathology (e.g. degenerative disc disease and/or facet arthrosis is not considered a major structural pathology). 3. Inflammatory neck pain

Note: Reminder that urgent or emergent referral to emergency room should be considered when patient presents with red flags, particularly with severe/ progressive neurological deficit.

Box 5b. Rheumatology Referral Criteria

The following patients are appropriate for referral to a rheumatologist:^{44 45}

Table 4: Referral Criteria to Rheumatologist

Appropriate for Referral to Rheumatologist
<p>Patients at risk for inflammatory arthritis:</p> <ul style="list-style-type: none">• Spine pain with multiple joint swelling and tenderness• Spine pain >3 months duration, typically with onset < 45 years of age<ul style="list-style-type: none">○ And any two of the following:<ul style="list-style-type: none">▪ Early morning stiffness > 30 minutes▪ Improvement of pain with exercise not with rest▪ Pain at night (with improvement upon getting up)▪ Associated uveitis, inflammatory bowel disease, or psoriasis
Not Appropriate for Referral to Rheumatologist
<ul style="list-style-type: none">• Arm/ Leg dominant pain• Neurological symptoms• Established diagnosis of an inflammatory condition being followed by Rheumatologist

Box 5c. Psychology/Psychiatry Referral Criteria

Psychological factors have been found to play an important role in recovery from spine pain.⁴⁶ Disability is significantly predicted by patient perceptions about their spine pain symptoms, maladaptive beliefs related to the controllability of their condition, and low self-efficacy in their ability to perform ADL despite existing pain.

To manage these patients effectively, the psychologist/psychiatrist to whom the patient is being referred must have the following skillset:

- ✓ Knowledge about spine pain (e.g. hurt vs. harm, acute vs. chronic pain, biopsychosocial approach)
- ✓ An ability to teach adaptive symptom management strategies (e.g. relaxation techniques, goal setting, problem-solving, assertive communication, sleep hygiene, etc.)
- ✓ An ability to help patients identify and modify maladaptive thoughts and beliefs
- ✓ An ability to help patients modify their behaviour using established behavioural principles and more generally, an ability to provide treatment in a supportive, empathic, and encouraging manner.

To coordinate shared care, mental health professionals are encouraged to communicate with PCPs (with the patient's informed consent) on clinical impressions and treatment recommendations.

Prior to referral to a Psychologist or Psychiatrist for evidence-based treatment, the following diagnostics/assessment should ideally be completed by the referring provider:

- Completion of any one of the established screening measures*:
 - ☑ **Keele STarT Back Screening Tool**: A 9-item tool designed to identify patients with low, medium, and high risk of chronicity - patients identified as “high risk” should ideally be referred for mental health services.^{47 48 49}
 - ☑ **PHQ-4**: A 4-item screening measure for depression and anxiety that contains the first two items of both the PHQ-9 depression scale and the GAD-7 anxiety scale - a score of at least 3 (out of 6) is accepted as the cut-off for both depression (2 items) and anxiety items (2 items).⁵⁰
 - ☑ **PSEQ-2**: A 2-item screen for pain self-efficacy with a proposed clinical cut-off score less than or equal to 5.⁵¹

*** Prior to completion of any of the above mentioned screening measures, the referring provider should assess the readiness and emotional well-being of the patient to participate in these assessments.**

- Review and adjustment of psychotropic medications with referral to psychiatry, as indicated.

Based on findings, the following patients are appropriate for referral to a psychologist/psychiatrist (see [Table 5](#)).

The findings from the assessment should be shared by the referring provider with the psychologist/psychiatrist at the time of referral.

Table 5: Referral Criteria to Psychologist/Psychiatrist

Appropriate for Spine Related Referral to Psychologist/Psychiatrist	
Any one of the following:	<ul style="list-style-type: none"> • Psychosocial factors related to dealing with the impact of spine symptoms (e.g. fear, anxiety, pain-related beliefs, and sadness) • Psychosocial factors that are exacerbated by the presence of the spine symptoms (e.g. depression, anxiety, and opioid abuse risk) • Environmental and/or psychosocial stressors that impact recovery from spine symptoms (e.g. poverty, family dysfunction, and job dissatisfaction)
Not Appropriate for Spine Related Referral to Psychologist/Psychiatrist	
Any one of the following:	<ul style="list-style-type: none"> • Acute risk of suicide • Presence of an unstable or unmanaged major psychiatric condition • Currently stable and receiving adequate, available, and ongoing support from a mental health professional

Possible treatment options include:

1-2 visits of psycho-educational supportive counselling

- For individuals deemed to be a “low” risk for chronicity and with mild psychosocial distress
- Focus on encouraging activity and self-management; avoidance of unhelpful labels and medicalization; provision of oral and written communication

6 session group psycho-educational curriculum (e.g. Living a Healthy Life with Chronic Conditions)

- For individuals amenable to group-based treatment and with “low” or “moderate” risk of chronicity and mild to moderate psychosocial distress
- Focus on self-management strategies, including relaxation, goal-setting, pacing, exercising, communication.

Individual (one-on-one) Cognitive Behavioural Therapy (CBT)

- For individuals with “high” risk of chronicity and elevated levels of psychosocial distress
- Based on empirically-supported CBT treatment principles and protocols
- In addition to the self-management strategies noted above, treatment focuses on cognitive, emotional, and behavioural responses to pain and the impact on functioning across life domains

It is recognized that there are barriers to accessing mental health services, including cost and lack of local resources. This is a broader system issue that extends beyond the current initiative. Some patients may have coverage through health benefits or employee assistance programs. Others could access services through community-based organizations or counseling centres, some of which offer services on sliding fee scales.

Box 5d. Outpatient Rehabilitation Referral Criteria

Referral to outpatient rehabilitation can be indicated in some patients presenting with spine symptoms. To manage these pain patients effectively, the rehabilitation provider to whom the patient is being referred must have the following skillset:

- ✓ A knowledge of the evidence-based interventions that may benefit a patient (sometimes the best treatment is education and reassurance)
- ✓ A knowledge of the course and prognosis of the condition
- ✓ Ability to establish [SMART](#) goals^{iv} and to progress these goals with the patient
- ✓ Ability to prescribe and progress exercise
- ✓ Ability to modify, assess and treat functional limitations pertaining to work, home or fitness pursuits that could limit activity tolerance
- ✓ Ability to provide manipulative and soft tissue therapy including massage, mobilizations, myofascial release techniques, contract-relax muscle work
- ✓ Ability to provide condition specific education and facilitate patient self-management
- ✓ Ability to integrate evidence-based treatment protocols
- ✓ Willing to engage and collaborate in inter-professional communication and care
- ✓ Understand opioid management

^{iv} Smart goals are: Specific; Measurable; Attainable; Relevant; and Timed.

Prior to referral to rehabilitation practitioner for treatment the following diagnostics and assessments should be completed by the referring provider:

- ✓ An understanding of where the patient is along the natural history of the condition
- ✓ An assessment of yellow flags/risk factors for delayed recovery (in particular patient's expectation of recovery)
- ✓ A discussion about patient preferences for and accessibility to treatment (e.g. cost, transport, availability of services)

Based on findings, the following patients (see [Table 6](#)) are appropriate for referral to a psychologist/psychiatrist.

The findings from the assessment should be shared by the referring provider with the outpatient rehabilitation provider at the time of referral.

Table 6: Referral Criteria to Outpatient Rehabilitation Provider

Appropriate for Referral to Outpatient Rehabilitation Provider
<p>Any one of the following:</p> <ul style="list-style-type: none"> • Absence of red flags • Patient whose medical pain management has been optimized to be able to engage in active exercises • Patient who is open to implementing new information and/or strategies into their management program (e.g. goal setting, self-management focus)
<u>Not Appropriate</u> for Referral to Outpatient Rehabilitation Provider
<p>Any one of the following:</p> <ul style="list-style-type: none"> • Presence of red flags (consider referral to an appropriate specialist) • High pain levels that interfere with activities and function (consider referral for pain management in primary care or specialist care) • Presence of comorbid psychiatric condition that interfere with activities and function (consider facilitating home exercise, education, self-management) • Inability to attend regular sessions to complete treatment plan due to work/life demands (consider facilitating home exercise, education, self-management) • Higher priority problem that requires further investigations (e.g. significant medical pathology) prior to clearance for a rehabilitation-focused program. (consider referral to an appropriate specialist)

Box 5e. Pain Specialist Referral Criteria

Prior to referral to a pain specialist for treatment, the following assessments should be completed by the referring practitioner to:

- Understand where the patient is along the natural history of the condition

- Assess yellow flags
- Assess patient's constant nature of pain

The referring practitioner should consider completing **established screening measure**:

- CORE Back Tool / or similar assessment to support physician with assessment of red and yellow flags and assess whether pain experienced by the patient is intermittent or constant. Completion of a 10-point visual analog scale can assist PCPs with measuring the severity of pain experienced by the patient.
- PCPs may consider completing a more comprehensive pain rating scale that may help facilitate referral e.g., Brief Pain Inventory⁵², painDetect⁵³, McGill Short-Form questionnaire⁵⁴, or others.

Based on findings, the following patients ([See Table 7](#)) are appropriate for referral to a pain specialist.

The findings from the assessment should be shared by the referring practitioner with the pain specialist at the time of referral.

Table 7: Referral Criteria to Pain Specialist Provider

Appropriate for Referral to Pain Specialist Provider
<ul style="list-style-type: none"> • High constant pain levels that interfere with activities and function • Presence of yellow flags • Patient who identifies active goals for treatment and self-management • Patient who is open to implementing new information into their management program • Patient who is on escalating/high doses of pain medications (e.g. opioids)
<u>Not Appropriate</u> for Referral to Pain Specialist Provider
<ul style="list-style-type: none"> • Presence of red flags (referral to appropriate specialist) • Higher priority problem that requires further investigations (e.g. significant medical pathology) prior to clearance for pain focused program (referral to appropriate specialist)

PCPs may consider prescribing the pharmacological therapies to patients prior to referral to a pain specialist.

The Cochrane Back Review Group has described findings from systematic reviews on the evidence for the following pharmacologic treatments for spine pain:

- **Antidepressants:** There is no clear evidence in antidepressants reducing depression in chronic low back pain patients compared to placebo. There is conflicting evidence in antidepressants reducing pain intensity compared to placebo.
- **Non-steroidal anti-inflammatory drugs (NSAIDs):** NSAIDs are effective for short-term symptomatic relief in patients with acute and chronic low-back pain without sciatica, yet no specific type of NSAID is clearly more effective than others.

- **Opioids:** There is some evidence for short-term efficacy of opioids to treat chronic low back pain compared to placebo.

The **Cochrane Back Review Group (CBRG)** has published a set of the summary slides (QuickDecks) that provide a snapshot of evidence on various treatment and prevention measures for back and neck pain to support clinical decision-making. These are available online at: <http://www.iwh.on.ca/cbrg-quickdecks>.

PCPs may consider referring a patient for interventional pain procedures for pain that is unresponsive to conventional pharmacological (acetaminophen, non-steroidal anti-inflammatory medications) and physical therapy.

The referral criteria are based on the assumption that patients are not responsive to appropriate first line conservative care. Interventional pain procedures should be used as second line treatment.

Criteria for referring patient for Cervical Facet Joint Intra-articular Injection, and diagnostic and therapeutic (radiofrequency) blockade of the nerve supply to cervical facet joints:

At least six months of continuous neck pain that can be attributed to the facet joint with the following features:

- Predominate axial (i.e. neck dominant and non-radicular) pain in Para spinal area
- Moderate-to-severe pain intensity (> 4/10 score on a numeric rating scale for pain) AND
- No other clear structural cause of neck pain
- Symptoms may typically include associated history of trauma to neck (e.g. whiplash), restriction of motion, and exacerbation of pain on extension, lateral flexion, and rotation and/or alleviation of pain on flexion

Criteria for referring patient for Cervical * Epidural Steroid Injections

At least one month of predominantly upper limb radicular pain with the following features:

- Pain in a dermatome consistent with the site of pathology on imaging of the spine
- Moderate-to-severe pain intensity (> 4/10 score on a numeric rating scale for pain)

* Epidural steroid injections are not indicated for back or neck dominant pain (i.e. axial pain).

Criteria for referring patient for Lumbar Epidural* or Selective Nerve Root Steroid Injections

At least one month of predominantly lower limb radicular pain with the following features:

- Pain in a dermatome consistent with the site of pathology on imaging of the spine
- Moderate-to-severe intensity (> 4/10 on a NRS for pain)

* Epidural steroid injections are not indicated for back or neck dominant pain (i.e. axial pain).

Criteria for referring patient for Lumbar Facet Joint Intra-articular Injection, diagnostic and therapeutic (radiofrequency) blockade of the nerve supply to lumbar facet joints:

At least six months of continuous low back pain referable to the facet joint with the following features:

- Predominate axial (i.e. back dominant and non-radicular) pain in Para spinal area
- Moderate-to-severe pain intensity (> 4/10 score on a numeric rating scale for pain)
- There are no other clear structural cause of low back pain
- Symptoms may typically include restriction of motion, and exacerbation of pain on extension, lateral flexion, and rotation and/or alleviation of pain on flexion

Criteria for referring patient for sacroiliac joint intra-articular injection, diagnostic and therapeutic (radiofrequency) blockade of the nerve supply to sacroiliac joints:

At least six months of continuous low back pain referable to the sacroiliac joint with the following features:

- Non-radicular pain in sacroiliac joint area
- Moderate-to-severe intensity (> 4/10 score on a numeric rating scale for pain)
- There are no other clear structural cause of low back pain
- Symptoms may typically include restriction of motion, and/or exacerbation of pain on extension, lateral flexion, and rotation

Criteria for referring patients for Para spinal Muscles Injections

Short-term use of these therapies (e.g. up to one week) may help in relieving muscle spasms and facilitation rehabilitation in patients who have persistent, unmanageable neck or low back pain for more than three months that is associated with “trigger points”.

- There are no other clear structural cause of neck or low back pain

Box 5f. Osteoporosis Specialist Referral Criteria

Patients with any of the following general osteoporosis related factors (see [Table 8](#)) may benefit from referral to a physician with expertise in osteoporosis: ⁵⁵

Table 8: Referral Criteria to Pain Specialist Provider

Appropriate for Referral to Osteoporosis Specialist Provider

- Fracture or significant ongoing loss of bone mineral density despite good adherence while on first-line therapy
- Intolerance of first- and second-line therapies
- Any secondary cause of osteoporosis that is outside the expertise of the primary care physician
- Extremely low bone mineral density.

Referral is also recommended for patients with persistent spine pain, progressive kyphotic deformity, or additional fractures following an index osteoporotic spine fracture.

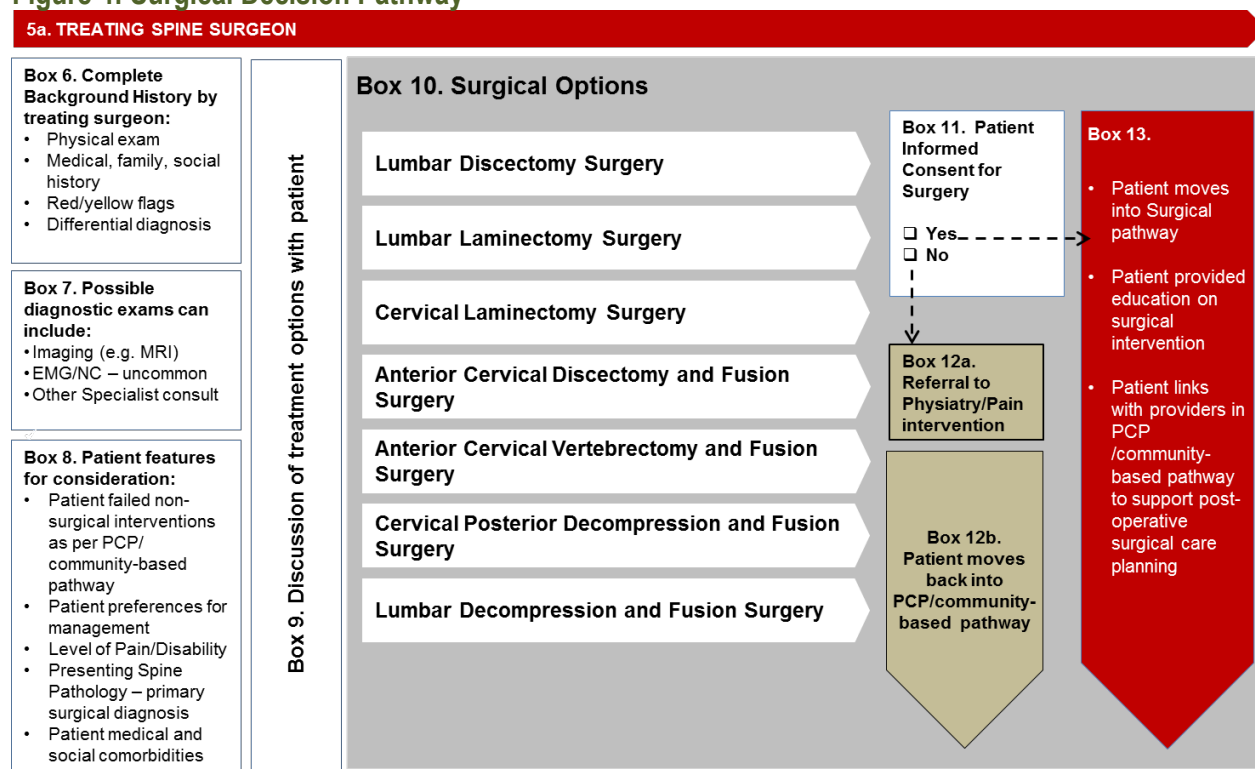
Specific guidance with respect to screening and primary care management of osteoporosis is out of scope for this QBP.

For further information please refer to the Canadian Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis ⁵⁵ or access related clinical tools and resources online at: <http://www.osteoporosis.ca/health-care-professionals/clinical-tools-and-resources>.

4.2 Surgical decision to treat pathway

Processes to support the treating spine surgeon with decision to treat with surgical intervention are highlighted in [Figure 4](#).

Figure 4: Surgical Decision Pathway



Box 6. Complete Background History:

The treating spine surgeon should perform thorough patient assessments prior to surgical intervention to establish a diagnosis or differential diagnoses when required and to determine appropriate surgical treatment options for patients presenting with signs and symptoms of a degenerative spine disorder that is amenable to surgical intervention. Assessments may include an appropriate physical examination; medical, family, and social history; red and yellow flag assessment; and differential diagnosis.

Box 7. Diagnostic Exams:

Possible diagnostic exams can include confirmatory and/or planning imaging or consideration of referral to other non-operative specialist when needed. Electromyogram and nerve conduction are uncommon but may be used in certain instances.

Box 8. Consideration of Patient Features:

Given each patient's presentation is unique, the treating surgeon must assess patient level features prior to determining appropriate treatment approaches such as:

- Whether a patient has tried and failed non-surgical interventions
- A patient's preferences for management of condition
- A patient's level of pain and/or disability
- Presenting spine pathology
- Current medical and psychosocial comorbidities

Box 9-10. Discussion of Treatment Options:

A patient must be informed of available treatment options as well as the risks and benefits of the available treatment options in addition to that being recommended by the surgeon.

This QBP considers 7 elective inpatient or day surgery spine surgery procedures:

1. Lumbar Discectomy Surgery
2. Lumbar Laminectomy Surgery
3. Cervical Laminectomy Surgery
4. Anterior Cervical Discectomy and Fusion Surgery
5. Anterior Cervical Vertebrectomy Surgery
6. Cervical Posterior Decompression and Fusion Surgery
7. Lumbar Decompression and Fusion Surgery

Box 11-13. Decision for Surgery:

If a patient chooses not to have spine surgery, the treating spine surgeon should consider referral to physiatrist and/or pain specialist (see referral criteria under [Box 5c](#)), as appropriate. If the patient chooses to have spine surgery and provides informed consent, the patient can follow a surgical pathway to receive the appropriate spine surgery procedure. The patient should receive education on the treatment option, required preparation before and on the day of surgery, and post-surgery recovery care. It is important that the patient be continue to be monitored and managed by primary care.

4.3 Spine surgical pathways

This section describes the surgical pathways for patient groups having spine surgery to treat degenerative spine disease as described in [section 3.3.2](#). Best practice evidence and expert consensus guided the development of these pathways and recommended processes of care.

4.3.1 Clinical Pathway for Lumbar Discectomy and Lumbar Laminectomy Day Surgery or Inpatient Surgery

The clinical pathway in [Figure 5](#) outlines the care processes for the following spine surgery procedures performed as either day surgery or inpatient surgery:

Lumbar Discectomy: This QBP procedure with intervention attribute location either at the lumbar, or lumbosacral is performed as a day surgery for 1 Level, 2 Level. Inpatient surgery is performed for >2 Levels or where patient medical co-morbidities or other circumstances prevent day surgery consideration.

Lumbar Laminectomy: This QBP procedure with intervention attribute location either at lumbar or lumbosacral is performed as a day surgery for 1 Level, 2 Level. Inpatient surgery is performed for >2 Levels or where patient medical co-morbidities or other circumstances prevent day surgery consideration.

Cervical Laminectomy: Refer to clinical pathway in [Figure 6](#) for patients undergoing cervical laminectomy alone for cervical myelopathy

Figure 5: Clinical Pathway for Lumbar Discectomy and Lumbar Laminectomy Performed

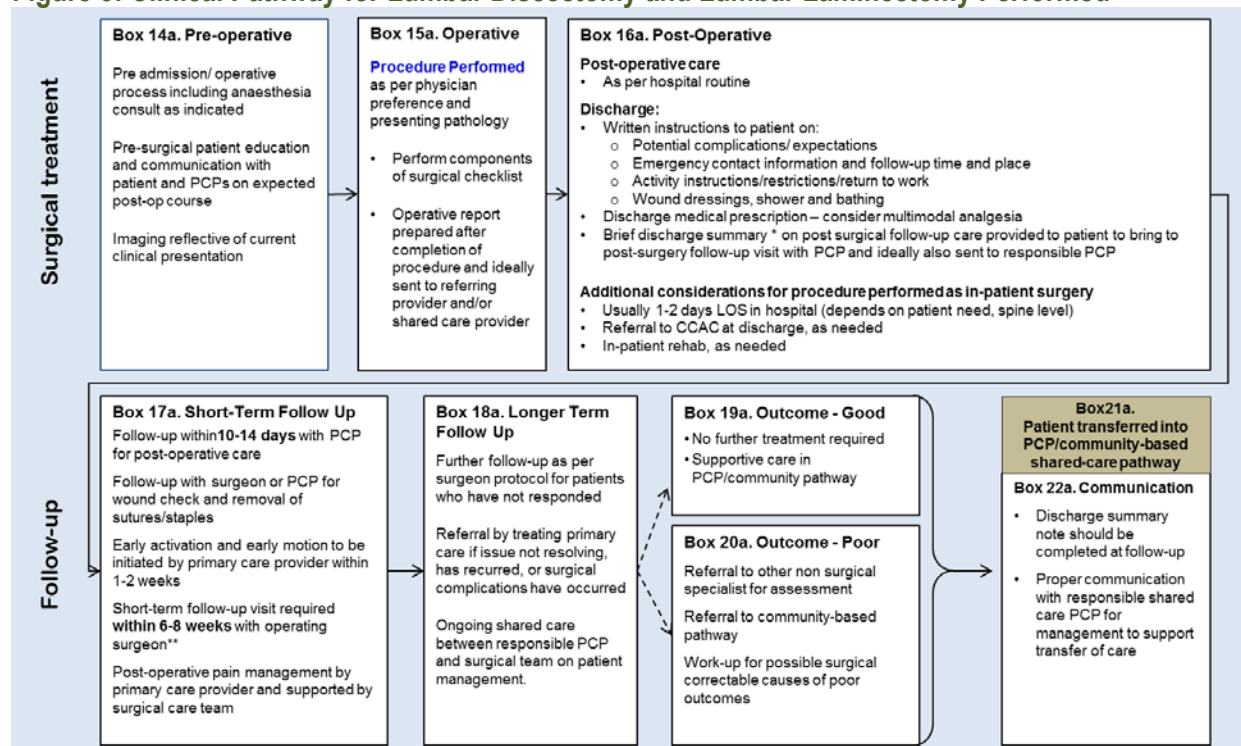


Figure 5 Notes:

***Brief Discharge Summary** should include: Date of Surgery; Diagnosis; Final Surgical Procedure; Operative and Post-operative complications; and Follow-up Care Instructions on Suture Care and Removal, Daily Activity Restrictions (Self Care, Work Restrictions) (short and long-term), Medications (short and long-term), Rehabilitative Treatment (short and long-term); Next Surgical Appointment; and planned date/time frame for return to work if relevant

**Operating surgeon may see patients at 2 weeks for suture removal

Box 14a. Pre-Operative Care:

Pre-operative care includes pre-admission and operative processes, including anaesthesia consult as indicated. The treating surgeon should determine clinical indications that necessitate surgery and assess patient's ability to follow post-surgical routine and complete clinic follow-up. Appropriate imaging reflective of current clinical presentation should be performed.

Pre-surgical education on surgical procedure should be provided to the patient. Communication between patient and PCP is required regarding expected post-operative course to support shared care approach to patient management of their spine pain.

Box 15a. Operative Care:

The procedure is typically performed under general anesthesia. For anatomical 1 Level or 2 Level, the panel recommends that lumbar discectomy or lumbar laminectomy is performed as a day surgery procedure. These procedures are performed as an inpatient surgery for >2 Levels or if the patient has medical co-morbidities or other circumstances that prevent day surgery consideration.

The operating surgeon and surgical team must complete the components of the surgical checklist. The general components of the checklist should be as per institutional policy. At a minimum, the surgical checklist should consider marking of the operative site, antibiotics use, intra-operative x-ray/image confirming correct level, and patient positioning check. Canadian Spine Society - Choosing Wisely Canada provides recommendations for physicians and patients that include guidance on use of antibiotic therapy in spine surgery, which are available online: <http://www.choosingwiselycanada.org/recommendations/spine/>.

After completion of surgery, the treating surgeon should prepare an operative report and ideally send the report to the referring PCP and/or shared care PCP responsible for the patient.

Box 16a. Post-operative Care:

Post-operative care should be provided as per hospital protocol.

Discharge care processes should include written instructions to the patient by the operating surgeon on the following:

- Potential early complications and expectations following surgery
- Patient must be given information to access after-hours assistance or emergent care
- Patient must receive information and education on activity restrictions/return to work
- Patient should get instructions on wound dressings, shower, and bathing following surgery
- Patient must know the time and place for their follow-up visit

Note: Follow-up visits are usually carried out by the operating surgeon or surgical team. If returning to an operating surgeon is not feasible, follow-up care may be delegated to a qualified professional with demonstrated competency to detect complications.

Discharge medical prescription provided to the patient post surgery may also consider multimodal analgesia.

Patient teaching should be offered by the surgical team to support patients with self-managing their post-operative surgical care and pain.

A brief discharge summary should be provided to patient to provide to their PCP at their post-surgical visit. Ideally, the treating surgeon should also send a copy of the discharge summary to the responsible shared-care PCP responsible for the patient.

The brief discharge summary should include the following information:

- Date of surgery
- Diagnosis
- Final surgical procedure
- Operative and post-operative complications
- Follow-up care instructions on:
 - Suture care and removal
 - Daily activity restrictions (Self-care, work restrictions) (short and long-term)
 - Medications (short and long-term)
 - Rehabilitative treatment (short and long-term)
- Next surgical appointment
- Planned date/time frame for return to work if relevant

For patients who received the procedure as an inpatient surgery, the following should be considered when planning for their post-operative care:

- Depending on the patients need and the anatomical level involved in the procedure, the patient's length of stay may be around 1-2 days.
- At discharge, the patient may require referral to a Community Care Access Centre (CCAC).
- Inpatient rehabilitation may be required for some patients.

Box 17a. Short-Term Follow-up:

Short-term follow-up requires that a patient follow-up with the PCP at **10-14 days** after surgery. Within 1-2 weeks, the PCP should initiate early activation and early motion in the surgical patient. Dependent on patient response, PCPs should support patients with ongoing follow-up care. The operating surgeon may see the surgical patient at 2 weeks for suture removal as per surgeon practice or as required. The operating surgeon should see the patient 6-8 weeks post surgery.

The surgical care team should support the PCP who is responsible for managing post-operative pain in the surgical patient.

Box 18a. Longer-Term Follow-up:

Longer-term follow up is required with the operating surgeon as per their routine and particularly for patients slow to respond to or non-responders to surgery. The PCP responsible for managing the patient post-surgery should request reassessment of the patient to the operating surgeon if issues are not

resolving within 12 weeks, or if symptoms recur or complications arise. Ongoing shared care between PCP and surgical team may be required to manage the patient post-operatively.

Box 19a and 20a. Surgical Outcomes:

Ongoing care supportive care should continue to be provided by the PCP to manage outcomes in patients regardless of outcomes of surgery. Patients should continually be engaged in self-managing their pain. Patients who achieve good outcomes from surgery typically should not require further surgical or specialist treatment. In patients with poor outcomes to surgery, referral to other non-surgical specialist for assessment and management should be considered (see referral criteria in [Box 5](#)). The operating surgeon may also consider work up for possible surgical correctable causes of poor outcomes.

Box 21a and 22a. Patient Transfer and Communication to Community-Based Shared Care:

The transfer of patient care to primary care for ongoing management should include a discharge summary note (as per [Box 16a](#)) with proper communication on expected postoperative course by the operating surgeon. It is recommended that the discharge summary be provided to the patient and ideally also faxed to the PCP for any health care services required in the first month of the postoperative period.

4.3.2 Clinical Pathway for Cervical Laminectomy; Anterior Cervical Discectomy and Fusion; Anterior Cervical Vertebrectomy and Fusion; Cervical Posterior Decompression and Fusion Surgery; Lumbar Decompression and Fusion

The clinical pathway in [Figure 6](#) outlines the care processes for the following spine surgery procedures performed as an inpatient surgery:

Cervical Laminectomy Surgery: This QBP procedure with intervention attribute location either at Cervical, or Cervicothoracic is performed as an inpatient surgery for 1 or more Levels.

Anterior Cervical Discectomy and Fusion Surgery: This QBP procedure with intervention attribute location either at Cervical, or Cervicothoracic is performed as an inpatient surgery for 1 or more Levels.

Anterior Cervical Vertebrectomy and Fusion Surgery: This QBP procedures with intervention attribute location either at Cervical, or Cervicothoracic is performed as an inpatient surgery for 1 or more Levels.

Cervical Posterior Decompression and Fusion Surgery or Laminectomy for Myelopathy: This QBP procedure with intervention attribute location either at Cervical, or Cervicothoracic is performed as an inpatient surgery for 1 or more Levels. Laminectomy alone not recommended at the cervicothoracic junction.

Lumbar Decompression and Fusion Surgery: This QBP procedure with intervention attribute location either at Lumbar, Lumbosacral, or Thoracolumbar is performed as an inpatient surgery for 1 or more Levels.

Anterior Cervical Discectomy and Fusion Surgery, Anterior Cervical Vertebrectomy and Fusion Surgery; Cervical Posterior Decompression and Fusion Surgery or Laminectomy for Myelopathy; and Lumbar Decompression and Fusion Surgery require special devices and instrumentation with or without a bone graft.

The care processes outlined in Box 14a to Box 22a for pre-operative, post-operative, and follow-up care for lumbar discectomy and lumbar laminectomy surgery in [Section 4.3.1](#) are similar to the care processes for the above listed procedures in [Section 4.3.2](#) with some additional post-operative inpatient care and discharge processes required, including:

[Figure 6](#) outlines the following additional post-operative inpatient care and discharge processes.

- Patients who undergo the spine procedures in this pathway will usually require 1-7 days in hospital stay. The length of stay (LOS) will vary depending on patient need, surgical level, and use of autogenous (i.e. patient donor site morbidity) bone graft during procedure. LOS will be longer for procedures performed for ≥ 3 Levels and/or those with neurological deficits.
- Follow-up imaging is required at least once following discharge from the hospital. Imaging should be performed as per the treating surgeon's routine.
- At discharge, some patients will require referral to Community Care Access Centre (CCAC), speech language pathology, and/or inpatient rehabilitation.
- A discharge summary is required as per hospital protocol. The transfer of patient care to primary care for ongoing management should include a discharge summary note (as per [Box 16a](#)). It is recommended that the discharge summary be provided to the patient and ideally also faxed to the PCP to support shared-cared management of the patient.

Figure 6: Clinical Pathway for Cervical Laminectomy; Anterior Cervical Discectomy and Fusion (ACDF), Anterior Cervical Vertebrectomy and Fusion, Cervical Posterior Decompression and Fusion Surgery, Lumbar Decompression and Fusion Surgery

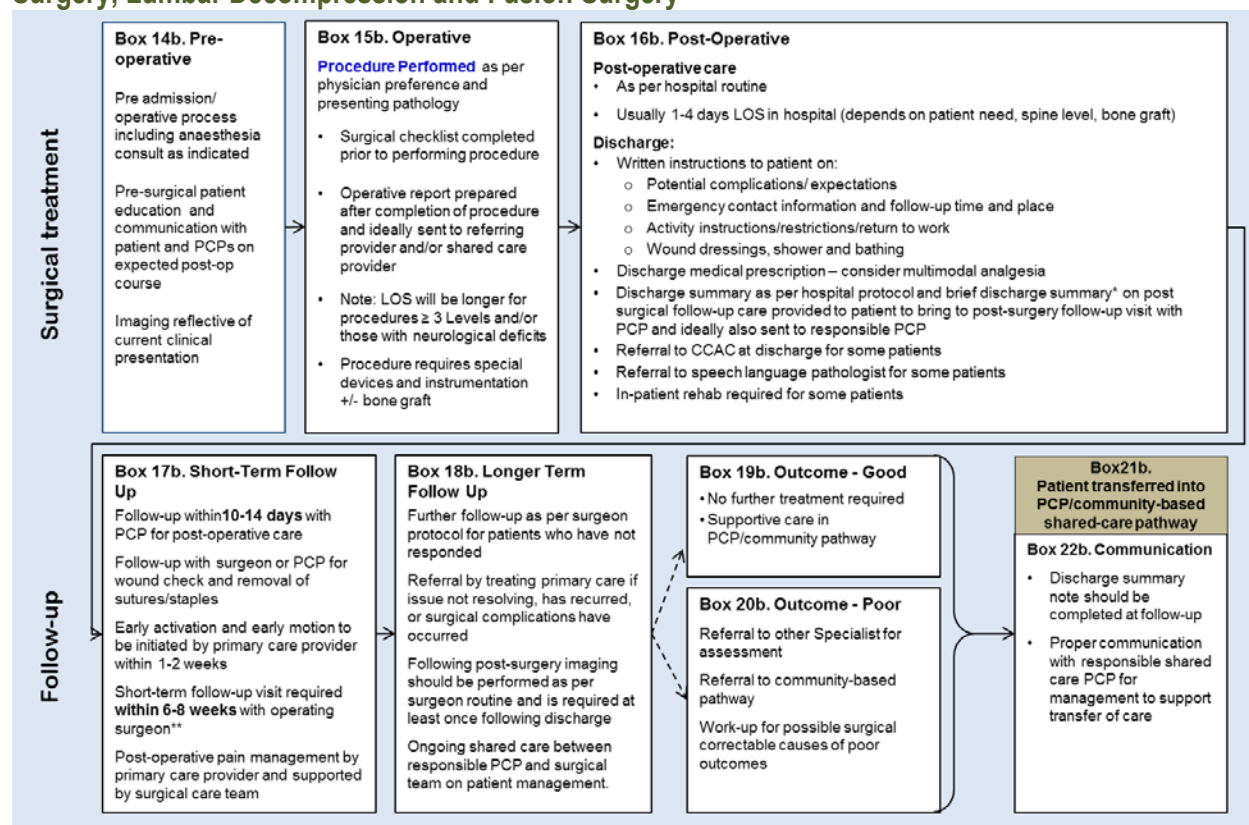


Figure 6 Notes:

***Brief Discharge Summary** should include: Date of Surgery; Diagnosis; Final Surgical Procedure; Operative and Post-operative complications; and Follow-up Care Instructions on Suture Care and Removal, Daily Activity Restrictions (Self Care, Work Restrictions) (short and long-term), Medications (short and long-term), Rehabilitative Treatment (short and long-term); Next Surgical Appointment; and planned date/time frame for return to work if relevant

******Operating surgeon may see patients at 2 weeks for suture removal

5.0 Implementation of Best Practices

The Expert Panel identified key partners to support implementation of best practices outlined in this QBP:

- Ministry of Health and Long-Term Care spine related partners:
 - Inter-professional Spine Assessment and Education Clinics (ISAEC) available in select communities across the province (<http://www.isaec.org/>)
 - Centre for Effective Practice
 - Joint Department of Medical Imaging
 - Ontario Hospital Association
- Provincial Neurosurgery Ontario
- Ontario College of Family Physicians
- Other Ontario Professional Colleges and Associations

The Expert Panel has also identified key considerations for effective implementation for this QBP which are described below.

- 1. QBP implementation requires a strong partnership between primary care and spine surgery programs at hospitals to effectively manage patients receiving spine surgery.**
- 2. PCPs should identify and utilize local resources in their catchment area to support screening, management and referrals of non-emergent spine patients.**

[Section 4.0](#) highlights a number of resources available in the community, including:

- Education tools to help patients to understand and to self-manage their pain:
 - A low back pain self-management video to educate and increase awareness of self-management tools and techniques in patients experiencing low back pain is available. (<https://www.youtube.com/watch?v=BOjTegn9RuY>)
 - Patient Education inventory that provides useful links on general patient education and mechanical pain management. (http://www.health.gov.on.ca/en/pro/programs/ecfa/docs/lb_tk_edu_bw.pdf)
- The Clinically Organized Relevant Exam Back Tool (CORE Back Tool) assists PCPs with assessing patients who present with low back pain to support risk stratification for appropriate screening, referral, and management.
- A Clinically Organized Relevant Exam Neck Tool is planned for development starting in late 2015 by the Center for Effective Practice. (<http://www.effectivepractice.org/>)
- A quick reference guide on management of neck associated disorders is available. (<https://www.fscs.gov.on.ca/en/auto/Documents/2015-qrg.pdf>)
- A clinically focused online course can support PCPs with assessing and managing low back pain. (<http://www.effectivepractice.org/index.cfm?id=48100>)

- A list of family physicians with a Focused Practice Designation (applicable to support patients with specialized musculoskeletal knowledge or cognitive based therapy skills) can be obtained from the Ontario Medical Association. (<https://www.oma.org/About/Pages/default.aspx>)
- Self-management resources and programs including Toronto Central Self Management Program (<http://www.tcsmp.ca/>) and Living Well Self Management Program of Southeastern Ontario (<http://www.livingwellseontario.ca/>).
- Inter-professional Spine Assessment and Education Clinics (ISAEC) available in select communities across the province (<http://www.isaec.org/>)

3. Implementation of QBP will require accurate data entry and coding for reimbursement and quality indicator measurement across the continuum of care.

- It is important for hospitals and clinicians to work with their respective decision support departments in reviewing inclusion criteria for QBP surgical cases and identify requirements for accurately documenting spine surgery procedures.
- For coding and abstracting of spine surgery QBP cases, the following considerations have been identified:
 - For lumbar discectomy, the procedure code 1.SE.89.^ (excision total, spinal vertebrae) has been discontinued in 2015/16. It has remained in the definition for historical comparative purposes.
- For spine surgery, the complexity and resource use of the procedure is determined by the number of spinal vertebrae levels involved in the surgical intervention. Currently coding for spine levels is optional in NACRS and DAD reporting systems.

Mandatory coding by hospitals in Ontario should be required for the number of spinal vertebrae levels documented for a spine surgery procedure.

- For quality indicator measurement to effectively monitor patient access to spine care, it is recommended that wait times for referral to surgical consultation (wait 1) and wait times for decision to treat to surgical intervention (wait 2) be captured and reported separately for:
 - Inpatient *versus* day spine surgery
 - Lumbar Instrumented *versus* non-instrumented
 - Cervical Instrumented *versus* non-instrument interventions
- There are a number of OHIP codes for neck and back complaints that are currently available to primary care (see [Appendix 1](#)). The Expert Panel recommends that the Ministry review the number and type of primary care OHIP codes to support identification of patients presenting with non-emergent for spine care. This will help improve OHIP data quality that can then be used for measurement and monitoring of QBP performance indicators in primary care.

4. QBP implementation should consider 3 separate pricing streams given the different resource utilization associated with performing spine surgery procedures in Groups A₁, A₂, and B.

The Expert Panel is recommending separate funding streams for the three surgical patient groups identified (See [Table 9](#)).

- Funding for day surgery cases should be considered separately from inpatient surgeries due to the different distribution of resource needs for these patients.
- The spine surgery procedures are grouped by the relative intensity weightings, which reflect the resource utilization for performing inpatient spine surgery. For inpatient cases, resource utilization is impacted by use of instrumentation during surgery. Costs for instrumented surgery are considerably higher.

Table 9: Spine Surgery QBP Groups: Volumes, LOS, and RIW (FY 2013/1014)

Spine Group	Type of Case	2013/14 Activity (DAD and NACRS)		
		All Cases	Average LOS	Average RIW
Group A₁: Non-Instrumented Day Surgery	Lumbar Discectomy (Day Surgery)	1,169	0.36	0.52
	Lumbar Laminectomy (Day Surgery)	266	0.35	0.53
Group A₂: Non-Instrumented Inpatient Surgery	Lumbar Discectomy (Inpatient Surgery)	872	1.73	0.9
	Lumbar Laminectomy (Inpatient Surgery)	935	2.56	1.38
	Cervical Laminectomy (Inpatient Surgery)	205	3.13	1.42
Group B: Instrumented Inpatient Surgery	Anterior Cervical Discectomy and Fusion (Inpatient Surgery)	474	2.24	1.52
	Anterior Cervical Vertebrectomy and Fusion (inpatient Surgery)	51	3.94	1.59
	Cervical Posterior Decompression and Fusion (inpatient Surgery)	382	6.03	2.03
	Lumbar Decompression and Fusion (Inpatient Surgery)	1,412	5.12	2.06

Source: Ministry of Health and Long Term Care (NACRS and DAD)

5. Funding for spinal surgery procedures excluded from the QBP will continue to remain in hospital global funding. Access to these procedures should be maintained and managed by hospitals.

- The Expert Panel intentionally excluded urgent admissions, tumour surgeries, and spinal deformities from the QBP as these represent different patient populations and care pathways. The QBP is focused on patients presenting with non-emergent spine care.
- At this time, disc arthroplasty (CCI procedure code 1.SE.53.^{^^}) has not been included in this QBP. The Expert Panel recognizes that this procedure, particularly in the cervical spine, may become more

prevalent with currently evolving evidence in the area. This procedure should be reviewed for future consideration in subsequent revisions to this QBP.

6. The Ontario Hospital Association has developed a Toolkit to support implementation of QBPs.

The Toolkit provides:

- Organizational structure overview required to support successful implementation of QBPs
- Patient engagement approaches to identify improvements that positively impact patient experience
- Change management considerations, including senior leadership support, clinical engagement and high quality clinical, financial and statistical data.
- Approaches to monitoring and measuring process and outcomes related to QBP implementation

It is hoped that the principles and action items outlined in this toolkit will be valuable to hospital and community based practitioners in implementation of this QBP.

Toolkit Link:

http://www.oha.com/CurrentIssues/keyinitiatives/PatientSafety/Documents/QBP/QBP%20Toolkit_toolkit%20only.pdf

6.0 What does it mean for Interdisciplinary Spine Care Teams?

6.1 Will the QBP have implications on interdisciplinary spine care teams (i.e. physicians, nurses, allied health, specialists, health records etc)?

Patient-centeredness in health care is one of the quality domains of QBPs. Best practice dictates that it is critical to integrate interdisciplinary collaborative health care delivery models into the care of patients with spine symptoms to achieve and maintain quality outcomes. The WHO defines interdisciplinary collaborative practice in health care as occurring “when multiple health workers from different professional backgrounds work together with patients, families, caregivers and communities to deliver the highest quality of care.”⁵⁶

Standardization of care delivery and best practices for treatment of spine symptoms will require individual care providers to participate in a **shared care and interdisciplinary team approach** involving a network of care providers with various expertise including but not limited to primary care physicians and nurse practitioners, focused practice clinicians, allied health professionals (e.g. physiotherapy and chiropractors), surgeons, rheumatologists, pain management specialists, rehabilitation specialists, and psychology/psychiatry to facilitate continuity of both community and acute based spine care. Contribution of decision support and health records departments should also be considered for accurate coding and documentation of surgical procedures.

Innovative and integrated solutions are required to plan for and meet the future needs of patients with spine symptoms and improve levels of access, coordination, and service delivery across the continuum of care.

6.2 How does the Non-Emergent Integrated Spine Care QBP align with clinical practice?

The recommendations for best practice of non-emergent integrated spine care are based on evidence from current literature and guidelines, and Expert Panel consensus. Alignment of these recommendations with current clinical practice will vary across the province depending on the local resources available within each community.

Notwithstanding resource limitations as noted, the Expert Panel strongly **recommends a shared care approach to the management of non-emergent spinal disorders** and consequently the expansion and enhancement of the current, albeit limited, regional and provincial initiatives that strive to accomplish this goal. A shared care model has most value in the identification of risk factors for chronicity, enabling appropriate investigations and referral, expansion of treatment options, and follow-up care for post surgery.

6.3 Will adoption of the non emergent integrated spine pathway change current clinical practice?

It is expected that this QBP will provide standardization in clinical practice for assessment, referral, and management of patients presenting with non-emergent spine symptoms. The extent of changes in practice will vary based on the individual circumstances of each community.

Adoption of evidence-based best practices will support primary care in delivering key messages on appropriate imaging and referrals, and acceptance of surgical referral criteria. This in turn will lead to targeted wait lists due to appropriate referrals for surgical assessment and consult.

Overall, the adoption of best practices will support the right care at the right time by the right provider to improve outcomes for patients presenting with non-emergent spine symptoms.

7.0 Surgical Service Capacity Planning

Both surgical and non-surgical capacity planning are important to fully realize an integrated care pathway for non-emergent spine care. Capacity considerations should be included in future planning of non-surgical care with respect to primary care, specialist, and outpatient rehabilitation access and support.

At this time, only considerations for surgical capacity planning are outlined here. Carve-out and funding for this spine surgery QBP should consider the following:

- Over the past three years, the overall provincial volume of spinal surgery activity to treat degenerative spinal disease has increased by 9%.
- There is a shift occurring from inpatient lumbar discectomies and laminectomies to day surgery procedures.
- The highest growth in volumes is in instrumented inpatient spine surgery.

Table 10: QBP spine surgery volumes over 3 years

Spine Group	Spinal Anatomy	2011/12	2012/13	2013/14	% Change from 2011/12 to 2013/14
A1: Non-Instrumented Day Surgery	Lumbar	1,148	1,301	1,435	+25%
A2: Non-Instrumented Inpatient Surgery	Lumbar	1,956	1,858	1,807	-8%
	Cervical	192	208	205	+7%
B: Instrumented Inpatient Surgery	Lumbar	1,265	1,356	1,412	+12%
	Cervical	743	777	907	+22%
TOTAL		5,119	5,550	5,766	+9%

Source: Ministry of Health and Long Term Care (NACRS and DAD)

Spine surgery is performed at specialized centres across the province.

Hospitals which perform more than 50 QBP spine procedures in 2013/14 are listed in [Table 11](#).

Table 11: QBP spine surgery volumes by spine surgery centre (2013/14)

LHIN	Facility Name	Total QBP Surgical Cases (2013/14)	Proportion of 2013/14 QBP Provincial Volume
Erie St. Clair	Windsor Regional Hospital / Windsor Hotel Dieu Grace	331	5.7%
South West	London Health Sciences	312	5.4%
Waterloo Wellington	Grand River Hospital	165	2.9%
Hamilton Niagara Haldimand Brant	Hamilton St Joseph's	146	2.5%
Hamilton Niagara Haldimand Brant	Hamilton Health Sciences	437	7.6%
Mississauga Halton	Trillium Health Partners	1020	17.7%
Toronto Central	St Michael's Hospital	406	7.0%
Toronto Central	Toronto East General	77	1.3%
Toronto Central	University Health Network	503	8.7%
Toronto Central	Sunnybrook Health Sciences Centre	570	9.9%
Central	Mackenzie Health	175	3.0%
Central East	Scarborough Hospital	218	3.8%
South East	Kingston General Hospital	233	4.0%
Champlain	The Ottawa Hospital	472	8.2%
North East	Health Sciences North	362	6.3%
North West	Thunder Bay Regional Health Sciences	213	3.7%
Other		126	2.2%
TOTAL		5,766	100%

Source: Ministry of Health and Long Term Care (NACRS and DAD)

Currently the median **90th percentile waiting time** across the province **for an initial surgical consultation** (with a neurosurgeon or orthopaedic spinal surgeon) for patients requiring spinal surgery **is between 5 months for ACDF surgery to more than 9 months for other spinal surgeries** (Wait 1 ^[1]). No wait time target or benchmark has been established for this Wait 1. However this wait has a significant impact on a patient's quality of life and overall care planning for the interdisciplinary team.

In addition, **once a decision for surgery has been made, 15% to 24% of patients do not receive care within the recommended Wait 2^[2] timeframe** of between 2 and 6 months (applicable to priority 3^[3] and

^[1] Wait 1 is the time that the patient waits for a first consultation with a clinician. It is measured from the time the referral is received to the date the first consultation with the clinician occurs. This wait time is only captured for patients who proceed with a decision for surgical treatment.

^[2] Wait 2 is the wait time from decision to treat by the care team until the surgical intervention is performed.

priority 4^[4] patients). Some patients wait considerably more than a year for surgery after the decision for treatment has been made.

Table 12: Wait 1 and Wait 2 for spine surgery

	2014/15 Access to Care Data				
	Wait for Consultation (Wait 1)		Wait for Surgery (Wait 2 for Priority 3 and 4 Patients)		
	Provincial Median Wait 1 Time	Provincial 90 th Percentile Wait 1 Time	Provincial Median Wait 1 Time	Provincial 90 th Percentile Wait 1 Time	Percent of Patients Treated within Wait 2 Target
Lumbar Discectomy / Laminectomy	49 Days	170 Days	50 Days	211 Days	78%
Anterior Cervical Discectomy +/- Fusion	41 Days	161 Days	45 Days	138 Days	84%
Other Spinal Surgery	50 Days	295 Days	57 Days	243 Days	76%

Source: CCO, Access to Care, Wait Time Information System (WTIS)

A 2015 survey of spine surgery programs undertaken by Provincial Neurosurgery Ontario identified significant pressures being experienced for access to degenerative spinal surgery for patients. A number of practices reported being closed to new referrals due to insufficient capacity to assess patients in a timely manner. It is believed that instrumented lumbar procedures are the greatest access pressure. Surgical wait times for spine surgery are higher than what is considered acceptable by patients and providers.

It is hoped that the QBP, once fully implemented, will reduce the wait-times for surgical consultation (wait 1) by redirecting patients who would benefit from non-surgical approaches to that pathway. By doing so, the number of appropriate surgical referral to spine surgeons should improve. Conversely, an increase in appropriate surgical referrals may increase the wait for surgery (wait 2). The funding reform afforded by implementation of this QBP may result in the need to increase surgical capacity.

^[3] Priority 3 patients have moderate pain symptoms; symptoms moderately impact ability to perform usual work day; there is low probability that treatment delay will adversely affect physical or cognitive abilities; occasional unscheduled health care encounters. The target Wait 2 time for these patients is 8 weeks.

^[4] Priority 4 patients have mild or occasional pain symptoms; elective indication for surgery; symptoms have minimal impact ability to perform usual work day; there is low probability that treatment delay will adversely affect physical or cognitive abilities. The target Wait 2 time for these patients is 26 weeks.

8.0 Performance evaluation and feedback

The Ministry requested that the Expert Panel recommend performance indicators as part of the Non-Emergent Integrated Spine QBP work. The Expert Panel recommended indicators that are aligned with best practices outlined for the entire continuum of care. The indicators include existing as well as developmental measures that can support measurement and monitoring of quality improvements that result from the implementation of the QBP.

In introducing the QBPs the ministry has a strong interest in:

1. Supporting monitoring and evaluation of the impact (intended and unintended) of the introduction of QBPs
2. Providing benchmark information for clinicians and administrators that will enable mutual learning and promote on-going quality improvement
3. Providing performance-based information back to Expert Panels to evaluate the impact of their work and update as required in real time

There was recognition that reporting on a few system-level indicators alone would not be sufficient to meet the ministry's aim of informing and enabling quality improvement initiatives at the provider-level. Therefore measures meaningful to hospitals and clinicians that are interpretable and have demonstrable value in improving the quality of care provided to patients are of utmost importance.

To guide the selection and development of relevant indicators for each QBP, the ministry, in consultation with experts in evaluation and performance measurement, developed an approach based on the policy objectives of the QBPs and a set of guiding principles. This resulted in the creation of an integrated scorecard with the following six quality domains:

- Effectiveness (including safety)
- Appropriateness
- Integration
- Efficiency
- Access
- Patient-centeredness

The scorecard is based on the following guiding principles:

- **Relevance** – the scorecard should accurately measure the response of the system to introducing QBPs
- **Importance** – to facilitate improvement, the indicators should be meaningful for all potential stakeholders (patients, clinicians, administrators, LHINs and the ministry)
- **Alignment** – the scorecard should align with other indicator-related initiatives where appropriate

- **Evidence** – the indicators in the integrated scorecard need to be scientifically sound or at least measure what is intended and accepted by the respective community (clinicians, administrators and/or policy-decision makers)

A set of evaluation questions was identified for each of the QBP policy objectives outlining what the ministry would need to know in order to understand the intended and unintended impact of the introduction of QBPs. These questions were translated into key provincial indicators resulting in a QBP scorecard (see table below).

The Expert Panel recommended indicators across the six quality domains of the scorecard to provide a foundation that ensures provision of care that is aligned with best practice principles (See [Table 13](#)).

Table 13: Expert Panel Recommended Indicators for Surgical and Non-Surgical Spine Care

Quality Domain	What is being measured?	MOHLTC key provincial indicators	Expert Panel Recommended Indicators: Surgical	Expert Panel Recommended Indicators: Non-Surgical
Effectiveness	What are the results of care received by patients and do the results vary across providers that cannot be explained by population characteristics as well as is care provided without harm?	<ul style="list-style-type: none"> Proportion of QBPs that improved outcomes Proportion of QBPs that reduced variation in outcome Proportion of (relevant) QBPs that reduced rates of adverse events and infections 	<ol style="list-style-type: none"> Post-surgical complication rates (NACRS/DAD) Patient satisfaction with outcomes and pain post spine surgery (patient surveys) Number of spine surgeries performed annually per 100,000 population (NACRS/DAD) 	<ol style="list-style-type: none"> Reduced use of opioids and related adverse events (ODB / NACRS/ DAD) Number of ED visits for non-emergent spine symptoms (NACRS/DAD) Proportion of non-emergent spine symptoms patients referred for MRI who underwent surgery (Ministry DI data / NACRS/DAD)
Appropriateness	Is patient care being provided according to scientific knowledge and in a way that avoids overuse, underuse or misuse?	<ul style="list-style-type: none"> Proportion of QBPs that reduced variation in utilization Proportion of (relevant) QBPs that saw a substitution from inpatient to outpatient/day surgery Proportion of (relevant) QBPs that saw a substitution to less invasive procedures Increased rate of patients being involved in treatment decision Proportion of (relevant) QBPs that saw an increase in discharge dispositions into the community 	<ol style="list-style-type: none"> Number of surgical referrals (OHIP) Inpatient length of stay for spine surgical patients (NACRS/DAD) Percent of day surgery cases for (NACRS/DAD): <ul style="list-style-type: none"> Discectomy Laminectomy (lumbar) 	<ol style="list-style-type: none"> Number of specialist referrals for disciplines included in the QBP best practice guidelines (OHIP) Number of MRI scans by PCP and LHIN (Ministry DI data) Number of PCPs that have completed spine care education programs (CME credits) <u>Future Development</u>: Number of providers using and documenting the CORE Back Tool to manage patients with non-emergent spine symptoms (EMR)
Integration	Are all parts of the health system organized, connected and work with another to provide high quality care?	<ul style="list-style-type: none"> Reduction in 30-day readmissions rate (if relevant) Improved access to appropriate primary and community care including for example psychosocial support (e.g. personal, family, financial, employment and/or social needs) Coordination of care (TBD) Involvement of family (TBD) 	<ol style="list-style-type: none"> 30 day readmission rate to hospital (NACRS/DAD) 30 day return to ED following surgery (NACRS/DAD) Percent of PCPs who received hospital discharge report from surgeon within 2 weeks (Developmental Indicator) 	<ol style="list-style-type: none"> Percent of QBP spine surgery patients seen by PCP within 2 weeks of surgery (NACRS/DAD/ OHIP) Number of Extended Role Practitioners by LHIN (CPSO/ other professional association data source)
Efficiency	Does the system make best use of available resources to yield maximum benefit ensuring that the system is sustainable for the long term?	<ul style="list-style-type: none"> Actual costs vs. QBP price 	<ol style="list-style-type: none"> Number of surgical referrals that receive a surgical procedure within 6 months (OHIP) 	<ol style="list-style-type: none"> Proportion of patients referred for repeat spine imaging (MRI, CT, X-ray) for the same complaint (Ministry of Health and Long-Term Care)

Access	Are those in need of care able to access services when needed?	<ul style="list-style-type: none"> • Increase in wait times for QBPs / for specific populations for QBP • Increase in wait times for other procedures • Increase in distance patients have to travel to receive the appropriate care related to the QBP • Proportion of providers with a significant change in resource intensity weights (RIW) 	<p>11. 90th percentile combined Wait 1 and Wait 2 for QBP non-instrumented spine surgeries (CCO Access to Care, WTIS):</p> <ul style="list-style-type: none"> • Lumbar procedures (Discectomy; Laminectomy) • Cervical procedures (Laminectomy) <p>12. 90th percentile combined Wait 1 and Wait 2 for QBP instrumented spine surgeries (CCO Access to Care, WTIS):</p> <ul style="list-style-type: none"> • Cervical procedures (Anterior Cervical Discectomy and Fusion / Anterior Vertebrectomy; and Fusion / Posterior Decompression and Fusion) • Lumbar procedures (Decompression and Fusion) 	<p>25. Same day or next day access to PCP for patients with non-emergent spine symptoms (patient survey)</p> <p>26. Percentage of evidenced-based active rehabilitation spine care programs by LHIN</p> <p>27. Percent of patients with non-emergent spine symptoms who have access to evidenced-based active rehabilitation spine care programs when needed (patient survey)</p>
Patient-Centeredness	Is the patient/user at the center of the care delivery and is there respect for and involvement of patients' values, preferences and expressed needs in the care they receive? (TBC)	<ul style="list-style-type: none"> • Increased rate of patients being involved in treatment decision • Coordination of care (TBD) • Involvement of family (TBD) 	<p>13. Percent of surgical patients satisfied with (patient survey):</p> <ul style="list-style-type: none"> • Interaction with clinical team • Discharge planning • Pre-op education • Post-op education <p>14. Rate of return to work / ADL (EMR / patient survey)</p>	<p>28. Percent of patients receiving PCP supported early patient self-management (i.e. within the first three months) including:</p> <ul style="list-style-type: none"> • Goal setting • Information on expectations and chronic disease management (patient survey / EMR) <p>29. Percent of non-emergent spine patients satisfied with care co-ordination and communication between providers (patient survey)</p> <p>30. Rate of return to work / ADL (EMR / patient survey)</p> <p>31. <u>Future Development</u>: Percent of non-emergent spine patients who are able to manage their pain e.g. pain stability / management (CORE back tool pain scale / EMR)</p>

It should be noted that although not explicitly mentioned as a separate domain, the equity component of quality of care is reflected across the six domains of the scorecard and will be assessed by stratifying indicator results by key demographic variables and assessing comparability of findings across sub-groups. Where appropriate, the indicators will be risk-adjusted for important markers of patient complexity so that they will provide an accurate representation of the quality of care being provided to patients.

The ministry and experts recognized that to be meaningful for clinicians and administrators, it is important to tie indicators to clinical guidelines and care standards. Hence, Expert Panels that developed the best practices were asked to translate the provincial-level indicators into QBP-specific indicators. In consulting the Expert Panels for this purpose, the ministry was interested in identifying indicators both for which provincial data is readily available to calculate and those for which new information would be required. Measures in the latter category are intended to guide future discussion with ministry partners regarding how identified data gaps might be addressed.

In developing the integrated scorecard approach, the ministry recognized the different users of the indicators and envisioned each distinct set of measures as an inter-related cascade of information. That is, the sets of indicators each contain a number of system or provincial level measures that are impacted by other indicators or driving factors that are most relevant at the Local Health Integration Networks (LHINs), hospital or individual clinician level. The indicators will enable the province and its partners to monitor and evaluate the quality of care and allow for benchmarking across organizations and clinicians. This will in turn support quality improvement and enable target setting for each QBP to ensure that the focus is on providing high quality care, as opposed to solely reducing costs.

It is important to note that process-related indicators selected by the Expert Panels will be most relevant at the provider level. The full list of these measures is intended to function as a 'menu' of information that can assist administrators and clinicians in identifying areas for quality improvement. For example, individual providers can review patient-level results in conjunction with supplementary demographic, financial and other statistical information to help target care processes that might be re-engineered to help ensure that high-quality care is provided to patients.

Baseline reports and regular updates on QBP specific indicators will be included as appendices to each QBP Clinical Handbook. Reports will be supplemented with technical information outlining how results were calculated along with LHIN and provincial-level results that contextualize relative performance. Baseline reports will also be accompanied by facility-level information that will facilitate sharing of best practices and target setting at the provider-level.

The ministry recognizes that the evaluation process will be on-going and will require extensive collaboration with researchers, clinicians, administrators and other relevant stakeholders to develop, measure, report, evaluate and, if required, revise and/or include additional indicators to ensure that the information needs of its users are met.

9.0 Support for Change

The ministry, in collaboration with its partners, will deploy a number of field supports to support adoption of the funding policy. These supports include:

- Committed clinical engagement with representation from cross-sectoral health sector leadership and clinicians to champion change through the development of standards of care and the development of evidence-informed patient clinical pathways for the QBPs.
- Dedicated interdisciplinary clinical expert group that seek clearly defined purposes, structures, processes and tools which are fundamental for helping to navigate the course of change.
- Strengthened relationships with ministry partners and supporting agencies to seek input on the development and implementation of QBP policy, disseminate quality improvement tools, and support service capacity planning.
- Alignment with quality levers such as the Quality Improvement Plans (QIPs). QIPs strengthen the linkage between quality and funding and facilitate communication between the hospital board, administration, providers and public on the hospitals' plans for quality improvement and enhancement of patient-centered care.
- Deployment of a Provincial Scale Applied Learning Strategy known as IDEAS (Improving the Delivery of Excellence Across Sectors). IDEAS is Ontario's investment in field-driven capacity building for improvement. Its mission is to help build a high-performing health system by training a cadre of health system change agents that can support an approach to improvement of quality and value in Ontario.

We hope that these supports, including this Clinical Handbook, will help facilitate a sustainable dialogue between hospital administration, clinicians, and staff on the underlying evidence guiding QBP implementation. The field supports are intended to complement the quality improvement processes currently underway in each organization.

10.0 Membership

Name	Affiliation	Functional Representation	LHIN Representation
Dr. Raja Rampersaud (Chair)	Orthopaedic Spine Surgeon, University Health Network; Lead, ISAEC pilot	Orthopaedic Spine Surgeon	Toronto Central
Dr. Julia Alleyne (Co-Chair)	Primary Care Physician with Focused Practice in Sport and Exercise Medicine, University Health Network, Toronto Rehab Institute	Family Medicine	Toronto Central
Dr. Inge Schabot	Family Physician, Stonechurch Clinical Teaching Unit, McMaster University	Family Medicine	Hamilton Niagara Haldimand Brant
Dr. James Rutka	Co-Chair, Provincial Neurosurgery Ontario; Chair, Department of Surgery, University of Toronto	System Planner	Provincial
Dr. Rick Moulton	Chairman, Division of Neurosurgery, The Ottawa Hospital	Neurosurgeon	Champlain
Dr. Ryan DeMarchi	Neurosurgeon, Health Sciences North	Neurosurgeon	North East
Dr. Dominic Rosso	Dr. Dominic Rosso, Director of Interventional and Diagnostic Neuroradiology, Trillium Health Partners	Neuroradiology	Mississauga Halton
Dr. Christopher Bailey	Orthopaedic Spine Surgeon, London Health Sciences Centre	Orthopaedic Spine Surgeon	South West
Dr. Ronald Pokrupa	Neurosurgeon, Kingston General Hospital	Spine Neurosurgeon	South East
Dr. Anuj Bhatia	Director of Clinical Pain Services in Department of Anesthesia, University Health Network	Anesthesiologist / Pain Specialist	Toronto Central
Dr. Paul Fenton	Radiologist, Musculoskeletal and Spine specialty, Kingston General Hospital	Radiology	South East
Dr. Robert Inman	Director, Spondylitis Program, University Health Network	Rheumatology	Toronto Central
Dr. John Flannery	Director, Musculoskeletal and Multisystem Rehabilitation Program, Toronto Rehabilitation Institute	Physiatry	Toronto Central
Dr. John Kowal	Psychologist, Chronic Pain Management Program, The Ottawa Hospital Rehabilitation Centre	Psychology	Champlain
Jill Burkholder	Past President, Nurse Practitioners Association of Ontario; Primary Health Care Nurse Practitioner, Maple Family Health Team	Nurse Practitioner	South East
Dr. Deborah Kopansky-Giles	Steering Committee Member, Bone and Joint Canada Professor, Canadian Memorial Chiropractic College	Chiropractor	Provincial
Dr. Pierre Côté	Canada Research Chair in Disability Prevention and Rehabilitation, University of Ontario Institute of Technology; Epidemiologist/Chiropractor	Chiropractor/Researcher	Provincial
Caroline Fanti	Practice Leader, Inter-professional Spine Assessment and Education Clinics (ISAEC) program	Physiotherapy	North West
Dr. Andrea Furlan	Scientist, Institute for Work and Health	Methodologist / Researcher	Provincial
Dr. Eugene Wai	Orthopaedic Surgeon and Epidemiologist, The Ottawa Hospital	Methodologist / Researcher	Champlain
Dr. Fawaz Siddiqi	Neurosurgeon, Researcher, Health Care Delivery Model	Methodologist / Researcher	South West

Dr. Chaim Bell	Adjunct Scientist, ICES	Health Services Researcher	Provincial
Dr. Angela Chung	Founding Director of University Health Network Osteoporosis Program, the Founding Director of Centre of Excellence in Skeletal Health Assessment (CESHA)	Senior Scientist/Osteoporosis	Toronto Central
Elizabeth Chiu	Manager of Coding and Abstracting, University Health Network	Decision Support	Provincial
Marnie Weber	Executive Director, Strategic Development, University Health Network	Hospital Administrator	Toronto Central
Patti Cochrane	Senior Vice President, Clinical Strategy and Chief Innovation Officer, Trillium Health Partners	Hospital Administrator	Mississauga Halton
Michael Stewart (ex-officio)	Project Lead, Quality Alignment to Payment, Health Quality Branch, Ministry of Health and Long-Term Care	System Planner	Provincial
Allison Costello (ex-officio)	Manager (A), Quality Programs and HQO Liaison, Health Quality Branch, Ministry of Health and Long-Term Care	System Planner	Provincial
Seetha Kumaresk (ex-officio)	Acting Program Manager for the Blended Models Unit in Primary Health Care Branch	Ministry of Health and Long-Term Care	Provincial
Cindy VandeVyvere	Senior Planner, Critical Care Services Ontario	Project co-Lead	Provincial
Samra Mian	Corporate Planner, University Health Network	Project co-Lead	Provincial
Tanya Mohan	Senior Business Analyst, Critical Care Services Ontario	Project Support	Provincial
Paul Santaguida	Program Director, Health Quality Programs (HQP)	Project Support	Provincial

The following experts were invited to present to the Panel on various topics to inform the development of the Clinical Handbook :

Name	Title	Affiliation	Presentation
Dr. Dale Guenter	Primary Care Physician, Co-Investigator, McMaster Pain Assistant	McMaster Family Practice	Low Back Pain Clinical Decision Support System for EMR
Heather Driver	Sr. Manager, Automobile Insurance Policy	Financial Services Commission of Ontario	Current Status of Neck Pain Practice in Ontario
Margaret Orlander	Policy Consultant for Automobile Insurance Policy		
Robin Horodyski	Director Neuro/MSK Program	Trillium Health Partners	Trillium Health Partners' Spine Centre Program
Dave Dos Santos	Advanced Chiropractor		
Nijole Simonavicius	Manager Spine Centre		
Dr. Hart Schutz	Neurosurgeon		
Anna Lee	Advanced Physiotherapist		
Lilly Whitham	Senior Project Manager	Joint Department of Medical Imaging (UHN, Mount Sinai, Women's College Hospital)	DI Appropriateness (DI-APP) Project and Low Back Pain Pathway
Karen Weiser	Business Analyst		
Thomas Custers	Manager, Quality Performance and Evaluation	Ontario Ministry of Health and Long-Term Care	Overview of the purpose and development of QBP Indicators
Ella Ferris	Chief Nursing Officer	St. Michael's Hospital	Activity of the Provincial Neurosurgery Ontario Spine Sub-Group
Leslie Carlin	Research Associate	University of Toronto	Summary of NLBP Patient Focus Groups

11.0 Appendices

DRAFT

Appendix 1: OHIP Diagnostic Codes

Table A. For primary care visits (OHIP):		
Intervertebral disc disorders	Back	722
Coccydynia; lumbago; lumbar strain; sciatica	Back	724
Neck sprain/strain; sprains, strains and other trauma of coccyx, low back or neck; whiplash	Neck	847
Table B. For emergency department utilization (NACRS):		
Dislocation, sprain and strain of joints and ligaments at neck level	Neck	S13.0-S13.3
Sprain and strain of cervical spine (e.g. whiplash)	Neck	S13.40-S13.48
Sprain and strain of joints and ligaments of other and unspecified parts of the neck	Neck	S13.6
Other specified dorsopathies, lumbosacral region	Back	M53.87
Other specified dorsopathies, sacral and sacrococcygeal region	Back	M53.88
Dorsopathy, unspecified, lumbosacral region	Back	M53.97
Dorsopathy, unspecified, sacral and sacrococcygeal region	Back	M53.98
Sciatica	Back	M54.3
Lumbago with sciatica	Back	M54.4
Low back pain	Back	M54.5
Radiculopathy, lumbosacral region	Back	M54.17
Radiculopathy, sacral and sacrococcygeal region	Back	M54.18
Dislocation, sprain and strain of joints and ligaments of the lumbar spine and pelvis	Back	S33.0-S33.7

Appendix 2: Patient survey



Appendix 2 - Patient
Survey.pdf

Appendix 3: Guide for Focus Group Discussions

Prep: voice recorder, batteries, notebook, name cards, consents, pens

1. Welcome; discuss reason for the focus group, the nature of the QBP. Ask for questions.

Purpose:

The Ontario Ministry of Health and Long-Term Care is developing a provincial care approach for neck and back pain. This work will help all health care providers in Ontario treat patients with neck and back pain in the best possible way based on the best current evidence.

The main objective of these focus groups is to understand patients' experiences, concerns, and suggestions to improve neck and back pain care in Ontario. We want to know what you think is important for health care providers to consider when treating patients with neck and back pain.

Ontario's Excellent Care for All Strategy

Health care matters to every Ontarian. That's why the government has taken important steps to improve the quality of Ontario's health care system and make sure every health care dollar is used to provide the best possible care.

Ontario's new Excellent Care for All strategy means that :

1. The patient is at the centre of the health care system.
2. Decisions about patient care are based on the best evidence and standards.
3. The health care system is focused on the quality of care and the best use of resources.
4. The main goal of the health care system is to get better and better at what it does.

How does this affect the health care system?

The health care system is playing a vital role in improving health care services for Ontarians by working toward new standards set out in the *Excellent Care for All Act*, which became law in June of 2010. These new standards will ensure that Ontarians receive health care of the highest possible quality and value.

How will it affect me?

For individual Ontarians and their families, the Excellent Care for All strategy means that:

- Doctors, nurses and everyone working in health care will put your needs as a patient first.
- The best available evidence will be used to make decisions about the care you receive.
- The experience you have as a patient will be an important part of health care quality.
- You will have more information and greater choice in the health care you receive

Finally, health care providers will be paid based on how well they make quality their main job. As the health care system makes quality its number one concern, it will also make better use of public funds. And that means all Ontarians will be able to count on the health system being there in the future.

2. Where it hurts

1. Please tell us about your pain [prompt: duration, frequency, persistence, location(s)].
2. What effects, if any, does this [or most recent episode] of pain have on your daily activities?
 - a. (prompts: self-care, work; household/family; recreation)
3. What effect, if any, does this [or most recent] pain have on your state of mind?

3. Treating the pain

4. What steps do you take to manage your pain? [prompt: visit doctor, exercise (independent, supervised), physio, chiropractic, alternative practitioner, medication – Rx, OTC; oral or injected, surgery]
5. What you do for **self-management** on a daily basis? Describe a typical day.

6. What do health care practitioners advise about managing your pain? [prompts: which practitioners; what types of treatment?]
7. Of the various types of advice you have received, which is most helpful, if any?
8. What treatments or activities do you find helpful, if any?
9. What problems or barriers do you face in accessing or following recommended treatments?

4. Accessing care

10. Please tell us about your experience in accessing pain-related health care when you need it [timeliness, location, choice]
11. What would help you the most in managing your pain?
12. Please tell us your best experience with health care, most challenging experience with health care, related to the spine.

Is there anything else you would like to discuss with regard to your neck or back pain? What topics have we not covered here that are important to you?

Appendix 4: CORE Back Tool



Appendix 4 - Core
Back Tool.pdf



Appendix 4 - Core
Back Tool Guide.pdf

Appendix 5: Neck Assessment Considerations

The Expert Panel developed a set of neck assessment considerations using the CORE Back Tool framework.

1. History:

- Determine where patient experiences worst pain:
 - ☐ Neck
 - ☐ Upper Extremity (Upper Arm, Shoulder)
 - ☐ Shoulder Girdle
 - ☐ Head
- Determine whether patient's pain is:
 - ☐ Constant (24/7) (If, constant pain → Rule out red flags (See Table A))
 - ☐ Intermittent (not consistent with cancer, infection, acute fracture)
 - ☐ Directional (particular direction that reproduces pain)
- Determine if any neurologic symptoms consist of:
 - ☐ Tingling, numbness and weakness in arms, hands, legs, feet, or upper or lower limbs
 - ☐ Change in dexterity or walking
- Determine if symptoms suggestive of inflammatory arthritis (Morning stiffness in neck lasting > 30 minutes, with age on onset <45 years, nocturnal back pain, improvement with exercise not rest)

2. Screening for Red Flags and Yellow Flags

In patient presenting with neck pain that is constant, screening for red flags (See Table A) should be undertaken.

Red Flags (Risk Factors for Serious Pathology)

Table A: Risk factors for serious pathology (red flags) for neck pain

Possible Cause	Risk factors of serious pathology identified during history or physical examination
Fracture/dislocation	<ul style="list-style-type: none">• Positive Canadian C-spine rule
Cancer	<ul style="list-style-type: none">• History of cancer• Unexplained weight loss• Night pain
Vertebral infection	<ul style="list-style-type: none">• Fever• Immuno-suppressed patients (Hep C, B, HIV)• Intravenous drug use• Recent infection• Meningismus (headache, neck stiffness)

Possible Cause	Risk factors of serious pathology identified during history or physical examination
Osteoporotic fractures	<ul style="list-style-type: none"> • History of osteoporosis • Long-term corticosteroid use • Older age
Myelopathy/Severe progressive neurological deficits	<ul style="list-style-type: none"> • Upper extremity pain and weakness • Sensory changes in lower extremity • Motor weakness and atrophy • Hyper-reflexia • Change in dexterity • Spastic gait • Falls
Carotid/vertebral artery dissection	<ul style="list-style-type: none"> • Sudden and intense onset of headache or neck pain • Meningismus (headache, neck stiffness)
Brain haemorrhage/mass lesion	<ul style="list-style-type: none"> • Sudden and intense onset of headache • Meningismus (headache, neck stiffness)
Inflammatory arthritis	<ul style="list-style-type: none"> • Morning stiffness, disproportionate nocturnal spine pain, improvement with exercise not rest • Swelling or pain in multiple joints

Note: Screening is only intended for adult patients

Yellow Flags (Barriers)

For those with neck pain > 6 weeks or non-responsive to treatment, Yellow Flags⁵⁷ include:

- Belief that pain or activity will cause physical harm
- Excessive reliance on rest, time off work or dependency on others
- Persistent low or negative moods, social withdrawal
- Belief that passive treatment (i.e. modalities) is key to recovery
- Problems at work, poor job satisfaction
- Unsupportive/dysfunctional or dependent family relationships
- Expectation of poor outcome

3. Radiography

Routine imaging for spine patients is not required unless:

- There are clinical reasons to suspect serious underlying pathology (e.g. red flags)
- Imaging is necessary for the planning and/or execution of a particular evidenced-based therapeutic intervention on a specific spinal condition.

Suggested investigation for suspected significant pathology include:

- **X-ray:** Suspected traumatic or osteoporotic fracture, congenital anomaly /deformity, inflammatory arthritis, a history of or suspicion of cancer /infection
- **MRI:** functionally significant progressive neurological deficit, persisting radicular symptoms, high suspicion of cancer /infection with negative x-ray (note: x-ray alone is not indicated as a diagnostic tool for cancer / infection / inflammation) due to high false negative rate (note- AP pelvis x-ray is appropriate for initial studies of suspected inflammatory back pain)

- **Bone scan:** infection, suspected inflammatory process, history of cancer, CBC Diff ESR, Blood Cultures, Fever or infectious risk factor

4. Surgical Referral for Neck Related Symptoms

Urgent or emergent referral to emergency room should be considered when patient presents with red flags (See Table B), particularly with severe/ progressive neurological deficit.

Surgical Office referral should be considered when the patient presents with the stable or slowly progressive myelopathy or those with radiculopathy and functionally significant neurological deficits that is not improving or persistent and unmanageable symptoms failing conservative treatment.

5. Physical Examination for Neck Pain

A general exam should look at visible abnormality of the neck (web neck, deformity, distorted posture). PCPs should also perform the following tests:

- Range of motion with respect to pain reproduction
- Upper limb tension test: Contralateral rotation of the head and extension of the arm.
- Spinal and Paraspinal and Trapezius muscle palpation
- Basic Neurological Exam (See Table B)

Table B: Neurological Examination for Neck Pain

Recommended Examination Type	Exam Details
Motor	<ul style="list-style-type: none"> • Muscle tone, atrophy, strength <ul style="list-style-type: none"> • Shoulder Abduction (Deltoid) • Elbow Flexion (Biceps) • Elbow Extension (Triceps) • Wrist Extension • Finger Flexion/extension (Long flexors / extensors) • Finger Abduction (Intrinsics)
Gait	<ul style="list-style-type: none"> • Tandem Gait/Spastic • Imbalance
Dexterity and Fine movements of Fingers	<ul style="list-style-type: none"> • Simple neuro-coordination e.g. tapping of thumb and index finger
Sensory Changes or loss (Use Pin-prick sensation except for spinal sensory changes)	<ul style="list-style-type: none"> • Radicular pattern • Proximal–distal (Arms, fingers; Neck and Torso; Legs and feet) • Spinal sensory changes
Reflexes:	<ul style="list-style-type: none"> • Biceps • Triceps • Hoffmans • Patellar • Achilles • Babinski

6. Determination of Neck Pain Pattern and Treatment Recommendations:

The Expert Panel outlined 4 patterns of neck pain with treatment recommendations using the FSCO guidelines^v for neck pain and its associated disorders grades I-IV (See Table C):

Neck Dominant Pain (Non-functional limitation of ADL)

- No signs or symptoms suggestive of major structural pathology and/or minor interference with ADL

Neck Dominant Pain (with Significant ADL limitation)

- No signs or symptoms of major structural pathology, but major interference with ADL

Arm Dominant Pain (Radiculopathy)

- No signs or symptoms of major structural pathology, but presence of neurologic signs such as decreased deep tendon reflexes, weakness or sensory deficits

Major Structural Pathology

- Signs or symptoms of major structural pathology (e.g. red flags, fracture, cervical myelopathy)

Table C: Non-Emergent Neck Pain Patterns and Treatment Recommendations

Neck Pattern	Treatment Recommendations
I Neck Dominant Pain (Non-functional limitation of ADL)	<ul style="list-style-type: none">• See FSCO Guidelines– Management of NAD I-II
II Neck Dominant Pain (with Significant ADL limitation)	<ul style="list-style-type: none">• See FSCO Guidelines– Management of NAD I-II• Directional preference (guiding the exercise on the opposite side of pain)
III Arm Dominant Pain (Radiculopathy)	<ul style="list-style-type: none">• See FSCO Guidelines– for initial Management of NAD III• Surgical Office referral should be considered functionally significant neurological deficits that is not improving or persistent and unmanageable radicular symptoms failing conservative treatment
IV Major Structural Pathology	<ul style="list-style-type: none">• Refer to surgeon

Note: Reminder that urgent or emergent referral to emergency room should be considered when patient presents with red flags, particularly with severe/ progressive neurological deficit.

^v Although developed for motor vehicle injury, all the evidence was for both accident and non-accident or combined population, review for development of guidelines. Therefore recommendations are cross-cutting. The guidelines can be accessed at <https://www.fSCO.gov.on.ca/en/auto/Documents/2015-cti.pdf>

Appendix 6: Low Back Pain Imaging Pathway

The Low Back Pain Imaging Pathway has been developed by the Provincial Diagnostic Imaging Appropriateness Panel for Musculoskeletal and Spine. The membership of the panel is:

Primary Care Providers	<p>Dr. Heather McLean (co-lead), Family Physician, Thunder Bay</p> <p>Caroline Fanti (co-lead), Advanced Practice Physiotherapist, Thunder Bay Regional Health Sciences Centre</p> <p>Dr. Ric Almond, Primary Care Lead Northwest LHIN, Program Director Family Medicine, Northern Ontario School of Medicine</p> <p>Dr. Andrew Bidos, Chiropractor, Toronto Western Hospital, University Health Network</p> <p>Dr. Neil Dilworth, Sports Medicine Specialist, MacIntosh Clinic, Georgetown Hospital Emergency; Clinical Lecturer Women's College Hospital, Department of Family and Community Medicine, University of Toronto</p> <p>Dr. Rahul Jain, Family Physician and Hospitalist, Sunnybrook Health Sciences Centre; Lecturer, Department of Family and Community Medicine, University of Toronto</p> <p>Dr. Michelle Naimer, Clinical Director, Mount Sinai Academic Family Health Team; Associate Professor, Department of Family and Community Medicine, University of Toronto</p> <p>Dr. Sarah Newbery, Marathon Family Health Team Staff Physician, Wilson Memorial General Hospital Chief of Staff; Associate Professor, Northern Ontario School of Medicine</p> <p>Dr. Margaret Woods, Superior Family Health, Lead Physician; Chief of General and Family Practice, Thunder Bay Regional Health Sciences Center</p> <p>Renée-Ann Wilson, Advanced Practice Physiotherapist, Health Sciences North / Horizon Santé-Nord</p>
Radiologists	<p>Dr. David Kisselgoff (co-lead), Medical Director Diagnostic Services, Chief Radiologist, Thunder Bay Regional Health Sciences Centre; Associate Professor, Northern Ontario School of Medicine</p> <p>Dr. Robert Bleakney, Staff MSK Radiologist, Joint Department of Medical Imaging; Assistant Professor, University of Toronto</p> <p>Dr. Paul Fenton, MSK Radiologist, Kingston General Hospital; Associate Professor of Radiology, Queen's University</p> <p>Dr. Srin Harish, Staff Radiologist, St. Joseph's Healthcare; Associate Professor, Department of Radiology, McMaster University</p> <p>Dr. Rakesh Mohankumar, Staff Radiologist, Musculoskeletal Division, Joint Department of Medical Imaging; Assistant Professor, University of Toronto</p> <p>Dr. John O'Neill, MSK Imaging Specialist, Associate Professor, St. Joseph's Healthcare/McMaster University</p> <p>Dr. Roger Smith, Interventional Neuroradiologist, University Health Network</p>

Dr. David Puskus (co-lead), Chief of Orthopaedic Surgery , Trauma Team Leader, Thunder Bay Regional Health Sciences Centre; Assistant Professor and Program Director Post Graduate Training: Orthopaedic Surgery; Northern Ontario School of Medicine

Dr. Chris Bailey, Orthopedic Surgeon, London Health Science Centre; Western University and Victoria Hospital

Dr. Steve Gallay, Orthopedic Surgeon, Rouge Valley Health System

Dr. J. Robert Giffin, Professor of Orthopaedic Surgery; Co-Director, Wolf Orthopaedics Biomechanics Laboratory; Western University

Dr. Jon Hummel, Orthopedic Surgeon, Program Chief, Surgery, Rouge Valley Health System

Dr. Hans J Kreder, Orthopaedic Surgery and Health Policy Evaluation & Management Chief, Holland Musculoskeletal Program; Marvin Tile Chair & Chief, Orthopaedic Surgery, Sunnybrook Health Sciences Centre; Professor, University of Toronto

Dr. Doug Richards, Medical Director, David L. MacIntosh Sport Medicine Clinic; Chief Medical Officer, Canadian Sport Institute Ontario; Assistant Professor, Kinesiology and Physical Education, University of Toronto

Dr. John Theodoropoulos, Orthopedic Surgeon, Arthroscopy and Sports Medicine, Mount Sinai and Women's College Hospital

Dr. Eugene Wai, Head, Ottawa Combined Adult Spine Program;, Clinician Investigator, Ottawa Hospital Research Institute; Associate Professor, Division of Orthopaedic Surgery, University of Ottawa



Appendix 6 - Low Back Imaging Pathwa

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