Ambassador Program Guideline for the Evidence-Informed Primary Care Management of Low Back Pain, 3rd Edition

Background Document

Supporting documents and process description

February 2017

Abbreviations

All abbreviations that have been used in this document are listed here unless the abbreviation is well known, has been used only once, or has been used only in tables or appendices, in which case the abbreviation is defined in the figure legend or in the notes at the end of the table.

AGREE	Appraisal of Guidelines for Research and Evaluation
Alberta CPG	*Alberta Clinical Practice Guideline for the Evidence-Informed Primary Care Management of Low Back Pain*
CADTH	Canadian Agency for Drugs and Technologies in Health
CPG	clinical practice guideline
CS	case series study
EO	expert opinion
G	guideline
G1 to G11	seed guidelines
GDG	Guideline Development Group
GLIA	GuideLine Implementability Appraisal
GUC	Guideline Update Committee
HTA	health technology assessment
IHE	Institute of Health Economics
NRCS	nonrandomized comparative study
RCT	randomized controlled trial
SC	Steering Committee
SR	systematic review
TOP	Toward Optimized Practice
US FDA	United States Food and Drug Administration

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SCOPE OF THIS DOCUMENT

This background document outlines the methods used to update the *Alberta Clinical Practice Guideline for the Evidence-Informed Primary Care Management of Low Back Pain*, which was produced as part of the second phase of the Alberta Health Technology Assessment (HTA) Ambassador Program.

This document should be cited as: Institute of Health Economics (IHE). *Ambassador Program guideline for the evidence-informed primary care management of low back pain, 3rd Edition: Background document.* Edmonton (AB): Institute of Health Economics; 2017. Available from: *http://www.ihe.ca/research-programs/hta/aagap/lbp*.

The citation for the background document describing the methods and process used to create the 2nd Edition of this guideline is as follows: Institute of Health Economics (IHE). *Ambassador Program guideline for the evidence-informed primary care management of low back pain, 2nd Edition: Background document.* Edmonton (AB): Institute of Health Economics; 2012. Available from: *http://www.ihe.ca/download/ambassador_lbp_guideline_100_pager_july_2012.pdf*.

The citation for the background document describing the methods and process used to create the 1st Edition of this guideline is as follows: Institute of Health Economics (IHE). *Ambassador Program guideline for the evidence-informed primary care management of low back pain: Background document.* Edmonton (AB): Institute of Health Economics; 2009, Revised 2010. Available from: *http://www.ihe.ca/download/ambassador_lbp_guideline_100_pager_june_2010.pdf*.

ABOUT THE ALBERTA LOW BACK PAIN GUIDELINE

This section contains the following information about the *Alberta Clinical Practice Guideline for the Evidence-Informed Primary Care Management of Low Back Pain*, 3rd Edition:

- ✓ Purpose, objectives, and target audience
- ✓ Multidisciplinary committees involved in its development
- ✓ Type and location of guideline and companion documents available to clinicians and patients
- ✓ Conflict of interest, funding, and editorial independence
- ✓ Terms of use

Purpose

The purpose of the 3rd edition of the *Alberta Clinical Practice Guideline for the Evidence-Informed Primary Care Management of Low Back Pain* (herein referred to as the *Alberta CPG*) is to help Alberta clinicians make evidence-informed decisions about the care of adult patients (18 years of age or older) with nonmalignant, nonspecific low back pain. The guideline was written to provide healthcare professionals in community practice and patients in Alberta with guidance about the prevention, assessment, and treatment of low back pain.

It is expected that providing relevant, up-to-date information to assist primary care practitioners in the prevention, diagnosis, and treatment of low back pain will allow more patients to be competently managed in the primary care setting and decrease unnecessary referrals to increasingly overburdened specialists.

Objectives

The primary objectives are:

- to increase the use of evidence-informed conservative approaches to the prevention, assessment, diagnosis, and treatment of patients with low back pain in primary care;
- to promote appropriate specialist referrals and use of diagnostic tests in patients with low back pain; and
- to encourage patients to engage in appropriate self-care activities.

Target Users

The guideline is intended to be used by any healthcare provider (e.g., family physician, osteopathic physician, chiropractor, physical therapist, occupational therapist, nurse, pharmacist, or psychologist) in a primary care setting who is responsible for the care of patients with low back pain.

Multidisciplinary Participation

Two multidisciplinary committees were involved in the development of the *Alberta CPG*, 3rd Edition:

- The Steering Committee (SC) guided the collection and collation of research material, provided operational oversight, and acted as a secretariat to the Guideline Update Committee (GUC).
- The GUC reviewed the 2nd Edition of the *Alberta CPG* and revised the recommendations, where necessary, to reflect current research in the management of low back pain.

A Research Team, consisting of HTA researchers with methodological expertise from the Institute of Health Economics (IHE), assisted the SC and the GUC in developing the *Alberta CPG*, 3rd Edition. The profile of each committee participant is listed in *Appendix A*. A flow diagram of the development process for the *Alberta CPG*, 3rd Edition, and an outline of the roles and activities of each of the committees are provided in *Appendix B*.

Guideline Documents

The *Alberta CPG*, 3rd Edition and its companion documents are hosted by Toward Optimized Practice (TOP), the program responsible for provincial CPGs, on its website (*www.topalbertadoctors.org/cpgs/*). The *Alberta CPG*, 3rd Edition, was posted on the TOP website on 20 January 2016. Additional companion documents are hosted by the IHE on the Ambassador Program website (*www.ihe.ca/research-programs/hta/aagap/lbp*).

For clinicians

1. Guideline
    a) *Guideline for the Evidence-Informed Primary Care Management of Low Back Pain, 3rd Edition*
    b) *A Summary of the Guideline for the Evidence-Informed Primary Care Management of Low Back Pain, 3rd Edition*
2. Yellow flags (Source: Kendall et al. *Guide to Assessing Psycho-Social Yellow Flags in Acute Low Back Pain*. Wellington, New Zealand: Accident Compensation Corporation and New Zealand Guidelines Group; 2004)
    a) *Clinical assessment of psychosocial yellow flags*
    b) *Management of psychosocial yellow flags*
    3. *The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain*. National Pain Centre, endorsed by the College of Physicians and Surgeons of Alberta; 2017 (available from: *http://nationalpaincentre.mcmaster.ca/guidelines.html*)
4. Instructional video: *The 3-Minute Primary Care Low Back Examination*. Script editors: Bombardier C, Carette S. Division of Rheumatology, University of Toronto and Institute for Work & Health; 2004
5. *Guideline for the Evidence-Informed Primary Care Management of Low Back Pain, 3rd Edition: Background Document (Supporting Documents and Process Description)*
6. *Guideline for the Evidence-Informed Primary Care Management of Low Back Pain, 2nd Edition: Background Document (Supporting Documents and Process Description)*

7. *Guideline for the Evidence-Informed Primary Care Management of Low Back Pain: Background Document (Supporting Documents and Process Description)*
8. *Radiological Diagnostic and Therapeutic Interventions Directed to Lumbar Spine Pathology*
9. *Authorizing Dried Cannabis for Chronic Pain or Anxiety: Preliminary Guidance from the College of Family Physicians of Canada*. College of Family Physicians of Canada; 2014

For patients

1. Patient information sheets
    a) *What You Should Know About Your Acute Low Back Pain*
    b) *What You Should Know About Your Chronic Low Back Pain*
2. Patient brochures
    a) *Acute low back pain: So Your Back Hurts…Learn what works, what doesn't, and how to help yourself*
    b) *Chronic low back pain: So Your Back Hurts…Learn what works, what doesn't, and how to help yourself*
3. Instructional videos
    a) Acute low back pain: *What to do with Low Back Pain? Get Back At It!*
    b) Chronic low back pain: *Living Well with Chronic Low Back Pain*
    c) *Self-management for Chronic Pain*

Conflict of Interest

All GUC, SC, Research Team, and invited clinical experts who were not members of the GUC completed a declaration of competing interest using a standard form (see *Appendix T*). Competing interest was considered to be financial or nonfinancial interest, either direct or indirect, that could affect the recommendations contained in the *Alberta CPG*.

No competing interests were declared by the invited clinical experts or by members of the GUC, SC, or Research Team.

Funding and Editorial Independence

Alberta's HTA program was established under the Health Research Collaboration Agreement between the IHE and the Alberta Ministry of Health. Funding for this initiative was provided by Alberta Health.

Alberta Health Services, Calgary Zone, provided in-kind contributions.

The above-mentioned funders had no influence on the recommendations contained in the final *Alberta CPG*, 3rd Edition.

Legal aspects

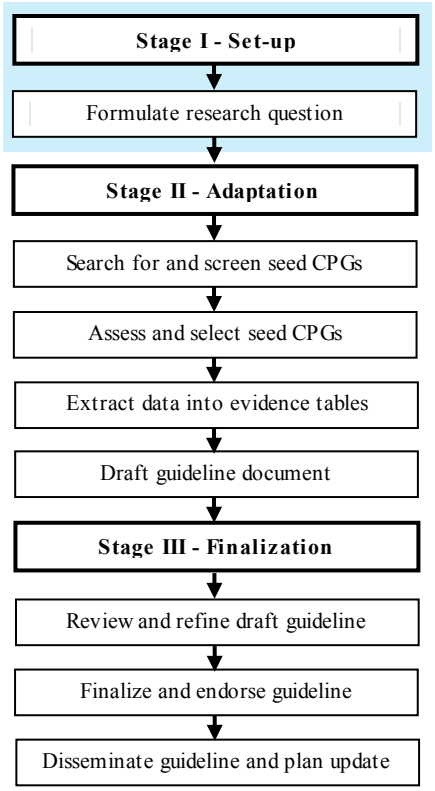
TOP, the program responsible for provincial guidelines, hosts the *Alberta CPG*, 3rd Edition, and possesses the associated legal and intellectual property rights.

The *Alberta CPG*, 3rd Edition, was posted on the TOP website on 20 January 2016 (*www.topalbertadoctors.org/cpgs/885801*).

Terms of Use

STAGE I: SET-UP

BACKGROUND AND PLANNING



This section contains the following information:

- ✓ Overview of the Ambassador Program – its genesis and establishment
- ✓ Development of the *Alberta CPG*
- ✓ Set-up and planning of the *Alberta CPG* update process
- ✓ About low back pain – the epidemiology and economic burden, as well as the knowledge gaps identified among primary care practitioners regarding its management

Overview of the Ambassador Program

The Alberta HTA Ambassador Program is a knowledge translation strategy that was trialled in Alberta, Canada in 2004-2005. The first phase of the program (the Ambassador Pilot Project), completed in 2005, used clinical opinion leaders to present evidence to healthcare providers on various treatments for chronic pain.[1-4] Funding for the Ambassador Pilot Project was provided by a capacity-building grant from the Canadian Agency for Drugs and Technologies in Health (CADTH; formerly known as the Canadian Coordinating Office for Health Technology Assessment). The success of the initial Ambassador Program led to additional funding from Alberta Health to expand the scope of the project.

The second phase of the program started in 2006 and focused on developing evidence-based, Alberta-specific CPGs for the management of two conditions: low back pain and headache. This second iteration of the Ambassador Program built on the Ambassador Pilot Project, with the aims of:

- collaborating with local champions to develop locally adapted CPGs for low back pain and headache, to guide clinicians through a sequential process of clinically appropriate treatment options that are available in their region;
- supporting local networks in disseminating the CPGs to clinicians in Alberta;
- updating and maintaining the Ambassador Program website (*www.ihe.ca/research-programs/hta/aagap*) as a resource for clinicians and patients;
- designing and implementing an appropriate approach for evaluating the impact of the CPGs;
- exploring strategies for engaging the public in HTA research transfer on the topics of low back pain and headache management.

Development of the Alberta Low Back Pain Guideline (1st Edition)

The Ambassador Program began developing the 1st Edition of the *Alberta CPG* in April 2007. This involved adapting seven clinical practice guidelines on low back pain into a single guideline that spanned the continuum of care from prevention and diagnosis through to treatment. The process used to produce the 1st Edition of the *Alberta CPG* has been described in more detail elsewhere.[5,6]

Briefly, the following three multidisciplinary committees were formed comprising participants with clinical, research, and dissemination expertise (see *Appendix C* for profiles of each of the committee participants).

- The SC provided project leadership, guided the collection and collation of research material, provided operational and fiscal oversight, and acted as a secretariat to the Guideline Development Group (GDG) and the Advisory Committee. The SC was responsible for finalizing and signing off on the guideline.
- The Advisory Committee provided general project oversight, advised the SC on strategic matters, and provided linkages to appropriate stakeholders.
- The multidisciplinary GDG constructed the CPG.

A Research Team consisting of HTA researchers assisted the SC and GDG by selecting and appraising the published guidelines, preparing background documents, tracking decision points, and helping to write the final guideline. The GDG reviewed all of the background materials (the seven seed guidelines and their companion documents, the evidence inventory tables, and the quality appraisal scores) and drafted an Alberta-specific guideline during 10 half-day meetings (nine via videoconference and one face-to-face) over a 12-month period.[5,6]

The final guideline was posted on the TOP website in March 2009. The guideline was also listed on the Canadian Medical Association (CMA) Infobase (April 2009) and the United States Department of Health and Human Services National Guideline Clearinghouse (NGC) (March 2010) websites.

Alberta Low Back Pain Guideline 2011 (2nd Edition) Update Process

At the completion of the 1st Edition of the *Alberta CPG* in March 2009, an Update Committee was established to oversee the ongoing review and maintenance of the guideline. The committee included six former members of the GDG with expertise in the field (three physicians, one physical therapist, one pain specialist, and the clinical psychologist who chaired the GDG) plus two new members (one physician and one pharmacist) who had not been involved in the development of the 1st Edition of the *Alberta CPG*. TOP, the program responsible for provincial guidelines, and HTA researchers from the IHE were responsible for updating the scientific content of the *Alberta CPG*. The SC began outlining a schedule and process for updating the guideline in the fall of 2010.

A workshop titled "Encouraging Optimal Use of Diagnostic Imaging for Low Back Pain" was held on 26-27 October 2010[7] to explore options for improving the quality of and access to diagnostic imaging services for low back pain in Alberta through the engagement of stakeholders involved in the assessment, diagnosis, treatment, and management of low back pain. Users of the *Alberta CPG* stated that the recommendations related to the use of diagnostic imaging were among the most difficult to implement in primary care practice, and that an updated version of the guideline might benefit from the input of radiologists. Feedback from workshop participants indicated the need to update the diagnostic imaging recommendations of the *Alberta CPG*.[8]

In November 2010, all former GDG and Advisory Committee members were asked to list any primary care assessments and treatments not included in the 1st Edition of the guideline that may be relevant for patients with low back pain. The resulting list of assessments and interventions was initially reviewed by the two co-chairs of the Update Committee (the clinical psychologist who chaired the GDG and a physician who participated in the GDG) in December 2010, followed by full Update Committee review in January 2011. The process used to produce the 2nd Edition of the *Alberta CPG* is described in more detail elsewhere.[9] The 2nd Edition of the *Alberta CPG* was posted on the TOP website on 28 November 2011.

Set-Up and Planning of the Alberta Low Back Pain Guideline 2015 (3rd Edition) Update Process

The *Alberta CPG* was developed using a hybrid process involving adaptation of seed guidelines supplemented with evidence from published systematic reviews as required. Published literature indicates that the median life span of a de novo guideline is about five years from publication and that updated guidelines have an even shorter life span.[10,11] To maintain the currency of the *Alberta CPG*, a scoping search of the medical literature is conducted annually. An update of the CPG is considered necessary when at least two new guidelines of good quality (or updates of previously reviewed seed guidelines) are identified.

An update search was conducted in October 2013. On 2 December 2013, the SC and a representative from Alberta Health met to discuss whether an update of the *Alberta CPG* was required. A summary of the key discussion points follows:

- The medical literature scoping search identified new published guidelines and updates of seed guidelines. Participants reviewed the new guidelines and their quality scores as well the list of excluded guidelines.
- At least two new guidelines of good quality had been published since the launch of the *Alberta CPG*, 2nd Edition, so it was decided to update the guideline.
- Participants emphasized the need to survey stakeholders for new interventions not included in the 2nd Edition of the *Alberta CPG* and discussed the addition of new interventions: radiofrequency ablation (identified by Alberta Health) as well as the CORE Back Tool and the STarT Back Tool (identified by the SC).
- It was noted that an updated *Alberta CPG* would dovetail with initiatives by the Council of the Federation examining the appropriateness of diagnostic imaging in patients with low back pain, headache, or minor head injuries.

The SC subsequently met several times over the period from December 2013 to February 2014 to discuss the logistics and approach for updating the *Alberta CPG*, including recruiting new members for the GUC, potentially developing an app for patients, and involving patients and lay people in the update process. Given the challenge of patient recruitment, the SC decided to canvass patient members of the Chronic Pain Association of Canada regarding new interventions not currently included in the *Alberta CPG*, and to have the IHE Lay Advisory Committee review the patient information sheets and brochures.

An online survey was created (one for patients and one for clinicians) to inquire about new interventions not currently included in the *Alberta CPG*. Between 10 February and 24 February 2014, the surveys were emailed to former GDG (1st Edition), Advisory Committee (1st Edition), and

Update Committee (2nd Edition) members, to GUC members (3rd Edition), and to 140 other stakeholders – individuals involved in Ambassador Program activities (n=38), clinicians from Bone and Joint Canada (n=25), physicians from the Alberta Primary Care Networks (n=77), and patients affiliated with the Chronic Pain Association of Canada. Twenty participants answered the clinician survey, listing 27 new interventions. Another eight interventions were proposed by members of the GUC. None of the patient surveys were completed. Interventions for low back pain that were recently advertised in local newspapers (the *Calgary Herald* and the *Edmonton Journal*) were also included.

About Low Back Pain

Definition of nonspecific low back pain – acute, subacute, chronic

Nonspecific low back pain is defined as pain, muscle tension, or stiffness that occurs between the rib cage and the inferior gluteal folds, with or without leg pain (sciatica), and has no identifiable cause.[12,13] Specific back pain is associated with an identified pathological cause, such as infection, arthritis, fracture, or tumour.[12,14] Nonspecific low back pain, which occurs in approximately 90% of cases in primary care settings, is usually classified according to symptom duration as acute (<6 weeks), subacute (between 6 weeks and 3 months), or chronic (>3 months).[13-15] Less than 2% of people with low back pain have potentially serious spine conditions that will require surgery or medical intervention.[16,17]

Epidemiology of low back pain

Estimates of prevalence and incidence for low back pain vary widely depending on the definitions used and the populations studied. Between 49 and 90% of people in developed countries will experience at least one episode of low back pain during their lifetime. The point prevalence and period prevalence range from 4 to 33% and from 25 to 42%, respectively.[13,18-21] Low back pain is most common among the working population, particularly men, with peak incidence occurring in people aged between 25 and 64 years.[13]

Up to 84% of people in developed countries will experience at least one episode of low back pain during their lifetime, with up to 23% of the adult population suffering from back pain at any given time.[13,18-22] Back pain is usually self-limiting and resolves within 2 to 6 weeks, but symptoms may linger for up to 2 months.[13,15,23-25] At least 25% of patients will experience further episodes within a year, and over three quarters will have a recurrence at some point in their lives.[13,15,22,24,26] A small minority of patients (2 to 7%) will develop chronic low back pain.[13,15]

Clinical need/burden of disease

The management of low back pain can be complex and costly.[27] In the United States, back problems are associated with nearly a quarter of all lost workdays. Back pain is now the second leading cause of work absenteeism, with approximately 2% of American adults either temporarily or chronically disabled by low back pain.[18] While 67% of people on sick leave from low back pain return to work within a week and 90% return within 2 months,[27] patients who are absent for longer periods have a far less sanguine prognosis. Less than 50% of patients return to work after 6 months, and, after a 2-year absence, there is virtually no chance that an individual will re-enter the work force.[13]

Back pain's economic burden to society largely consists of the indirect costs associated with work absenteeism and disablement.[21] The small subgroup of patients with chronic low back pain is responsible for the bulk of this expenditure.[21,28] Chronic pain conditions are generally accompanied

by coincidental social, behavioural, and psychological problems that either precede or follow the development of the disease. This, in addition to the common presence of a financial disincentive to improve, a hostile work environment, and/or a dysfunctional family unit, can make the treatment of chronic pain complex and problematic.[29-31] Consequently, individuals with severe, chronic pain require, on average, three times as many visits with a health professional and spend up to five times the number of days in hospital compared with patients who have mild or no pain. This high level of healthcare utilization often persists for many years if the condition is not resolved, making the prevention of chronicity an important aim of treatment.[28,32]

In Alberta and Saskatchewan, close to 40% of patients with back pain seek help from a healthcare provider.[33] Primary care physicians undertake the initial evaluation in 65% of low back pain cases and are often the sole healthcare provider for these patients.[34,35] Thus, primary care practitioners play an important role in the management of patients with low back pain.

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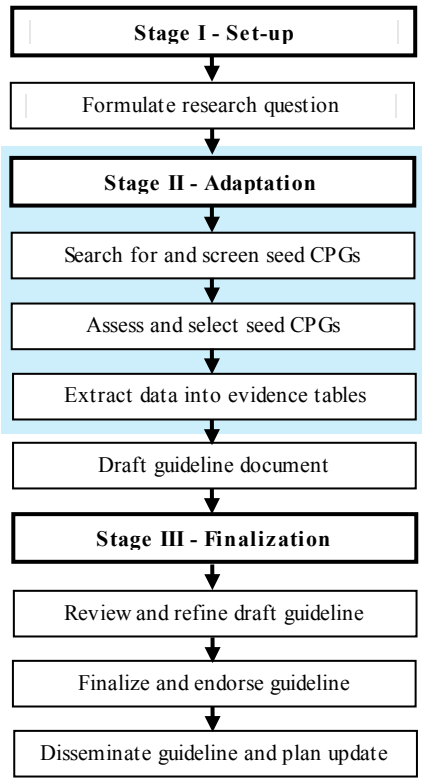
STAGE II: ADAPTATION

IDENTIFYING, SELECTING, AND APPRAISING THE SEED GUIDELINES

This section contains the following information:

- ✓ Rationale for choosing an adaptation approach over de novo guideline production
- ✓ Search strategy used to identify the seed guidelines
- ✓ Criteria used to select the seed guidelines
- ✓ Method and results of the critical appraisal of the selected guidelines and systematic review evidence



Rationale

CPGs are systematically developed statements that assist practitioners and patients in choosing appropriate interventions for specific clinical situations.[1] The creation of CPGs can take different approaches that range from de novo development to adopting or adapting existing guidelines. The development and adaptation of CPGs are processes that necessitate extensive resources and expertise to ensure high quality outcomes.[2]

The CPG adaptation process encompasses a variety of options, from accepting the entire guideline and its recommendations to partial acceptance of some of the guideline recommendations or its companion documents, with or without modification. For example, the Guidelines Advisory Committee[3] in Ontario, Canada, endorses guidelines based primarily on the methodological rigour of their development process, the quality of the linkage between evidence and recommendations for best clinical practice, and their applicability to the local context. In contrast, the COMPUS[4] program of CADTH unbundles existing guidelines, reviews and updates the pertinent evidence, and constructs a new guideline with input from a panel of experts.

The adaptation process takes advantage of existing high quality CPGs while also allowing guideline developers to modify the guideline to meet the needs, priorities, legislation, policies, and resources of a targeted setting.[2] Adapting pre-existing guidelines offers the advantages of reduced duplication, decreased resource commitment, increased efficiency, and enhanced local uptake. Adaptation may be applied to only one guideline or multiple guidelines.

Preliminary literature and consultation with clinical experts in Alberta revealed the existence of an important body of CPGs on low back pain that could be adapted to meet local needs, thereby avoiding unnecessary duplication of effort in developing a guideline from scratch. In addition, it was thought that the adaptation approach would capitalize on the heightened interest and receptivity of local users generated by the Ambassador Pilot Project, thereby allowing the production of a CPG that was more tailored and relevant to the Alberta context.

Thus, the second phase of the Ambassador Program aimed to adapt and contextualize good quality international and national guidelines on the management of low back pain in the primary care setting to the provincial healthcare system.[5,6]

Identifying Seed Guidelines

Inclusion criteria

Guidelines

Guidelines ("seed" guidelines) were included if they focused on the diagnosis, conservative nonsurgical treatment, or prevention of nonmalignant, nonspecific low back pain and were designed for use in primary healthcare settings by physicians, physical therapists, chiropractors, occupational therapists, psychologists, nurses, physiatrists, and other healthcare providers who treat patients with back pain.

Only CPGs formulated in countries with developed market economies were included since the health status, cultural norms, access to health care, and disease burden of individuals from countries with transitional or developing economies were likely to be too different from those in Canada to be clinically relevant. Countries deemed to have developed economies, as defined by the United Nations, were Australia, Canada, Japan, New Zealand, the United States, and European countries (except for those with transition economies).[7]

Patient group

Patients included individuals who were 18 years of age or older. Guidelines that referred to adult patients without providing a specific age range were also included.

Condition

For guidelines on treatment and diagnosis, the duration of pain was defined as follows:

- *acute and subacute pain*: pain of less than 12 weeks' duration
- *chronic pain*: pain of at least 12 weeks' duration

Guidelines that referred to adult patients with "chronic pain" but that lacked a definition of chronic pain in terms of time period (i.e., at least 12 weeks) were also included.

Exclusion criteria

The following were excluded:

- guidelines focused on inpatient interventions, such as surgical treatments
- guidelines focused on children or adolescents, pregnant women, or patients with specific causes for low back pain, such as referred pain (from abdomen, kidney, ovary, pelvis, bladder), inflammatory conditions (rheumatoid arthritis, ankylosing spondylitis), infections (postherpetic neuralgia, discitis, osteomyelitis, epidural abscess), degenerative and structural changes (spondylosis, spondylolisthesis, gross scoliosis, kyphosis), fracture, neoplasm, or metabolic bone disease (osteoporosis, osteomalacia, Paget's disease)

Literature search strategies

For the 1st Edition of the *Alberta CPG*, a preliminary systematic literature search was conducted to identify relevant guidelines published in English between January 1996 and February 2006. The

search was further refined and updates were conducted in April 2006, October 2006, June 2007, and February 2008.

For the 2nd Edition of the *Alberta CPG*, these searches were updated to identify relevant guidelines published in English between January 2001 and June 2010. An additional update search was conducted in October 2010. The date restriction was applied to ensure that the guidelines collected were current and clinically relevant.

For the 3rd Edition of the *Alberta CPG*, the searches were updated to identify relevant guidelines published in English from October 2010 (end date of the 2nd Edition search) to October 2013. An additional update search was conducted in April 2014 (see Table 1 below). Relevant websites were also checked for updates or revisions to previously included seed guidelines.

Medical Subject Headings (MeSH) relevant to this topic are: *Low back pain*, *Back pain*, *Pain*, *Sacrococcygeal region*, and *Sciatica*.

TABLE 1: Search strategy used to identify relevant low back pain seed guidelines

Database/Website	Date Searched	Search Terms
PubMed *www.pubmed.gov*	28 April 2014	(low back pain OR lower back pain OR lbp OR sciatica OR lumbago AND (Practice Guideline[ptyp] OR Guideline[ptyp] OR guideline*[title])) AND ("2013/10/01"[PDat] : "2014/04/28"[PDat])
CMA Infobase *www.cma.ca/clinicalresources/practiceguidelines*	28 April 2014	sacral; lumbago; low back pain; lower back pain; LBP; sciatica
National Guidelines Clearinghouse *www.ngc.org*	28 April 2014	"low* back pain"; sacral region pain; lumbago pain; LBP; sciatica
Guidelines International Network *www.g-i-n.net/*	28 April 2014	"low* back pain"; sacral region pain; lumbago pain; LBP; sciatica
Google *www.google.ca*	29 April 2014	allintext: "clinical decision" OR "clinical guideline" OR "practice guideline" OR "clinical pathway" "low back pain" date range: Nov 1, 2013- April 29, 2014 reading level: advanced
Chartered Society of Physiotherapy *www.csp.org.uk/director/members/libraryandpublications/csppublications.cfm*	28 April 2014	Low back pain
Institute for clinical systems improvement (Musculoskeletal guidelines page) *www.icsi.org/guidelines_and_more/gl_os_prot/musculo-skeletal/*	28 April 2014	Browsed 'Pain' guidelines
U.S. Preventive Services Task Force *www.uspreventiveservicestaskforce.org/recommendations.htm*	28 April 2014	Browsed page
Backpain Europe website *www.backpaineurope.org*	28 April 2014	Browsed website
Alberta Health Services Pain Management Programs *www.calgaryhealthregion.ca/programs/rp*	28 April 2014	Browsed list of clinical practice guidelines

Database/Website	Date Searched	Search Terms
p/providers.htm		
Australian Government – National Health and Medical Research Council Musculoskeletal Publications *www.nhmrc.gov.au/publications/subjects/musculoskeletal.htm*	28 April 2014	Browsed list
University of Michigan Health System CME *www.cme.med.umich.edu/iCME/*	28 April 2014	Browsed list

Note: The * symbol is a truncation character that retrieves all possible suffix variations of the root word; e.g., surg* retrieves surgery, surgical, surgeon, etc. Semicolons are used to separate search terms that were searched separately.

In cases where additional information was required by the GUC to finalize a recommendation, the database developed for the Ambassador Pilot Project, known as the IHE Database (updated to January 2014), was searched for systematic reviews focused on specific interventions for low back pain that were published in English and had a search end date no earlier than January 2007. The search end date restriction was applied to ensure that the systematic reviews included research that had been published within the last seven years (generally, the median shelf life of a systematic review is 7 years[8]). The search strategy for the systematic reviews in this database is outlined in Table 2 below.

TABLE 2: Search strategy used to identify relevant systematic reviews for the IHE Database

Database/Website	Date Searched	Search Terms
General Databases		
PubMed *www.pubmed.gov*	13 January 2014	Search low back pain OR lower back pain* OR lumbago OR LBP OR sciatica OR (sacral region OR lumbar AND pain) Filters: Systematic Reviews; Publication date from 2010/01/01 to 2014/12/31 Sort by: Author
Cochrane Database of Systematic Reviews Issue 1 of 12, January 2014 DARE Issue 4 of 4, October 2013 HTA Database Issue 4 of 4, October 2013 NHS Economic Evaluation Database Issue 4 of 4, October 2013	13 January 2014	(sacral region or lumbago AND pain) OR (low back pain or lower back pain* OR LBP OR sciatica)
OVID Embase 1974 to 10 January 2014	13 January 2014	1. meta-analysis.pt. 2. (meta-anal$ OR metaanal$).mp. 3. (((quantitativ$ adj3 review$1) OR quantitativ$) adj3 overview$).mp. 4. (((systematic adj3 review$1) OR systematic) adj3 overview$1).mp. 5. (((methodologic adj3 review$1) OR methodologic) adj3 overview$).mp. 6. (integrat$ adj5 research).mp.

Database/Website	Date Searched	Search Terms
		7. (quantitativ$ adj3 synthes$).mp. 8. OR/1-7 9. review.pt. OR (review$ OR overview$).mp. 10. (medline OR medlars OR pubmed OR indexmedicus OR embase OR cochrane).mp. 11. (scisearch OR web of science OR psycinfo OR psychinfo OR cinahl OR cinhal).mp. 12. (excerpta medica OR psychlit OR psyclit OR current contents OR science citation index OR sciences citation index).mp. 13. (hand search$ OR manual search$).mp. 14. ((((electronic adj3 database$) OR bibliographic) adj3 database$) OR periodical index$).mp. 15. (pooling OR pooled OR mantel haenszel).mp. 16. (peto OR der simonian OR dersimonian OR fixed effect$).mp. 17. ((combine$ OR combining) adj5 (data OR trial OR trials OR studies OR study OR result OR results)).mp. 18. OR /10-17 19. 9 AND 18 20. 8 OR 19 21. (hta$ OR health technology assessment$ OR biomedical technologyassessment$).mp. 22. technologyassessment, biomedical/ OR biomedical technologyasssessment/ 23. 21 OR 22 24. 20 OR 23 25. (((sacral region OR sacrococcygeal region OR lumbago) AND pain) OR low$ back pain$ OR LBP OR sciatica).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] 26. 24 AND 25 27. 201$.dp,em,yr. 28. 26 AND 27 29. remove duplicates from 28
PsycINFO 1806 to January Week 1, 2014	13 January 2014	1. (meta-anal$ OR metaanal$).mp. 2. (((quantitativ$ adj3 review$1) OR quantitativ$) adj3 overview$).mp. 3. (((systematic adj3 review$1) OR systematic) adj3 overview$1).mp. 4. (((methodologic adj3 review$1) OR methodologic) adj3 overview$).mp. 5. (integrat$ adj5 research).mp. 6. (quantitativ$ adj3 synthes$).mp. 7. OR/1-6 8. review.pt. OR (review$ OR overview$).mp. 9. (medline OR medlars OR pubmed OR index medicus OR embase OR cochrane).mp. 10. (scisearch OR web of science OR psycinfo OR psychinfo OR cinahl OR cinhal).mp. 11. (excerpta medica OR psychlit OR psyclit OR current contents OR science citation index OR sciences citation index).mp. 12. (hand search$ OR manual search$).mp. 13. ((((electronic adj3 database$) OR bibliographic) adj3 database$) OR periodical index$).mp.

Database/Website	Date Searched	Search Terms
		14. (pooling OR pooled OR mantel haenszel).mp. 15. (peto OR der simonian OR dersimonian OR fixed effect$).mp. 16. ((combine$ OR combining) adj5 (data OR trial OR trials OR studies OR study OR result OR results)).mp. 17. OR/9-16 18. 8 AND 17 19. 7 OR 18 20. (hta$ OR health technology assessment$ OR biomedical technology assessment$).mp. 21. 19 OR 20 22. (((sacral region OR sacrococcygeal region OR lumbago) AND pain) OR low$ back pain$ OR LBP OR sciatica).mp. 23. 21 AND 22 24. limit 22 to "systematic review" 25. 201$.dp,yr. 26. (23 OR 24) AND 25 27. remove duplicates from 26
CINAHL 1937 to present	13 January 2014	S6. S3 AND S4 Limiters - Published Date: 20100101-20131231 S5. S3 AND S4 S4. (MH "Systematic Review") OR ((TI (systematic* n3 review*)) OR (AB (systematic* n3 review*)) OR (TI (systematic* n3 bibliographic*)) OR (AB (systematic* n3 bibliographic*)) OR (TI (systematic* n3 literature)) OR (AB (systematic* n3 literature)) OR (TI (systematic* n3 review*)) OR (AB (systematic* n3 review*)) OR (TI (comprehensive* n3 literature)) OR (AB (comprehensive* n3 literature)) OR (TI (comprehensive* n3 bibliographic*)) OR (AB (comprehensive* n3 bibliographic*)) OR (JN "Cochrane Database of Systematic Reviews") OR (TI (information n2 synthesis)) OR (TI (data n2 synthesis)) OR (AB (information n2 synthesis)) OR (AB (data n2 synthesis)) OR (TI (data n2 extract*)) OR (AB (data n2 extract*)) OR (TI (medline OR pubmed OR psyclit OR cinahl OR (psycinfo NOT "psycinfo database") OR "web of science" OR scopus OR embase)) OR (AB (medline OR pubmed OR psyclit OR cinahl OR (psycinfo NOT "psycinfo database") OR "web of science" OR scopus OR embase)) OR (MH "Systematic Review") OR (MH "Meta Analysis") OR (TI (meta-analy* OR metaanaly*)) OR (AB (meta-analy* OR metaanaly*))) S3. S1 OR S2 S2. low back pain OR lower back pain* OR LBP OR sciatica S1. (sacral region OR lumbago) AND pain
Google *www.google.ca*	30 June 2010 to 1 November 2013 1 October 2010 to 1 November 2013 First 150 results	"low back pain" clinical-pathways OR clinical-decision OR clinical-guideline clinical-pathways OR clinical-decision OR clinical-guideline "low back pain "

Database/Website	Date Searched	Search Terms
Web of Science	13 January 2014	TOPIC: (((sacral region OR lumbago) AND pain) OR (low back pain OR lower back pain OR LBP OR sciatica)) AND TOPIC: ((meta-analysis OR meta-anal* OR metaanal* OR quantitativ* review* OR quantitative* overview* OR systematic* review* OR systematic* overview* OR methodologic* review* OR methodologic* overview*) OR (review* AND (medline OR pubmed OR embase OR cinahl))) Refined by: Document Types=(review OR article) AND [excluding] Document Types=(proceedings paper) Timespan=2010-2014. Indexes=SCI-EXPANDED.
HTA Agencies		
INESSS *www.inesss.qc.ca/*	13 January 2014	Browsed titles
CADTH *www.cadth.ca*	13 January 2014	"low back pain" OR sciatica OR "lower back pain" OR lumbago ((lumbar OR sacral OR "lower back" OR "low back") AND pain)
ICES *www.ices.on.ca/*	13 January 2014	sacral; lumbago; "low back pain"; "lower back pain"; LBP; sciatica
Rehabilitation Databases		
Rehab Data *www.naric.com/?q=en/Knowledgebase*	13 January 2014	With all the words: low back pain; lower back pain With the exact phrase: systematic review; meta-analysis; search Medline
CIRRIE Database of International Rehabilitation Research *cirrie.buffalo.edu/database/index.php*	13 January 2014	Back pain in title and subject AND review in title
PeDRO *www.pedro.org.au/*	13 January 2014	Problem: pain Body Part: lumbar spine, sacro-iliac joint or pelvis Method: systematic review
OT Seeker *www.otseeker.com/*	13 January 2014	Keywords: (low OR lower) AND back pain Method: Systematic Reviews
Sport Discus EBSCO Version	13 January 2014	(low* back pain OR backache) AND (review OR Medline OR search OR meta analysis) Restricted dates to 2010-2014

Note: The * and $ symbols are truncation characters that retrieve possible suffix variations of the root word; e.g., surg* retrieves surgery, surgical, surgeon, etc. In databases accessed via the OVID platform the truncation character is $. Semicolons are used to indicate terms that were searched separately.

Selecting the Seed Guidelines

The initial selection of guidelines was made by one reviewer and double-checked by a second reviewer. Guidelines were excluded that, on the basis of their abstract, clearly did not meet the inclusion criteria. Copies of the full text of potentially eligible guidelines were retrieved. In some cases, closer examination of the full text revealed that the guideline did not meet the inclusion criteria. Consequently, these papers were excluded (see *Appendix D*). When a single guideline development group had published more than one guideline, only the most recent version was used.

Critically Appraising the Seed Guidelines

The included guidelines were assessed with respect to various aspects of methodology and reporting using the original Appraisal of Guidelines for Research and Evaluation (AGREE) instrument.[9,10] Although a new edition of the tool, AGREE tool (II), was published in May 2009,[11,12] to maintain consistency and continuity in the guideline appraisal process, the Research Team decided to continue using the original AGREE tool[9,10] that had been used in the 1st and 2nd Editions of the *Alberta CPG*.

The AGREE instrument is an internationally developed, generic tool that is validated, transparent, and widely accepted, with satisfactory reliability for most domains. The original instrument has 23 key items organized into the following six domains:

- *Scope and Purpose* (items 1 to 3) reflects the overall aim/objective of the CPG, specific clinical question(s), and target population.
- *Stakeholder Involvement* (items 4 to 7) contains representations of views of intended users.
- *Rigor of Development* (items 8 to 14) is the process used to gather and synthesize the evidence, and the methods used to formulate the recommendations and to update them.
- *Clarity of Presentation* (items 15 to 18) assesses the language and format of the CPG.
- *Applicability* (items 19 to 21) refers to the organizational and cost implications of applying the guideline.
- *Editorial Independence* (items 22 to 23) indicates the independence of the recommendations and acknowledgement of possible conflict of interest from the GDG.

The tool is accompanied by a detailed user guide that explains how to score the 23 items.[13] Each guideline is assessed by at least two (ideally four) appraisers using a four-point scale (ranging from 4 = "strongly agree" to 1 = "strongly disagree") to rate each of the 23 items. These scores are then combined for each of the six domains and converted into standardized domain scores as per the following formula:

$$\text{Standardized domain score (\%)} = \frac{\text{obtained score} - \text{minimum possible score}}{\text{maximum possible score} - \text{minimum possible score}} \times 100$$

The six domain scores are independent and cannot be combined into a single score. Instead, appraisers can provide an overall assessment of the guideline according to the following categories:

- strongly recommended
- recommended (with provisos or alterations)
- would not be recommended
- unsure

The Research Team modified the original AGREE tool to reduce the ambiguity and subjectivity associated with item scoring, and to enable the differentiation of good from poor quality guidelines. Three modifications were made as follows:[14]

1. A detailed set of instructions, or dictionary, based on the original AGREE user guide was constructed using logical operators (AND, OR, NOT) to quantify what constitutes a score of 4, 3, 2, or 1 for each of the 23 items (see *Appendix E*).
2. The three criteria relating to objectives, clinical question(s), and target population in the *Scope and Purpose* domain were considered mandatory for a good quality guideline. If a guideline scored less than 4 for any of these elements, it was excluded from further appraisal. Thus, all guidelines meeting these three criteria received the maximum possible total domain score of 12 (3 × 4), and all included guidelines achieved a standardized score of 100% for this domain.
3. Seven "essential" criteria were identified for categorizing guidelines as good, moderate, or poor quality:[15]
    - Item 8: Systematic search conducted
    - Item 10: Methods used to formulate recommendations described
    - Item 12: Link between recommendations and evidence
    - Item 13: External review by experts
    - Item 15: Specific, unambiguous recommendations
    - Item 22: Editorial independence from funder
    - Item 23: Conflicts of interest reported

The average quality score (maximum possible of 28 [7 × 4]) was then rated as:

- *good* – a score of 22 to 28
- *average* – a score of 15 to 21
- *poor* – a score of 0 to 14

The seed guideline quality assessments were undertaken independently by two reviewers who discussed the dictionary with respect to the interpretation of questions prior to assessing the guidelines. When the scores for an item differed by at least two points, the reviewers re-examined and discussed the item until the disparity was less than two points by consensus.

Critically Appraising the Systematic Reviews on New Interventions

The IHE Database was searched to identify recently published systematic reviews on interventions proposed by stakeholders (the SC, the GUC, members of the former GDG [1st Edition], Update Committee [2nd Edition], and Advisory Committee, and others) that were considered important by the GUC, but which were not covered in the *Alberta CPG*, 2nd Edition or in the new seed guidelines. Interventions for low back pain that were recently advertised in local newspapers (the *Calgary Herald* and the *Edmonton Journal*), were also included. Two Research Team members and another IHE researcher critically appraised the systematic reviews found on the following new interventions: antibiotic treatment, the Clinically Organized Relevant Exam (CORE) back screening tool, diagnostic facet and sacroiliac joint blocks, duloxetine, gravity tables (inversion/inverted traction, self-traction, gravitational traction), low-level laser therapy, maximum frequency of administering epidural steroid injections, medial branch blocks, messaging regarding likelihood of recurrence of low back pain, mindfulness-based meditation, radiofrequency neurotomy, referral for inflammatory

disease, shock-wave treatment, strategies for reassuring patients about not having diagnostic imaging, trigger point injections, and vitamin B12 injections.

The systematic reviews were assessed with respect to various aspects of methodology and reporting using an in-house quality appraisal checklist adapted from a number of sources (see *Appendix F*). The checklist was operationalized by constructing a dictionary that explained each criterion. The reviewers discussed the dictionary with respect to the interpretation of questions prior to assessing the reviews.

The quality of each systematic review was assessed independently by two reviewers. Any disagreements in scoring were resolved by discussion until consensus was reached. The systematic reviews were rated according to six essential quality criteria as good, average, or poor. Critical appraisal results for all of the included reviews are tabulated in *Appendix G*. Although the results of the quality appraisal were examined by the SC, interventions with poor-quality systematic review evidence were not excluded from the *Alberta CPG*.

Extracting Data

Two reviewers extracted guideline information into standardized evidence inventory tables that were developed a priori. However, duplicate data extraction and cross-checking were not performed. The evidence inventory tables included guideline profile information (title, country, intervention category; e.g., prevention, acute and subacute, or chronic low back pain), a synopsis of the recommendations, and a list of the number and types of studies referenced by the guideline to support its recommendations, as well the grades assigned by the seed guidelines for the strengths of the recommendations. Only seed guideline recommendations that were not included or disagreed with those in the *Alberta CPG*, 2nd Edition were listed in the evidence inventory tables. Discordant recommendations among guidelines were highlighted within the table.

Additional research evidence and information was required, particularly when recommendations were overlapping, discordant, or absent. These supplementary requests by the GUC or its Subcommittees, named "parking lot" items, necessitated examination of the individual studies cited by the seed guideline(s) or of other research evidence; i.e., systematic reviews on low back pain with a search end date of January 2007 onwards (for the 3rd Edition) identified by a supplementary literature search of the IHE Database (for details, see *Table 2*). Only systematic reviews that focused on adults and had a clear definition of the duration of pain were considered. An article was deemed to be a systematic review if it met all of the following criteria as defined by Cook et al. (1997):[16]

- focused clinical question;
- explicit search strategy;
- use of explicit, reproducible, and uniformly applied criteria for article selection;
- critical appraisal of the included studies; and
- qualitative or quantitative data synthesis.

The information abstracted from studies referenced by the seed guidelines or identified by a supplementary literature search of the IHE Database included (to the level of detail sufficient to allow an informed decision): objectives, studies reviewed, funding, inclusion and exclusion criteria, interventions, outcome measures, and relevant results and conclusions. If a potentially relevant systematic review lacked adequate detail to determine whether the target population, duration of

pain, or intervention was relevant, then the primary studies referred to in the review were retrieved for closer examination, when requested by the GUC or its Subcommittees. When required, the authors of the systematic review were also contacted by the Research Team to obtain further information.

If a systematic review included multiple interventions or conditions, only the results and conclusions related to the intervention or condition of interest were extracted. The primary studies included in these reviews were not disaggregated into the various component conditions or interventions, nor were any additional analyses conducted by the Research Team (e.g., appraising the quality of primary studies or conducting supplementary meta-analyses).

When no systematic review was available for a specific intervention, information was considered from the most recent quasi-systematic review(s) (defined as a review that did not critically appraise the included studies) or narrative review(s) (defined as a review that did not use a search strategy or critically appraise the included studies) listed in the IHE Database of systematic reviews. The information abstracted from quasi-systematic or narrative reviews (referenced by seed guidelines or identified in the supplementary literature search) was less comprehensive than for systematic reviews and only included a summary of the relevant results and conclusions.

Recommendations Based on Expert Opinion or Expired Evidence

The IHE Database was also searched to identify recently published systematic reviews on:

- any recommendations from the *Alberta CPG*, 2nd Edition that were based on "expired" research evidence (older than 7 years from search end date of the source seed guideline to the current date,[8] which was taken as December 2013 for this update) and were not covered in the new seed guidelines. These included the following:
    - *prevention of occurrence and recurrence of low back pain*: physical activity, shoe insoles/orthoses, spinal manipulation, mattresses, chairs; and
    - *acute and subacute low back pain*: epidural steroids with or without radiculopathy.
- recommendations from the *Alberta CPG*, 2nd Edition that were demarcated with a recommendation category of "Do" or "Do Not Do" and were based on the expert opinion of the GDG (1st Edition) or the Update Committee (2nd Edition) but were not covered in the new seed guidelines. These included the following recommendations for chronic low back pain: diagnostic tests, laboratory testing, therapeutic exercise, active rehabilitation, and referral for surgical opinion on spinal fusion.

The quality of the newly included systematic reviews was appraised by the Research Team using the in-house IHE quality tool (see *Appendix F*).

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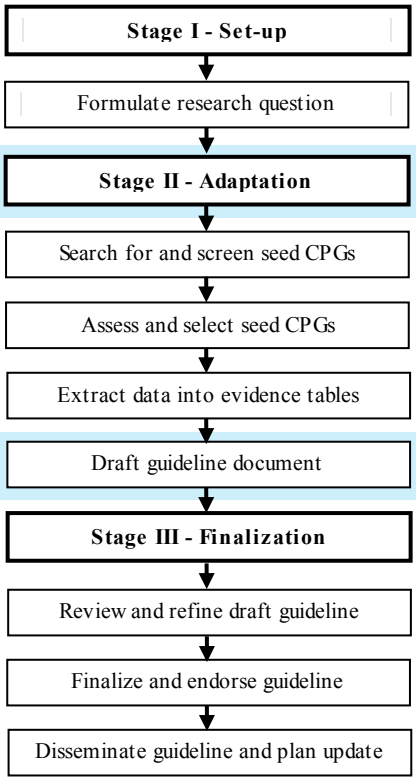
STAGE II: ADAPTATION

GUIDELINE DEVELOPMENT PROCESS



This section contains the following information:

- ✓ Multidisciplinary process used to adapt the seed guidelines
- ✓ Rationale and process for classifying the recommendations as "Do", "Do Not Do" (not recommended), and "Do Not Know"
- ✓ Limitations of the guideline development process

General Process

Guidelines reviewed

A flow diagram of the guideline development process is provided in *Appendix B* (*Figure B.2*). Six relevant new guidelines were identified by the update's literature searches (see *Appendix D* and *Appendix H*). Two guidelines focused on acute/subacute low back pain, three on chronic low back pain, and one on low back pain (duration of pain not stated). An update of one seed guideline, G2, which was incorporated in the 1st and 2nd Editions of the *Alberta CPG*, was also included. The modified AGREE tool was used to appraise all potentially eligible seed guidelines. Results were reviewed by the two co-chairs of the GUC on 2 December 2013. Two guidelines, one on acute low back pain and one on acute/subacute/chronic low back pain, were excluded due to their average quality rating and low scores on the AGREE domains of rigour of development, applicability, and editorial independence, and after reviewing their clinical relevance (see *Appendix D* and *Appendix I*). This decision, as well as the quality appraisal results for all of the potentially eligible seed guidelines, was presented to the GUC at the inaugural face-to-face meeting on 7 March 2014. The seed guideline that did not define the duration of pain (G10[1]) was later approved for inclusion by the Diagnostic Imaging and Interventions Subcommittee of the GUC. A second guideline (G11) published in December 2013 was not captured by the October 2013 literature search, but was considered useful by the SC and approved for inclusion. The reason for this was the lack of seed guidelines available on chronic low back pain in the previous versions of the *Alberta CPG*. A final search for seed guidelines was conducted in April 2014 and yielded no further seed guidelines. Thus, 11 seed guidelines (three new guidelines and eight, including one updated guideline, from the previous two editions) were used in the adaptation process and were included in the 3rd Edition of the *Alberta CPG* (see *Appendix H*). The references for the excluded guidelines, together with their AGREE scores and evidence inventory tables, were provided to the GUC.

The AGREE critical appraisal results (standardized domain scores and average quality scores based on the seven essential criteria) for the new included seed guidelines, and also for the two guidelines

subsequently excluded, are provided in *Appendix I*. Evidence inventory tables for the new seed guidelines are provided in *Appendix J*.

Update protocol

There is no published information on how to deal with "old" evidence in subsequent iterations of an updated guideline developed using an adaptation process. Since recommendations differ in terms of their need for review, partial updating of a guideline may be just as effective as, and more efficient than, full updating when there is an ongoing monitoring system.[2] To streamline the update process and avoid the wholesale, and unnecessary, review of the entire *Alberta CPG* every two years, a systematic protocol was devised for conducting sequential partial updates of the *Alberta CPG* (see Table 3 below). This focused the limited available resources on reviewing only those recommendations that truly required updating. Therefore, in addition to reviewing three new guidelines, the present update involved: a) updating seven existing recommendations that were based on expired evidence; b) updating five "Do" and "Do Not Do" recommendations that were based on the expert opinion of the GDG (1st Edition) or the Update Committee (2nd Edition); c) reviewing evidence on new interventions that were not included in the *Alberta CPG* to date; and d) checking drug alerts from Health Canada and the United States Food and Drug Administration (US FDA) for changes in medication availability and safety.

TABLE 3: Ambassador Program guideline update protocol

Timeline	Process Details
Annually	Scan literature for new seed guidelines according to TOP requirements Update triggered when there are at least two new seed guidelines of good quality as judged by the AGREE tool[3] (can include new seed guidelines or updates of previously reviewed guidelines) containing recommendations suggesting that the Alberta guidance needs to be updated
After two years (quadrennially thereafter)	Update "Do Not Know" recommendations by searching for recently published systematic reviews
	Update medication table by searching for recently published systematic reviews for all drugs listed therein
	Survey stakeholders to identify new interventions of interest that are not included in the Ambassador Program guideline
	Check US FDA and Health Canada drug alerts for changes in medication availability and safety
After four years (quadrennially thereafter)	Update old* recommendations that are based on expired evidence by searching for recently published systematic reviews
	Update "Do" and "Do Not Do" recommendations that are based on EO (GDG/GUC) evidence by searching for recently published systematic reviews
	Survey stakeholders to identify new interventions of interest that are not included in the Ambassador Program guideline
	Check US FDA and Health Canada drug alerts for changes in medication availability and safety

*More than 7 years from search end date of seed guideline to current date[4]

AGREE: Appraisal of Guidelines for Research and Evaluation; EO: expert opinion; GDG: Guideline Development Group; GUC: Guideline Update Committee; TOP: Toward Optimized Practice; US FDA: United States Food and Drug Administration

In following this protocol, it was decided that, rather than removing the outdated seed guidelines from the *Alberta CPG*, the information would be updated according to the protocol in Table 3 above and the references for the older guidelines would be cited alongside those for the newer evidence.

Committees

The inaugural face-to-face GUC meeting was held in Edmonton on 7 March 2014. The GUC comprised former members, including the two co-chairs, of the Update Committee (1st Edition) and other invited specialists in pain management. The GUC reviewed the results of the survey for new interventions and all of the documents for the new seed guidelines (the guidelines plus their companion documents, evidence inventory tables, and AGREE scores). To expedite the recommendation review process, three topic-specific GUC Subcommittees were formed: 1) the Diagnostic Imaging and Interventions Subcommittee; 2) the Rehabilitation Subcommittee; and 3) the Pharmacology/Analgesia Subcommittee. The Subcommittees had one or two chairpersons (the second was always a GUC co-chair) and included one HTA researcher and at least one volunteer from the GUC with relevant expertise. Two Subcommittees included invited clinical experts who were not members of the GUC: the Diagnostic Imaging and Interventions Subcommittee (one pain medicine specialist, one physical medicine and rehabilitation specialist, one radiologist, and one rheumatologist) and the Rehabilitation Subcommittee (one pain medicine specialist, one physical medicine and rehabilitation specialist, and one kinesiologist). Recommendations were assigned by the GUC to the appropriate Subcommittees for discussion and deliberation.

Formulating recommendations

To simplify the task of reviewing the new research evidence, only those recommendations that were discordant with or contained more information than the *Alberta CPG*, or that were new (i.e., were not included in the 2nd Edition of the *Alberta CPG*), were tabulated in the evidence inventory tables. The recommendations from the 2nd Edition of the *Alberta CPG* were listed for reference alongside the new evidence, where applicable. Evidence inventory tables for the guidelines common to the 1st and 2nd Editions of the *Alberta CPG* can be found in the background documents for the 1st and 2nd Editions of this guideline (Appendix G).[5,6]

The three Subcommittees reviewed the evidence inventory tables and drafted new or revised recommendations during half-day meetings via WebEx: the Diagnostic Imaging and Interventions Subcommittee had four meetings, from 8 May 2014 to 3 March 2015; the Rehabilitation Subcommittee had five meetings, from 12 June 2014 to 9 March 2015; and the Pharmacology/ Analgesia Subcommittee had two meetings on 19 June and 29 September 2014, as well as two shorter meetings on 20 January and 26 February 2015. The GUC reviewed all of the drafted recommendations during four half-day WebEx meetings over the period from January to March 2015.

The agenda and all documents were provided in advance for each meeting, and participants had the option of joining the meetings via telephone if they could not attend the face-to-face meeting in-person or use the WebEx conferencing system. Each of the Subcommittee meetings was guided by both co-chairs. Frequent "roundtables" were conducted during each meeting to ensure that all participants had a voice in the proceedings, and process reviews were instigated at strategic points throughout. All final decisions were made by consensus and then presented to the GUC for final approval.

To expedite the process, a co-chair of the Rehabilitation Subcommittee circulated draft recommendations via email for Subcommittee and subgroup members to review in advance of the meetings. The Rehabilitation Subcommittee also used an online survey, conducted between 6 and 14 January 2015, to gain consensus on draft recommendations prior to the GUC meeting.

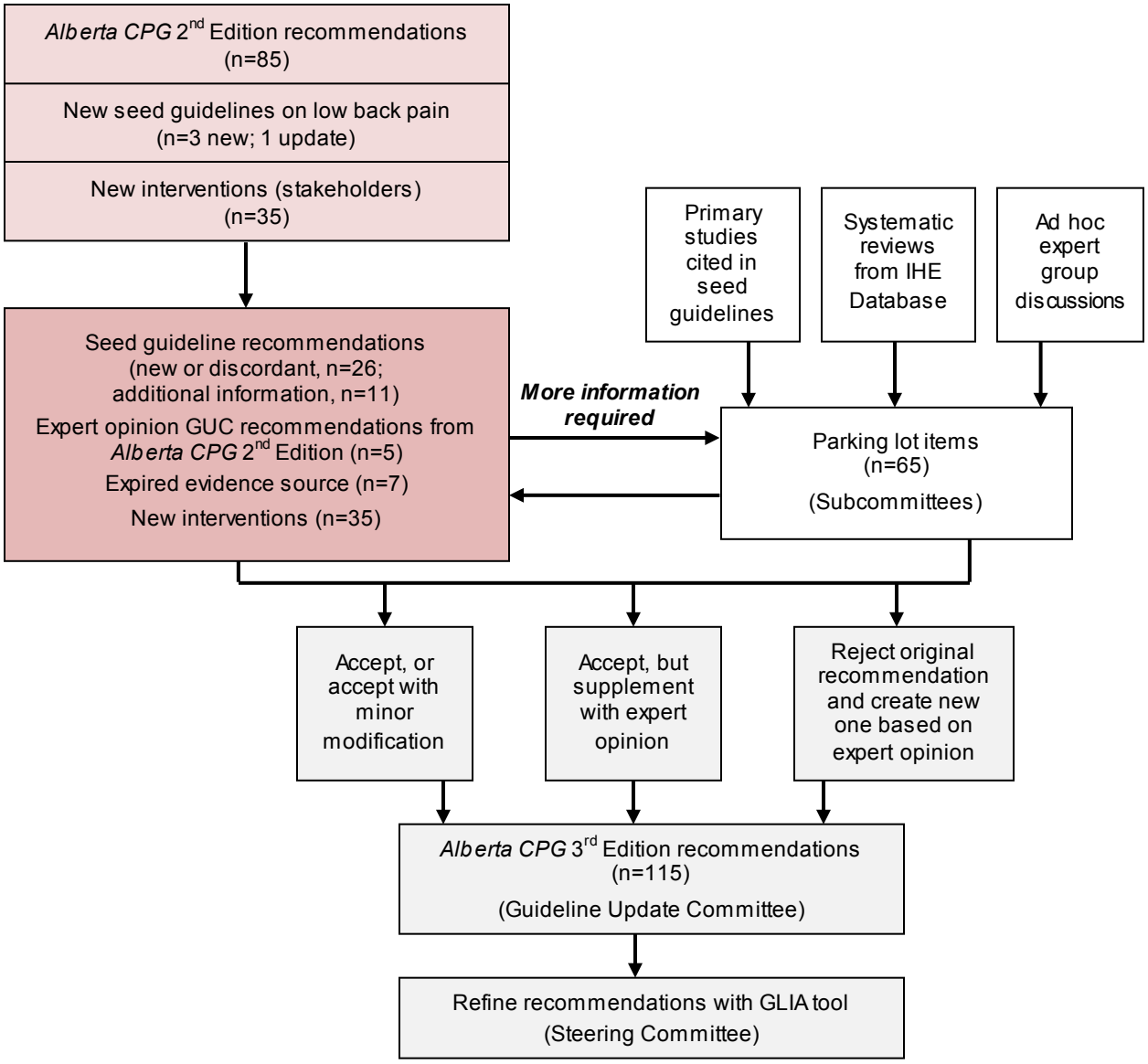
In many cases, additional evidence was required when uncertainties or disagreements arose regarding interpretation of the evidence from the seed guidelines or when new interventions that were not included in the seed guidelines or the 2nd Edition of the *Alberta CPG* were considered. These requests by the GUC or Subcommittees, named "parking lot" items, encompassed the examination of individual research studies cited by the seed guidelines as well as additional systematic reviews on low back pain published between 2007 and January 2014 identified by a supplementary literature search of the IHE Database (see *Table 2*). The parking lot items were referred for further analysis to the relevant Subcommittees, or to ad hoc subgroups of the Subcommittees comprising one Subcommittee chair, one HTA researcher, and at least one Subcommittee member or an invited clinical expert with expertise in the relevant area (see Figure 1 below). Information generated from these subgroups was presented to the relevant Subcommittee for final review. Consensus-based decisions made by the Subcommittees were then presented to the GUC for final approval. For information about the parking lot items and other miscellaneous requests made by the GUC, Subcommittees, and SC, the deliberations of the Subcommittees, and the dates when the actions and final approval of the recommendations took place, see *Appendix K*.

The committees identified 65 parking lot items (5 prevention, 24 acute and subacute, and 36 chronic low back pain) (see *Appendix K*). Parking lot items included existing recommendations based on expired evidence (older than 7 years from search end date of the source seed guideline to the current date, which was taken as December 2013 for this update), "Do" and "Do Not Do" recommendations based on the expert opinion of the GDG (1st Edition) or the Update Committee (2nd Edition), new interventions that were not included in the 2nd Edition of the *Alberta CPG*, and queries about revised or new recommendations from the GUC or the three Subcommittees. A single new recommendation on spinal mobilization for acute and subacute low back pain was generated from parking lot item discussions alone rather than from seed guidelines or proposals from stakeholders. A summary table of the revisions made to the *Alberta CPG* for the 3rd Edition is available in *Appendix L*.

A sample of a parking lot item document prepared by the Research Team for discussion in a Subcommittee meeting is provided in *Appendix M*. Other parking lot item documents are available upon request.

To keep track of the deliberations relating to formulating *Alberta CPG* recommendations, the SC and the Research Team developed an internal document for each Subcommittee that included the original wording of each recommendation from the seed guidelines, discussions undertaken and decisions made by the Subcommittees, revisions of each draft recommendation, and the evidence source for each recommendation. These documents were continuously updated throughout the guideline development process, and an abridged version was provided to the GUC at each meeting. A sample of these documents is provided in *Appendix N*.

FIGURE 1: Process of formulating recommendations and resolving parking lot items



The SC and the Research Team added harm statements to some recommendations, where appropriate; these were sourced from the original seed guideline recommendations or from elsewhere in the seed guidelines, or from a systematic review identified from a supplementary literature search required by the GDG or GUC. The lack of a harm statement for some recommendations indicates an absence of adverse event information in the seed guidelines, not an absence of adverse events for the intervention itself. Harm statements were added to the following new or updated recommendations:

- *acute and subacute low back pain*: brief course of narcotic analgesics, acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs)
- *chronic low back pain*: opioids, therapeutic lumbar facet joint interventions

The medication table provided in the 1st Edition of the *Alberta CPG* was adapted from the G6 seed guideline by a subcommittee of the GDG, in consultation with pharmaceutical experts who were not part of the GDG. This table was re-assessed for the 2nd Edition by conducting supplementary searches to identify published systematic reviews on the drugs mentioned in the medication table as well as on new drugs being considered for inclusion. For the 3rd Edition, the drug alerts from Health Canada and the US FDA were checked for changes in medication availability and safety and new research evidence from seed guidelines and other background information suggested by the Pharmacology/Analgesia Subcommittee was reviewed. As a result, the following revisions were made:

- *chronic low back pain*: added opioids watchful dose equivalents and revised the side effects and ongoing monitoring sections
- *neuropathic pain if co-emergent with musculoskeletal complaints*: revised and updated the 1st and 2nd lines of treatment, modified the daily doses of duloxetine and venlafaxine, and removed the 3rd and 4th lines of treatment
- *sleep disturbance accompanying chronic pain*: removed the section

The definitions and information regarding yellow flags that were included in the *Alberta CPG* were sourced, without modification, from the New Zealand Accident Compensation Corporation guideline (2003).[7] No updates or changes were made for the 3rd Edition of the *Alberta CPG*.

The information about red flags that was contained in the 1st Edition of the *Alberta CPG* was adapted from two seed guidelines (G2 and G4) by a subcommittee of the GDG that included the chair of the GDG, one HTA researcher, and two physicians. The red flags were reviewed and revised for the 2nd Edition of the *Alberta CPG* during a half-day, face-to-face, special topic meeting, and again for the 3rd Edition by the Diagnostic Imaging and Interventions Subcommittee.

A new companion document for clinicians, titled *Radiological Diagnostic and Therapeutic Interventions Directed to Lumbar Spine Pathology*, was created by the Diagnostic Imaging and Interventions Subcommittee (available from: *www.ihe.ca/research-programs/hta/aagap/lbp*) to help clinicians provide more detailed explanations for patients seeking information on interventional lumbar spine procedures.

Definitions of various terms and other general clarifications required for the interventions covered by the seed guidelines and for the new interventions were provided to the GUC and Subcommittees. Fifty-seven terms are incorporated in the *Alberta CPG* glossary, which was updated in the 3rd Edition and is listed in *Appendix O*.

Rationale and Process for Developing Recommendations

Each recommendation from the *Alberta CPG* was sourced from one or multiple seed guidelines and was accepted, supplemented, or changed as follows:

- Accepted, or accepted with minor modification (e.g., wording)
- Accepted, but supplemented with expert opinion
- Additional information retrieved/considered:
    - accepted/changed original recommendation based only on studies included in seed guidelines

- accepted/changed original recommendation based on additional evidence from systematic review literature search
- supplemented additional evidence with expert opinion

In wording the recommendations, the GUC, Subcommittees, SC, and Research Team considered the GuideLine Implementability Appraisal (GLIA) tool,[8,9] which is designed for appraising the implementability of CPGs. It explores different dimensions of individual recommendations, such as decidability, executability, effect on process of care, presentation and formatting, measurable outcomes, apparent validity, novelty/innovation, flexibility, and computability. The SC and Research Team met several times over the period from 19 June to 25 September 2015 to refine the wording of recommendations. TOP also assisted in simplifying the wording of the recommendations.

In the *Alberta CPG*, the type of evidence (evidence source) referenced by the seed guideline(s) in support of the original recommendation was represented as follows (note that some evidence types are not listed because not all study designs were cited by the seed guidelines):

- Systematic review (SR), as cited by the seed guideline(s) or identified by the supplementary search for literature that was required by the GDG (1st Edition), Update Committee (2nd Edition), or GUC (3rd Edition). The literature search spanned the period between January 1996 and August 2007 for the 1st Edition of the guideline, between January 2002 and December 2010 for the 2nd Edition, and between January 2010 and January 2014 for the 3rd Edition.
- Randomized controlled trial (RCT), as cited by the seed guideline(s).
- Non-randomized comparative study (NRCS), as cited by the seed guideline(s).
- Case series (CS), as cited by the seed guideline(s).
- Guideline (G), as cited by the seed guideline.
- Expert opinion (EO), as cited by the seed guideline, when no evidence was provided by the seed guideline in support of the recommendation.
- EO (GDG) or EO (GUC): After examining the individual studies cited by the seed guideline(s), additional SRs on low back pain as identified by a supplementary literature search spanning from January 1996 to April 2014, or other references nominated by the GDG or GUC members, or when no evidence from SRs was found on an intervention, the original recommendation was rejected and or a new recommendation was drafted based on the collective EO of the GDG or GUC.

For evidence cited by the seed guideline(s), only the highest level of evidence was listed. For example, when the evidence cited by a seed guideline was from SRs and studies of other design (i.e., RCT, NRCS, CS, or G) only SR was listed as the source. When no SR was referenced in the seed guideline, the evidence source was indicated in the following order: RCT, NRCS, CS, G, EO. The same classification for the evidence source was applied when multiple seed guidelines were used to inform one recommendation.

Each recommendation in the *Alberta CPG* came from one or more seed guidelines or SRs from the IHE Database, or was created by the GDG (1st Edition), Update Committee (2nd Edition), or GUC (3rd Edition), based on their collective professional opinion and an analysis of relevant evidence.

Recommendations that used SRs from the IHE Database in their evidence source together with the relevant SR citations are listed in *Appendix P*.

For *Alberta CPG* recommendations that were sourced from a seed guideline(s) with an outdated evidence source (more than 7 years from search end date of seed guideline to current date, which was taken as December 2013 for this update) as well as by an SR from the IHE Database or a more recent seed guideline(s), the citation for the old seed guideline was retained. Citations of the older seed guideline(s) were removed only if in the update process a new recommendation was developed by the GUC based on evidence from a new seed guideline that would constitute a change of recommendation category (e.g., from "Do" to "Do Not Do"), or if the older recommendation is supported by newer research evidence of a higher evidence level (e.g., from other seed guidelines or an SR from the IHE Database).

Classification of Recommendations

Although 11 average- to good-quality guidelines informed the 3rd Edition of the *Alberta CPG* (see *Appendix F*), the AGREE tool could not verify the validity of the guideline recommendations and the underlying evidence, or reconcile differences in evidence rating scales. In addition, the seed guidelines were inconsistent in how they rated the quality of the evidence and the strength of recommendations. Also, because of time constraints, the Ambassador Program guideline adaptation process could not unbundle the seed guidelines to review all of the research evidence cited by the guidelines to support their recommendations. Therefore, a process was developed to ensure a standardized definition of the final guideline recommendations in the *Alberta CPG* (i.e., what constituted a "Do", "Do Not Do", or "Do Not Know" recommendation), systematically meld the seed guidelines' recommendations into consistently worded recommendations, and display the source (e.g., seed guideline(s), expert opinion) of the final recommendations in a transparent and systematic way (see *Appendix Q*). In the *Alberta CPG*, the recommendations are categorized into three groups: "Do", "Do Not Do" (i.e., not recommended), and "Do Not Know" (see Table 4 below); more details on the recommendation categories are available in *Appendix R*.

TABLE 4: Definitions for recommendation categories

Recommendation Category	Definition
Do ✓	The GDG or GUC accepted the original recommendation, which provided a prescriptive direction to perform the action or used the term "effective" to describe it. The GDG or GUC supplemented a recommendation or created a new one based on their collective professional opinion, which supported the action. A supplementary literature search found at least one systematic review presenting consistent evidence to support the action.
Do not do ✘	The GDG or GUC accepted the original recommendation, which provided a prescriptive direction "not" to perform the action, or used the term "ineffective" to describe it, or stated that the evidence does "not support" it. The GDG or GUC supplemented a recommendation, or created a new one based on their collective professional opinion, which did not support the action. A supplementary literature search found at least one systematic review presenting consistent evidence that did not support the action.
Do not know ?	The GDG or GUC accepted the original recommendation, which did not recommend for or against the action, or stated that there was "no evidence," "insufficient or conflicting evidence," or "no good evidence" to support its use. The GDG or GUC supplemented a recommendation or created a new one based on their collective professional opinion, which was equivocal with respect to supporting the action. A supplementary literature search found either no systematic reviews ("insufficient evidence to recommend for or against") or at least one systematic review presenting conflicting or equivocal results or stating that the evidence in relation to the action was "limited," "inconclusive," "inconsistent," or "insufficient" ("inconclusive evidence to recommend for or against").

Limitations of the Guideline Development Process

Using seed guidelines minimized resource commitment, and the expedited development process ensured the continued engagement of clinical experts. Stakeholder buy-in was also fostered by the contextualization process. However, the below challenges were identified:

- The AGREE tool identified well-developed and reported guidelines, but could not verify the validity of the recommendations and the underlying evidence, or reconcile differences in evidence rating scales.
- Clinical judgement was needed for overlapping, discordant, or absent recommendations.
- The strength and quality of the underlying empirical evidence was not formally assessed and could not be defined by terms such as *good*, *fair*, *poor*, *insufficient*, or *conflicting*, which made categorizing the strength and type of recommendations problematic.
- Faith in the process can be undermined by the fear of using inferior seed guidelines.
- Recently published evidence is not necessarily incorporated.
- Not all recommended treatment options are available in all communities, nor are all treatment options necessarily covered by CPGs.

Updating an adapted guideline posed the following additional challenges, which became apparent during the revision process:

- How to efficiently extract information from the new seed guidelines into evidence tables without duplicating previous effort: only new or discordant recommendations were extracted from the additional seed guidelines.
- How to incorporate new seed guideline information, while preserving the accumulated knowledge from previous guidelines whose publication dates would otherwise render them obsolete: original citations were retained, new guideline references were added when the guideline supported the original recommendation, and any changes to original recommendations were highlighted within the updated guideline.
- How to incorporate new interventions and revise recommendations rated as "Do Not Know" in the original *Alberta CPG* that are not addressed by the new seed guidelines: search for and appraise any systematic review evidence on the interventions and use ad hoc subcommittees to deliberate on the additional information.
- How to form a streamlined, multidisciplinary GDG/GUC that maximizes local relevance and buy-in, but is also efficient: ensure continuity by using the same experienced GDG/GUC chair, SC, and Research Team, together with a smaller GUC comprising some of the original GDG who are familiar with the adaptation process; ration expertise wisely; and clearly outline the process and responsibilities of all participants upfront.

References

Note: The references for the seed guidelines (e.g., G10, G11) are available in *Appendix H*.

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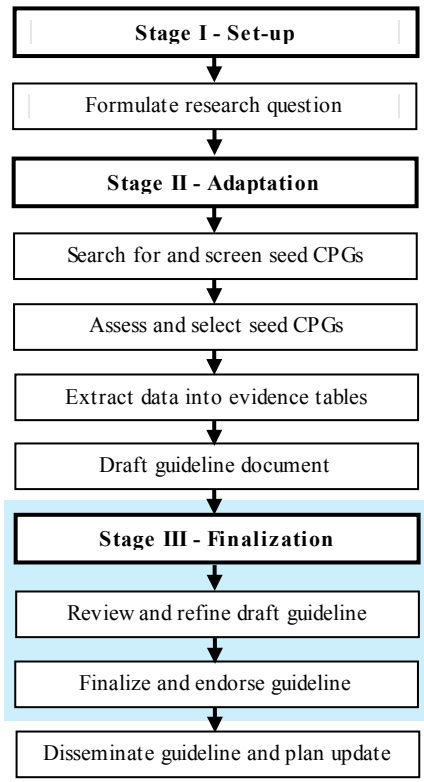
STAGE III: FINALIZATION

REVIEWING, EVALUATING, AND ENDORSING THE GUIDELINE



This section contains the following information:

- ✓ Process used to review the *Alberta CPG*, 3rd Edition
- ✓ Evaluation of the *Alberta CPG* and the guideline development process
- ✓ Key review criteria for assessing the impact of the *Alberta CPG*

Reviewing the *Alberta CPG*

The 1st Edition of the *Alberta CPG* (summary, guideline, and companion documents) was reviewed by various stakeholders (professionals with experience and interest in pain management, members of the GDG and their colleagues, and patients with acute and chronic low back pain) as well as two independent methodologists with expertise in guideline development. The SC and Research Team collated all feedback and incorporated it, where possible, into the *Alberta CPG*.

For the 2nd Edition of the *Alberta CPG*, the Update Committee and healthcare practitioners from the TOP dissemination list were asked to provide feedback on the clarity of the recommendations, particularly the new and revised sections of the guideline, and their implementability in practice and, more generally, in the Alberta healthcare environment. A web-based survey form was created to assist in providing feedback. A pilot study[1] was also conducted in August 2011 among 83 final-year physical therapy students at the University of Alberta to evaluate the utility of measuring awareness of and adherence to the *Alberta CPG*.

For the 3rd Edition of the *Alberta CPG*, the GUC and Subcommittee members were asked to provide feedback on the clarity of the recommendations, particularly the new and revised sections of the guideline, and their implementability within primary care practice in Alberta. The respondents included two family physicians, one specialist physician, two physical therapy/rehabilitation professionals, and one pharmacist from three of the five Alberta Health Services zones (i.e., Edmonton, Calgary, and South). A sample of the web-based survey form and the responses received are provided in *Appendix S*.

The *Alberta CPG*, 3rd Edition was endorsed by the TOP program, which is funded under the Master Agreement between the Alberta Medical Association (AMA), Alberta Health Services, and Alberta Health. TOP is administered by the AMA.

Evaluation Strategy

Guideline development process

The Ambassador Program adaptation process used to develop the 1st Edition of the *Alberta CPG* was evaluated by an independent management consultancy firm in 2009. The evaluation aimed: a) to identify the major challenges and successful strategies associated with the process; b) to assess the strengths and weaknesses of the process by benchmarking it against the ADAPTE framework;[2,3] and c) to identify opportunities for improvement in future iterations of the adaptation process.

A comparison of the process, tools, and deliverables revealed a high degree of alignment between the Ambassador Program process and the ADAPTE framework.[4,5] However, the Ambassador Program adaptation process differed from the ADAPTE method in several ways:

- A novel process was used to recruit GDG members.
- A more complex committee structure with altered responsibilities was used.
- The AGREE tool was modified to reduce the ambiguity and subjectivity of item scoring.
- More detailed evidence inventory tables were created.
- Ad hoc GDG subcommittees were used to systematically review additional research evidence when necessary.
- Standardized definitions were constructed for the types of recommendations made in the *Alberta CPG* (e.g., what constituted a "Do" or "Do Not Do" recommendation) from the overlapping evidence rating scales used by the seed guidelines.
- The principles of the GLIA tool[6,7] were used to "word-smith" the final recommendations.
- A more comprehensive process was used to gather feedback on the draft guideline.

There was strong consensus among the 29 stakeholders (GDG, Advisory Committee, SC, and Research Team members) interviewed in the evaluation that the process used to develop the *Alberta CPG* was sound and rigorous.

An evaluation of the updating process used to construct the 2nd and 3rd Editions of the *Alberta CPG* was not conducted.

Guideline impact

Key review criteria

The key review criteria established in the dissemination and implementation plan[8] for the 1st and 2nd Editions of the *Alberta CPG* are applicable to the 3rd Edition. The effectiveness of the knowledge transfer strategy can be assessed at several levels, including:

- reach indicators for any disseminated material (guideline and its companion documents for clinicians and patients);
- usefulness indicators of material/resources and activities;
- use indicators, changes in practice;
- changes in patient outcomes; and
- satisfaction with visit.

Metrics for each of these include such things as number of hits on and downloads from the website hosting the CPG, media requests, user satisfaction, and changes in physician practice. Desirable changes in physician behaviour include the following:[9]

- improvement in assessing red flags
- reduction in inappropriate ordering of diagnostic imaging tests
- increase in provision of appropriate education and reassurance to patients
- reduction of inappropriate recommendations regarding sick leave, bed rest, and continuing activity
- increase in provision of correct recommendations for steroids, antidepressants, and muscle relaxants
- reduction of inappropriate prescription of passive physiotherapy and injection therapy
- increase in provision of appropriate recommendations for spinal manipulation
- increase in the appropriate prescription of physiotherapy, active rehabilitation, and patient self-management programs
- increase in the appropriate referral of patients to multidisciplinary pain clinics
- reduction in recommendations for traction
- reinforcement of the correct use of and adherence to guidelines for history taking and physical examination; prescribing of non-steroidal anti-inflammatory drugs (NSAIDs) and acetaminophen; and administration of heat and ice, therapeutic ultrasound, and massage therapy

Changes in practice and outcomes

Research funding was obtained from the Canadian Institutes of Health Research (CIHR) to evaluate implementing the *Alberta CPG* via a multidisciplinary, interactive workshop.[10] This project involved a series of workshops with multidisciplinary primary care clinicians participating in the Alberta Primary Care Networks. The workshop content focused on providing participants with an overview of the *Alberta CPG* recommendations and with opportunities to participate in discussions and skills-based experiential learning modules focused on key clinical skills and strategies to enhance patient acceptance and adherence.

On 26-27 October 2010, an invitational workshop was conducted on the optimal use of diagnostic imaging (computed tomography and magnetic resonance imaging)[11,12] based on recommendations from Alberta and other jurisdictions across Canada. The aims were:

- to review available data on the use of diagnostic imaging for low back pain;
- to develop an understanding of the barriers to and facilitators of the appropriate use of diagnostic imaging in primary care settings;
- to review the results of implementation science (knowledge translation) research related to implementing policy-, professional-, and patient-level interventions to align clinical practice with evidence-informed recommendations; and
- to develop a framework for a multifactorial knowledge translation program for diagnostic imaging in low back pain for primary care in Alberta.

Feedback from users of the *Alberta CPG* identified the recommendations related to the use of diagnostic imaging as being among the most difficult to implement in primary care practice. These concerns are consistent with Canadian and international literature, which indicates an overuse of diagnostic imaging for low back pain. Workshop attendees discussed the barriers to and facilitators of implementation from their various perspectives (policy, patient/public, clinician, and system/administration) and identified potential knowledge translation strategies as a foundation for next steps.

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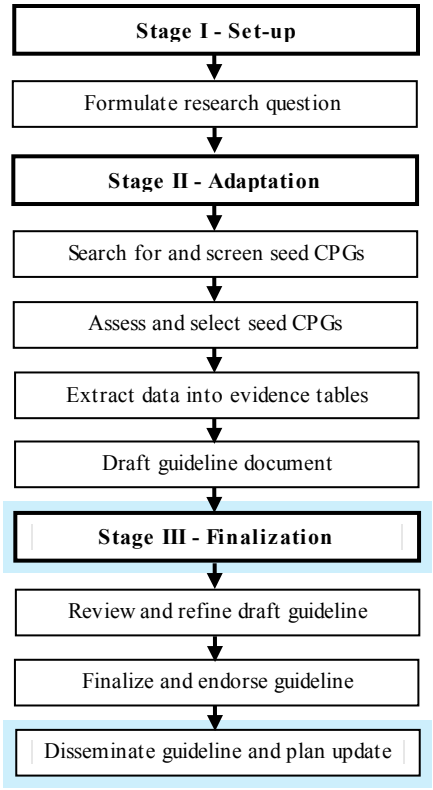
STAGE III: FINALIZATION

DISSEMINATING, IMPLEMENTING, AND UPDATING THE GUIDELINE

This section contains the following information:

- ✓ Potential organizational barriers to implementing the *Alberta CPG*
- ✓ Plan for disseminating and implementing the *Alberta CPG* within Alberta



Potential Barriers to Guideline Uptake and Implementation

Information on potential barriers to chronic pain management and guideline implementation was obtained from three surveys conducted in 2006, 2007, and 2008 as part of the Ambassador Program. Details of participant responses are provided in Table 5 below. Further details are available in the background document for the 1st Edition of the *Alberta CPG*.[1] The barriers listed in Table 5 are also applicable to the 3rd Edition of the *Alberta CPG*.

The updated recommendations in the 2nd Edition of the *Alberta CPG* were reviewed by members of the Update Committee and other healthcare practitioners from the TOP dissemination list. Feedback via a web-based form, which included questions about the potential barriers to implementing the recommendations as well as resource implications associated with implementing the new recommendations, was received from one family physician, one specialist physician, two physical therapist/rehabilitation professionals, and one psychologist. Further details are available in the background document for the 2nd Edition of the *Alberta CPG*.[2]

The updated recommendations in the 3rd Edition of the *Alberta CPG* were reviewed by members of the GUC and Subcommittees. Feedback via a web-based form, which included questions about the potential barriers to implementing the recommendations, was received from two family physicians, one specialist physician, two physical therapy/rehabilitation professionals, and one pharmacist. A sample of the web-based survey form and the responses received are provided in *Appendix S*. The two-page guideline summary was also reviewed by participants at a workshop held during the Annual Calgary Pain Conference in December 2015 (Calgary, Canada) (*Appendix S, Table S.3*).

The patient information sheets and brochures were updated by the SC and reviewed by the IHE Lay Advisory Committee on 23 October 2015. A selection of their comments is provided in *Appendix S, Table S.4*. The SC reviewed this feedback, the majority of which was incorporated into the final versions of the patient materials. The revisions included streamlining the document formats, simplifying the wording, and clarifying the differentiation between the acute and chronic documents.

Key actors

A dissemination and implementation plan[3] was developed for the 1st Edition of the *Alberta CPG*. This document included a section on the state of practice and knowledge as well as barriers to change, grouped by audience. The plan also identified the key actors in the dissemination and implementation process:

- **Physicians and other healthcare providers**: A literature review on knowledge gaps,[4] which focused on practitioner compliance with CPGs on low back pain, stated that compliance is affected by a complex interplay of factors that influence practitioner beliefs, attitudes, and actions. Many determinants, such as regulatory decisions, allocation of resources, and availability of treatment options, are out of the practitioner's control.
- **Patients**: From a physician's perspective, agreement with guideline recommendations is a basic but not sufficient precondition for guideline implementation. Physicians may agree with guideline content but believe that guideline stipulations are not congruent with patient wishes.[3] However, other research has shown that patients with low back pain in primary care seek assurance and advice.[1]
- **Public**: The public is an audience for the *Alberta CPG*, but using the public can also be seen as a strategy to support dissemination and implementation with other decision-makers in the healthcare system.
- **Government**: Government representation and involvement has been part of the Ambassador Program from its inception. These representatives are in the best position to inform the dissemination and implementation of the *Alberta CPG* within government and within the Primary Care Networks.
- **Professional associations and colleges**: Professional associations and colleges are an important means of facilitating communication with allied health professionals. They are also an audience in their own right, as the *Alberta CPG* might or might not align with their own intraprofessional guidelines.
- **Health regions and provincial authorities**: The Ambassador Program will need to work with the informal regions within Alberta to customize the guidelines, with due consideration of the differences between urban and rural settings.
- **Insurers and others**: The interest in the *Alberta CPG* within this audience group will vary. For example, the Workers' Compensation Board may be more interested in the guideline than the Builders' Association. The intensity of dissemination and implementation within these groups will vary accordingly.

Dissemination and Implementation Plan

The *Alberta CPG* dissemination plan includes the following main strategies to manage barriers:

- Develop patient support materials (information sheets, instructional videos, website, brochures) and potentially a patient website with interactive teaching videos and other information.
- Target dissemination to the general public (media, brochure) and provide information to insurers.
- Involve partners:

  - TOP, to launch the guideline;
  - GUC members, to champion the CPG in their regions; and
  - Bone and Joint Health Strategic Clinical Network, to incorporate the *Alberta CPG*.
- Facilitate access to the *Alberta CPG* on the TOP website from sites of other Alberta associations and organizations.
- Contact and connect with important stakeholders such as Alberta Health, Alberta Health Services, the Workers' Compensation Board, and the Primary Care Networks.
- Promote the CPG to professionals through different channels such as workshops, teaching support for continuing medical education (CME) in faculties of medicine (University of Calgary and University of Alberta), presentation at one of the rural CME sessions, participation at conferences and other professional meetings, publication in peer-reviewed Canadian and international journals, and a consensus conference.

Dissemination of the *Alberta CPG* has included peer-reviewed publications, conference presentations, workshops, and inclusion in academic curricula,[5] as well as the following activities:

- Listing on the Canadian Medical Association (CMA) Infobase and the United States Department of Health and Human Services National Guideline Clearinghouse (NGC).
- Creation of an educational YouTube video on self-management for chronic pain in collaboration with Alberta Innovates-Health Solutions (published June 2013). This complemented other YouTube videos on acute and chronic low back pain that were shown on the Health Unlimited Television in emergency department waiting rooms and physicians' offices, with a potential audience of approximately 650,000 Albertans per month (available from: *www.ihe.ca/research-programs/hta/aagap/llbp*).
- Alignment with Choosing Wisely Canada's national recommendations from Radiology, Family Practice, Emergency, and Spine Medicine (available from: *choosingwiselycanada.org*) – the *Alberta CPG* is referenced in the Canadian Association of Radiologists' top five recommendations for Choosing Wisely Canada (available from: *www.choosingwiselycanada.org/recommendations/radiology/*).
- Integration into Health Link materials through the Bone and Joint Health Strategic Clinical Network's SpineAccess Alberta initiative.

TABLE 5: Potential barriers to the use of care pathways, chronic pain management, and implementing the *Alberta CPG* recommendations

Potential Barriers to the Use of Care Pathways[3]	Potential Barriers to Chronic Pain Management[4]	Potential Barriers to Implementing the *Alberta CPG* Recommendations[6]
Guideline/pathway factors		
Not available in form and format needed Not practical; too rigid Lack of satisfaction with the initial guideline or pathway Multiple contradictory pathways No obvious benefit to patients Unsure of its quality Developed with little input from physicians Variation in interpretation across clinicians and cases	Access to guidelines Access to a simple algorithm to sort through different chronic pain models	Simplicity is both good and bad Challenge of making it easy for everyone to use Lack of access to the specific reviewed literature used to construct the guidelines Lack of awareness about availability of guidelines Difficulty of keeping recommendations up to date
Practice environment/organizational barriers		
No institutional support Lack of time to use care pathways in the clinical setting The regional service model does not support the use of care pathways Challenge of allocating time for informing staff of new materials Lack of staff availability Lack of communication, e.g., between departments Lack of networking	Accessibility to pain management specialists Accessibility to alternative and effective non-drug treatment modalities such as mind/body work, e.g., yoga, tai chi, exercise programs, and nutrition considerations (especially for migraine) Poor understanding of, and support for, a holistic mind-body view of chronic pain, and appropriate alternative treatment approaches in conjunction with emotional/psychological support, e.g., craniosacral therapy, visceral release therapy, myofascial release therapy, acupuncture Lack of communication mechanisms between the various disciplines managing the patient	Lack of access to interdisciplinary and chronic pain programs Lack of access in each treatment area Lack of availability of active rehabilitation and self-management programs, particularly in non-urban/ rural areas Full therapy facilities not always available in rural areas Organizational resistance to recommendations

Potential Barriers to the Use of Care Pathways[3]	Potential Barriers to Chronic Pain Management[4]	Potential Barriers to Implementing the *Alberta CPG* Recommendations[6]
Educational environment/knowledge barriers		
Lack of awareness about relevant pathways Pathways not compatible with practitioner values/ experience Inconsistent interpretation and use of care pathways across clinicians and cases	Poor understanding of and support for a holistic mind-body view of chronic pain and appropriate alternative treatment approaches	Inconsistencies in treatment recommendations throughout client/patient care history Discrepancies among other professionals' recommendations and opinions Time needed to devote to updating clinicians Difficulties in educating physicians about new protocols/treatments Implementation may necessitate change in practice for some therapists
Healthcare environment		
Lack of resources (infrastructure/information technology to support use of care pathways, funding, staff) Cumbersome approval process for pathways	Limited resources (staff, funding for rehabilitation programs)	Lack of availability of resources and their advertisement Lack of access to services Communication, e.g., between physical therapist and primary care physician
Practitioner factors		
Lack of time and/or other resources (electronic records, information technology resources) Resistance of clinicians to trying new approaches and lack of physician buy-in Lack of interest in education Lack of awareness Lack of competence No obvious benefit to practice Pain management is directed by a doctor, not by a pathway Information overload	Concern about patient drug-taking behaviour (e.g., abuse, addiction) Physician prescribing practices: family physicians frequently are not following current professional medical standards (e.g. may undermedicate, overmedicate, or medicate in a substandard fashion) Accurate diagnosis and subsequent appropriate treatment Lack of information and cohesiveness among health professionals when managing a patient with chronic pain Poor understanding of, and support for, a holistic mind-body view of chronic pain and appropriate alternative treatment approaches	Antagonism between practitioners' opinions Compliance of practitioners, old routines, tradition, resistance to change, level of awareness Differences between patient needs and practitioner experience Time limitations (e.g., due to shortage of personnel) Time needed to obtain, review, and learn the guidelines

Potential Barriers to the Use of Care Pathways[3]	Potential Barriers to Chronic Pain Management[4]	Potential Barriers to Implementing the *Alberta CPG* Recommendations[6]
Patient factors		
Difficulties in reconciling patient preferences with pathway recommendations Patient complexity, multiple concerns	Patient willingness to accept recommendations for management instead of focusing on cure Patient engagement and compliance with learning self-management techniques Patient noncompliance with self-care as advised Ability to override physician opinion if current treatment does not seem to work Self-diagnosis, self-treatment, and use of nonprescription medications General misinformation among patients about chronic pain, especially back pain Patients with special conditions (e.g., dementia)	Differences between patient needs and practitioner experience

*Feedback on potential barriers to implementing the new/substantially changed recommendations developed in the 3rd Edition of the *Alberta CPG* is provided in *Appendix S, Table S.2*.

Update Process

For guidelines to remain valid and relevant, TOP, the program responsible for provincial guidelines, requires that guidelines be reviewed annually and updated every two years, if necessary.

The GUC was established to be responsible for the ongoing review and maintenance of the *Alberta CPG*. The committee includes former members of the GDG (1st Edition of the *Alberta CPG*) and new members (added in the 2nd and 3rd Editions of the *Alberta CPG*) with expertise in the field. Technical support is provided by HTA researchers from the IHE. The task of the GUC is to ensure that the currency of the *Alberta CPG* is maintained over time.

The timelines and process details for the sequential updating of the *Alberta CPG* are listed in *Table 3*. An update is triggered when at least two new guidelines (or updates of previously reviewed seed guidelines) of good quality, as judged by the modified AGREE tool, are identified that contain recommendations suggesting that the *Alberta CPG* needs to be updated.

TOP and HTA researchers from the IHE will co-lead any future updates of the scientific content of the *Alberta CPG*.

References

1. Institute of Health Economics (IHE). *Ambassador Program guideline for the evidence-informed primary care management of low back pain: Background document*. Edmonton (AB): Institute of Health Economics; 2009, Revised 2010. Available from: *www.ihe.ca/research-programs/hta/aagap* (accessed 28 October 2016).
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3. Angus D. The Alberta HTA Ambassador Program: *Dissemination and implementation of evidence-informed primary care management of low back pain guideline*. Edmonton (AB): Institute of Health Economics; 2009, updated 2010.
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APPLICABILITY OF THE GUIDELINE – ECONOMIC/COST IMPLICATIONS

This section contains the following information:

- ✓ Economic burden of low back pain
- ✓ Economic implications of recommendations reported in the seed guidelines
- ✓ Potential resource implications of the *Alberta CPG*

General Aspects

Low back pain is a common medical condition that is often associated with functional disability, and economic and social consequences that pose a substantial burden on affected individuals, the healthcare system, and society.[1,2] The costs associated with low back pain include the direct cost of medical care and the indirect costs of time lost from work, disability payments, the cost of providing assistance, and diminished productivity.[2,3] The small number of individuals with low back pain who become chronically disabled is responsible for approximately 80% of the cost associated with caring for patients with low back pain.[4] Initial investments in infrastructure and the development of new programs for managing low back pain, such as developing an emergency back pain service, may add to total healthcare system costs.

There is a general belief that medical care is based on scientific evidence and that clinical decisions about the assessment, diagnosis, treatment, and management of a particular condition should also be evidence-based. However, professionals often have their own specific clinical opinions that affect the use of medical services, and also their costs.

In the management of low back pain, there is documentation of large practice variations, which include the overutilization of diagnostic imaging, specialist referral, and certain ineffective treatments, such as activity restriction.[5] Adherence to CPGs may assist practitioner and patient decisions on appropriate health care, and may also improve practice and reduce costs. Focusing on high users and individuals with chronic conditions might ultimately improve outcomes for these patients and reduce short- and long-term costs.[1]

Economic Implications Reported in the Seed Guidelines

Formal economic evaluations or cost analyses were not performed or included in any of the new seed guidelines. The following statements were made in the seed guidelines regarding the economic implications of their recommendations.

- Patients should be encouraged to follow-up with their healthcare provider in one to two weeks. Follow-up can be as an office visit or phone call. Although there is no evidence to support this, the work group concludes that the benefits of reinforcing education and activity for patients who are improving outweigh the risk and potential costs (G2c).
- A randomized control trial confirmed that cognitive behavioural therapy reduced disability scores in a cost-effective manner (G2c).

- Computerized tomography has the advantage of being more available and less costly than some other imaging techniques (G2c).
- Implementation of the guidelines may improve the quality of care, patient access, treatment outcomes, appropriateness of indicated and medically necessary care, and efficiency and effectiveness, as well as achieve cost containment by improving the cost-benefit ratio (G9).
- The G9 guideline developers reviewed published cost analyses, but no information was available for the recommendations (lumbar discography and diagnostic selective nerve root blocks) included in the *Alberta CPG*.
- Published cost analyses were reviewed in the G10 guideline, but no costings or economic evaluations were available for the recommendations (electrodiagnostic studies) included in the *Alberta CPG*.
- Published cost analyses were not reviewed in G11. The authors identified the following areas for further research: investigation of strategies for combining drug therapies for optimal efficacy, safety and cost-effectiveness; economic modelling of the cost-effectiveness of an acupuncture service; and studies on the effect of music, in combination with other non-pharmacological therapies, on pain, medication use, and cost-effectiveness in patients with chronic pain.

Economic implications reported in seed guidelines included in the previous editions of the *Alberta CPG* can be found in the respective background documents.[6,7]

Resource Implications of the *Alberta CPG*

The updated recommendations were reviewed by members of the GUC and Subcommittees with respect to implementing the *Alberta CPG*, including resource implications. Feedback was received from two family physicians, one specialist physician, two physical therapy/rehabilitation professionals, and one pharmacist. A sample of the web-based survey form and the responses received are provided in *Appendix S* (*Figure S.1* and *Table S.2*, respectively).

Because of time and resource constraints, a formal cost analysis or economic evaluation of the impact of the *Alberta CPG* was not conducted. Nevertheless, information derived from such analyses (e.g., cost of implementation of multidisciplinary treatment programs, cost of unnecessary imaging tests) is important and useful in the decision-making process. Studies to address the resource implications of the *Alberta CPG* are planned for the future.

References

Note: References for the seed guidelines (G2c, G9, G10, and G11) are available in *Appendix H*.

1. Asche CV, Kirkness CS, McAdam-Marx C, Fritz JM. The societal costs of low back pain: Data published between 2001 and 2007. *Journal of Pain & Palliative Care Pharmacotherapy* 2007;21(4):25-33.
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5. Scott NA, Moga C, Harstall C. Managing low back pain in the primary care setting: the know–do gap. *Pain Research & Management* 2010;15(6):392-400.

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7. Institute of Health Economics (IHE). *Ambassador Program guideline for the evidence-informed primary care management of low back pain, 2nd Edition: Background document*. Edmonton (AB): Institute of Health Economics; 2012. Available from: *www.ihe.ca/research-programs/hta/aagap* (accessed 28 October 2016).

APPENDIX A: Participants in the *Alberta CPG* update process

TABLE A.1: Guideline Update Committee – Active members

Zone	City/Site	Affiliation, Discipline, Area of Expertise
Edmonton	Edmonton[†‖]	MD, MSc, FCFP Professor, Department of Family Medicine, University of Alberta Primary care, preventative health, chronic disease management
	Edmonton*[†‖]	MD, FRCPC Professor, Radiology & Diagnostic Imaging, University of Alberta Neuroimaging
	Edmonton[§‖]	BScPharm Clinical Pharmacist, Alberta Health Services Pain management
	Edmonton*[‡‖]	PT, DSc, PhD Postdoctoral Fellow, Clinical Specialist, University of Alberta, LifeMark Musculoskeletal physiotherapy
	Edmonton*[‡‖]	BSc, DC, MSc, PhD Professor, University of Alberta Spine function
	Edmonton	BScMLS, MHSA Director Health Technology Assessment (HTA), Institute of Health Economics HTA, research
Calgary	Calgary[†‡]	**Paul Taenzer BSc, PhD, RPsych, Co-Chair** Adjunct Assistant Professor, University of Calgary Psychology, pain management
	Calgary[†‡§]	**Ted Findlay MD, DO, CCFP, Consultant, Co-Chair** Family physician, Chronic Pain Centre, Alberta Health Services Musculoskeletal chronic pain management
	Calgary[†]	MB, ChB, FRCA, FFPMRCA Medical Leader, Calgary Pain Program, Alberta Health Services Chronic pain, anaesthesia
	Calgary[†]	MD, CCFP, FCFP Associate Professor Emeritus, Department of Family Medicine, University of Calgary Primary care, primary care evaluation
	Calgary*[‡‖]	BSc PT, BPE Physical therapist, Chronic Pain Centre, Alberta Health Services Chronic pain, headaches, yoga
	Calgary*[†‖]	MD, MSc, FRCSC Clinical Assistant Professor, University of Calgary Spinal surgery
South Zone	Lethbridge[‡§]	MD, FCFP Family physician, Chinook Regional Hospital Chronic pain management

*Members who were not part of the Update Committee for the 2nd Edition of the guideline

[†]Members who participated in the Diagnostic Imaging and Interventions Subcommittee

[‡]Members who participated in the Rehabilitation Subcommittee

[§]Members who participated in the Pharmacology/Analgesia Subcommittee

[‖]Members who were not part of the GDG for 1st Edition of the guideline

Note: Occasionally a representative from Alberta Health was invited to attend GUC or SC meetings, as needed, to update participants on government initiatives.

TABLE A.2: Additional Subcommittee members

Zone	City/Site	Affiliation, Discipline, Area of expertise
Edmonton	Edmonton‡	BSc (OT) Clinical Director, LifeMark Chronic pain, rehabilitation, occupational therapist
	Edmonton*†‡§	BSc, MD, FRCPC, CSCN (EMG) RMSK Assistant Clinical Professor, University of Alberta Physical medicine, rehabilitation
	Edmonton†§	MB, MSc, FRCPC Professor, Department of Anesthesiology & Pain Medicine, University of Alberta Pain medicine, epidemiology
Calgary	Calgary*†§	BSc, MD, FRCPC Radiologist and Nuclear Medicine Physician, RCA Diagnostics Radiology, nuclear medicine
	Calgary*†§	BD, FRPCP Clinical Assistant Professor, Department of Medicine, Division of Rheumatology, University of Calgary Rheumatology, osteoporosis
	Calgary*‡§	BSc (EXCI) Kinesiologist, Chronic Pain Centre, Alberta Health Services Chronic pain management

*Members who were not part of the Update Committee for the 2nd Edition of the guideline
†Members who participated in the Diagnostic Imaging and Interventions Subcommittee
‡Members who participated in the Rehabilitation Subcommittee
§Members who were not part of the GDG for 1st Edition of the guideline

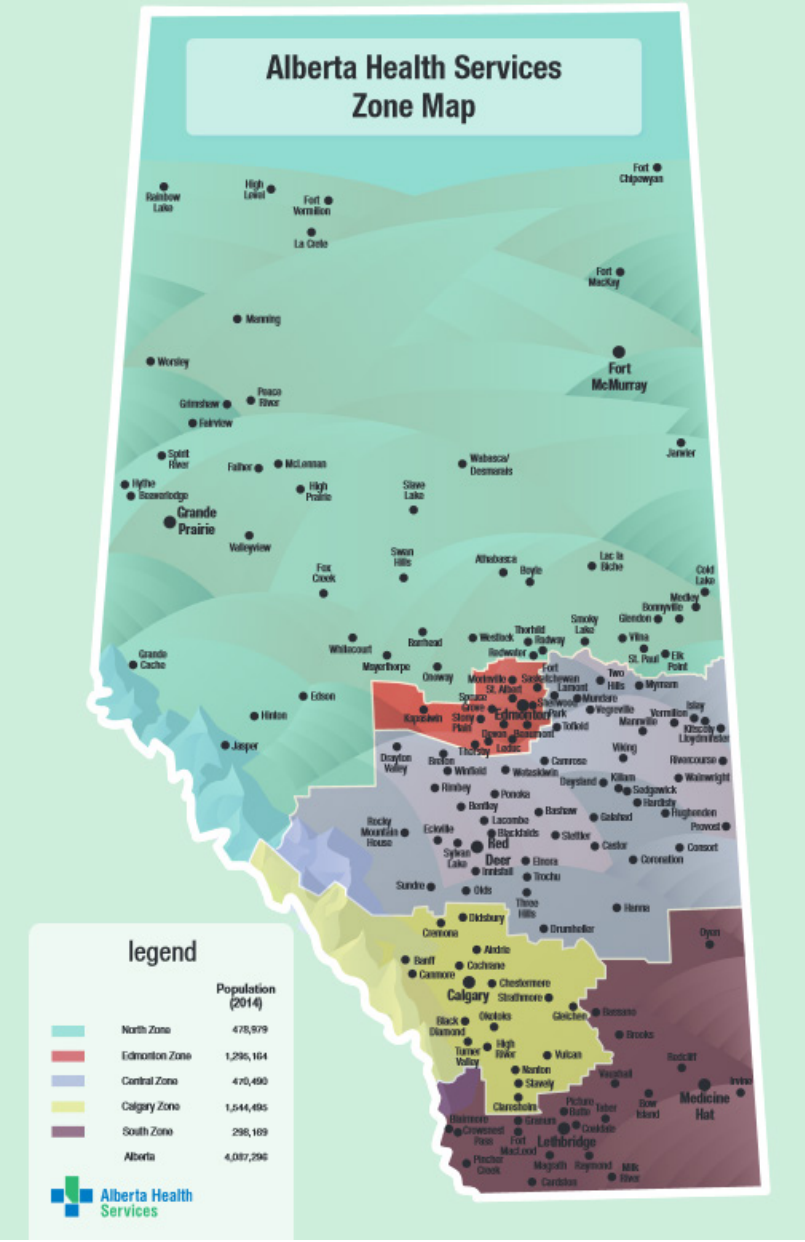
TABLE A.3: Steering Committee and Research Team members

Zone	City/Site	Name	Affiliation, Discipline, Area of expertise
Calgary	Calgary	**Paul Taenzer***‡§‖ Co-Chair of the Guideline Update Committee and Steering Committee	BSc, PhD, RPsych University of Calgary Psychology, pain management
	Calgary	**Ted Findlay***‡§‖¶ Co-Chair of the Guideline Update Committee	MD, DO, CCFP, Consultant, Co-Chair Chronic Pain Centre, Alberta Health Services, Calgary Musculoskeletal chronic pain management
Edmonton	Edmonton	Christa Harstall*†‡ Co-Chair of the Steering Committee	BScMLS, MHSA Director Health Technology Assessment (HTA), Institute of Health Economics HTA, research
	Edmonton	Carmen Moga*†‡‖¶	MD, MSc Institute of Health Economics Principal Research Lead, HTA HTA, methodologist
	Edmonton	Ann Scott*†‡§	BSc (Hons), PhD Institute of Health Economics Principal Research Lead, HTA HTA, methodologist
	Edmonton	Kimberly Pinnick Broderick*‡§‖¶	BSc, MHA Institute of Health Economics Project coordinator (until February 2014)

Zone	City/Site	Name	Affiliation, Discipline, Area of expertise
	Edmonton	Stefanie Kletke*‡§‖¶	BSc, BA (Hons), MA Institute of Health Economics Project coordinator (from February 2014)
	Other members of the Research Team		
	Edmonton	Lisa Tjosvold	MLIS Institute of Health Economics Information specialist
	Edmonton	Bing Guo	MD, MSc Institute of Health Economics Principal Research Lead, HTA HTA

*Steering Committee members
†Research Team members
‡Members who participated in the Guideline Update Committee meetings
§Members who participated in the Diagnostic Imaging and Interventions Subcommittee meetings
‖Members who participated in the Rehabilitation Subcommittee meetings
¶Members who participated in the Pharmacology/Analgesia Subcommittee meetings

FIGURE A.1: Multidisciplinary Guideline Update Committee and Subcommittee participation from the Alberta Health Services zones (active members)



Source: *www.albertahealthservices.ca/ahs-map-ahs-zones.pdf*

Edmonton Zone: practicing family physician (1*), radiologist/neuroimaging (1*), pharmacist (1*), physiotherapist (1+1*), spinal function-chiropractor (1*), occupational therapist (1), pain specialist (1)

Calgary Zone: family physician (2*), psychologist (1*), pain specialist (1*), spinal surgeon (1*), radiologist-nuclear medicine (1), physical therapist (1*), kinesiologist (1), rheumatologist (1)

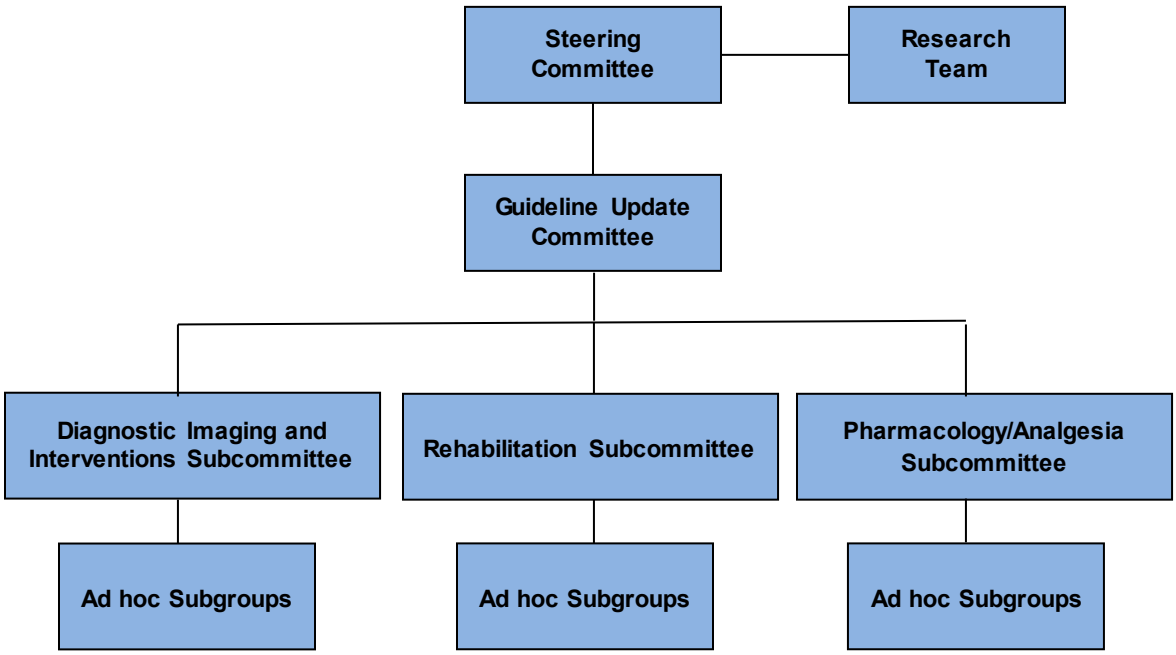
South Zone: family physician (1)

*Participants in the Guideline Update Committee

APPENDIX B: Guideline Update Process – Participants and roles

A streamlined, multidisciplinary, collaborative process was utilized for the guideline updating process to ensure that expertise was rationed wisely and efficiently (see Figure B.1).

FIGURE B.1: Relationships among the committees in the guideline update process



Steering Committee (SC)

Role

- Had the authority and responsibility for the development, implementation, monitoring, and reporting of the project
- Provided research information and guided the Research Team
- Was responsible for the final decisions regarding the wording of the guideline recommendations
- Provided operational and fiscal oversight
- Acted as a secretariat to the GUC

Membership

- Clinical ambassador, HTA expert, members of the Research Team, and project coordinator

The committee met by WebEx monthly, or more often as required.

Guideline Update Committee (GUC)

Role

- Had the authority and responsibility for developing and revising guideline recommendations
- Reviewed and revised the guideline recommendations, including those prepared by three Subcommittees, and companion documents to reflect advances in the research evidence regarding the assessment and management of low back pain, and considered recommendations related to treatments and interventions that would potentially benefit primary care in Alberta and were not included in the 2nd Edition of the *Alberta CPG*
- Worked in Subcommittees and ad hoc subgroups to analyze supplementary research evidence and draft recommendations

Membership

- Multidisciplinary group of primary care practitioners (i.e., a pharmacist, four family physicians, two physical therapists, a chiropractor, a psychologist, a pain specialist, a radiologist, a spine surgeon, a representative from Alberta Health) – some of whom were members of the GDG and GUC that developed the previous editions of the guideline – SC members, and Research Team members
- Led by two co-chairs who attended the WebEx meetings as well as the Subcommittee meetings

The GUC had an inaugural face-to-face meeting at the beginning of the update process and also met four times via WebEx to assess and formulate the recommendations prepared by the Subcommittees. Some discussions were also conducted by e-mail.

Subcommittees

Role

- Reviewed, revised, and drafted guideline recommendations in the following areas of expertise, as directed by the GUC: 1) diagnostic imaging, interventions, and referral/red flags; 2) rehabilitation; 3) pharmacology and analgesia
- Considered and assessed recommendations from the seed guidelines that were new to or discordant with the 2nd Edition of the *Alberta CPG*
- Assessed background materials prepared by the Research Team and reviewed research evidence to reach a consensus on assigned questions, the decisions on which were then presented by the chairs of the Subcommittees to the GUC for approval
- Worked in ad hoc subgroups as required

Membership

- Subcommittees had one or two chairpersons (one of which a GUC co-chair) and comprised one HTA researcher and at least one volunteer from the GUC with relevant expertise, as well as invited experts who were not members of the GUC when required

The Subcommittees and subgroups conferred via WebEx or email to analyze supplementary research evidence and draft recommendations before presenting them to the GUC.

Research Team

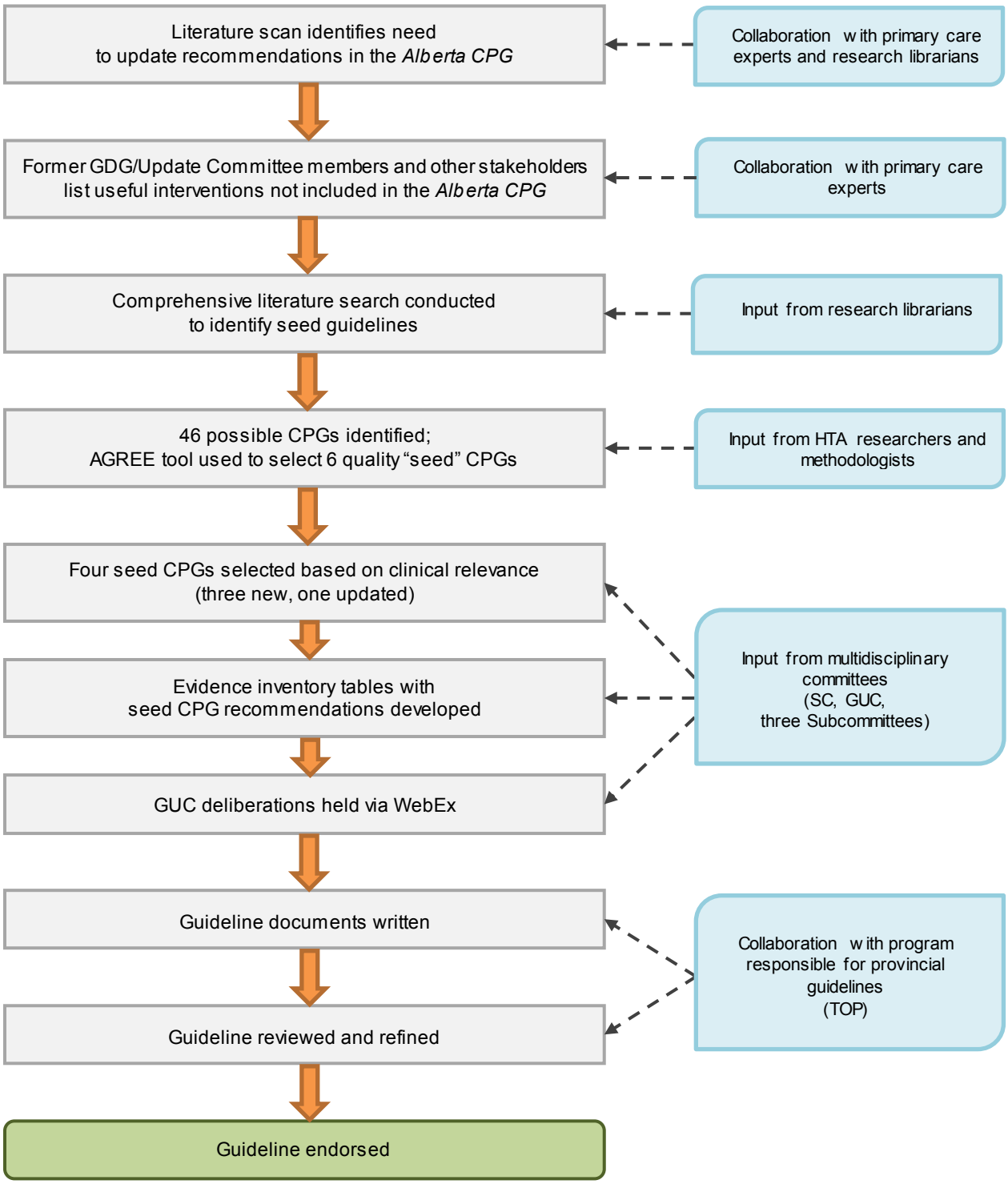
Role

The Research Team played multiple roles and served various functions in the guideline update process, including the following:

- selection and critical appraisal of published guidelines
- preparation of background documents and evidence inventory tables
- active leadership and participation on all committees
- presentation of relevant research information to the GUC
- co-chairing of Subcommittee discussions on selected interventions
- preparation and condensation of all the materials to expedite the review by the GUC
- participation in the process of writing the guideline documents

Figure B.2 below outlines the guideline update process.

FIGURE B.2: The *Alberta CPG* update process and involvement of stakeholders, experts, and committee members



APPENDIX C: Participants in the development process for previous editions of the *Alberta CPG*

Note: As of 1 April 2009, the nine Alberta health regions (Aspen, Calgary, Capital Health, Chinook, David Thompson, East Central, Northern Lights, Palliser, Peace Country) were amalgamated into a single entity, Alberta Health Services.

Participants in the 1st Edition of the *Alberta CPG*

TABLE C.1: Guideline Development Group – Active members

Health Region	City/Site	Affiliation, Discipline, Area of Expertise
Aspen	Hinton	BScPT Alberta Health Services—Aspen Hinton Community Health Services Physical Therapist Clinical Lead Physical therapy
	St. Paul	Registered Nurse Geriatric
Calgary	Calgary	**Paul Taenzer BSc, PhD, RPsych, Chair** Regional Pain Program Alberta Health Services Calgary Health Region Psychology, pain management
	Calgary	BHScOT Alberta Health Services Calgary Health Region Chronic Pain Centre Rehabilitation Program facilitator Occupational therapy for chronic pain
	Calgary	MD, CCFP, Consultant Alberta Health Services Calgary Health Region Chronic Pain Centre Chronic pain management, family practice
	Calgary	MB ChB, FRCA, FFPMRCA Medical leader, Regional Pain Program, Calgary Assistant Professor, Department of Anaesthesia, University of Calgary Pain medicine
	Calgary	MD, CCFP, FCFP University of Calgary, Associate Professor, Department of Family Medicine Primary care
	Calgary	Alberta Health Services Calgary Health Region Chronic Pain Centre Psychology
	Calgary	Pharmacist, BSP Calgary Health Region Chronic Pain Centre Pharmacy
Capital	Edmonton	BA (Hons), MD, CCFP, FCFP Associate Dean, Rural and Regional Health, Faculty of Medicine & Dentistry University of Alberta Rural family medicine

Health Region	City/Site	Affiliation, Discipline, Area of Expertise
	Edmonton	MD Grey Nuns Family Medicine Centre Primary care
	Edmonton	BSc, BScOT, Occupational Therapist, Chronic Pain Coordinator, Community Rehabilitation, Capital Health Chronic pain
Chinook	Lethbridge	RPN, MSc Director, Acute Geriatrics and Palliative Care Chinook Health Region Geriatric medicine, pain management
	Lethbridge	MD, FCFP Chinook Health Region Family medicine, chronic pain management
David Thompson	Sylvan Lake	BSc, MSc, MD, FCFP Clinical Associate Professor, Department of Family Medicine University of Alberta Family medicine, physical medicine
East Central	Camrose	BScOT Professional Practice Lead Occupational Therapy (Adults) East Central Health, Alberta Health Services Occupational therapist
	Camrose	BScPT Clinical Practice Lead Physical Therapy (Adults) Physical Therapist: CRP Adult Camrose East Central Health Physical therapy
	Wainwright	BSc, MD, CCFP, FCFP Family medicine
Palliser	Medicine Hat	BScPT, CAFCI Physical Therapist (Pain Clinic) Medicine Hat Regional Hospital Pain musculoskeletal

The following individuals withdrew from the GDG because of time constraints and/or workload issues.

TABLE C.2: Guideline Development Group – Resigned members

Health Region	City/Site	Affiliation, Discipline, Area of expertise
Peace Country	Peace River	MBBS Physician
Calgary	Calgary	BPT, MScPT, FCAMT Calgary Chronic Pain Centre Physical Therapist Physical therapy
Capital	Edmonton	MD Family Doctor—General Practitioner Family medicine
	Edmonton	MD Family Doctor—General Practitioner Family medicine

Health Region	City/Site	Affiliation, Discipline, Area of expertise
	Sturgeon	Registered Nurse Manager for Quality/Risk Management & Utilization Alberta Health Services, Sturgeon Community Hospital Policy, Procedure and Project Development Nursing
East Central	Camrose	BSc Pharm Pharmacist Pharmacy
	Wetaskiwin	MBBS Family Doctor—General Practitioner Family medicine

TABLE C.3: Steering Committee and Research Team members

Health Region	City/Site	Name	Affiliation, Discipline, Area of expertise
Calgary	Calgary	**Paul Taenzer*‡ Chair of the GDG**	BSc, PhD, RPsych Regional Pain Program Alberta Health Services, Calgary Health Region Psychology, pain management
Capital	Edmonton	Christa Harstall*†‡	BScMLS, MHSA Institute of Health Economics Director Health Technology Assessment (HTA) HTA, research
	Edmonton	Carmen Moga†‡	MD, MSc Institute of Health Economics Research Associate HTA HTA, methodologist
	Edmonton	Ann Scott†‡	BSc (Hons), PhD Institute of Health Economics Research Associate HTA HTA, methodologist
	Edmonton	Donna Angus*‡	BEd, MSA Alberta Heritage Foundation for Medical Research Manager, Knowledge Transfer Initiatives, Communications and knowledge transfer
	Edmonton	Harold Lopatka*‡	BSc Pharm, MHSA, PhD *LopAlta* Ltd Consulting Consultant
	Edmonton	Tara Schuller*‡	BA Charis Management Consulting Inc. Project coordinator
Other members of the Research Team			
Capital	Edmonton	Liz Dennett	BSc, MLIS Institute of Health Economics Information specialist
	Edmonton	Trish Chatterley	BSc, MLIS Institute of Health Economics Information specialist

Health Region	City/Site	Name	Affiliation, Discipline, Area of expertise
	Edmonton	Zhaohui Wu	MD Institute of Health Economics HTA Skills Development (Division of Health Technology Development Ministry of Health China) Health services research
	Edmonton	Don Schopflocher	PhD Associate Professor & Research Statistician Faculty of Nursing, University of Alberta Epidemiologist, statistician

*Steering Committee members
†Research Team members
‡ Members who participated at the GDG videoconference meetings (up to January 2008 for Harold Lopatka)

TABLE C.4: Advisory Committee members

Name	Affiliation, Discipline
Saifee Rashiq (Chair)	BM BS, MSc (Epid) DA(UK), FRCPC Associate Professor, Director Division of Pain Medicine Department of Anesthesiology and Pain Medicine, University of Alberta
Michael Aherne	MEd, CMC Director of Initiative Development Pallium Project
Werner Becker	MD, FRCPC Professor, Division of Neurology Departments of Clinical Neurosciences and Medicine Faculty of Medicine, University of Calgary Foothills Medical Centre and Chronic Pain Centre Alberta Health Services, Calgary Health Region
Greta Cummings	RN, PhD Associate Professor Faculty of Nursing, University of Alberta
Christa Harstall	BScMLS, MHSA Institute of Health Economics Director, Health Technology Assessment
June Norris	Manager Community Rehabilitation Division of Public Health Primary Care and Chronic Disease Management Alberta Health Services
John Parboosingh	MB, FRCSC Professor Emeritus, University of Calgary Consultant, Community Learning PEAK Project
Sara Pereira	Director Hospital Chronic Pain Consultation Service Alberta Health Services, Calgary Health Region
Darlene Schindel (new member)	RN, BScN, MHS Senior Advisor, Project Director Alberta Bone and Joint Health Institute

Name	Affiliation, Discipline
Don Schopflocher	PhD Associate Professor & Research Statistician Faculty of Nursing, University of Alberta
Chris Spanswick	MB ChB, FRCA, FFPMRCA Medical leader, Regional Pain Program Calgary Assistant Professor, Department of Anaesthesia, University of Calgary
Doug Stich	BSc Program Director Toward Optimized Practice
Paul Taenzer	PhD, BSc, RPsych Regional Pain Program Alberta Health Services, Calgary Health Region
Barry Ulmer	Executive Director Chronic Pain Association of Canada
Janet Wright	Prescription Database Administrator Alberta College of Physicians and Surgeons
Clarence Weppler (alternate)	Manager Physician Prescribing Practices Department College of Physicians and Surgeons of Alberta
Blair MacKinnon (new member)	Dissemination Coordinator Primary Care Unit Alberta Health
Resigned members	
Henry Borowski	Director Health Technologies and Services Policy Alberta Health
Julian Daly	Program Operations Manager Primary Care Initiative
Carole Estabrooks	RN, PhD Professor University of Alberta, Faculty of Nursing
Cindy Gerdes	Director Programs SEARCH Canada
Sarah Hayward	PhD Chief Executive Officer SEARCH Canada
Betty Jeffers	BA Director, Primary Care Unit Alberta Health
Jacques Magnan	PhD Acting President and CEO Alberta Heritage Foundation for Medical Research
Sumit Majumdar	MD, MPH Associate Professor, Department of Medicine, University of Alberta
Sandra Pichler	Program Director Primary Care Initiative

Name	Affiliation, Discipline
Jennifer Rees	BScPT Project Director Ambulatory Care Services Capital Health
Rob Wedel	Alberta College of Family Physicians Chinook Health Region
Valerie Wiebe	RN, BN, MN Executive Director of Medical Services Calgary Health Region Alberta Health Services

TABLE C.5: Advisory Committee Ex-officio members

Name	Affiliation, Discipline
Donna Angus	BEd, MSA Alberta Heritage Foundation for Medical Research Manager, Knowledge Transfer Initiatives
Egon Jonsson	PhD, Professor School of Public Health, University of Alberta Community Health Sciences, University of Calgary Executive Director & CEO, Institute of Health Economics
Harold Lopatka	BSc Pharm, MHSA, PhD *LopAlta* Ltd. Consulting
Tara Schuller	BA Charis Management Consulting Inc. Ambassador Guideline Project Coordinator
Resigned members	
Richard Thornley	MPH, MLIS Manager, Evaluation Alberta Heritage Foundation for Medical Research
Margaret Wanke	BSc, MHSA Chief Executive Officer Charis Management Consulting Inc.
Debbie Wilson	MN, CHE General Manager St. Albert and Sturgeon Primary Care Network

Participants in the 2nd Edition of the *Alberta CPG*

TABLE C.6: Update Committee – Active members

Zone	City/Site	Affiliation, Discipline, Area of Expertise
North	Hinton	BScPT Alberta Health Services Area Manager—Allied Health Services, Jasper, Hinton, Edson, Whitecourt, Swan Hills, Mayerthorpe, Barrhead Physical therapy
Edmonton	Edmonton*†‡	MD, MSc, FCFP Professor, Department of Family Medicine, University of Alberta Primary care, guideline development, chronic disease

Zone	City/Site	Affiliation, Discipline, Area of Expertise
	Edmonton*‡	Homecare Pharmacist, BScPharm Alberta Health Services Pharmacy
	Edmonton†	BScMLS, MHSA Institute of Health Economics Director Health Technology Assessment (HTA) HTA, research
Calgary	Calgary†	**Paul Taenzer BSc, PhD, RPsych, Co-Chair** University of Calgary Psychology, pain management
	Calgary†‡	**Ted Findlay MD, DO, CCFP, Consultant, Co-Chair** Chronic Pain Centre, Alberta Health Services, Calgary Musculoskeletal chronic pain management
	Calgary	MB ChB, FRCA, FFPMRCA Medical leader, Calgary Pain Program, Alberta Health Services, Calgary Clinical Assistant Professor, Department of Anaesthesia, University of Calgary Chronic pain, anaesthesia
	Calgary‡	MD, CCFP, FCFP Associate Professor Emeritus, Department of Family Medicine, University of Calgary Primary care
South Zone	Lethbridge‡	MD, FCFP Chinook Regional Hospital Chronic pain management

*Members who were not part of the GDG for the 1st Edition of the guideline
†Members who participated in the diagnostic imaging special topic committee
‡Members who participated in the medication table special topic committee

TABLE C.7: Special topic committee members

Zone	City/Site	Affiliation, Discipline, Area of expertise
Diagnostic Imaging		
Edmonton	Edmonton	MD, FRCPC University of Alberta, Associate Professor, Radiology & Diagnostic Imaging Neuroimaging
Calgary	Calgary	MD, FRCP Radiologist, Assistant Clinical Professor, Radiology Consultants, University of Calgary Diagnostic imaging
	Calgary	MD, FRCSC University of Calgary, Clinical Professor Orthopaedic spine surgeon
Central	Red Deer	MD, FRCPC Central Alberta Medical Imaging Services, Red Deer Radiologist
Medication Table		
Edmonton	Edmonton	RPh, BSc.Pharm Edmonton Consultant pharmacist
Calgary	Calgary	BSc.Pharm, ACPR Chronic Pain Centre, Alberta Health Services, Calgary Pharmacist

TABLE C.8: Steering Committee and Research Team members

Zone	City/Site	Name	Affiliation, Discipline, Area of expertise
Calgary	Calgary	**Paul Taenzer*‡** Co-Chair of the Update Committee	BSc, PhD, RPsych University of Calgary Psychology, pain management
	Calgary	**Ted Findlay*‡** Co-Chair of the Update Committee	MD, DO, CCFP, Consultant, Co-Chair Chronic Pain Centre, Alberta Health Services, Calgary Musculoskeletal chronic pain management
Edmonton	Edmonton	Christa Harstall*†‡	BScMLS, MHSA Institute of Health Economics Director Health Technology Assessment (HTA) HTA, research
	Edmonton	Carmen Moga†‡§	MD, MSc Institute of Health Economics Research Associate HTA HTA, methodologist
	Edmonton	Ann Scott†§	BSc (Hons), PhD Institute of Health Economics Research Associate HTA HTA, methodologist
	Edmonton	Liz Dennett	BSc, MLIS Institute of Health Economics Information specialist
	Edmonton	Tara Schuller*‡	BA, MA Charis Management Consulting Inc. Project coordinator

*Steering Committee members
†Research Team members
‡Members who participated in the Update Committee meetings
§Members who participated in the Steering Committee meetings

APPENDIX D: Excluded Guidelines

TABLE D.1: Summary of excluded guidelines

Publication	Reason for exclusion
Abbott JH. Spinal manipulative therapy for acute low back pain. *Journal of Manual & Manipulative Therapy*. 2008;16(4):204-7.	Commentary; not a guideline
American Osteopathic Association guidelines for osteopathic manipulative treatment (OMT) for patients with low back pain. *Journal of American Osteopathic Association* 2010;110(11):653-66.	No definition of pain in the methodology section Target population (adult) not stated
Banner Health. *Acute low back pain clinical practice (adults in primary care settings)*. Phoenix (AZ): Banner Health; 2012.	Based on G1
Burr J, Shephard R, Cornish S, Vatanparast H, Chilibeck P. Arthritis, osteoporosis, and low back pain. Evidence-based clinical risk assessment for physical activity and exercise clearance. *Canadian Family Physician* 2012;58(1):59-62.	Review article and recommendations Target population (adult) not stated Definition for chronic pain: pain lasting longer than 8 weeks
Centre of Effective Practice. *Government of Ontario's Provincial Low back pain strategy. Toolkit for primary care providers: overview*. Available from: *http://www.health.gov.on.ca/en/pro/programs/ecfa/docs/lb_tk_overview_c.pdf*; *http://www.effectivepractice.org/index.cfm?id=48100* (accessed 13 November 2016).	Toolkit; not a guideline
Chou R, Qaseem A, Owens DK, Shekelle P, for the Clinical Guidelines Committee of the American College of Physicians. Diagnostic imaging for low back pain: advice for high-value health care from the American College of Physicians. *Annals of Internal Medicine* 2011;154 (3):181-9.	Definitions for acute and chronic pain not provided
Colorado Division of Workers' Compensation. *Chronic pain disorder medical treatment guidelines*. Denver (CO): Colorado Division of Workers' Compensation; 2011. Available from: *http://www.guideline.gov/content.aspx?id=38441* (accessed 28 October 2016).	Definition for chronic pain: pain that persists for at least 30 days beyond the usual course of an acute disease or a reasonable time for an injury to heal, or that is associated with a chronic pathological process that causes continuous pain
Daffner RH, Weissman BN, Wippold FJ II, Angtuaco EJ, Appel M, Berger KL, et al. *ACR Appropriateness Criteria® suspected spine trauma*. Reston (VA): American College of Radiology (ACR); 2012. Available from: *http://www.guideline.gov/content.aspx?id=37931*; *https://acsearch.acr.org/docs/69359/Narrative* (accessed 28 October 2016).	Definitions for acute, subacute, and chronic pain due to trauma not provided Focused on cervical trauma: not clear about imaging for low back pain trauma
Davis PC, Wippold FJ II, Cornelius RS, Angtuaco EJ, Broderick DF, Brown DC, et al. *ACR Appropriateness Criteria® low back pain*. Reston (VA): American College of Radiology (ACR); 2011. Available from: *http://www.guideline.gov/content.aspx?id=35145* and *https://acsearch.acr.org/docs/69483/Narrative/* (accessed 28 October, 2013) Note: *Update of an excluded guideline (1st and 2nd Edition)*: Davis PC, Wippold FJ II, Brunberg JA, Cornelius RS, de la Paz RL, Dormont D, et al. *ACR Appropriateness Criteria® low back pain*. Reston (VA): ACR; 2008 and Bradley WG Jr, Seidenwurm DJ, Brunberg JA, Davis PC, de la Paz RL, Dormont D, et al. *Low back pain*. Reston (VA): ACR; 2005.	Target population (adult) not stated Definition of pain not provided

Publication	Reason for exclusion
Delitto A, George SZ, van Dillen LR, Whitman JM, Sowa G, Shekelle P, et al. Low back pain. *Journal of Orthopedic & Sports Physical Therapy* 2012;42(4):A1-57.	Definition of pain not provided Target population (adult) not stated
Duthey B. *Background Paper 6.24 Low back pain*. 2013. Available from: *http://www.who.int/medicines/areas/priority_medicines/BP6_24LBP.pdf* (accessed 12 November 2016).	Background paper; not a guideline Includes recommendations from an existing clinical practice guideline; defined chronic pain as pain persisting for longer than 7 to 12 weeks.
Empire Blue Cross Blue Shield. *Clinical UM Guideline. Pain management: cervical, thoracic & lumbar facet injections*. 2013. Available from: *http://www.empireblue.com/medicalpolicies/guidelines/gl_pw_c160721.htm* (accessed 13 November 2013).	Definition of pain not provided Target population (adult) not stated
Forseen SE, Corey AS. Clinical decision support and acute low back pain: evidence-based order sets. *Journal of American College of Radiology* 2012;9(10):704-12.	Not a guideline Provides clinical decision templates designed to assist practitioners through the process of managing patients with acute low back pain
Froedtert & Medical College of Wisconsin. *Spine Care. Management of back and neck pain guidelines*. Milwaukee (WI): Froedtert & Medical College of Wisconsin; 2013.	Definition of pain not provided Target population (adult) not stated
Hashimoto R, Raich A, Ecker E, Henrikson NB, Wallace L, Dettori JR, et al. Spectrum Research, Inc. *Spinal Injections. Report prepared for Washington State Health Care Authority*. 2011. Available from: *http://www.hca.wa.gov/about-hca/health-technology-assessment/spinal-injections* (accessed 13 November 2016).	HTA review; not a guideline
Sierra Health and Life. *Low back pain guidelines*. Las Vegas (NV): Sierra Health and Life; 2002, revised February 2013.	Target population (adult) not stated Guideline based on existing clinical practice guidelines
Institute for Clinical Systems Improvement (ICSI). *Assessment and management of chronic pain*. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2011. Note: *Update of an excluded guideline (1st and 2nd Edition)*: ICSI. *Assessment and management of chronic pain*. Bloomington (MN): ICSI; 2007 and ICSI. *Assessment and management of chronic pain*. Bloomington (MN): ICSI; 2009.	Did not focus on low back pain Target population physiologically mature adolescents (between 16 and 18 years) and adults
Ju H, Docter S, Newton S, Merlin T, Hiller JE. *The management of acute/subacute soft tissue injuries to the low back: Evidence update and recommendations for clinical practice*. Adelaide: Adelaide Health Technology Assessment; 2009.	Target population employees older than 16 years of age
Jurecki-Tiller M, Bruening W, Tregear S, Schoelles K, Erinoff E, Coates V. *Decompression therapy for the treatment of lumbosacral pain*. Rockville (MD): Agency for Healthcare Research and Quality; 2009. Available from: *https://www.cms.gov/Medicare/Coverage/DeterminationProcess/downloads/id47TA.pdf* (accessed 1 November 2016).	Not a guideline Definitions for acute and chronic pain not provided
Kumar SP, Kumar A. Treatment-based classification and low back pain – Sharpening the two-edged sword of clinical decision-making. *Journal of Physical Therapy* 2013;8(1):1-4.	Editorial; not a guideline

Publication	Reason for exclusion
Lee J, Gupta S, Price C, Baranowski AP. Low back and radicular pain: a pathway for care developed by the British Pain Society. *British Journal of Anaesthesia* 2013;111 (1):112-20.	Clinical pathways; definition of pain not provided Target population (adult) not stated
Livingston C, Little A, King V, Pettinari C, Thielke A, Vandegriff S, et al. *Advanced imaging for low back pain: A clinical practice guideline based on the joint practice guideline of the American College of Physicians and the American Pain Society (diagnosis and treatment of low back pain)*. Salem (OR): Office for Oregon Health Policy & Research; 2012. Available from: https://www.oregon.gov/oha/herc/EvidenceBasedGuidelines/Guideline%20for%20Advanced%20Imaging%20for%20Low%20Back%20Pain.pdf (accessed 8 November 2016).	Developed/adapted from G1 Also based on excluded guideline: Chou R, et al. *Annals of Internal Medicine* 2011;154 (3):181-9. Definition of pain not provided
Livingston C, Little A, King V, Pettinari C, Thielke A, Pensa M, et al. *Percutaneous interventions for low back pain: A clinical practice guideline based on the 2009 American Pain Society Guideline (Interventional Therapies, Surgery, and Interdisciplinary Rehabilitation for Low Back Pain)*. Salem (OR): Office for Oregon Health Policy and Research; 2012. Available from: https://www.oregon.gov/oha/herc/EvidenceBasedGuidelines/Guideline%20for%20Percutaneous%20Interventions%20for%20Low%20Back%20Pain.pdf (accessed 8 November 2016).	Developed/adapted from G1 Defined subacute pain >4 weeks Definitions for acute and chronic pain not provided Based on guideline excluded in 2nd Edition of *Alberta CPG*: Chou R, et al. *Spine* 2009;34(10):1066-77.
Livingston C, King V, Little A, Pettinari C, Thielke A, Gordon C. *Evaluation and management of low back pain: A clinical practice guideline based on the joint practice guideline of the American College of Physicians and the American Pain Society (Diagnosis and treatment of low back pain)*. Salem (OR): Office for Oregon Health Policy and Research; 2011. Available from: https://www.oregon.gov/oha/herc/EvidenceBasedGuidelines/Guideline%20on%20the%20Evaluation%20and%20Management%20of%20Low%20Back%20Pain.pdf (accessed 8 November 2016).	Developed/adapted from G1 Evaluation and management of low back pain, regardless of duration Defined subacute and chronic pain >4 weeks
Low back disorders. In: Hegmann KT, editor(s). *Occupational medicine practice guidelines. Evaluation and management of common health problems and functional recovery in workers*. 3rd Edition. Elk Grove Village (IL): American College of Occupational and Environmental Medicine (ACOEM); 2011. p. 333-796. Available from: http://www.guideline.gov/content.aspx?id=38438&search=low+back+pain (accessed 28 October 2016). Note: *Update of an excluded guideline (2nd Edition)*: Low back disorders. In: Hegmann KT, editor(s). *Occupational medicine practice guidelines: evaluation and management of common health problems and functional recovery in workers*. 2nd Edition. Elk Grove Village (IL): ACOEM; 2007.	Definition for acute pain not provided Subacute and chronic pain defined as pain lasting at least 4 to 6 weeks
Macintyre PE, Schug SA, Scott DA, Visser EJ, Walker SM, APM: SE Working Group of the Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine. *Acute Pain Management: Scientific Evidence (3rd Edition), 2010*. Melbourne: Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine; 2010.	Definition of acute pain not provided
Manusov EG. Evaluation and diagnosis of low back pain. *Primary Care: Clinics in Office Practice* 2012;39(3):471-9.	Background document; not a guideline
Melcher C, Wegener B, Kanz K-G, Mutschler E, Jansson V, Birkenmaier C. Management of acute back pain. *Global Spine Journal* 2012;02-P107 (poster presentation).	Definition of pain not provided Target population (adult) not stated

Publication	Reason for exclusion
Miller Spoto M. Conservative management of low back pain. In: Asghar Norasteh A, editor(s). *Low back pain*. InTech; 2012. Available from: *http://cdn.intechopen.com/pdfs/36702/InTech-Conservative_management_of_low_back_pain.pdf* (accessed 12 November 2016).	Book chapter, synopsis; not a guideline
NHS Coventry, NHS Warwickshire. *Commissioning policy. Therapeutic spinal injections for back pain*. 2012. Available from: *http://www.gpgateway.coventry.nhs.uk/mf.ashx?ID=15d6439b-fb36-45f9-8d14-70562d761bef* (accessed 13 November 2016).	Medical policy Target population (adult) not stated
North American Spine Society (NASS). *Five things physicians and patients should question*. Available from: *https://www.spine.org/Documents/ResearchClinicalCare/NASS5Things.pdf* (accessed 13 November 2016).	Summary recommendations; not a guideline
North American Spine Society (NASS). *Diagnosis and treatment of degenerative lumbar spinal stenosis*. Burr Ridge (IL): NASS; 2011. Available from: *http://www.guideline.gov/content.aspx?id=34839* and *https://www.spine.org/Portals/0/Documents/ResearchClinicalCare/Guidelines/LumbarStenosis.pdf* (accessed 28 October 2016).	Focuses on degenerative lumbar spinal stenosis
Reese C, Mittag O. Psychological interventions in the rehabilitation of patients with chronic low back pain: evidence and recommendations from systematic reviews and guidelines. *International Journal of Rehabilitation Research* 2013;36(1):6-12.	Review of systematic reviews and guidelines for recommendations; not a guideline Definition of chronic pain not provided
SA Health, Government of South Australia. *Lumbar disorders*. Available from: *http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+topics/orthopaedics/lumbar+disorders* (accessed 7 November 2016).	Target population (adult) not stated Definitions for acute and chronic pain not provided
Santaguida PL, Gross A, Busse J, Gagnier J, Walker K, Bhandari M, et al. *Complementary and alternative medicine in back pain utilization report. Evidence Report/Technology Assessment No. 177*. Rockville, MD: Agency for Healthcare Research and Quality; 2009. Available from: *http://www.ahrq.gov/research/findings/evidence-based-reports/backcam-evidence-report.pdf* (accessed 1 November 2016).	HTA report; not a guideline Included studies of patients with specific causes for low back pain (cancer, spinal cord injury), and pain in pregnant women
Sixta S, Moore FO, Ditillo MF, Fox AD, Garcia AJ, Holena D, et al. Screening for thoracolumbar spinal injuries in blunt trauma: an Eastern Association for the Surgery of Trauma practice management guideline. *Journal of Trauma and Acute Care Surgery*. 2012;73(5 Suppl 4):S326-32.	Target population (adult) not stated
South Central Priorities Committees. *Policy recommendation 68. Facet joint injections and medial branch blocks for the treatment of low back and neck pain*. 2012. Available from: *http://www.fundingrequests.cscsu.nhs.uk/wp-content/uploads/2013/11/MOBBB_Policy_68_Facet_Joint_Injection_treatment_-therapeutic.pdf* (accessed 12 November 2016).	Clinical policy; not a guideline
Spratt JD. *Musculoskeletal imaging for GPs. Reports on the Rheumatic Diseases Series 7, Summer 2013 hands On No 3*. 2013. Available from: *http://www.arthritisresearchuk.org/~/media/Files/Education/Hands-On/HO03-Summer-2013.ashx* (accessed 13 November 2016).	Definition of pain not provided Target population (adult) not stated
Telford and Wrekin Clinical Commissioning Group. Clinical Pathways. (1) MRI pathway for LBP and headache MRI requests. (2) Spine triage. 2012. Available from: *http://www.telfordccg.nhs.uk/clinical-pathways* (accessed 13 November 2016).	Target population (adult) not stated

Publication	Reason for exclusion
Thompson H. Clinical practice guideline series update. *Journal of Neuroscience Nursing* 2012;44(2):111.	Information about a published guideline for care of patients undergoing spine surgery
Work Loss Data Institute. *Low back - lumbar & thoracic (acute & chronic)*. Encinitas (CA): Work Loss Data Institute; 2011. Note: *Update of an excluded guideline (1st and 2nd Edition)*: Work Loss Data Institute. Low back: lumbar & thoracic (acute & chronic). Corpus Christi (TX): Work Loss Data Institute; 2007 and Work Loss Data Institute. *Low back - lumbar & thoracic (acute & chronic)*. Corpus Christi (TX): Work Loss Data Institute; 2008.	Definitions for acute and chronic pain not provided Target population (adult) not stated

CPG: clinical practice guideline; G1 to G11: seed guidelines; HTA: health technology assessment

Note: References for the seed guidelines (G1, G2, etc.) are available in *Appendix H*. Excluded guidelines for the 1st and 2nd Editions of the *Alberta CPG* can be found in their respective background documents available from: *www.ihe.ca/research-programs/hta/aagap*.

TABLE D.2: Summary of guidelines excluded after reviewing the AGREE quality appraisal results (Steering Committee meeting, 2 December 2013)

Guideline, Type of Pain, Definition; Target Population; Intended Users; Setting; Focus	Reason for exclusion
E1 (Canada) Brosseau L, Wells GA, Poitras S, Tugwell P, Casimiro L, Novikov M, et al. Ottawa Panel evidence-based clinical practice guidelines on therapeutic massage for low back pain. *Journal of Bodywork and Movement Therapies* 2012;16(4):424-55. **Type of pain**: Acute (<4 weeks), subacute (4 to 12 weeks), and chronic (>12 weeks) low back pain **Target population**: Adult patients, 18 years of age and older **Setting**: Primary care **Intended users**: Family physicians, physiotherapists, occupational therapists, massage therapists, other clinicians (type not reported) **Clinical specialty**: Family practice, physical medicine and rehabilitation **Focus**: Treatment **Clinical algorithm**: Not available	Low score on AGREE tool (average quality) Low scores on AGREE domains of rigor of development, applicability, and editorial independence General appraisal of recommendations by clinical experts
E2 (USA) Michigan Quality Improvement Consortium. *Management of acute low back pain.* Southfield (MI): Michigan Quality Improvement Consortium; 2011. Note: *Update of an excluded guideline (2nd Edition)* – low scores on AGREE tool (average quality) **Type of pain**: Acute low back pain or back-related leg symptoms (<6 weeks) **Target population**: Adult patients **Setting**: Primary care **Intended users**: Advanced practice nurses, health plans, hospitals, physician assistants, physicians **Clinical specialty**: Family practice, internal medicine, neurology, orthopedic surgery **Focus**: Diagnosis, evaluation, management, risk assessment, treatment **Clinical algorithm**: Not available	Low score on AGREE tool (average quality) Low scores on AGREE domains of rigor of development, applicability, and editorial independence General appraisal of recommendations by clinical experts

AGREE: Appraisal of Guidelines for Research and Evaluation

APPENDIX E: Modifications Made to the AGREE Tool

Scope and Purpose (Items 1, 2, 3)

Details of the objectives, clinical question, and target population should be stated in the abstract, introduction, or methods section of the guideline (see detailed scoring guidance below). If the first mention of any of these elements occurs in the recommendations section, the guideline should not receive a score of 4. All of these elements are considered mandatory for a quality CPG, so if a guideline scores <4 for any of these elements, you do not need to assess it further.

As all guidelines meeting these three criteria will receive the maximum possible total domain score of 12 (3 × 4), the standardized domain score will not be calculated since all of the guidelines will achieve 100%.

Examples of the detailed instructions constructed using logical operators (AND, OR, NOT) for the AGREE tool items are listed below.

Item 7 – Piloted among target users

4 – Guideline piloted among target users and methods reported
3 – Guideline piloted among target users but methods not reported
2 – Unclear
1 – Guideline not piloted among target users

Item 8 – Systematic methods used to search for evidence

Information about the search terms used, sources consulted, and date limits of the literature searches should be provided.

4 – All three elements (search terms, sources, date limits) reported
3 – Two elements reported
2 – Unclear or only one element reported
1 – Information about the methods used to search for evidence is not provided

Item 16 – Different management options presented

4 – Different management options were considered to be adequately presented if the comparators for each intervention were stated in the guideline (for example, massage therapy is more effective than relaxation therapy in patients with chronic low back pain)
3 – The comparators were stated for only some of the interventions
2 – Unclear
1 – The comparators for the interventions were not stated

Item 19 – Organizational barriers discussed

4 – Not applicable, or organizational barriers discussed and required changes are outlined
3 – Organizational barriers mentioned but required changes are not outlined
2 – Unclear
1 – Organizational barriers not discussed

Source: Scott NA, Moga C, Harstall C. Making the AGREE tool more user friendly: The feasibility of a user guide based on Boolean operators. *Journal of Evaluation in Clinical Practice* 2009;15(6):1061-1073.

APPENDIX F: Systematic Review Quality Assessment Checklist

(*Note*: Adapted from various sources[1-4])

This checklist contains six quality subsections (grey sections) that, according to the literature, reflect aspects considered essential for a good quality systematic review.[1-4] If desired, the scores obtained for these six subsections can be used to categorize the review as good, average, or poor quality according to the number of criteria met. This additional categorization is optional. The rating system is flexible in that other criteria can be substituted for some or all of the six criteria in accordance with the priorities and opinions of the assessors.

Study Question

The research question should be established a priori.

- *Reported*: The objectives of the review are clearly stated in the abstract, introduction, or methods.
- *Partially reported*: The objectives of the review are stated in:
  - the abstract, introduction, or methods, but are vague or unclear; or
  - a section of the report other than the abstract, introduction, or methods.
- *Not reported*: The objectives are not stated in any section of the review.

Inclusion/Exclusion Criteria

The participants, interventions, outcome measures, and types of studies considered for analysis should be established a priori.

- *Reported*: All four elements (participants, interventions, outcome measures, types of studies) are reported in the abstract, introduction, or methods section of the review.
- *Partially reported*: Only three of the four elements are reported in the abstract, introduction, or methods section.
- *Not reported*:
  - Less than three of the four elements are reported in the abstract, introduction, or methods section; or
  - the first mention of any of these elements occurs in the results section.

Search Strategy

Electronic databases

- *Reported*: At least one electronic database was searched and the names of the databases are provided.
- *Partially reported*: At least one electronic database was searched but the names are not provided.
- *Not reported*: Electronic databases were not searched or are not mentioned in the review.

Quality subsection 1: At least MEDLINE and one other relevant literature database

- *Yes*: MEDLINE and one other relevant literature database were searched.
- *Unclear*: It was unclear whether MEDLINE and one other relevant literature database were searched because a complete list of all the electronic databases searched is not provided.
- *No:*
  - The review stated that neither MEDLINE nor another relevant literature database was searched;
  - neither MEDLINE nor another relevant literature database is mentioned in the complete list of electronic databases searched; or
  - only one of the two the databases (MEDLINE or one other relevant database) was searched.

Other sources

- *Reported*: At least one additional resource or method, other than searching electronic databases, was used to identify relevant literature (e.g., pearling or review of reference lists in retrieved articles, hand-searching of journals).
- *Partially reported*: Other resources or methods were used but details are not provided.
- *Not reported*: The review did not use other resources or methods to identify relevant literature or does not mention them.

Data Extraction

Data extraction method

- *Reported*: The data extraction process is described.
- *Partially reported*: A data extraction process is mentioned but no details are provided.
- *Not reported*: A data extraction process was not used or described.

Quality subsection 2: Standardized method

- *Yes*: The data categories extracted are listed or the use of a standardized data extraction form is mentioned.
- *Unclear*: The review states that a standardized data extraction process was used but does not list the data categories extracted or mention the use of a standardized data extraction form.
- *No*: The data categories extracted are not listed or the use of a standardized data extraction form is not mentioned.

Quality subsection 3: Independent data extraction by at least two reviewers

- *Yes*: Data were extracted independently by at least two reviewers.
- *Unclear*: The number of reviewers who extracted data is not stated.
- *No*: Details of data extraction were not provided or data were extracted by:
  - only one reviewer; or
  - one reviewer and checked by another.

Quality Assessment

Criteria used to assess the validity of included studies

- *Reported*: A quality assessment tool or checklist was used and details are provided (e.g., name or source).
- *Partially reported*: A quality assessment tool or checklist was used but no details are provided.
- *Not reported*:
  - A quality assessment tool or checklist was not used or mentioned; or
  - studies were only categorized according to a level of evidence hierarchy.

Quality subsection 4: Independent quality assessment by at least two reviewers

- *Yes*: The quality of the included studies was assessed independently by at least two reviewers.
- *Unclear*: The number of reviewers who appraised study quality is not stated.
- *No*: Studies were assessed by:
  - only one reviewer; or
  - one reviewer and checked by another.

Inter-rater agreement

- *Reported*: The review mentions that a consensus method was used or provides a statement of the degree of difference/equivalence between the reviewers or a statistical measure of inter-rater agreement.
- *Partially reported*: The review mentions that inter-rater agreement was measured but does not provide a statement of the degree of difference/equivalence or a statistical measure of inter-rater agreement.
- *Not reported*: The review does not provide any information on inter-rater agreement.

Data Analysis/Synthesis

Only ONE of the three methods for data analysis/synthesis can be assessed. Select the data analysis type according to the definitions below. Only score the quality subsection that pertains to the particular data analysis method used in the review.

Qualitative review

A narrative summary of the study results with no statistical analysis or pooling of results.

Quality subsection 5a: Study quality used in analysis or discussion of study results

- *Yes*: Results of the included studies are discussed or analyzed in terms of their quality.
- *Unclear*:
  - Study quality was assessed but is either not used at all or is only used to analyze some of the included studies.
  - The review mentions selective inclusion of "quality" studies, but without further assessment of their quality (e.g., only RCTs were included but the robustness of their execution was not assessed).
- *No*:
  - The results of the included studies are not discussed or analyzed in terms of their quality.
  - Study quality was not assessed.

Semi-quantitative review

Incorporates a statistical analysis of individual studies without pooling the results (e.g., relative risks calculated for individual study outcomes) or pooling of results using only descriptive statistics (e.g., median, mean, mode, frequency).

Quality subsection 5b: Confidence interval/measures of dispersion reported

- *Yes*: Confidence intervals or measures of dispersion (range, standard deviation, standard error of the mean) are reported for all relevant analyses.
- *Unclear*:
  - Confidence intervals or measures of dispersion are only reported for some of the relevant analyses.
  - Confidence intervals are reported for all relevant analyses, but the level of confidence is not specified (e.g., unclear whether 95% or 99% confidence intervals were calculated).
  - Measures of dispersion are reported for all relevant analyses but the type is not specified (e.g., standard deviation or standard error).
- *No*: Confidence intervals or measures of dispersion are not reported.

Meta-analysis

A pooled effect estimate is calculated for at least two studies. Reviews that contain a meta-analysis of some studies and a qualitative analysis of the remaining studies are considered a "meta-analysis."

Quality subsection 5c: Precision of results reported

- *Yes*: Confidence intervals are reported for all pooled effect estimates.
- *Unclear*:
  - Confidence intervals are reported for some but not all pooled effect estimates.
  - Confidence intervals are reported for all pooled effect estimates but the level of confidence is not specified (e.g., unclear whether 95% or 99% confidence intervals were calculated).
- *No*: Confidence intervals are not reported.

Quality subsection 5d: Test of study heterogeneity conducted

- *Yes*: A statistical analysis of study heterogeneity is reported for all pooled studies.
- *Unclear*:
  - A statistical analysis of study heterogeneity is reported for some but not all pooled studies.
  - Heterogeneity was examined visually or a statistical analysis of study heterogeneity is reported for all pooled studies, but the type of model used is not specified (e.g., fixed-effect or random-effects).
- *No*: A statistical analysis of study heterogeneity was not conducted.

Test for publication bias

- *Reported*: Publication bias was analyzed or a reason provided for why it was not.
- *Partially reported*:
    - The review mentions analyzing publication bias but does not present the results.
    - The review states that publication bias was not analyzed but does not explain why.
- *Not reported*: There was no mention of analyzing publication bias.

Concluding Section

Potential methodological advantages/limitations

- *Reported*: The methodological limitations or advantages of the review are described in a separate section or paragraph.
- *Partially reported*: The description of the methodological limitations or advantages of the review is cursory (e.g., a single sentence or no separate paragraph or section).
- *Not reported*: No mention is made of the potential methodological limitations or advantages of the review.

Clinical application of results

The clinical application of results is considered adequate if all of the following four elements are present in the concluding section (includes discussion) or statement of the review: treatment, treatment effect, patient group, and comparator.

- *Reported*: All four elements are present.
- *Partially reported*: Only three of the four elements are present.
- *Not reported*: Less than three of the four elements are present.

Incorporation of methodological quality

The review should take into account the methodological quality of the included studies when formulating the conclusions.

- *Reported*: The methodological quality of the included studies is mentioned in the concluding section (includes discussion) or statement of the review.
- *Partially reported*: The study types, as designated by a level of evidence hierarchy category, are mentioned in the concluding section (includes discussion) or statement of the review, but not the quality of the studies.
- *Not reported*: The methodological quality of the included studies is not mentioned in the concluding section (includes discussion) or statement of the review.

Quality subsection 6: Conclusions supported by results

- *Yes*: The conclusions drawn by the authors of the review are supported by the evidence presented in the results section.
- *Unclear*: Some, but not all, of the conclusions drawn by the authors of the review are supported by the evidence presented in the results section.
- *No*: The conclusions drawn by the authors of the review are not supported by the evidence presented in the results section.

Conflict of Interest and Funding

Conflict of interest

- *Reported*: A statement of conflict of interest (if any) is provided.
- *Partially reported*: A conflict of interest is mentioned but details are not provided.
- *Not reported*: A statement of conflict of interest (if any) is not provided.

Sources of funding

- *Reported*:
    - Funding sources are mentioned; or
    - the review was developed without external funding (e.g., authors employed by a university or volunteered time to produce a Cochrane Review).
- *Partially reported*: External funding is mentioned but details are not provided.
- *Not reported*: Funding sources are not mentioned.

Optional Quality Rating System

The quality of systematic reviews can be assessed according to how well their methods exclude bias and confounding by examining: the search strategy used; how the data extraction, quality assessment of the included studies, and data analysis/synthesis were conducted, and; whether the conclusions of the review match the results. Thus, the quality of the review can be rated numerically with respect to the six quality subsections (grey boxes above) as follows.

- ***Good*** – six criteria met, or five criteria met and one criterion "unclear"
- ***Average*** – one criterion not met, or one criterion not met and one criterion "unclear," or two criteria "unclear"
- ***Poor*** – at least two criteria not met

N.B. For a criterion to have been "met," it must be scored as "yes" (✓). For meta-analyses, the two applicable quality subsections (5c and 5d) are counted as a single quality criterion. Therefore, to meet the fifth quality criterion for meta-analyses, both 5c and 5d must be scored as "yes" (✓).

References (Appendix F)

1. Fishbain D, Cutler RB, Rosomoff HL, Rosomoff RS. What is the quality of the implemented meta-analytic procedures in chronic pain treatment meta-analyses? *Clinical Journal of Pain* 2000;16(1):73-85.
2. Aggressive Research Intelligence Facility – University of Birmingham. *ARIF critical appraisal checklist*. Birmingham: University of Birmingham; 2002.
3. University of Alberta. Evidence based medicine tool kit. Available from: *www.ebm.med.ualberta.ca* (accessed 16 November 2016).
4. Greenhalgh T. How to read a paper. Papers that summarise other papers (systematic reviews and meta-analysis). *British Medical Journal* 1997;315(7109):672-675.

APPENDIX G: Quality Assessment Results for Systematic Reviews of New Interventions

TABLE G.1: Critical appraisal results for systematic reviews of new interventions

Review Characteristic	LLLT	Trigger point injections [1] Vitamin B12 injections [2]		Gravity tables/ traction	Recovery expect-ations	Duloxetine		Mindfulness -based meditation	Shock-wave therapy	CORE back tool	Antibiotic treatment markers	
	van Middelkoop et al. (2011)[1]	Staal et al. (2008)[2] [1;2]	Waseem et al. (2011)[3] [1]	Wagner et al. (2013)[4]	Hallegraeff et al. (2012)[5]	Cawston et al. (2013)[6]	Watson et al. (2011)[7,8]	Cramer et al. (2012)[9]	Seco et al. (2011)[10]	Fairbank et al. (2011)[11]	Jensen et al. (2008)[12]	Steffans et al. (2013)[13]
Study question established a priori	●	●	●	●	●	●	◐	●	●	●	●	●
Inclusion/exclusion criteria	●	●	●	●	●	◐	○	◐	●	●	●	●
Search strategy												
Electronic databases	●	●	●	●	●	●	●	●	●	●	●	●
1. At least MEDLINE and one other relevant literature database	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other sources	●	●	●	●	●	●	○	●	●	●	●	●
Data extraction												
Data extraction method	●	●	●	●	●	●	○	●	●	●	●	●
2. Standardized method	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓
3. Independent data extraction by at least two reviewers	✓	✓	✓	✓	?	✓	?	✓	✓	✓	?	✓
Quality assessment												
Criteria used to assess the validity of included studies	●	●	●	●	●	●	●	●	●	●	●	●

Review Characteristic	LLLT	Trigger point injections [1] Vitamin B12 injections [2]		Gravity tables/ traction	Recovery expect-ations	Duloxetine		Mindfulness -based meditation	Shock-wave therapy	CORE back tool	Antibiotic treatment markers	
	van Middelkoop et al. (2011)[1]	Staal et al. (2008)[2] [1;2]	Waseem et al. (2011)[3] [1]	Wagner et al. (2013)[4]	Hallegraeff et al. (2012)[5]	Cawston et al. (2013)[6]	Watson et al. (2011)[7,8]	Cramer et al. (2012)[9]	Seco et al. (2011)[10]	Fairbank et al. (2011)[11]	Jensen et al. (2008)[12]	Steffans et al. (2013)[13]
4. Independent quality assessment by at least two reviewers	✓	✓	✓	✓	✓	✓	?	✓	✓	✓	?	✓
Inter-rater agreement	●	●	●	●	●	●	○	●	●	○	●	●
Data analysis/synthesis												
Qualitative review	N/A	●	●	N/A	N/A	N/A	●	●	N/A	●	N/A	N/A
5a. Study quality used in analysis or discussion of study results		✓	✓				✓	✓		✓		
Semi-quantitative review	N/A	N/A	N/A	●	N/A	N/A	N/A	N/A	●	N/A	●	●
5b. Confidence interval/ measures of dispersion reported				✓					✓		X	✓
Meta-analysis	●	N/A	N/A	N/A	●	●	N/A	N/A	N/A	N/A	N/A	N/A
5c. Precision of results reported	✓				✓	✓						
5d. Test of study heterogeneity conducted	✓				✓	✓						
Test for publication bias	◐	○	○	○	●	●	○	○	◐	○	○	○
Concluding section												
Potential methodological limitations/advantages	●	○	●	●	●	●	○	●	○	●	●	●
Clinical application of results	●	●	●	●	●	●	○	●	●	●	●	●

Review Characteristic	LLLT	Trigger point injections [1] Vitamin B12 injections [2]		Gravity tables/ traction	Recovery expect-ations	Duloxetine		Mindfulness -based meditation	Shock-wave therapy	CORE back tool	Antibiotic treatment markers	
	van Middelkoop et al. (2011)[1]	Staal et al. (2008)[2] [1;2]	Waseem et al. (2011)[3] [1]	Wagner et al. (2013)[4]	Hallegraeff et al. (2012)[5]	Cawston et al. (2013)[6]	Watson et al. (2011)[7,8]	Cramer et al. (2012)[9]	Seco et al. (2011)[10]	Fairbank et al. (2011)[11]	Jensen et al. (2008)[12]	Steffans et al. (2013)[13]
Incorporation of methodological quality	●	●	●	●	●	●	●	●	●	●	●	●
6. Conclusions supported by results	✓	✓	✓	✓	✓	?	?	✓	✓	✓	✓	✓
Conflict of interest and funding												
Conflict of interest	●	●	●	●	○	◐	●	●	●	●	○	●
Sources of funding	●	●	●	●	○	●	○	●	●	●	●	●
Rating												
Six criteria (see grey rows above)	6/6 Good	6/6 Good	6/6 Good	6/6 Good	5/6 Good	5/6 Good	2/6 Poor	6/6 Good	6/6 Good	6/6 Good	3/6 Poor	6/6 Good

Key for quality of reporting: Reported = ●; Partially reported = ◐; Not reported = ○; Not applicable = N/A

Key for quality of review (grey sections of table): Yes = ✓; No = **X**; Unclear = **?**

CORE: Clinically Organized Relevant Exam; LLLT: low-level laser therapy

References (Appendix G)

1. van Middelkoop M, Rubinstein SM, Kuijpers T, Verhagen AP, Ostelo R, Koes BW, et al. A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *European Spine Journal* 2011;20(1):19-39.
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3. Waseem Z, Boulias C, Gordon A, Ismail F, Sheean G, Furlan AD. Botulinum toxin injections for low-back pain and sciatica. *Cochrane Database for Systematic Reviews* 2011;(1):CD008257.
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6. Cawston H, Davie A, Paget MA, Skljarevski V, Happich M. Efficacy of duloxetine versus alternative oral therapies: an indirect comparison of randomized clinical trials in chronic low back pain. *European Spine Journal* 2013;22(9):1996-2009.
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11. Fairbank J, Gwilym SE, France JC, Daffner SD, Dettori J, Hermsmeyer J, et al. The role of classification of chronic low back pain. *Spine* 2011;36(21S):S19-S42.
12. Jensen TS, Karppinen J, Sorensen JS, Niinimaki J, Leboeuf-Yde C. Vertebral endplate signal changes (Modic change): a systematic literature review of prevalence and association with non-specific low back pain. *European Spine Journal* 2008;17(11):1407-1422.
13. Steffens D, Hancock MJ, Maher CG, Williams C, Jensen TS, Latimer J. Does magnetic resonance imaging predict future low back pain? A systematic review. *European Journal of Pain* 2014;18(6):755-765.

APPENDIX H: Included Seed Guidelines

Note that the guidelines are not presented in the below table in any specific order. The G1, G2, etc., identifiers were randomly assigned for the purpose of organization only.

TABLE H.1: Summary of included seed guidelines

Guideline Country	Type of Pain, Definition; Target Population; Setting; Intended Users; Focus	Source Database Clinical Algorithms
G1† **USA** 131 references Included in the 2nd Edition of the *Alberta CPG*; only recommendations on acute LBP	**Type of pain**: Acute LBP (<4 weeks) and subacute/chronic LBP (>4 weeks) not associated with major trauma. If specific data on duration of trials were not provided, the authors relied on the categorization (acute or chronic/subacute) assigned by the systematic review **Target population**: Adult patients **Setting**: Primary and secondary care **Intended users**: Physicians **Clinical specialty**: Chiropractic, family practice, internal medicine, neurological surgery, pediatrics, physical medicine and rehabilitation, radiology **Focus**: Diagnosis, management, treatment	**Source:** (GIN), PubMed, American College of Physicians (ACP) web site. **Clinical algorithm**: Available
G2a **Minnesota, USA** 124 references Included in the 1st Edition of the *Alberta CPG*	**Type of pain**: Acute LBP and sciatica ≤6 weeks; chronic LBP defined as >6 weeks **Target population**: Adult patients 18 years of age and over who have symptoms of low back pain or sciatica **Setting**: Primary care **Intended users**: Advanced practice nurses, allied health personnel, health care providers, health plans, hospitals, managed care organizations, nurses, physician assistants, physicians—chiropractic, family practice, internal medicine, orthopaedic surgery, physical medicine and rehabilitation, radiology, sports medicine **Focus**: Diagnosis, treatment	**Source**: Available for purchase **Clinical algorithm**: Not available *Note:* Guideline referred by a member of the former Guideline Development Group
G2b **Minnesota, USA** 105 references Included in the 2nd Edition of the *Alberta CPG*; only recommendations on acute LBP	**Type of pain**: Acute LBP and sciatica ≤6 weeks; chronic LBP defined as >6 weeks **Target population**: Adult patients 18 years of age and over who have symptoms of low back pain or sciatica **Setting**: Primary care **Intended users**: Advanced practice nurses, allied health personnel, health care providers, health plans, hospitals, managed care organizations, nurses, physician assistants, physicians **Clinical specialty**: Chiropractic, family practice, internal medicine, orthopaedic surgery, physical medicine and rehabilitation, radiology, sports medicine **Focus**: Diagnosis, evaluation, management, treatment	**Source**: National Guideline Clearinghouse (NGC), Institute for Clinical Systems Improvement **Clinical algorithm**: Available
G2c – Update **Minnesota, USA** 133 references	**Type of pain**: Acute (pain for up to 6 weeks) and subacute (pain for between 7 and 12 weeks) LBP and radiculopathy **Target population**: Adult patients 18 years of age and over who have symptoms of LBP or radiculopathy **Setting**: Primary care **Intended users**: Advanced practice nurses, allied health personnel, chiropractors, health care providers, health plans, hospitals, managed	**Source**: NGC, Institute for Clinical Systems Improvement **Clinical algorithm**: Available

Guideline Country	Type of Pain, Definition; Target Population; Setting; Intended Users; Focus	Source Database Clinical Algorithms
	care organizations, nurses, occupational therapists, physical therapists, physician assistants, physicians **Focus**: Diagnosis, evaluation, management, rehabilitation, treatment	
G3 **USA** 3 references Included in the 1st Edition of the *Alberta CPG*	**Type of pain**: NA **Target population**: Adults **Setting**: Primary care settings **Intended users**: Advanced practice nurses, allied health personnel, nurses, physician assistants, physicians—family practice, internal medicine, orthopaedic surgery, preventive medicine **Focus**: Prevention	**Source**: NGC, PubMed: *American Family Physician* 2005;71(12):2337-8. **Clinical algorithm**: Not available
G4 **Europe** 74 references Included in the 1st Edition of the *Alberta CPG*	**Type of pain**: Acute and subacute LBP, duration of pain <12 weeks **Target population**: General public adults, adult patients with LBP **Setting**: Primary care **Intended users**: Individuals or groups that are going to develop new guidelines (national or local) or update existing guidelines, and their professional associations that will disseminate and implement these guidelines; healthcare providers, health promotion agencies, industry/employers, educationalists, and policy-makers in Europe **Focus**: Diagnosis, treatment	**Source**: Google **Clinical algorithm**: Not available
G5 **Europe** 46 references Included in the 1st Edition of the *Alberta CPG*	**Type of pain**: NA **Target population**: General public adults (18 years of age and older) from the adult patients with LBP **Setting**: Not stated **Intended users**: Individuals or groups that are going to develop new guidelines (national or local) or update existing guidelines, and their professional associations that will disseminate and implement these guidelines; also, general public, people with LBP, healthcare providers, health promotion agencies, industry/employers, educationalists, and policy-makers in Europe **Focus**: Prevention	**Source**: Google **Clinical algorithm**: Not available
G6 **Alberta, Canada** 21 references Included in the 1st Edition of the *Alberta CPG*	**Type of pain**: Chronic LBP, pain that does not radiate past the knee, with current symptoms >12 weeks from onset **Target population**: Adults **Setting**: Primary care practice **Intended users**: Community physician practice and multidisciplinary team members **Focus**: Assessment, diagnosis, management, and referral	**Source**: Referred by professionals involved in the Ambassador Program; Google **Clinical algorithm**: Available
G7 **Australia** 313 references Included in the 1st Edition of the *Alberta CPG*	**Type of pain**: Acute low back pain, an episode of pain present for <12 weeks **Target population**: Adults **Setting**: Primary care settings **Intended users**: Clinicians, including general practitioners, physiotherapists, chiropractors, osteopaths; and specialists, including rheumatologists, pain specialists, orthopaedic surgeons, pain specialists, rehabilitation specialists, and sports medicine specialists; health consumers; and patients **Focus**: Diagnostic, treatment	**Source**: Google **Clinical algorithm**: Not available

Guideline Country	Type of Pain, Definition; Target Population; Setting; Intended Users; Focus	Source Database Clinical Algorithms
G8 **Québec, Canada** 422 references for all conditions including LBP Included in the 2nd Edition of the *Alberta CPG*	**Type of pain**: Musculoskeletal disorders of the spine including acute (<4 weeks), subacute (4 to 12 weeks), and persistent LBP (>12 weeks) **Target population**: Adult patients **Setting**: Primary care **Intended users**: Advanced practice nurses, allied health personnel, chiropractors, healthcare providers, health plans, hospitals, nurses, physical therapists, physician assistants, physicians **Clinical specialty**: Chiropractic, emergency medicine, family practice, geriatrics, orthopedic surgery, physical medicine and rehabilitation, radiology, sports medicine **Focus**: Diagnosis, evaluation, risk assessment	**Source**: NGC **Clinical algorithm**: Not available
New **G9** **USA** 2,424 references for all recommendations	**Type of pain**: Chronic spinal pain (including LBP) of at least 12 weeks **Target population**: Adult at least 18 years of age **Setting**: Primary and secondary care (reported in the guideline as: office, hospital, outpatient, inpatient) **Intended users**: Advanced practice nurses, allied health personnel, healthcare providers, health plans, managed care organizations, patients, physical therapists, physician assistants, physicians, utilization management **Clinical specialty**: Anesthesiology, neurological surgery, neurology, orthopedic surgery, physical medicine and rehabilitation, radiology, rheumatology **Focus**: Diagnosis, evaluation, management, technology assessment, treatment	**Source**: NGC, PubMed: *Pain Physician* 2013;16(2 Suppl): S1-S283) **Clinical algorithm**: Available
New **G10** **USA** 446 references for all recommendations Note: include only recommendations on diagnostic, evaluation	**Type of pain**: Radiculopathy (leg pain, numbness or weakness in a dermatomal or myotomal distribution as a result of a primary lumbar disc herniation). Duration of pain: NR **Target population**: Adult patients **Setting**: Primary and secondary care **Intended users**: Advanced practice nurses, allied health personnel, healthcare providers, health plans, managed care organizations, nurses, physical therapists, physician assistants, physicians, utilization management **Clinical specialty**: Anesthesiology, chiropractic, family practice, neurological surgery, orthopedic surgery, physical medicine and rehabilitation, radiology, surgery **Focus**: Diagnosis, evaluation, management, treatment	**Source**: NGC **Clinical algorithm**: Not available
New **G11** **United Kingdom** 196 references for all recommendations	**Type of pain**: Chronic pain (including LBP) for more than 12 weeks **Target population**: Adult patients **Setting**: Non-specialist settings **Intended users**: Advanced practice nurses, nurses, occupational therapists, patients, pharmacists, physical therapists, physician assistants, physicians, psychologists/non-physician behavioural health clinicians **Clinical specialty**: Endocrinology, family practice, internal medicine, pharmacology, physical medicine and rehabilitation, psychiatry, psychology, rheumatology **Focus**: Management, treatment	**Source**: NGC **Clinical algorithm**: Not available

†The seed guideline labelled G1 in the 1st Edition of the *Alberta CPG* (Mercer et al., 2006) was excluded by the Update Committee because the definition of chronic pain (i.e., persistent pain lasting for 6 weeks or more) did not meet the inclusion criteria for the *Alberta CPG* (see Appendix D, Table D.4 in the background document for the 2nd Edition of the *Alberta CPG*, available from: www.ihe.ca/research-programs/hta/aagap).

CPG: clinical practice guideline; LBP: low back pain; NA: not applicable; NGC: National Guideline Clearinghouse

References (included seed guidelines)

- **G1 (USA)**: **G1a**: Chou R, Qaseem A, Snow V, Casey D, Cross T, Shekelle P, et al., for the Clinical Efficacy Assessment Subcommittee of the American College of Physicians and the American College of Physicians/American Pain Society Low Back Pain Guidelines Panel. Diagnosis and treatment of low back pain: A joint clinical practice guideline from the American College of Physicians and the American Pain Society. *Annals of Internal Medicine* 2007;147(7):478-91.
    - Companion documents:
        - **G1b**: Chou R, Huffman LH. Nonpharmacologic therapies for acute and chronic low back pain: A review of the evidence for an American Pain Society/American College of Physicians clinical practice guideline. *Annals of Internal Medicine* 2007;147(7):492-504.
        - **G1c**: Chou R, Huffman LH. Medications for acute and chronic low back pain: A review of the evidence for an American Pain Society/American College of Physicians clinical practice guideline. *Annals of Internal Medicine* 2007;147(7):505-14.
- **G2 (update, Minnesota, USA)**
    - **G2a**: Institute for Clinical Systems Improvement (ICSI). *Adult low back pain, 12th Edition*. Bloomington (MN): ICSI; 2006.
    - **G2b**: Institute for Clinical Systems Improvement (ICSI). *Adult low back pain, 13th Edition*. Bloomington (MN): ICSI; 2008.
    - **G2c**: Goertz M, Thorson D, Bonsell J, Bonte B, Campbell R, Haake B, et al. *Adult acute and subacute low back pain*. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); updated 2012 (15th Edition). Available from: *www.icsi.org/_asset/bjvqrj/LBP.pdf* (accessed 30 January 2017).
    - Companion documents:
        - Guideline executive summary: Available from: *www.icsi.org/_asset/6t0r2s/LBPES.pdf* (accessed 30 January 2017).
        - Summary by the National Guideline Clearinghouse (NGC): Available from: *www.guideline.gov/content.aspx?id=39319* (accessed 30 January 2017).
- **G3 (USA)**: U.S. Preventive Services Task Force. *Primary care interventions to prevent low back pain: Brief evidence update*. Rockville (MD): Agency for Healthcare Research and Quality; 2004. Available from: *www.ahrq.gov/clinic/3rduspstf/lowback/lowbackup.htm* (accessed 30 January 2017).
- **G4 (Europe)**: van Tulder M, Becker A, Bekkering T, Breen A, Carter T, Gil del Real MT, et al., on behalf of the COST B13 Working Group on Guidelines for the Management of Acute Low Back Pain in Primary Care. *European guidelines for the management of acute nonspecific low back pain in primary care*. Brussels: European Commission Research Directorate General; 2004.

- **G5 (Europe)**: Burton AK, Eriksen HR, Leclerc A, Balagué F, Henrotin Y, Müller G, et al., on behalf of the COST B13 Working Group on Guidelines for Prevention in Low Back Pain. *European guidelines for prevention in low back pain*. Brussels: European Commission Research Directorate General; 2004.
- **G6 (Canada)**: Calgary Health Region. *Chronic pain management: Guidelines for primary care practice in the Calgary Health Region*. Calgary (AB): Calgary Health Region; 2005.
- **G7 (Australia)**: Australian Acute Musculoskeletal Pain Group. *Evidence-based management of acute musculoskeletal pain: acute low back pain*. Chapters 4 and 9. Brisbane: Australian Academic Press Pty. Ltd.; 2003, pp. 25-62, 183-8. Available from: *www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp94_evidence_based_management_acute_musculoskeletal_pain_131223.pdf* (accessed 30 January 2017).
- **G8 (Canada)**: Bussieres AE, Taylor JAM, Peterson, C. Diagnostic imaging practice guidelines for musculoskeletal complaints in adults-an evidence-based approach, part 3: Spinal disorders. *Journal of Manipulative Physiology Therapy* 2008;31(1):33-88.
    - Details about methods, other information: Bussières AE, Peterson C, Taylor JA. Diagnostic imaging practice guidelines for musculoskeletal complaints in adults – an evidence-based approach: Introduction. *Journal of Manipulative Physiology Therapy* 2007;30(9):617-83.
- **G9 (USA)**: Manchikanti L, Abdi S, Atluri S, Benyamin RM, Boswell MV, Buenaventura RM, et al. An update of comprehensive evidence-based guidelines for interventional techniques in chronic spinal pain. Part I: Introduction and general considerations *Pain Physician* 2013;16 (2 Suppl):S1-48. Available from: *www.painphysicianjournal.com/2013/april/2013;16;S1-S48.pdf* (accessed 30 January 2017).
    - An update of comprehensive evidence-based guidelines for interventional techniques in chronic spinal pain. Part II: Guidance and recommendations. *Pain Physician* 2013;16 (2 Suppl):S49-283. Available from: *www.painphysicianjournal.com/2013/april/2013;16;S49-S283.pdf* (accessed 30 January 2017).
    - Summary by the NGC: *www.guideline.gov/content.aspx?id=45379&osrc=11* (accessed 30 January 2017).
- **G10 (USA):** North American Spine Society. *Diagnosis and treatment of lumbar disc herniation with radiculopathy*. Burr Ridge (IL): North American Spine Society; 2012. Available from: *www.spine.org/Documents/ResearchClinicalCare/Guidelines/LumbarDiscHerniation.pdf* (accessed 30 January 2017).
    - Summary by the NGC: Available from: *www.guideline.gov/content.aspx?id=46414* (accessed 30 January 2017).
- **G11 (United Kingdom)**: Scottish Intercollegiate Guidelines Network (SIGN). Management of Chronic Pain. Edinburgh, Scotland: SIGN; 2013. Available from: *www.sign.ac.uk/pdf/SIGN136.pdf* (accessed 30 January 2017).
    - Summary by the NGC: Available from: *www.guideline.gov/content.aspx?id=47707* (accessed 30 January 2017).

APPENDIX I: Critical Appraisal Results (Modified AGREE Tool)

TABLE I.1: Standardized domain scores AGREE (%) – included seed guidelines

AGREE Domain†	G1* (USA) *A: D,M,T*	New G2c (USA) *A,SA: D,E,M,R, T*	G3 (USA) *P*	G4 (Europe) *A: D,T*	G5 (Europe) *P*	G6 (Canada) *C: D,E,M,T*	G7 (Australia) *A: D,T*	G8 (Canada) *A,SA,C: D,E,RA*	New G9 (USA) *C: D,E,T*	New G10 (USA) *NR: D,E*	New G11 (UK) *C: M,T*
Scope and purpose	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	94
Stakeholder involvement	38	83	58	50	58	58	**92**	**100**	54	46	83
Rigour of development	67	71	76	73	75	33	86	**100**	81	79	81
Clarity and presentation	**100**	92	92	97	**100**	**100**	**100**	96	71	75	96
Applicability	50	72	67	**89**	67	33	22	50	94	67	89
Editorial independence	50	**100**	67	56	61	33	50	83	83	75	83

*References for the seed guidelines are available in *Appendix H*.

†The quality assessments were undertaken independently by two reviewers (three reviewers for G2 to G6).

A: acute; AGREE: Appraisal of Guidelines for Research and Evaluation; C: chronic; D: diagnosis (imaging, other); E: evaluation (assessment); M: management; NR: not reported; P: prevention; R: rehabilitation; RA: risk assessment; SA: subacute; T: treatment

TABLE I.2: Standardized domain scores AGREE (%) – guidelines excluded by a subcommittee of clinical experts

AGREE Domain†	E1* (Canada) *A,SA,C: T*	E2 (USA) *A,SA: D,E,M,RA,T*
Scope and purpose	94	94
Stakeholder involvement	63	42
Rigour of development	52	45
Clarity and presentation	63	50
Applicability	0	28
Editorial independence	33	25

*References for excluded guidelines are available in *Appendix D, Table D.2*.

†The quality assessments were undertaken independently by two reviewers.

A: acute; AGREE: Appraisal of Guidelines for Research and Evaluation; C: chronic; D: diagnosis (imaging, other); E: evaluation; M: management; RA: risk assessment; SA: subacute; T: treatment

TABLE I.3: Average quality score based on seven designated quality criteria – included seed guidelines

Rating	G1* (USA) *A: D,M,T*	New G2c (USA) *A,SA: D,E,M,R, T*	G3 (USA) *P*	G4 (Europe) *A: D,T*	G5 (Europe) *P*	G6 (Canada) *C: D,E,M,T*	G7 (Australia) *A: D,T*	G8 (Canada) *A,SA,C: D,E,RA*	New G9 (USA) *C: D,E,T*	New G10 (USA) *NR: D,E*	New G11 (UK) *C: M,T*
Main score	21	23.5	25	21.6	22.9	15	22	27	23.5	25	26.5
Quality rating†	Average	Good	Good	Average	Good	Average	Good	Good	Good	Good	Good

*References for the seed guidelines are available in *Appendix H*.

†Guidelines were rated on how well their methods excluded bias by examining the search strategy used, how the recommendations were formulated and presented, whether the recommendations were directly linked to the evidence, the external review process, and whether conflicts of interest and funding sources were reported. The average quality rating score (maximum possible score is 28 [7 × 4]) for these criteria is derived by dividing the sum of the scores given by each reviewer by the number of reviewers. The guideline is then rated as follows:

- *Good* – average score of 22 to 28
- *Average* – average score of 15 to 21
- *Poor* – average score 0 to 14

A: acute; C: chronic; D: diagnosis (imaging, other); E: evaluation; M: management; NR: not reported; P: prevention; R: rehabilitation; RA: risk assessment; SA: subacute; T: treatment

TABLE I.4: Average quality score based on seven designated quality criteria – excluded seed guidelines

Rating	E1* (Canada) *A,SA,C: T*	E2 (USA) *A,SA: D,E,M,RA,T*
Main score	18	18
Quality rating†	**Average**	**Average**

*References for excluded guidelines are available in *Appendix D, Table D.2*.

†Guidelines were rated as above.

A: acute; C: chronic; D: diagnosis (imaging, other); E: evaluation; M: management; RA: risk assessment; SA: subacute; T: treatment

APPENDIX J: Inventory of Guideline Recommendations from New Seed Guidelines

Note: References for the seed guidelines are available in *Appendix H*. Evidence inventory tables for the guidelines common to previous editions of the *Alberta CPG* can be found in Appendix G and J, respectively, of the background documents for the 1st and 2nd Editions of this guideline (available from: *www.ihe.ca/research-programs/hta/aagap/lbp*).

1. The recommendations for acute, subacute, and chronic low back pain (LBP) are grouped as follows:
    - Subcommittee 1: Diagnostic Imaging and Interventions
        - Table J.1a – Acute and subacute LBP – Prediction rules and diagnosis
        - Table J.1b – Acute and subacute LBP – Treatment
        - Table J.1c – Chronic LBP – Diagnosis
        - Table J.1d – Diagnosis of lumbar disc herniation with radiculopathy
        - Table J.1e – Chronic LBP – Treatment
    - Subcommittee 2: Rehabilitation
        - Table J.2a – Acute and subacute LBP – Treatment
        - Table J.2b – Chronic LBP – Treatment
    - Subcommittee 3: Pharmacology/Analgesia
        - Table J.3a – Acute and subacute LBP – Treatment
        - Table J.3b – Chronic LBP – Treatment
    - Recommendations not referred to a Subcommittee
        - Table J.4 – Acute and subacute LBP – Treatment
2. The *Rating of Recommendation* column denotes the strength of the recommendation as stated by the seed guideline (see *Table J.5*).
3. The bolded integers in the columns under the *Supporting Evidence* (rightmost) section of the table represent the total number of discrete studies of that type cited by the guideline to support its recommendation. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.
4. The recommendations from the 2nd Edition of the *Alberta CPG* are bolded in the tables. The nature of the recommendations from the new seed guidelines relative to the 1st Edition of the *Alberta CPG* is noted in italics in the leftmost column as either providing *Additional information* or a *New recommendation*.
5. In cases where recommendations are discordant, a brief description of the disagreement is written in italics in the leftmost column under the relevant item name, and identified as a *Discordant recommendation*.

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/MA	NR	RCT	NRCS	CS	G	Other
Antidepressants	**TOP guideline** 2nd Edition (p. 17) (Based on G6, IHE database) ✓ **Tricyclic antidepressants have a small to moderate effect for chronic low back pain at much lower doses than might be used for depression.** ***Possible side-effects include drowsiness and anticholinergic effects.***	Not applicable	**2** 60,61						
Discordant recommendation	**G11 (UK)** (p.18) Tricyclic antidepressants should not be used for the management of pain in patients with chronic low back pain.	**A**	**2** 31,62		**1** 63				
Duloxetine	**TOP guideline** 2nd Edition (p. 21) (Based on EO GDG) ? **No evidence from SR(s) was found to support recommending duloxetine for chronic low back pain.**	Not applicable	Based on expert opinion of Guideline Development Group						
Statement (discordant), not a recommendation *See parking lot document*	**G11 (UK)** (p.18) There is some evidence to support the use of duloxetine 60-120 mg in patients with chronic low back pain.	Not applicable			**2** 64,65				

Subcommittee 1: Diagnostic Imaging and Interventions

TABLE J.1a: Acute and subacute low back pain – prediction rules and diagnosis

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Clinical prediction rule for spinal manipulative therapy *New statement/ recommendation* Reassigned to Rehabilitation Subcommittee	**G2c (USA)** (p. 22) At this point evidence is not sufficient to strongly recommend the clinical prediction rule. However, studies are currently underway that may add further support. Therefore, we suggest consideration of the clinical prediction rule in the category of early low back pain patients. Clinical prediction rule – patients with four or more of the following criteria have a greater likelihood of success (>90%) with spinal manipulation (see glossary in *Table J.6*): • Duration of symptoms <16 days • At least one hip with less than 35 degrees of medial (internal) rotations • Lumbar hypomobility • No symptoms distal to the knee • Fear-Avoidance Beliefs Questionnaire work subscale score <19 (see glossary in *Table J.6*)	**Weak recommendation – Low quality evidence**	**1** 1		**1** 2,3		**1** 4		
Evaluate for fracture *New statement/ recommendation*	**G2c (USA)** (p. 27) Imaging may be considered for low back pain when fracture is suspected.	**Strong recommendation – Moderate quality evidence**	**3** 5-7						
Imaging to rule out underlying pathology *New statement/ recommendation*	**G2c (USA)** (p. 29) Imaging should be done to rule out underlying pathology or for those who are considering surgery, including epidural steroid injections. *Additional notes (pages 76-78 of G2c):* MRI indications: • Major or progressive neurologic deficit (e.g., foot drop or functionally limiting weakness such as hip flexion or knee extension) • Cauda Equina Syndrome (loss of bowel or bladder	**Strong recommendation – Moderate quality evidence**	**3** 5-7						

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	control or saddle anesthesia) • Progressively severe pain and debility despite conservative therapy • Severe or incapacitating back or leg pain (e.g., requiring hospitalization, precluding walking, or significantly limiting the activities of daily living) • Clinical or radiological suspicion of neoplasm (e.g., lytic or sclerotic lesion on plain radiographs, history of cancer, unexplained weight loss, or systemic symptoms) • Clinical or radiological suspicion of infection (e.g., endplate destruction of plain radiographs, history of drug or alcohol abuse, or systemic symptoms) • Trauma (fracture with neurologic deficit, compression fracture evaluation in elderly patients with question of underlying malignancy, characterization in anticipation of vertebroplasty/kyphoplasty, stress fracture, or subacute spondylosis in a patient less than 18 years of age) • Moderate to severe low back pain or radicular pain, unresponsive to conservative therapy, with indications for surgical intervention or therapeutic injection For patients with mild to moderate claustrophobia, administering benzodiazepines an hour prior to scan may be effective. Patients who receive benzodiazepines should not drive. **CT/CT myelography indications**: • Major or progressive neurologic deficit (e.g., foot drop or functionally limiting weakness such as hip flexion or knee extension) • Cauda Equina Syndrome (loss of bowel or bladder control or saddle anesthesia) • Progressively severe pain and debility despite conservative therapy • Severe or incapacitating back or leg pain (e.g., requiring hospitalization, precluding walking, or								

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	significantly limiting the activities of daily living) • Clinical or radiological suspicion of neoplasm (e.g., lytic or sclerotic lesion on plain radiographs, history of cancer, unexplained weight loss, or systemic symptoms) • Clinical or radiological suspicion of infection (e.g., endplate destruction of plain radiographs, history of drug or alcohol abuse, or systemic symptoms) • Bone tumors (to detect or characterize) • Trauma (rule out or characterize fracture, evaluate for healing) • Moderate or severe low back pain or radicular pain, unresponsive to conservative therapy, with indications for surgical intervention or therapeutic injection								
Referral for MRI and possible surgical opinion for radiculopathy	**Alberta CPG** 2nd Edition (p. 9) (Based on G8) ✓ **If the patient has radiculopathy (leg-dominant pain) that persists after 6 weeks of conservative treatment, consider referral for MRI. If clinical and imaging findings correlate, consider referral to a spinal surgeon.**	Not applicable					**2** 8,9		
Additional information	**G2c (USA)** (p. 29) Clinicians should not recommend imaging (including computed tomography [CT], magnetic resonance imaging [MRI], and x-ray) for patients in the first 6 weeks of radicular pain.	**Strong recommendation – Moderate quality evidence**	**3** 5-7						

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

TABLE J.1b: Acute and subacute low back pain – treatment

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Epidural steroids in the presence of radiculopathy	**Alberta CPG** 2nd Edition (p. 13) (Based on G4) **?** **It may be helpful to use epidural steroid injections for patients with radicular pain for longer than 6 weeks who have not responded to first line treatments.** **Fluoroscopy improves/verifies accuracy. Even in the most experienced hands, epidural injections can be misplaced.** ***Adverse effects are infrequent and include headache, fever, subdural penetration and more rarely epidural abscess and ventilatory depression.***	Not applicable	**5** 10-14				**4** 15-18	**5** 19-23	
Epidural steroids (acute low back pain: 1 to 6 weeks' duration) *Discordant recommendation*	**G2c (USA)** (p. 29) Epidural steroid injections may be used for acute low back pain with radicular component to assist with short-term pain relief. *Additional notes (pages 30-31 of G2c)*: Patient selection for epidurals: • Patients typically have symptoms of radicular pain. Examination findings for radiculopathy (reflex changes, possible motor weakness, and root tension signs) need not be present. In addition, the pain should be of a severity that significantly limits function and quality of life, and that has not responded to oral analgesic medications and other conservative care measures. • Advanced imaging is required – either magnetic resonance imaging or computerized tomography to rule out other causes of pain (e.g., infection, cancer). • Steroid injections should not be given for two weeks following the flu vaccine. Also wait for one month after a steroid injection to receive the flu vaccine. Therapeutic corticosteroid injections may temporarily suppress the body's immune response	**Weak recommendation – Moderate quality evidence**	**2** 24,25		**3** 26-28				

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	and may compromise the ability to develop the expected immune protection from a flu vaccine. This is based on recommendations from the Centers for Disease Control and the International Spine Intervention Society. • Patients should have no contraindications to an injection, including these: – No signs or symptoms of active infection either systemically or locally. – No history of bleeding disorders or current use of anticoagulants such as warfarin or clopidogrel. Epidural injections carry a higher risk of bleeding. Patients taking anti-thrombotics have an increased risk, and the standard of care should be followed. Guidelines have been developed to limit the risk. Assessment of the risk versus benefit should be done prior to the procedure. Consult with the individual performing the procedure for appropriate anticoagulation guidelines. • Patients with non-anaphylactic reaction to iodine-based contrast may still be treated. Consult with the provider performing the procedure. Those with documented anaphylaxis to iodine-based contrast can be treated with a non-iodine based contrast such as gadolinium. • No allergies to local anesthetic agents, contrast agents, or corticosteroids. • No prior complications to corticosteroid injections. • Pregnancy is a contraindication due to the use of fluoroscopy. • Use caution in diabetic patients because of altered glycemic control, which is typically transient. Patients with diabetes need to be informed and aware that their blood glucose levels will rise and alterations in sliding scales will likely be needed. • Patients with congestive heart failure need to be									

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	aware of steroid-induced fluid retention. • Though non-steroidal anti-inflammatory drug (NSAID) use is not a contraindication to injections, some practitioners discontinue NSAIDs several days prior to injection.								

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

TABLE J.1c: Chronic low back pain – diagnosis

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Lumbar discography as a diagnostic test	**Alberta CPG** 2nd Edition (p. 20) (Based on SR IHE Database) **?** **There is insufficient evidence to recommend for or against the use of lumbar discography as a diagnostic test.**	NA	**2** 29 30						
Additional information	**G9 (USA)** (p. S71) Lumbar provocation discography is recommended with appropriate indications in patients with low back pain to prove a diagnostic hypothesis of discogenic pain specifically after exclusion of other sources of lumbar pain, only when a treatment is available. The evidence for diagnostic accuracy for lumbar provocation discography is fair. There is limited evidence supporting functional anesthetic discography or provocation discography with local anesthetic injection. *Complications related to discography include discitis, subdural abscess, spinal cord injury, vascular injury, annular strains, epidural and paravertebral abscess,*	**Fair evidence**	**1** 31						**1** 32

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	and local anesthetic toxicity.								
Diagnostic selective nerve root blocks *New statement/ recommendation*	**G9 (USA)** (p. S67) The evidence for accuracy of diagnostic selective nerve root blocks is limited in the lumbar spine in patients with an equivocal diagnosis and involvement of multiple levels. Diagnostic selective nerve root blocks are recommended in the lumbar spine in select patients with an equivocal diagnosis and involvement of multiple levels.	**Limited evidence**	**1** 33			**3** 34-36	**4** 37-40		**7** 41-47
Diagnostic lumbar facet joint nerve blocks *New statement/ recommendation* ***Note**: Stakeholders suggested this be added to the Alberta CPG*	**G9 (USA)** (p. S122) The evidence for diagnostic lumbar facet joint nerve blocks is good with 75% to 100% pain relief as the criterion standard with controlled local anesthetic or placebo blocks. Diagnostic lumbar facet joint nerve blocks are recommended in patients with suspected facet joint pain.	**Good evidence**					**3** 48-50		**18** 51-72
Diagnostic sacroiliac joint blocks *New statement/ recommendation*	**G9 (USA)** (p. S134) The evidence for diagnostic intra-articular sacroiliac joint injections is good with 75% to 100% pain relief as the criterion standard with controlled local anesthetic or placebo blocks, and fair due to the limitation of the number of studies with 50% to 74% relief with a dual block. Controlled sacroiliac joint blocks with placebo or controlled comparative local anesthetic blocks are recommended when indications are satisfied with suspicion of sacroiliac joint pain, except when required by regulation or guidance, a positive response is considered ≥ 75% relief (good evidence) or with ability to perform previously painful movements.	**Good evidence**					**3** 50,73,74		**14** 51,69,70, 75-86

*References for the seed guidelines are available in *Appendix H*.
†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

TABLE J.1d: Diagnosis of lumbar disc herniation with radiculopathy (duration of pain not stated for this seed guideline)

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Diagnosis of lumbar disc herniation with radiculopathy *New statement/ recommendation* Duration of pain not stated	**G10 (USA)** (p. 13) Manual muscle testing, sensory testing, supine straight leg raise, Lasegue's sign, and crossed Lasegue's sign are recommended for use in diagnosing lumbar disc herniation with radiculopathy (see glossary in *Table J.6*).	**Grade A**					**2** 87,88		**3** 89-91
	(p. 14) The supine straight leg raise, as compared with the seated straight leg raise, is suggested for use in diagnosing lumbar disc herniation with radiculopathy.	**Grade B**					**1** 92		**1** 91
	(p. 14) There is insufficient evidence to make a recommendation for or against the use of the cough impulse test, Bell test, hyperextension test, femoral nerve stretch test, slump test, lumbar range of motion, or absence of reflexes in diagnosing lumbar disc herniation with radiculopathy.	**Grade I (Insufficient evidence)**				**1** 93	**3** 87,88,94		**3** 90,95,96
	(p. 18) There is a relative paucity of high quality studies on advanced imaging in patients with lumbar disc herniation. It is the opinion of the work group that in patients with history and physical examination findings consistent with lumbar disc herniation with radiculopathy, MRI be considered as the most appropriate, noninvasive test to confirm the presence of lumbar disc herniation. In patients for whom MRI is either contraindicated or inconclusive, CT or CT myelography are the next most appropriate tests to confirm the presence of lumbar disc herniation.	Based on consensus of Guideline Development Group							

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	(p. 18) In patients with history and physical examination findings consistent with lumbar disc herniation with radiculopathy, MRI is recommended as an appropriate, noninvasive test to confirm the presence of lumbar disc herniation.	**Grade A**							**3** 97-99
	(p. 19) In patients with history and physical examination findings consistent with lumbar disc herniation with radiculopathy, CT scan, myelography, and/or CT myelography are recommended as appropriate tests to confirm the presence of lumbar disc herniation.	**Grade A**				**1** 100			**2** 97,98
	(p. 19) Electrodiagnostic studies may have utility in diagnosing nerve root compression though lack the ability to differentiate between lumbar disc herniation and other causes of nerve root compression. When the diagnosis of lumbar disc herniation with radiculopathy is suspected, it is the work group's opinion that cross-sectional imaging be considered the diagnostic test of choice and electrodiagnostic studies should only be used to confirm the presence of comorbid conditions.	Based on consensus of Guideline Development Group							
	(p. 19) Somatosensory evoked potentials are suggested as an adjunct to cross-sectional imaging to confirm the presence of nerve root compression but are not specific to the level of nerve root compression or the diagnosis of lumbar disc herniation with radiculopathy.	**Grade B**				**1** 101			**2** 102,103
	(p. 20) Electromyography, nerve conduction studies, and F-waves are suggested to have limited utility in the diagnosis of lumbar disc herniation with radiculopathy. H-reflexes can be helpful in the diagnosis of an S1 radiculopathy, though are not specific to the diagnosis of lumbar disc herniation.	**Grade B**				**1** 101			**4** 104-107

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	(p. 21) There is insufficient evidence to make a recommendation for or against the use of motor evoked potentials or extensor digitorum brevis reflex in the diagnosis of lumbar disc herniation with radiculopathy.	**Grade I (Insufficient evidence)**				**1** 108			**1** 107
	(p. 21) There is insufficient evidence to make a recommendation for or against the use of thermal quantitative sensory testing or liquid crystal thermography in the diagnosis of lumbar disc herniation with radiculopathy.	**Grade I (Insufficient evidence)**					**1** 109		

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

TABLE J.1e: Chronic low back pain – treatment

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Epidural steroid injections	**Alberta CPG** 2nd Edition (p. 19) (Based on G6) ✓ **For patients with leg pain, epidural steroid injections can be effective in providing short-term and occasional long-term pain relief.** **Fluoroscopy improves/verifies accuracy. Even in the most experienced hands, epidural injections can be misplaced.** ***Transient minor complications include: headache, nausea, pruritus, increased pain of sciatic distribution, and puncture of the dura.***	Not applicable	**1** 12				**4** 15-18	**2** 19,22	

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Therapeutic epidural injections *Additional information*	**G9 (USA)** (p. S95) The evidence for caudal epidural, interlaminar epidural, and transforaminal epidural injections is good in managing disc herniation or radiculitis; fair for axial or discogenic pain without disc herniation, radiculitis or facet joint pain with caudal and lumbar interlaminar epidural injections, and limited with transforaminal epidural injections; fair for spinal stenosis with caudal, interlaminar, and transforaminal epidural injections; and fair for post-surgery syndrome with caudal epidural injections and limited with transforaminal epidural injections. The recommendation for epidural injections for disc herniation is that one of the three approaches may be used; for spinal stenosis any of the three approaches are recommended; whereas for axial or discogenic pain, either lumbar interlaminar or caudal epidural injections are recommended. However for transforaminal the evidence is limited for axial or discogenic pain and post-surgery syndrome. Note 1: Table includes information only for disc herniation and radiculitis and axial or discogenic pain. Note 2: The guideline provides algorithms and includes information about complications as follows: *Complications related to caudal epidural injections are rare. The common complications are related to either the needle placement or to the drug activity. These include infection either local or epidural, abscess, discitis, intravascular injection either intravenous or intra-arterial with hematoma formation, spinal cord infarction, extra epidural placement with subcutaneous injection, subdural injection, dural puncture with post lumbar puncture headache, nerve damage, intracranial air injection or increased intracranial pressure, pulmonary embolism, and adverse effects of steroids.* *The commonly described complications of interlaminar epidural injections are related either to the needle placement or drug administration. Multiple infectious complications including epidural abscess, meningitis,*	*Caudal epidural injections*							
		• Disc herniation and radiculitis							
		Good evidence	**1** 110		**7** 111-119				
		• Axial or discogenic pain							
		Fair evidence			**1** 120		**1** 121		
		Interlaminar epidural injections							
		• Disc herniation and radiculitis							
		Good evidence			**17** 113,122-137				
		• Axial or lumbar discogenic pain							
		Fair evidence			**1** 138,139		**1** 140		**1** 141
		Lumbar transforaminal epidural injections							
		• Disc herniation and radiculitis							
		Good evidence			**14** 113,125-127,142-152				
		• Axial or discogenic pain							
		Limited evidence					**1** 153		**1** 154

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	and osteomyelitis/discitis have been reported. One potentially serious complication of the epidural injection is epidural hematomas in patients with or without evidence of any bleeding tendency, anticoagulation, or traumatic needle insertion. Neurological injuries, though rare, could be devastating and are related to needle trauma, intraarticular injection, toxic effects of steroids, bleeding, and infection. Other complications include increased pain, seizures, chemical meningitis, dural puncture, disc puncture, subdural air, pneumocephalus, transient blindness, retinal necrosis, chorioretinopathy, hiccups, flushing, and arterial gas embolism. *The major theoretical complications of corticosteroid administration include suppression of pituitary adrenal axis, hypercorticism, Cushing's syndrome, osteoporosis, avascular necrosis of the bone, steroid myopathy, epidural lipomatosis, weight gain, fluid retention, and hyperglycemia.* *An evaluation of 10,000 fluoroscopically guided epidural injections, showed intravascular and return of blood in 0.5%, profuse bleeding and dural puncture in 0.8%, local hematoma and transient nerve root irritation in 0.28%, postlumbar puncture headache in 0.07%, and facial flushing in 0.13% with lumbar interlaminar epidural injections. Radiation exposure is also a potential problem with damage to eyes, skin, and gonads.* *The most common and worrisome complications of transforaminal epidural steroid injections in the lumbar spine, though rare, are related to neural trauma, vascular trauma, intravascular injection, and infection.* *None of the studies included in an effectiveness analysis showed any major complications. However, transforaminal injections have been reported with complications including spinal cord injury and infarction and paraplegia.*								

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Therapeutic lumbar facet joint interventions *New statement/ recommendation* ***Note**: Stakeholders suggested radiofrequency neurotomy of the facet joint be added to the Alberta CPG*	**G9 (USA)** (p. S132) The evidence for lumbar conventional **radiofrequency neurotomy** is good, limited for pulsed radiofrequency neurotomy, fair to good for lumbar facet joint nerve blocks, and limited for intraarticular injections. Among the therapeutic facet joint interventions either conventional radiofrequency neurotomy or therapeutic facet joint nerve blocks are recommended after the appropriate diagnosis with controlled diagnostic lumbar facet joint blocks.	*Conventional radiofrequency neurotomy*							
		Good evidence	**2** 155,156		**7** 157-163	**1** 164	**9** 165-173		**1** 174
		Pulsed radiofrequency neurotomy							
		Limited evidence			**1** 159		**1** 173		
		Lumbar facet joint nerve blocks							
		Fair to good evidence			**3** 27,157, 175,176				
		Intraarticular injections							
		Limited evidence			**2** 27,177	**1** 178	**3** 179-181		**1** 182
Therapeutic sacroiliac joint interventions *New statement/ recommendation* ***Note**: Stakeholders suggested radiofrequency neurotomy of the sacroiliac joint be added to the Alberta CPG*	**G9 (USA)** (p. S141) The evidence for sacroiliac cooled radiofrequency neurotomy is fair; limited for intraarticular steroid injections; limited for periarticular injections with steroids or botulinum toxin; and limited for both pulsed radiofrequency and conventional radiofrequency neurotomy. Due to emerging evidence for intraarticular injections, they are recommended in select cases with or without periarticular injections. Cooled radiofrequency neurotomy is recommended after appropriate diagnosis confirmed by diagnostic sacroiliac joint injections.	*Intraarticular steroid injections*							
		Limited evidence			**1** 183		**3** 184-186		
		Periarticular injections with steroids or botulinum toxin							
		Limited evidence				**3** 187-189	**1** 186		
		Conventional radiofrequency neurotomy							
		Limited evidence					**2** 190,191		
		Cooled radiofrequency neurotomy							
		Fair evidence			**2** 192,193		**2** 191,194		
		Pulsed radiofrequency neurotomy							
		Limited evidence					**1** 195		

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

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Subcommittee 2: Rehabilitation

TABLE J.2a: Acute and subacute low back pain – treatment

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Therapeutic exercise	**Alberta CPG** 2nd Edition (p. 13) (Based on G2, G4, IHE Database) **?** **There is insufficient evidence to recommend for or against any specific kind of exercise, or the frequency/intensity of training. Clinical experience suggests that supervised or monitored therapeutic exercise may be useful following an individualized assessment by a spine care specialist. For patients whose pain is exacerbated by physical activity and exercise, refer to a physical therapist, chiropractor, osteopathic physician, or physician who specializes in musculoskeletal medicine for therapeutic exercise recommendations.** ***Patients should discontinue any activity or exercise that causes spread of symptoms (peripheralization). Self-treating with an exercise program not specifically designed for the patient may aggravate symptoms.***	Not applicable	**10** 1-10		**4** 11-14			**9** 15-23	
Exercise for treatment (subacute low back pain: 7 to 12 weeks' duration) *Discordant recommendation*	**G2c (USA)** (p. 25) Exercise is recommended in the treatment of subacute low back pain. *Additional note*: The use of a progressive exercise plan in the treatment of subacute low back pain is supported. Progressive exercise is based on a number of variables that include but are not limited to increasing physical activity, education regarding pain and exercise program that is graded with de-emphasis on pain.	**Strong recommendation – Moderate quality evidence**	**2** 7,9		**2** 24,25				
Clinical prediction rule for spinal manipulative therapy	**G2c (USA)** (p. 22) At this point evidence is not sufficient to strongly recommend the clinical prediction rule. However, studies are currently underway that may add further	**Weak recommendation – Low quality evidence**	**1** 26		**1** 27,28		**1** 29		

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
New statements/ recommendations	support. Therefore, we suggest consideration of the clinical prediction rule in the category of early low back pain patients. Clinical prediction rule – patients with four or more of the following criteria have a greater likelihood of success (>90%) with spinal manipulation: • Duration of symptoms <16 days • At least one hip with less than 35 degrees of medial (internal) rotations • Lumbar hypomobility • No symptoms distal to the knee • Fear-Avoidance Beliefs Questionnaire work subscale score <19 (see Appendix D of G2c) (See glossary in *Table J.6* for definitions of spinal manipulative therapy and fear-avoidance beliefs.)								

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

TABLE J.2b: Chronic low back pain – treatment

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Multidisciplinary treatment program	**Alberta CPG** 2nd Edition (p. 18) (Based on G6) ✓ **Referral to a multidisciplinary chronic pain program is appropriate for patients who are significantly affected by chronic pain and who have failed to improve with adequate trials of first line treatment. Get to know the multidisciplinary chronic pain program in your referral area and use it for selected cases of chronic low back pain.**	Not applicable	**1** 30						

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
FYI *Statement, not a recommendation* *Note: SIGN recommendation focuses on chronic pain and is a "Do" recommendation*	**G11 (UK)** (p.20) Of the systematic reviews that looked at outcomes separately, two concluded that there is no demonstrable effect that multidisciplinary treatment reduces pain for clients with non-specific chronic low back pain (CLBP) compared to no treatment or usual care. In contrast a third systematic review found moderate evidence that multidisciplinary treatment is superior compared to no treatment or other active treatments (e.g., physiotherapy) for reduction in short term pain intensity but moderate quality evidence of no differences in long term pain. There is no demonstrable effect that multidisciplinary treatment improves functional status or disability for patients with CLBP.	Not applicable	**3** 31,32,33						
Education *New recommendation*	**G11 (UK)** (p.21) Brief education should be given to patients with chronic pain to help patients continue to work. (See glossary in *Table J.6* for definition of education.) *Note the statement is based on research evidence from LBP studies.*	**C**	**2** 34,35						
Behavioural therapies	**Alberta CPG** 2nd Edition (p.18) (Based on G6) ✓ **Where group programs are not available, consider referral for individual cognitive behavioural treatment provided by psychologist or other qualified provider.**	Not applicable	**1** 36						
Respondent behavioural therapies *New recommendation*	**G11 (UK)** (p.22) Progressive relaxation or electromyographic (EMG) biofeedback should be considered for the treatment of patients with chronic pain. *Note the statement is based on research evidence from LBP studies.*	**C**	**3** 33,37,38		**1** 39				
Operant behavioural therapies *New statement*	**G11 (UK)** (p.23) Clinicians should be aware of the possibility that their own behaviour, and the clinical environment, can impact on reinforcement of unhelpful responses.	Not applicable	Recommended best practice based on the clinical experience of the Guideline Development Group (Background studies cited: 2SR[33;37])						

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	Note the statement is based on research evidence from LBP studies.								
Manual therapy	**Alberta CPG** 2nd Edition (p.21) (Based on G6) **?** **There is insufficient evidence to recommend for or against spinal manipulative treatment or spinal mobilization.**	Not applicable							
Discordant recommendation	**G11 (UK)** (p.25) Manual therapy should be considered for short term relief of pain for patients with chronic low back pain. (See glossary in *Table J.6* for definition of manual therapy.) *Note: one SR referenced in support of the recommendation focuses on massage therapy.*	**B**	**3** 33,40,41						
Physical exercise	**Alberta CPG** 2nd Edition (p.15) (Based on G6) ✓ **Patients should be encouraged to initiate gentle exercise and to gradually increase the exercise level within their pain tolerance. Sophisticated equipment is not necessary. Low cost alternatives include unsupervised walking and group exercise programs, such as those offered by chronic disease management programs. The peer support of group exercise is likely to result in better outcomes, giving patients improved confidence and empowering them to manage with less medical intervention.** **When exercise exacerbates the patient's pain, the exercise program should be assessed by a qualified physical therapist or exercise specialist.** **If exercise persistently exacerbates their pain, patients should be further assessed by a physician to determine if further investigation, medication, treatment, or consultation is required.** ***Some studies reported mild negative reactions to exercise programs, such as increased low back pain and muscle soreness in some patients.***	Not applicable	**1** 42						

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Therapeutic exercise	**Alberta CPG** 2nd Edition (p.15) (Based on EO GDG) ✓ **A client-specific, graded, active therapeutic exercise program is recommended.**	Not applicable	Based on expert opinion Guideline Development Group						
Exercise *Supplementary information*	**G11 (UK)** (p.27) Exercise and exercise therapies, regardless of their form, are recommended in the management of patients with chronic pain. *Note: The recommendation does not clearly indicate LBP but there were reviewed several systematic reviews (SRs) that focused on LBP: Movement facilitation and stabilization exercises (2SRs), Walking (1SR), Pilates (1SR),Therapeutic aquatic exercise (1SR), Exercise therapy (1SR), Heterogeneity of exercise (1SR)*	**B**	**7** 10,33,43 ,44,45,4 6,47						
	(p.28) Advice to stay active should be given in addition to exercise therapy for patients with chronic low back pain to improve disability in the long term. Advice alone is insufficient.	**A**	**1** 48						
Low-level laser therapy	**Alberta CPG** 2nd Edition (p.21) (Based on IHE Database) **?** **There is insufficient evidence to recommend for or against low-level laser therapy.**	Not applicable	**1** 49						
Electrotherapy *Discordant recommendation*	**G11 (UK)** (p.28) Low level laser therapy should be considered as a treatment option for patients with chronic low back pain.	**B**	**1** 49						
Acupuncture	**Alberta CPG** 2nd Edition (p.16) (Based on G6) ✓ **Acupuncture is recommended as a stand-alone therapy or as an adjunct to an overall active treatment program.** ***No serious adverse events were reported in the trials. The incidence of minor adverse events was***	Not applicable	**1** 50						

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	5% in the acupuncture group.								
Supplementary information about "short term relief"	**G11 (UK)** (p.29) Acupuncture should be considered for short term relief of pain in patients with chronic low back pain.	**A**	**1** 51						

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR; non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

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Subcommittee 3: Pharmacology/Analgesia

TABLE J.3a: Acute and subacute low back pain – treatment

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Analgesia	**Alberta CPG** 2nd Edition (p. 11) (Based on G1, G2b, G4, G7, IHE Database) ✓ **Prescribe medication, if necessary, for pain relief preferably to be taken at regular intervals. First choice acetaminophen; second choice NSAIDs.** **Only consider adding a short course of muscle relaxant (benzodiazepines, cyclobenzaprine, or antispasticity drugs) on its own, or added to NSAIDs, if acetaminophen or NSAIDs have failed to reduce pain.** ***Serious adverse effects of NSAIDs include gastrointestinal complications (e.g. bleeding, perforation and increased blood pressure). Drowsiness, dizziness, and dependency are common adverse effects of muscle relaxants.*** **(See Medication Table in Appendix B.)**	Not applicable	For NSAIDs only						
			5 1-5		**8** 4,6-13			**12** 14-25	**1** 26
Additional information (due to defining period of use, i.e. short-term)	**G2c (USA)** (p. 17) NSAIDs may be used for short-term pain relief in patients with acute and subacute low back pain.	**Weak recommendation – Moderate quality evidence**	**1** 1		**2** 27,28				
Narcotic analgesics (opioids)	**Alberta CPG** 2nd Edition (p. 13) (Based on G1, G2b, G7, IHE Database) **?** **There is insufficient evidence to recommend the use of opioids in the treatment of acute low back pain. However clinical experience suggests the use of opioids may be necessary to relieve severe musculoskeletal pain. If used, opioids are preferable for only short term intervention. Ongoing need for opioids is an indication for reassessment.** ***In general, opioids and compound analgesics have a***	Not applicable	**5** 14,29-32		**3** 33-35				

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	substantially increased risk of side effects compared with acetaminophen alone.								
Additional information	**G2c (USA)** (p. 17) Cautious and responsible use of opioids may be considered for those carefully selected patients with severe acute pain not controlled with acetaminophen and NSAIDs, at a minimum effective dose for a limited period of time, usually less than 1 to 2 weeks.	**Strong recommendation – Low quality evidence**	**1** 30		**2** 35,36	**1** 37	**2** 38,39	**1** 40	**2** 41,42

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

TABLE J.3b: Chronic low back pain – treatment

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Acetaminophen and Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)	**Alberta CPG** 2nd Edition (p. 17) (Based on G6, IHE Database) ✓ **Acetaminophen and NSAIDs are recommended. No one NSAID is more effective than another.** **A proton pump inhibitor (PPI) should be considered for patients over 45 years of age when offering treatment with an oral NSAID/COX-2 inhibitor.** ***NSAIDs are associated with mild to moderately severe side effects such as: abdominal pain, bleeding, diarrhea, edema, dry mouth, rash, dizziness, headache, tiredness. There is no clear difference between different types of NSAIDs.***	Not applicable	**3** 1,2,43						
Additional statement/ recommendation	**G11 (UK)** (p.10) *Cardiovascular and gastrointestinal risk needs to be taken into account when prescribing any non-steroidal anti-inflammatory drug.*	**B**	**1** 44						

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
	Note: From the abstract information it is not clear if the studies included in the systematic review are focusing on patients with LBP.								
Statement. Not a recommendation	**G11 (UK)** (p.11) There is insufficient evidence to determine the efficacy of paracetamol in the treatment of patients with generalized chronic low back pain. Paracetamol showed slightly inferior pain relief to NSAIDs in patients with chronic low back pain.	**NA**	**2** 30,43						
Opioids	**Alberta CPG** 2nd Edition (p. 17) (Based on G6, IHE Database) ✓ **Long-term use of weak opioids, like codeine, should only follow an unsuccessful trial of non-opioid analgesics. In severe chronic pain, opioids are worth careful consideration. Long acting opioids can establish a steady state blood and tissue level that may minimize the patient's experience of increased pain from medication withdrawal experienced with short acting opioids. Careful attention to incremental changes in pain intensity, function, and side effects is required to achieve optimal benefit. Because little is known about the long-term effects of opioid therapy, it should be monitored carefully.** ***Opioid side-effects (including headache, nausea, somnolence, constipation, dry mouth, and dizziness) should be high in the differential diagnosis of new complaints.*** **A history of addiction is a relative contraindication. Consultation with an addictions specialist may be helpful in these cases.** **Consult the Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain endorsed by the CPSA. http://nationalpaincentre.mcmaster.ca/opioid/**	Not applicable	**3** 31,32,45						

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Additional information	**G11 (UK)** (p.15) Strong opioids should be considered as an option for pain relief for patients with chronic low back pain or osteoarthritis, and only continued if there is ongoing pain relief. Regular review is required. *Note: From the information available in the abstracts, some of the systematic reviews focus on chronic pain in general. It is not clear if they focus on LBP.*	**B**	**12** 30,31,32,46,47,48,49,50,51,52,53,54		**2** 55,56				
	It may be necessary to trial more than one opioid sequentially, as both effectiveness and side effects vary between opioids.	**B**							
	Opioid rotation should be considered for chronic pain that is likely to respond to opioids, if there are problems with efficacy or side effects.	Not applicable	Recommended best practice based on the clinical experience of the Guideline Development Group						
	Signs of abuse and addiction should be sought at re-assessment of patients using strong opioids. Routine urine drug testing, pill counts or prescription monitoring should not be used to detect problem use.	**C**	**1** 57						
	Currently available screening tools should not be relied upon to obtain an accurate prediction of patients at risk of developing problem opioid use before commencing treatment.	**B**	**1** 57						
	There should be careful assessment of pre-existing risk factors for developing opioid misuse. In patients where opioid therapy is indicated, but there is an increased risk of iatrogenic opioid misuse, specialist advice should be sought. The minimal effective dose should be used to avoid increased problems of fracture and overdose that may occur on higher doses.	Not applicable	Recommended best practice based on the clinical experience of the Guideline Development Group (Background studies cited: 2SR[32,57], 1CS[58], 1Other[59]						
	Specialist referral or advice should be considered if there are concerns about rapid-dose escalation with continued unacceptable pain relief or if >180 mg/day morphine equivalent dose is required.	**D**	**1** 57				**1** 58		**1** 59

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Antidepressants	**Alberta CPG** 2nd Edition (p. 17) (Based on G6, IHE Database) ✓ **Tricyclic antidepressants have a small to moderate effect for chronic low back pain at much lower doses than might be used for depression.** ***Possible side-effects include drowsiness and anticholinergic effects.***	Not applicable	**2** 60,61						
Discordant recommendation	**G11 (UK)** (p.18) Tricyclic antidepressants should not be used for the management of pain in patients with chronic low back pain.	**A**	**2** 31,62		**1** 63				
Duloxetine	**Alberta CPG** 2nd Edition (p. 21) (Based on EO GDG) **?** **No evidence from SR(s) was found to support recommending duloxetine for chronic low back pain.**	Not applicable	Based on expert opinion of Guideline Development Group						
Statement (discordant), not a recommendation *See parking lot document*	**G11 (UK)** (p.18) There is some evidence to support the use of duloxetine 60-120 mg in patients with chronic low back pain.	Not applicable			**2** 64,65				

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

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Recommendations Not Referred to a Subcommittee

TABLE J.4: Acute and subacute low back pain – treatment

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Heat or cold packs	**Alberta CPG** 2nd Edition (p. 11) (Based on G1) ✓ **Superficial heat (application of heating pads or heated blankets) is recommended for the short term relief of acute low back pain.** **Clinical experience supports a role for superficial cold packs and alternating heat and cold as per patient preference.** ***Heat or cold should not be applied directly to the skin, and not for longer than 15 to 20 minutes. Use with care if lack of protective sensation.***	Not applicable	For cold packs only Guideline Development Group expert opinion						
Cold therapy *Discordant recommendation*	**G2c (USA)** (p. 18) Cold therapy is not recommended for low back pain.	**Weak recommendation – Low quality evidence**	**1** 1						
Acupuncture	**Alberta CPG** 2nd Edition (p. 14) (Based on G7, IHE Database) **?** **There is insufficient evidence to recommend for or against acupuncture for acute or subacute low back pain.**	Not applicable	**2** 2,3		**1** 4				
Acupuncture (subacute low back pain: 7 to 12 weeks' duration) *Discordant recommendation*	**G2c (USA)** (p. 26) Acupuncture may be used as an adjunct treatment for subacute low back pain.	**Weak recommendation – Low quality evidence**	**3** 5-7						

Item	Guideline/Country/Synopsis of Recommendations*	Rating of Recommendation†	Supporting Evidence‡						
			SR/ MA	NR	RCT	NRCS	CS	G	Other
Multidisciplinary treatment programs for subacute low back pain	**Alberta CPG** 2nd Edition (p. 11) (Based on G1) ✓ **For subacute low back pain (duration 4 to 8 weeks), intensive interdisciplinary rehabilitation (defined as an intervention that includes a physician consultation coordinated with a psychological, physical therapy, social, or vocational intervention) is moderately effective.** **Functional restoration with a cognitive-behavioral component reduces work absenteeism due to subacute low back pain in occupational settings.**	Not applicable	**2** 8,9						
Additional information (CBT outside of a multidisciplinary program) (subacute low back pain: 7 to 12 weeks' duration)	**G2c (USA)** (p. 25) Clinicians should consider cognitive behavioral therapy in the treatment of subacute low back pain.	**Weak recommendation – Moderate quality evidence**	**1** 9	**1** 10	**1** 11				

*References for the seed guidelines are available in *Appendix H*.

†Refer to *Table J.5* for explanation of ratings.

‡The integers listed in the *Supporting Evidence* columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

CS: case series study; G: guideline; NR: non-systematic/narrative review; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SR/MA: systematic review/meta-analysis

References (Table J.4)

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TABLE J.5: Recommendation ratings used by the new seed guidelines

G2c (G2 [USA] Update)		
Category	**Strong Recommendation**	**Weak Recommendation**
High quality evidence		
Further research is very unlikely to change our confidence in the estimate of effect.	The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.	The work group recognizes that the evidence, though of high quality, shows a balance between estimates of harms and benefits. The best action will depend on local circumstances, patient values or preferences.
Moderate quality evidence		
Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.	The work group is confident that the benefits outweigh the risks, but recognizes that the evidence has limitations. Further evidence may impact this recommendation. This is a recommendation that likely applies to most patients.	The work group recognizes that there is a balance between harms and benefit, based on moderate quality evidence, or that there is uncertainty about the estimates of the harms and benefits of the proposed intervention that may be affected by new evidence. Alternative approaches will likely be better for some patients under some circumstances.
Low quality evidence		
Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change. The estimate or any estimate of effect is very uncertain.	The work group feels that the evidence consistently indicates the benefit of this action outweighs the harms. This recommendation might change when higher quality evidence becomes available.	The work group recognizes that there is significant uncertainty about the best estimates of benefits and harms.

G9 (USA)	
As recommended by the IOM, for each recommendation, information was provided with an explanation of the reasoning underlying the recommendation, including a clear description of potential benefits and harms; a summary of relevant available evidence, description of the quality, quantity, and consistency of the aggregate available evidence; an explanation of the part played by values, opinion, theory, and clinical experience in deriving the recommendations; a rating of the level of confidence, a rating of the strength of recommendation, and a description and explanation of any differences of opinion regarding the recommendation. In grading recommendations, the grading of recommendations from US Preventive Services Task Force was utilized as follows:	
Good	Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes (at least 2 consistent, higher-quality randomized controlled trials or studies of diagnostic test accuracy).
Fair	Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, size, or consistency of included studies; generalizability to routine practice; or indirect nature of the evidence on health outcomes (at least one higher-quality trial or study of diagnostic test accuracy of sufficient sample size; 2 or more higher quality trials or studies of diagnostic test accuracy with some inconsistency; at least 2 consistent, lower-quality trials or studies of diagnostic test accuracy, or multiple consistent observational studies with no significant methodological flaws).
Limited or poor	Evidence is insufficient to assess effects on health outcomes because of limited number or power of studies, large and unexplained inconsistency between higher-quality trials, important flaws in trial design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

G10 (USA)			
1. Levels of evidence for primary research questions			
Level I	Testing of previously developed diagnostic criteria on consecutive patients (with universally applied reference "gold" standard) Systematic review of Level I studies		
Level II	Development of diagnostic criteria on consecutive patients (with universally applied reference "gold" standard) Systematic review of Level II studies		
Level III	Study of nonconsecutive patients; without consistently applied reference "gold" standard Systematic review of Level III studies		
Level IV	Case-control study Poor reference standard		
Level V	Expert opinion		
2. Grades of recommendations for summaries or reviews of studies			
A	Good evidence (Level I studies with consistent finding) for or against recommending intervention		
B	Fair evidence (Level II or III studies with consistent findings) for or against recommending intervention		
C	Poor quality evidence (Level IV or V studies) for or against recommending intervention		
I	Insufficient or conflicting evidence not allowing a recommendation for or against intervention		
3. Linking levels of evidence to grades of recommendations			
Grade	***Standard language***	***Levels of evidence***	
A	Recommended	Two or more consistent Level I studies	
B	Suggested	One Level I study with additional supporting Level II or III studies	Two or more consistent Level II or III studies
C	May be considered; is an option	One Level I, II, or III study with supporting Level IV studies	Two or more consistent Level IV studies
I	Insufficient evidence to make recommendation for or against	A single Level I, II, III, or IV study without other supporting evidence	More than one study with inconsistent findings*
*Note that, in the presence of multiple consistent studies and a single outlying, inconsistent study, the Grade of recommendation will be based on the level of consistent studies.			
G11 (UK)			
Levels of evidence			
1^{++}	High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias		
1^{+}	Well conducted meta-analyses, systematic reviews, or RCTs with a very low risk of bias		
1^{-}	Meta-analyses, systematic reviews, or RCTs with a high risk of bias		
2^{++}	High quality systematic reviews of case control or cohort studies High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal		
2^{+}	Well conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal		
2^{-}	Case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal		

3	Non-analytic studies, e.g., case reports, case series
4	Expert opinion
Grades of recommendation *Note: The grade of recommendation relates to the strength of the evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation*	
A	At least one meta-analysis, systematic review, or RCT rated as 1++, and directly applicable to the target population OR A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results
B	A body of evidence including studies rated as 2^{++}, directly applicably to the target population, and demonstrating overall consistency of results OR Extrapolated evidence from studies rated as 1^{++} or 1^{+}
C	A body of evidence including studies rated as 2^{+}, directly applicably to the target population, and demonstrating overall consistency of results OR Extrapolated evidence from studies rated as 2^{++}
D	Evidence level 3 or 4 OR Extrapolated evidence from studies rated as 2^{+}
Good practice points	
✓	Recommended best practice based on the clinical experience of the guideline development group

TABLE J.6: Glossary of terms for interventions included in the inventory tables

Term	Definition
Brief education in a clinical setting	Examination, information, reassurance, and advice to stay active. (Source: G11, UK, p. 21)
Exercise	Therapeutic exercises are prescribed according to the results of an individual patient assessment, and recommendations are based on the specific impairments identified. A supervised exercise program or formal home exercise regimen, ranging from programs aimed at general physical fitness or aerobic exercise to programs aimed at muscle strengthening, flexibility, stretching, or different combinations of these elements. (Source: Alberta CPG, 2nd Edition)
Fear-avoidance belief	The belief that pain is harmful, resulting in fear of movement or re-injury and thus pain-avoidance behavior, such as guarding. (Source: G2c, USA)
Interdisciplinary rehabilitation (also called *multidisciplinary therapy*)	An intervention that combines and coordinates physical, vocational, and behavioural components and is provided by multiple healthcare professionals with different clinical backgrounds. The intensity and content of interdisciplinary therapy varies widely. (Source: Alberta CPG, 2nd Edition)
Lumbar disc herniation with radiculopathy	Localized displacement of disc material beyond the normal margins of the intervertebral disc space resulting in pain, weakness, or numbness in a myotomal or dermatomal distribution. (Source: G10, USA)
Manual therapy	*Manual therapy* is an umbrella term that has increasingly been adopted to encompass various forms of hands-on treatment, including both manipulation and mobilization. Mobilization techniques involve the therapist applying slow, passive movements to a joint; typically the patient cannot perform these movements independently but they are within the normal physiological range of motion of the joint. Manipulation is a passive technique where the therapist applies a specifically directed manual thrust to a joint, at or near the end of the physiological range of motion. This may be accompanied by an audible 'crack' or 'pop'. Manual therapy as a treatment option in the management of pain is an intervention that is practised by a variety of healthcare professionals including physiotherapists, osteopaths, and chiropractors. Philosophical differences exist both within and between the various professions regarding the possible mechanisms of action of manual therapy. (Source: G11, USA, p.25)
Radiculopathy	Dysfunction of a nerve root associated with pain, sensory impairment, weakness, or diminished deep tendon reflexes in a nerve root distribution. (Source: Alberta CPG, 2nd Edition)
Spinal manipulative therapy	The generic term commonly given to a group of manually applied therapeutic interventions. These interventions are usually applied with the aim of inducing intervertebral movement by directing forces to vertebrae, and include spinal manipulation and mobilization. (Source: G2c, USA)

Appendix K: Summary of Parking Lot Items

Recommendations accepted or rejected by the Guideline Update Committee (GUC) based on supplementary information reviewed and discussed in Subcommittee and subgroup meetings.

TABLE K.1: Prevention of occurrence and recurrence of low back pain

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Physical activity (Do; expired evidence source – TOP CPG 2011) G5 (USA)	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on physical activity.§	11 August 2014. Email correspondence of Subcommittee co-chair. Reviewed one SR.[1,2]	Pain management and psychology HTA research	*16 March 2015*. Accepted by GUC as "Do." **Exercise for prevention of recurrence** **SR (G2c, G5, IHE Database) + EO (GUC)**
		27 August 2014. Keep TOP recommendation as is, but change title and add statement on messaging regarding likelihood of recurrence of LBP (see "Messaging regarding likelihood of recurrence of acute and subacute LBP" in *Table K.2*).	Rehabilitation Subcommittee (see details in *Table K.5*)	
Shoe insoles/orthoses (Do Not Do; expired evidence source – TOP CPG 2011) G5 (USA)	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on shoe insoles/orthoses.§	11 August 2014. Email correspondence of Subcommittee co-chair. Reviewed one SR.[4,5]	Pain management and psychology HTA research	*16 March 2015*. Accepted by GUC as status quo ("Do Not Do"). **RCT (G5) + SR (IHE Database)**
		27 August 2014. Keep TOP recommendation as is; update evidence source.	Rehabilitation Subcommittee (see details in *Table K.5*)	
Spinal manipulative therapy or spinal mobilization (Do Not Know; expired evidence source – TOP CPG 2011) G5 (USA)	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on spinal manipulative therapy and spinal mobilization.§	11 August 2014. Email correspondence of Subcommittee co-chair. Reviewed one SR[6] that focused on treatment of chronic LBP and did not address prevention. Discussed further with Subcommittee members.	Spine biomechanics, chiropractic Pain management and psychology HTA research	*16 March 2015*. Accepted by GUC as two "Do Not Know" recommendations. **Manual therapy – Spinal manipulative therapy** **RCT (G5)** **Manual therapy – Spinal Mobilization** **RCT (G5)**
		27 August 2014. Reviewed research evidence. Status quo: "Do Not Know".	Rehabilitation Subcommittee (see details in *Table K.5*)	
		28 October to 20 December 2014. Email correspondence of Subcommittee members. Proposed further revisions, reworded for	Spine biomechanics, chiropractic Pain management and psychology	

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
		consistency, and separated into two recommendations under manual therapies. Postpone development of a new recommendation on massage therapy for prevention of LBP until the next update to maintaining consistency with the guidelines methods and work.	HTA research	
		6 January to 14 January, 2015. Online survey of Subcommittee members; approval of the suggested revisions.	Rehabilitation Subcommittee (see details in *Table K.5*)	
Any specific type of chair **(Do Not Know; expired evidence source – TOP CPG 2011)** G5 (USA)	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on types of chairs.§	27 August 2014. No SR found on chairs for preventing LBP. Status quo: "Do Not Know."	Rehabilitation Subcommittee (see details in *Table K.5*)	*16 March 2015*. Accepted by GUC as status quo ("Do Not Know"). **CS (G5)**
Any specific type of mattress **(Do Not Know; expired evidence source – TOP CPG 2011)** G5 (USA)	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on types of mattresses.§	27 August 2014. No SR found on mattresses for preventing LBP. Status quo: "Do Not Know."	Rehabilitation Subcommittee (see details in *Table K.5*)	*16 March 2015*. Accepted by GUC as status quo ("Do Not Know"). **RCT (G5)**

CS: case series; CPG: clinical practice guideline; EO: expert opinion; GUC: Guideline Update Committee (see role and membership in *Appendix A* and *Appendix B*); HTA: health technology assessment; IHE: Institute of Health Economics; LBP: low back pain; RCT: randomized controlled trial; SC: Steering Committee; SR: systematic review; TOP: Toward Optimized Practice

Parking lot item – Any activity that involved review of individual studies referenced in the seed guideline(s), systematic reviews published between January 2007 and April 2014, or other requests that were required by the GUC before a final decision could be made.

*Interventions were sourced from the *Alberta CPG*, 2nd Edition, new seed guideline(s), stakeholder requests, or systematic reviews (IHE Database). They are listed in the same order in which they are written in the *Alberta CPG*. Original recommendations from the seed guidelines are listed in *Appendix J*. References for the seed guidelines are available in *Appendix H*.

†Detailed information on the searches conducted and on data extraction from studies is available upon request.

‡The number of SRs may vary if there were multiple publications of the same study.

§The systematic search included systematic reviews focused on low back pain that were published between January 2007 and April 2014.

TABLE K.2: Acute and subacute low back pain

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Red flags (Update evidence – TOP CPG 2011) Adapted from G2, G4, G6, G7, G8, EO (GDG)	Supplementary search for SRs on red flags.§	8 May 2014. Subcommittee meeting. Look for SRs on red flags. 13 August Subgroup meeting & 5 September 2014 Subcommittee meeting. Reviewed two SRs.[7-9] Status quo for TOP guidance.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* Minor wording revision. Accepted by GUC. **Adapted from G2, G4, G6, G7, G8, EO (GDG/GUC)**
Evaluate for fracture **New recommendation**	Review new ("Do") recommendation from G2c (USA).	8 May 2014. Subcommittee meeting. Reviewed G2c recommendation and revised wording.	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC as "Do." **SR (G2c) + EO (GUC)**
Imaging to rule out underlying pathology in the absence of radiculopathy **New recommendation**	Review new ("Do") recommendation from G2c (USA).	8 May 2014. Subcommittee meeting. Review the evidence on indications for MRI and CT scanning in acute and subacute LBP. 13 August 2014. Subgroup meeting. Reviewed four SRs.[10-13] Revised wording and added SR[11] as an evidence source. Changed subsection titles to: (a) MRI/CT myelography indications; and (b) CT indications. Copy all MRI and CT/CT myelography indications to Referral for MRI and Possible Surgical Opinion for Radiculopathy recommendation. 5 September 2014. Subcommittee meeting. Keep recommendation as "Do", but modify so that message is clear that imaging is only necessary in specific circumstances. Revised wording and removed reference to CT myelography and claustrophobia.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* Revised wording. Accepted by GUC as "Do." **SR (G2c) + SR (IHE Database)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Referral for MRI and possible surgical opinion for radiculopathy **(Do – TOP CPG 2011)** G8 (Canada)	Review additional information from G2c (USA).	8 May 2014. Subcommittee meeting. Review the evidence on indications for MRI and CT scanning in acute and subacute LBP. 13 August 2014. Subgroup meeting. Reviewed two SRs.[10,12,13] and revised to include epidural injections. Added MRI/CT myelopathy indications. Changed title. 5 September 2014. Subcommittee Meeting. Removed reference to claustrophobia and CT myelography.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* Revised wording and accepted by GUC as "Do." **Imaging to Rule Out Underlying Pathology in the Presence of Radiculopathy** **SR (G2c, IHE Database) + CS (G8)**
Messaging regarding the likelihood of recurrence of acute and subacute LBP **New recommendation/ statement**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on messaging regarding recurrence.§	11 August 2014. Email correspondence of Subcommittee co-chair. Reviewed one SR[3] that focused on expectations for recovery and did not address the required topic. 27 August 2014. Subcommittee meeting. Developed a statement and decided to incorporate messaging in the Exercise for Prevention of Recurrence Recommendation (see *Table K.1* above).	Pain management and psychology HTA research Rehabilitation Subcommittee (see details in *Table K.5*)	*16 March 2015*. Accepted by GUC as a statement added to recommendation on exercise for prevention of recurrence. **Evidence Source: Not applicable**
Therapeutic exercise **(Do Not Know – TOP CPG 2011)** G2a,b (USA) G4 (Europe) IHE Database	Review new ("Do") discordant recommendation from G2c (USA).	12 June 2014. Subcommittee meeting. Reviewed G2c recommendation and added wording. 27 August 2014. Subcommittee meeting. Revised wording and changed from a "Do Not Know" to a "Do". 10 October 2014. Email correspondence of Subcommittee co-chair. Added emphasis on optimizing function. 15 October 2014. Subcommittee meeting. Further wording refinements.	Rehabilitation Subcommittee (see details in *Table K.5*)	23 January 2015. GUC. Added "de-emphasizing pain". *16 March 2015*. Accepted by GUC as "Do." **SR (G2c, G4, IHE Database)**
Heat or cold packs **(Do – TOP CPG 2011)** G1 (USA)	7 March 2014. GUC face-to-face meeting. Review new ("Do Not Do") discordant recommendation from G2c (USA). Review SR cited by G2c.[14,15]	16 January 2015. Email correspondence among SC members. Keep Alberta CPG recommendation as is.	Family physician-chronic pain management Pain management and psychology	*6 March 2015*. Accepted by GUC as "Do". **SR (G1, G2) + EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Narcotic analgesics (Do Not Know – TOP CPG 2011) G1, G2b (USA) G7 (Australia) IHE Database	Review/revise recommendation.	19 June 2014. Subcommittee meeting. Revised wording and added supplementary information from G2c. Changed from "Do Not Know" to "Do". 29 September 2014. Subcommittee meeting. Further wording revision; removed G7 as evidence (labelled opioids under insufficient evidence).	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	23 January 2015. GUC. Changed title; further wording revision. *16 March 2015*. Accepted by GUC as "Do". **BRIEF course of narcotic analgesics (opioids)** **SR (G1, G2c, IHE Database)**
Multidisciplinary treatment programs for subacute low back pain (Do – TOP CPG 2011) G1 (USA)	7 March 2014. GUC face-to-face meeting. Review additional information from G2c (USA). Add a "Do" recommendation for cognitive behavioural therapy outside of a multidisciplinary program for subacute LBP. Check number of sessions needed in the SR cited by G2c.[16]	16 January 2015: Email correspondence among SC members. Keep Alberta CPG recommendation as is. Changed title.	Family physician-chronic pain management Pain management and psychology HTA research	*6 March 2015*. Accepted by GUC as "Do". **Multidisciplinary treatment programs for occupationally-related subacute low back pain** **SR (G1)**
Epidural steroids in the absence of radiculopathy (Do Not Do; expired evidence source – TOP CPG 2011) G4 (Europe)	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on epidural steroids in the absence of radiculopathy.§	5 December 2014. Subcommittee meeting. No SR found. Leave TOP recommendation as is.	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015*. Accepted by GUC as status quo ("Do Not Do"). **SR (G4)**
Epidural steroids in the presence of radiculopathy (Do Not Know – TOP CPG 2011) G4 (Europe)	Review new ("Do") discordant recommendation from G2c (USA).	8 May 2014. Subcommittee meeting. Look for evidence on using epidural steroid injections in young, healthy patients with severe radiculopathy. Investigate evidence base for 23 April 2014 US FDA warning on epidural corticosteroids.[17] 13 August 2014. Subgroup meeting. No SR found on using epidural injections in younger patients. US FDA warning primarily referred to cervical spine treatment, and the corticosteroid	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*16 March 2015*. Wording revised. Accepted by GUC as "Do Not Know". **SR (G4) + EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
		warnings were not applicable in Canada. Keep Alberta CPG recommendation as is, but add "lumbar" to clarify location of radicular pain. 5 September & 31 October 2014. Subcommittee and Subgroup meeting. Revised wording. 5 December 2014. Subcommittee meeting. Changed to a "Do" recommendation. 29 January 2015. Subgroup Meeting. Changed to a "Do Not Know" recommendation and added appropriate wording on the evidence. 3 March 2015. Subcommittee Meeting. Revised wording.		
Amitriptyline for nerve pain **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on amitriptyline.§	19 June 2014. Subcommittee meeting. No SR found. 29 September 2014. Subcommittee meeting. Do not add to Alberta CPG; amitriptyline is already captured in the antidepressants recommendation. 28 January to 2 February 2015. Email correspondence among the Subcommittee members. Reviewed evidence source for recommendation on antidepressants and anticonvulsants from the Alberta CPG, 2nd Edition (evidence source EO (G1)) and the research evidence from G1. Proposed new wording for antidepressants recommendation. Keep anticonvulsants from Alberta CPG, 2nd Edition as "Do Not Know"; added EO (GUC) as evidence source.	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	*23 January 2015.* Accepted by GUC as two "Do Not Know" recommendations. **Analgesic antidepressants** **EO (G1, GUC)** **Anticonvulsants** **EO (G1, GUC)**
Marijuana/dried cannabis **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on marijuana/dried cannabis.§	19 June 2014. Subcommittee meeting. No SR found. 29 September 2014. Subcommittee meeting. Add as "Do Not Know"; added reference to the College of Family Physicians of Canada guide (*Authorizing Dried Cannabis for Chronic Pain or Anxiety)* for more information (available from:	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	*23 January 2015.* Accepted by GUC as "Do Not Know". **EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
		www.cfpc.ca/uploadedFiles/Resources/_PDFs/Authorizing%20Dried%20Cannabis%20for%20Chronic%20Pain%20or%20Anxiety.pdf).		
Acupuncture (Do Not Know – TOP CPG 2011) G7 (Australia) IHE Database	7 March 2014. GUC face-to-face meeting. Review new discordant ("Do") recommendation from G2c (USA). Review SRs cited by G2c.[18-20]	16 January 2015: Email correspondence among SC members. Keep Alberta CPG recommendation as is. Change title.	Family physician-chronic pain management Pain management and psychology HTA research	*6 March 2015*. Accepted by GUC as "Do Not Know". **SR (G7, IHE Database)**
Clinical prediction rule for spinal manipulative therapy New recommendation G2c (USA)	16 March GUC meeting. Check SR referenced by G2c to support recommendation.	23 March to 27 March 2015. Email correspondence. The SR[21] included four RCTs. The clinical prediction rules outlined are designed for a specialized clinical setting that would be involved in providing certain types of treatments (manipulation, mobilization, exercise), which are not usually done by primary care practitioners. There was no information in the SR about the setting(s) where the interventions were conducted, or on how the prediction rules were generated or validated.	Spine biomechanics, chiropractic Family physician HTA research	*16 March 2015*. Accepted by GUC as "Do Not Know". **SR (G2c)**
Herbal medicine (Do Not Know – TOP CPG 2011) IHE Database	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on herbal medicine for acute and subacute LBP§ (treatment requested by stakeholders).	19 June 2014. Subcommittee meeting. No SR found. 29 September 2014. Subcommittee meeting. Status quo: "Do Not Know."	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	*23 January 2015*. Accepted by GUC as status quo ("Do Not Know"). **SR (IHE Database)**
Craniosacral massage/therapy New recommendation	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on craniosacral massage/therapy.§	27 August 2014. Subcommittee meeting. No SR found. Add to Alberta CPG as a "Do Not Know" recommendation for acute and subacute LBP.	Rehabilitation Subcommittee (see details in *Table K.5*)	*16 March 2015*. Accepted by GUC as "Do Not Know". **EO (GUC)**
Manual therapy – Spinal mobilization New recommendation	12 November 2014. Subcommittee meeting. Supplementary search for SRs on spinal mobilization.§ Add new	14 November 2014. No SR found. Email correspondence of the Subcommittee members. Generally the excluded reviews were affected by heterogeneity of the patient populations included and the intervention	Spine biomechanics, chiropractic Pain management and psychology	*16 March 2015*. Accepted by GUC as "Do Not Know". **EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
	recommendation for consistency.	techniques applied. The majority of the studies included spinal manipulation or a combination of various techniques such as manipulation, mobilization, massage, other soft techniques, or generic-manual therapy, with or without providing a definition for manual therapy. Add as "Do Not Know". 16 January 2015. Email correspondence. Reworded recommendation for consistency.	HTA research	
Shock wave treatment **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on shock wave treatment.§	27 August 2014. Subcommittee meeting. No SR found. GUC to decide whether to include in the acute/subacute section of the guideline.	Rehabilitation Subcommittee (see details in *Table K.5*)	*16 March 2015*. Accepted by GUC as "Do Not Know". **EO (GUC)**
Tapentadol (Nucynta®) **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on tapentadol.§	19 June 2014. Subcommittee meeting. No SR found on using tapentadol for acute or subacute LBP. 29 September 2014. Add as "Do Not Know" recommendation.	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	*23 January 2015*. Accepted by GUC as "Do Not Know". **EO (GUC)**
Vitamin injections **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on vitamin injections.§	19 June 2014. Subcommittee meeting. No SR found on using vitamin injections for acute and subacute LBP; add as "Do Not Know". 29 September 2014. Discussed results from a new SR[22,23] that included evidence on vitamin B12 injections from one RCT; keep as "Do Not Know".	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	*23 January 2015*. GUC. Do not add to Alberta CPG.
Infusion therapies (IV): lidocaine, ketamine **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on infusion therapies.§ 19 June 2014. Pharmacology/ Analgesia Subcommittee: review neuropathic pain guideline.	19 June 2014. Subcommittee meeting. No SR found. Recommendation to use Canadian neuropathic pain guideline[24] and to reference IV lidocaine/ketamine as being used for different sources of pain. 29 September 2014. Subcommittee meeting. Add a statement to consult the Canadian neuropathic pain guideline.	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	*23 January 2015*. GUC. Do not add to Alberta CPG.
Topical lidocaine (lidocaine patch) **New**	7 March 2014. GUC face-to-face meeting. Supplementary search for	19 June 2014. Subcommittee meeting. No SR found. 29 September 2014. Subcommittee meeting.	Pharmacology/ Analgesia Subcommittee and	*23 January 2015*. GUC. Do not add to Alberta CPG.

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
recommendation	SRs on topical lidocaine.§ 19 June 2014. Pharmacology/Analgesia Subcommittee: check Canadian neuropathic pain guidelines (pharmacological management).	Add a statement referring to the Canadian neuropathic pain guidelines.[25] The available guidelines will be replaced soon by a new guideline. 23 December 2014 to 16 January 2015. Email correspondence among the Subcommittee members. Additional information on topical lidocaine for neuropathic pain abstracted from the revised consensus statement from the Canadian Pain Society.[26] Lidocaine is now considered the fourth-line treatment for neuropathic pain. 20 January 2015. Subgroup meeting. Keep the statement and reference to the Canadian neuropathic pain guideline.	Subgroup (see details in *Table K.5*)	
Ketamine **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on ketamine.§	19 June 2014. Subcommittee meeting. No SR found. 29 September 2014. Subcommittee meeting. Add as "Do Not Know" recommendation; add a statement referring to the Canadian neuropathic pain guidelines.[25] 14 October 2014. Email correspondence among the Subcommittee members. Remove new recommendation on ketamine in general from the guideline.	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	*23 January 2015*. GUC. Do not add to Alberta CPG.

CS: case series; CPG: clinical practice guideline; CT: computed tomography; EO: expert opinion; FDA: Food and Drug Administration; GDG: Guideline Development Group; GUC: Guideline Update Committee (see role and membership in *Appendix A* and *Appendix B*); HTA: health technology assessment; IHE: Institute of Health Economics; LBP: low back pain; MRI: magnetic resonance imaging; RCT: randomized controlled trial; SC: Steering Committee; SR: systematic review; TOP: Toward Optimized Practice

Parking lot item – Any activity that involved review of individual studies referenced in the seed guideline(s), systematic reviews published between January 2007 and April 2014, or other requests that were required by the GUC before a final decision could be made.

*Interventions were sourced from the *Alberta CPG*, 2nd Edition, new seed guideline(s), stakeholder requests, or systematic reviews (IHE Database). They are listed in the same order in which they are written in the *Alberta CPG*. Original recommendations from the seed guidelines are listed in *Appendix J*. References for the seed guidelines are available in *Appendix H*.

†Detailed information on the searches conducted and on data extraction from studies is available upon request.

‡The number of SRs may vary if there were multiple publications of the same study.

§The systematic search included systematic reviews focused on low back pain that were published between January 2007 and April 2014.

TABLE K.3: Chronic low back pain

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Diagnostic imaging (Do; update evidence – TOP CPG 2011) EO (GDG)	Supplementary search for SRs on diagnostic tests.§	5 December 2014. Subcommittee meeting. Four SRs were found.[10,12,13,27] Leave TOP recommendation as is.	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC as status quo ("Do"). **EO (GUC)**
Physical exercise (Do not know – TOP CPG 2011) G6 (Canada)	12 June 2014. Subcommittee meeting. Revise Alberta CPG recommendations by using G11 as a base; add advice on how to stay active and an explanatory statement on specific forms of exercise, where there is evidence to support it.	10 October & 25 November to 9 December 2014. Email correspondence among Subcommittee members. Co-chair proposed wording refinements; merged TOP physical exercise recommendation ("Do") and the expert opinion recommendation on therapeutic exercise ("Do Not Know") as Exercise and Therapeutic Exercise ("Do").	Physiotherapy (2 participants) Spine biomechanics, chiropractic Musculoskeletal physiotherapy Pain management and psychology HTA research	*16 March 2015.* Merged recommendation accepted by GUC as "Do". **Exercise and therapeutic exercise SR (G6, G11)**
		6 January to 14 January, 2015. Online survey of the Subcommittee members. Replaced "low cost alternatives" with "other options may include".	Rehabilitation Subcommittee (see details in *Table K.5*)	
Education **New recommendation**	12 June 2014. Subcommittee meeting. Review 2 SRs referenced by G11.	11 August 2014. Reviewed two SRs[28,29]; most studies in one SR involved patients with acute and subacute LBP and the reviews classified the same studies differently. 10 October 2014. Proposed wording refinements.	Pain management and psychology HTA research	*16 March 2015.* Accepted by GUC as "Do". **SR (G11)**
		12 November 2014. Subcommittee meeting. Accepted recommendation wording with modifications; added definition of education.	Rehabilitation Subcommittee (see details in *Table K.5*)	
	9 December 2014. Co-chair of Subcommittee. Review information from RCTs referenced in one SR about "examination".	9 to 10 December 2014. Email correspondence. Reviewed information from four RCTs.[30-33] referenced in the SR[28] about evaluated brief education in the clinical setting consisting of examination, information, reassurance, and advice to stay active. Keep recommendation as is.	Pain management and psychology HTA research	

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Acupuncture (Do – TOP CPG 2011) G6 (Canada)	27 August 2014. Subcommittee meeting. Review acupuncture as a stand-alone therapy; review one SR referenced in G11; add a comment on functional improvement.	31 October 2014. Email correspondence. Reviewed one SR.[34]	Spine biomechanics, chiropractic Pain management and psychology HTA research	*16 March 2015.* Accepted by GUC as "Do". **SR (G6, G11)**
		12 November 2014. Subcommittee meeting. Keep TOP recommendation as is, but add a reference to it being short term: "Acupuncture is recommended as a short-term stand-alone therapy…"; remove "extended trials…". 6 January to 14 January, 2015. Online survey of Subcommittee members; remove "stand-alone".	Rehabilitation Subcommittee (see details in *Table K.5*)	
Antidepressants (Do – TOP CPG 2011) G6 (Canada) IHE Database	19 June 2014. Subcommittee meeting. Review new ("Do Not Do") discordant recommendation from G11 (UK); check two SRs and one RCT from G11.	29 September 2014. Subcommittee meeting. Reviewed two SRs[35,36], one RCT[37] from G11, and one SR[38] used to inform the recommendation in the Alberta CPG, 2nd Edition (2011). Keep Alberta CPG recommendation as "Do", but revise wording to include "may": "Tricyclic antidepressants may have a small to moderate effect…".	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	23 January 2015. GUC meeting. Refined wording; revised title. *6 February 2015.* Accepted by GUC as "Do". **Analgesic antidepressants (amitriptyline and nortriptyline)** **SR (G6, IHE Database)**
Behavioural therapy/progressive muscle relaxation for chronic low back pain (Do – TOP CPG 2011) G6 (Canada)	7 March 2014. GUC face-to-face meeting. Review SR from G6 for information on number of sessions needed. Supplementary search for SRs on CBT.§	16 January 2015. The SR[16], which was also cited by G1 (USA), does not mention the number of sessions needed for CBT. Keep TOP guidance as is. Reviewed one SR[39] found by literature search.	Pain management and psychology HTA research	6 March 2015. Accepted by GUC as status quo ("Do"), but add wording around qualifications of provider. *16 March 2015.* Accepted by GUC as "Do". Changed title. **Cognitive behavioural therapy** **SR (G6)**
		14 January to 19 January. Email correspondence. Keep TOP guidance as is.	Pain management and psychology Family physician-musculoskeletal chronic pain management HTA research	

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Multidisciplinary treatment program **(Do – TOP CPG 2011)** G6 (Canada)	12 June 2014. Subcommittee meeting. Review three SRs referenced in G11 (UK).	10 August to 22 August 2014. Email correspondence among Subcommittee members. Review summaries from three SRs.[40-42] 27 August 2014. Subcommittee meeting. Leave Alberta CPG recommendation as is; include a definition of multidisciplinary treatment in the recommendation and glossary and add reference to SR from G11. 15 October 2014. Subcommittee meeting. Refined wording; add "biopsychosocial". 12 November 2014. Added statement on accessing other pain services.	Rehabilitation Subcommittee (see details in *Table K.5*) Family physician-musculoskeletal chronic pain management	*8 May 2015.* Email correspondence. Accepted by GUC and Subcommittee as "Do". **SR (G6, G11)**
		16 March 2015. GUC meeting. More refinements needed: define "adequate trial" and first-line treatment.	GUC	
		20 March 2015. Email correspondence among Subcommittee co-chairs about additional refinements.	Pain management and psychology Spine biomechanics, chiropractic HTA research	
		31 March 2015. Subcommittee meeting. Refined recommendation sent to the Subcommittee members and GUC via SurveyMonkey®. Received 12 replies in favour of revisions.	Rehabilitation Subcommittee (see details in *Table K.5*) and GUC	
Referral for surgical opinion on spinal fusion **(Do; update evidence – TOP CPG 2011)** EO (GDG)	Supplementary search for SRs on referral for spinal fusion.§	5 December 2014. Subcommittee meeting. Three SRs found on factors predisposing patients to a good or poor outcome after surgery.[43-46] Leave TOP recommendation as is. 6 January 2015. Email correspondence among Subcommittee members.	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC as "Do" with revised wording. **EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Lumbar discography as a diagnostic test **(Do not know – TOP CPG 2011)** SR (IHE Database)	7 March 2014. GUC face-to-face meeting. Review additional information from G9 (USA).	8 May 2014. Subcommittee meeting. Revise recommendation to indicate that lumbar discography is not indicated at the primary care level. Review two supporting studies from G9 to determine what discography is used for. 13 August 2014. Subgroup meeting. Reviewed the systematic review[47] and diagnostic study[48] from G9. Keep first sentence of revised recommendation and add concluding statement from retrospective comparative study cited by G9[48] as a comment. 5 September 2014. Subcommittee meeting. Changed from "Do Not Know" to "Do Not Do". Changed title.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC as "Do Not Do." **Lumbar discography in primary care** **SR (IHE Database) + G9 (NRCS)**
Electrodiagnostic studies in primary care **New recommendation**	7 March 2014. GUC face-to-face meeting. Review new recommendation from G10 (USA).	5 September 2014. Subcommittee meeting. Include recommendation on the use of electrodiagnostic studies as an adjunct procedure. Review literature on the effect of electrodiagnostic studies on treatment plans and patient outcomes. 31 October 2014. Subgroup meeting. One SR was found[10]. Include as "Do Not Do", but revise wording. 25 November 2014. Email correspondence among Subgroup members. Revise wording. 5 December 2014. Subcommittee meeting. Accept wording but remove repeated words.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC as "Do Not Do". **G10 (EO) + SR (IHE Database)**
Diagnostic selective nerve root blocks (SNRBs) **New recommendation**	7 March 2014. GUC face-to-face meeting. Review new recommendation from G9 (USA).	8 May & 5 September 2014. Subcommittee meeting. Add recommendation in larger section on nerve blocks within the context of an overall management plan. Add wording to describe SNRBs and the patient indications in an appendix. 5 December 2014. Subcommittee meeting. Accept recommendation wording. 29 January 29 2015. Subgroup meeting. Make it clearer that SNRBs are not indicated at the primary care level.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* GUC. Changed to "Do Not Do"; changed title, removed second paragraph, and revised wording. **Diagnostic SNRBs in primary care** **SR (G9) + EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Diagnostic lumbar facet joint nerve blocks **New recommendation**	7 March 2014. GUC face-to-face meeting. Review new recommendation from G9 (USA) (treatment requested by stakeholders). 25 April 2014. SC meeting. Lumbar facet joint blocks and medial branch blocks were suggested as new interventions by stakeholders, but the G9 recommendation appears to relate only to medial branch blocks. Review SRs on lumbar facet joint blocks and medial branch blocks.	5 September 2014. Subcommittee meeting. One SR was found on facet joint blocks[49]; no SR found on medial branch blocks.. Add separate recommendation for facet joint blocks in a larger section on nerve blocks within the context of an overall management plan. 7 October 2014. Request from Subcommittee member to check if any studies included in the one SR found[49] include medial branch blocks. 31 October 2014. Subgroup meeting. At least one study in the SR[49] included medial branch blocks. Wording drafted. 5 December 2014. Subcommittee meeting. Accept recommendation wording. Describe lumbar facet joint nerve blocks and patient indications in an appendix. 3 March 2015. Subgroup meeting. Remove NRCS (G9) from evidence source. Wording accepted.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* GUC. Changed to "Do Not Know" and removed wording after "nerve blocks". **SR (IHE Database)**
Diagnostic sacroiliac joint blocks **New recommendation**	7 March 2014. GUC face-to-face meeting. Review new recommendation from G9 (USA).	5 September 2014. Subcommittee meeting. Add recommendation in a larger section on nerve blocks within the context of an overall management plan. 31 October 2014. Subgroup meeting. Wording drafted. 5 December 2014. Subcommittee meeting. Revised wording. Describe sacroiliac joint blocks and the patient indications in an appendix. 29 January 2015. Subgroup meeting. Wording accepted.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* GUC. Changed to "Do Not Know" and removed wording after "joint blocks". Removed CS (G9) from evidence source. **EO (GUC)**
Epidural steroid injections **(Do – TOP CPG 2011)** SR (G6)	7 March 2014. GUC face-to-face meeting. Review additional information from G9 (USA).	5 September 2014. Subcommittee meeting. Changed to "Do Not Know" recommendation. Review recommendation to clarify available procedures for patients based on symptoms and/or MRI findings. 31 October 2014. Subgroup meeting. Wording	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 March 2015.* Accepted by GUC as "Do Not Know", but revised wording on harms. **SR (G4, G6) +EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
		drafted. 5 December 2014. Subcommittee meeting. Keep TOP recommendation as is. Add a flow diagram/algorithm in an appendix to assist clinicians in determining which interventions should be used for certain indications. 3 March 2015. Subcommittee meeting. Changed to "Do Not Know" based on inconclusive evidence; modify wording accordingly. Added "image guided" to second paragraph and removed third paragraph. Replaced adverse events section with that from epidural steroid recommendation for acute/subacute low back pain.		
Therapeutic lumbar facet joint injections **New recommendation**	7 March 2014. GUC face-to-face meeting. Review new recommendation from G9 (USA) (radiofrequency neurotomy of facet joints requested by stakeholders).	5 September 2014. Subcommittee meeting. Look at evidence cited by the Alberta Health report.[50] 31 October 2014. Subgroup meeting. Add recommendation, but remove first paragraph and revise the second paragraph. 5 December 2014. Subcommittee meeting. Wording approved.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* GUC. Changed to "Do Not Know". Removed SR (G9) from evidence source. **EO (GUC)**
Therapeutic sacroiliac joint injections **New recommendation**	7 March 2014. GUC face-to-face meeting. Review new recommendation from G9 (USA) (radiofrequency neurotomy of the sacroiliac joint requested by stakeholders).	5 September 2014. Subcommittee meeting. Look at evidence cited by the Alberta Health report.[50] 31 October 2014. Subgroup meeting. Include a general statement on intra-articular injections, but do not include any reference to radiofrequency neurotomy. 5 December 2014. Subcommittee meeting. Wording approved.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* GUC. Changed to "Do Not Know". Removed RCT (G9) from evidence source. **EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Spinal manipulative treatment or spinal manipulation **(Do not know – TOP CPG 2011)** G6 (Canada)	12 June 2014. Subcommittee meeting. Review 3 SRs referenced in G11. 15 October 2014. Subcommittee meeting. Review/discuss again the research evidence available from the SRs.	27 August 2014. Subcommittee meeting. Reviewed three SRs.[42,51,52] Leave Alberta CPG recommendation as is. 16 October to 20 November 2014. Email correspondence among Subcommittee members. Re-checked research evidence from SRs. Keep the same evidence source and category of "Do Not Know". 12 November 2014. Subcommittee meeting. Separate spinal manipulative treatment and spinal mobilization into two separate "Do Not Know" recommendations under manual therapy.	Rehabilitation Subcommittee (see details in *Table K.5*)	*23 Jan 2015.* Accepted by GUC as two "Do Not Know" recommendations. **Manual therapy – Spinal manipulation treatment** **SR (G6, IHE Database)** **Manual therapy – Spinal mobilization** **SR (G6, IHE Database)**
STarT back screening tool **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on STarT back screening tool for LBP.§	9 March 2015. Reviewed a rapid review document prepared by Research Team: one RCT (multiple publications)[53-55] and one before-and-after study[56,57] with two independent groups on STarT back tool. Add as "Do Not Know" recommendation.	Physical medicine and rehabilitation Family physician-chronic pain management Pain management and psychology Physiotherapy HTA research	*16 March 2015.* Accepted by GUC as "Do Not Know". **EO (GUC)**
Clinically Organized Relevant Exam (CORE) back screening tool **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on CORE back screening tool for LBP.§	9 March 2015. Reviewed a rapid review document prepared by Research Team: one SR[58] that referenced one non-randomized comparative study[59] on CORE back tool. Add as "Do Not Know" recommendation.	Physical medicine and rehabilitation Family physician-chronic pain management Pain management and psychology Physiotherapy HTA research	*16 March 2015.* Accepted by GUC as "Do Not Know". **SR (IHE Database)**
	15 October 2014. Subcommittee co-chair. Check with authors of CORE tool if any missing resource evidence.	18 December 2014. Phone call with author. CORE tool is going to a new version.	Spine biomechanics, chiropractor Spine rehabilitation (Pers. Comm. Dr Hamilton Hall)	

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Opioids **(Do – TOP CPG 2011)** G6 (Canada) IHE Database	14 October 2014. Email correspondence among Subcommittee members. Review four SRs and two RCTs from G11.	23 December 2014 to 16 January 2015. Email correspondence among Subgroup members. Reviewed four SRs[35,60-63] and two RCTs[64,65] from G11. 20 January 2015. Subcommittee meeting. Revised wording on careful consideration and added statement from American Academy of Neurology[66]; changed from "Do" to "Do Not Know".	Pharmacology/ Analgesia Subcommittee and Subgroup (see details in *Table K.5*)	23 January 2015. GUC. Refined wording. *6 March 2015.* Accepted by GUC as "Do Not Know". **SR (G6, G11, IHE Database) + EO (GUC)**
Duloxetine **(Do not know – TOP CPG 2011)** EO (GUC)	19 June 2014. Subcommittee meeting. Discordant statement in G11; conduct supplementary search for SRs on duloxetine.§	29 September 2014. Subcommittee meeting. Reviewed two SRs[67-69] from IHE Database. Keep Alberta CPG recommendation as "Do Not Know" due to inconclusive evidence and inconsistencies in reporting of results.	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	23 January 2015. GUC meeting. Refined wording. *6 February 2015.* Accepted by GUC as "Do". **SR (IHE Database)**
Gravity tables (inversion/inverted traction, self-traction, gravitational traction) **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on gravity tables.§	One SR[70] found on chronic LBP that included only one study (RCT) on gravity tables. 10 to 18 August 2015. Email correspondence among Subgroup members to decide whether the recommendation is a "Do Not Know" or "Do Not Do".	Pain management and psychology Physiotherapy Musculoskeletal physiotherapy Family physician-musculoskeletal chronic pain management Spine biomechanics, chiropractic HTA research	*16 March 2015.* Discussed harms aspects. Accepted by GUC as "Do Not Know". **SR (IHE Database)**
		10 October 2014. Proposed "Do Not Know" wording.	Pain management and psychology HTA research	
		12 November 2014. Subcommittee meeting. Accepted recommendation wording with modifications.	Rehabilitation Subcommittee (see details in *Table K.5*)	

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Low-level laser therapy/ Electrotherapy **(Do not know – TOP CPG 2011)** SR (IHE Database)	7 March 2014. GUC face-to-face meeting. Review new discordant ("Do") recommendation in G11. Supplementary search for SRs on low-level laser therapy.§	12 June 2014. Subcommittee meeting. G11 based their "Do" recommendation on a SR[71] used to develop the "Do Not Know" recommendation in Alberta CPG.	Rehabilitation Subcommittee (see details in *Table K.5*)	*23 January 2015.* Accepted by GUC as "Do Not Know". **SR (IHE Database)**
		10 - 21 August 2014. Email correspondence among Subgroup members. Reviewed one new SR.[42] New evidence did not suggest that the current recommendation be changed. Discuss with Subcommittee.	Physiotherapy Spine biomechanics, chiropractic Musculoskeletal physiotherapy Pain management and psychology HTA research	
		12 November 2014. Subcommittee meeting. Keep TOP recommendation as is. 16 January 2015. Reworded for consistency.	Rehabilitation Subcommittee (see details in *Table K.5*)	
Mindfulness-based meditation **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on mindfulness-based meditation.§	11 August 2014. Reviewed summary of one SR.[72] There is some evidence of benefit, but it's not consistent; the number of patients from the three studies included in the SR is small; the patients are older and have chronic rather than acute or subacute LBP.	Pain management and psychology HTA research	*16 March 2015.* Accepted by GUC as "Do Not Know". **SR (IHE Database)**
		27 August 2014. Subcommittee meeting. Accepted as "Do Not Know" for chronic LBP.	Rehabilitation Subcommittee (see details in *Table K.5*)	
		10 October 2014. Refined wording. 16 January 2015. Reworded for consistency.	Pain management and psychology HTA research	
Shock wave treatment **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on shock wave treatment.§	11 August 2014. Reviewed one SR[73] that included only one RCT and concluded that the evidence did not support the use of shock wave for chronic LBP.	Pain management and psychology HTA research	*16 March 2015.* Accepted by GUC as "Do Not Know". **SR (IHE Database)**
		27 August 2014. Subcommittee meeting. Accepted as "Do Not Know" for chronic LBP. 16 January 2015. Reworded for consistency.	Rehabilitation Subcommittee (see details in *Table K.5*)	

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Trigger point injections for muscular reaction **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on trigger point injections for muscular reaction.§	10 August to 27 November 2015. Email correspondence among Subgroup members. Reviewed two SRs[22,74] that focused on subacute and chronic LBP. Trigger point injections have a role for selected patients (with an identifiable trigger point and other diagnosis of a specific myofascial pain syndrome) who are engaged in an appropriate rehabilitation program.	Family physician-musculoskeletal chronic pain management Physical medicine and rehabilitation Pain management and psychology Spine biomechanics, chiropractic Family physician-chronic pain management HTA research	*16 March 2015.* Accepted by GUC as "Do Not Know". **SR (IHE Database)**
		10 October 2014. The two SRs are old and do not support using trigger point injections with any injectate (including Botox). Proposed wording.	Pain management and psychology HTA research	
		4 December 2014. Subgroup meeting. Add as "Do Not Know".	Rehabilitation Subgroup (see details in *Table K.5*)	
		16 January 2015. Reword for consistency.	Pain management and psychology HTA research	
Back belts (Dr Ho's Decompression Back Belt) **Corsets** **Non-motorized traction** **Over-the-counter TENS** **New recommendations *(advertised in newspapers)***	7 March 2014. GUC face-to-face meeting. Supplementary searches for SRs on the new interventions.§	March to May 2014. No SR found. 27 August 2014. Subcommittee meeting. Do not add to Alberta CPG.	Rehabilitation Subcommittee (see details in *Table K.5*)	*16 March 2015.* Accepted by GUC as "Do Not Know". **EO (GUC)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Craniosacral massage/therapy **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on craniosacral massage/therapy.§	27 August 2014. Subcommittee meeting. No SR found; add as "Do Not Know" as no evidence from SR to support recommending craniosacral massage/therapy for chronic LBP. 16 January 2015. Reworded for consistency.	Rehabilitation Subcommittee (see details in *Table K.5*)	*16 March 2015.* Accepted by GUC as "Do Not Know". **EO (GUC)**
Medication table (Update evidence – TOP CPG 2011)	7 March 2014. GUC face-to-face meeting. Review/update medication table.	16 January 2015 to 6 March 2016. Email correspondence among Subcommittee and GUC members. Revised information about opioids, duloxetine, venlafaxine, and neuropathic pain medications based on new neuropathic pain guidance[26] and two SRs[67,68].	Pharmacology/ Analgesia Subcommittee Pain specialist (GUC member) HTA research	*16 March 2015.* Revisions accepted by GUC.
	GUC member. Review new RCT on acetaminophen/paracetamol for acute LBP. Decide if TOP recommendation should be changed.	29 September 2014. Subcommittee meeting. Reviewed one RCT[75]. The study did not show that paracetamol improved recovery time in comparison with the placebo. Some of the study limitations (patient population recruited via advertisements, non-severe LBP) might have contributed to the results. The study does not affect the current Alberta CPG recommendations.	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	Not applicable
Drug alerts	7 March 2014. GUC face-to-face meeting. Check US FDA and Health Canada drug alerts for changes in medication availability and safety.	6 June to 19 June 2014. Email correspondence; reviewed search results.	HTA research Project coordinator Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	Not applicable
		29 September 2014. Subcommittee meeting. The information provided on drug alerts does not require adjustments of current recommendations.	Pharmacology/ Analgesia Subcommittee (see details in *Table K.5*)	
Active rehabilitation (Do – TOP CPG 2011) EO (GDG)	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on active rehabilitation.§	11 August 2014. No SR found; discuss with Subcommittee whether recommendation remains in the guideline as expert opinion.	Pain management and psychology HTA research	*16 March 2015.* GUC. Do not add to Alberta CPG; moved to preamble/background.
		27 August 2014. Subcommittee meeting. Keep TOP recommendation as is.	Rehabilitation Subcommittee (see details in *Table K.5*)	

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Operant behavioural therapies **New recommendation**	12 June 2014. Subcommittee meeting. Consider adding a new recommendation on operant behavioural therapies; review 2 SRs referenced in G11 (UK).	11 August 2014. Reviewed summaries of two SRs.[39,42]. Both SRs supported the use of operant therapy, but the intervention is not used in Canada. Neither review directly addressed the global issue of therapist behaviour. 10 October 2014. Proposed wording refinements.	Pain management and psychology HTA research	*16 March 2015*. GUC. Do not add to Alberta CPG. Do not add recommendation on communication – incorporate into background statement instead.
		15 October 2014. Subcommittee meeting. Accepted wording, but considering unavailability in Canada, decided not to add the recommendation, but instead to develop a new statement/recommendation on clinical communication	Rehabilitation Subcommittee (see details in *Table K.5*)	
Stretching therapy **New recommendation**	7 March 2014. GUC face-to-face meeting. Supplementary search for SRs on stretching therapy.§	24 March 2014. No SR found. Stretching therapy was included in studies focused on yoga therapy (separate recommendation). 26 September 2014. Reviewed results from studies on therapeutic exercise for LBP. Some of the studies included stretching therapy among other types of exercises. Do not add to Alberta CPG. There is no information about other types of exercises in the other recommendations.	Rehabilitation Subcommittee (see details in *Table K.5*)	*16 March 2015*. GUC. Do not add to Alberta CPG.
Diagnosis of lumbar disc herniation with radiculopathy **New recommendation**	7 March 2014. GUC face-to-face meeting. Review new recommendation from G10 (USA).	8 May & 5 September 2014. Do not add to Alberta CPG.	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015*. GUC. Do not add to Alberta CPG.
Electromyography **New recommendation**	7 March 2014. GUC face-to-face meeting. Review new recommendation from G10 (USA).	5 September 2014. Subcommittee meeting. Include recommendation on the use of electromyography as an adjunct procedure. Review literature on the effect of electromyography on treatment plans and patient outcomes. 31 October 2014. Subgroup meeting. One SR was found.[10] Do not add to Alberta CPG.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015*. GUC. Do not add to Alberta CPG.

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Laboratory testing **(Do; update evidence – TOP CPG 2011)** **EO (GDG)**	Review any new evidence on laboratory testing.	5 December 2014. Subcommittee meeting. No SR found. Leave TOP recommendation as is. 7 January 2015. Email correspondence among Subgroup members. Leave TOP recommendation as is.	Diagnostic Imaging and Intervention Subcommittee and Subgroup (see details in *Table K.5*)	*6 February 2015.* GUC. Remove recommendation from guideline.

CS: case series; CPG: clinical practice guideline; CBT: cognitive behavioural therapy; CORE: Clinically Organized Relevant Exam; EO: expert opinion; FDA: Food and Drug Administration; GDG: Guideline Development Group; GUC: Guideline Update Committee (see role and membership in *Appendix A* and *Appendix B*); HTA: health technology assessment; IHE: Institute of Health Economics; LBP: low back pain; NRCS: non-randomized comparative study; RCT: randomized controlled trial; SC: Steering Committee; SNRB: selective nerve root block; SR: systematic review; TOP: Toward Optimized Practice

Parking lot item – Any activity that involved review of individual studies referenced in the seed guideline(s), systematic reviews published between January 2007 and April 2014, or other requests that were required by the GUC before a final decision could be made.

*Interventions were sourced from the *Alberta CPG*, 2nd Edition, new seed guideline(s), stakeholder requests, or systematic reviews (IHE Database). They are listed in the same order in which they are written in the *Alberta CPG*. Original recommendations from the seed guidelines are listed in *Appendix J*. References for the seed guidelines are available in *Appendix H*.

†Detailed information on the searches conducted and on data extraction from studies is available upon request.

‡The number of SRs may vary if there were multiple publications of the same study.

§The systematic search included systematic reviews focused on low back pain that were published between January 2007 and April 2014.

TABLE K.4: Acute, subacute, and chronic low back pain

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Epidural steroids **New recommendation**	Supplementary search for SRs on the maximum frequency for epidural steroid injections (requested by stakeholders).§	5 December 2014. Subcommittee meeting. No SR found. Add a statement regarding frequency to epidural steroid recommendations: "Clinical experience suggests that for patients who have had favorable responses (improved function and pain relief) with an epidural steroid injection may benefit from a follow-up injection after 3 months."	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC to add statement to all epidural steroid injection recommendations. **EO (GUC)**
Strategies for reassuring patients that they don't need imaging **New recommendation**	Supplementary search for SRs on the effectiveness of strategies for reassuring patients who don't need imaging.§	5 December 2014. Subcommittee meeting. No SR found. Possibly add wording to recommendations on imaging in the absence of red flags as follows: "There is some evidence that imaging does not reassure patients".	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC to add statement to all recommendations on imaging in the absence of red flags. **SR (IHE Database)**

Intervention*	Parking Lot Item(s) and Other Miscellaneous Requests by the GUC; SC Actions	Subcommittee/Subgroup Meetings		Final Decision by Subcommittee and GUC; Evidence Source
		Review/Discussion/Deliberation†‡	Expertise of Participants	
Referral for inflammatory disease **New recommendation**	Supplementary search for SRs on referral for inflammatory disease.§	5 December 2014. Subcommittee meeting. No SR found on markers for inflammatory disease to aid in referral. Add as "Do".	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC as "Do"; changed title. **EO (GUC)**
Antibiotic treatment **New recommendation**	Supplementary search for SRs on the efficacy of antibiotic treatment and markers for patients who may benefit from this treatment.§	5 December 2014. Subcommittee meeting. Two SRs were found on markers.[11,76] Add as "Do Not Do".	Diagnostic Imaging and Intervention Subcommittee (see details in *Table K.5*)	*6 February 2015.* Accepted by GUC as "Do Not Do"; changed title. **Antibiotic treatment based on modic changes** **EO (GUC)**

EO: expert opinion; GUC: Guideline Update Committee (see role and membership in *Appendix A* and *Appendix B*); IHE: Institute of Health Economics; SC: Steering Committee; SR: systematic review

Parking lot item – Any activity that involved review of individual studies referenced in the seed guideline(s), systematic reviews published between January 2007 and April 2014, or other requests that were required by the GUC before a final decision could be made.

*Interventions were sourced from the *Alberta CPG*, 2nd Edition, new seed guideline(s), stakeholder requests, or systematic reviews (IHE Database). They are listed in the same order in which they are written in the *Alberta CPG*. Original recommendations from the seed guidelines are listed in *Appendix J*. References for the seed guidelines are available in *Appendix H*.

†Detailed information on the searches conducted and on data extraction from studies is available upon request.

‡The number of SRs may vary if there were multiple publications of the same study.

§The systematic search included systematic reviews focused on low back pain that were published between January 2007 and April 2014.

TABLE K.5: Expertise of subcommittee and subgroup participants by date of meeting

Diagnostic Imaging and Intervention Subcommittee (Group 1)	Rehabilitation Subcommittee (Group 2)	Pharmacology/Analgesia Subcommittee (Group 3)
Expertise of Members • Family physician-chronic pain management (co-chair) • Radiology (co-chair) • Pain management and psychology • Rheumatology • Orthopedic surgery and neurosurgery • Family physician - chronic pain management (n=2) • Anesthesiology and pain medicine (n=2) • Physical therapy • Radiology • HTA research	**Expertise of Members** • Spine biomechanics, chiropractor (co-chair) • Family physician-chronic pain management • Family physician-musculoskeletal chronic pain management • Physiotherapy (n=2) • Musculoskeletal physiotherapy • Physical medicine and rehabilitation • Pain management and psychology (co-chair) • Occupational therapy • HTA research	**Expertise of Members** • Family physician-musculoskeletal chronic pain management • Family physician-chronic pain management • Pharmacist (chair) • HTA research
8 May 2014 Participants • Radiology • Rheumatology • Family physician - chronic pain management (n=3) • Orthopedic surgery and neurosurgery • Physical therapy • Anesthesiology and pain medicine (n=2) • Pain management and psychology • HTA research	**12 June 2014 Participants** • Spine biomechanics, chiropractor • Family physician-chronic pain management • Family physician-musculoskeletal chronic pain management • Physiotherapy (n=2) • Musculoskeletal physiotherapy • Physical medicine and rehabilitation • Pain management and psychology • Occupational therapy • HTA research	**19 June 2014 Participants** • Family physician-musculoskeletal chronic pain management • Family physician-chronic pain management • Pharmacist • HTA research
13 August 2014 Participants (Ad hoc Subgroup) • Family physician - chronic pain management (n=2) • Orthopedic surgery and neurosurgery • HTA research	**27 August 2014 Participants** • Spine biomechanics, chiropractor • Family physician-chronic pain management • Family physician-musculoskeletal chronic pain management • Physiotherapy • Musculoskeletal physiotherapy • Physical medicine and rehabilitation • Pain management and psychology • Occupational therapy • HTA research	**29 September 2014 Participants** • Family physician-musculoskeletal chronic pain management • Family physician-chronic pain management • Pharmacist • HTA research
5 September 2014 Participants • Radiology (n=2) • Family physician - chronic pain management (n=3)	**15 October 2014 Participants** • Spine biomechanics, chiropractor • Family physician-chronic pain management	**20 January 2015 Participants** • Family physician-musculoskeletal chronic pain management

Diagnostic Imaging and Intervention Subcommittee (Group 1)	Rehabilitation Subcommittee (Group 2)	Pharmacology/Analgesia Subcommittee (Group 3)
• Anesthesiology and pain medicine (n=2) • Pain management and psychology • Physical therapy • HTA research	• Physiotherapy (n=2) • Musculoskeletal physiotherapy • Pain management and psychology • Occupational therapy • HTA research	• Family physician-chronic pain management • Pharmacist (over email) • HTA research
31 October 2014 Participants (Ad hoc Subgroup) • Family physician - chronic pain management (n=2) • Orthopedic surgery and neurosurgery • Pain management and psychology • Radiology • Physical therapy • HTA research	**12 November 2014 Participants** • Spine biomechanics, chiropractic • Family physician-chronic pain management • Musculoskeletal physiotherapy • Pain management and psychology • Occupational therapy • HTA research	
5 December 2014 Participants • Pain management and psychology • Orthopedic surgery and neurosurgery • Family physician - chronic pain management (n=2) • Anesthesiology and pain medicine • Physical therapy • Radiology • HTA research	**4 December 2014 Participants (Ad hoc Subgroup)** • Spine biomechanics, chiropractic • Family physician-musculoskeletal chronic pain management • Physical medicine and rehabilitation • Pain management and psychology • Family physician-chronic pain management • HTA research	
29 January 2015 Participants (Ad hoc Subgroup) • Family physician - chronic pain management (n=2) • Orthopedic surgery and neurosurgery • Pain management and psychology • Radiology (n=2) • Physical therapy • HTA research		
3 March 2015 Participants • Pain management and psychology • Family physician - chronic pain management (n=2) • Radiology (n=2) • Anesthesiology and pain medicine • Physical therapy • HTA research (n=2)		

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APPENDIX L: List of New and Revised Recommendations

Original Recommendation	Nature of Revision	Final Category
Prevention of occurrence and recurrence of low back pain		
Patient education	Updated evidence source[†]	✓
Exercise for prevention of recurrence	Updated evidence source; changed title and added more information	✓
Shoe insoles/orthoses	Reviewed evidence source[‡]	✗
Spinal manipulative therapy or spinal mobilization	Split into two recommendations: Manual therapy - spinal manipulative therapy Manual therapy - spinal mobilization	 ? ?
Any specific type of chair	Reviewed evidence source	?
Any specific type of mattress	Reviewed evidence source	?
Acute and subacute low back pain		
Diagnostic triage	Updated evidence source	✓
Evaluate for fracture	New recommendation	✓
Imaging to rule out underlying pathology in the absence of radiculopathy	New recommendation	✓/✗[§]
Referral for MRI and possible surgical opinion for radiculopathy	Changed title of recommendation to: "Imaging to rule out underlying pathology in the presence of radiculopathy"; added more information; updated evidence source	✓
Referral to a spinal care specialist	Updated evidence source	✓
Referral for inflammatory disease	New recommendation	✓
Laboratory testing	Updated evidence source	✓
Psychosocial risk factors	Updated evidence source	✓
Reassessment of patients whose symptoms fail to resolve	Updated evidence source	✓
Information and reassurance	Updated evidence source	✓
Advice to stay active	Updated evidence source	✓
Therapeutic exercise	Changed from "Do Not Know" to "Do"	✓
Return to work	Updated evidence source	✓
Heat or cold packs	Reviewed/updated evidence source	✓
Analgesia	Reviewed/updated evidence source	✓
BRIEF course of narcotic analgesics (opioids)	Changed from "Do Not Know" to "Do"; updated evidence source	✓
Manual therapy – spinal manipulation	Updated evidence source	✓
Multidisciplinary treatment programs for occupationally-related subacute low back pain	Reviewed evidence source	✓
Bed rest	Updated evidence source	✗
Diagnostic imaging	Updated evidence source	✗
Antibiotic treatment based on MRI modic changes	New recommendation	✗
Traction	Updated evidence source	✗

Original Recommendation	Nature of Revision	Final Category
Epidural steroid injections in the presence of radiculopathy	Revised recommendation	?
Adjuvant therapies: antidepressants and anticonvulsants	Reviewed evidence source Split into two recommendations: Antidepressants and anticonvulsants as adjuvant therapies: analgesic antidepressants Antidepressants and anticonvulsants as adjuvant therapies: anticonvulsants	 ? ?
Marijuana (dried cannabis)	New recommendation	?
Acupuncture	Reviewed evidence source	?
Clinical prediction rule for spinal manipulative therapy	New recommendation	?
Craniosacral massage/therapy	New recommendation	?
Manual therapy – Spinal mobilization	New recommendation	?
Shock wave treatment	New recommendation	?
Tapentadol (Nucynta®)	New recommendation	?
Chronic low back pain		
Physical exercise Therapeutic exercise	Reviewed evidence source and merged into a single recommendation: Exercise and therapeutic exercise	✓
Education	New recommendation	✓
Acupuncture	Reviewed evidence source	✓
Acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs)	Reviewed evidence source	✓
Analgesic antidepressants (amitriptyline and nortriptyline)	Revised recommendation	✓
Respondent behavioural therapies (progressive relaxation or EMG biofeedback)	New recommendation	✓
Multidisciplinary treatment program	Revised recommendation; reviewed evidence source	✓
Injection therapy	Removed and replaced with the following new recommendations: Diagnostic selective nerve root blocks (SNRBs) in primary care Diagnostic lumbar facet joint nerve blocks Diagnostic sacroiliac joint blocks Therapeutic lumbar facet joint interventions Therapeutic sacroiliac joint interventions	 ✗ ? ? ? ?
Referral for surgical opinion	Reviewed evidence source	✓
Referral for inflammatory disease	New recommendation	✓
Antibiotic treatment based on MRI modic changes	New recommendation	✗
Lumbar discography in primary care	Changed from “Do Not Know” to “Do Not Do”	✗
Electrodiagnostic studies in primary care	New recommendation	✗
Diagnostic selective nerve root blocks (SNRBs) in primary care	New recommendation	✗

Original Recommendation	Nature of Revision	Final Category
Diagnostic lumbar facet joint nerve blocks (includes medial branch blocks and intra-articular facet joint blocks)	New recommendation	?
Diagnostic sacroiliac joint blocks	New recommendation	?
Spinal manipulative treatment or spinal mobilization	Split into two recommendations: Manual therapy - spinal manipulative treatment Manual therapy - spinal mobilization	 ? ?
Epidural steroid injections	Changed from "Do" to "Do Not Know"	?
Therapeutic lumbar facet joint interventions	New recommendation	?
Therapeutic sacroiliac joint interventions	New recommendation	?
STarT back screening tool	New recommendation	?
Clinically Organized Relevant Exam (CORE) back screening tool	New recommendation	?
Opioids	Changed from "Do" to "Do Not Know"	?
Marijuana (dried cannabis)	New recommendation	?
Duloxetine	Reviewed evidence source	?
Gravity tables (inversion/inverted traction, self-traction, gravitational traction)	New recommendation	?
Low-level laser therapy	Reviewed evidence source	?
Mindfulness-based meditation	New recommendation	?
Shock wave treatment	New recommendation	?
Trigger point injections	New recommendation	?
Back belts, corsets, non-motorized traction, or over-the-counter TENS	New recommendations	?
Craniosacral massage/therapy	New recommendation	?
Tapentadol (Nucynta®)	New recommendation	?
Laboratory testing	Removed from guideline	NA
Active rehabilitation	Removed from guideline and placed in a background statement	NA

EMG: electromyography; MRI: magnetic resonance imaging; NA: not applicable; TENS: transcutaneous electrical nerve stimulation

✓"Do" category - indicates that the action should be undertaken; × "Do Not Do" category - indicates that the action should not be undertaken; **?**"Do Not Know" category - indicates that there was either insufficient evidence or a lack of conclusive evidence to make a definitive decision regarding the action

†Updated evidence source: recommendation supported by a new seed guideline or by an update of a previously cited seed guideline

‡Reviewed evidence source: the IHE Database was searched to identify recently published systematic reviews

§"Do" for clarifying anatomy and directing treatment decisions and "Do Not Do" when results are not going to affect treatment decisions.

APPENDIX M: Sample of the Additional Information Provided to the Guideline Update Committee, Subcommittees, and Subgroups

AMBASSADOR PROGRAM – LBP 3RD EDITION

NEW INTERVENTIONS

DIAGNOSTIC FACET JOINT BLOCKS

Additional information on diagnostic facet joint blocks for chronic low back pain (≥12 weeks' duration)

Steering Committee decision 25 April 2014: Lumbar facet joint blocks and medial branch blocks were suggested as new interventions by stakeholders. However, the recommendation from the new seed guideline, G9, appears to relate only to medial branch blocks. Therefore, additional systematic review evidence was sought on lumbar facet joint blocks.

New statement/recommendation

Diagnostic lumbar facet joint nerve blocks (chronic LBP)

G9 (USA) (p. S122)

The evidence for diagnostic lumbar facet joint nerve blocks is good with 75% to 100% pain relief as the criterion standard with controlled local anesthetic or placebo blocks.

Diagnostic lumbar facet joint nerve blocks are recommended in patients with suspected facet joint pain.

(Based on evidence from 3 case series studies and 18 diagnostic test studies.)

Section A

Information abstracted from the systematic reviews retrieved from a literature search conducted by the IHE librarians (Table M.1).

SECTION A

Systematic Reviews on Diagnostic Facet Joint Blocks Retrieved by the IHE Literature Search

Inclusion criteria

- *Intervention*: diagnostic facet joint blocks.
- *Condition*: non-malignant, non-specific chronic low back pain. Duration of pain defined as:
  - acute and subacute pain: pain <12 weeks;
  - chronic pain: pain ≥12 weeks (The International Association for the Study of Pain [IASP] definition).
- *Target population*: patients who were 18 years of age or older. Reviews that refer to adult patients without providing a specific age range were also included.
- *Type of study*: systematic reviews. An article was deemed to be a systematic review if it met all of the following criteria as defined by Cook et al. (1997):[1]
  - focused clinical question;
  - explicit search strategy;
  - use of explicit, reproducible, and uniformly applied criteria for article selection;
  - critical appraisal of the included studies using a quality tool or checklist;
  - qualitative or quantitative data synthesis.
- *Publication limits*: reviews with a search end date from January 2007 onwards (generally the median shelf life of a systematic review is 7 years).[2]
- *Language limits*: English.

Exclusion criteria

- Systematic reviews focused on inpatient treatments such as surgical therapies.
- Systematic reviews focused on diagnosis or treatment of specific causes for low back pain such as referred pain (from abdomen, kidney, ovary, pelvis, bladder) inflammatory conditions (rheumatoid arthritis, ankylosing spondylitis), infections (neuralgia post-herpetic, discitis, osteomyelitis, epidural abscess), degenerative and structural changes (spondylosis, spondylolisthesis, gross scoliosis and/or kyphosis), fracture, neoplasm, metabolic bone disease (osteoporosis, osteomalacia, Paget's disease).
- Quasi-systematic reviews and narrative reviews. A review was considered to be quasi-systematic if it used a systematic search strategy to identify literature, but did not use a quality tool or checklist to critically appraise the included studies. Narrative reviews were evidence syntheses that reported neither a systematic search strategy nor a method of appraising the quality of the included studies.

Literature selection process

Articles were excluded that, on the basis of their abstract, clearly did not meet the inclusion criteria. Copies of the full text of potentially eligible studies were retrieved. In some cases, when the full text of the article was retrieved, closer examination revealed that it did not meet the inclusion criteria specified by the protocol. Consequently these papers were excluded (Appendix A.1).

When two or more systematic reviews had identical comparators and patient populations, only the most recently published review was included, unless it was less comprehensive and of poorer quality than the earlier review.

For reference, when there were no systematic reviews available on the topic of interest, a summary of the conclusions from excluded quasi-systematic reviews was provided, when available.

Literature search strategy

The abstracts of English language articles of possible systematic reviews focused on low back pain published from January 2007 to April 2014 were reviewed. The search strategy is outlined in Appendix A.2 for your information.

References

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2. Shojania KG, Sampson M, Ansari MT, Ji J, Doucette S, Moher D. How quickly do systematic reviews go out of date? A survival analysis. *Annals of Internal Medicine* 2007;147(4):224-33.

Table M.1: Summary of data from systematic reviews on diagnostic facet joint blocks in patients with chronic low back pain

Review	Study Population	Comparison/Outcome/ Intervention Details	Relevant Results/Authors' Conclusions*
Falco et al. (2012)[1] USA **Objective:** To determine the diagnostic accuracy of lumbar facet joint nerve blocks in the assessment of chronic low back pain (LBP) **Studies reviewed:** Diagnostic accuracy (n=22); factors influencing diagnostic accuracy (n=23) **Financial support:** Five of the 14 authors listed competing interests involving medical device and pharmaceutical companies **Methodological quality:** Good (score 5/6)*	**Included patients:** Not stated Condition: Chronic LBP ≥3 months' duration Age: At least 18 years Race: Not stated **Inclusion criteria:** Diagnostic accuracy studies on lumbar facet joint pain in patients with chronic LBP who were at least 18 years old and had failed previous pharmacotherapy, exercise therapy, etc., prior to starting diagnostic interventional pain management techniques **Exclusion criteria:** Reports without appropriate diagnosis, non-systematic reviews, book chapters, and case reports; Interventional techniques performed blindly or using other identification modalities	**Index test:** Lumbar facet joint nerve blocks appropriately performed with proper technique under fluoroscopic or computed tomography guidance N.B. Studies on medial branch blocks were included in the review **Comparator:** Not applicable **Reference Standard:** Not reported **Outcomes Measured:** *Primary*: Pain relief, prevalence of lumbar facet joint pain, false positive rate *Secondary*: Ability to perform previously painful movements without significant pain or complications **Provider:** Not stated **Setting:** Not stated	**Diagnostic accuracy:** All 22 diagnostic accuracy studies were considered to be of high quality. Single blocks: *50% to 74% relief criterion (n=1 study)*: Prevalence = 48%; false-positive range =17% to 66% *75% to 100% relief criterion (n=4 studies)*: Prevalence range = 31% to 61%, false-positive range = 27% to 49% Dual blocks: *50% to 74% relief criterion (5 studies)*: Prevalence range = 15% to 61%; false-positive range = 17% to 66% *75% to 100% relief criterion (13 studies)*: Prevalence range = 25% to 45%; false-positive range = 25% to 49% in heterogeneous populations **Safety:** • Complications from facet joint nerve blocks in the lumbar spine are exceedingly rare. • Most problems such as local swelling, pain at the site of the needle insertion, and pain in the low back are short-lived and self-limited. • More serious complications may include dural puncture, spinal cord trauma, subdural injection, neural trauma, injection into the intervertebral foramen, and hematoma formation; infectious complications including epidural abscess and bacterial meningitis; and side effects related to the administration of steroids, local anesthetics, and other drugs. • Other minor complications include light-headedness, flushing, sweating, nausea, hypotension, syncope, pain at the injection site, and non-postural headaches. **Authors' conclusions:** There is good evidence for diagnostic facet joint nerve blocks with 75% to 100% pain relief as the criterion standard with dual blocks, whereas there is fair evidence with 50% to 74% criterion standard with controlled diagnostic blocks. However, the evidence is poor with single diagnostic blocks of 50% to 74% and limited for 75% to 100% pain relief as the criterion standard. Analysis of confounding factors on prevalence and false-positive rates showed the following: • Limited evidence that the prevalence of facet joint pain is higher in women, the elderly, and obese patients. • The prevalence of facet joint pain is lower in patients with post-laminectomy syndrome and fusion than in non-surgical patients. • No detectable difference in prevalence between patients who smoke and those who don't. • There was no significant correlation with psychopathology and prevalence of facet joint pain or false-positive rate.

[1]Falco FJ, Manchikanti L, Datta S, Sehgal N, Geffert S, Onyewu O, et al. An update of the systematic assessment of the diagnostic accuracy of lumbar facet joint nerve blocks. *Pain Physician* 2012;15:E869-907.

*The quality of systematic review was assessed according to how well its methods excluded bias and confounding by examining: the search strategy used; how the data extraction, quality assessment of the included studies, and data analysis/synthesis were conducted; and whether the conclusions of the review matched the results. Thus, the quality of the review was rated numerically with respect to the six quality subsections as follows: Good – six criteria met, or five criteria met and one criterion 'unclear'; Average – one criterion not met, or one criterion not met and one criterion 'unclear', or two criteria 'unclear'; Poor – at least two criteria not met

APPENDIX A.1

Table M.1.1: Summary of excluded reviews on facet joint blocks for chronic low back pain (listed in alphabetical order of first author)

Study	Study Type	Reason for Exclusion
Canadian Agency for Drugs and Technologies in Health (CADTH). *Facet joint injection as diagnostic and therapeutic tools for pain of the cervical and lumbar spine: A review of clinical and cost-effectiveness*. Ottawa: CADTH; 2011.	Quasi-systematic review	Not a systematic review - no critical appraisal of the included studies Pain duration not stated Single relevant study was Datta (2009)
Cohen SP. The ability of diagnostic spinal injections to predict surgical outcomes. *Anesthesia and Analgesia* 2007;105:1756-75.	Quasi-systematic review	Not a systematic review - no critical appraisal of the included studies Pain duration not stated
Datta SL. Systematic assessment of diagnostic accuracy and therapeutic utility of lumbar facet joint interventions. *Pain Physician* 2009;12:437-60.	Systematic review	Superseded by Falco et al. (2012)
Rubinstein SM, van Tulder M. A best-evidence review of diagnostic procedures for neck and low-back pain. *Best Practice & Research Clinical Rheumatology* 2008;22(3):471-82.	Quasi-systematic review	Not a systematic review Pain duration not defined
van Kleef M, Vanelderen P, Cohen SP, Lataster A, Van ZJ, Mekhail N. 12. Pain originating from the lumbar facet joints. *Pain Practice* 2010;10:459-69.	Quasi-systematic review	Not a systematic review - no critical appraisal of the included studies Pain duration not stated
Willems P. Decision making in surgical treatment of chronic low back pain: the performance of prognostic tests to select patients for lumbar spinal fusion. *Acta Orthopaedica Supplementum* 2013;84(Suppl349):1-35. Willems P C, Staal J B, Walenkamp G H, de Bie R A. Spinal fusion for chronic low back pain: systematic review on the accuracy of tests for patient selection. *Spine Journal* 2013;13:99-109.	Systematic review	No information on facet joint blocks

APPENDIX A.2

The original literature search was conducted by the IHE Research Librarian between May 3, 2004 and May 21, 2004 and the latest update search was conducted on January 13, 2014 (for literature databases) and April 17, 2014 (for health technology assessment agency websites and rehabilitation databases) (Table M.2.1). Publication types were limited to systematic reviews or health technology assessments.

Medical Subject Headings (MeSH) terms relevant to this topic are: low back pain, back pain, pain, Sacrococcygeal Region, sciatica.

Table M.2.1: Databases and search terms used in the search strategy

Database	Search Date/ Edition	Search Terms†
Cochrane Database of Systematic Reviews Issue 1 of 12, January 2014 *CRD Databases*: DARE Issue 4 of 4, October 2013 HTA Issue 4 of 4, October 2013 NHS Economic Evaluation Database Issue 4 of 4, October 2013	13 January 2014	(sacral region OR lumbago AND pain) OR (low back pain OR lower back pain* OR LBP OR sciatica)
PubMed http://www.pubmed.gov	13 January 2014	low back pain OR lower back pain* OR lumbago OR LBP OR sciatica OR (sacral region OR lumbar AND pain) Filters: Systematic Reviews
Google http://www.google.ca	13 January 2014	"low back pain" clinical-pathways OR clinical-decision OR clinical-guideline clinical-pathways OR clinical-decision OR clinical-guideline "low back pain"
CINAHL EBSCO Licensed Resource	13 January 2014	S1 (sacral region OR lumbago) AND pain S2 low back pain OR lower back pain* OR LBP OR sciatica S3 S1 OR S2 S4 (MH "Systematic Review") OR ((TI (systematic* n3 review*)) OR (AB (systematic* n3 review*)) OR (TI (systematic* n3 bibliographic*)) OR (AB (systematic* n3 bibliographic*)) OR (TI (systematic* n3 literature)) OR (AB (systematic* n3 literature)) OR (TI (systematic* n3 review*)) OR (AB (systematic* n3 review*)) OR (TI (comprehensive* n3 literature)) OR (AB (comprehensive* n3 literature)) OR (TI (comprehensive* n3 bibliographic*)) OR (AB (comprehensive* n3 bibliographic*)) OR (JN "Cochrane Database of Systematic Reviews") OR (TI (information n2 synthesis)) OR (TI (data n2 synthesis)) OR (AB (information n2 synthesis)) OR (AB (data n2 synthesis)) OR (TI (data n2 extract*)) OR (AB (data n2 extract*)) OR (TI (medline OR pubmed OR psyclit OR cinahl OR (psycinfo NOT "psycinfo database") OR "web of science" OR scopus OR embase)) OR (AB (medline OR pubmed OR psyclit OR cinahl OR (psycinfo NOT "psycinfo database") OR "web of science" OR scopus OR embase)) OR (MH "Systematic Review") OR (MH "Meta Analysis") OR (TI (meta-analy* OR metaanaly*)) OR (AB

		(meta-analy* OR metaanaly*))) S5 S3 AND S4 S6 S3 AND S4
EMBASE Ovid Licensed Resource	13 January 2014	1. meta-analysis.pt. 2. (meta-anal$ OR metaanal$).mp. 3. (((quantitativ$ adj3 review$1) OR quantitativ$) adj3 overview$).mp. 4. (((systematic adj3 review$1) OR systematic) adj3 overview$1).mp. 5. (((methodologic adj3 review$1) OR methodologic) adj3 overview$).mp. 6. (integrat$ adj5 research).mp. 7. (quantitativ$ adj3 synthes$).mp. 8. OR/1-7 9. review.pt. OR (review$ OR overview$).mp. 10. (medline OR medlars OR pubmed OR index medicus OR embase OR cochrane).mp. 11. (scisearch OR web of science OR psycinfo OR psychinfo OR cinahl OR cinhal).mp. 12. (excerpta medica OR psychlit OR psyclit OR current contents OR science citation index OR sciences citation index).mp. 13. (hand search$ OR manual search$).mp. 14. ((((electronic adj3 database$) OR bibliographic) adj3 database$) OR periodical index$).mp. 15. (pooling OR pooled OR mantel haenszel).mp. 16. (peto OR der simonian OR dersimonian OR fixed effect$).mp. 17. ((combine$ OR combining) adj5 (data OR trial OR trials OR studies OR study OR result OR results)).mp. 18. OR/10-17 19. 9 AND 18 20. 8 OR 19 21. (hta$ OR health technology assessment$ OR biomedical technology assessment$).mp. 22. technology assessment, biomedical/ OR biomedical technology assessment/ 23. 21 OR 22 24. 20 OR 23 25. (((sacral region OR sacrococcygeal region OR lumbago) AND pain) OR low$ back pain$ OR LBP OR sciatica).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] 26. 24 AND 25 27. 201$.dp,em,yr. 28. 26 AND 27 29. remove duplicates from 28
Web of Science	13 January 2014	TOPIC: (((sacral region OR lumbago) AND pain) OR (low back pain OR lower back pain OR LBP OR sciatica)) AND TOPIC: ((meta-analysis OR meta-anal* OR metaanal* OR quantitativ* review* OR quantitative* overview* OR systematic* review* OR systematic* overview* OR methodologic* review* OR methodologic* overview*) OR (review* AND (medline OR pubmed OR embase OR cinahl)))

		Refined by: DOCUMENT TYPES=(REVIEW OR ARTICLE) AND [excluding] DOCUMENT TYPES=(PROCEEDINGS PAPER)
PsycINFO Ovid Licensed Resource	13 January 2014 (January Week 1, 2014)	1. (meta-anal$ OR metaanal$).mp. 2. (((quantitativ$ adj3 review$1) OR quantitativ$) adj3 overview$).mp. 3. (((systematic adj3 review$1) OR systematic) adj3 overview$1).mp. 4. (((methodologic adj3 review$1) OR methodologic) adj3 overview$).mp. 5. (integrat$ adj5 research).mp. 6. (quantitativ$ adj3 synthes$).mp. 7. OR/1-6 8. review.pt. OR (review$ OR overview$).mp. 9. (medline OR medlars OR pubmed OR index medicus OR embase OR cochrane).mp. 10. (scisearch OR web of science OR psycinfo OR psychinfo OR cinahl OR cinhal).mp. 11. (excerpta medica OR psychlit OR psyclit OR current contents OR science citation index OR sciences citation index).mp. 12. (hand search$ OR manual search$).mp. 13. ((((electronic adj3 database$) OR bibliographic) adj3 database$) OR periodical index$).mp. 14. (pooling OR pooled OR mantel haenszel).mp. 15. (peto OR der simonian OR dersimonian OR fixed effect$).mp. 16. ((combine$ OR combining) adj5 (data OR trial OR trials OR studies OR study OR result OR results)).mp. 17. OR/9-16 18. 8 AND 17 19. 7 OR 18 20. (hta$ OR health technology assessment$ OR biomedical technology assessment$).mp. 21. 19 OR 20 22. (((sacral region OR sacrococcygeal region OR lumbago) AND pain) OR low$ back pain$ OR LBP OR sciatica).mp. 23. 21 AND 22 24. limit 22 to "0830 systematic review" 25. 201$.dp,yr. 26. (23 OR 24) AND 25 27. remove duplicates from 26
CADTH http://www.cadth.ca	17 April 2014	"low back pain" OR sciatica OR "lower back pain" OR lumbago ((lumbar OR sacral OR "lower back" OR "low back") AND pain)
ICES http://www.ices.on.ca/	17 April 2014	Browsed titles
INESSS http://www.inesss.qc.ca/	17 April 2014	Browsed titles
Rehabilitation Databases		
Rehab Data http://www.naric.com/?q=en/Knowledgebase	17 April 2014	**With all the words**: low back pain, lower back pain **With the exact phrase:** review meta-analysis search MEDLINE

CIRRIE Database of International Rehabilitation Research http://cirrie.buffalo.edu/search/index.php	17 April 2014	Back pain in title and subject AND review in title
PEDro: The Physiotherapy Evidence Database http://www.pedro.org.au/	17 April 2014	Problem: pain Body Part: lumbar spine, sacro-iliac joint or pelvis Method: systematic review
OTSeeker http://www.otseeker.com/	17 April 2014	**Keywords**: (low OR lower) AND back pain **Method**: Systematic Reviews
SPORT Discus EBSCO Licensed Resource	17 April 2014	(Low* back pain OR backache) AND (review OR MEDLINE OR search OR meta analysis)

Notes:

†*Limits*: Publication type: systematic reviews and health technology assessments**.** These limits were applied in databases where such functions are available.

Truncation: The * and $ symbol are truncation character that retrieves possible suffix variations of the root word e.g. surg* retrieves surgery, surgical, surgeon, etc. In databases accessed via the OVID platform the truncation character is $.

Semicolons are used to indicate terms that were searched separately.

OVID Methodology Search Filter for Systematic Reviews Only (Used for EMBASE and PsycINFO):

1 meta-analysis.pt.
2 (meta-anal$ OR metaanal$).mp.
3 (((quantitativ$ adj3 review$1) OR quantitativ$) adj3 overview$).mp.
4 (((systematic adj3 review$1) OR systematic) adj3 overview$1).mp.
5 (((methodologic adj3 review$1) OR methodologic) adj3 overview$).mp.
6 (integrat$ adj5 research).mp.
7 (quantitativ$ adj3 synthes$).mp.
8 OR/1-7
9 review.pt. OR (review$ OR overview$).mp.
10 (medline OR medlars OR pubmed OR index medicus OR embase OR cochrane).mp.
11 (scisearch OR web of science OR psycinfo OR psychinfo OR cinahl OR cinhal).mp.
12 (excerpta medica OR psychlit OR psyclit OR current contents OR science citation index OR sciences citation index).mp.
13 (hand search$ OR manual search$).mp.
14 ((((electronic adj3 database$) OR bibliographic) adj3 database$) OR periodical index$).mp.
15 (pooling OR pooled OR mantel haenszel).mp.
16 (peto OR der simonian OR dersimonian OR fixed effect$).mp.
17 ((combine$ OR combining) adj5 (data OR trial OR trials OR studies OR study OR result OR results)).mp.
18 OR/10-17
19 9 AND 18
20 8 OR 19
21 (hta$ OR health technology assessment$ OR biomedical technology assessment$).mp.
22 technology assessment, biomedical/ OR biomedical technology asssessment/
23 21 OR 22
24 20 OR 23

APPENDIX N: Sample of Documents Used to Track Committee Deliberations

TABLE N.1: Sample of working document for the Guideline Update Committee and Subcommittees

Item	Alberta CPG Recommendations/Evidence Source	Discussion/Decision (no change, revision of recommendation, subcommittee parking lot)	Recommendation: Status Quo or Changes/ Evidence Source
Chronic low back pain - treatment			
Acupuncture *Supplementary information about "short term relief"*	**Alberta CPG** 2nd Edition (p.16) (Based on G6) ✓ **Acupuncture is recommended as a stand-alone therapy or as an adjunct to an overall active treatment program.** ***No serious adverse events were reported in the trials. The incidence of minor adverse events was 5% in the acupuncture group.*** **G11 (UK)** (p.29) Acupuncture should be considered for short term relief of pain in patients with chronic low back pain.	**June 12/14: Item deferred to next meeting** **Aug 27/14 Rehabilitation Subcommittee meeting:** Keep Alberta CPG recommendation, but add a reference to short term relief i.e. "…as a stand-alone therapy for short-term relief…" Also add last sentence from Acupuncture – Evidence in Brief document, April 2009: "Extended trials…not warranted." ***Parking lot item***: Review acupuncture as a stand-alone therapy; review one SR referenced in G11; add a comment on functional improvement. "Addition of acupuncture to other therapies is more effective for pain relief and functional improvement than the same therapies without acupuncture." Subgroup nominated. **Nov. 12/14: Rehabilitation Subcommittee meeting**: Keep TOP recommendation, but add a reference to it being short term: "Acupuncture is recommended as a short term stand-alone therapy…" Remove "extended trials…" **Jan 16/15**: Remove stand-alone (feedback survey Subcommittee members) **Mar 16/15 GUC**: Accept revised wording.	**Acupuncture** **✓ (Do recommendation)** Acupuncture is recommended as a short-term ~~stand-alone~~ therapy ~~for short term relief~~ or as an adjunct to an overall active treatment program. ~~Extended trials without benefit are not warranted~~. *No serious adverse events were reported in the trials. The incidence of minor adverse events was 5% in the acupuncture group.* **Evidence source: SR (G6, G11)**
Active rehabilitation (EO GDG)	**Alberta CPG** 2nd Edition (p. 7) (Based on EO (GDG) An active rehabilitation program includes: • Education about back pain principles • Self-management programming (see Self-Management Programs recommendation) • Gradual resumption of normal activities (including work and physical exercise) as tolerated • Therapeutic exercise (see Therapeutic Exercise recommendation)	**Parking lot:** Search IHE Database for SRs. **Aug 11/14** Research evidence (no SRs, 12 reviews excluded) reviewed by Paul. Discuss with Subcommittee if recommendation remains in the guideline as expert opinion. **Aug 27/14 Rehabilitation Subcommittee meeting**: Keep Alberta CPG recommendation as is. **Dec 2014**: Update title of recommendation (bullet 4) (see exercise and therapeutic exercise recommendation) **Mar 16/15 GUC**: question if it should be a recommendation or preamble. Reject as a recommendation, move to preamble/background.	~~***Recommendation: status quo***~~ ~~**Evidence source: EO (GDG)**~~ **Background information** An active rehabilitation program includes: • Education about back pain principles • Self-management programming (see Self-Management Programs recommendation) • Gradual resumption of normal activities (including work and physical exercise) as tolerated • Therapeutic exercise (see Exercise and Therapeutic Exercise recommendation)

EO: expert opinion; G6, G11: seed guidelines (see references in *Appendix H*); GDG: Guideline Development Group; GUC: Guideline Update Committee; IHE: Institute of Health Economics; SR: systematic review; TOP: Toward Optimized Practice

TABLE N.2: Sample of abridged working document summarizing Subcommittee outcomes for the Guideline Update Committee

Item	Alberta CPG Recommendations/Evidence Source	Action	Recommendation/Evidence Source
Chronic low back pain - treatment			
Acupuncture Revised wording *Supplementary information about "short term relief"*	**Alberta CPG** 2nd Edition (p.16) (Based on SR (G6)) ✓ **Acupuncture is recommended as a stand-alone therapy or as an adjunct to an overall active treatment program.** ***No serious adverse events were reported in the trials. The incidence of minor adverse events was 5% in the acupuncture group.*** **Evidence source**: G (1) **G11 (UK)** (p.29) Acupuncture should be considered for short term relief of pain in patients with chronic low back pain. **Evidence source**: SR (1)	• Reviewed study from G11 (SR (1)); added "short term". • Removed "stand-alone". • Mar 16/15: Accept revised wording.	**Acupuncture** **✓ (Do recommendation)** Acupuncture is recommended as a short term therapy or as an adjunct to an overall active treatment program. *No serious adverse events were reported in the trials. The incidence of minor adverse events was 5% in the acupuncture group.* **Evidence source:** SR (G6, G11)
Active rehabilitation Update EO(GDG)/ remove and add as background	**Alberta CPG** 2nd Edition (p. 7) (Based on EO (GDG)) An active rehabilitation program includes: • Education about back pain principles • Self-management programming (see Self-Management Programs recommendation) • Gradual resumption of normal activities (including work and physical exercise) as tolerated • Therapeutic exercise (see Therapeutic Exercise recommendation) **Evidence source**: EO (GDG)	• Looked for SR evidence: none found. • Keep current guidance as is. • Mar 16/15: Question if this should be a recommendation or preamble. Reject as a recommendation, move to preamble/background.	~~**Status quo**~~ An active rehabilitation program includes: • Education about back pain principles • Self-management programming (see Self-Management Programs recommendation) • Gradual resumption of normal activities (including work and physical exercise) as tolerated • Therapeutic exercise (see Exercise and Therapeutic Exercise recommendations)

EO: expert opinion; G: guideline; G6, G11: seed guidelines (see references in *Appendix H*); IHE: Institute of Health Economics; SR: systematic review; TOP: Toward Optimized Practice

APPENDIX O: Glossary

Term	Definition
Acupuncture	An intervention consisting of the insertion of needles at specific acupuncture points.
Acute and subacute low back pain	Pain present for less than three months.
Back schools	An intervention consisting of education and a skills program, including exercise therapy, in which all lessons are given to groups of patients and supervised by a paramedical therapist or medical specialist.
Behavioural treatment	There are three behavioural treatment approaches: operant, cognitive, and respondent. Each of these focuses on the modification of one of the three response systems that characterize emotional experiences: behaviour, cognition, and physiological reactivity.
Brief education in a clinical setting	Brief education in clinical setting is defined as review of the patient's clinical examination results, provision of low back pain information and advice to stay active, and reduction of fear and catastrophizing.
Catastrophizing	Exaggerating the potential or real consequences of an event and becoming fearful of these consequences.
Chronic low back pain	Pain present for more than three months.
Cognitive behavioural treatment (CBT)	A range of therapies based on psychological models of human cognition, learning and behaviour that are usually taught as a "package" and are intended to provide patients with a variety of skills for managing their pain.
Craniosacral therapy	An alternative treatment approach that involves applying a gentle manual force to address somatic dysfunctions of the head and body, with the aim of releasing restrictions around the spinal cord and brain and restoring body function.
Electrodiagnostic studies	Studies performed in the electromyography (EMG) laboratory, including nerve conduction studies, F-waves, somatosensory evoked potentials, and EMG.
Electromyography (EMG)	The recording of electrical activity generated in skeletal muscle for diagnostic purposes. EMG is performed using an instrument called an electromyograph to produce a record called an electromyogram.
Exercise	Therapeutic exercises are prescribed according to the results of an individual patient assessment. Recommendations are based on the specific impairments identified. Supervised exercise programs and formal home exercise regimens range from programs aimed at general physical fitness or aerobic exercise to programs aimed at muscle strengthening, flexibility, stretching, or different combinations of these elements.
Facet joint injection	Injection of local anesthetic, with or without corticosteroid medication, into one or more of the small joints along the sides of each vertebrae to diagnose or treat low back pain associated with facet joint dysfunction. See also the companion document *Radiological Diagnostic and Therapeutic Interventions Directed to Lumbar Spine Pathology*.
Functional restoration (also called *physical conditioning*, *work hardening*, or *work conditioning*)	An intervention that involves simulated or actual work tests in a supervised environment in order to enhance job performance skills and improve strength, endurance, flexibility, and cardiovascular fitness in injured workers.

Term	Definition
Interdisciplinary rehabilitation (also called *multidisciplinary therapy*)	A biopsychosocial intervention that combines and coordinates physical, vocational, and behavioural components and is provided by multiple health care professionals with different clinical backgrounds. The intensity and content of interdisciplinary therapy varies widely.
Interferential current therapy	The superficial application of a medium-frequency alternating current modulated to produce low frequencies up to 150 Hz. It is thought to increase blood flow to tissues and provide pain relief and is considered more comfortable for patients than transcutaneous electrical nerve stimulation.
Intramuscular stimulation	Uses very thin needles to 'dry needle' affected areas without the injection of any substance. IMS differs from acupuncture in its application because needle insertion is indicated by physical signs as opposed to the predetermined meridians of acupuncture. IMS is based on known scientific, neurophysiological principles.
Low-level laser therapy	The superficial application of lasers at wavelengths between 632 and 904 nm to the skin in order to apply electromagnetic energy to soft tissue. Optimal treatment parameters (wavelength, dosage, dose-intensity, and type of laser) are uncertain.
Lumbar disc herniation with radiculopathy	Localized displacement of disc material beyond the normal margins of the intervertebral disc space resulting in pain, weakness or numbness in a myotomal or dermatomal distribution.
Lumbar discography	Procedure that is used to characterize the pathoanatomy and architecture of the intervertebral disc and to determine if the intervertebral disc is a source of chronic low back pain.
Lumbar supports	External devices designed to reduce spinal mobility.
Manual therapy	Manual therapy (MT) is an umbrella term that has increasingly been adopted to encompass various forms of hands-on treatment, including both manipulation and mobilization (see *Spinal manipulative therapy* and *Spinal mobilization*). Manual therapy as a treatment option in the management of pain is an intervention that is practiced by a variety of healthcare professionals including physiotherapists, osteopaths, and chiropractors. Philosophical differences exist both within and between the various professions regarding the possible mechanisms of action of manual therapy.
Massage	Soft tissue manipulation using the hands or a mechanical device through a variety of specific methods. The pressure and intensity used in different massage techniques vary widely.
Medial branch block	An injection of local anesthetic, with or without corticosteroid medication, in the area of the medial branch of the posterior primary ramus, the primary nerve innervating the intervertebral facet joint, to diagnose or treat back pain. See also the companion document *Radiological Diagnostic and Therapeutic Interventions Directed to Lumbar Spine Pathology*.
Mindfulness	The skill of non-judgmentally observing emotions, sensations, or cognitions (moment-to-moment awareness). It is learned through meditation exercises that have been adapted from Buddhist traditions.
Motorized traction	An intervention involving drawing or pulling in order to stretch the lumbar spine. Various methods are used, usually involving a harness around the lower rib cage and the iliac crest, with the pulling action done by using free weights and a pulley, motorized equipment, inversion techniques, or an overhead harness.
Magnetic resonance imaging (MRI)	An imaging technique used to image internal structures of the body, particularly the soft tissues without use of radiation.

Term	Definition
Multidisciplinary therapy (multidisciplinary treatment programs)	See *Interdisciplinary rehabilitation*.
Nonspecific low back pain	Pain occurring primarily in the back with no signs of a serious underlying condition (such as cancer, infection, or Cauda Equina Syndrome), spinal stenosis or radiculopathy, or another specific spinal cause (such as vertebral compression fracture or ankylosing spondylitis). Degenerative changes on lumbar imaging are usually considered nonspecific, as they correlate poorly with symptoms.
Osteopathic physician	The training of osteopathic physicians incorporates the diagnosis, treatment, prevention and rehabilitation of musculoskeletal conditions. Osteopathic manual therapy, including manipulation, can be an important part of treatment.
Physiotherapy provided operant conditioning	Operant conditioning is defined as a time contingent, graduated increase in activity including goal setting and the education and reinforcement of positive pain behaviours with the ultimate aim of decreasing disability and increasing function.
Prevention of occurrence of low back pain	Reduction of the incidence (first-time onset) of low back pain or the risk of new cases appearing, i.e., primary prevention.
Prevention of recurrence of low back pain	Reduction of the occurrence of a new episode of low back pain after a symptom-free period in patients who have previously experienced low back pain, i.e., secondary prevention.
Progressive (muscle) relaxation	A technique that involves the deliberate tensing and relaxation of muscles to facilitate the recognition and release of muscle tension.
Prolotherapy	Injections of irritant solutions to strengthen lumbosacral ligaments.
Proton pump inhibitor	A type of drug that reduces the production of acid in the stomach, and is used to treat indigestion and stomach ulcers.
Radiculopathy	Dysfunction of a nerve root associated with pain, sensory impairment, weakness, or diminished deep tendon reflexes in a nerve root distribution. The most common symptom of lumbar radiculopathy is sciatica.
Radiofrequency neurotomy	Application of a high-frequency electrical current via an electrode to spinal nerves to destroy nerve function and interrupt pain signals to the brain. Also known as radiofrequency ablation. See also the companion document *Radiological Diagnostic and Therapeutic Interventions Directed to Lumbar Spine Pathology*.
Red flags	Clinical (i.e., physical) features that may alert to the presence of serious but relatively uncommon conditions or diseases requiring evaluation. Such conditions include tumours, infection, fractures, and neurological damage/disease.
Respondent therapy using EMG biofeedback	A therapy aimed at modifying physiological response to pain by reducing muscular tension. It is based on the idea of a pain-tension cycle, where pain is viewed as both a cause and a result of muscular tension. Respondent therapy attempts to interrupt this cycle by using a tension-incompatible reaction, such as relaxation. EMG biofeedback is frequently used to reduce the assumed muscular tension, relieve anxiety, and subsequently pain (see *Electromyography [EMG]*).
Sacroiliac joint block	An injection of local anesthetic, with or without corticosteroid medication, into the sacroiliac joint to diagnose or treat low back pain associated with sacroiliac joint dysfunction. See also the companion document *Radiological Diagnostic and Therapeutic Interventions Directed to Lumbar Spine Pathology*.

Term	Definition
Sciatica	Pain that radiates along the path of the sciatic nerve, which runs from the lower back, through the buttock, and down the back of the leg. Sciatica can be caused by irritation or compression of the sciatic nerve.
Selective nerve root block (SNRB)	An injection of local anesthetic, with or without other substances such as corticosteroid medication, along a specific nerve root that exits from the spinal cord to diagnose or treat nerve root pain in the back. Also known as *selective transforaminal epidural injection*. See also the companion document *Radiological Diagnostic and Therapeutic Interventions Directed to Lumbar Spine Pathology*.
Shock-wave treatment	Application of low-frequency sound waves (10, 50, 100, or 250 Hz) to the skin, causing an oscillatory pressure in the underlying soft tissue. Also commonly known as *vibrotherapy*.
Short-wave diathermy	Therapeutic elevation of the temperature of deep tissues by application of short-wave electromagnetic radiation with a frequency range from 10-100 MHz.
Spa therapy	An intervention involving several interventions, including mineral water bathing, usually with heated water, and other interventions such as massage and exercise, typically while staying at a spa resort.
Spinal care specialist	A physical therapist, chiropractor, osteopathic physician, or physician who specializes in musculoskeletal medicine.
Spinal manipulative therapy	Application of high-velocity, low-amplitude manual thrusts to the spinal joints slightly beyond the passive range of joint motion. This may be accompanied by an audible 'crack' or 'pop'.
Spinal mobilization	Application of manual force to the spinal joints within the passive range of joint motion that does not involve a thrust.
Spinal stenosis	A condition in which there is diminished space available for the neural and vascular elements in the lumbar spine, secondary to degenerative changes in the spinal canal. When symptomatic, this causes a variable clinical syndrome of gluteal and/or lower extremity pain and/or fatigue, which may occur with or without back pain. See also the companion document *Radiological Diagnostic and Therapeutic Interventions Directed to Lumbar Spine Pathology*.
TENS (transcutaneous electrical nerve stimulation)	Use of a small, battery-operated device to provide continuous electrical impulses via surface electrodes, with the goal of providing symptomatic relief by modifying pain perception.
Therapeutic aquatic exercise	Active exercise in warm water; such as aqua-aerobics and aqua-jogging.
Therapeutic ultrasound	The use of, externally applied sound waves to generate heat within specific parts of the body.
Trigger point injection	An injection of fluid directly into a hyperirritable area of muscle or soft tissue (trigger point) that is tender when compressed and can give rise to referred pain. Also known as *direct wet needling*.
Touch therapies	Touch therapies are defined as energy based complementary therapies including healing touch, therapeutic touch, and Reiki.
Yellow flags	Psychosocial and sociological factors that increase the risk of developing or perpetuating long-term disability and work loss associated with low back pain.

Term	Definition
Yoga	An intervention distinguished from traditional exercise therapy by the use of specific body positions, breathing techniques, and an emphasis on mental focus. Many styles of yoga are practiced, each emphasizing different postures and techniques. Iyengar yoga: A type of hatha yoga; make use of a variety of props so that perfect alignment is obtained regardless of physical limitations. Viniyoga: A type of hatha yoga customized by the practitioner for each individual. Other types of hatha yoga include: Ashtanga, Kripalu, Bikram, Anusara.

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APPENDIX P: List of Recommendations with Evidence Sourced from IHE Database Systematic Reviews

Recommendation/ Evidence Source	Systematic Reviews*
Prevention of occurrence and recurrence of low back pain (LBP)	
Exercise for Prevention of Recurrence SR (G2c, G5, IHE Database) + EO (GUC)	Choi BK, Verbeek JH, Tam WWS, Jiang JY. Exercises for prevention of recurrences of low-back pain. *Cochrane Database of Systematic Reviews* 2010;(1):CD006555. Choi BK, Verbeek JH, Tam WW, Jiang JY. Exercises for prevention of recurrences of low-back pain. *Occupational and Environmental Medicine* 2010;67(11):795-6.
Shoe Insoles/Orthoses RCT (G5) + SR (IHE Database)	Sahar T, Cohen MJ, Ne'eman V, Kandel L, Odebiyi DO, Lev I, et al. Insoles for prevention and treatment of back pain. *Cochrane Database of Systematic Reviews* 2007;(4):CD005275. Sahar T, Cohen MJ, Uval-Ne'eman V, Kandel L, Odebiyi DO, Lev I, et al. Insoles for prevention and treatment of back pain: a systematic review within the framework of the Cochrane Collaboration Back Review Group. *Spine* 2009;34(9):924-33.
Lumbar Supports RCT (G3) + SR (IHE Database)	van Duijvenbode IC, Jellema P, van Poppel MN, van Tulder MW. Lumbar supports for prevention and treatment of low back pain. *Cochrane Database of Systematic Reviews* 2008;16(2):CD001823.
Risk Factor Modification SR (G3, IHE Database)	Shiri R, Karppinen J, Leino-Arjas P, Solovieva S, Varonen H, Kalso E, et al. Cardiovascular and lifestyle risk factors in lumbar radicular pain or clinically defined sciatica: a systematic review. *European Spine Journal* 2007. Shiri R, Karppinen J, Leino-Arjas P, Solovieva S, Viikari-Juntura E. The association between smoking and low back pain: a meta-analysis. *American Journal of Medicine* 2010;123(1):87–135. Shiri R, Karppinen J, Leino-Arjas P, Solovieva S, Viikari-Juntura E. The association between obesity and low back pain: a meta-analysis. *American Journal of Epidemiology* 2010;171(2):135–54.
Acute and subacute LBP	
Imaging to Rule Out Underlying Pathology in the Absence of Radiculopathy SR (G2c) + SR (IHE Database)	Steffens D, Hancock MJ, Maher CG, Williams C, Jensen TS, Latimer J. Does magnetic resonance imaging predict future low back pain? A systematic review. *European Journal of Pain* 2014;18(6):755-65.
Imaging to Rule out Underlying Pathology in the Presence of Radiculopathy SR (G2c, IHE Database) + CS (G8)	de Schepper EI, Overdevest GM, Suri P, Peul WC, Oei EH, Koes BW, et al. Diagnosis of lumbar spinal stenosis: an updated systematic review of the accuracy of diagnostic tests. *Spine* 2013;38(8):E469-81. van Rijn RM, Wassenaar M, Verhagen AP, Ostelo RWJG, Ginai AZ, de Boer MR, et al. Computed tomography for the diagnosis of lumbar spinal pathology in adult patients with low back pain or sciatica: a diagnostic systematic review. *European Spine Journal* 2012;21(2):228-39. Wassenaar M, van Rijn RM, van Tulder MW, Verhagen AP, van der Windt DA, Koes BW, et al. Magnetic resonance imaging for diagnosing lumbar spinal pathology in adult patients with low back pain or sciatica: a diagnostic systematic review. *European Spine Journal* 2012;21(2):220-7.
Therapeutic Exercise SR (G2c, G4, IHE Database)	Hayden JA, van Tulder MW, Malmivaara A, Koes BW. Exercise therapy for treatment of non-specific low back pain. *Cochrane Database for Systematic Reviews* 2005;(3):CD000335. Keller A, Hayden J, Bombardier C, van Tulder MW. Effect sizes of non-

Recommendation/ Evidence Source	Systematic Reviews*
	surgical treatments of non-specific low-back pain. *European Spine Journal* 2007;16(11):1776-88. Schaafsma F, Schonstein E, Whelan KM, Ulvestad E, Kenny DT, Verbeek JH. Physical conditioning programs for improving work outcomes in workers with back pain. *Cochrane Database for Systematic Reviews* 2010;(1):CD001822.
Analgesia SR (G1, G2, G4, G7, IHE Database)	Roelofs PD, Deyo RA, Koes BW, Scholten RJ, van Tulder MW. Nonsteroidal anti-inflammatory drugs for low back pain: an updated Cochrane review. *Spine* 2008;33(16):1766-74. Roelofs PD, Deyo RA, Koes BW, Scholten RJ, van Tulder MW. Non-steroidal anti-inflammatory drugs for low back pain. *Cochrane Database of Systematic Reviews* 2008;(1):CD000396. van Tulder MW, Touray T, Furlan AD, Solway S, Bouter LM. Muscle relaxants for non-specific low-back pain. *Cochrane Database of Systematic Reviews* 2003;(4):CD004252.
BRIEF Course of Narcotic Analgesics (Opioids) SR (G1, G2c, IHE Database)	Kuijpers T, van Middelkoop M, Rubinstein SM, Ostelo R, Verhagen A, Koes BW, et al. A systematic review on the effectiveness of pharmacological interventions for chronic non-specific low-back pain. *European Spine Journal* 2011;20(1):40-50. Martell BA, O'Connor PG, Kerns RD, Becker WC, Morales KH, Kosten TR, et al. Systematic review: opioid treatment for chronic back pain: prevalence, efficacy, and association with addiction. *Annals of Internal Medicine* 2007;146(2):116-27.
Therapeutic Ultrasound RCT (G1) + SR (IHE Database)	Hahne AJ, Ford JJ, McMeeken JM. Conservative management of lumbar disc herniation with associated radiculopathy A systematic review. *Spine* 2010;35(11):E488–E504. Philadelphia Panel evidence-based clinical practice guidelines on selected rehabilitation interventions for low back pain. *Physical Therapy* 2001;81(10):1641–74. Philadelphia Panel evidence-based clinical practice guidelines on selected rehabilitation interventions: Overview and methodology. *Physical Therapy* 2001;81(10):1629–40. Seco J, Kovacs FM, Urrutia G. The efficacy, safety, effectiveness, and cost-effectiveness of ultrasound and shock wave therapies for low back pain: a systematic review. *Spine Journal* 2011;11(10):966-77.
Acupuncture SR (G7, IHE Database)	Furlan AD, van Tulder MW, Cherkin D, Tsukayama H, Lao L, Koes BW, Berman BM Acupuncture and dry-needling for low back pain. *Cochrane Database of Systematic Reviews* 2005;(1):CD001351.
Herbal medicine SR (IHE Database)	Gagnier J, van Tulder MW, Berman B, Bombardier C. Herbal medicine for low back pain. *Cochrane Database of Systematic Reviews* 2006;(2):CD004504. Gagnier JJ, van Tulder MW, Berman B, Bombardier C. Herbal medicine for low back pain: a Cochrane review. *Spine* 2007;32(1):82–92.
Low-level laser therapy RCT (G1) + SR (IHE Database)	van Middelkoop M, Rubinstein SM, Kuijpers T, Verhagen AP, Ostelo R, Koes BW, et al. A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *European Spine Journal* 2011;20(1):19-39. Yousefi-Nooraie R, Schonstein E, Heidari K, Rashidian A, Pennick V, Akbari-Kamrani M, et al. Low level laser therapy for nonspecific low-back pain. *Cochrane Database of Systematic Reviews* 2008;(2):CD005107.
Manual therapy – massage therapy SR (G1, IHE Database)	Furlan AD, Imamura M, Dryden T, Irvin E. Massage for low-back pain. *Cochrane Database of Systematic Reviews* 2008;(4):CD001929.

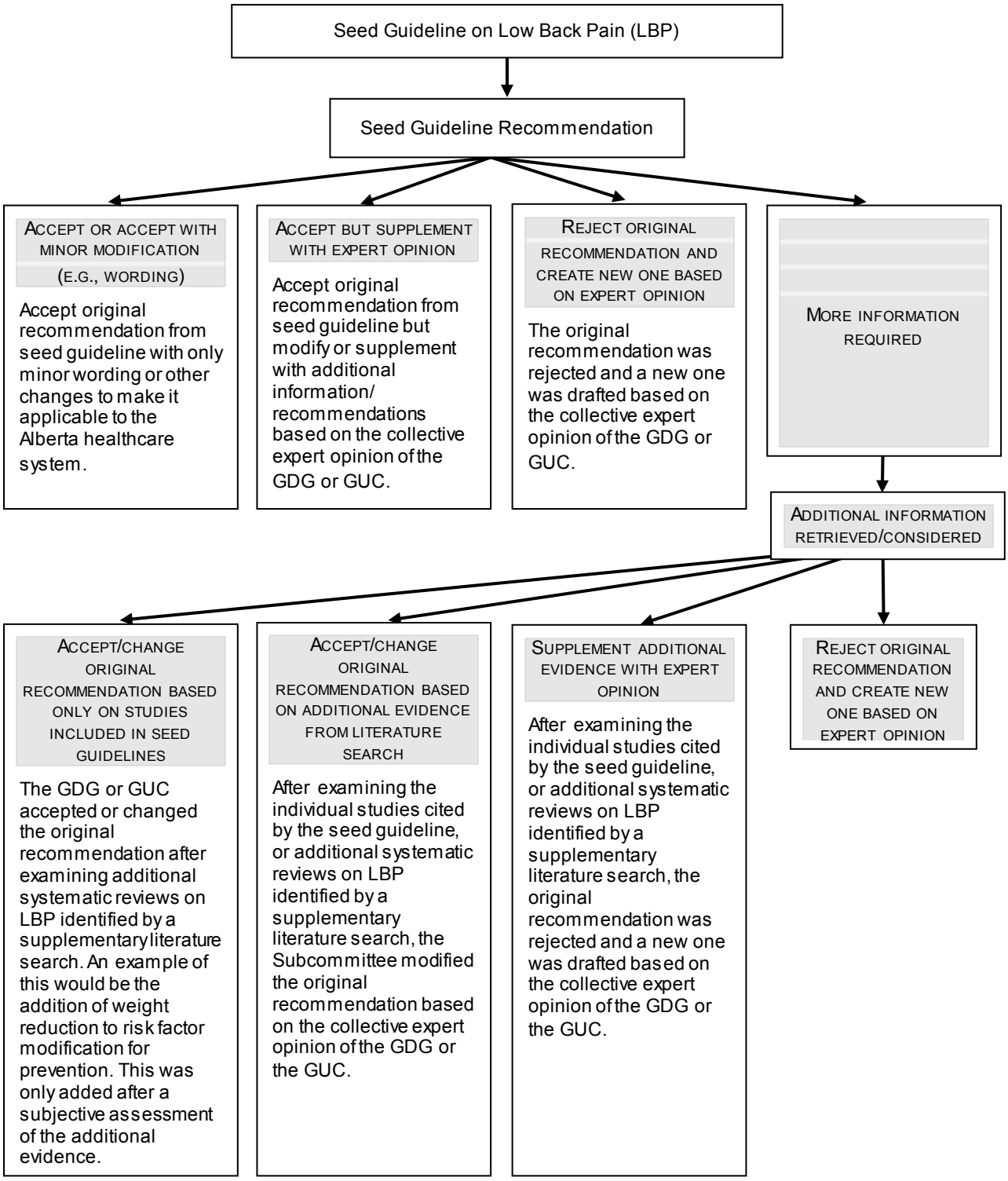
Recommendation/ Evidence Source	Systematic Reviews*
Operant conditioning provided by a physiotherapist SR (IHE Database)	Bunzli S, Gillham D, Esterman A. Physiotherapy-provided operant conditioning in the management of low back pain disability: A systematic review. *Physiotherapy Research International* 2011;16(1):4-19.
Short-wave diathermy RCT (G1) + SR (IHE Database)	Ferreira ML, Ferreira PH, Latimer J, Herbert R, Maher CG. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. *Journal of Manipulative and Physiological Therapeutics* 2003;26(9):593–601.
Topical NSAIDS SR (IHE Database)	Roelofs PD, Deyo RA, Koes BW, Scholten RJ, van Tulder MW. Nonsteroidal anti-inflammatory drugs for low back pain: an updated Cochrane review. *Spine* 2008;33(16):1766-74. Roelofs PD, Deyo RA, Koes BW, Scholten RJ, van Tulder MW. Non-steroidal anti-inflammatory drugs for low back pain. *Cochrane Database of Systematic Reviews* 2008;(1):CD000396
Chronic LBP	
Therapeutic Aquatic Exercise SR (IHE Database)	Waller B, Lambeck J, Daly D. Therapeutic aquatic exercise in the treatment of low back pain: a systematic review. *Clinical Rehabilitation* 2009;23(1):3-14.
Yoga therapy SR (IHE Database)	Lewis A, Morris ME, Walsh C. Are physiotherapy exercises effective in reducing chronic low back pain? *Physical Therapy Reviews* 2008;13(1):37–44. Quinn F, Hughes C, Baxter GD. Complementary and alternative medicine in the treatment of low back pain: a systematic review. *Physical Therapy Reviews* 2006;11(2):107–16.
Acetaminophen and Non-Steroidal Anti-inflammatory Drugs (NSAIDS) SR (G6, IHE Database) + EO (GUC)	Roelofs PD, Deyo RA, Koes BW, Scholten RJ, van Tulder MW. Nonsteroidal anti-inflammatory drugs for low back pain: an updated Cochrane review. *Spine* 2008;33(16):1766-74. Roelofs PD, Deyo RA, Koes BW, Scholten RJ, van Tulder MW. Non-steroidal anti-inflammatory drugs for low back pain. *Cochrane Database of Systematic Reviews* 2008;(1):CD000396. van Tulder MW, Touray T, Furlan AD, Solway S, Bouter LM. Muscle relaxants for non-specific low-back pain. *Cochrane Database of Systematic Reviews* 2003;(4):CD004252.
Analgesic Antidepressants (amitriptyline and nortriptyline) SR (G6, IHE Database)	Schnitzer TJ, Ferraro A, Hunsche E, Kong SX. A comprehensive review of clinical trials on the efficacy and safety of drugs for the treatment of low back pain. *Journal of Pain and Symptom Management* 2004;28(1):72-95.
Herbal medicine SR (IHE Database)	Gagnier J, van Tulder MW, Berman B, Bombardier C. Herbal medicine for low back pain. *Cochrane Database of Systematic Reviews* 2006;(2):CD004504. Gagnier JJ, van Tulder MW, Berman B, Bombardier C. Herbal medicine for low back pain: a Cochrane review. *Spine* 2007;32(1):82–92.
Selective Serotonin Reuptake Inhibitors (SSRIs) SR (IHE Database)	Urquhart DM, Hoving JL, Assendelft WW, Roland M, van Tulder MW. Antidepressants for non-specific low back pain. *Cochrane Database of Systematic Reviews* 2008;(1):CD001703.
Motorized traction SR (IHE Database)	Clarke JA, van Tulder MW, Blomberg SE, de Vet HC, van der Heijden GJ, Bronfort G, et al. Traction for low-back pain with or without sciatica. *Cochrane Database of Systematic Reviews* 2007;(2):CD003010. Macario A, Pergolizzi JV. Systematic literature review of spinal decompression via motorized traction for chronic discogenic low back pain. *Pain Practice* 2006;6(3):171–8.
Lumbar Discography in Primary Care SR (IHE Database) + NRCS (G9)	Manchikanti L, Glaser SE, Wolfer L, Derby R, Cohen SP. Systematic review of lumbar discography as a diagnostic test for chronic low back pain. *Pain Physician* 2009;12(3):541-59. Wolfer LR, Derby R, Lee JE, Lee SH. Systematic review of lumbar provocation

Recommendation/ Evidence Source	Systematic Reviews*
	discography in asymptomatic subjects with a meta-analysis of false-positive rates. *Pain Physician* 2008;11(4):513-38.
Electrodiagnostic Studies in Primary Care EO (G10) + SR (IHE Database)	de Schepper EI, Overdevest GM, Suri P, Peul WC, Oei EH, Koes BW, et al. Diagnosis of lumbar spinal stenosis: an updated systematic review of the accuracy of diagnostic tests. *Spine* 2013;38(8):E469-81.
Diagnostic Lumbar Facet Joint Nerve Blocks (includes medial branch blocks and intra-articular facet joint blocks) SR (IHE Database)	Falco FJE, Manchikanti L, Datta S, Sehgal N, Geffert S, Onyewu O, et al. An update of the effectiveness of therapeutic lumbar facet joint interventions. *Pain Physician* 2012;15(6):E909-53.
Manual Therapy – Spinal Manipulative Treatment SR (G6, IHE Database)	Bronfort G, Haas M, Evans R, Kawchuk G, Dagenais S. Evidence-informed management of chronic low back pain with spinal manipulation and mobilization. *Spine Journal* 2008;8(1):213-25. Rubinstein SM, van Middelkoop M, Assendelft WJ, de Boer MR, van Tulder MW. Spinal manipulative therapy for chronic low-back pain. *Cochrane Database of Systematic Reviews* 2011;(2):CD008112. Standaert CJ, Friedly J, Erwin MW, Lee MJ, Rechtine G, Henrikson N, et al. Comparative effectiveness of exercise, acupuncture, and spinal manipulation for low back pain. *Spine* 2011;36(21 Suppl):S120-30. van Middelkoop M, Rubinstein SM, Kuijpers T, Verhagen AP, Ostelo R, Koes BW, et al. A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *European Spine Journal* 2011;20(1):19-39.
Manual Therapy – Spinal Mobilization SR (G6, IHE Database)	Bronfort G, Haas M, Evans R, Kawchuk G, Dagenais S. Evidence-informed management of chronic low back pain with spinal manipulation and mobilization. *Spine Journal* 2008;8(1):213-25. Rubinstein SM, van Middelkoop M, Assendelft WJ, de Boer MR, van Tulder MW. Spinal manipulative therapy for chronic low-back pain. *Cochrane Database of Systematic Reviews* 2011;(2):CD008112. van Middelkoop M, Rubinstein SM, Kuijpers T, Verhagen AP, Ostelo R, Koes BW, et al. A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *European Spine Journal* 2011;20(1):19-39.
Therapeutic ultrasound SR (IHE Database)	Philadelphia Panel evidence-based clinical practice guidelines on selected rehabilitation interventions: Overview and methodology. *Physical Therapy* 2001;81(10):1629–40. Philadelphia Panel evidence-based clinical practice guidelines on selected rehabilitation interventions for low back pain. *Physical Therapy* 2001;81(10):1641–74. Seco J, Kovacs FM, Urrutia G. The efficacy, safety, effectiveness, and cost-effectiveness of ultrasound and shock wave therapies for low back pain: a systematic review. *Spine Journal* 2011;11(10):966-77.
Clinically Organized Relevant Exam (CORE) Back Screening Tool SR (IHE Database)	Fairbank J, Gwilym SE, France JC, Daffner SD, Dettori J, Hermsmeyer J, et al. The role of classification of chronic low back pain. *Spine* 2011;36(21S):S19-42.
Opioids SR (G6, G11, IHE Database) + EO (GUC)	Kuijpers T, van Middelkoop M, Rubinstein SM, Ostelo R, Verhagen A, Koes BW, et al. A systematic review on the effectiveness of pharmacological interventions for chronic non-specific low-back pain. *European Spine Journal* 2011;20(1):40-50. Martell BA, O'Connor PG, Kerns RD, Becker WC, Morales KH, Kosten TR, et

Recommendation/ Evidence Source	Systematic Reviews*
	al. Systematic review: opioid treatment for chronic back pain: prevalence, efficacy, and association with addiction. *Annals of Internal Medicine* 2007;146(2):116-27.
Duloxetine SR (IHE Database)	Cawston H, Davie A, Paget MA, Skljarevski V, Happich M. Efficacy of duloxetine versus alternative oral therapies: an indirect comparison of randomized clinical trials in chronic low back pain. *European Spine Journal* 2013;22(9):1996-2009. Watson CPN, Gilron I, Sawynok J, Lynch ME. Nontricyclic antidepressant analgesics and pain: Are serotonin norepinephrine reuptake inhibitors (SNRIs) any better? *Pain* 2011;152(10):2206-10. Watson CPN, Gilron I, Pollock BG, Lipman AG, Smith MT. *Antidepressant analgesics*. In: McMahon S, Koltzenburg M, Tracey I, Turk DC, editors. Wall & Malzack's textbook of pain. 6th Edition. Philadelphia: Elsevier Saunders; 2013.
Gravity tables (inversion/inverted traction, self-traction, gravitational traction) SR (IHE Database)	Wegner I, Widyahening IS, van Tulder MW, Blomberg SEI, de Vet HC, Brønfort G et al. Traction for low-back pain with or without sciatica. *Cochrane Database of Systematic Reviews* 2013;(8):CD003010.
Low-level laser therapy SR (IHE Database)	van Middelkoop M, Rubinstein SM, Kuijpers T, Verhagen AP, Ostelo R, Koes BW, et al. A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *European Spine Journal* 2011;20(1):19-39. Yousefi-Nooraie R, Schonstein E, Heidari K, Rashidian A, PennickV, Akbari-Kamrani M, et al. Low level laser therapy for nonspecific low-back pain. *Cochrane Database of Systematic Reviews* 2008;(2):CD005107.
Mindfulness-based meditation SR (IHE Database)	Cramer H, Haller H, Lauche R, Dobos G. Mindfulness-based stress reduction for low back pain. A systematic review. *BMC Complementary and Alternative Medicine* 2012;12:162.
Shock-wave treatment SR (IHE Database)	Seco J, Kovacs FM, Urrutia G. The efficacy, safety, effectiveness, and cost-effectiveness of ultrasound and shock wave therapies for low back pain: a systematic review. *Spine Journal* 2011;11(10):966-77.
Spa therapy SR (IHE Database)	Pittler MH, Karagulle MZ, Karagulle M, Ernst E. Spa therapy for treating low back pain: meta-analysis of randomized trials. *Rheumatology* 2006;45(7):880-4.
Trigger point injections SR (IHE Database)	Staal JB, de Bie R, de Vet HC, Hildebrandt J, Nelemans P. Injection therapy for subacute and chronic low-back pain. *Cochrane Database for Systematic Reviews* 2008;(3):CD001824. Waseem Z, Boulias C, Gordon A, Ismail F, Sheean G, Furlan AD. Botulinum toxin injections for low-back pain and sciatica. *Cochrane Database for Systematic Reviews* 2011;(1):CD008257.

*Some systematic reviews may also have been cited by the recently published seed guidelines.

APPENDIX Q: Process Used to Formulate Recommendations



GDG: Guideline Development Group (1st Edition); GUC: Guideline Update Committee (2nd and 3rd Editions)

APPENDIX R: Recommendation Categories

Definitions for *Do*, *Do Not Do*, *Do Not Know*

DO

Recommendations sourced from seed guidelines

When the Ambassador Program Guideline Update Committee (GUC) accepted the gist of the original recommendation in the seed guideline(s), the original wording was preserved where possible. Thus, recommendations were classified as "Do" when the original guideline recommended or provided a prescriptive direction to perform the action, or used the term "effective" to describe it.

The seed guidelines used different systems to grade or categorize the level of evidence supporting each recommendation and the strength or type of recommendation made. However, generally all of the guidelines recommended an action or described it as effective when this statement was supported by:

- results from at least one study of strong design for answering the question addressed,
- generally consistent results from multiple studies of strong design for answering the question addressed, or
- the clinical experience of the Guideline Development Group (GDG).

Recommendations not sourced from seed guidelines

New recommendations were classified as "Do" when a supplementary literature search found at least one relevant systematic review presenting consistent evidence to support the action from a minimum of two critically appraised primary studies of at least moderate quality (as assessed by the authors of the review) or five primary studies of undefined quality.*

Expert Opinion

When the GUC supplemented a recommendation or created a new one based on expert opinion, it was classified "Do" when the collective professional opinion of the GUC supported the action.

DO NOT DO (Not Recommended)

Recommendations sourced from seed guidelines

When the GUC accepted the gist of the original recommendation in the seed guideline(s), the original wording was preserved where possible. Thus, recommendations were classified as "Do Not Do" when the original guideline recommended against or provided a prescriptive direction not to perform the action, used the term "ineffective" to describe it, or stated that the evidence did "not support" it.

The seed guidelines used different systems to grade or categorize the level of evidence supporting each recommendation and the strength or type of recommendation made. However, generally all of the guidelines recommended against performing an action or described it as ineffective when this statement was supported by:

- results from at least one study of strong design for answering the question addressed,

- generally consistent results from multiple studies of strong design for answering the question addressed, or
- the clinical experience of the GDG.

Recommendations not sourced from seed guidelines

New recommendations were classified as "Do Not Do" when a supplementary literature search found at least one relevant systematic review presenting consistent evidence that did not support the action from a minimum of two critically appraised primary studies of at least moderate quality (as assessed by the authors of the review) or five primary studies of undefined quality.*

Expert Opinion

When the GUC supplemented a recommendation or created a new one based on expert opinion, it was classified "Do Not Do" when the collective professional opinion of the GUC did not support the action.

DO NOT KNOW

Recommendations sourced from seed guidelines

When the GUC accepted the gist of the original recommendation in the seed guideline(s), the original wording was preserved where possible. Thus, recommendations were classified as "Do Not Know" when the original guideline did not recommend for or against the action or stated that there was "no evidence", "insufficient or conflicting evidence", or "no good evidence" to support its use.

The seed guidelines used different systems to grade or categorize the level of evidence supporting each recommendation and the strength or type of recommendation made. However, generally all of the guidelines stated that evidence for a particular action was lacking or insufficient when:

- effectiveness was demonstrated in a general sense but not specifically for back pain,
- the studies were of poor quality, inappropriately designed to answer the question addressed, or presented conflicting results, which precluded the determination of effectiveness or the balance of benefits and harms,
- only one study of any design was available, or
- no studies of any design were available.

Recommendations not sourced from seed guidelines

New recommendations were classified as "Do Not Know" and worded as follows.

- "There is insufficient evidence to recommend for or against" the action: when a supplementary literature search found no relevant systematic reviews.
- "There is inconclusive evidence to recommend for or against" the action: when a supplementary literature search found at least one relevant systematic review presenting evidence from primary studies that were of poor quality, exhibited significant heterogeneity in the populations studied or methods used, were inappropriately designed to answer the question addressed, or presented conflicting or equivocal results.

Recommendations unchanged by new seed guidelines

Recommendations listed as "Do Not Know" in the original low back pain guideline:

- were changed to "Do" when a supplementary literature search found at least one relevant systematic review presenting consistent evidence to support the action from a minimum of two critically appraised primary studies of at least moderate quality (as assessed by the authors of the review) or five primary studies of undefined quality*;
- were changed to "Do Not Do" when a supplementary literature search found at least one relevant systematic review presenting consistent evidence that did not support the action from a minimum of two critically appraised primary studies of at least moderate quality (as assessed by the authors of the review) or five primary studies of undefined quality*;
- remained as "Do Not Know" when a supplementary literature search found either no relevant systematic reviews or at least one relevant systematic review presenting conflicting or equivocal results or stating that the evidence in relation to the action was "limited", "inconclusive", "inconsistent", or "insufficient".

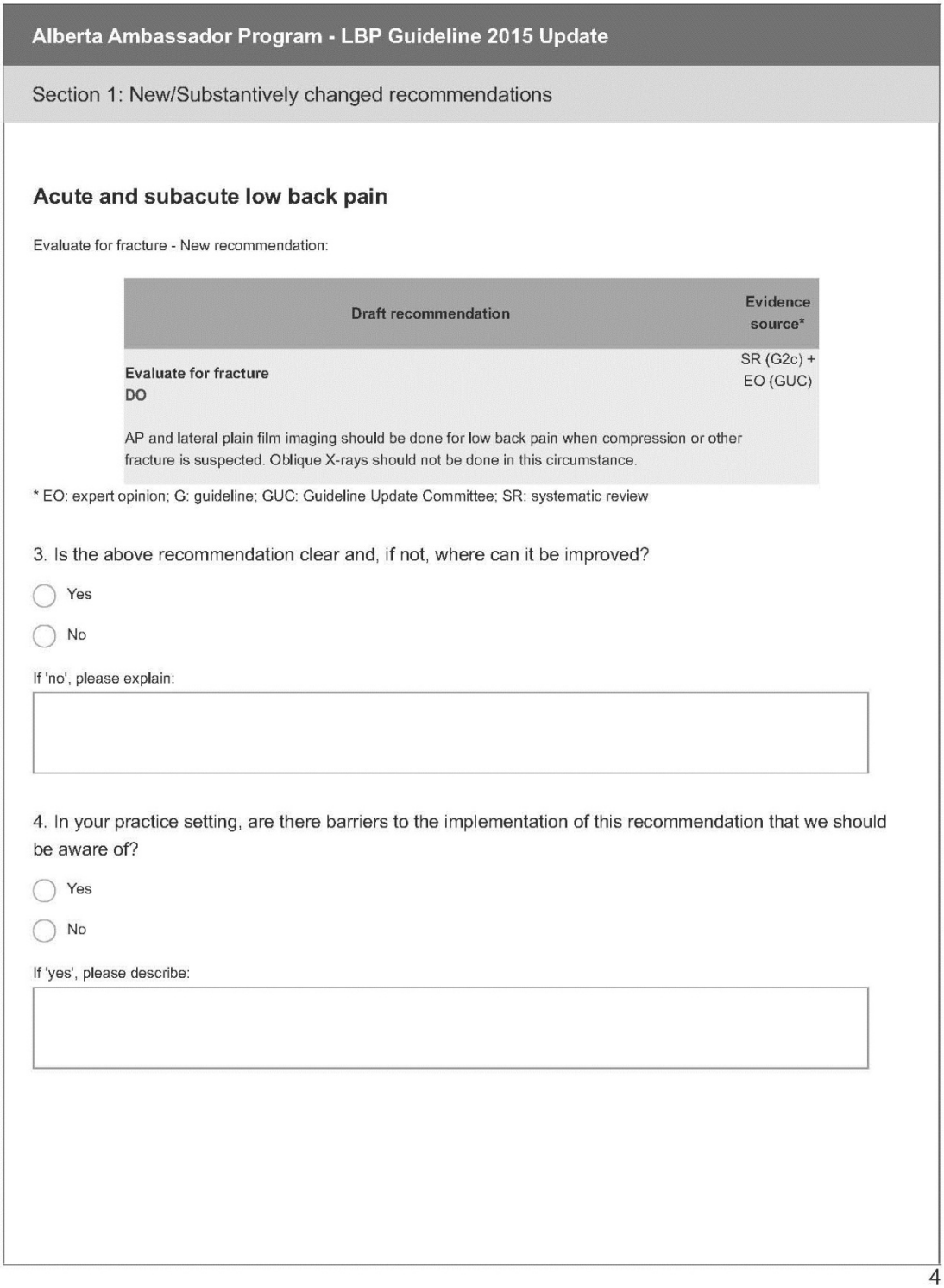
Expert Opinion

When the GUC supplemented a recommendation or created a new one based on expert opinion, it was classified "Do Not Know" when the collective professional opinion of the GUC was equivocal with respect to supporting the action.

*The number of studies is arbitrary and is not supported by literature.

APPENDIX S: Feedback on Guideline Documents

FIGURE S.1: Sample of the web-based survey form



Alberta Ambassador Program - LBP Guideline 2015 Update

Section 1: New/Substantively changed recommendations

Acute and subacute low back pain

Evaluate for fracture - New recommendation:

Draft recommendation	Evidence source*
Evaluate for fracture **DO** AP and lateral plain film imaging should be done for low back pain when compression or other fracture is suspected. Oblique X-rays should not be done in this circumstance.	SR (G2c) + EO (GUC)

* EO: expert opinion; G: guideline; GUC: Guideline Update Committee; SR: systematic review

3. Is the above recommendation clear and, if not, where can it be improved?

- ◯ Yes
- ◯ No

If 'no', please explain:

4. In your practice setting, are there barriers to the implementation of this recommendation that we should be aware of?

- ◯ Yes
- ◯ No

If 'yes', please describe:

4

TABLE S.1: Suggestions for improving the guideline from Guideline Update Committee and Subcommittee members (n=6)

Question	Feedback
Is the above recommendation clear and, if not, where can it be improved?	Imaging to rule out underlying pathology in the absence of radiculopathy (acute and subacute LBP) Yes: 5; No: 1 The third bullet leaves the field wide open to order an MRI for anyone with increasing pain and poor response to the usual treatment... many patients. Are there any circumstances where this recommendation would come into play to catch patients that really should be imaged that the other bullets (recommendations) don't cover? If not, can we eliminate it? Referral for inflammatory disease (acute and subacute LBP) Yes: 5; No: 1 Does this mean that clinical indicators are not valuable when determining if a referral is necessary? Therapeutic exercise (acute and subacute LBP) Yes: 5; No: 1 Individualized specific is redundant - individualized is enough. Marijuana (dried cannabis) (acute and subacute LBP) Yes: 6; No: 0 This fits correctly into your evidence categories. I still think in circumstances with this type of evidence ["do not know"] there still could be a recommendation made either to do or not do something. This would require a revision of your evidence categories that could be considered for future guidelines.* Clinical prediction rule for spinal manipulative therapy (acute and subacute LBP) Yes: 6; No: 0 *See previous comment"do not know" recommendations "Do Not Know" recommendations (Craniosacral massage/therapy; Manual therapy - spinal mobilization; Shock wave treatment; Tapentadol) (acute and subacute LBP) Yes: 5; No: 1 Why is tapentadol included in the same guideline as other physical modalities? *See previous comment"do not know" recommendations Education (chronic LBP) Yes: 6; No: 0 Perhaps this could be accompanied by some knowledge translation tools for patients. Diagnostic selective nerve root blocks (SNRBs) in primary care (chronic LBP) Yes: 5; No: 1 I find this a bit confusing. Primary care physicians don't technically do EMGs or MRIs either, but they're ordered for other physicians to perform with the clinical acumen that accompanies that responsibility. With this in mind the recommendation should be a "do". Diagnostic lumbar facet joint nerve blocks (chronic LBP) Yes: 6; No: 0 *See previous comment"do not know" recommendations Diagnostic sacroiliac joint blocks (chronic LBP) Yes: 6; No: 0 *See previous comment"do not know" recommendations Epidural steroid injections (chronic LBP) Yes: 6; No: 0 *See previous comment"do not know" recommendations STarT back screening tool (chronic LBP) Yes: 5; No: 1 Will there be a reference to the STarT back tool in the guidelines for interested physicians? Clinically Organized Relevant Exam (CORE) back screening tool (chronic LBP) Yes: 5; No: 1 Will a link to these guidelines be included?

Question	Feedback
	"Do Not Know" recommendations (Back belts, corsets, non-motorized traction, or over-the-counter TENS; Craniosacral massage/therapy; Tapentadol) (chronic LBP) Yes: 5; No: 1 Why is tapentadol included with these other physical modalities?
Do you agree that the above recommendation be removed?	Laboratory testing (chronic LBP) Yes: 5; No: 1 Why? I will leave this to the physicians, but it sounds reasonable.
Please provide any comments you have about the medication table.	(3 comments) It is my understanding that there are new Canadian guidelines about the use of diclofenac >50 mg twice a day. Has this been considered? I would like to add that a maximum dose equivalent of 60 mg is required before any fentanyl patch can be started. I'm wondering if we should change the dose of acetaminophen in the acute and chronic table to 650 mg to 1,000 mg up to four times/day (maximum of 3,000 mg/day for chronic use). There is a lot of 650 mg use in the community in Edmonton, especially due to the long-acting formulation.
If you have any further comments on any of the sections reviewed in this survey and/or anything from the emailed full guideline draft not reviewed in this survey (e.g. the preamble or appendices), please provide them below.	(1 comment) I have a concern about the chronic LBP recommendation and medical marijuana as a "do not know". This contradicts recent statements that the only clear indications for medicinal marijuana in chronic pain is for neuropathic pain and spasticity from multiple sclerosis.[1]

EMG: electromyograph; LBP: low back pain; MRI: magnetic resonance imaging

[1]Kahan, M, Srivastava, A. New medical marijuana regulations: the coming storm. *CMAJ* 2014;186(12). doi:10.1503/cmaj.13182.

Note: No comments were made about the glossary or unchanged recommendations.

TABLE S.2: Barriers to implementing the *Alberta CPG* recommendations – summary of responses from Guideline Update Committee and Subcommittee members (n=6)

Question	Feedback
In your practice setting, are there barriers to the implementation of these recommendations that we should be aware of?	Imaging to rule out underlying pathology in the absence of radiculopathy (acute and subacute LBP) Yes: 1; No: 5 Timely access to MRI, particularly for injection therapy as a short-term treatment. Referral for inflammatory disease (acute and subacute LBP) Yes: 1; No: 5 In the Edmonton zone we can only order either a CRP or ESR, not both. Therapeutic exercise (acute and subacute LBP) Yes: 1; No: 5 Referral to a physical therapist frequently results in advice that contradicts the advice given in this guideline.

Question	Feedback
	Respondent behavioural therapies (progressive relaxation or EMG biofeedback) (chronic LBP) Yes: 1; No: 5 Unaware of who does this in Edmonton. Lumbar discography in primary care (chronic LBP) Yes: 2; No: 4 This test is generally not available in Calgary, although I support the "do not do" recommendation. In my practice I see a small percentage of patients with LBP (non-radicular) that are considering stem cell injections (intradiscal). Clinically, specialists will not consider these injections without performing a discogram first. The addition of "it exposes patients and physicians to radiation", although relevant may be a bit extreme. Many other interventional pain procedures expose patients and physicians to radiation as well.

CRP: C-reactive protein; EMG: electromyography; ESR: erythrocyte sedimentation rate; LBP: low back pain; MRI: magnetic resonance imaging

TABLE S.3: Feedback on the 2-page guideline summary from participants at the annual Calgary Pain Conference Workshop (Calgary, Canada), 3 December 2015 (n=8 surveys + 1 feedback on algorithm)

Question	Feedback
Is the summary guideline easy to read?	• There is a lot of information in 2 short pages, but the set-up of the document is easy to read and navigate. • Yes, easy to follow. • Does contain substantial amount of information, but seems to be well organized. • Another five participants answered "Yes".
Do you see any errors?	• Not able to compare to anything else, therefore no. • "c" at contraindications. • Another 5 participants answered "No".
Do you see any surprises?	• The encouragement and support for pain self-management. So happy to see this as a focus. • Diagram (happy face drawing). • Indications for imaging; imaging is currently overused. • Diclofenac versus ketorolac or other NSAIDs. • Another 4 participants answered "No".
Would you be able to use this in your clinical practice?	• Yes. We are a radiology practice but have many one-on-one conversations with patients and can sometimes detect yellow flags not initially documented by referring physicians. • Yes, as a nursing info sheet for teaching. • Used more by primary care providers; not radiology practice. • Another 4 participants answered "Yes".
Can you suggest any improvements?	• Very comprehensive, thanks for all your hard work. • Colours. • What to do with patients who will have to get an MRI to enable them to be seen by specialty. It can take up to 8 months to get an MRI done. • Another 5 participants answered "No". • One feedback on algorithm: Delete "including lab tests and imaging as indicated"; add "educate patient"; add "butrans (buprenorphine)".

TABLE S.4: Suggestions for improving patient information sheets and brochures from IHE Lay Advisory Committee members (n=8)

Task	Feedback
Provide input on the format, wording, colour, and content of the patient information sheets and brochures	• The presentation is too busy (e.g. grid at the top, info at the bottom). • Is blue the best colour? Is any colour necessary? The simpler the better. • Wording could be simplified (one committee member provided notes with specific suggestions for wording and organization). • People with limited reading skills would have a hard time, even with the one-pagers. Suggest a large poster with the most important information in simple wording. • Could the guideline be combined with the Choosing Wisely Campaign, as they cover come of the same material? • Questioned why there was no mention of prevention, e.g. use of good body mechanics, and techniques to relieve computer strain. Is there a website to direct people to such information? • Don't mention more powerful medications. It is likely to make some people want them even if not necessary. • The picture on the detailed package is too vague; it doesn't stand out and it's difficult to tell that it is a picture of a "sore back". • In addition to doctors' offices, these should available at, for example, pharmacies, physios, health centres, Workers' Compensation Board, counsellors' offices.

APPENDIX T: Declaration of Competing Interest Form

IHE INSTITUTE OF HEALTH ECONOMICS ALBERTA CANADA

Declaration of Competing Interest

Project Name: **Low Back Pain Guidelines in Primary Care – 2nd Update**

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1. I agree to have my name acknowledged as a contributor on the development of the guideline on low back pain.

   Yes ☐ No ☐

   If not, please be assured that we would respect your preference.

2. If yes, please list name, degrees, position, title and affiliation as you wish them to appear in the guideline.

   Name: _____

   Degrees: _____

   Position Title: _____

   Affiliation: _____

   Area of expertise: _____

All contributors are required to disclose circumstances which could be perceived to be a competing interest.

Competing interest is considered to be financial interest or non-financial interest, either direct or indirect that could affect the recommendations contained in this guideline.

Please note that declaring financial and/or non-financial competing interest helps us to fully inform our stakeholders about this aspect and does not mean that the person would not be in a position to act as an expert, or that his/her contributions would be incorrect or biased.

If you have any questions or concerns, please contact Christa Harstall, Director HTA, by e-mail at charstall@ihe.ca.

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Potential competing interest	NO	YES
Ownership of stock, stock options or other financial instruments of a product's manufacturer or manufacturers of competitive products (excluding mutual fund ownership).	☐	☐
Honoraria or other compensation from a manufacturer or a special interest group for writing a publication or participating in the development of the guideline.	☐	☐
Grant, honoraria or other compensation from a manufacturer or a special interest group for conducting research	☐	☐
Currently, or within the last 2 years: • Consultancy or employment with a manufacturer or a special interest group. • Speaker fees, educational grants and/or travel assistance provided by a manufacturer or a special interest group. • Any other direct or indirect relationship with a manufacturer or a special interest group which could be perceived to be a competing interest.	☐	☐

If yes to any of the above or if there is any other potential competing interest, please describe below:

_____

_____

_____

_____ _____

Signature Date

_____

Printed Name

Thank you for completing this form. Please return the form by mail or fax to:

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