Guideline for the evidence-informed primary care management of low back pain.

Bibliographic Source(s)

Toward Optimized Practice. Guideline for the evidence-informed primary care management of low back pain. Edmonton (AB): Toward Optimized Practice; 2011. 37 p. [39 references]

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- August 31, 2016 – Opioid pain and cough medicines combined with benzodiazepines  : A U.S. Food and Drug Administration (FDA) review has found that the growing combined used of opioid medicines with benzodiazepines or other drugs that depress the central nervous system (CNS) has resulted in serious side effects, including slowed or difficult breathing and deaths. FDA is adding Boxed Warnings to the drug labeling of prescription opioid pain and prescription opioid cough medicines and benzodiazepines.
- March 22, 2016 – Opioid pain medicines  : The U.S. Food and Drug Administration (FDA) is warning about several safety issues with the entire class of opioid pain medicines. These safety risks are potentially harmful interactions with numerous other medications, problems with the

adrenal glands, and decreased sex hormone levels. They are requiring changes to the labels of all opioid drugs to warn about these risks.

Recommendations

Major Recommendations

The criteria used to determine the categorization of the recommendations (Do, Do Not Do, and Do Not Know) are defined at the end of the "Major Recommendations" field. In addition, an explanation of the evidence source (i.e., types of evidence and corresponding "seed" guidelines) are also available.

*Note: Statements in italics relate to harm. These statements were sourced from the recommendations or elsewhere in the "seed" guidelines. An * indicates a recommendation was revised or a new recommendation was added since the previous version of the guideline. It is recognized that not all recommended treatment options are available in all communities.*

Prevention of Occurrence and Recurrence of Low Back Pain

	Recommendation	Evidence Source
Do	Patient Education Practitioners should provide information or patient education material on back pain prevention and care of the healthy back that emphasizes patient responsibility and workplace ergonomics (see the patient brochures in the "Patient Resources" field). Practitioners should emphasize that acute low back pain is nearly always benign and generally resolves within 1 to 6 weeks. There is insufficient evidence to determine what quantity,	**SR (G2, G5)**

	Recommendation	Evidence Source
	intensity, or media is optimal for delivering this information (see the patient information sheets: "What You Should Know About Acute Low Back Pain" and "What You Should Know About Chronic Low Back Pain" and patient booklets: "Acute Low Back Pain: So Your Back Hurts ... Learn what works, what doesn't and how to help yourself" and "Chronic Low Back Pain: So Your Back Hurts ... Learn what works, what doesn't and how to help yourself" [see the "Patient Resources" field]). Patient information and educational material based on a biomedical or biomechanical model (anatomical and "traditional" posture information) can convey negative messages about back pain and is not recommended.	
Do	Physical Activity Physical activity is recommended. There is insufficient evidence to recommend for or against any specific kind of exercise, or the frequency/intensity of training.	**SR (G5)**
Do Not Do	Shoe Insoles/Orthoses The use of shoe insoles or orthoses is not recommended for prevention of low back pain.	**RCT (G5)**
Do Not Do	Lumbar Supports* The use of lumbar supports is not recommended for the prevention of low back pain.	**RCT (G3) + SR (IHE Database)**
Do Not	Spinal Manipulative Therapy or Spinal Mobilization	**RCT (G5)**

	Recommendation	Evidence Source
Know	No evidence was found to support recommending regular manipulative treatment for the prevention of low back pain.	
Do Not Know	Risk Factor Modification Although overweight/obesity and smoking are associated with the increased prevalence of low back pain, there is insufficient evidence to recommend modifying these risk factors for the prevention of low back pain. There is insufficient evidence to recommend reducing alcohol consumption for the prevention of low back pain.	**SR (G3, IHE Database)**
Do Not Know	There is insufficient evidence to recommend for or against the following interventions for preventing low back pain:	
	Any specific type of mattress	**RCT (G5)**
	Any specific type of chair	**CS (G5)**

Acute and Subacute Low Back Pain

	Recommendation	Evidence Source
Do	Diagnostic Triage The first qualified practitioner with the ability to do a full assessment (i.e., history-taking, physical and neurological examination, and psychosocial risk factor assessment) should	**SR (G2, G4)**

	Recommendation	Evidence Source
	assess the patient and undertake diagnostic triage. (See Appendix A in the original guideline document for summary of red and yellow flags and "Clinical assessment for psychosocial yellow flags" and "What can be done to help somebody who is at risk?" [see the "Availability of Companion Documents" field].) If serious spinal pathology is excluded, manage as non-specific low back pain as per the reassessment and treatment recommendations below.	
Do	Ankylosing Spondylitis* Consider a diagnosis of ankylosing spondylitis, particularly in younger adults who, in the absence of injury, present with a history of needing to get out of bed at night and reduced side bending.	**SR (G1)**
Do	Emergent Cases Patients with red flags (see Appendix A in the original guideline document for red flag definitions) indicating a high likelihood of serious underlying pathology should be referred for immediate evaluation and treatment to an appropriate resource depending on what is available in your region (e.g., emergency room, relevant specialist.)	**EO (G2)**
Do	Cases Requiring Further Evaluation Schedule an urgent appointment with a physician if any of the red flags are present. (See Appendix A in the original guideline document for red flag definitions.)	**EO (G2)**

	Recommendation	Evidence Source
Do	Referral to a Spinal Care Specialist Patients with disabling back or leg pain or significant limitation of function including job related activities should be referred within 2-6 weeks to a trained spinal care specialist such as a physical therapist, chiropractor, osteopathic physician or physician who specializes in musculoskeletal medicine.	**EO (G2)**
Do	Referral for Magnetic Resonance Imaging (MRI) and Possible Surgical Opinion for Radiculopathy* 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.	**CS (G8)**
Do	Laboratory Testing If cancer or infection is suspected, order the appropriate blood tests. In the absence of red flags, no laboratory tests are recommended.	**EO (G2)**
Do	Psychosocial Risk Factors Primary care evaluation should include assessment for psychosocial risk factors ("yellow flags") and a detailed review if there is no improvement (see Appendix A in the original guideline document for summary of yellow flags and "Clinical assessment for psychosocial yellow flags" and "What can be done to help somebody who is at risk?" [see the "Availability of Companion Documents" field]). Psychosocial risk factors (yellow	**SR (G2, G4)**

	Recommendation	Evidence Source
	flags) include fear, financial problems, anger, depression, job dissatisfaction, family problems, or stress.	
Do	Reassessment of Patients Whose Symptoms Fail to Resolve Reassess patients whose symptoms are not resolving. Follow-up in 1 week if pain is severe and has not subsided. Follow-up in 3 weeks if moderate pain is not improving. Follow-up in 6 weeks if not substantially recovered. If serious pathology (red flag) is identified, consider further appropriate management. Identify psychosocial risk factors (yellow flags) and address appropriately (see Appendix A in the original guideline document for definitions of red and yellow flags and "Clinical assessment for psychosocial yellow flags" and "What can be done to help somebody who is at risk?" for chronicity and increased disability [see the "Availability of Companion Documents" field]).	**G (G2, G4)**
Do	Information and Reassurance Educate the patient and describe the benign long-term course of low back pain. Provide education materials that are consistent with your verbal advice, to reduce fear and anxiety and emphasize active self-managements (see "What you should know about acute low back pain" and "Acute low back pain - so your back hurts ... Learn what works, what doesn't and how to help yourself" [see the "Patient Resources" field]). Other methods for providing self-care education, such as e-mail discussion groups and videos, are not well studied, but may also	**SR (G1)**

	Recommendation	Evidence Source
	be beneficial (see http://www.ihe.ca/research/lbpvideo/ ).	
Do	Advice to Stay Active Patients should be advised to stay active and continue their usual activity, including work, within the limits permitted by the pain. Physical exercise is recommended. *Patients should limit/pace 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.*	**SR (G1, G2, G4)**
Do	Return to Work Encourage early return to work. Refer workers with low back pain beyond 6 weeks to a comprehensive return-to-work rehabilitation program. Effective programs are typically multidisciplinary and involve case management, education about keeping active, psychological or behavioral treatment and participation in an exercise program. *Working despite some residual discomfort poses no threat and will not harm patients.*	**SR (G1, G2)**
Do	Heat or Cold Packs 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	**SR (G1)**

	Recommendation	Evidence Source
	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.*	
Do	Analgesia Prescribe medication, if necessary, for pain relief preferably to be taken at regular intervals. First choice acetaminophen; second choice non-steroidal anti-inflammatory drugs (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 of the original guideline document).*	**SR (G1, G2b, G4, G7, IHE Database)**
Do	Spinal Manipulation Patients who are not improving may benefit from referral for spinal manipulation provided by a trained spinal care specialist such as a physical therapist, chiropractor, osteopathic physician or physician who specializes in musculoskeletal medicine. *Risk of serious complication after spinal manipulation is low (estimated risk: cauda equina syndrome, less than 1 in one*	**SR (G1, G4)**

	Recommendation	Evidence Source
	million). Current guidelines contraindicate manipulation in people with severe or progressive neurological deficit.	
Do	Multidisciplinary Treatment Programs for Subacute Low Back Pain* 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.	**SR (G1)**
Do Not Do	Bed Rest Do not prescribe bed rest as a treatment. If the patient must rest, bed rest should be limited to no more than 2 days. Prolonged bed rest for more than 4 days is not recommended for acute low back problems. Bed rest for longer than two days increases the amount of sick leave compared to early resumption of normal activity in acute low back pain. *There is evidence that prolonged bed rest is harmful.*	**SR (G2, G4, G7)**
Do Not Do	Diagnostic Imaging For acute low back pain (no red flags), diagnostic imaging tests, including X-ray, computed tomography (CT), and magnetic	**SR (G1, G4, G8)**

	Recommendation	Evidence Source
	resonance imaging (MRI) are not indicated. *In the absence of red flags, routine use of X-rays is not justified due to the risk of high doses of radiation and lack of specificity.*	
Do Not Do	Traction Do not use traction. Traction has been associated with significant adverse events. *Passive treatment modalities such as traction should be avoided as monotherapy and not routinely be used because they may increase the risk of illness behavior and chronicity*. *The following adverse effects from traction were reported: reduced muscle tone, bone demineralization, and thrombophlebitis.*	**SR (G1, G4, G7)**
Do Not Do	Therapeutic Ultrasound* Do not use therapeutic ultrasound for acute or subacute low back pain.	**RCT (G1) + SR (IHE database)**
Do Not Do	Transcutaneous Electrical Nerve Stimulation (TENS) TENS is not recommended for the treatment of acute non-specific low back pain.	**SR (G1, G4)**
Do Not Do	Oral Steroids Do not use oral steroids for acute low back pain.	**EO (G2)**

	Recommendation	Evidence Source
Do Not Do	Systemic Steroids* Systemic corticosteroids (intramuscular injection) are not effective for the treatment of patients with acute low back pain and a negative result on a straight-leg-raise test.	**RCT(G1)**
Do Not Do	Epidural Steroids in the Absence of Radiculopathy Do not use epidural steroid injections for acute low back pain without radiculopathy.	**SR (G4)**
Do Not Know	Epidural Steroids in the Presence of Radiculopathy* 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.*	**SR (G4)**
Do Not Know	Narcotic Analgesics (Opioids)* 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	**SR (G1, G2b, G7, IHE Database)**

	Recommendation	Evidence Source
	for reassessment. *In general, opioids and compound analgesics have a substantially increased risk of side effects compared with acetaminophen alone.*	
Do Not Know	Therapeutic Exercise 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*.	**SR (G2, G4, IHE Database)**
Do Not Know	Multidisciplinary Treatment Programs for Acute Low Back Pain* No evidence was found to support recommending interdisciplinary rehabilitation for acute low back pain (pain	**SR (G1)**
Do Not Know	There is insufficient evidence to recommend for or against the following interventions for acute or subacute low back pain:	

	Recommendation	Evidence Source
	Acupuncture	**SR (G7, IHE Database)**
	Adjuvant therapies: antidepressants and anticonvulsants*	**EO (G1)**
	Back schools*	**SR (G1)**
	Herbal medicine*	**SR (IHE Database)**
	Low-level laser therapy*	**RCT (G1) + SR (IHE database)**
	Massage therapy*	**SR (G1, IHE Database)**
	Modified work duties for facilitating return to work*	**RCT (G1)**
	Operant conditioning provided by a physiotherapist*	**SR (IHE Database)**
	Short-wave diathermy*	**RCT (G1) + SR (IHE database)**
	Topical NSAIDs*	**SR (IHE**

	Recommendation	Evidence Source
		Database)
	No evidence from SR(s) was found to support recommending the following interventions for acute or subacute low back pain:	
	Interferential current therapy*	**EO (GDG)**
	Touch therapies*	**EO (GDG)**
	Yoga therapy*	**EO (GDG)**

Chronic Low Back Pain

	Recommendation	Evidence Source
Do	Diagnostic Tests In chronic low back pain, X-rays of the lumbar spine are very poor indicators of serious pathology. Hence, in the absence of clinical red flags spinal x-rays are not encouraged. More specific and appropriate diagnostic imaging should be performed on the basis of the pathology being sought (e.g., dual energy X-ray absorptiometry [DEXA] scan for bone density, bone scan for tumors and inflammatory diseases). However, lumbar spine X-rays may be required for correlation prior to more sophisticated diagnostic imaging, for example prior to a magnetic resonance imaging (MRI) scan. In this case, the views should be limited to	**EO (GDG)**

	Recommendation	Evidence Source
	standing anterior-posterior (AP) and lateral in order to achieve better assessment of stability and stenosis. Oblique views are not generally recommended. Computed tomography (CT) scans are best limited to suspected fractures or contraindication to MRI. In the absence of red flags, radiculopathy, or neurogenic claudication, MRI scanning is generally of limited value. *Oblique view X-rays are not recommended; they add only minimal information in a small percentage of cases, and more than double the patient's exposure to radiation.*	
Do	Laboratory Testing If cancer or infection is suspected, order the appropriate blood tests. In the absence of red flags, no laboratory tests are recommended.	**EO (GDG)**
Do	Physical Exercise Patients should be encouraged to initiate gentle exercise and gradually increase their 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 though 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	**SR (G6)**

	Recommendation	Evidence Source
	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 the exercise programs, such as increased low back pain and muscle soreness in some patients*.	
Do	Therapeutic Exercise A client-specific, graded, active therapeutic exercise program is recommended.	**EO (GDG)**
Do	Therapeutic Aquatic Exercise* Therapeutic aquatic exercise is recommended for chronic low back pain.	**SR (IHE Database)**
Do	Yoga Therapy* There is some evidence that Viniyoga and Iyengar types of yoga can be helpful in the treatment of chronic low back pain. No evidence was found to support recommending other types of yoga. *It is important to find an instructor who has experience in working with individuals who have low back pain to avoid further injury.*	**SR (IHE Database)**

	Recommendation	Evidence Source
Do	Active Rehabilitation 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)	**EO (GDG)**
Do	Self-Management Programs Where available, refer to a structured community-based self-management group program for patients who are interested in learning pain coping skills. These programs are offered through chronic disease management and chronic pain programs. Self-management programs focus on teaching core skills such as self-monitoring of symptoms to determine likely causal factors in pain exacerbations or ameliorations, activity pacing, relaxation techniques, communication skills, and modification of negative 'self-talk' or catastrophizing. These programs use goal setting and 'homework assignments' to encourage participants' self confidence in their ability to successfully manage their pain and increase their day-to-day functioning. Most community-based programs also include exercise and activity programming which are also recommended. Where structured group programs are not available, refer to a trained professional for individual self-management counseling.	**G (G6)**

	Recommendation	Evidence Source
Do	Massage Therapy Massage therapy is recommended as an adjunct to an overall active treatment program.	**SR (G6)**
Do	Acupuncture 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.*	**SR (G6)**
Do	Acetaminophen and Non-Steroidal Anti-Inflammatory Drugs (NSAIDS)* 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/cyclooxygenase (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 (see Medication Table in Appendix B in the original guideline document).*	**SR (G6, IHE Database)**
Do	Muscle Relaxants	**SR (G6)**

	Recommendation	Evidence Source
	Some muscle relaxants (e.g., cyclobenzaprine) may be appropriate in selected patients for symptomatic relief of pain and muscle spasm. *Caution must be exercised with managing side effects, particularly drowsiness, and also with patient selection, given the abuse potential for this class of drugs (see Medication Table in Appendix B in the original guideline document).*	
Do	Antidepressants Tricyclic antidepressants have a small to moderate effect for chronic back pain, at much lower doses than might be used for depression. *Possible side-effects include drowsiness and anticholinergic effects (see Medication Table in Appendix B in the original guideline document).*	**SR (G6, IHE Database)**
Do	Opioids 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	**SR (G6, IHE Database)**

	Recommendation	Evidence Source
	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 National Opioid Use Guideline Group guideline Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain, endorsed by the College of Physicians & Surgeons of Alberta (CPSA) (see also Medication Table in Appendix B in the original guideline document).	
Do	Herbal Medicine* The following herbal medicines can be considered as treatment options for acute exacerbations of chronic low back pain: • An aqueous extract of *Harpagophytum procumbens* (also called Devil's claw, grapple plant, wood spider) at a standardized daily dosage of 50 mg harpagoside • A combination of extract of *Salix daphnoides* and *Salix purpurea* (also called purple willow, red willow) at a standardized dosage of 240 mg salicin/day • A plaster of *Capsicum frutescens* (also called bird pepper, hot pepper, red chili, spur pepper, Tabasco pepper) *Devil's claw was associated with the following adverse events: repeated coughs, tachycardia, and gastrointestinal upset. Use of Capsicum frutescens plaster was associated with inflammatory*	**SR (IHE Database)**

	Recommendation	Evidence Source
	contact eczema, urticaria, minute haemorrhagic spots, vesiculation or dermatitis, sensation of warmth locally and pruritus. *Patients should be advised to read the product ingredients to ensure they are getting the correct amount and correct product mentioned in the recommendation. It is important to be aware that a product could list on the label different extracts of the same active ingredient (e.g., Devil's claw and wood spider).* *Devil's claw, Salix and Capsicum frutescens are currently regulated by Health Canada.*	
Do	Behavioral Therapy/Progressive Muscle Relaxation Where group programs are not available, consider referral for individual cognitive behavioral treatment provided by psychologist or other qualified provider.	**SR (G6)**
Do	Multidisciplinary Treatment Program 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.	**SR (G6)**
Do	Injection Therapy* The following injection therapies may be beneficial for carefully selected patients (see Appendix C in the original guideline	**SR (IHE Database)**

	Recommendation	Evidence Source
	document) with a clinical diagnosis of pain originating from the lumbar facet joints: • Intra-articular facet joint blocks • Medial branch blocks (studies show benefit for up to 6 weeks, and sometimes longer) • Medial branch neurotomy (studies demonstrate pain relief lasting longer than 3 months) The clinical diagnosis of facet joint pain lacks specificity and may be best determined by a trained spinal care specialist. *The most commonly reported adverse events are*: • *Facet joint interventions: haematoma, steroid side effects, accidental dural puncture and infection.* • *Radiofrequency denervation: increased pain (usually temporary) due to neuritis, and cutaneous dysaesthesias.*	
Do	Epidural Steroid Injections For patients with leg pain, epidural steroid injections can be effective in providing short-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.*	**SR (G6)**

	Recommendation	Evidence Source
Do	Referral for Surgical Opinion on Spinal Fusion* Consider referral for an opinion on spinal fusion for patients who: • Have completed an optimal package of care including a combined physical and psychological treatment program (usually 6 months of care); and • Still have severe low back pain for which the patient would consider surgery, particularly if related to spinal stenosis with leg pain. Offer anyone with significant psychological distress appropriate treatment for this before referral for an opinion on spinal fusion. Refer the patient to a specialist spinal surgical service if spinal fusion is being considered. Give due consideration to the possible risks in that patient. Counsel the patient that surgery may not be an option in his/her case.	**EO (GDG)**
Do Not Do	Selective Serotonin Reuptake Inhibitors (SSRIs)* Do not offer SSRIs for treating chronic low back pain. They may, however, be indicated for co-morbid depression.	**SR (IHE Database)**
Do Not Do	Motorized Traction* Do not use motorized traction for chronic low back pain.	**SR (IHE Database)**
Do Not Do	Prolotherapy as a Sole Treatment* Prolotherapy is not recommended as a sole treatment for chronic	**SR (G6)**

	Recommendation	Evidence Source
	low back pain.	
Do Not Do	Transcutaneous Electrical Nerve Stimulation (TENS) as a Sole Treatment* TENS is not recommended as a sole treatment for chronic low back pain.	**SR (G6)**
Do Not Know	Lumbar Discography as a Diagnostic Test* There is insufficient evidence to recommend for or against the use of lumbar discography as a diagnostic test.	**SR (IHE Database)**
Do Not Know	Prolotherapy as an Adjunct Treatment* Prolotherapy may be useful for carefully selected and monitored patients who are participating in an appropriate program of therapeutic exercise and/or manipulation/mobilization. *The most commonly reported adverse events were temporary increases in back pain and stiffness following injections. Some patients had severe headaches suggestive of lumbar puncture, but no serious or permanent adverse events were reported.*	**EO (G6)**
Do Not Know	Transcutaneous Electrical Nerve Stimulation (TENS) as an Adjunct Treatment* TENS may be useful as an adjunct in select patients for pain control to reduce the need for medications. A short trial (2 to 3 treatments) using different stimulation parameters should be sufficient to determine if the patient will respond to this modality.	**EO (G6)**

	Recommendation	Evidence Source
	Skin irritation is a common adverse event.	
Do Not Know	Therapeutic Ultrasound* There is insufficient evidence to recommend for or against the use of therapeutic ultrasound for chronic low back pain. Based on expert opinion, this modality is overused relative to any potential therapeutic benefit.	**SR (IHE Database)**
Do Not Know	There is insufficient evidence to recommend for or against the following interventions for chronic low back pain:	
	Low-level laser therapy*	**SR (IHE Database)**
	Spa therapy*	**SR (IHE Database)**
	Spinal manipulative treatment or spinal mobilization	**SR (G6, IHE Database)**
	No evidence from SR(s) was found to support recommending the following interventions for chronic low back pain:	
	Buprenorphine transdermal system*	**EO (GDG)**
	Duloxetine*	**EO (GDG)**

	Recommendation	Evidence Source
	Intramuscular stimulation*	**EO (GDG)**
	Interferential current therapy*	**EO (GDG)**
	Topical NSAIDs*	**EO (GDG)**
	Touch therapies*	**EO (GDG)**

Definitions:

Summary of Criteria to Determine the Categorization of Recommendations

Do	• The Guideline Development Group (GDG) accepted the original recommendation, which provided a prescriptive direction to perform the action or used the term "effective" to describe it. • The GDG 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 accepted the original recommendation, which provided a prescriptive direction "not" to perform the action; used the term "ineffective" to describe it; or stated that the evidence does "not support" it. • The GDG 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	• The GDG accepted the original recommendation, which did not recommend for or against the action or stated that there was "no evidence", "insufficient or conflicting

Know	evidence", or "no good evidence" to support its use. • The GDG 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 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".

Evidence Source

The Evidence Source provides information on the "seed" guideline(s) that were used to develop the Alberta guideline recommendations and the design of the studies referenced by the seed guideline(s) in support of their recommendations.

Evidence source legend:

- Systematic review - SR
- Randomized controlled trial - RCT
- Case series - CS
- Guideline - G
- Expert opinion as cited by the seed guideline(s) - EO
- Collective EO of the Ambassador Guideline Development Group (GDG) - EO (GDG)
- Institute for Health Economics - IHE

"Seed" Guidelines†

G1‡: Chou et al. 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 Oct 2;147(7):478-91. Last accessed online May 11, 2012.

G2‡a.: Institute for Clinical Systems Improvement (ICSI). Adult low back pain, 12th edition. Bloomington (MN): ICSI: 2006 Sept.

b. Institute for Clinical Systems Improvement (ICSI). Adult low back pain, 13th edition. Bloomington (MN): ICSI: 2008 Nov.

G3: U.S. Preventive Services Task Force. Primary Care Interventions to Prevent Low Back Pain: Brief Evidence Update. February 2004. Agency for Healthcare Research and Quality, Rockville, MD. Last accessed online May 11, 2012.

G4: van Tulder M 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. 2004. Last accessed online May 11, 2012.

G5: Burton AK 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. November 2004. Last accessed online May 11, 2012.

G6: Calgary Health Region. Chronic Pain Management. Guidelines for Primary Care Practice in the Calgary Health Region. October 2005.

Regional Pain Program. Low Back Pain. Evidence-based Clinical Practice Guidelines for Primary Care Practice in the Calgary Health Region. Chronic Pain Services in the Community: Supporting Primary Care. September 19, 2006.

G7: Australian Acute Musculoskeletal Pain Group. Evidence-based Management of Acute Musculoskeletal Pain. Acute Low Back Pain. Chapters 4 & 9, pg 25-62 and 183-188. 2003. Last accessed online May 11, 2012.

G8: Bussieres AE et al. Diagnostic imaging practice guidelines for musculoskeletal complaints in adults-an evidence-based approach-part 3: spinal disorders. Journal of Manipulative Physiology Therapy 2008 Jan;31(1):33-88. Last accessed online May 11, 2012.

†The guidelines are not presented in any specific order. G1, G2, etc., are randomly assigned and for the purpose of organization only.

‡New "seed" guidelines used in this update.

Clinical Algorithm(s)

An algorithm for non-specific, non-malignant low back pain in adults only is provided in the summary of the guideline (Appendix H of the original guideline document).

Scope

Disease/Condition(s)

- Acute and subacute low back pain
- Chronic low back pain
- Acute and subacute sciatica/radiculopathy
- Chronic sciatica/radiculopathy

Guideline Category

Counseling

Diagnosis

Evaluation

Management

Prevention

Risk Assessment

Treatment

Clinical Specialty

Chiropractic

Family Practice

Nursing

Pharmacology

Physical Medicine and Rehabilitation

Preventive Medicine

Psychology

Intended Users

Advanced Practice Nurses

Chiropractors

Nurses

Occupational Therapists

Pharmacists

Physical Therapists

Physicians

Psychologists/Non-physician Behavioral Health Clinicians

Guideline Objective(s)

- To help Alberta clinicians make evidence-informed decisions about care of patients with nonspecific low back pain
- To increase the use of evidence-informed conservative approaches to the prevention, assessment, diagnosis, and treatment in primary care patients with low back pain
- To promote appropriate specialist referrals and use of diagnostic tests in patients with low back pain
- To encourage patients to engage in appropriate self-care activities

Target Population

Adult patients 18 years or older in primary care settings

Interventions and Practices Considered

Note: Not all of the listed interventions/practices are recommended; please see the "Major Recommendations" field for full context.

Prevention

1. Patient education
2. Physical activity
3. Shoe insoles/orthoses
4. Lumbar supports
5. Spinal manipulative therapy or spinal mobilization
6. Risk factor modification
7. Mattresses
8. Furniture—chairs

Management/Treatment

1. Acute and sub-acute low back pain (duration less than 12 weeks)
    - Diagnostic triage
    - Assessing emergent cases
    - Cases requiring further evaluation
    - Referral to a spinal care specialist
    - Referral for magnetic resonance imaging (MRI) and possible surgical opinion for radiculopathy
    - Laboratory testing
    - Assessing psychosocial risk factors
    - Reassessment of patients whose symptoms fail to resolve
    - Information and reassurance
    - Advice to stay active
    - Return to work
    - Heat or cold packs
    - Analgesia
    - Spinal manipulation
    - Multidisciplinary treatment programs
    - Bed rest
    - Diagnostic imaging

- Traction
- Therapeutic ultrasound
- Transcutaneous electrical nerve stimulation (TENS)
- Oral steroids
- Systemic steroids
- Epidural steroids
- Narcotic analgesics (opioids)
- Therapeutic exercise
- Acupuncture
- Adjuvant therapies: antidepressants and anticonvulsants
- Back schools
- Herbal medicine
- Low-level laser therapy
- Massage therapy
- Modified work duties for facilitating return to work
- Operant conditioning provided by a physiotherapist
- Short-wave diathermy
- Topical non-steroidal anti-inflammatory drugs (NSAIDs)
- Interferential current therapy
- Touch therapies
- Yoga therapy

2. Chronic low back pain (duration more than 12 weeks)
    - Diagnostic tests
    - Laboratory testing
    - Physical exercise
    - Therapeutic exercise
    - Therapeutic aquatic exercise
    - Yoga therapy
    - Active rehabilitation
    - Self-management programs
    - Massage therapy
    - Acupuncture
    - Acetaminophen and NSAIDs
    - Muscle relaxants
    - Antidepressants
    - Opioids

- Herbal medicine
- Behavioural therapy/progressive muscle relaxation
- Multidisciplinary treatment program
- Injection therapy
- Epidural steroid injections
- Referral for surgical opinion on spinal fusion
- Selective serotonin reuptake inhibitors (SSRIs)
- Motorized traction
- Prolotherapy
- TENS
- Lumbar discography as a diagnostic test
- Therapeutic ultrasound
- Buprenorphine transdermal system
- Low-level laser therapy
- Spa therapy
- Spinal manipulative treatment or spinal mobilization
- Duloxetine
- Intramuscular stimulation
- Interferential current therapy
- Topical NSAIDs
- Touch therapies

Major Outcomes Considered

- Number, duration, and intensity of pain episodes
- Pain recurrence
- Functional status (strength, mobility, endurance)
- Time required to return to work
- Utilization of health care resources
- Diagnostic accuracy of various imaging techniques including lumbar spine computed tomography (CT) and magnetic resonance imaging
- Patient satisfaction

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

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 clinical practice guidelines (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 of America, and European countries (except for those with transition economies).

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

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 first edition of the guideline, 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 (see Table 1 in the background document; and the "Availability of Companion Documents" field).

For the second edition of the guideline, 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.

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

In some cases, Update Committee members requested additional research evidence to finalize some of the guideline's recommendations. Hence, primary studies cited in the seed guidelines in support of their recommendations were retrieved for closer examination. For some of these recommendations, the database developed for the Ambassador Pilot Project, known as the

Institute of Health Economics (IHE) database, was searched for systematic reviews, published in English between January 2002 and December 2010, that focused on specific interventions for low back pain. The search strategy for the systematic reviews in this database is outlined in Table 2 in the background document.

"Do Not Know" Recommendations and New Interventions

The IHE database was searched to identify recently published systematic reviews of new interventions that were considered important by the Steering Committee, the Update Committee, and members of the former Guideline Development Group (GDG) and Advisory Committee, but which were not covered in the first edition of the Alberta Clinical Practice Guideline (CPG). These included the following: lumbar discography as a diagnostic test, herbal medicine, aquatic exercise and spa therapy, yoga therapy, touch therapy, spinal decompression treatment/traction, low level laser therapy, radiofrequency neurotomy, intramuscular stimulation, and topical non-steroidal anti-inflammatory drugs (NSAIDs).

The IHE database was also searched to identify recently published systematic reviews on interventions from the first edition of the Alberta CPG that were demarcated with a recommendation category of "do not know" as follows:

- Prevention of occurrence and recurrence of low back pain: lumbar support/back belts, manipulative treatment, mattresses, furniture—chairs, risk factor modification
- Acute and subacute low back pain: acupuncture, therapeutic exercise
- Chronic low back pain: spinal manipulation

See Table 2 in the background document (see the "Availability of Companion Documents" field) for more information.

Recently published systematic reviews were similarly sought for all of the drugs listed in the medication table from the first edition of the Alberta CPG.

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 in the background document

[see the "Availability of Companion Documents" field]). When a single guideline development group had published more than one guideline, only the most recent version was used.

In the first edition of the Alberta CPG, a dearth of guidelines on chronic low back pain led to the inclusion of two guidelines (Mercer et al. [2006], formerly G1, and Institute for Clinical Systems Improvement [2006], formerly G2) that did not match the definition of chronic low back pain—both defined chronic pain as pain lasting 6 weeks or longer—as listed in the inclusion criteria for the Alberta CPG (i.e., pain of at least 12 weeks' duration). Similarly, no new guidelines on chronic low back pain that matched the Alberta CPG definition were identified by the literature searches for the second edition of the Alberta CPG. Consequently, the Research Team included a recent comprehensive guideline by Savigny et al. (2009) for review by the Update Committee, which defined chronic pain as pain lasting more than 6 weeks. An update of the Institute for Clinical Systems Improvement (2008) guideline, which still defined chronic pain as pain lasting longer than 6 weeks, was also included for review by the Update Committee.

However, the Update Committee decided to exclude seed guidelines whose definition of chronic low back pain did not exactly match that of the Alberta CPG's inclusion criteria (see Appendix D, Table D.4 in the background document [see the "Availability of Companion Documents" field]). Therefore, the two seed guidelines that were initially included in the first edition were also excluded by the Update Committee: Mercer et al. (2006), formerly G1, and the Institute for Clinical Systems Improvement (2006), formerly G2. The chronic pain recommendations that were derived from these two guidelines were subsequently removed from the second edition of the Alberta CPG. The guideline by Savigny et al. was also excluded. However, an exception was made for the updated version of the Institute for Clinical Systems Improvement (2008) guideline, which was included in the second edition of the Alberta CPG (only for acute low back pain) because its recommendations on acute/subacute low back pain had already been included in the first edition, and its definition for acute/subacute pain overlapped with that of the Alberta CPG.

Number of Source Documents

Eight seed guidelines

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Critically Appraising the Seed Guidelines

The included guidelines were assessed with respect to various aspects of methodology and reporting using the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument. Although a new edition of the tool, AGREE tool (II), was published in May 2009, to maintain consistency and continuity in the guideline appraisal process, the Research Team decided to continue using the original AGREE tool that had been used in the first edition of the Alberta Clinical Practice Guideline (CPG).

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. A detailed discussion of the modifications can be found in the background document (see the "Availability of Companion Documents" field).

Seed guideline quality assessments were undertaken independently by two or three reviewers who discussed the modified AGREE dictionary with respect to the interpretation of questions prior to assessing the guidelines.

Critically Appraising the Systematic Reviews on New Recommendations

The Research Team critically appraised the systematic reviews found on the following new interventions, which were added to the Alberta CPG based on input from the Steering

Committee, the Update Committee, and members of the former Guideline Development Group (GDG) and Advisory Committee: lumbar discography as a diagnostic test, herbal medicine, aquatic exercise, spa therapy, yoga therapy, touch therapy, spinal decompression treatment/traction, physiotherapist-provided operant conditioning, short wave diathermy, therapeutic ultrasound, low-level laser therapy, radiofrequency neurotomy, intramuscular stimulation, and topical non-steroidal anti-inflammatory drugs (NSAIDs). 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 in the background document [see the "Availability of Companion Documents" field]). The checklist was operationalized by constructing a dictionary that explained each criterion. The two reviewers discussed the dictionary with respect to the interpretation of questions prior to assessing the reviews.

The quality assessment was conducted 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 in the background document (see the "Availability of Companion Documents" field). Although the results of the quality appraisal were examined by the Steering Committee, 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, and 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. Discordant recommendations among guidelines were highlighted within the table.

Additional information regarding the methods and processes used to develop this guideline is available in the background document (see the "Availability of Companion Documents" field.)

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Set-up and Planning of the Alberta Low Back Pain Guideline Update Process

Several activities occurred in preparation for the second edition (or update) of the Alberta Clinical Practice Guideline (CPG) for the Evidence-Informed Primary Care Management of Low Back Pain.

- At the completion of the first 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 Guideline Development Group (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 first edition of the Alberta CPG. Toward Optimized Practice (TOP), the program responsible for provincial guidelines, and health technology assessment (HTA) researchers from the Institute of Health Economics were responsible for updating the scientific content of the Alberta CPG. The Steering Committee began outlining a schedule and process for updating the guideline in the fall of 2010. The Update Committee, which was co-chaired by two members (the clinical psychologist who chaired the GDG and a physician who participated in the GDG), became active in January 2011.
- A workshop titled "Encouraging Optimal Use of Diagnostic Imaging for Low Back Pain" was held on 26–27 October 2010 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.
- In November 2010, all former GDG and Advisory Committee members were asked to list any primary care assessments and treatments not included in the first 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 in December 2010, followed by full Update Committee review in January 2011.

General Process

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 first edition of the Alberta CPG), were tabulated in the evidence inventory tables. The recommendations from the first edition of the Alberta CPG were listed for reference alongside the new evidence, where applicable. Evidence inventory tables for the guidelines common to the first and second edition of the Alberta CPG can be found in Appendix G of the background document (see the "Availability of Companion Documents" field) for the first edition of this guideline: 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/documents/Guideline100-pagerJune2010.pdf  .

The Update Committee reviewed all of the documents for the new seed guidelines (the guidelines plus their companion documents, evidence inventory tables, and Appraisal of Guidelines for Research and Evaluation [AGREE] scores) and engaged in deliberations during three half-day meetings (two via WebEx and one face-to-face) over a 5-month period (January to May 2011) to review and update the Alberta CPG recommendations. In addition, two special topic meetings were held. The first involved one half-day, face-to-face meeting on 1 June 2011 to review and refine recommendations relating to clinical red flags and to referral for diagnostic imaging and surgical evaluation, to ensure they were relevant to Alberta practice. The meeting participants included one spine surgeon, three radiologists, four members of the Update Committee, and one member of the Research Team. In preparation for this meeting, two additional reviewers from the Institute for Work & Health, Ontario, were asked to use the modified AGREE tool to appraise a guideline from the Canadian Association of Radiologists that had been excluded during the seed guideline selection process (see Appendix D, Table D.3 of the background document [see the "Availability of Companion Documents" field]) This was done to ensure that the decision to exclude this national guideline was not biased, and to provide some external validation of the critical appraisal methodology used in the development of the Alberta CPG (see Appendix I, Table I.2 of the background document [see the "Availability of Companion Documents" field]).

The second special topic meeting involved a 2-hour teleconference on 3 August 2011 to review any published systematic reviews relating to the pharmaceutical interventions listed in the Alberta CPG, with the aim of updating the information contained in the medication table. The meeting participants included four members of the Update Committee (three family physicians and one osteopathic physician), one pharmacist who was not a member of the Update Committee, and one member of the Research Team. Two other pharmacists, one of whom was not a member of the Update Committee, provided feedback via e-mail.

The agenda and all documents were provided in advance for each meeting, and participants had the option of joining the face-to-face meetings via telephone if they could not attend in person. Each of the meetings was guided by one or both of the co-chairs. To expedite the process, multiple subcommittee meetings were organized to review the new research evidence and draft recommendations prior to the Update Committee meetings. 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.

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 first edition of the guideline were considered. These requests by the Update Committee, 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 identified by a supplementary literature search conducted between January 2002 and December 2010. The parking lot items were referred for further analysis to ad hoc subcommittees comprising the co-chairs of the Update Committee, one HTA researcher, and at least one volunteer from the Update Committee with expertise in the relevant area. Consensus-based decisions made by the subcommittees were then presented to the Update Committee for final approval. Information about the parking lot items and other miscellaneous requests made by the Update Committee, the deliberations of the subcommittees, and the dates when the actions and final approval of the recommendations took place are provided in Appendix K of the background document (see the "Availability of Companion Documents" field).

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 guideline
    - Accepted/changed original recommendation based on additional evidence from systematic review literature search
    - Supplemented additional evidence with expert opinion

In wording the recommendations, the Update Committee, Steering Committee, and Research Team considered the GuideLine Implementability Appraisal (GLIA) tool, 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.

Additional information regarding the methods and processes used to develop this guideline is available in the background document (see the "Availability of Companion Documents" field).

Rating Scheme for the Strength of the Recommendations

Summary of Criteria to Determine the Categorization of Recommendations

Do	• The Guideline Development Group (GDG) accepted the original recommendation, which provided a prescriptive direction to perform the action or used the term "effective" to describe it. • The GDG 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 accepted the original recommendation, which provided a prescriptive direction "not" to perform the action; used the term "ineffective" to describe it; or stated that the evidence does "not support" it.

	• The GDG 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 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 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 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".

Cost Analysis

Economic Implications Reported in the Seed Guidelines

Formal economic evaluations or cost analyses were not included in any of the seed guidelines. The following statements were made in the seed guidelines regarding the economic implications of their recommendations (see the "Major Recommendations" field to identify the seed guidelines).

- Proper information (information/education/training [back schools]) may reduce the cost of back problems. The power of written information is relatively weak, but it may be cost-effective due to its low per-person costs. Regarding information from general activities of the media, cost-benefit aspects need to be considered, because a higher intensity delivery may have a higher impact on the recipient but is likely to be more expensive. Therefore, local circumstances and needs must be considered. Currently, insufficient evidence is available from randomized controlled trials and reviews to give specific recommendations. (G5)
- Self-care education books based on evidence-based guidelines are recommended because they are an inexpensive and efficient method for supplementing clinician-provided back information and

advice and are similar or only slightly inferior in effectiveness to such costlier interventions as supervised exercise therapy, acupuncture, massage, and spinal manipulation. (G1)

- There is no evidence that risk factor modification will reduce the incidence, prevalence, or socioeconomic costs of low back pain. (G5)
- Substitution of rapid magnetic resonance imaging (MRI) for X-ray evaluations in the primary care setting may offer little additional benefit to patients, and it may increase the costs of care because of the increased number of spine operations that patients are likely to undergo (G4, G8). Because of its high cost, the use of MRI cannot be justified for the screening of acute low back pain. (G7)
- Selection of appropriate radiologic imaging procedures for evaluation of patients with musculoskeletal disorders of the spine decreases costs and unnecessary ionizing radiation exposure and improves accessibility. In adult patients with acute, uncomplicated low back pain (less than 4 weeks' duration), routine use of lumbar spine conventional radiography is not indicated because of the very low incidence of unexpected findings on radiographs (only 1 in 2500 radiographs), the high radiation dose to gonads, the high cost/benefit ratio, and the poor association between patient findings and low back pain (i.e., not specific). MRI or computed tomography (CT) is useful in the detection of problems with bone and soft tissue structures. The choice of study depends on the current clinical question, availability of equipment, and costs. CT is more available and less costly. (G2b)
- Several classes of medications have been shown to have moderate, primarily short-term benefits for patients with low back pain. Each class of medication is associated with unique trade-offs involving benefits, risks, and costs. For example, acetaminophen is a slightly weaker analgesic than non-steroidal anti-inflammatory drugs (NSAIDs) (10 points on a 100-point visual analogue pain scale), but is a reasonable first-line option for treatment of acute or chronic low back pain because of its more favorable safety profile and low cost. Factors that should be considered when weighing medications for low back pain include the presence of risk factors for complications, concomitant medication use, baseline severity of pain, duration of low back symptoms, and cost. (G1)
- Some interventions (such as intensive, interdisciplinary rehabilitation) may not be available in all settings, and costs for similarly effective interventions can vary substantially. (G1)

The following cost-effectiveness recommendations are provided in the seed guidelines.

- Published data are very limited, but there is some evidence that advice to maintain usual activities, the provision of an education booklet, and participation in community-based exercises are cost-effective first-line interventions for acute low back pain. An exercise program is more

cost-effective than usual care, with lower direct and indirect costs (as measured by days of work lost). (G7)

Method of Guideline Validation

Clinical Validation-Pilot Testing

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Reviewing the Alberta Clinical Practice Guideline (CPG)

The first edition of the Alberta CPG for the Evidence-Informed Primary Care Management of Low Back Pain (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 Steering Committee and Research Team collated all feedback and incorporated it, where possible, into the Alberta CPG.

For the second edition of the Alberta CPG, the Update Committee and healthcare practitioners from the Toward Optimized Practice (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. One family physician, one specialist physician, two physical therapists/rehabilitation professionals, and one psychologist, from four of the five Alberta Health Services zones (i.e., North, Edmonton, Calgary, and South) provided feedback. A sample of the survey and of the responses is provided in Appendix R of the background document (see the "Availability of Companion Documents" field).

A pilot study was conducted in August 2011 among 83 physical therapy students at the University of Alberta who were in the final year of their Masters in Physical Therapy program.

The aim was to evaluate the utility of measuring awareness of and adherence to the Alberta CPG among physical therapists using previously validated vignettes. Seventy-five students responded, of whom 43 commented on the usefulness of the guideline: it received an average rating of 5 out of 10 (scale ranged from 0 = not useful to 10 = extremely useful). The following suggestions for improving the guideline were provided: disseminate it widely and make it more available (n=5); use the guideline as a teaching resource in the physiotherapy curriculum (n=4); publish the guideline on a professional website (n=1); and enhance the treatment options available in the guideline (n=1).

The Alberta CPG for the Evidence-Informed Primary Care Management of Low Back Pain, 2nd Edition, has been 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 adaptation process used to develop the first edition of the Alberta CPG was evaluated by an independent management consultancy firm in 2009. The evaluation aimed to identify the major challenges and successful strategies associated with the process; to assess the strengths and weaknesses of the process by benchmarking it against the ADAPTE framework, and 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 process and the ADAPTE framework. 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 GuideLine Implementability Appraisal tool (GLIA) were used to "word-smith" the final recommendations; and a more comprehensive process was used to gather feedback on the draft guideline. There was strong consensus among the 29 stakeholder 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 second edition of the Alberta CPG will not be conducted.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified for each recommendation (see the "Major Recommendations" field).

The Evidence Source provides information on the "seed" guideline(s) that were used to develop the Alberta guideline recommendations and the design of the studies referenced by the seed guideline(s) in support of their recommendations.

The following evidence sources were considered:

- SR (systematic review): as cited by the seed guideline(s) or identified from a supplementary literature search (Institute of Health Economics [IHE] Database) required by the Ambassador Guideline Development Group (GDG). The literature search spanned from January 1996 to August 2007 for the first edition of this guideline and from January 2002 to December 2010 for the second edition.
- RCT (randomized controlled trial): as cited by the seed guideline(s)
- CS (case series): as cited by the seed guideline(s)
- G (guideline): as cited by the seed guideline(s)
- EO (expert opinion as cited by the seed guideline[s]): when no evidence was provided by the "seed" guideline(s) in support of the recommendation
- EO (GDG): after examining other references nominated by GDG members (i.e., SRs or Gs which defined chronic pain as >6 weeks' duration) or when no evidence from SRs was found on an intervention, a new recommendation was drafted based on the collective EO of the Ambassador GDG.

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, CS, or G) only SR is listed as the source. When no SR was referenced in the seed guideline, the evidence source was indicated in the following order: RCT, 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 guideline came from one or more seed guidelines or SRs (IHE Database) was created by the GDG, based on their collective professional opinion and an analysis of relevant evidence.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

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.

Potential Harms

Heat or Cold Packs

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.

Non-steroidal Anti-inflammatory Drugs (NSAIDs)

Serious adverse effects of NSAIDs include gastrointestinal complications (e.g., bleeding, perforation and increased blood pressure). Mild-to-moderately severe side-effects of NSAIDs

include abdominal pain, diarrhea, edema, dry mouth, rash, dizziness, headache, tiredness. There is no clear difference between different types of NSAIDs.

Opioids

In general, opioids and compound analgesics have a substantially increased risk for side effects compared with acetaminophen alone. Opioid side-effects (including headache, nausea, somnolence, constipation, dry mouth, and dizziness) should be high in the differential diagnosis of new complaints.

Injection Therapy

The most commonly reported adverse events are:

- Facet joint interventions: haematoma, steroid side effects, accidental dural puncture and infection
- Radiofrequency denervation: increased pain (usually temporary) due to neuritis, and cutaneous dysaesthesias

Epidural Steroids

Transient minor complications include: headache, nausea, pruritus, increased pain of sciatic distribution, and puncture of the dura. Adverse effects of epidural steroids in the presence of radiculopathy are infrequent and include headache, fever, subdural penetration and more rarely epidural abscess and ventilatory depression.

Therapeutic Exercise

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.

Physical Exercise

Some studies report mild negative reactions to exercise programs such as increased low back pain and muscle soreness in some patients.

Yoga Therapy

It is important for find an instructor who has experience in working with individuals who have low back pain to avoid further injury.

Acupuncture

No serious adverse events were reported in the trials. The incidence of minor adverse events was 5% in the acupuncture group (see the "Major Recommendations" field).

Muscle Relaxants

Drowsiness, dizziness and dependency are common adverse effects of muscle relaxants. Caution must be exercised with managing side effects, particularly drowsiness, and also with patient selection, given the abuse potential for this class of drugs.

Antidepressants

Possible side-effects include drowsiness and anticholinergic effects.

Prolotherapy

The most commonly reported adverse events were temporary increases in back pain and stiffness following injections. Some patients had severe headaches suggestive of lumbar puncture, but no serious or permanent adverse events were reported.

Herbal Medicines

Devil's claw was associated with the following adverse events: repeated coughs, tachycardia, and gastrointestinal upset. Use of Capsicum frutescens plaster was associated with inflammatory contact eczema, urticaria, minute hemorrhagic spots, vesiculation or dermatitis, sensation of warmth locally and pruritus.

Transcutaneous Electrical Nerve Stimulation (TENS)

Skin irritation is a common adverse event.

See Medication Table in Appendix B in the original guideline document for more information about side-effects of medications.

Contraindications

Contraindications

- Risk of serious complication after spinal manipulation is low (estimated risk: cauda equina syndrome, less than 1 in one million). Current guidelines contraindicate manipulation in people with severe or progressive neurological deficit.
- A history of addiction is a relative contraindication to opioid use. Consultation with an addictions specialist may be helpful in these cases.

See Medication Table in Appendix B in the original guideline document for contraindications for drug treatments used in the management of acute and chronic low back pain.

Qualifying Statements

Qualifying Statements

- These recommendations are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. They should be used as an adjunct to sound clinical decision making.
- It is recognized that not all recommended treatment options are available in all communities.

Implementation of the Guideline

Description of Implementation Strategy

The 'Alberta Clinical Practice Guideline (CPG) for the Evidence-Informed Primary Care Management of Low Back Pain' dissemination plan includes the following main strategies to manage barriers.

- Develop patient support materials (information sheets, instructional videos, website, brochure) 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:
    - Toward Optimized Practice (TOP) to launch guideline
    - The update committee to champion the CPG in their regions
    - The Bone and Joint Strategic Clinical Networks, 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 (Calgary and Edmonton), 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.

The timetable for dissemination of the Alberta CPG is provided in Appendix S of the background document (see the "Availability of Companion Documents" field).

Implementation Tools

Clinical Algorithm

Mobile Device Resources

Patient Resources

Quick Reference Guides/Physician Guides

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Toward Optimized Practice. Guideline for the evidence-informed primary care management of low back pain. Edmonton (AB): Toward Optimized Practice; 2011. 37 p. [39 references]

Adaptation

The following "seed" guidelines* were used to develop the guideline recommendations.

G1: Chou et al. 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 Oct 2;147(7):478-91. Last accessed online May 11, 2012.

G2: a. Institute for Clinical Systems Improvement (ICSI). Adult low back pain, 12th edition. Bloomington (MN): INCSI: 2006 Sept.

b. Institute for Clinical Systems Improvement (ICSI). Adult low back pain, 13th edition. Bloomington (MN): INCSI: 2008 Nov.

G3: U.S. Preventive Services Task Force. Primary Care Interventions to Prevent Low Back Pain: Brief Evidence Update. February 2004. Agency for Healthcare Research and Quality, Rockville, MD. Last accessed online May 11, 2012.

G4: van Tulder M 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. 2004. Last accessed online May 11, 2012.

G5: Burton AK 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. November 2004. Last accessed online May 11, 2012.

G6: Calgary Health Region. Chronic Pain Management. Guidelines for Primary Care Practice in the Calgary Health Region. October 2005.

Regional Pain Program. Low Back Pain. Evidence-based Clinical Practice Guidelines for Primary Care Practice in the Calgary Health Region. Chronic Pain Services in the Community: Supporting Primary Care. September 19, 2006.

G7: Australian Acute Musculoskeletal Pain Group. Evidence-based Management of Acute Musculoskeletal Pain. Acute Low Back Pain. Chapters 4 & 9, pg 25-62 and 183-188. 2003. Last accessed online May 11, 2012.

G8: Bussieres AE et al. Diagnostic imaging practice guidelines for musculoskeletal complaints in adults-an evidence-based approach-part 3: spinal disorders. Journal of Manipulative Physiology Therapy 2008 Jan;31(1):33-88. Last accessed online May 11, 2012.

*The guidelines are not presented in any specific order. G1, G2, etc., are randomly assigned and for the purpose of organization only.

Date Released

2009 Mar (revised 2011 Nov)

Guideline Developer(s)

Institute of Health Economics - Nonprofit Research Organization

Toward Optimized Practice - State/Local Government Agency [Non-U.S.]

Source(s) of Funding

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The above-mentioned funders had no influence on the recommendations contained in the final Alberta Clinical Practice Guideline (CPG), 2nd Edition.

Guideline Committee

Guideline Development Group (GDG)

Composition of Group That Authored the Guideline

Guideline Development Group (GDG) Co-Chairs: Paul Taenzer, BSc, PhD, RPsych, Regional Pain Program, Alberta Health Services Calgary Health Region, Psychology, pain management; Ted Findlay MD, DO, CCFP, Consultant, Chronic Pain Centre, Alberta Health Services, Musculoskeletal chronic pain management

For details on the affiliation, discipline, and area of expertise of the GDG members, see Appendix A in the guideline background document (see the "Availability of Companion Documents" field).

Financial Disclosures/Conflicts of Interest

All Update Committee, Steering Committee, and Research Team members completed a declaration of competing interest using a standard form (see Appendix T in the guideline background document). Competing interest was considered to be financial or nonfinancial interest, either direct or indirect, that could affect the recommendations contained in the Alberta clinical practice guideline (CPG).

No competing interests were declared by members of the Update Committee, Steering Committee, Research Team, or special topic committees.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Toward Optimized Practice. Guideline for the evidence-informed primary care management of low back pain. Edmonton (AB): Toward Optimized Practice; 2009 Mar 2. 21 p.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Toward Optimized Practice (TOP) Web site  .

Availability of Companion Documents

The following are available:

- A summary of the guideline for the evidence-informed primary care management of low back pain. Edmonton (AB): Institute of Health Economics; 2011. 2 p. Electronic copies: Available in Portable Document Format (PDF) from the Toward Optimized Practice (TOP) Web site  .
- Ambassador Program guideline for the evidence-informed primary care management of low back pain: background document. Edmonton (AB): Institute of Health Economics; 2012 Jul. 190 p. Electronic copies: Available in PDF from the Institute of Health Economics Web site  .
- Ambassador Program guideline for the evidence-informed primary care management of low back pain: background document. Edmonton (AB): Institute of Health Economics; 2010 Jun. 165 p. Electronic copies: Available in PDF from the Institute of Health Economics Web site  .
- Clinical assessment of psychosocial yellow flags. Edmonton (AB): Institute of Health Economics; 2009. 3 p. Electronic copies: Available in PDF from the TOP Web site  .
- What can be done to help somebody who is at risk? Edmonton (AB): Institute of Health Economics; 2009. 2 p. Available in PDF from the TOP Web site  .
- Bombardier C, Carrette S (eds). Primary care low back pain examination video. The three-minute primary care low back examination. © 2004 Division of Rheumatology, University of Toronto and Institute for Work & Health. Available from the Institute of Health Economics Web site  .
- Canadian guideline for safe and effective use of opioids for chronic non-cancer pain. Hamilton (Ontario): National Opioid Use Guideline Group (NOUGG). 2010. Electronic copies: Available in PDF from the TOP Web site  .

In addition, a mobile version of the original guideline document is available from the TOP Web site  .

Patient Resources

The following are available:

- What you should know about chronic low back pain. Patient handout. Edmonton (AB): Institute of Health Economics; 2011. 1 p. Electronic copies: Available in Portable Document Format (PDF) from the Toward Optimized Practice (TOP) Web site  (Adapted for the Institute of Health Economics with permission from the Institute of Work & Health).
- What you should know about acute low back pain. Patient handout. Edmonton (AB): Institute of Health Economics; 2011. 1 p. Electronic copies: Available in PDF from the TOP Web site  .
- Chronic low back pain. So your back hurts... learn what works, what doesn't and how to help yourself. Patient brochure. Edmonton (AB): Institute of Health Economics; 2011. 10 p. Electronic copies: Available from the TOP Web site  .
- Acute low back pain. So your back hurts... learn what works, what doesn't and how to help yourself. Patient brochure. Edmonton (AB): Institute of Health Economics; 2011. 14 p. Electronic copies: Available from the TOP Web site  .

In addition, instructional videos are available from the Institute of Health Economics Web site  .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

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