Using the Alberta Primary Care Low Back Pain Guideline in Practice

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Disclosures

- Paul Taenzer – honoraria from Amgen and Janssen Ortho
- Christa Harstall – no competing interest
- Ted Findlay – no competing interest

Learning objectives

To understand:

- The methodology used to develop the guideline
- What constitutes the evidence underlying the guideline recommendations
- How to apply the guideline in a typical primary care case

Outline

- Introduction – Paul Taenzer
- Overview of methodology – Christa Harstall
- Overview of the Guideline – Ted Findlay
- Case Discussion – all of us

Oh no, not another guideline:

History and rationale for developing the guideline

The problem of low back pain

- There's a lot of it
- There's lot's of disability and social burden
- Practitioners don't get much training
- On average, they don't know much about current evidence-based care

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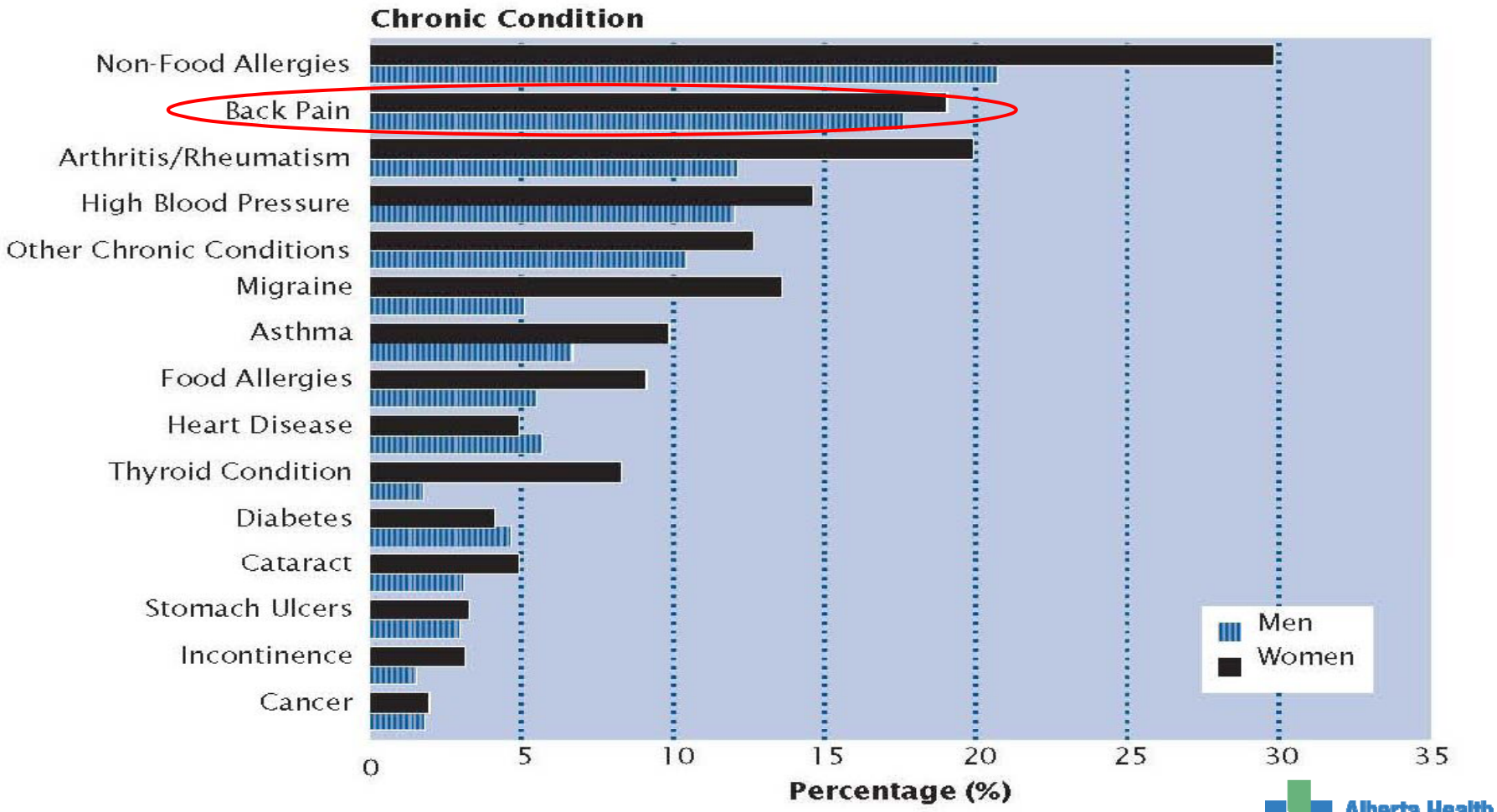
How does back pain rank?



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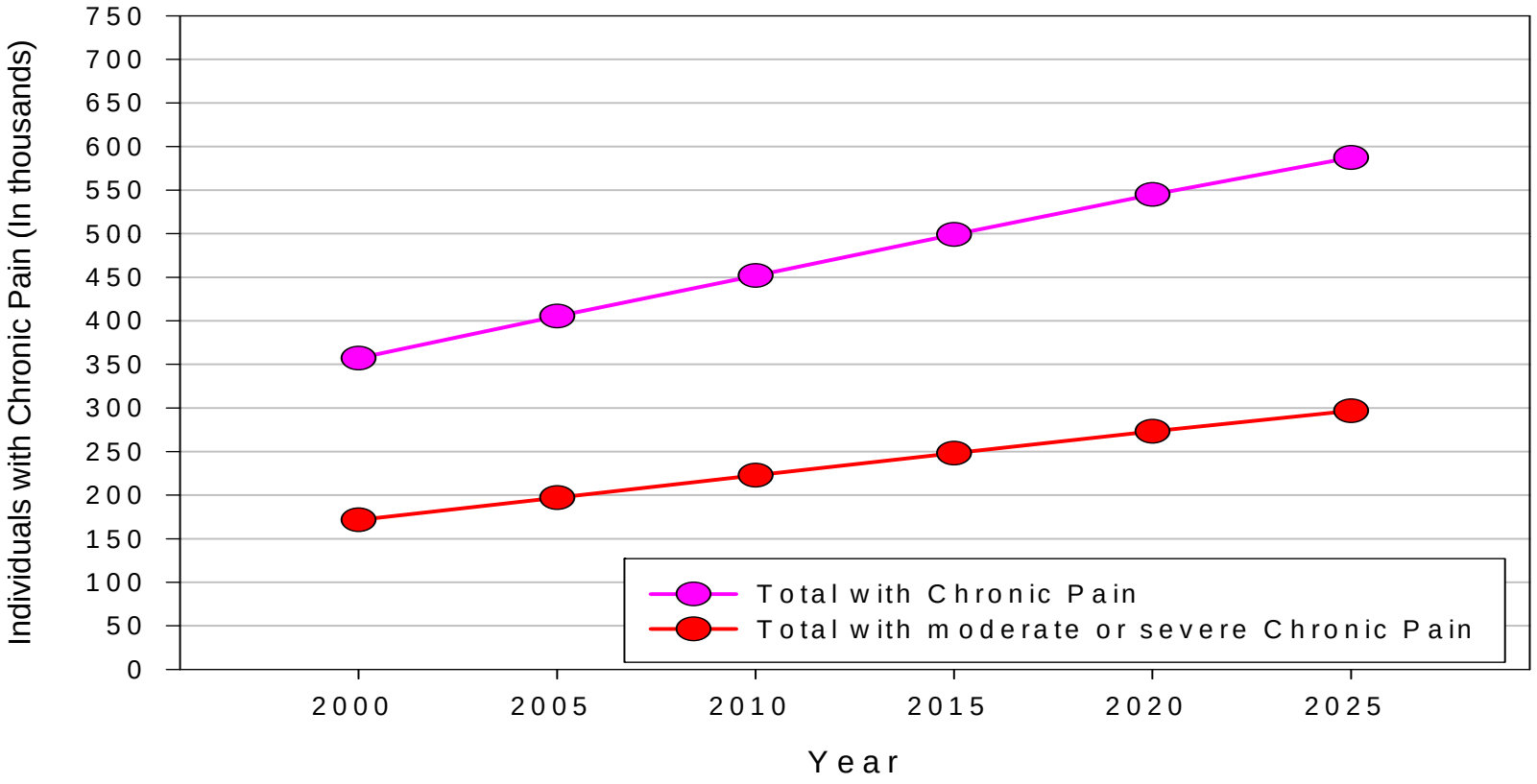
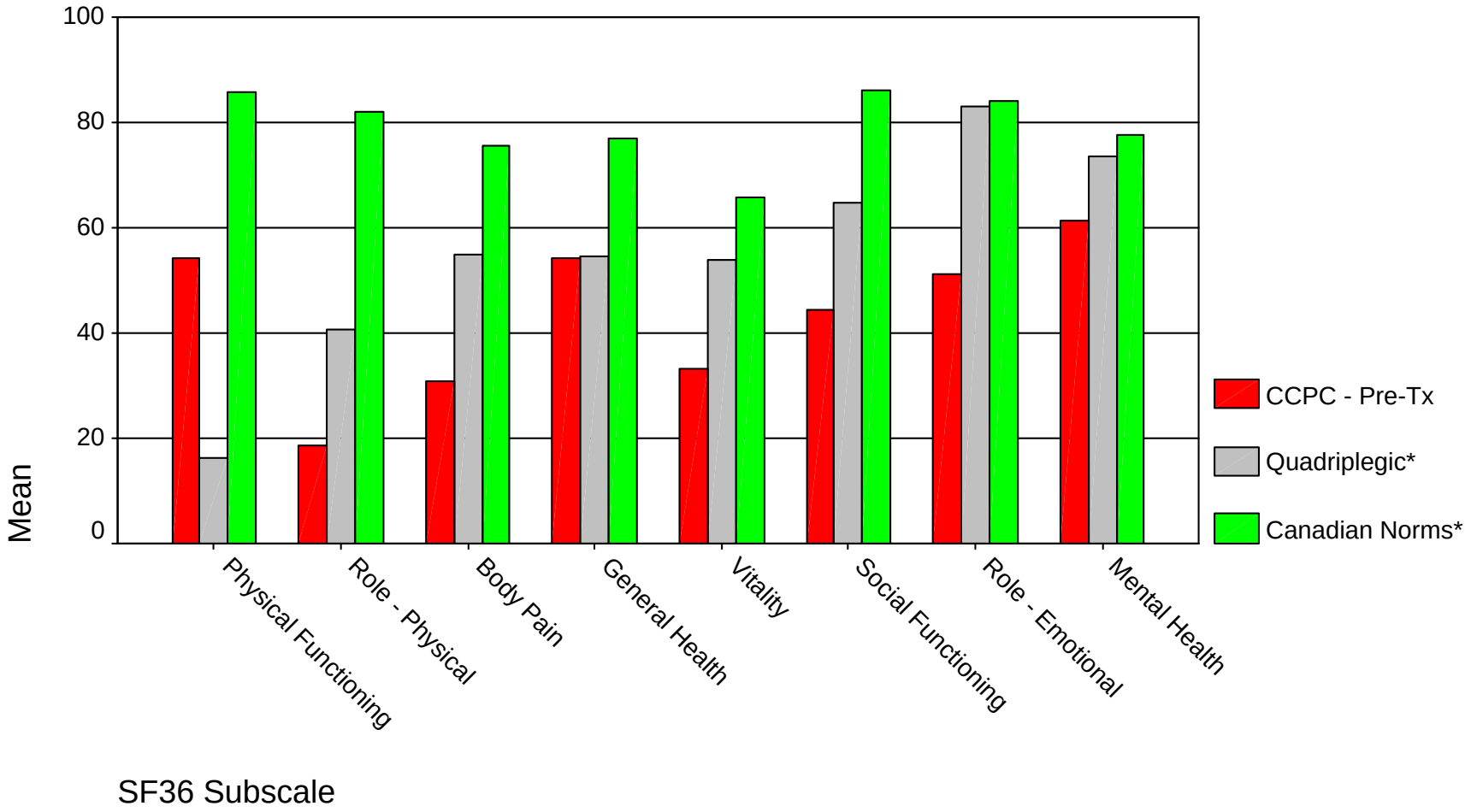
Data source: Canadian Community Health Survey 2000, Statistics Canada

Predicted population trends



Source: Schopflocher (2003)

QoL: Chronic Pain vs Quadraplegics



*Quadriplegic: N=82; Andreson, E. M., Fouts, B. S., Romeis, J. C., and Brownson, C. A. (1999). Performance of health-related quality-of-life instruments in a spinal cord injured population. *Archives of Physical Medicine & Rehabilitation, 80*(8), 877-884.

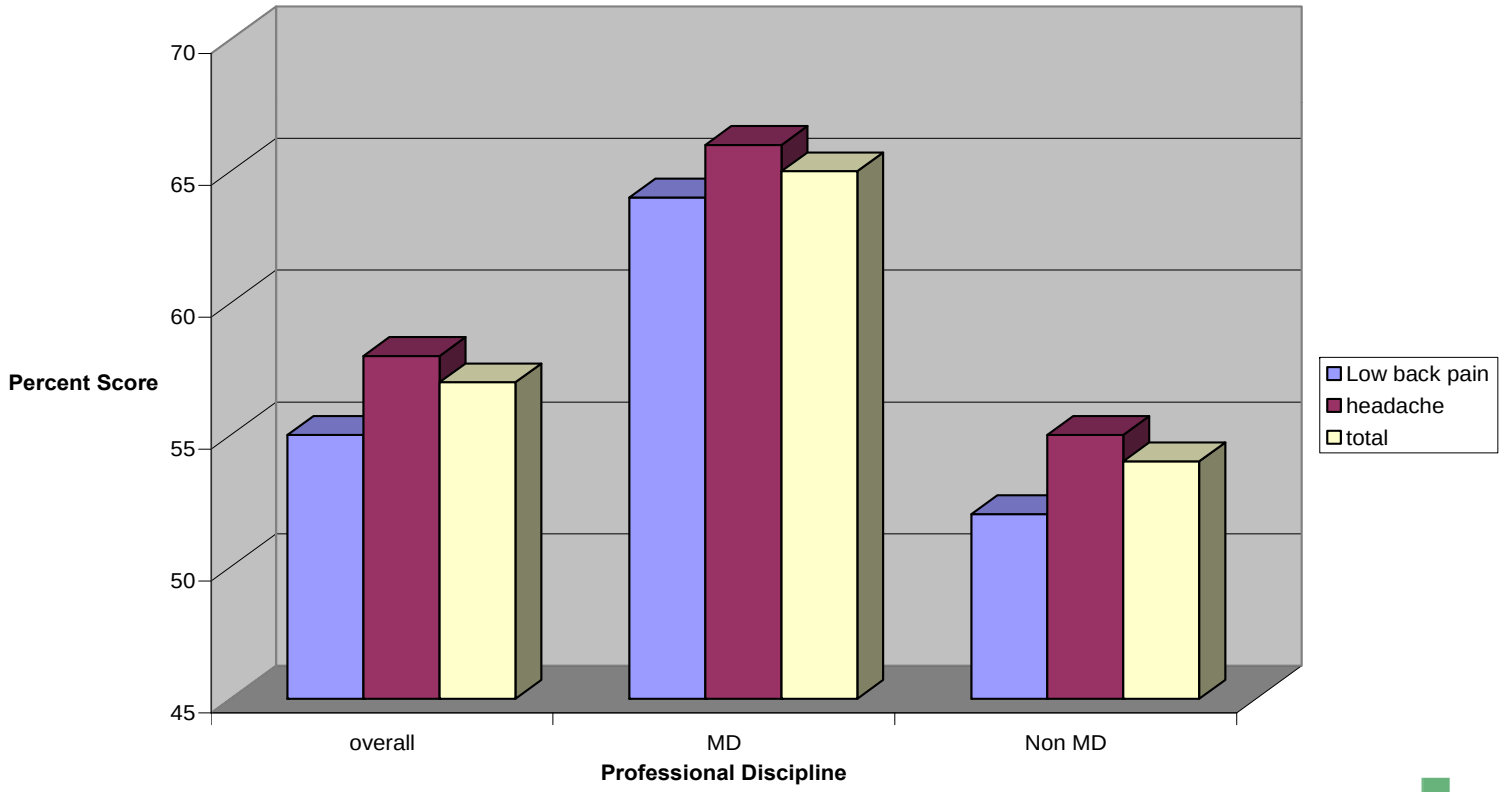
Professional education on pain management

- Canadian Pain Society sponsored survey
  - Human and veterinary professional training programs
  - Undergraduate curriculum hours dedicated to pain
    - Veterinary = 87
    - Medical = 16
    - Pharmacy = 13
    - Nursing = 31
    - Physiotherapy = 41
- How much do they know about pain?

Source: www.canadianpainsociety.ca/SurveyOfPainCurricula.pdf

Knowledge of evidence-based recommendations

Figure 3 - Knowledge Assessment - Comparison of Average Scores by Professional Discipine (Chronic Pain Condition)



Source: http://www.ihe.ca/documents/Knowledge-Assessment-Survey.pdf

Guideline development

A collaboration among Alberta clinical leaders and relevant agencies to develop a locally adapted clinical practice guideline (CPG) for low back pain

Collaborating organizations

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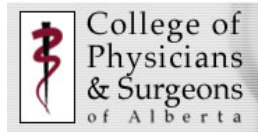
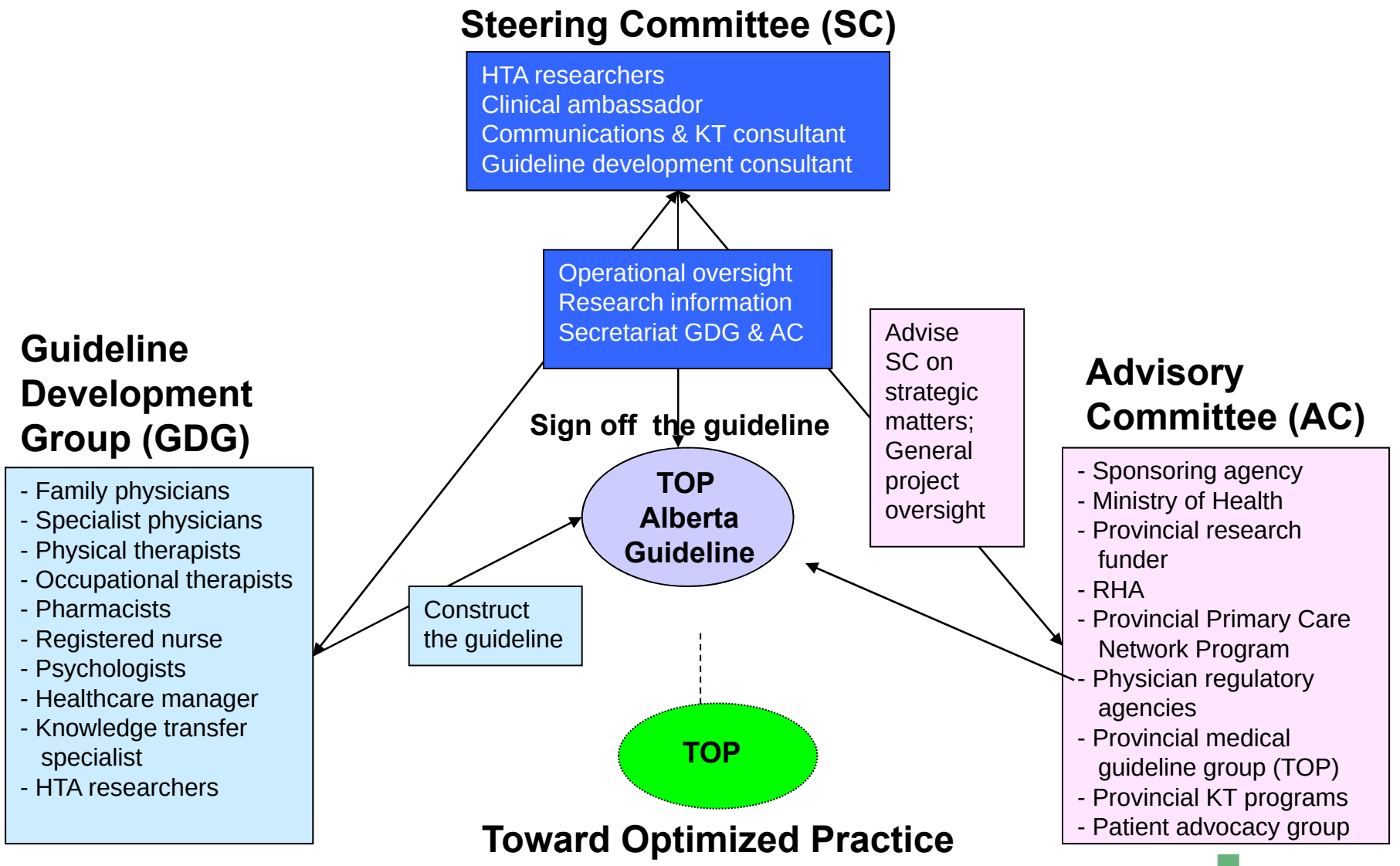


Guideline development project structure



Overview of methodology

Guideline development strategies

- De novo starting with SRs and RCTs
  - APS/ACP
- Hybrid (de novo – adaptation)
  - CADTH

- Very resource intensive
- Quality of evidence clear

- **Adapt existing guidelines**
  - **Alberta Ambassador ***

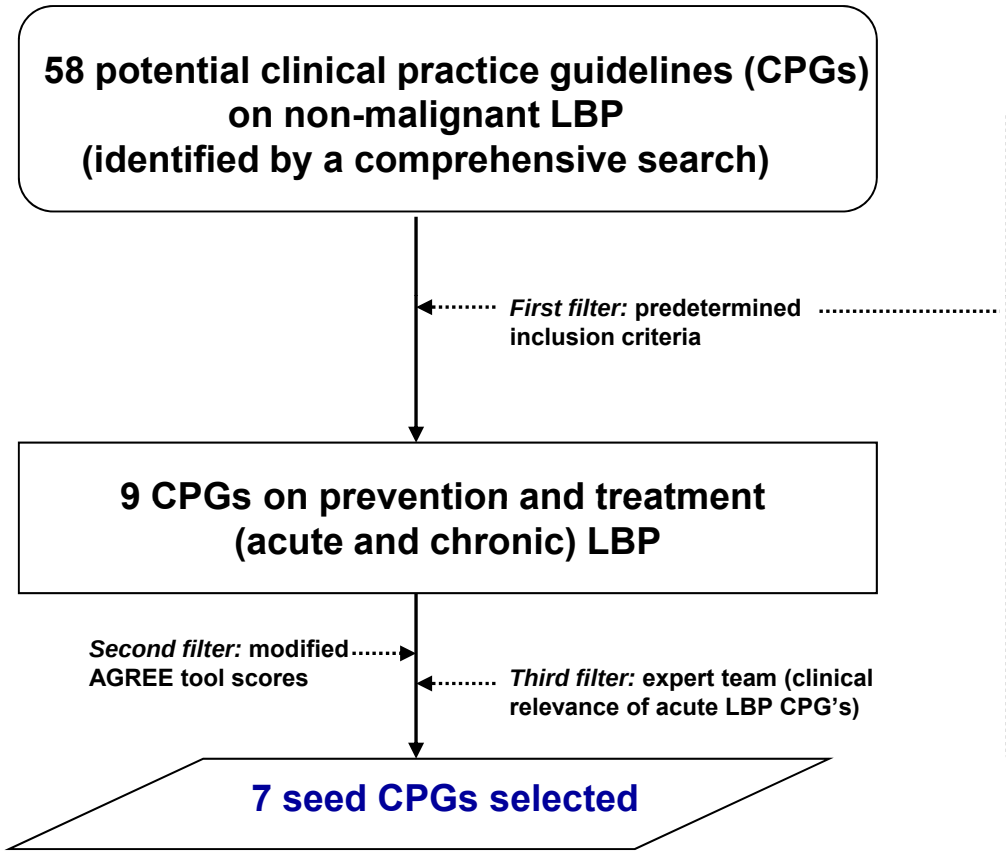
- Avoid duplication
- Less resource intensive
- Reflects local practice environment

- Adopt existing guideline
  - GAC Ontario

- Least resource intensive

* IHE *Ambassador Program guideline for the evidence-informed primary care management of low back pain: background document*. 2009. http://www.ihe.ca/research/ambassador-program/--low-back-pain/low-back-pain-guideline/guideline-documents

Selecting the seed guidelines



Predetermined inclusion criteria

- **Condition:**
  - **Non-specific low back pain**
- **Population:**
  - **Adult patients (≥ 18 years)**
- **Intervention:**
  - **Diagnosis, non-surgical treatment, or prevention in primary healthcare settings**
- **Duration of pain defined as (treatment and diagnosis only):**
  - **acute and sub-acute pain: pain <12 weeks**
  - **chronic pain: pain ≥12 weeks (IASP definition)**
- **Publication limits: from 1996 to Feb 2008**
- **Language: English**
- **Source: countries with developed market economies**

Evidence inventory table. Sample

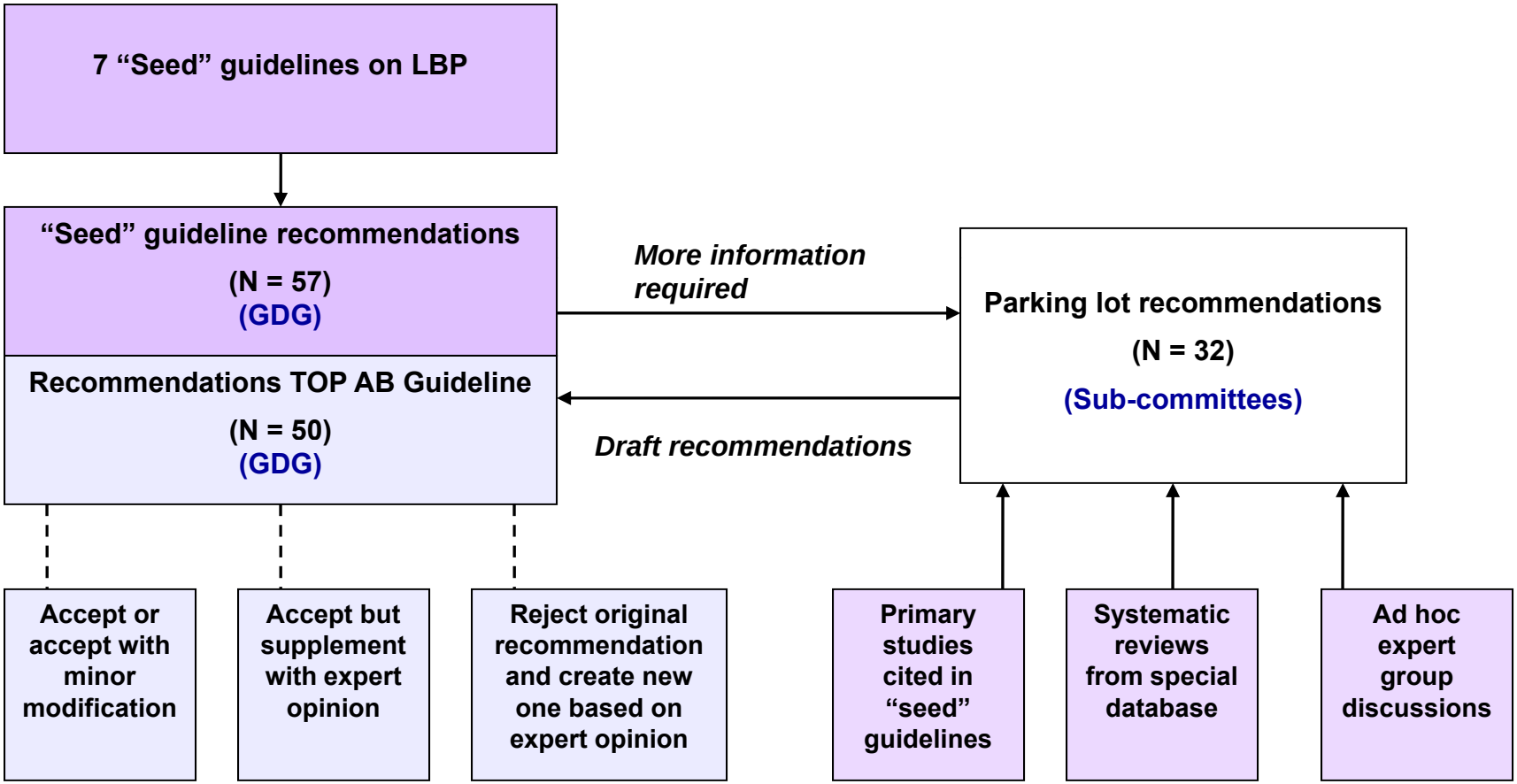
Table G.3a: Diagnosis*

Item	Guideline/Country/Synopsis of Recommendations	Supporting Evidence†						
		SR/MA	NR	RCT	NRCS	CS	G	Other
Electromyography (EMG)	**G6 (Canada)** (p. 16 & 19) Needle EMG and H-reflex tests of the lower limb may be useful in assessing questionable nerve root dysfunction in patients with leg symptoms lasting longer than 4 weeks (regardless of whether patients also have back pain).						**1** 1	
Diagnostic imaging *Some differences with respect to using X-rays*	**G2 (USA)** (p. 18-20) For patients who have not improved after 6 weeks, consider lumbar spine X-rays (anteroposterior and lateral views). Oblique view X-rays are not recommended (they add only minimal information in a small percentage of cases, with more than double the radiation exposure). For patients with chronic sciatica/radiculopathy, consider ordering an MRI or lumbar spine CT when the patient is a potential surgical candidate. If uncertain whether an MRI or CT should be ordered, consider consulting with an appropriate consultant if the patient meets surgical referral criteria (see re-evaluation section below). In cases of low back pain without radicular symptoms, MRI is preferred. However, in an otherwise healthy adult, without a previous history of back surgery, who has low back pain with radicular symptoms, a CT scan may be as sensitive as an MRI (MRI/CT indications listed on pp.19-20 of guideline).				**1** 2			**1** 3
	G6 (Canada) (p. 16 & 19) After 1 month of symptoms, an imaging test is acceptable when surgery is being considered (or to rule out a suspected serious condition). Consider lumbar X-ray (AP and lateral views). Consider MRI or lumbar CT imaging when the patient is a potential surgical candidate.						**1** 1	
Re-evaluation *Continued on next page*	**G2 (USA)** (p. 17, 8-9) A comprehensive re-evaluation, including a general assessment, should be done for patients who have not improved after 6 weeks. The evaluation should include history taking, physical examination (including palpation for spinal tenderness, neuromuscular testing, and bilateral straight leg raise), and consideration of psychosocial factors. An assessment that includes a subjective pain rating, functional assessment, and a clinician's objective assessment should also be done.	Not provided						

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

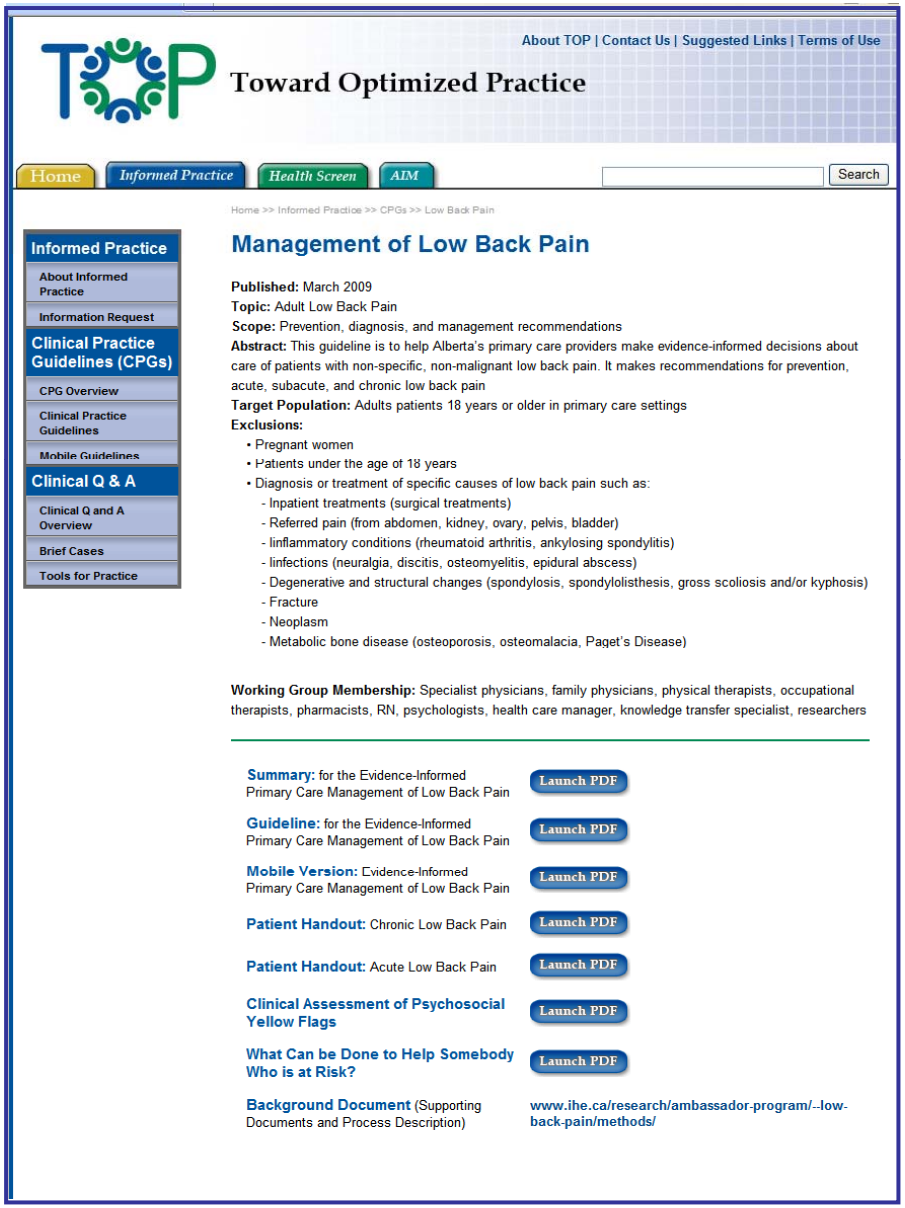
Source: IHE *Ambassador Program guideline for the evidence-informed primary care management of low back pain: background document*. 2009. http://www.ihe.ca/research/ambassador-program/--low-back-pain/low-back-pain-guideline/guideline-documents

Formulating the recommendations



March 2nd 2009, Low Back Pain Guideline available on TOP website

http://www.topalbertadoctors.org



Okay I'm here;
now tell me something I don't already know

Simulated Ambassador Workshop

Pre-Workshop Questions

Research evidence supports the use of:

1. Routine diagnostic imaging for acute low back pain with sciatica
2. Spinal manipulation for preventing recurrence of low back pain
3. Early return to work for acute low back pain
4. Opioid analgesia for chronic low back pain
5. Massage therapy for acute low back pain
6. Traction for acute low back pain
7. Back belts and braces
8. Extended bed rest

Summary Guideline

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A Summary of the Guideline for the Evidence-Informed Primary Care Management of

Low Back Pain

This evidence-informed guideline is for non-specific, non-malignant low back pain in adults only

Red Flags help identify rare, but potentially serious conditions. They include:

- Features of Cauda Equina Syndrome including sudden onset or loss of bladder/ bowel control, saddle anaesthesia (**emergency**)
- Severe worsening pain, especially at night or when lying down (urgent)
- Significant trauma (urgent)
- Weight loss, history of cancer, fever (urgent)
- Use of steroids or intravenous drugs (urgent)
- Patient with first episode over 50 years old (soon)
- Widespread neurological signs (soon)

EMERGENCY - referral within hours
URGENT - referral within 24 - 48 hours
SOON - referral within weeks

Conduct a full assessment

Including:

- history taking
- physical and neurological exam
- evaluation of **Red Flags**
- psychosocial risk factors/ **Yellow Flags**

Yellow Flags indicate psychosocial barriers to recovery. They include:

- Belief that pain and activity are harmful
- 'Sickness behaviours' (like extended rest)
- Low or negative mood, social withdrawal
- Treatment expectations that do not fit best practice
- Problems with claim and compensation
- History of back pain, time-off, other claims
- Problems at work, poor job satisfaction
- Heavy work, unsociable hours (shift work)
- Overprotective family or lack of support

Kendall et al. Guide to Assessing Psycho-social Yellow Flags in Acute Low Back Pain. ACC & NZGG, Wellington, NZ. (2004 Ed.).

Any **Red Flags?** — **Yes** → Refer for immediate evaluation and treatment
e.g., emergency room, relevant specialist

No

Acute and Subacute (within 12 weeks of pain onset)

- **Educate patient** that low back pain typically resolves within a few weeks (refer to Patient Information Sheet)
- **Prescribe self-care strategies** including alternating cold and heat, continuation of usual activities as tolerated
- **Encourage early return to work**
- **Recommend physical activity and/or exercise**
- **Consider analgesics** in this order:
  - Acetaminophen
  - NSAIDs
  - Short course muscle relaxants
  - Short-acting opioids (rarely, for severe pain)

1-6 Weeks

Reassess (including Red Flags) if patient is not returning to normal function or symptoms are worsening

Consider Referral

- Physical therapist
- Chiropractor
- Osteopathic physician
- Physician specializing in musculoskeletal medicine
- Spinal surgeon (for unresolving radicular symptoms)
- Multidisciplinary pain program (if not returning to work)

Chronic (more than 12 weeks since pain onset)

- **Prescribe physical or therapeutic exercise**
- **Analgesics Options**
  - Acetaminophen
  - NSAIDs
  - Low dose tricyclic antidepressants
  - Short term cyclobenzaprine for flare-ups
- **Referral Options**
  - Community-based active rehabilitation program
  - Community-based self management/cognitive behavioural therapy program
- **Additional Options**
  - Progressive muscle relaxation
  - Acupuncture
  - Massage therapy, TENS as adjunct to active therapy

Moderate to Severe Pain

- **Opioids** (for appropriate patients: refer to the Canadian National Opioid Guideline endorsed by the College of Physicians and Surgeons of Alberta)
- **Referral Options**
  - Multidisciplinary chronic pain program
  - Epidural steroids (for short-term relief of radicular pain)
  - Prolotherapy in conjunction with exercise

Toward Optimized Practice

new for 2009

For complete guideline refer to the TOP Website:
www.topalbertadoctors.org

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Low Back Pain

Key Messages

- Do a full clinical assessment; rule out red flags
- In the absence of red flags, reassure the patient there is no reason to suspect a serious cause
- Reinforce that pain typically resolves in a few weeks without intervention
- Encourage patient to keep active
- Consider evidence-based management as per the guideline
- Recommend physical activity and/or exercise to prevent recurrence
- If pain continues beyond 6 weeks, reassess and consider additional treatment and referrals
- The goal of chronic pain management is improved quality of life
- Encourage and support pain self-management
- Monitor patient for relative benefit versus side effects

Contraindications

Evidence indicates these actions are ineffective or harmful

- Lab tests and diagnostic imaging in the absence of red flags
- Prolonged bed rest
- Traction
- Oral steroids
- Epidural steroid injections in the absence of radicular pain
- TENS for acute pain
- Back schools for acute pain
- Massage therapy for acute pain

Medication Table[1]

Pain Type		Medication	Dosage range
Acute and sub-acute low back pain or flare-up of chronic low back/ spinal pain	**1st line**	Acetaminophen	Up to 1000 mg QID (max of 4000 mg/day)
	2nd line NSAIDs	Ibuprofen	Up to 800 mg TID (max of 800 mg QID)
		Diclofenac	Up to 50 mg TID
	Add: Cyclobenzaprine for prominent muscle spasm		10 to 30 mg/day; Greatest benefit seen within one week; therapy up to 2 weeks may be justified
	If taking controlled release opioids: add a short-acting opioid or increase controlled release opioid by 20 to 25%		See opioids below
Chronic low back/ spinal pain	**1st and 2nd lines**	See acute pain, above	
	3rd line Weak Opioids	Codeine	30 to 60 mg every 3 to 4 hours
		Controlled release codeine	50 to 200 mg Q8h, may also be given Q12h
	Tricyclics (TCAs)	Amitriptyline Nortriptyline fewer adverse effects	10 to 100 mg HS
	4th line Tramadol (*not currently covered by Alberta Blue Cross*)		Slow titration up to max of 400 mg/day; short acting form is only available in combination with acetaminophen. Monitor for total combined daily acetaminophen dose.
	5th line Strong Opioids (controlled release)	Morphine sulfate	15 to100 mg BID
		Hydromorphone HCl	3 to 24 mg BID
		Oxycodone HCl	10 to 40 mg BID -TID
		Fentanyl patch	25 to 50 µg Q3days

OPIOIDS AND TRICYCLICS

[1] *Adapted from the Calgary Regional Pain Program. September 19, 2006*

- This guideline was written to provide healthcare providers and patients with guidance about appropriate prevention, assessment and intervention strategies
- It was developed by a multidisciplinary team of Alberta clinicians and researchers
- This guideline is for adults 18 years of age or older with low back pain and is not applicable to pregnant women
- It is recognized that not all recommended treatment options are available in all communities
- For further details on the recommendations, see the guideline and background document

The case of Barney

- Barney is a 35 year old quarry worker who is experiencing his first episode of low back pain. He did not have any trouble pedaling his car to work this morning, but had the sudden onset of pain in his left buttock and low back while swinging a 20 kg sledge hammer over his head. His pain is rated at 4/10, and he has filed a WCB report at work and needs a note from you to say that he will not be able to return to his job until the year 2012 B.C. He describes his boss as a real dinosaur.

What causes low back pain?

- In spite of the fact that approximately 70% of us will develop at least one episode of low back pain over our lifetime and that 5% of us have low back pain at any given time, it has been surprisingly difficult to determine its causes and risk factors not to mention optimal standardized treatment.

Activity related risk factors are also poorly understood

- The most frequently reported are heavy physical work, frequent bending, twisting, lifting, pulling and pushing, repetitive work, static postures and exposure to vibrating tools and instruments.

“Red Flags” for serious spinal pathology

1. Age less than 20 years or greater than 50.
2. Recent history of trauma.
3. Constant progressive, non-mechanical back pain (no relief with bed rest).
4. Thoracic back pain.
5. Past medical history of malignancy.
6. Prolonged use of corticosteroids.
7. Drug abuse, immunosupression, HIV.

“Red Flags”, Continued

8. Drug abuse, immunosupression, HIV.
9. Systematically unwell.
10. Unexplained weight loss.
11. Widespread neurological symptoms (including cauda equina syndrome).
12. Structural deformity.
13. Fever.

“Yellow Flags”

1. Inappropriate attitudes and beliefs about back pain (e.g. that it is necessarily harmful or severely disabling, or a high expectation of passive treatments rather than a belief that active participation will help).
2. Inappropriate pain behavior (for example fear-avoidance behavior and reduced activity levels).

“Yellow Flags”, Continued

3. Work related problems or compensation issues (for example poor work satisfaction).
4. Emotional problems (such as depression, anxiety, stress, tendency to low mood and withdrawal from social interaction).

Initial classification

- Non-specific Low Back Pain either acute or chronic, and with or without Sciatica. This is often referred to as “Idiopathic Mechanical Low Back Pain”.
- A spinal therapist may also add a biomechanical examination to try to assign a putative cause for the patients pain i.e. facet joint pain, sacro-iliac joint pain, annular disc pain, etc.

Initial treatment

Initial treatment

- Current guidelines indicate that the presence or absence of sciatica symptoms does not alter the initial case management, unless the patient has chronic sciatica with positive straight leg raise over 6 weeks.

Barney's initial presentation

- Barney reports that his pain is most severe when seated and especially when getting out of a chair. It seems to be better after he walks a few steps although the first steps are painful. He demonstrates a bit of a limp, favoring his left leg, when he gets out of the chair in the waiting room to come to your office. His pain seems to be maximal on palpation over the left sacro-iliac joint.

What investigations are appropriate at this time?

What investigations are appropriate at this time?

- Guidelines highlight the fact that it is extremely unlikely to find a “cause” for the patient’s back pain from screening X-rays, in the absence of the Red Flags or consistent neurological signs and symptoms [8]. They may be indicated after 4-6 weeks have gone by based on the clinical judgment of the physician should there be inadequate recovery, but even then the routine use of oblique lumbar X-ray views should be discouraged.

MRI and CT

- MRI and CT evaluation are justified even in the presence of normal X-rays in the presence of red flags and/or neurological signs.
- If there is a history of previous surgery, gadolinium contrast is recommended with the MRI scan to assess for related scar tissue.
- The results must be interpreted with caution, as we know that an MRI of asymptomatic patients will reveal herniated discs in up to 76% of patients, and bulging discs in up to 81%, degenerative discs in up to 93% and annular tears in up to 56%.

What is the most likely diagnosis?

What is the most likely diagnosis?

- Barney's initial presentation is consistent with a pattern of "idiopathic mechanical low back pain", but with a strong overlay of "Yellow Flags" reflecting psychosocial concerns.

What is your initial management?

What is your initial management?

- In the acute setting, the focus needs to be on reassurance and pain control.
- Assuming that the “Red Flags” are not present, the patient needs to be educated about the generally benign nature of their complaint, and its natural history.
- The use of a standardized patient handout may be very helpful in this regard.

The use of bed rest

- Bed rest must be discouraged, particularly for longer than two or three days since longer periods of bed rest are associated with slower recovery.

The use of manipulative therapy

- An early referral to physical therapy or other qualified therapist may be considered when the patient has severe, incapacitating, disabling back or leg pain, there are significant functional or job limitations, or there has been a failure to make progress with home self-care after two weeks.

Epidural steroid injections

- For patients that have spinal stenosis or a herniated disc, referral for an Epidural Steroid Injection under flouroscopy prior to potential surgical intervention may be appropriate. These are limited to patients that have failed an initial conservative treatment program.
- No studies support the use of oral steroids in patients with acute low back pain.

Other treatment options include

- Medications; see Figure 3 for commonly used medications for acute and chronic low back pain with and without sciatica.
- See the Institute for Health Economics “Ambassador” materials for chronic pain.

Exercise therapy

- It is considered good advice to encourage the patient to stay active and to continue normal daily activities to the degree tolerated, including work if possible. While there are many varying and sometimes contradictory recommendations regarding flexion vs. extension exercises, and core stability, none have been demonstrated to be consistently more effective than the others.
- Patients may be more comfortable if they temporarily limit or avoid specific activities known to increase mechanical stress on the spine.

Multidisciplinary treatment programs

- There is evidence for the effectiveness of such programs in the chronic scenario, and in the occupational setting may be an options for workers with sub-acute low back pain and sick leave for more than 4-8 weeks.

Barney's Questions

- Barney's brother-in-law, a specialist in California, has told him that he should have ongoing spinal manipulative therapy as "maintenance" to prevent any future recurrences of low back pain, and that he could return to work if he used a back brace or lumbar belt. What can we tell Barney about this advice?
- He wants to know about newspaper adds that he has seen for traction machines.

Case progression

- Barney returns to your office one month later after having been treated at the WCB approved physical therapy clinic. He usually feels worse after treatment for a day or two, and overall has not made any progress. His pain is now rated at 6/10 and he needs a refill of the Tylenol #3 that he received from the clinic after the NSAIDs you prescribed were of no help. He has used 75 tablets of Acetaminophen with Codeine 30mg in the past 5 days. In the past week his pain has started to radiate the length of his left leg to the foot, and on examination he has a diminished Achilles reflex and positive straight leg raising tests seated and supine.

How would your evaluation change?

How would your evaluation change?

- Following the guidelines again, it is now appropriate to recognize the presence of clinical red flags that warrant further evaluations by X-Ray, MRI or CT scan.
- One treatment option in this scenario, besides medication, could be referral for an epidural steroid injection.

How would your diagnosis change?

How would your diagnosis change?

- Barney's situation progresses to be more suggestive of nerve root impingement, the decreased Achilles reflex correlates with the S1 nerve root.

What concerns do you have with his medication?

What concerns do you have with his medication?

- His increased use of medication may or may not have been an appropriate response to a need for increased analgesia, but continued intake of acetaminophen at the rate he has been taking them raises the risks of toxicity.

Case progression

- It is now one year since Barney's microdiscectomy. The surgery was successful in relieving his leg pain, but in Barney's mind the surgery was unsuccessful as his back pain is now unrelenting, rated at 8-9/10 and unrelieved with oxycodone 80 mg every 4 hours (total 320 mg/day).
- You have just received the results of a repeat MRI with Gadolinium, which shows epidural scar tissue enveloping the L4, L5 and S1 nerve roots bilaterally.
- Barney wants to go back to the neurosurgeon to have this "cleaned out".

How would your management change?

How would your management change?

- Barney is now well established in the “Chronic” category as outlined in the guidelines. Some may refer to this as a “failed back” although this term is not well defined. In any event, in the absence of lateralizing signs there is little chance that a surgical consultation will lead to a further procedure. Barney again needs to be reassured of the benign if painful nature of his back pain and to seek non-surgical treatment approaches.

Is there a role for opiates?

Is there a role for opiates?

- As a general rule, opioids can be a legitimate treatment option for chronic pain and come with their own guidelines for appropriate risk reduction and effective prescribing.
- If Barney has not yet completed an “opiate prescribing contract” that limits him to one prescribing physician, this needs to be done.
- Slow release forms of opioids that achieve a steadier state concentration than the peaks and troughs seen with quicker acting formulations are preferred.

What concerns might you have with his current meds?

What concerns might you have with his current meds?

- Barney is currently taking a dosage of 640 mg/day morphine equivalents, and there is little evidence to encourage this dosage range in non-malignant pain without expert assistance.

What other treatment options are there?

What other treatment options are there?

- Other medication options at this point include the tri-cyclic antidepressants. Barney might even be interested in a trial of TENS, acupuncture or massage therapy. If he is, these trials should be time limited, accompanied by exercise and activity and demonstrate clear evidence of efficacy within the first few treatments.

What other treatment options are there?

- Barney needs to embark on a much more active form of rehabilitation, and community based self-management programs, particularly when combined with a therapeutic exercise program, should be considered. However, given the chronicity of his pain, severity, and significant psychosocial impact, an early referral to a multidisciplinary treatment program should be entertained.

Post-Workshop Questions

Research evidence supports the use of:

1. Routine diagnostic imaging for acute low back pain with sciatica
2. Spinal manipulation for preventing recurrence of low back pain
3. Early return to work for acute low back pain
4. Opioid analgesia for chronic low back pain
5. Massage therapy for acute low back pain
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8. Extended bed rest

Debrief

- How did this process work for you?
- What else would you like?
- What would you change?

Thank you

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