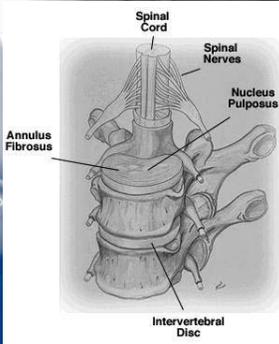

Low Back Pain with Risk Factors for Compromised Recovery



Introduction	pg. 1
Definitions	pg. 3
Major Recommendations	pg. 5
Resources	pg. 33
References	pg. 37
Guide Background	pg. 45

Clinical Pathway for Work-Related Injury

Introduction

This clinical pathway is designed for clinicians treating patients with work-related injury who are at significantly increased risk for compromised recovery and the development of chronic low back pain. It is intended to serve as an instructional aid and to be used as a supplement to the Institute for Clinical Systems Improvement Health Care (ICS) Guideline for Adult Low Back Pain www.icsi.org (see attached). The goal of this pathway is to provide clinicians with evidence-based therapeutic options that will help reduce the incidence of chronic back pain in the American workforce.

The authors depend on research studies to verify the accuracy of the information offered and to explain generally accepted practices. However, we cannot guarantee its correctness. Professionals in the field may have different opinions and because of continual progress in medical research, we strongly recommend that readers independently confirm information on specific drugs and interventions.

Furthermore, it should be noted that this clinical pathway is not intended to constitute inflexible treatment recommendations, and is not a scientific treatise on the subject. Modifications to the pathway will undoubtedly be necessary as a result of new research and practice-based evidence. The developers believe this pathway should always be considered a work in progress. For this reason it must be broad enough to incorporate a wide range of diagnostic and treatment modalities. This allows for philosophical and evidence-based practice differences between the various licensed health care practitioners. It is not intended either to replace a clinician's judgment or to establish a protocol for all patients at risk for development of chronic low back pain. It is expected that a clinician will establish a plan of care based on an individual patient's needs, taking into account the individual's medical condition, personal needs, and preferences, as well as clinical evidence and provider experience. Treatment may differ from that outlined here.

Working Group

Project Leader: Carol Wells-Federman MS, MEd, APRN BC.

Working Group Panel (2005): Joseph Audette, MD, James Dillard DC, MD, Carol Hartigan, MD, Michael Montagne PhD, Scott Tromanhauser MD MBA, Michael J. Shor, MPH

Working Group Panel Revised Edition (2007): Geno Martinez, MD, Scott Tromanhauser MD MBA, Michael J. Shor, MPH

Intended Users

Physicians and allied health professionals

Goals

This pathway will focus on treatment recommendations health care professionals can begin to consider in an effort to assure:

- the work-injured are receiving high quality, evidence based therapeutics,
- a reduction in the number of work injured who develop chronic low back pain, and
- a reduction in patient suffering, unnecessary costs associated with delayed recovery and inefficient resource utilization

Patient Population

Adult injured workers 18 years or older at high risk for compromised recovery and development of chronic low back pain.²

Objectives

- To improve the clinical and financial outcomes associated with work-injured patients at significant risk for compromised recovery and development of chronic low back pain.
- To serve as an instructional aid for clinicians when treating injured workers at high risk for compromised recovery and development of chronic low back pain.
- To provide nurse advocates and physicians with an educational tool in their efforts to empower patients to make informed decisions about their own care.

The authors are confident that each recommendation if implemented with clear qualitative and quantitative goals and objectives will improve the quality of care available to the Massachusetts workforce and help create an evolutionary constructive dialog between those who pay for care, those who provide clinical services and the patients that we all serve.

²See definitions.

Definitions

Addiction. A primary, chronic, neurobiological disease with genetic, psychosocial, and environmental factors influencing its development and manifestations³. Addiction involves a compulsive desire to use a drug despite continued harm. Addiction should be differentiated from physical dependence, which is the state of adaptation manifested by a drug class-specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, or administration of an antagonist. Tolerance is a state of adaptation in which exposure to a drug induces changes that result in a reduction of the drug's effects over time.

BMI (Body Mass Index): the weight in kilograms, divided by height in meters squared

*Note: to convert pounds to kilograms, multiply pounds by 0.455, to convert inches to meters, multiply inches by 0.0254.

Chronic low back pain: Low back pain with or without radiation past the knee (sciatica) lasting >6 weeks after conservative treatment and/or surgery.⁴

Cognitive-behavioral therapy. A treatment that combines cognitive therapy techniques with behavioral techniques. It is used to help patients change their thinking and behaviors related to pain in order to increase coping and function and improve mood. Research on prevention of chronic disability in patients with acute low back and neck pain found that adding cognitive-behavioral intervention produced a significant preventive effect with regard to disability.⁵ In addition, cognitive-behavioral intervention and preventive physical therapy was found to enhance the prevention of long-term disability in those with acute low back pain.^{6,7}

Neuropathic pain: Pain due to nerve injury, neurologic disease, or the involvement of nerves by other disease processes.⁸

Non-radicular low back pain: pain not related to or involving a nerve root⁹.

Modic changes: Modic changes, a common observation in MR imaging, are signal intensity changes in vertebral body marrow adjacent to the endplates of degenerative discs¹⁰.

Modic changes take 3 main forms:

Type I

Decreased signal on T1, and increased signal on T2.

Represents marrow edema.

Associated with an acute process.

3 APS Opiate Policy, 2004

4 Commonwealth of Massachusetts Department of Industrial Accidents (MA DIA) Guideline. www.mass.gov/dia/hcsb/treatmentguidelines.htm

5 Linton SJ, Ryberg M. 2001

6 Linton SJ, et al. 2005

7 Linton SJ, Andersson T. 2000

8 Ballantyne J and Mao J, 2003

9 The American Heritage® Stedman's Medical Dictionary, 2004

10 http://www.drvoxray.com/modic_changes.htm Accessed April, 2007

Histological examination shows disruption and fissuring of the endplate and vascularized fibrous tissues within the adjacent marrow

Type II - the most common type

Increased signal on T1, and isointense or slightly hyperintense signal on T2.

Represents fatty degeneration of subchondral marrow.

Associated with a chronic process.

Histological examination shows endplate disruption with yellow marrow replacement in the adjacent vertebral body.

Type I changes convert to Type II changes with time, while Type II changes seem to remain stable.

Type III

Decreased signal on both T1 and T2.

Correlate with extensive bony sclerosis on plain radiographs.

Histological examination shows dense woven bone; hence, no marrow to produce MRI signal

Pseudarthrosis: Pseudarthrosis in the spine is the failure of an intentional fusion to occur. The determination of a pseudarthrosis usually cannot be made until the patient is about 12 months post surgery.

Radiculopathy: any pathological condition of the nerve roots.¹⁰

Red Flag Symptoms: Suggest serious underlying disease. Urgent appointment w/in 24 hours: Fever 38°C or 100.4°F >48 hours; unrelenting night pain or pain at rest, pain with distal numbness or weakness of leg(s); loss of bowel or bladder control; progressive neurological deficit; patient requests same day appointment. (See complete list ICSI Guidelines Annotation 4).

Secondary Gain. Interpersonal or social advantages gained indirectly from organic illness, such as an increase in attention from others.¹¹

Somatization disorder. A polysymptomatic disorder with generally early onset in life (before the age of 30)¹². The disorder is characterized by a pattern of physical complaints (e.g., pain symptoms, gastrointestinal symptoms, sexual problems) that cause considerable social and occupational impairment.¹³

Somatoform disorders. A disorder whose physical symptoms suggest a physical disorder for which there is evidence of underlying psychological mechanisms. "The symptoms must cause clinically significant distress or impairment in social, occupational, or other areas of functioning."¹⁴ The category includes somatization disorder, undifferentiated somatoform disorder, conversion disorder, pain disorder, hypochondriasis, body dysmorphic disorder and somatoform disorder not otherwise specified. In each of these symptom production is believed to be unintentional¹⁵.

Spondylolisthesis: forward displacement of a lumbar vertebra on the one below it. This can occur at any level of the spine but most frequently at L4-5 or L5-S1. Spondylolisthesis has several causes including degenerative, developmental, and traumatic although rare and usually associated with another fracture elsewhere in the spine. This can cause back pain and/or leg pain secondary to nerve root compression.

11 The American Heritage® Stedman's Medical Dictionary, 2004

12 APA 1994

13 Aronoff GM 1998

14 DSM-IV 1994

15 Sullivan MD & Turk DC 2001

Symptom Magnification. It is important to note that a differentiation must be made between malingering and magnification or exaggeration of symptoms.¹⁶ Chronic pain patients may magnify or exaggerate symptoms for a variety of reasons. Some exaggerate symptoms in an effort to gain recognition of their pain, which often is not related to objective findings. The observation that a patient is magnifying symptoms should not invalidate the complaints. Instead, magnification of symptoms can provide the clinician with valuable information about the patient's awareness of his or her condition and psychological state.

Yellow Flag Risk Factors: Co-morbid factors associated with an increase risk of compromised recovery. These include: smoking, obesity, diabetes, history of physical abuse or sexual assault, history of previous injury, work-related injury, absence and job dissatisfaction, fear avoidance behavior, depressive mood, substance abuse history. (Also see Guide to assessing psychosocial yellow flags in acute low back pain: Kendall et al.1997)

Major Recommendations

Weeks 1 - 3

I. Evaluation & History

Critical to the prevention and/or treatment and management of low back pain is a thorough evaluation and appropriate diagnosis of the initial presentation of low back pain and associated symptoms.

All patients should be evaluated and treated according to the recommendations established by [ICSI Guidelines for Adult Low Back Pain](http://www.icsi.org) www.icsi.org.

*** This pathway applies to those worked-injured **without evidence of Red Flag** signs and symptoms of serious underlying disease such as cancer or Cauda Equina Syndrome, significant/progressive neurologic deficit or other systemic illness.

In addition we recommend:

- a nurse advocate be assigned at the time of initial injury or symptom to follow the patient until maximum medical improvement (MMI) has been reached.¹⁷
- evaluation should include pain as well as behavioral and psychosocial (yellow flag) risk factor.

¹⁶ Rucker KS, West MD, 1998

¹⁷ Maximum Medical Improvement: The treating physician determines that no further intervention will significantly affect the patient's medical problem.

Suggested Tools:

A: Pain Assessment

Detailed Pain History	Psychosocial Assessment	Physical Examination and Diagnostic Tests	Ongoing Reassessments
<ul style="list-style-type: none"> • Onset and temporal pattern • Description • Location • Intensity/severity • Aggravating and relieving factors • Previous and current treatments and effectiveness (Pharmacologic and nonpharmacologic) • Effects of pain on function 	<ul style="list-style-type: none"> • Effects of the pain problem and/or the chronic illness on the patient and the family caregiver • Meaning of the pain to the family caregiver • Significant past experiences pain • Changes in mood • Typical coping responses to stress or pain • Expectations regarding pain management • Concerns about using opioid analgesics • Economic impact of pain and its treatment • Evaluation of support systems 	<ul style="list-style-type: none"> • Examine the site of the pain and evaluate common referral patterns • Perform pertinent portions of the neurological examination depending on the pain with complaint • Perform appropriate diagnostic tests to facilitate the diagnosis of the cause of the pain (may need to give analgesics to facilitate the diagnostic workup) 	<ul style="list-style-type: none"> • Use valid and reliable tools • Perform the reassessments at appropriate intervals • Document reassessment (pain intensity, extent to which pain interferes with function, pain relief is a distinct from pain assessment, level of adherence with the pain management plan)

Modified from Miaskowski C, Cleart J, Burney R, Coyne P, Grossman S, Jamjam N, Finley R, Ray J, Syrjala K, Weisman S, and Zahbock C (2005). Guideline for the Management of Center Pain in Adults and Children, APS Clinical Guidelines Series, No.3 Glenview, IL: America Pain Society, with permission from American Pain Society.

⁶ Adapted from Rigotti A, 2004.

Low Back Pain with Risk Factors for Compromised Recovery

14. In your estimation, what are the chances that you will be working in 6 months? Circle one.

0 1 2 3 4 5 6 7 8 9 10
No chance Very large chance

15. If you take into consideration your work routines, management, salary, promotion possibilities and work mates, how satisfied are you with your job? Circle one.

0 1 2 3 4 5 6 7 8 9 10
Not at all satisfied Completely satisfied

Here are some of the things which other people have told us about their pain. For each statement please circle one number from 0 to 10 to say how much physical activities, such as bending, lifting, walking or driving would affect your pain.

16. Physical activity makes my pain worse.

0 1 2 3 4 5 6 7 8 9 10
Completely disagree Completely agree

17. An increase in pain is an indication that I should stop what I'm doing until the pain decreases.

0 1 2 3 4 5 6 7 8 9 10
Completely disagree Completely agree

18. I should not do my normal work with my present pain.

0 1 2 3 4 5 6 7 8 9 10
Completely disagree Completely agree

Here is a list of 5 activities. Please circle the one number that best describes your current ability to participate in each of these activities.

19. I can do light work for an hour.

0 1 2 3 4 5 6 7 8 9 10
Can't do it because of pain being a problem Can do it without pain

20. I can walk for an hour.

0 1 2 3 4 5 6 7 8 9 10
Can't do it because of pain being a problem Can do it without pain

21. I can do ordinary household chores.

0 1 2 3 4 5 6 7 8 9 10
Can't do it because of pain being a problem Can do it without pain

22. I can go shopping.

0 1 2 3 4 5 6 7 8 9 10
Can't do it because of pain being a problem Can do it without pain

23. I can sleep at night.

0 1 2 3 4 5 6 7 8 9 10
Can't do it because of pain being a problem Can do it without pain

Thank you for your cooperation!

© Steven J Linton, Örebro Reproduced with permission

Revised Edition 12/07

Örebro Musculoskeletal Pain Questionnaire (ÖMPQ) Explanatory notes¹⁸

This screening questionnaire identifies how likely it is that workers with soft tissue injury will develop long-term problems. The Örebro Musculoskeletal Pain Questionnaire (ÖMPQ) is valid and reliable in predicting long-term disability.¹⁹

This yellow flag screening questionnaire, when completed four to 12 weeks after musculoskeletal injury, predicts long term disability and failure to return to work. A cut-off score of 105 has been found to predict, with 95 per cent accuracy, those who will recover and, with 81 per cent accuracy, those who will have no further sick leave, in the next six months. Prediction of long-term sick leave (more than 30 days within the next six months) was found to be 67 per cent accurate.

Identification, through the ÖMPQ, of workers at risk of failing to return to work due to personal and environmental factors provides the opportunity for treating practitioners to apply appropriate interventions (including the use of activity programs based on cognitive behavioural strategies) to reduce the risk of long-term disability in injured workers. Evidence indicates that these factors can be changed if they are addressed.²⁰

Scoring instructions

- For question 5, count the number of pain sites and multiply by two – this is the score (maximum score allowable is 10).
- For questions 6 and 7 the score is the number bracketed after the ticked box.
- For questions 8, 9, 10, 11, 13, 14, 15, 18, 19 and 20 the scores is the number that has been ticked or circled.
- For questions 12, 16, 17, 21, 22, 23, 24 and 25 the score is 10 minus the number that has been circled.
- Write the score in the shaded area beside each item.
- Add up the scores for questions 5 to 25 – this is the total ÖMPQ score.

Readers seeking further information on the administration of the ÖMPQ are referred to Steven Linton's text:

Understanding pain for better clinical practice – a psychological perspective. Edinburgh: Elsevier, 2005.

Additional screening tools for specific risk factors are included in the Appendices below.

¹⁸ WorkCover Authority NSW 2003 <http://www.workcover.nsw.gov.au> accessed February 2007.

¹⁹ Linton SJ,

²⁰ Boersma K 2003

Initial evaluation and history reveals:

A. Red Flag Symptoms Present (See #2 "Urgent" ICSI Guidelines for details) .

1. Assign Nurse Advocate
2. Refer or Consult

B. Red Flag Symptoms Absent (See #2 "Urgent" ICSI Guidelines for details) **and Yellow Flag Risk Factors Absent** (See #1 "Yellow Flag Risk Factors" for details).

1. Assign Nurse Advocate
2. Refer to [ICSI Guidelines for Acute Low Back Pain Conservative Treatment](#)
Passive treatment limited to 4 -6 weeks, additional therapy may be requested if medically indicated.
 - a) Passive treatment may include:
 - Rest (usually 2 days or less)
 - Heat or cold
 - Postural advice
 - Anti-inflammatory or analgesic over-the-counter medications (unless contraindicated)
 - Adjustment/manipulation of joints
 - b) Active treatment must be included after 1st week and may include:
 - Education
 - Exercise
 - Posture, work method training
 - Worksite modificationFor specific details refer to #12 [ICSI Adult Low Back Pain Guidelines](#).

C. Red Flag Symptoms Absent (See #2 "Urgent" [ICSI Guidelines](#) for details) **and Yellow Flag Risk Factors Present** (See #1 "Yellow Flag Risk Factors" for details).

1. Assign Nurse Advocate
2. Follow [ICSI Guidelines for Acute Low Back Pain Conservative Treatment](#)

3. Classify symptoms
 - e. Acute Low Back Pain: LBP that does not radiate past the knee with current symptoms 6 weeks or less from onset.
 - f. Chronic Low Back Pain: LBP that does not radiate past the knee with current symptoms more than 6 weeks from onset. (Go to IV).
 - g. Acute Sciatica: LBP that radiates past the knee with current symptoms 6 weeks or less from onset.
 - h. Chronic Sciatica: LBP that radiates past the knee with current symptoms more than 6 weeks or less from onset. (Go to IV)
4. Treat Yellow Flag Risk Factors - Consult or Refer
 - Treat all co-morbid risk factorsSee Appendices Below

II. Follow-up Visit 1-3 Weeks

A. Improving

1. Continue Conservative Treatment Plan according to the [ICSI Guidelines](#) for Acute Low Back Pain.
2. Transitional work (See #12 D [ICSI Guidelines](#) for details)

B. No Improvement

1. Comprehensive physical & psychosocial re-evaluation
 - a. Diagnosis correct?
 - o Physical factors which may lead to delayed recovery or prolonged disability may include:
 - o Malignancy (consider blood testing including ESR),
 - o Infection,
 - o Diabetes,
 - b. Surgery indicated?
 - Surgery must meet parameters (See Appendix C "Parameters for Surgery")
 - Receiving treatment for risk factors?
 - yes – Refer to trained spine therapy specialist
 - no – Surgery is contraindicated

Surgery is contraindicated for patients at high risk for compromised recovery if there are **no Red Flag** indications at the time of Re-Evaluation to include evidence of serious underlying disease such as cancer or Cauda Equina Syndrome, significant/progressive neurologic deficit or other systemic illness – Refer

- c. Behavioral or psychosocial issues?
 - Complete psychosocial re-evaluation (see Appendix G)
 - Treat or Refer

III. Weeks 4 - 12

A. Improving

1. Continue Conservative Treatment Plan according to ICSI Guidelines for Acute Low Back Pain.
2. Transitional work (See #12 D ICSI Guidelines for details).

B. No Improvement

1. Refer to Intensive Multidisciplinary Treatment Program. Also recommended for patient's who continue to have symptoms post surgery

OR

2. Continue with conservative treatment plan w/ referral to a trained spine therapy professional (See #14 ICSI Guidelines for details and Appendix A)

AND

Risk Factor Reduction (See Appendices D-H for details)

- a. Consider Adjuvant Medication

Trial on adjuvant medications such as tricyclic antidepressants, anticonvulsants or antispasmodics may be indicated for pain management (see reference for The Massachusetts General Hospital Handbook of Pain Management and/or BMJ Clinical Evidence Handbook).

CAUTION: Since the last update of this topic, a drug safety alert has been issued on increased suicidal behavior with antidepressants, and on major congenital malformations with paroxetine (www.fda.gov/medwatch).

IV. Re-evaluation Weeks 6-8

A. Improving

1. Continue Self-Care / Intensive Multidisciplinary Program
2. Transitional Work (See #12D ICSI Guidelines for details)

B. No Improvement

1. Consider further procedures & imaging (see #18 & 23 [ICSI Guidelines](#) for details)
 - a. Referrals for imaging studies should be limited to patients with:
 - Progressive neurological deficits and
 - Minimal to no improvement of radicular symptoms despite 6 weeks of conservative treatment.
 - See #4e "Lumbar Spine X-ray Indications" [ICSI guidelines](#)
 - See #23 "MRI or Lumbar Spine CT Imaging Indications when patient is a potential surgical candidate" [ICSI guidelines](#)
 - See #25 "Consider referral for epidural steroid injections for pain control" or other appropriate injections. [ICSI guidelines](#)
 - See Report #62, 2002 [ICSI guidelines](#) "Intradiscal electrothermal therapy" (IDET)
2. Classify Symptoms by Diagnosis
 - a. Chronic Low Back Pain
LBP that does NOT radiate past the knee with current symptoms for > 6 weeks

Procedures may include imaging:

- Lumbar spine x-rays (AP and LAT views) if indicated.

Treatment should include:

- Continue or refer to Intensive Multidisciplinary Program (see Section III)

b. Chronic Sciatica

LBP with radiation past the knee with current symptoms for > 6 weeks

Procedures may include imaging:

- MRI or lumbar spine CT imaging indications when patient is a potential surgical candidate
 - Images correlate with symptoms?
 - No – continue or refer to active rehabilitation program (see Section VB2 “Chronic Low Back Pain Management”)
 - Yes with active participation in risk factor reduction program or active rehabilitation Low Back Pain with Risk Factors for Compromised Recovery program (see Section VB2 “Chronic Low Back Pain Management”) – consult/refer to surgical or nonsurgical spine specialist (see Appendix D “Parameters for Surgery”)
 - Yes without active participation in risk factor reduction or active rehabilitation program (see Section VB2 “Chronic Low Back Pain Management”) – surgery is contraindicated (see Appendix C “Parameters for Surgery”).
 - Unsure – consider epidural steroid injection for pain control and continue risk factor reduction / active rehabilitation program (see Section VB2 “Chronic Low Back Pain Management”).

Exception: Patient has progressive neurological deficit or evidence of serious underlying disease –Refer

V. > 12 Weeks

Re-evaluation

A. Improving

1. Continue Self-Care
2. Return to work / modified work schedule.

B. No Improvement

1. Comprehensive physical & psychosocial re-evaluation

For those patients who do not improve with conservative measures and/or surgery after 6 – 8 weeks a comprehensive re-evaluation should be done (see “Comprehensive physical and psychosocial re-evaluation” #16 [ICSI guidelines](#)).

2. Chronic Low Back Pain Treatment

a) Active Rehabilitation

The treatment of chronic low back pain should include:

- Intensive Multidisciplinary Treatment Program (if not previously completed)
- Education (See Resources)
- Treatment of Risk Factors
- Active self-management (see #12 b, c ICSI guidelines)
- Gradual resumption of normal light activities as tolerated
- Prevention – good body mechanics
- Exercise – there is strong evidence that exercise therapy is effective for chronic low back pain.

However, there is inconclusive evidence in favor of one exercise over the other – flexion, extension, fitness.

- Consider a graded active exercise program

b) Pharmacological management

- Recommendations should be made based on the pharmacologic protocol outlined (See Appendix A “Pharmacological Management”)

- Medication choice should be customized to the patient’s individual lifestyle, preferences, pain type and pattern.

VI. Re-evaluation for MMI & continue active rehabilitation customized to the patient’s individual lifestyle, preferences, pain type and pattern.

Appendix A

Intensive Multidisciplinary Treatment Program

The purpose of an intensive short-term (8-10 week) treatment program is behavioral management of pain behaviors, risk factor reduction, and reduction of physical impairments. The work-injured patient/claimant suffering from delayed recovery and at high risk for chronic back pain is often experiencing a number of physical and psycho-behavioral health issues including daily pain, weight gain, smoking, inactivity/deconditioning, and stress.

Treatment objectives should include:

- Reduction of physical discomfort
- Risk factor reduction
- Maximizing functional capacity
- Successful reintegration to workforce/prepare for retraining

A) Program Components should include all or most of the following:

Cognitive strategies

- Education
- Goal setting
- Relaxation techniques
- Cognitive restructuring for stress management

Behavioral strategies

- Pacing activities
- Social support
- Exercise

Risk Factor Reduction (where appropriate) – (may refer to outside resource)

- Smoking cessation
- Weight reduction

- Treatment for depressive symptoms
- Counseling for physical abuse or sexual assault
- Alcohol or substance abuse counseling

Pain Management

- Pharmacological management (see recommendations section E)
- Offer at least of one of the following:
 - Therapeutic massage
 - Acupuncture
 - Spinal manipulation
 - Hypnosis
 - Trial of Percutaneous electrical nerve stimulation (PENS) or
 - Trial of Transcutaneous electrical nerve stimulation (TENS) (up to 6 months following injury).²¹

Physical Conditioning

- Functional restoration
- Offer at least one of the following or refer to outside resource:
 - Aquatherapy
 - Muscle group strengthening
 - Yoga

B) Evaluation must include:

Evaluation of the injured worker and development of a treatment plan by a multi-disciplinary treatment team, no member of which is a practitioner who has previously examined, ordered medical care for, rendered medical care to, or reviewed the medical records, of the injured employee.

1) Quantitative Measures must document:

- Functional Capacity Evaluation (FCE) pre program
- Attendance
- Weight
- Flexibility
- Strength
- FCE mid program
- FCE post program

2) Qualitative Measures must document:

- Pain level (numeric rating scale (NRS) 0-10) Pre, Post and weekly
- Pain location (see Pain Drawing Appendix B – ICSI guidelines)
- Effects of treatment on pain and function
- Self- Efficacy of pain management Pre and post program (See Appendix E)

3) Program Documentation must include:

- Weekly SOAP (subjective, objective, assessment, plan) notes provided to Nurse Advocate
- Weekly patient self-evaluation

C) Treatment Team

The treatment team to include a licensed mental health professional (either a psychiatrist or psychologist) and no more than three of the following: physician, advanced practice nurse/physician's assistant, physical therapist, occupational t

Low Back Pain with Risk Factors for Compromised Recovery

Therapist, or chiropractor. At least one member of the treatment team should be a clinician who by virtue of training or experience is especially qualified to evaluate and treat chronic pain patients

A member from within the pain program/treatment team must be assigned to coordinate clinical care (a Program Coordinator). This person is to communicate and coordinate the treatment plan, goals and outcome measures with the patient's Nurse Advocate

D) Patient Contract

Within 7 calendar days of the initial evaluation for treatment under this guideline, a Patient Contract for, and an outline of a treatment plan

- a. Non-compliance with the Patient Contract, as determined by the Program Coordinator, will result in immediate termination from the treatment program and this guideline.

Adapted from Commonwealth of Massachusetts Department of Industrial Accidents Treatment Guidelines. Downloaded from www.mass.gov/dia/hcsb/treatmentguidelines.htm September 10, 2004

E) Pharmacological Management

- 1) Trial anti-inflammatory or analgesic over-the-counter medications (unless contraindicated). (Weeks 1-3)
- 2) Trial on adjuvant medications such as tricyclic antidepressants, anticonvulsants or antispasmodics may be indicated for pain management (unless contraindicated) (see Reference for The Massachusetts General Hospital Handbook of Pain Management and/or BMJ Clinical Evidence Handbook). (Weeks 4-12+).

CAUTION: Since the last update of this topic, a drug safety alert has been issued on increased suicidal behavior with antidepressants, and on major congenital malformations with paroxetine (www.fda.gov/medwatch).

- 3) If at least 3 months of conservative care and/or surgery and a trial on anti-inflammatory, analgesic over-the-counter medications and/or adjuvant medications have failed to relieve pain, consideration for opioid therapy trial should be based upon suggested protocol. Please see VA/DoD [Veterans Administration/Department of Defense] CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF OPIOID THERAPY FOR CHRONIC PAIN at http://www.oqp.med.va.gov/cpg/cot/ot_base.htm for an evidence-based guide. A patient screening tool (Screener and Opioid Assessment for Pain patients – SOAPP) to assess risk potential for substance abuse among patients can be found at <http://www.painedu.com/tools.asp>.

=> See also Appendix F

Appendix B

Minimum Components for Conservative Treatment Plan

There may be circumstances whereby patients are unable to be referred to or participate in an Intensive Multidisciplinary Pain Treatment Program. In those cases we recommend a minimum of the following conservative measures for those at high risk for compromised recovery: (See ICSI guidelines for details)

- Education (see Resources)
- Exercise/physical conditioning
- Pain Management
 - o Pharmacological

Low Back Pain with Risk Factors for Compromised Recovery

- Trial on adjuvant medications such as tricyclic antidepressants, anticonvulsants or antispasmodics may be indicated for pain management (see Reference for The Massachusetts General Hospital Handbook of Pain Management and/or BMJ Clinical Evidence Handbook) (Weeks 4-12+)

CAUTION: Since the last update of this topic, a drug safety alert has been issued on increased suicidal behaviour with antidepressants, and on major congenital malformations with paroxetine (www.fda.gov/medwatch).

- If at least 3 months of conservative care and/or surgery and a trial on antiinflammatory, analgesic over-the-counter medications and/or adjuvant medications have failed to relieve pain, consideration for opioid therapy trial should be based upon suggested protocol. Please see [VA/DoD \[Veterans Administration/Department of Defense\] CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF OPIOID THERAPY FOR CHRONIC PAIN](http://www.oqp.med.va.gov/cpg/cot/ot_base.htm) at http://www.oqp.med.va.gov/cpg/cot/ot_base.htm for an evidencebased guide.

A patient screening tool (Screener and Opioid Assessment for Pain patients – SOAPP) to assess risk potential for substance abuse among patients can be found at <http://www.painedu.com/tools.asp>. (Butler, SF et al. 2004)

=> See also Appendix F

- Non-pharmacological
 - Therapeutic massage
 - Acupuncture
 - Spinal manipulation
 - Hypnosis
 - Trial of Percutaneous electrical nerve stimulation (PENS) or
 - Trial of Transcutaneous electrical nerve stimulation (TENS) (up to 6 months following injury).
- Risk Factor Reduction
 - o Smoking cessation
 - o Weight reduction
 - o Treatment for depressive symptoms
 - o Physical abuse or sexual assault counseling
 - o Treatment for alcohol or substance abuse

Documentation must include:

- o Quantitative & Qualitative Measures
- o Communication with Case Manager/Advocate

Evidence related to conservative treatments:

Clinical Evidence Handbook published in 2007 by the British Medical Journal has summarized effectiveness of conservative treatments for chronic low back pain according to evidence of benefit.

What are the effects of oral drug treatments?

Likely to be beneficial	<ul style="list-style-type: none"> • Analgesics • Antidepressants • Non-steroidal anti-inflammatory drugs
Trade off between benefits and harms	<ul style="list-style-type: none"> • Muscle relaxants • Facet joint injections

Low Back Pain with Risk Factors for Compromised Recovery

What are the effects of injection therapy?

Unknown effectiveness	<ul style="list-style-type: none"> • Epidural steroid injections • Local injections
Likely to be ineffective or harmful	<ul style="list-style-type: none"> • Facet joint injections

What are the effects of non-drug treatments?

Beneficial	<ul style="list-style-type: none"> • Exercise • Intensive multidisciplinary treatment programmes (evidence of benefit for intensive programmes but none for less intensive programmes)
Likely to be beneficial	<ul style="list-style-type: none"> • Acupuncture • Back schools • Behavioural therapy • Spinal manipulative therapy
Unknown effectiveness	<ul style="list-style-type: none"> • Electromyographic biofeedback • Lumbar supports • Massage • Traction • Transcutaneous electrical nerve stimulation

Web publication date: 01 Apr 2006 (based on November 2004 search)

Van Tulder and Koes, Low back pain (chronic), Clinical Evidence Handbook 2007

Appendix C

Parameters for Surgery²²

Exception: This pathway **does not** apply to clinical situations where fusion is requested to treat **spinal fracture or dislocation, spinal infection or deformity such as those related to degenerative scoliosis.**

I. Conservative care should be tried first.

- The patient should have at least three months of conservative therapy for low back pain. The primary emphasis should be on physical reconditioning through an active, rather than passive, physical therapy program.
- On at least two occasions prior to surgery the surgeon requesting the lumbar fusion will have personally evaluated the patient.
- For patients that do not meet utilization review or pathway standards a second opinion from a physiatrist with a focus in non-operative spine care should be requested. (see #23 [ICSI guidelines](#)).

Exception: The conditions above can be waived if the patient has a progressive neurological deficit.

II. Lumbar fusion should be considered if conservative care has failed to relieve symptoms and the patient has had no prior surgery, only if the patient has one or more of the following:

- Continued central (mechanical) low back pain with mechanical collapse and Modic changes, with or without radiculopathy.
- Spondylolisthesis with one or more of the following:
 - Objective signs/symptoms of neurogenic claudication OR

Revised Edition 12/07

²² Adapted from: Washington State Department of Labor and Industries. Guidelines for lumbar fusion (arthrodesis). Olympia (WA): Washington State Department of Labor and Industries; 2002 Aug. 5 p.

Low Back Pain with Risk Factors for Compromised Recovery

2. Objective signs/symptoms of unilateral or bilateral radiculopathy, which are corroborated by neurologic examination and by magnetic resonance imaging (MRI) or computed tomography (CT) (with or without myelography).

III. Lumbar fusion should be considered if conservative care has failed to relieve symptoms and the patient has had a prior laminectomy, discectomy, or other decompressive procedure at the same level, only if the patient has one or more of the following:

- A. Central (mechanical) low back pain with extensive degenerative change, disc space collapse, or Modic changes.
- B. Objective signs/symptoms compatible with neurogenic claudication or lumbar radiculopathy that is supported by MRI or CT (with or without myelography) and by a detailed clinical neurological examination OR
- C. Evidence from a post-laminectomy structural study of either:
 - 1. 100% loss of facet surface area unilaterally, OR
 - 2. 50% combined loss of facet surface area bilaterally

IV. Lumbar fusion revision at the same level should be considered only if the patient realized benefit including improved function, reduction in pain level and the need for opiates following initial fusion and is now experiencing a worsening of signs and symptoms and has one or more of the following:

- A. Pseudarthrosis with or without hardware failure (loosening, breakage, migration), confirmed by objective evidence of pseudarthrosis (e.g. thin slice CT scan with multiplanar reconstructions.)
- B. Neurogenic claudication supported by MRI, CT, or myelographic evidence for nerve compression.
- C. Lumbar radiculopathy supported by MRI, CT, or myelographic evidence of nerve compression, or by a detailed neurological examination.

V. Lumbar fusion should be considered if conservative care has failed to relieve symptoms and the patient has had a prior fusion at a level adjacent to the new one being considered, only if the patient meets the same criteria as described for patients with no prior history of spine surgery (see above II).

VI. Contraindications for lumbar fusions, even when patients meet the criteria described above.

- A. Absolute contraindications:
 - Lumbar fusion is not indicated with an initial laminectomy/discectomy related to unilateral compression of a lumbar nerve root.
- B. Risk factors that are correlated with poor outcome:
 - 1. Severe physical deconditioning. This is the patient who has not been involved in any active physical therapy program at all or at least not for the last 3-6 months. This would also include those who spend a majority of their day-time hours in a recumbent position.
 - 2. Morbidly obese BMI >30 (yellow flag) (see Appendix B below for Assessment and Treatment options).
 - 3. Current smoking (yellow flag) (see Appendix C below for Assessment and Treatment options).
 - 4. Multiple level degenerative disease of the lumbar spine
 - 5. Psychosocial factors (yellow flags) that are correlated with poor outcome, such as:
 - a. History of drug or alcohol abuse (see Appendix F for Assessment and Treatment options).
 - b. High degrees of somatization on clinical or psychological evaluation (see Appendix G for Psychological Assessment & Treatment options)
 - c. History of physical, emotional or sexual abuse or trauma (see Appendix H for Assessment and Evaluation options)
 - d. Presence of a personality disorder or major psychiatric illness, such as Depression or Anxiety. (see

Assessment & Treatment options).

VII. When the surgeon wants to continue with a lumbar fusion request:

A. A complete pain and risk factor assessment should be conducted (see I A & B above)

The physician should be aware of the following research based findings²³ :

1. The chance of an injured worker no longer being disabled 2 years after lumbar fusion is only 32%.
2. The overall rate of re-operation within 2 years for all fusions is approximately 23%.
3. Smoking at the time of fusion greatly increases the risk of pseudarthrosis.
4. Pain relief is not likely to be complete.

B. The operating surgeon should follow the lumbar fusion patient at least every two - three months for the first nine postoperative months. At the nine-month examination, if the patient is still experiencing significant pain, a face-to-face evaluation should be conducted, which includes all of the following elements:

1. Neurologic examination
2. Thin slice CT to rule out pseudarthrosis

If new objective neurologic signs are absent, and if there is no objective evidence of fusion failure, the patient may have reached maximum medical improvement and an impairment rating (permanent partial disability [PPD] assessment) may be appropriate.

C. Although adding to the clinical database, provocative discography, diagnostic facet joint injections, and pain relief during the use of a rigid spinal brace are not definitive indications for fusion nor do they predict pain relief success.

D. Anterior Lumbar Interbody Fusion (ALIF), if indicated, should be performed with devices that clearly stabilize the spine rather than act as simple spacers. Examples of simple spacers are femoral allograft rings, and metal or polymer

Note: Prior to surgery, the physician should discuss with the patient the information provided in the form below ("What You Should Know about Lumbar Fusion Surgery"). After discussing these details, both the physician and patient should sign at the bottom of the form. The form should be kept in the patient's medical records at the requesting surgeon's office.

²³ Franklin G. 1994.

What You Should Know About Lumbar Fusion Surgery²⁴

This information has been provided so that you will know how lumbar fusion surgery may affect your health and recovery. It is important that your doctor discuss this information with you before the surgery in order to make the best decision possible. After you have read and discussed this information, both you and your doctor should sign your names at the end of this form. **This is NOT a surgical consent form.**

Research conducted on spinal fusion surgery has found that²⁵ :

- About 2/3 of the workers who receive a lumbar fusion are still disabled two years after the surgery.
- More than half of the workers who received lumbar fusion felt that both their pain and ability to function were no better or worse after the surgery.
- Almost one quarter of the workers who had fusion surgery were operated on again within two years.

In addition:

- Smoking at the time of fusion greatly increases the risk of fusion failure.
- Pain relief after fusion, even when it occurs, is not likely to be complete.
- Obesity greatly increases the risk of disability and reduced function.

After the surgery:

If your surgery is approved, I will continue to see you at least every two months for six months after the surgery. If your fusion is successful (as defined in section VII-B of the guidelines), I will consider you to be stable and will ask for an impairment rating to complete your care. If you continue to have pain after your surgery and I cannot find a medical reason for it, your insurer may not continue to pay for your medical care.

By signing this form, we (the patient and physician), attest that we have discussed the information presented here, we understand this information and we wish to proceed with the fusion procedure. **We also understand that this information does NOT take the place of, and is separate and distinct from, the surgical consent form that we will review and sign prior to surgery.**

Patient Name _____

Physician Name _____

Date: ___/___/___ **Date:** ___/___/___

24 Adapted from: Washington State Department of Labor and Industries. Guidelines for lumbar fusion (arthrodesis). Olympia (WA): Washington State Department of Labor and Industries; 2002 Aug. 5 p. Electronic copies available at Washington State Department of Labor and Industries Web site. Accessed January, 2007.

25 Franklin G. 1994

Assessing and Treating Psychological and Behavioral (yellow flag) Risk Factors

It is important to remember that risk factors are often interrelated. This requires clinicians to use caution in treating them as if they were separate entities.²⁶ For example, certain risk factors may appear on the surface to be modifiable while complicating factors may in fact make them more difficult to address.²⁷ Take, for instance, functional disability. On the surface this appears to be a risk factor that could be improved by physical therapy. However, if there are other risk factors such as older age, emotional distress, and high job dissatisfaction that are contributing to the disability, then treatment will be inadequate if it does not attend to these underlying issues.

Because of the high co-morbidity associated with pain and disability, it is beneficial for clinicians to develop a collaborative approach to treatment. Early referral to multidisciplinary treatments such as vocational counseling, return-to-work rehabilitation, and/or cognitive-behavioral and preventive physical therapy intervention can be the key to addressing multiple risk factors and reducing long-term disability.

Appendix D

Assessment and Treatment for Obesity

Assessment for overweight individuals (BMI 25.0-29.9)²⁸ :

Diet: Preferably dietary assessment should be carried out by referral to a registered dietitian. If not practical, there are several brief tools, such as the MEDFACTS Dietary Assessment Questionnaire (see resources), which can give some quick insight into the patient's dietary patterns.

Physical activity: Physical activity can be quickly assessed by a number of questionnaires including the Self-Administered 7-day Physical Activity Recall Questionnaire. (See resources). Emotional status: Epidemiologic data suggest an association between obesity and depression^{29,30} Therefore, screening for depressive symptoms may be important in overweight individuals. Consider a screening tool such as the Beck Depression Inventory for Primary Care (BDI-PC). This is a self-administered questionnaire that helps to identify depressive symptoms (see resources).

Emotional status: Epidemiologic data suggest an association between obesity and depression^{29,30} Therefore, screening for depressive symptoms may be important in overweight individuals. Consider a screening tool such as the Beck Depression Inventory for Primary Care (BDI-PC). This is a self administered questionnaire that helps to identify depressive symptoms (see resources).

Another useful screening tool is the Battery for Health Improvement (BHI) that includes both psychological and functional scales (see resources).

A positive screen for depression should prompt referral for further evaluation and diagnostic interview with a psychologist, psychiatrist or other qualified mental health practitioner.

26 Boersma K & Linton SJ 2005

27 Turner J et al. 2000

28 Marcus DA. 2004

29 Simon GE et al. 200

30 Wyatt SB, Winters KP, Dubbert PM 2006

Low Back Pain with Risk Factors for Compromised Recovery

Assess Readiness to change:

The Transtheoretical Model^{31,32,33} is an integrative model of behavior change. The model describes how health care professionals can help individuals modify a problem behavior or acquire a positive behavior. The central organizing construct of the model is the Stages of Change where change is a process involving progress through a series of stages. Below is an example of the Stages of Change applied to assessment for weight loss and suggested intervention based upon the stage:

Stage	Assessment	Intervention
Precontemplation	Patient is not ready to change	Personalize risk factors; Discuss risk related to pain; Offer help; Provide written material; Arrange follow-up
Contemplation	Patient is concerned about weight	Assess diet, physical activity, emotional status; Discuss risk; Educate re: simple steps; Offer help; Provide written material; Arrange follow-up
Preparation	Patient has decided to do something about it but has not yet begun	Assess diet, physical activity, emotional status; Discuss risk: Educate re: simple steps; Provide counseling (see weight loss below): Arrange follow-up

- Discuss risk relationship of overweight and pain and disability:
 - o Weight is associated with co-morbid Disability, Depression and Reduced quality of life for physical function in patients with pain.
 - o For patients with low back pain there is a risk of:
 - More severe back pain symptoms,
 - Increased co-morbidities complicating their recovery and
 - Impaired functioning even after successful spine intervention.

- Recommend Dietary changes:

One of the most efficacious diets for weight loss is a balanced, reduced calorie plan based on the United States Department of Agriculture (USDA) guidelines. See www.mypyramid.gov. A deficit of 500 to 1000 calories a day from ones typical caloric intake will result in a safe 1- to 2-pound weight loss a week.

31 Prochaska & DiClemente, 1983

32 Prochaska, DiClemente, & Norcross, 1992

33 Prochaska & Velicer, 1997

Low Back Pain with Risk Factors for Compromised Recovery

Recent research comparing popular diets such as Atkins, Ornish, Weight Watchers and Zone³⁴ revealed that weight loss was associated with self-reported dietary adherence but not with diet type. For each diet, reduction in cholesterol, CRP and insulin were related to weight loss, with no significant difference among the diets.

The best approach may be to find 2 or 3 commercially available diets to recommend. What is important in terms of outcome is that the patient be able find a diet he or she can adhere to.

- Provide brief counseling^{35,36}
 - o Review food/physical activity records
 - o Review goals from last visit
 - o Review problems and solutions
 - o Set realistic goals
 - o Sign behavioral contract
 - o Give positive feedback and encouragement

- Weight Loss Counseling Strategies
 - o Set realistic goals
 - Help patients to set moderate realistic short-term goals such as making small increases in daily walking and decreases in portion sizes. Re-evaluate and revise at regular increments.
 - o Self-monitoring
 - Ask patient to write down what they eat and look up the calories. This is critical to raising awareness.
 - Ask the patient to write down the minutes they exercise or the number of steps a day if using a pedometer.
 - o Consider meal replacements
 - Research documents that substituting 2 meals with a meal replacement for weight loss has been shown excellent efficacy with no significant safety concerns.
 - o Stimulus control
 - Ask patients to identify the problems contributing to dietary and exercise lapses. Discuss ways to modify this behavior.
 - o Managing stress
 - Recommending relaxation techniques and increasing physical activity can be helpful for patients with stressful lifestyles.
 - o Cognitive restructuring
 - Recommend a cognitive-behavioral weight-loss program. This can help patients adopt self-enhancing, self-affirming rather than self-defeating thoughts and behaviors.
 - o Relapse prevention
 - Relapses are a normal part of a weight-loss process. Counseling patients about how to deal with relapses includes helping them to understand that they can be expected and how to prepare for them.

34 Dansinger ML et al. 2005

35 Poston WSC, Haddock CK, Pinkston MM, et al.2004.

36 Foreyt JP Weight Loss: Counseling and Long-Term Management

Low Back Pain with Risk Factors for Compromised Recovery

o Social support

Support is valuable for both weight loss and maintenance. Referral to a support group may be beneficial.

o Contracts

Ask patients to verbalize at least 1 behavior change they agree to make over the next 2-3 weeks. Examples may be increase walking from 15 to 30 minutes, increase the number of days from 3 to 5 or limit desserts from 4 days a week to 2 days a week. Ask the patient to write the behavior change down and sign the contract.

Pharmacological interventions³⁷ :

Clinical Evidence Handbook published in 2007 by the British Medical Journal has summarized effectiveness of drug treatments for obesity according to evidence of benefit

What are the effects of drug treatments in adults with obesity?

Trade off between benefits and harms	<ul style="list-style-type: none">• Diethylpropion• Mazindol• Orlistat• Phentermine• Rimonabant• Sibutramine
Unknown effectiveness	<ul style="list-style-type: none">• Sibutramine plus orlistat

Web publication date: 01 Aug 2006 (based on July 2005 search)

Diethylpropion, mazindol, orlistat, phentermine, rimonabant and sibutramine may promote modest weight loss (an additional 1 to 7 kg lost) compared with placebo in obese adults having lifestyle interventions, but they can all cause adverse effects.

- Diethylpropion, phentermine and mazindol have been associated with heart and lung problems in case reports and series.
- Sibutramine has been associated with cardiac arrhythmias and cardiac arrest in case reports.
- Orlistat may be less effective at promoting weight loss compared with sibutramine, although studies have shown contradictory results.
- The authors do not know whether combining orlistat and sibutramine treatment leads to greater weight loss than either treatment alone.

=>Clinicians unfamiliar with prescribing these medications should refer patients to clinicians specializing in the treatment of obesity.

Morbid obesity (BMI>40)

In adults with morbid obesity or with BMI > 35 with a serious obesity-related co-morbidity surgery is the most effective intervention for the production of weight loss. Patients should be referred to a reputable weight loss center for consultation and evaluation³⁸ .

37 Arterburn, DeLeet, Schauer 2007
38 Arterburn, DeLeet, Schauer 2007

What are the effects of bariatric surgery in adults with morbid obesity?

Likely to be beneficial	<ul style="list-style-type: none"> • Bariatric surgery (more effective than non-surgical treatment for clinically important weight loss in morbidly obese adults; but operative complications common) • Gastric banding • Gastric bypass • Vertical banded gastroplasty
Unknown effectiveness	<ul style="list-style-type: none"> • Biliopancreatic diversion (no studies comparing biliopancreatic diversion versus other bariatric techniques) • Sleeve gastrectomy (no studies comparing sleeve gastrectomy versus other bariatric techniques)

Web publication date: 01 Aug 2006 (based on July 2005 search)

Bariatric surgery (vertical banded gastroplasty, gastric bypass or gastric banding) may increase weight loss compared with no surgery in morbidly obese people.

- Bariatric surgery may result in loss of over 20% of body weight, which may be largely maintained for 10 years.
- Operative and postoperative complications are common and up to 2% of people die within 30 days of surgery. However, surgery may reduce long term mortality compared with no surgery.
- The authors do not know which surgical technique is the most effective or least harmful.
- The authors do not know how biliopancreatic diversion or sleeve gastrectomy compares with other treatments.

Appendix E

Assessment and Treatment for Smoking Cessation

Assess tobacco use in all injured workers.

For patients currently smoking > 10 cigarettes/day³⁹ (See also Motivational Interviewing section below):

- **Advise** to quit smoking. "I strongly advise you to quit smoking and I can help you."
- **Advise** of overall health risk related to:
 - o delayed wound healing, and
 - o nonunion of fractures as well as
 - o decreased rates of spinal fusion.⁴⁰
- **Ask** every tobacco user if s/he is willing to make a quit attempt at this time.
 - o If willing to quit, provide assistance (see below)
 - o If unwilling to quit, provide motivational intervention

QuitWorks a free stop-smoking service offered to any Massachusetts patient (see resources) provides a take-home pamphlet "Think About It"

39 Adapted from Rigotti A 2004.

40 Vogt M 2002

Low Back Pain with Risk Factors for Compromised Recovery

Assess Readiness to Change

Stage	Assessment	Intervention
Precontemplation	Patient is not ready to change	Personalize risk factors; Discuss risk related to pain; Offer help; Provide written material (see QuitWorks below); Arrange follow-up
Contemplation	Patient is concerned about smoking.	Assess current tobacco use; Discuss risk; Educate re: simple steps; Offer help; Provide written material (see QuitWorks below); Arrange follow-up
Preparation	Patient has decided to do something about it but has not yet begun	Assess current tobacco use; Discuss risk; Educate re: simple steps; Provide counseling (see smoking intervention below); Arrange follow-up

- **Assist** smokers in stopping.
 - o Provide brief counseling:
 - o Recommend use of pharmacotherapy (patch, gum, nasal spray, lozenge, inhaler, bupropion-SR) unless contraindicated⁴¹.
 - o QuitWorks provides clinicians with FDA recommendations for pharmacotherapy dosing.
 - o Enroll patient for QuitWorks services through the Try-To-STOP TOBACCO resource Center (see resources).

Or

- o Provide self-help material (see Resources).
 - o Develop a tapering program and plan to stop
 - o Identify triggers and brainstorm strategies
 - o Advise physical activity where appropriate
- **Arrange** follow-up within 1 – 2 weeks.
 - o At subsequent visit, review quit status.
 - o Congratulate success; encourage maintenance.
 - o QuitWorks provides status report and a six-month follow-up report for every patient referred.
 - o If tobacco use has occurred:
 - **Ask** for recommitment to total abstinence.
 - o Review circumstances that caused lapse.
 - o Use lapse as a learning experience.
 - o Assess pharmacotherapy use and problems.
 - o If willing to try again, re-enroll patient for QuitWorks services.
 - **Arrange** follow-up visit

=>Refer to Resources for additional quit smoking information

Appendix F

Assessment and treatment for alcohol or drug abuse⁴²:

Alcohol is commonly overlooked as a risk factor and a cause of problems in the management of pain. Therefore, consumption should be a routine part of the assessment of patients in pain.⁴³ Some patients may attempt to use alcohol to self-medicate to treat pain, sleep disturbance, depression, anxiety or panic disorders.

Drug abuse is often a confusing assessment for clinicians treating patients with pain. When assessing drug use, clinicians must be familiar with the terminology. One of the most confusing distinctions is between physical dependence, which is a pharmacological feature of many drugs, and addiction, which is a biobehavioral syndrome evidenced by a person's interaction with a drug^{44,45}. Fear and desperation in the patient seeking relief and poor understanding of drug actions can often lead to improper drug use or drug misuse in the pain patient. Cultural factors also figure in this and its imperative to do a thoughtful history and evaluation.

Assess:

Consequences and problems due to drinking

- **ASK:** "Has your use of alcohol or drugs ever caused a problem for you or your loved ones?"

Quantity/frequency of ETOH drinking related to established risk-levels

- **ASK:** "How many glasses (ounces) of wine/beer/mixed drinks do you have a day?"

And/or

CAGE (AID) Screening Checklist for Possibility of Alcoholism

The CAGE (AID) Screen broadens the CAGE to include other drug use.

CAGE (AID) Screen:

Have you ever:

C: felt you ought to **cut** down on your drinking or drug use?

A: had people **annoy** you by criticizing your drinking or drug use?

G: felt bad or **guilty** about your drinking or drug use?

E: had a drink or used drugs as an **eye** opener first thing in the morning to steady your nerves or get rid of a hangover or to get the day started?

If + CAGE (AID):

o Flesh out the responses asking "why" and "how" questions. For instance:

Why did you try to cut down?

How do people's comments about your drinking or drug use annoy you?

o These exploratory questions serve two purposes:

Diagnosis

Preparing for intervention

42 Adapted from Bierer MF, 2004.

43 Haddox JD 1998

44 Haddox JD 1998

45 Savage S et al. 2001

At risk drinking⁴⁶

- o Men >14 drinks/week or >4 drinks/occasion
- o Women of all ages and anyone >65 years of age: >7 drinks/week or >3 drinks/occasion
- o The Standard Drink (Standard Equivalent):
 - ~12-14 grams of pure ethanol
 - 5 oz wine
 - 12 oz beer
 - 1.5 oz distilled spirits (one shot)
- o Safe drinking
 - Moderate drinking: recommended maximum limits given no contraindications (e.g. depression, sleep apnea, seizures or reflux).
- o At risk drinking:
 - Above recommended maximum: NOT necessarily a “problem” but warrants further exploration and at least recommendation to drink at healthy levels
 - With negative consequences: “problematic drinking”: patient should decrease or stop
 - More severe: alcohol abuse
 - Most severe: dependence
- o Diagnosis
 - Alcohol dependence (Alcoholism)
 - Loss of control / inability to cut down
 - Use despite known negative consequences
 - Significant preoccupation and effort spent
 - Loss of major life role (s)
 - Optimally, patient needs to abstain; possibly taper or undergo medical detoxification

Consider Brief Intervention (See also Motivational Interviewing section below):

Share your thoughts

Be non-judgmental, supportive. This starts with the tenor of the questioning/history-gathering

Ask what the patient wants to do about this (potential) problem

Make clear recommendations and arrive at a clear next step (e.g. cutting down, quitting, trial of abstinence)

Arrange clear follow-up

Cardinal elements:

- Raising awareness
- Advising change
- Arranging follow-up

=>Refer to Resources for additional information

- If substance abuse is present or suspected, consider referral for chemical dependency assessment.
- For patients with history of substance abuse or alcohol dependence resistant to brief intervention refer to addiction⁴⁷ specialist (SeeResources).

⁴⁶ National Institute on Alcohol Abuse and Alcoholism (NIAAA)

⁴⁷ See definitions

=> Consideration for the use of opiates in patients with a history of alcohol or drug abuse. (Also see "Special consideration for long-term opiate therapy in non-cancer related chronic pain" below)

- For those individuals with current or remote alcohol or drug abuse who may benefit from the therapeutic use of abusable drugs including the use of opioids to treat acute or chronic pain, monitoring of drug taking is crucial^{48,49}. Treatment requires a system for monitoring drug-taking behavior that is fitting for the apparent level of risk. If the abuse occurred in the distant past, the level of risk may be low. If the risk were high, a rigorous monitoring system would be essential
- For those patients at high risk:
 - For the patient with chronic nonmalignant pain and substance abuse, there is neither a large and encouraging database of clinical experience nor empirical evidence that substantiate the safety and usefulness of opioid therapy⁵⁰. Clinicians must exercise caution in recommending opioid treatment to such patients. Generally, the use of opiates for active substance abusers with chronic nonmalignant pain should not be initiated. Referral to an addiction specialist should be made (see resources) and collaboration with experienced clinicians who can provide skilled assessment and multidisciplinary treatment should provide treatment.
 - For patients with a remote history of significant abuse or addiction, only experienced clinicians who can provide skilled assessment and monitoring should provide treatment.

o A patient screening tool to assess risk potential for substance abuse can be found at:
<http://www.painedu.com/tools.asp>⁵¹

This website includes a doctor-patient contract that is recommended when opioids are considered.

=>It is important to remember that patients who are not showing a meaningful response in terms of pain reduction and improved function and who cannot maintain compliance with therapy need to be proactively weaned from opioids.

Appendix G

Assessing and treating psychological risk factors

An overall idea of the most salient emotional aspects of pain can be elicited by posing a general question about the patient's well-being, such as, "How has the pain affected your life?" or, "Can you tell me how you are coping with the pain problem and its effect on your life?"⁵²

• Depression and anxiety

Patients frequently express depressive mood, including feelings of worthlessness, bad temper, and self-criticism. Suicidal ideation is quite common in patients with chronic pain conditions^{53,54}. Every patient should be assessed for suicidal ideation and it should be addressed immediately. The relationship of anxiety with chronic pain is well recognized both as a contributor to symptoms and a result of acute pain, persistent pain, and related disability.⁵⁵

48 Lu HU et al. 1998

49 Passik SD 2001

50 Menefee LA, Katz NP 2003

51 See VA/DoD [Veterans Administration/Department of Defense] CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF OPIOID THERAPY FOR CHRONIC PAIN at http://www.oqp.med.va.gov/cpg/cot/ot_base.htm for an evidence-based guide. A patient screening tool (Screener and Opioid Assessment for Pain patients – SOAPP) to assess risk potential for substance abuse among patients can be found at <http://www.painedu.com/tools.asp>. (Butler, SF et al. 2004)

52 Menefee LA, Katz NP 2003

53 Haddox JD 1998

54 Menefee LA, Katz NP 2003

55 Kulich RJ & Baker WK 1998

Warning signs for referral to a psychologist, psychiatrist or mental health professional are:

- suicidal ideation,
- anergia (i.e. lack of energy),
- persistent anhedonia (i.e., lack of pleasure),
- loss of appetite,
- sleep disturbance,
- anxiety or panic,
- prolonged difficulty accepting the condition,
- and angry outbursts toward self or others.

There are self-report screening tools available to assist the surgeon, primary care or occupational health clinician in assessing the psychological aspects of pain. The most frequently used self-report measure of depression is the **Beck Depression Inventory (BDI)** (see resources below) and is often used in primary care settings as a brief screening instrument for affective disorders.

In addition, the Battery for Health Improvement (BHI) includes both psychological (anxiety and depression scales) and functional scales for use in a clinical setting (see resources). A positive screen for depression should prompt referral for further evaluation and diagnostic interview with a psychologist, psychiatrist or other qualified mental health practitioner. Most importantly, suicidal thoughts should be taken seriously⁵⁶. Clinicians are encouraged to learn the laws in their state that apply to this circumstance. Do not hesitate to consult a mental health professional for advice or to arrange hospital admission. Every patient must be handled differently, because suicidal ideation does not inevitably signify a wish to die.

=>Important intervention for patients with suicidal plan:

- Send immediately to nearest Emergency Room for evaluation, employ emergency response system, or advise patient, family or caregiver to employ emergency response system.

• Assessing and treating significant psychiatric disorders

It should first be noted that although the presence of unexplained somatic symptoms is common, somatization disorder is rare. When present the disorder is characterized by a pattern of physical complaints (e.g., pain symptoms, gastrointestinal symptoms, sexual problems) that cause considerable social and occupational impairment.⁵⁷ Symptoms must begin before the age of 30 and occur over several years⁵⁸. Individuals must have pervasive complaints, including pain related to at least four different sites, and a history of at least two gastrointestinal symptoms other than pain. Somatoform disorders are also rare. They are disorders where physical symptoms suggest a physical disorder for which there is confirmation of underlying psychopathology but no evidence of demonstrable organic disease.⁵⁹ “The symptoms must cause clinically significant distress or impairment in social, occupational, or other areas of functioning.”⁶⁰ This category includes somatization disorder, undifferentiated somatoform disorder, conversion disorder, pain disorder, hypochondriasis, body dysmorphic disorder, and somatoform disorder not otherwise specified.

56 Haddox JD 1998

57 Kulich RJ & Baker WK 1998

58 APA 1994

59 Aronoff G 1998

60 APA 1994

In each of these, symptom production is believed to be unintentional. Most importantly, care should be taken before labeling patients with somatoform disorder or as “somatizers” because of current limitations of diagnostic testing and disease criteria.⁶¹

It is imperative that clinicians remember that, even in the absence of psychiatric illness, pain is always both a physical and emotional experience. When evaluating and treating individuals in pain, clinicians must avoid reductionism (i.e., the pain is either in the mind or the body) and utilize a comprehensive biopsychosocial approach. It is most important to work to form a therapeutic bond. Clinicians should not take lightly the therapeutic effects of having someone listen to and validate the difficulty of living with pain. If, however, significant psychiatric impairment is observed psychiatric consultation should be considered.

Appendix H

Assessing and treating physical trauma &/or emotional abuse or sexual assault

There is increasing consideration for the assessment of sexual assault and physical or emotional trauma with regard to chronic pain and disability⁶². Data suggest a higher proportion of sexual abuse is found in chronic pain populations than in the general population, although a causal link has not been demonstrated⁶³. Case reports suggest that the effects of a history of abuse or trauma may predict a difficult treatment course and poor outcome. There appears to be support for adequate evaluation and appropriate psychotherapeutic treatment of individuals with this history in order to reduce suffering and differentiate past trauma from present work related trauma or procedure, and improve outcome.

- **Screening for physical trauma &/or emotional abuse or sexual assault**

ASK: “In your lifetime, have you been physically or sexually abused? Has anyone ever tried to pressure or force you to have unwanted sexual contact? (sexual contact: touching your sexual parts, you touching their sexual parts, or intercourse). Have you experienced physical trauma in your lifetime?”

- If significant physical or sexual abuse is reported, abuse counseling should be considered. (see resources)

61 Sullivan & Turk 2001

62 Kulich RJ & Baker WK 1998

63 Linton SJ 1997

Special Consideration for long-term opiate therapy in non cancer related pain

The use of long-term opioids in chronic non-cancer pain remains controversial⁶⁴. Research on the use of opiate-based pain relievers, in what dose, for how long does not yet provide clear guidance for clinicians when prescribing for patients with non-cancer related chronic pain. A recent review of opiate therapy in chronic pain concluded that: "Whereas it was previously thought that unlimited dose escalation was at least safe, evidence now suggests that prolonged, high dose opioid therapy may be neither safe nor effective."⁶⁵

Tolerance, or loss of analgesic effect over time, occurs in a number of patients, but prevalence is unknown. Addiction, which is the compulsive and self-destructive use of opiates, also may occur, but again with unknown frequency. As with all medications, the prescribing of opioids should be intended toward helping patients increase function and reduce pain perception. Side effects include constipation, sedation, nausea, irritability, and sweating, itching, and cognitive dysfunction. These should be aggressively managed; however, most will lessen in time in many patients. pain management centers for consultation and/or evaluation and treatment.

Generally opiates are used in chronic pain conditions when other therapies have not been effective⁶⁶. The pharmacologic treatment of chronic pain should proceed considering the goals of both pain reduction and restoration of function. Realistic goal-setting is an important part of initial communications with the patient in chronic pain. Unfortunately, patients with chronic pain rarely achieve complete relief; however, function and quality of life can often be enhanced through a combination of pharmacologic and non-pharmacologic therapies. Therefore, it is essential to help the patient set appropriate expectations: that pain relief will likely be partial but life can be greatly improved through pain management. Although primary care practitioners often manage opioids for patients with chronic pain, they should not hesitate to refer patients to psychiatry, psychology or pain management centers for consultation and/or evaluation and treatment. It is imperative that clinicians become aware of the data related to opioid dosing trends and mortality rates, consider carefully before prescribing opiates for long-term use in patients with chronic non-cancer-related pain⁶⁷ and use and attend to the principles outlined in the guidelines below when choosing to prescribe.

- A patient screening tool to assess risk potential for substance abuse can be found at: <http://www.painedu.com/tools.asp>⁶⁸
- For those patients at low risk:
- An evidenced-based protocol can be found at: http://www.oqp.med.va.gov/cpg/cot/ot_base.htm. This Website includes a doctor-patient contract that is recommended when opioids are considered.

=>It is important to remember that patients who are not showing a meaningful response in terms of pain reduction and improved function and who cannot maintain compliance with therapy need to be proactively weaned from opioids.

64 Franklin GM et al. 2005

65 Ballantyne & Mao 2003

66 Menefee LA, Katz NP 2003

67 Franklin GM et al. 2005

68 See VA/DoD [Veterans Administration/Department of Defense] CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF OPIOID THERAPY FOR CHRONIC PAIN at http://www.oqp.med.va.gov/cpg/cot/ot_base.htm for an evidence-based guide. A patient screening tool (Screener and Opioid Assessment for Pain patients – SOAPP) to assess risk potential for substance abuse among patients can be found at <http://www.painedu.com/tools.asp>. (Butler, SF et al. 2004).

Resources

Chronic Pain Management Resources

- Managing Pain Before It Manages You, Revised Edition by Margaret Caudill, MD
- Cognitive Therapy for Chronic Pain: A Step-by-Step Guide by Beverly E. Thorn, 2004, The Guilford Press, New, York, New York.
- The Chronic Pain Control Workbook: A Step-By-Step Guide for Coping With and Overcoming Pain (New Harbinger Workbooks) by Ellen Mohr Catalano, Ph.D. Kimeron N. Hardin.
- Learning to Master Your Chronic Pain by Robert Jamison. 1996, Professional Resource Press, Sarasota, Florida.
- Mayo Clinic on Chronic Pain (Mayo Clinic on Health) by Jeffrey Rome. 2002, Mayo Clinic.
- The Chronic Pain Solution: Your Personal Path to Pain Relief by James N Dillard MD with Leigh Ann Hirschman. 2003, Bantam Dell, New York, New York.
- Freedom from Chronic Pain: The Breakthrough Method of Pain Relief Based on the New York Pain Treatment Program at Lenox Hill Hospital by Norman J. Marcus, Jean S. Arbeiter. 1995.
- The Truth About Chronic Pain: Patients and Professionals on How to Face It, Understand It, Overcome It by Arthur Rosenfeld. 2004.

Smoking Cessation Resources

QUITWORKS

A free, evidence-based stop-smoking service to which health care providers may refer any Massachusetts patient, regardless of health insurance status.

1-800-TRY-TO-STOP (1-800-879-8678)

1-800-8-DEJALO (1800-833-5256)

1-800-TDD-1477 (1-800-833-1477)

FAX: 1-866-560-9113

www.trytostop.org

Strategies & Skills for Quitting

U.S. Surgeon General's five keys to quitting: get ready, get support, learn new skills and behaviors, get and use medication, and be prepared for relapse.

http://aolsvc.health.webmd.aol.com/hw/smoking_cessation/aa151797.asp

National Cancer Institute

via the Internet web site at <http://cancer.gov>

or call 1-800-4-CANCER

Weight Control Resources

American Dietetic Association
216 West Jackson Boulevard
Chicago, IL 60606-6995
(800) 366-1655
<http://www.eatright.org>

American Obesity Association
1250 24th Street, NW
Suite 300
Washington, DC 20037
(800) 98-OBESE (986-2373)
<http://www.obesity.org>

Food and Nutrition Information Center
<http://www.nal.usda.gov/fnic/>

Food Safety Information
<http://www.foodsafety.gov/>

Dietary Questionnaire:

National Cholesterol Education Program. Short dietary questionnaire to assess adherence to a step I and step II diet. In: Second Report of Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. 1993, National Institutes of Health. National Heart, Lung, and Blood Institute: Bethesda, Md.P.IIA-1.

Nutrition.gov
<http://www.nutrition.gov>

Physical Activity Questionnaire:

Blair SN. How to assess exercise habits and physical fitness. In: Matarazzo JD, Miller NE, Weiss SM, Herd, JA eds. Behavioral Health. New York, NY:Wiley; 1984: 424-447.

Shape Up America
4500 Connecticut Avenue
Washington, DC 20008
(202) 244-3560
<http://www.shapeup.org>

Weight-Control Information Network
1 Win Way
Bethesda, MD 20892-3665
Phone. (877) 946-4627

Screening for Psychological Risks

Beck Depression Inventory (BDI)

The BDI is a self-administered 21 item self-report scale measuring supposed manifestations of depression. The BDI takes approximately 10 minutes to complete, although clients require a fifth – sixth grade reading age to adequately understand the questions. A copy of the BDI or any further information on it can be obtained through The Psychological Corporation at <http://harcourtassessment.com/HAIWEB/Cultures/en-us/default>.

The Brief Symptom Inventory (BSI) or the short version of the Symptom Check List (SCL-90) can be used to evaluate psychological problems including anxiety in a variety of medical settings. The BSI test is brief and requires only 8-10 minutes to complete, making it well-suited for repeated administrations over time to evaluate patient progress. The instrument provides an overview of a patient's symptoms and their intensity at a specific point in time. The Global Severity Index (GSI) is designed to help quantify a patient's severity-of-illness and provides a single composite score for measuring the outcome of a treatment program based on reducing symptom severity. The reliability, validity, and utility of the BSI instrument have been tested in more than 400 research studies. Further information can be found at: <http://www.pearsonassessments.com/tests/bsi.htm>

Brief Battery for Health Improvement (BHI)

The BBHI 2 test was developed specifically to help medical professionals assess the important mind/body connection for their patients. Derived from the well-researched, widely used BHI™ (Battery for Health Improvement) test, the shorter BBHI 2 instrument helps practitioners quickly evaluate for a number of psychomedical factors commonly seen in medical patients, such as pain, somatic, and functional complaints – as well as traditional psychological concerns such as depression, anxiety and patient defensiveness. Further information can be obtained at: <http://www.pearsonassessments.com/tests/bbhi2.htm>

Addiction Disorders Resource

The American Society of Addiction Medicine.
4601 North Park Avenue
Arcade suite 101
Chevy Chase, MD 20815
301/6563920
email@asam.org
www.asam.org

NIAA: Helping patients with alcohol problems
<http://www.niaaa.nih.gov/publications/Practitioner/HelpingPatients.htm>

NIAA: How to cut down on your drinking
<http://www.niaaa.nih.gov/publications/handout.htm>

Physical Abuse or Sexual Assault

Grant me the serenity. Resource Directory for survivors of abuse
http://open-mind.org/Directory/index.php?ax=list&cat_id=6

Low Back Pain with Risk Factors for Compromised Recovery

National Clearinghouse on Child Abuse and Neglect Information
<http://nccanch.acf.hhs.gov/>

Abuse Resources available at the Center for Disability Resources Library
<http://uscm.med.sc.edu/CDR/abuse.html>

National Sexual Assault Hotline
[1/800-656-HOPE](tel:1800656HOPE)

Rape, Abuse & Incest National Network (RAINN)
<http://www.rainn.org/>

4 Woman. Gov
The National Women's Health Information Center
<http://www.4woman.gov/faq/sexualassault.htm>

References

The American Heritage® Stedman's Medical Dictionary, 2nd Edition Copyright © 2004 by Houghton Mifflin Company.

American Pain Society. Chronic pain in America: roadblocks to relief. Available at www.ampainsoc.org

Anderson KO, Dowds BN, Pellez RE, Edwards WT: Development and initial validation of a scale to measure self-efficacy beliefs in patients with chronic pain. *Pain*.63:77-84, 1995.

APS Opiate Policy: Downloaded from <http://www.ampainsoc.org/advocacy/pdf/rights.pdf> on September 10, 2004.

A consensus document from the American Academy of Pain Medicine, the American Pain Society, and the American Society of Addiction Medicine. Public Policy Statement on the Rights and Responsibilities of Healthcare Professionals in the use of Opioids for the Treatment of Pain.

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th Ed. 1994. Washington, DC.

Arnow BA, Hart S, Scott C, Dea R, O'Connell L, Taylor, CB Childhood Sexual Abuse, Psychological Distress, and Medical Use Among Women *Psychosomatic Medicine* 61:762-770 (1999)

Aronoff GM, Dupuy DN Evaluation and management of back pain: Preventing disability. Chapter 17 In GM Aronoff Evaluation and Treatment of Chronic Pain. 3rd Edition, Baltimore: Williams and Wilkins, 1998.

Arterburn, DE, DeLeet, DE, Schauer, DP. Obesity. In *Clinical Evidence Handbook*. 2007. BMJ Publishing Group Ltd.

Astin, JA, Shapiro, SL Eisenberg, DM Forays, KL. Mind-Body Medicine: State of the Science, Implications for Practice *J Am Board Fam Pract* 2003;16:131- 47.

Ballantyne J and Mao J Opioid Therapy for Chronic Pain. *n engl j med* 349;20 www.nejm.org November 13,2003.

Revised Edition 12/07

Low Back Pain with Risk Factors for Compromised Recovery

Ballantyne J, ed The Massachusetts General Hospital handbook of pain management. 3rd ed. Philadelphia: Lippincott Williams & Wilkins, 2005.

Barbui C, Butler R, Cipriani A, Geddes J, Hatcher S. Depression in adults. In Clinical Evidence Handbook 2007. BMJ Publishing Group Ltd.

Bierer MF Alcohol Abuse: New management strategies. Lecture Current Clinical Issues in Primary Care at Harvard Medical School Pri-Med Conference, October 29, 2004.

Boersma K, Linton SJ. Expectancy, fear and pain in the prediction of chronic pain and disability: A prospective analysis. Eur J Pain. 2005 Sep 28; [Epub ahead of print]

Boersma K, Linton SJ. How does persistent pain develop? An analysis of the relationship between psychological variables, pain and function across stages of chronicity. Behav Res Ther. 2005 Nov;43(11):1495-507. Epub 2005 Jan 26.

Boersma K, Linton SJ. Screening to identify patients at risk: profiles of psychological risk factors for early intervention. Clin J Pain. 2005 Jan-Feb;21(1):38-43; discussion 69-72.

Bronfort G, Haas M, Evans RL, Bouter LM. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. Spine J. 2004 May-Jun;4(3):335-56.

Brosseau L, Milne S, Robinson V, Marchand S, Shea B, Wells G, Tugwell P. Efficacy of the transcutaneous electrical nerve stimulation for the treatment of chronic low back pain: a metaanalysis. Spine. 2002 Mar 15;27(6):596-603.

Brunnhuber K, Cummings KM, Felt S, Sherman S, Woodcock J. Putting evidence into practice: Smoking cessation. Summer 2007. British Medical Journal Publishing Group, Ltd.

Butler R, Hatcher S, Price J, Von Korff M. Depression in adults: psychological treatments and care pathways. In Clinical Evidence Handbook, 2007. BMJ Publishing Group Ltd.

Butler SF, Budman SH, Fernandez K, Jamison RN. Validation of a screener and opioid assessment measure for patients with chronic pain. Pain. 2004 Nov;112(1-2):65-75.

Carragee EJ, Prospective controlled study of the development of lower back pain in previously asymptomatic subjects undergoing experimental discography, Spine, 2004.

Carragee EJ, Provocative Discography in Volunteer Subjects with Mild Persistent Low Back Pain, Spine, 2002.

Carragee EJ, Provocative Discography in patients after limited lumbar discectomy: A controlled randomized study of pain response in symptomatic and asymptomatic subjects, Spine 2000.

Carragee EJ, Persistent low back pain. N Engl J Med 2005;352:1891-8.

Cats-Baril WL, Frymoyer JW. Demographic factors associated with the prevalence of disability in the general population: Analysis of the NHANES I database. Spine 1991;16(6):671-674.

Caudill M, Decreased clinic use by chronic pain patients: response to behavioral medicine intervention. *Clinical Journal of Pain*, Dec 1991.

Cheadle A, Franklin G, Wolfhagen C, Savarino J, Liu PY, Salley C, Weaver M.. Factors influencing the duration of work-related disability: a population-based study of Washington State Workers' Compensation. *Am J Public Health* 1994;84:190-196.

Commonwealth of Massachusetts Department of Industrial Accidents Treatment Guidelines. Downloaded from www.mass.gov/dia/hcsb/treatmentguidelines.htm September 10, 2004.

Connor PM, Cervical discography complications and clinical efficacy, *Spine* 2003.

Crawford HJ, Knebel T, Kaplan L, Vendemia JM, Xie M, Jamison S, Pribram KH. Hypnotic analgesia: 1. Somatosensory even t-related potential changes to noxious stimuli and 2. Transfer learning to reduce chronic low back pain. *Int J Clin Exp Hypn*. 1998 Jan;46(1):92-132.

Crook J, Moldofsky H, Shannon H.. Determinants of disability after a work related musculoskeletal injury. *J Rheumatol* 1998;25:1570-1577.

Danzinger, ML et Comparison of the Atkins, Ornish, Weight Watchers, and Zone diets for weight loss and heart disease risk reduction. *JAMA* 2005;293:43-53

Department of Veterans Affairs Toolkit Taskforce. Take 5: Pain: The 5th Vital Sign. 2000. Washington, DC: Geriatrics and Extended Care Strategic Healthcare Group, Department of Veterans Affairs.

Deyo R, Spinal-Fusion Surgery—The case for restraint, *NEJM*, Feb. 2004

Elkins G, Jensen MP, Patterson DR. Hypnotherapy for the management of chronic pain. *Int J Clin Exp Hypn*. 2007 Jul;55(3):275-87.

Fairbank J, et al. (2005). Randomised controlled trial to compare surgical stabilisation of the lumbar spine with an intensive rehabilitation programme for patients with chronic low back pain: The MRC spine stabilisation trial. *BMJ*, 330(7502): 1233–1239.

Fanuele J, Association between Obesity and Functional Status in Patients with Spine Disease, *Spine* 2002

Fayad F, Chronicity, Recurrence, and Return to Work in Low Back Pain, Common Prognostic Factors, *Annales de Readaptation et de Medecine Physique*, 2004

Fiore MC. Treating Tobacco Use and Dependence. Originally offered as an online Web-based program certified for CME, 2004. CME@webmd.net. Accessed on November 6, 2006.

Foreyt JP Weight Loss: Counseling and Long-Term Management <http://www.medscape.com/viewarticle/493028> 11/8/2004.

Franklin G et al. Outcomes of Lumbar Fusion in Washington State Workers' Compensation *Spine* 1994, Vol 9, No. 17, pp. 1897 – 1903.

Low Back Pain with Risk Factors for Compromised Recovery

Franklin GM, Mai J, Wickizer T, Turner JA, Fulton-Kehoe D, Grant L. Opioid dosing trends and mortality in Washington state workers' compensation, 1996–2002. 2005. *Am J Indust Med.* 48:91–99.

Furlan AD, Brosseau L, Imamura M, Irvin E. Massage for low back pain. *Cochrane Database Syst Rev.* 2002;(2):CD001929.

Furlan AD, van Tulder M, Cherkin D, Tsukayama H, Lao L, Koes B, Berman B. Acupuncture and dry-needling for low back pain: an updated systematic review within the framework of the cochrane collaboration. *Spine.* 2005 Apr 15;30(8):944-63.

Guzman J, Esmail R, Karjalainen K, et al. Multidisciplinary rehabilitation for chronic low back pain: systematic review. *BMJ* 2001;322:1511–1516. Search date 1998; primary sources Medline, Embase, Psychlit, Cinahl, Healthstar, Cochrane Library, citation tracking, and personal contact with content experts.

Hazard RG, Haugh LD, Reid S, Preble JB, MacDonald L Early prediction of chronic disability after occupational low back injury. *Spine.* 1996 Apr 15;21(8):945-51.

Hazard RG. Chronic low back pain and disability: the efficacy of functional restoration. *Bull Hosp Jt Dis.* 1996;55(4):213-6.

Hee HT, Whitecloud TS 3rd, Myers L. The effect of previous low back surgery on general health status: results from the National Spine Network initial visit survey of patients with low back pain. *Spine.* 2004 Sep 1;29(17):1931-7.

ICSI Health Care Guideline Downloaded from www.icsi.org on September 12, 2004.

Ivar Brox J, Randomized clinical trial of lumbar instrumented fusion and cognitive intervention and exercises in patients with chronic low back pain and disc degeneration. *Spine* 2003

Jensen M, Patterson DR. Hypnotic treatment of chronic pain. *J Behav Med.* 2006 Feb;29(1):95-124. Epub 2006 Jan 11.

Jensen MC, Magnetic Resonance Imaging of the Lumbar Spine in People without Back Pain, *NEJM*, 1994

A Joint Statement from 21 Health Organizations and the Drug Enforcement Administration. Promoting Pain Relief and Preventing Abuse of Pain Medications: A Critical Balancing Act. Downloaded from www.aacpi.org/regularotyr/consensus.pdf September 10, 2004.

Katz DA, Muehlenbruch DR, Brown RL, et al. Effectiveness of implementing the agency for healthcare research and quality smoking cessation clinical practice guideline: a randomized controlled trial. *J Natl Cancer Inst* 2004;96:594-603.

Kendall, NAS, Linton, SJ & Main CJ Guide to assessing psychosocial yellow flags in acute low back pain: Risk factors for long-term disability and work loss. Wellington, New Zealand: Accident Rehabilitation and Compensation Insurance Corporation of New Zealand and the National Health Committee. 1997.

Kendall NA. Psychosocial approaches to the prevention of chronic pain: the low back paradigm. *Baillieres Best Pract Res Clin Rheumatol.* 1999 Sep;13(3):545-54.

Lam CY, Minnix JA, Robinson JD, et al. A brief review of pharmacotherapies for smoking cessation. *J Nat Comp Cancer Net* 2006;4:583–589.

Revised Edition 12/07

- Lincoln AE, Smith GS, Amoroso PJ, Bell NS. The effect of cigarette smoking on musculoskeletal-related disability. *Am J Ind Med.* 2003 43(4):337-349.
- Linton S.J. A population-based study of the relationship between sexual abuse and back pain: Establishing a link. *Pain* 1997; 73, 47-53.
- Linton SJ, Hallden K. Can we screen for problematic back pain? A screening questionnaire for predicting outcome in acute and subacute back pain. *Clin J Pain.* 1998 Sep;14(3):209-15.
- Linton SJ, Ryberg M. A cognitive-behavioral group intervention as prevention for persistent neck and back pain in a non-patient population: a randomized controlled trial. *Pain.* 2001 Feb 1;90(1-2):83-90.
- Linton SJ. Early identification and intervention in the prevention of musculoskeletal pain. *Am J Ind Med.* 2002 May;41(5):433-42.
- Linton SJ, Boersma K. Early identification of patients at risk of developing a persistent back problem: the predictive validity of the Orebro Musculoskeletal Pain Questionnaire. *Clin J Pain.* 2003 Mar-Apr;19(2):80-6.
- Linton SJ, Boersma K, Jansson M, Svard L, Botvalde M. The effects of cognitive-behavioral and physical therapy preventive interventions on pain-related sick leave: a randomized controlled trial. *Clin J Pain.* 2005 Mar-Apr;21(2):109-19.
- Linton SJ Prevention with special reference to chronic musculoskeletal disorders. Chapter 23 in In Gatchel RJ and Turk DC (Eds). *Psychosocial Factors in Pain: Critical Perspectives.* New York: The Guilford Press. 1999;374-89.
- Linton SJ, Andersson T. Can chronic disability be prevented? A randomized trial of a cognitive-behavior intervention and two forms of information for patients with spinal pain. *Spine.* 2000 Nov 1;25(21):2825-31.
- Luo X, Estimates and Patterns of Direct Health Care Expenditures Among Individuals with Back Pain in the United States, *Spine*, 2004
- Lipson SJ (2004). Spinal-fusion surgery—Advances and concerns. *New England Journal of Medicine*, 350(7): 643–644.
- Manchikanti et al. Evidence-based practice guidelines for interventional techniques in the management of chronic spinal pain. *Physician* Vol.6, No.1, 2003
- Manheimer E, White A, Berman B, Forys K, Ernst E. Meta-analysis: acupuncture for low back pain. *Ann Intern Med.* 2005 Apr 19;142(8):651-63.
- Marhold C, Linton SJ, Melin L. A cognitive-behavioral return-to-work program: effects on pain patients with a history of long-term versus short-term sick leave. *Pain.* 2001 Mar;91(1-2):155-63.
- Melissas J, Volakakis E, Hadjipavlou A. Low-back pain in morbidly obese patients and the effect of weight loss following surgery. *Obes Surg.* 2003 Jun;13(3):389-93.
- Melissas J, Kontakis G, Volakakis E, Tsepetsis T, Alegakis A, Hadjipavlou A. The effect of surgical weight reduction on functional status in morbidly obese patients with low back pain. *Obes Surg.* 2005 Mar;15(3):378-81.

Low Back Pain with Risk Factors for Compromised Recovery

McCauley JD, Thelen MH, Frank RG, Willard RR, Callen KE. Hypnosis compared to relaxation in the outpatient management of chronic low back pain. *Arch Phys Med Rehabil.* 1983 Nov;64(11):548-52.

Minnesota Workers' Compensation Treatment Guidelines Summary Downloaded from www.revisor.leg.state.mn.us/arule/5221/6200.html

Mior S. Manipulation and mobilization in the treatment of chronic pain. *Clin J Pain.* 2001 Dec;17(4 Suppl):S70-6.

Model guidelines for the use of controlled substances for the treatment of pain: a policy document of the Federation of State Medical Boards of the United States Inc. Dallas:Federation of State Medical Boards of the United States, 1998.

Olason M, Outcome of an interdisciplinary pain management program in a rehabilitation clinic, *Work*, 2004.

Passik, S. D. (2001). *Meeting the challenge: Substance abuse issues in chronic pain.* Princeton: MediCom

Pengel HM, Maher CG, Refshauge KM. Systematic review of conservative interventions for subacute low back pain. *Clin Rehabil.* 2002 Dec;16(8):811-20.

Peters L, The COPE Program: treatment efficacy and medical utilization outcome of a chronic pain management program at a major military hospital. *Military Medicine* Dec. 2000.

Poston WS, Haddock CK, MM, Pace P, Reeves RS, Karakoc N, Jones P, Foreyt JP. Evaluation of a primary care-oriented brief counselling intervention for obesity with and without orlistat. *J Intern Med.* 2006 Oct;260(4):388-98.

Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, 1983, 51, 390-395.

Prochaska, JO, CC, Norcross, JC. In search of how people change: Applications to addictive behavior. *American Psychologist*, 1992, 47, 1102-1114.

Prochaska, JO, Velicer, WF. The Transtheoretical Model of health behavior change. *American Journal of Health Promotion*, 1997, 12, 38-48.

Rushton DN. Electrical stimulation in the treatment of pain. *Disabil Rehabil.* 2002 May 20;24(8):407-15.

Samanta J, Kendall J, Samanta A. Primary care 10-minute consultation. Chronic low back pain. *BMJ* 2003;326:535 (8 March)

Savage, S., Covington, E. C., Heit, H. A., Hunt, J., Joranson, D., & Schnoll, S. H. Definitions related to the use of opioids for the treatment of pain. A consensus document from the American Academy of Pain Medicine, the American Pain Society, and the American Society of Addiction Medicine. 2001

Schultz IZ, Crook J, Meloche GR, Berkowitz J, Milner R, Zuberbier OA, Meloche W. Psychosocial factors predictive of occupational low back disability: towards development of a return-to-work model. *Pain.* 2004 Jan;107(1-2):77-85.

Silber JS, Pre-operative discography: appropriate indications and clinical interpretation, University of Pennsylvania

Low Back Pain with Risk Factors for Compromised Recovery

Simon GE, Von Korff M, Saunders K, Miglioretti DL, Crane PK, van Belle G, Kessler RC. Association between obesity and psychiatric disorders in the US adult population. *Arch Gen Psychiatry*. 2006 Jul; 63(7):824-30.

Speilberger CD. *Manual for State-Trait Anxiety Inventory (Form Y)*. Palo Alto, CA:Consulting Psychologists Press, 1963.

Stein MB, Barrett-Connor E Sexual Assault and Physical Health: Findings From a Population-Based Study of Older Adults *Psychosomatic Medicine* 62:838-843 2000

Sullivan MD, Turk DC. Psychiatric illness, depression, and psychogenic pain. In J. D. Loeser, S. H. Butler, C. R. Chapman and D. C. Turk (Eds.), *Bonica's Management of Pain*. Philadelphia: Lippincott 2001:483-500.

Sullivan MJ, Stanish WD Psychologically based occupational rehabilitation: the Pain-Disability Prevention Program. *Clin J Pain*. 2003 Mar-Apr;19(2):97-104.

Thorogood M, Hillsdon M, Summerbell C *Changing Behavior Clinical Evidence*, June 2004

Turk DC. Clinical effectiveness and cost-effectiveness of treatments for patients with chronic pain. *Clin J Pain*. 2002 Nov-Dec;18(6):355-65.

Turk DC, Okifuji A. Behavioral management of patients with pain. Chapter 24 In GM Aronoff *Evaluation and Treatment of Chronic Pain*. 3rd Edition, Baltimore: Williams and Wilkins, 1998.

Turner, J et.al. *Musculoskelet Disord*. BMC 2004; 5: 14. Published online 2004 May 24. doi: 10.1186/1471-2474-5-14.

Turner JA, Franklin G, Turk DC. Predictors of chronic disability in injured workers: A systematic literature synthesis. *Am J Ind Med* 2000; 38:707-722.

Van Tulder M, Koes B. *Low back pain (chronic)*, *Clinical Evidence Handbook*. BMJ Publishing Group Ltd, 2007.

Vogt M, *Influence of Smoking in the Health Status of Spinal Patients*, *Spine* 2002

Washington State Department of Labor and Industries. Utilization Review Program. New UR Firm. (Provider Bulletin: PB 02-04). Olympia (WA): Washington State Department of Labor and Industries; 2002 Apr. 12 p. Downloaded from www.guidelines.gov on September 16, 2004.

Washington State Department of Labor and Industries. Guidelines for outpatient prescription of oral opioids for injured workers with chronic, noncancer pain. Olympia (WA): Washington State Department of Labor and Industries; 2002 Aug. 21 p

Weissman DE, Haddox JD. Opioid pseudoaddiction--an iatrogenic syndrome. *Pain* 1989;36(3):363-366

Wells-Federman, Et Al. Nurse led pain management program: Effect on self-efficacy, pain intensity, pain related disability and depressive symptoms in chronic pain patients. *Journal of Pain Management Nursing*, 2002.

Washington State Department of Labor and Industries. Utilization Review Program. New UR Firm. (Provider Bulletin: PB 02-04). Olympia (WA): Washington State Department of Labor and Industries; 2002 Apr. 12 p. Downloaded from

Wong LS, Effects of "Second-Hand" Smoke on Structure and Function of Fibroblasts, Cells that are Critical for Tissue Repair and Remodeling, Bio Med Central Cell Biology, 2004

Wyatt SB, Winters KP, Dubbert PM. Overweight and obesity: prevalence, consequences, and causes of a growing public health problem. Am J Med Sci. 2006 Apr;331(4):166-74.

Yokoyama M, Sun X, Oku S, Taga N, Sato K, Mizobuchi S, Takahashi T, Morita K. Comparison of percutaneous electrical nerve stimulation with transcutaneous electrical nerve stimulation for longterm pain relief in patients with chronic low back pain. Anesth Analg. 2004 Jun;98(6):1552-6U

Motivational Interviewing Technique for Self-Management Support and Behavior Change^{69,70}

First developed in the addictions field, Motivational Interviewing (MI) has been adapted to a brief form that can be used in primary care. The underlying principle of MI is to help patients explore and eventually resolve ambivalence towards changing current health behaviors. Motivational interviewing highlights personal choice, self-directed learning, and responsibility for deciding future behavior.

Assess Importance of Change:

Assessing the importance of change to patients requires an understanding of their personal values and expectations of change. One method of evaluating importance is to weigh the pros and cons of changing a behavior. For example, the patient is asked to answer the questions, "How will I benefit from change? What will it cost to change? How much do I really want to change?"

In the MI model, readiness = importance x confidence.

Assess Confidence to Change:

Confidence to change answers the question, "Can I change?" In assessing confidence, the health care professional should focus on the patient's self-efficacy. Self-efficacy includes skills that can be used to change a behavior. A patient may have skills in one area that may be transferred to a behavior he/she wishes to change. For example, a person who is confident with work skills or a particular sport and is thinking about smoking cessation may be asked, "What is it that makes you successful with X job/sport? How can you use those same skills to stop smoking?" People can also build confidence through modeling themselves after others. They may profit from talking about friends who have succeeded in change.

A practical way to measure readiness, importance, and confidence is by using the readiness ruler, a scale that rates these qualities from 1 to 10.

The health care professional asks, "If 1 is 'not ready' and 10 is 'ready', how ready do you feel to change X behavior?"

This method can be used to assess importance and confidence.

The permutations of how individuals will feel in relation to readiness, importance, and confidence are infinite. A patient may feel ready and have confidence, but may feel the change is unimportant. Or, a patient may be unsure about readiness but understands the importance of change and feels confident to change. When patients feel ready to change, know they can change, and feel it is important, they will be more motivated to succeed.

69 Lange N, Tigges BB Influence Positive Change with Motivational Interviewing. The Nurse Practitioner. March 2005, Vol 30 (5); (44-53).
70 Bodenheimer, T et al. Helping Patients Manage Their Chronic Conditions. June 2005, California Healthcare Foundation. www.chcf.org

Intervene to Promote Change

Once readiness, confidence, and importance have been assessed, the next step is to clarify and summarize the patient's concerns. The patient may be unsure about change and low in confidence, yet feels change is very important? The patient may be ready to change but low in confidence about the ability to change? Summarizing this information with the patient helps focus attention on possibilities for problem solving.

Ask direct questions such as, "What would it take to increase your confidence level from a 4 to a 7?" or "What would it take to make change important to you?" to facilitate resolution of ambivalence about change. This allows the patient to set the agenda and may allow the patient to present the argument for change.

Intervening in behavior change begins with resolving ambivalence about change. To discuss the advantages and disadvantages of change, have patients write down the pros and cons of both changing and not changing. The role of the health care professional is to give structure, listen carefully, and summarize the issues elicited from the patient. This allows for a collaborative approach to self-management and behavior change. The goal is to increase the patient's confidence in the ability to change.

For more information on Self-Management Support and Motivational Interviewing see www.chcf.org

Guide Background

A.I.M. Mutual leadership and adjuster staff identified a growing and disturbing increase in the cost and utilization of opiate pharmaceuticals by injured workers in the Commonwealth of Massachusetts. Following a series of internal discussions it was hypothesized that the rising cost and utilization of opiates was a symptom of a larger problem relating to the effectiveness of current treatment patterns for chronic pain within the Massachusetts workforce.

The specific objective of this initiative was to stimulate a constructive dialog between A.I.M. Mutual leadership, representing Massachusetts employers and their employees and Workers Compensation policy and thought leaders to:

- Reduce (where possible), the prevalence of chronic pain within the Massachusetts workforce
- Improve the clinical and vocational outcomes for injured employees suffering with chronic low back pain and
- Reduce associated clinical and indemnity costs.

To accomplish these objectives A.I.M. Mutual leadership and its consulting resources undertook an extensive effort including:

- a non-randomized review of the therapeutic experience of 33 patients suffering with chronic pain
- identification of specific demographic, physiologic, behavioral and vocational risk factors that place the workforce at increased risk for chronic low back pain
- review internal processes and procedures of A.I.M. Mutual in the management of injured employees suffering from chronic low back pain
- review the clinical evidence related to the current state of the art treatment of chronic low back pain
- development of a series of short and long term internal and external strategies and tactics to achieve objectives one, two and three.

Low Back Pain with Risk Factors for Compromised Recovery

Specific information gathered during the literature review and the non-randomized chart review by the authors revealed a high prevalence of chronic low back pain within the workers compensation environment. In addition the data revealed that injured workers at greatest risk for compromised recovery and development of chronic low back pain were individuals with smoking histories and/or suffering from obesity. Furthermore, several other risk factors have been identified in the literature as yellow flags for problematic recovery. These include:

- A negative attitude that back pain is harmful or potentially severely disabling
- Fear avoidance behaviour and reduced activity levels
- An expectation that passive, rather than active, treatment will be beneficial
- A tendency to depression, low morale, and social withdrawal
- Social or financial problems
- History of low back pain
- Duration
- Disability
- Leg pain
- Related sick leave
- History of spinal surgery
- Low level of job satisfaction
- Poor general health

Methods used to formulate Recommendations

Literature Review: Searches of Electronic Databases

Expert consensus: Development has taken place between members of the committee (physiatrist, orthopedic surgeon, nurse practitioner specializing in pain medicine, pharmacist, and pain specialist).

Modifications to the pathway will undoubtedly be necessary as a result of new research and practice-based evidence. The developers believe this pathway should always be considered a work in progress.

To the degree permitted by law, Best Doctor's Occupational Health Institute and its authors and consultants are not responsible for any losses, injury or damage to any individual or property (including under contract, by negligence, product liability or otherwise) whether they be direct or indirect, special, incidental or consequential, resulting from the application of the information in this publication.