Appendix

A best practices resource guide for physical therapists

College of Physical Therapists of Alberta

University of Alberta, Department of Physical Therapy

Alberta Physiotherapy Association

Workers' Compensation Board - Alberta

Disability Management of Injured Workers

A best practices resource guide for physical therapists

CIHR IRSC
Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

Canadian Physiotherapy Association | Association canadienne de physiothérapie
Alberta Physiotherapy Association

COLLEGE OF PHYSICAL THERAPISTS OF ALBERTA

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About the Appendix

This Appendix was developed to supplement the information in the *Disability Management of Injured Workers: A best practices resource guide for physical therapists*. Information in this Appendix may have broader applications than the disability management of injured workers as the intent of the project is to provide physical therapists with a set of tools that will promote best practice. Resources listed can be easily accessed using the internet. In the supplemental folder marked *Outcome Measures*, commonly used standardized measures have been presented in *Word* and *PDF f*ormat to facilitate easy adaptation to daily practice. When reprinting, wording of the scale items should not be altered, the copyright statement or source reference should remain listed at the bottom of each outcome, along with the words “permission to reprint”.

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Clinical Tips and Scenarios

The following section provides tips on how clinicians in real life have successfully established the connections illustrated in the *Model of Physical Therapist Disability Management of Injured Workers*. This section will be updated periodically and clinicians are encouraged to submit additional information that will be added to the Appendix posted on the website of the College of Physical Therapists of Alberta, www.cpta.ab.ca.

Maximizing the Worker - Physical Therapist Connection

Involve the family in the rehabilitation of the worker as they can be integral to supporting recovery and achieving return to work.

Have the worker track their progress daily on home or clinic-based exercise programs. It is the basis of a cognitive-behavioural approach to rehabilitation. Over a two-week period the information provides a good indication of progress and can be used for decision-making and completing reports on the injured worker's progress.

Laminate or place the outcome measure in a clear plastic folder. Once finished, the laminated document or plastic folder can be cleaned and reused.

Scores from completed measures can be recorded in the chart by the support worker. For persons treated in the Workers' Compensation System, a copy of the completed form should be included in the patient record and scores transferred to progress reports.

Administer screening measures, such as the *Fear-Avoidance Beliefs Questionnaire* (FABQ), at the start and end of treatment and note any progress. Changing a worker's beliefs and perceptions around physical activity and work is an important aspect of physical therapy intervention, and it is important to record progress in this area.

Select a combination of outcomes measures for the worker to complete including several risk factor screening questionnaires, a general health questionnaire, and at least one questionnaire that is specific to the site of injury or condition. Train the administrative staff to confirm the area of injury with the person and have them provide the outcome designated for that body site.

Sometimes it is more important to use the questionnaire to facilitate discussion rather than obtain the absolute score. The questionnaire should be scanned for items that have a less desirable rating. The worker's response is used as a lead into a more detailed discussion on the subject of the questionnaire item. The questionnaire is simply a tool that allows the physical therapist to connect and establish a therapeutic relationship with the worker.

Maximizing the Case Manager - Physical Therapist Connection

Some clinics have developed policies that require contact with the payers informing them that the workers are being treated at their respective facilities. A simple step such as this promotes ongoing communication with the case managers and helps build relationships with the payer organizations.

Maximizing the Workplace - Physical Therapist Connection

In addition to communicating with the payer, some facilities routinely contact the workplace to communicate that the worker is being treated at their facility.

"Experience has proven that communication with the employer to inform them that the worker is being treated is always important, because it provides valuable information about the employer's perception of the worker's job. Sometimes the worker's and employer's perceptions don't match. For example, the employer and employee may differ in their descriptions of the critical demands of the job. The employee states he lifts 100 lbs frequently, and walks constantly, while the employer reports that the facility has anti-fatigue mats and a hoist that the employee could but chooses not to use."

The employer can confirm that modifications for work exist on a temporary basis. Knowing that the person has a job to return to and obtaining a better understanding of the job demands, allows the physical therapist to fine tune the rehab program to the workers needs.

"Many workers don't want to be on modified work as they perceive it as a 'weakness'*, a make-work project or, in general, would rather be working at the job in pain rather than doing something they perceive as* 'useless'*. Any job modification has to be perceived by both parties as a* 'value-added'*. The employer can help convince the worker that modified work is important and value-added. The employee benefits because the modified work schedule allows him/her to remain active but also recover from his/her injury."*

Maximizing the Physician - Physical Therapist Connection

Establish when the patient will next visit their physician and ensure that the physician has information regarding the patient's functional progress and return-to-work readiness in advance of the visit.

"On November 1, a worker stated that his doctor was planning to send him back to light duties on December 1, and maybe full duties in the New Year. Despite my phone call to the work supervisor informing them that the worker was ready to return to work because they were able to safely lift up to 17 kg, the work supervisor said "we'll wait and see what the doctor says.

The worker was due to see the physician the next day. I sent a note with him describing that he was ready for medium work as he was lifting 17 kg in our clinic with no aggravation of his low back pain. It was suggested that the worker was ready for immediate return to medium duties and a graduated return to full duty by December 5th."

It is a reality that employers rely on the family physician for final approval on return-to-work and/or restrictions. The work supervisor waiting for clearance from the physician can impede the achievement of the physical therapy goals.

"These recommendations appeared in the doctor's report and my progress report. If the patient had not told me his family physician's plans, I would have missed this window of opportunity and return to work would have been unnecessarily delayed. Not all people will know or share their physician's plan. It made me realize that I should send these informal progress notes with a worker whenever they are visiting their doctor. Just two sentences on a referral pad can make all the difference in the world."

The Canadian Medical Association views that it is the physician's role to assist patients to return to work and function and to work closely with other health professionals to achieve this goal. Establishing connections and a good working relationship with a physician often involves repeated contacts over a prolonged period and requires a discussion to identify the most effective methods of communication. [Canadian Medical Association Policy PD01-09 *The Physician's Role in Helping Patients Return to Work After an Illness or Injury (Update 2000)*]
http://policybase.cma.ca/dbtw-wpd/CMAPolicy/PublicB.htm

Maximizing the Other Health Care Provider - Physical Therapist Connection

Contacting other health care providers may be necessary to ensure physical therapy goals can be achieved.

"Other health care providers are usually contacted via phone, or using a written note, with a brief outline of the findings and some suggestions for them to potentially focus on, allowing me to look at other issues. In cases where there is an element of neural tension, the massage therapist is contacted with the suggestion that aggressive deep tissue techniques around the neck may be counterproductive to recovery. I just tell them my findings, and ask them not to do deep tissue techniques such active release technique with the elbow fully extended and shoulder abducted because the client has a brachial plexus injury.

In cases with a patient with a tight iliotibial band, the massage therapist can work to promote flexibility which compliments the physical therapy goal of changing lower extremity movement or motor recruitment patterns."

General Supplementary Resources

Clinic on Low-Back Pain in Interdisciplinary Practice

Purpose: A clinical practice guideline for low back pain developed with the input of five organizations representing primary healthcare professionals. It is a comprehensive best practices guide on all aspects of the management of low back pain, assessment, diagnosis, and treatment in acute and chronic care stages. The therapeutic interventions reviewed include NSAIDs, vertebral manipulation, exercise (flexion, extension and McKenzie), steroid injections, acupuncture, TENS and massage.

Source: Direction de santé publique de Montréal www.santepub-mtl.qc.ca/clip/

Early Pain Management of Musculoskeletal Disorders

Purpose: A report *Improved early pain management of musculoskeletal disorders*.

Source: Health and Safety Executive
http://www.hse.gov.uk/research/rsearch.htm

Guideline for Evidence Informed Primary Care Management of Low Back Pain

Purpose: Provides evidence based guideline for the management of low back pain for physicians and other health care practitioners working in primary care settings. Recommendations for management of both acute and chronic low back pain are provided in summary form and discussed in detail in a guideline. Handouts have been developed for patients in the acute and chronic stages.

Source: Towards Optimized Practice http://www.topalbertadoctors.org

New Zealand Psychosocial Yellow Flags Guide

Purpose: A literature review and multidisciplinary guide for assessing and managing psychosocial factors in the treatment of low back pain. The guide reviews best practices and recommends the use of standardized outcomes. It is part of the *New Zealand Acute Low Back Pain Guide".*

Source: Accident Compensation Corporation (New Zealand),
http://www.acc.co.nz/index.htm

Return to Work Knowledge Base

Purpose: A web-based resource developed for injured workers and their families and the others working to assist with patient's recovery and return to work, including RTW coordinators, claims managers, treating practitioners such as doctors and physical therapists, and policy makers, contains evidence based information and encourages best practice and cooperation. The resource includes:

- Research papers translated into plain language
- Resources - links to useful information on work disability such as patient handouts, work disability reports, treatment guidelines

Source: Worksafe Victoria, ResWorks (Australia)
http://www.rtwknowledge.org/index.php

Work-Related Musculoskeletal Disorders Guide

Purpose: This guide, *Work-related musculoskeletal disorders: Guide and tools for modified work,* proposes an approach to the planning and implementation of modified work programs, and identifies actions companies may take to carry out effective case management and follow-up of workers with musculoskeletal disorders (MSD). The decision-aid tools integrated into the guide, in the form of worksheets and forms, permit the rapid recognition of work-related risk factors for MSD.

Authors: Susan Stock, Raymond Baril, Dion-Hubert C, Lapointe C, Paquette S, Sauvage J, Simoneau S, Vaillancourt C.

Source: Direction de santé publique de Montréal, www.santepub-mtl.qc.ca/omrt

Price: $20

Work-Ready: Return-to-Work Approaches for People with Soft Tissue Injuries

Purpose: A report on best practices around injury and illness and return-to-work function.

Source: Workplace Safety and Insurance Board,
http://www.wsib.on.ca/wsib/wsibsite.nsf/public/Reference

Payer/Insurer/Insurance Resources

Automobile Insurance

Government of Alberta - Auto Insurance General Information Website
www.autoinsurance.gov.ab.ca/

Publications of Interest to Physical Therapists
- *Standard Automobile Policy*
- *Automobile Accidents Benefits Regulation (Section B)*
- *Diagnostic Treatment Protocol Regulation*
- *Minor Injury Regulation*

Workers' Compensation Board-Alberta (WCB)

WCB Alberta - Physical Therapy Providers
http://www.wcb.ab.ca/providers/

- *Claims Management Information Sheet*
- *Physical Therapy Contract: Reference guide to understanding your contract*
- *Disclosure of Medical Information to the Workers' Compensation Board of Alberta: A Guide for Alberta Physical Therapists*

WCB Alberta - Health Care Providers
Medical Advisory Guidelines - information designed to promote evidenced-based decisions around diagnosis and clinical care for a variety of conditions, http://www.wcb.ab.ca/providers/guidelines.asp .

- *Alberta Disability Duration Guidelines* (a frequently referenced guide on the expected minimum and maximum time frames for return to work)
- *Medical Advisory Guidelines - Specifics* (WCB's treatment guidelines for various conditions i.e. whiplash, fibromyalgia, carpal tunnel syndrome)

WCB Alberta - Workers
- *Worker Handbook,* www.wcb.ab.ca/workers/default.asp

WCB Alberta - Policy Manual
The section Claimant and Health Care Services is relevant to physical therapy practice, www.wcb.ab.ca

Insurance Bureau of Canada (IBC)

IBC is a voluntary national trade association representing general or property and casualty (P&C) insurers. The P&C industry includes most automobile insurers and home insurers, but does not include life and health insurers. IBC's goal is to strengthen the business environment for the property and casualty insurance industry. IBC's

activities include developing and maintaining relations with governments, the public, consumers, and media, as well as with member companies, and other institutions that share some of the concerns of member companies. It identifies and monitors policy issues affecting the general insurance industry, and develops strategies for addressing issues.

Regulation of Alberta Property and Casualty Insurers

The P&C insurance industry is highly regulated both federally by the Office of the Superintendent of Financial Institutions, www.osfi-bsif.gc.ca/, and provincially by the Alberta Ministry of Finance, Superintendent of Insurance, www.finance.gov.ab.ca/business/insurance/index.html.

Disability Management and Auto Insurance

Automobile insurance reimburses injured people for health expenses and other costs (such as income disruption) that are a result of an automobile collision. While automobile insurance policies vary from province to province, generally speaking, a person, who has been injured directly as a result of the automobile collision and is unable to work, may be eligible for various types of rehabilitation services to facilitate a return to their pre-accident occupation or activities of daily living. For more information about P&C insurance, speak with insurers in your area. In addition, the following information may be useful.

IBC Home Page
http://www.ibc.ca/en/index.asp

- Making a claim: www.ibc.ca/en/Car_Insurance/After_Collision/Making_a_Claim.asp
- Facts about the general insurance industry: http://www.ibc.ca/en/Need_More_Info/index.asp

IBC Alberta
http://www.ibc.ca/en/Car_Insurance/AB/

Resolving Disputes

Generally, physical therapists and their patients will be working with a claims adjuster who is the primary contact for any claims issues. Many companies have specific and distinct dispute resolution procedures and it can be helpful to ask for a description or literature about those processes from the company. Most complaints can be resolved by speaking to the adjuster or his/her supervisor. IBC encourages physical therapists to consider this as a “first-line” method. All companies have a claims manager who may be approached should a physical therapist (or client) be unable to resolve an issue with the adjuster or adjuster's supervisor. Physical therapists can identify the claims manager simply by calling the appropriate branch office and asking to be connected to the Accident Benefits (AB) Claims Manager. Should a physical therapist feel that the matter

is not fairly resolved; the office of the Alberta Superintendent of Insurance can be contacted. If a physical therapist requires assistance from IBC, request to speak with someone, preferably the physical therapist associated with the Health Issues Program.

Canadian Life & Health Insurers Association

The Canadian Life and Health Insurance Association (CLHIA) is a voluntary trade association that represents the collective interests of life and health insurers. Members account for 99 percent of the life and health insurance in Canada and administer about two-thirds of Canada's pension plans.

CLHIA Home Page
www.clhia.ca/index_en.htm

- CLHIA**:** A guide to supplementary health insurance (Client educational brochure)
  www.clhia.ca/download/Health_Brochure_EN.pdf

Measurement Tools

The following categories of clinical measures are described and included at the end of the section:

- Screening and Prediction: Outcome measures used to screen for "yellow flags" and barriers to return to work.
- Evaluation and Judging Improvement over Time: Questionnaires commonly cited in return-to-work literature specifically designed to measure the effectiveness of therapeutic interventions. Ideally these are completed upon initial assessment and at intervals throughout the treatment period. Results should be used to guide treatment and discharge decisions.
- Other questionnaires not commonly used in current return-to-work research but considered by the project team as useful in the management of injured workers such as the LANSS for differentiating neuropathic from nociceptive pain, or the IES-revised or PTSD-PCL for determining if workers are experiencing post traumatic stress symptoms.

Resources for Outcome Measures

Canadian Physiotherapy Association
www.physiotherapy.ca

- *The Physical Rehabilitation Outcome Measures*, (PROM) 2nd Edition is an excellent reference text for more information on using outcome measures in clinical practice. It is the source text for many of the outcome measures described in this appendix.
- Finch, E, Brooks, D, Stratford, PW, and Mayo, NE (2002). *Physical Rehabilitation Outcome Measures: A Guide to Enhanced Clinical Decision Making, 2nd Edition*. Canadian Physiotherapy Association: Lippincott, Williams and Wilkins.

Victorian WorkCover Authority
http://www.worksafe.vic.gov.au/wps/wcm/connect/WorkSafe

The website has outcome measures that are useful for physical therapy practice. Many of the measures of psychosocial function listed in this Appendix are included on the WorkCover website, as well as condition specific measures and a form for recording scores of the different measures used with patients.

Measures for Screening

Orebro Musculoskeletal Pain Questionnaire

Purpose: Screens for outcomes in acute and sub-acute musculoskeletal pain, especially back pain and helps to identify those at risk for long-term problems.

Description: 25-item self-report measure. 21 items are rated on a 0-10 scale. Scores < 90 indicate good prognosis, scores >105 indicate the patient is at risk of developing a long-term problem. A recommended outcome in the New Zealand Acute Low Back Pain Guide.

Source: Dr. Steven Linton, Department of Behavioral, Social and Legal Sciences-Psychology, Orebro University, Orebro, 701 82, Sweden. Email: steven.linton@bsr.oru.se

Fear Avoidance Beliefs Questionnaire (FABQ)

Purpose: Measures how fear and avoidance attitudes affect people with back pain.

Description: A 16-item self-report measure. Only eleven of the total sixteen items are scored. The questionnaire has two subscales. Higher scores indicate a greater fear and avoidance. FABQ work subscale score >19 points assists in identifying patients who will not respond to spinal manipulation.

Source: Dr. Gordon Waddell, Unum Provident Centre for Psychosocial and Disability Research, University of Cardiff, Wales, UK. Email: gordon.waddell@virgin.net

Waddell's Non-organic Signs

Purpose: Physical examination techniques with some validity for predicting outcome of patients with back pain.

Description: A series of 8-assessment items to identify pain behaviour. The presence of 1 or more non-organic signs has been reported as associated with delayed recovery.

Source: Dr. Gordon Waddell, Unum Provident Centre for Psychosocial and Disability Research, University of Cardiff, Wales, UK. Email: gordon.waddell@virgin.net

Pain Catastrophizing Scale

Purpose: Evaluates the types of thoughts and feelings patients have when in pain.

Description: 13 statements, each evaluated on a Likert scale. Some validity for predicting chronic pain and disability.

Source: Dr. Michael Sullivan, Department of Psychology, University of Montreal, Canada. Email: michael.jl.sullivan@umontreal.ca

Chronic Pain Grading Scale (Modified)

Purpose: Assesses a person's severity of chronic pain or recurrent pain.
Description: Series of seven 11-point numeric pain scales. Increasing scores indicate increasing severity.
Source: Dr. Michael Von Korff, Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle, WA USA 98101. Email: vonkorff.m@ghc.org

Cognitive Coping Strategies Inventory – Revised

Purpose: Evaluates different thoughts and behaviours that people engage in when they experience pain.
Description: 32 items rated on a 1-5 scale.
Source: Dr. Beverly E. Thorn, Department of Psychology, Univ. AL P.O. Box 870348 Tuscaloosa, AL USA 35487-0348. Email: Bthorn@as.ua.edu

Distress and Risk Assessment Method (DRAM)

Purpose: Allows patients to be classified into those showing no psychological distress, those at risk of developing major psychological overlay, and those clearly distressed.
Description: Contains the Modified Zung Depression Index and Modified Somatic Perceptions Questionnaire. Scoring indicates patients with modified Zungs scores <17 are normal, modified Zung 17-33 and MSPQ <12 are at risk, modified Zung >33 are distressed Depressive, and modified Zung 17-33 and MSPQ > 12 are Distressed Somatic.
Source: Dr. Chris Main, University of Manchester, Calderbank Research Unit, Manchester, UK M20 3JQ. Email: cjmain@gmail.com

Impact of Events scale – Revised (IES – Revised)

Purpose: Assesses post-traumatic stress symptoms related to a specific life event.
Description: A 22 item self-report scale with questions pertaining to 3 factors-avoidance, intrusion and physiological hyperarousal, criteria that characterize post-traumatic stress disorder (Weiss and Marmar 1996). Respondents are to rate each item on a 0-3 likert scale. Sensitivity is 74.5 and specificity is 63.1 when compared to the gold standard diagnostic tool in people with post – motor vehicle accident trauma. Thus IES-revised is best used as a screening tool to identify post-traumatic stress reactions rather than for diagnosis. Higher levels of post traumatic stress, combined with decreased range of motion and cold temperature hyperalgesia are associated with persistent pain and disability following a motor vehicle accident (Sterling et al 2006, Elliot, noteboom et al 2009).

Source: Daniel Weiss, Ph.D. Department of Psychiatry University of California - San Francisco Email: Daniel.weiss@ucsf.edu

PTSD Checklist – PCL Version

Purpose: Assesses post-traumatic stress symptoms related to traumatic life event

Description: A 17-item self-report measure that contains items related to the diagnostic criteria for post-traumatic stress disorder, rated using a 1 to 5 likert scale. This civilian version has been used to assess posttraumatic stress reaction in any traumatic event such as symptoms in the cases of assault and trauma to the public and to health care workers, breast cancer patients, and accident survivors. A total severity score is calculated by summing all the items. However, it is thought that the cut score for each item of 3 or greater is indicative of post-traumatic symptoms. Scores of 1-2 are considered non-symptomatic.

Source: Frank w. Weathers Phd, Department of Psychology Auburn University AL Email: weatherfw@auburn.ed The PTSD checklist is available in many public domains refer to Weathers et. al 1993 for original research, and Ruggiero et al 2003 for information on the checklists psychometric properties.

Leeds Assessment of Neuropathic Symptoms and Signs Pain Scale (LANSS)

Purpose: An easily-administered, clinically-based diagnostic screen that distinguishes individuals with neuropathic pain from those with nociceptive pain. Commonly used in individuals with chronic, low back and post-surgical pain and fibromyalgia.

Description In the scale five items are administered in an interview format. The questions are read to the individual asking them to think about their pain and only answer “yes” to the question describing their pain. Scoring is located by the items. The second part of the scale is a clinical exam testing for the presence of allodynia and for altered pin pick threshold (PPT). The assessor sums the scale score and compares with the cut-off score. Scores < 12 neuropathic mechanism are unlikely to contribute to pain. Scores > 12 neuropathic mechanism are likely to contribute to pain.

Source: Dr. Mike Bennett, Palliative Medicine St Gemma's Hospice, 329 Harrogate Road, Leeds UK LS17 6QD. Email: m.bennett@st-gemma.co.uk

Leeds Assessment Neuropathic Signs and Symptoms–Self complete (S-LANSS)

Purpose Similar purpose as described in the LANSS listed above, however the S-LANSS was developed to be purely a self-report scale to identify individuals pain of predominantly neuropathic origin, negating the need for a clinical exam as described for the LANSS.

Description A 7 item questionnaire with similar items to the LANSS along with a body pain diagram and numeric pain scale. Scores >12 on the S-LANSS indicate that neuropathic mechanisms are predominately responsible for pain.

Source: Dr. Mike Bennett, Palliative Medicine St Gemma's Hospice, 329 Harrogate Road, Leeds UK LS17 6QD. Email: m.bennett@st-gemma.co.uk

Yellow Flags Guide, Institute for Work & Health

Purpose: A list of red and yellow flags. Helps to identify individuals at risk, but is not a standardized measure.

Source: Component of IWH Physicians Tool Kit www.iwh.on.ca

Measures for Evaluating Change

Pain and/or Individualized Functional Status

Pain Visual Analogue Scale (VAS)

Purpose: A subjective measurement of pain intensity.
Description: Consists of a 10 cm straight line, either vertical or horizontal, on which clients identify their perceived level of pain intensity. Extremes anchored with “no pain” and “pain as bad as it could be”. Used with a variety of populations including those with acute and chronic pain, rheumatoid arthritis, orthopedic conditions, cancer or temporomandibular joint dysfunction. Minimum clinically important change is 2.8 points (Finch et al 2002).
Source: Unknown

Numerical Pain Rating Scale (NPRS)

Purpose: A subjective measurement of pain intensity.
Description: 11-point scale (0-10) with anchors at the extremes, “no pain” (0) and “pain as bad as it can be” (10). Used for individuals with orthopaedic conditions, acute and chronic problems and rheumatoid arthritis. Easier for older and less literate individuals to use as compared to the VAS. Minimum clinically important change is 3-points (Finch et al 2002).
Source: Unknown

Patient Specific Functional Scale (PSFS)

Purpose: A standardized method for eliciting and recording functional status limitations most relevant to an individual client.
Description: An 11-point scale related to specific activities and their associated difficulty for that client. Groups tested include those with back, neck, and lower extremity pain of MSK origin; acute, subacute, and chronic client groups; various conservative, surgical, and behavioral interventions (Finch et al 2002). Minimum clinically important difference is 3 points.
Source: Paul Stratford, C Gill, M Westaway and J Binkley, Contact: Paul Stratford, Clinical Epidemiology and Biostatistics, Faculty of Health Sciences, IAHS School of Rehabilitation Science, McMaster University, Hamilton, ON, Canada L8N 1C7. Email: stratfor@mcmaster.ca.

Measures for Specific Musculoskeletal Conditions

Back Pain

Oswestry Low Back Pain Disability Questionnaire

Purpose: Assesses pain-related disability in persons with low back pain.

Description: A 10-item self-administered questionnaire. Usually takes less than 5 minutes for the client to complete. Higher scores represent increased disability (expressed as a percent). Used with acute, sub-acute, and chronic back pain client groups; various conservative, surgical and behavioral interventions groups. (Finch et al 2002).
0-20% = minimal disability; 20-40% = moderate disability; 40-60% = severe disability; 60-80% = crippled; 80-100% = bed ridden or exaggerating symptoms. Important change for an individual is 4-6 percentage points.

Source: Dr. Jeremy Fairbank, Nuffield Orthopaedic Centre, Windmill Road, OX3 7LD, Headington, Oxford, UK. Email: Jeremy.fairbank@ndos.ox.ac.uk.

Roland-Morris Questionnaire

Purpose: Assesses functional status and pain-related disability status in clients with low back pain.

Description: 24-item self-report measure for acute, subacute, and chronic back pain client groups; various conservative, surgical and behavioral interventions groups. Takes 3-5 minutes for most clients to complete. Score out of 24 (0 is the highest functional state and 24 is the lowest). Minimum clinically important change is 5 points. May be more adept at detecting change versus the Oswestry or Quebec measures.

Source: Dr. Martin Roland National Primary Care Research and Development Centre, University of Manchester, Manchester, UK. Email: m.roland@man.ac.uk.

Quebec Back Pain Disability Scale

Purpose: Measures functional disability associated with back pain.

Description: 20-items scored on a 5-point scale. Self administered by the client; 0 = no disability and 100 = maximum disability. Groups tested: ambulatory clients with back pain, chronic back pain clients, post surgical, workers compensated for low back pain, and women with post-pregnancy pelvic pain. (Finch et al 2002). Meaningful change for individuals ("better") = 15.3 points.

Source: Dr. Jacek Kopec Department of Health Care and Epidemiology, University of British Columbia, Vancouver, BC, Canada. Email: jkopec@arthritisresearch.ca.

Back Pain Functional Scale (BPFS)

Purpose: Assesses functional status and pain-related disability in clients with low back pain.

Description: 12-item self-report measure for acute, sub-acute, and chronic low back pain clients; conservative and surgical intervention groups. Most clients complete the BPFS in 3-5 minutes. Scoring with computational aid is about 15 seconds (Finch et al 2002). True change estimate = 3.9 - 4.8.

Source: Paul Stratford and Jill Binkley, Contact: Paul Stratford, Clinical Epidemiology and Biostatistics, Faculty of Health Sciences, IAHS School of Rehabilitation Science, McMaster University, Hamilton, ON, L8N 1C7 Canada. Email: stratfor@mcmaster.ca.

Neck Pain

Neck Disability Index (NDI)

Purpose: Assesses pain-related disability associated with activities of daily living in persons with neck pain. A modification has also been made for the whiplash population (Whiplash Disability Index available on the Victoria WorkCover Authority website).

Description: 10-item self-report measure for acute, sub-acute, and chronic neck pain client groups; various conservative, surgical and behavioral interventions. Most clients complete in less than 3-minutes and scoring may take less than 20-seconds (Finch et al 2002). Clinically important change for individuals is 7 points.

Source: (Finch et al 2002) also can be downloaded for free from several websites.

Developer: Dr. Howard Vernon, Canadian Memorial Chiropractic College, Toronto, ON, Canada. Email: hvernon@cmcc.ca.

Upper Extremity Conditions

DASH and Quick-DASH

Purpose: Quantifies symptoms and disability among individuals with upper extremity MSK disorders, and evaluates change over time.

Description: A 30-item self-report for adults with wrist/hand, elbow, and shoulder disorders; psoriatic arthritis and cumulative trauma disorder. The items have no ceiling or floor effects. Requires a scoring algorithm. A score change of 15 on the DASH has been found to be the most accurate change in distinguishing those who become able to cope with their problem over time and those who do not (Finch et al 2002).

Source: Institute for Work and Health, Toronto ON Canada. Email: DASH@iwh.on.ca; www.iwh.on.ca.

Upper Extremity Functional Scale (UEFS)

Purpose: Assesses upper extremity functional status.
Description: Eight-item self-report questionnaire scored on a 1-10 numeric rating scale. Minimum detectable change is 9.6 points.
Source: Dr. Glenn Pransky, Liberty Mutual Center for Disability Research, Liberty Mutual Research Center, 71 Frankland Road, Hopkinton, MA 01748, US. Email: glenn.pransky@libertymutual.com.

Upper Extremity Functional Index (UEFI)

Purpose: Assesses upper extremity functional status.
Description: 20 item measure rated on a 5-point scale. Minimum detectable change is 9 points.
Source: Paul Stratford and Jill Binkley, Contact: Paul Stratford, Clinical Epidemiology and Biostatistics, Faculty of Health Sciences, IAHS School of Rehabilitation Science, McMaster University, Hamilton, ON, Canada L8N 1C7. Email: stratfor@mcmaster.ca.

Croft Disability Questionnaire

Purpose: Assesses functional status in patients with shoulder conditions.
Description: 22 item test. Scoring is one point for each yes response. Minimum clinically important change is 3 points.
Source: Dr. Peter Croft, Primary Care Sciences Research Centre, Keele University, Staffordshire, UK. Email: p.r.croft@cphc.keele.ac.uk.

Lower Extremity Conditions

Lower Extremity Functional Scale (LEFS)

Purpose: Assesses functional status in clients with lower extremity MSK conditions
Description: 20-item self-report for clients with acute and chronic lower extremity MSK conditions. Most clients complete in 3-5 minutes and scoring may take only 30 seconds. No ceiling or floor effect and appears to be applicable to all levels of functioning (Finch et al 2002). Minimum clinically important difference is 9 points.
Source: Jill Binkley and Paul Stratford, Contact Paul Stratford, Clinical Epidemiology and Biostatistics, Faculty of Health Sciences, IAHS School of Rehabilitation Science, McMaster University, Hamilton, ON, Canada L8N 1C7. Email: stratfor@mcmaster.ca.

Knee Injury and Osteoarthritis Outcome Score (KOOS)

Purpose: Assesses a patient's opinion about their knee and associated problems. Intended to be used for knee injury that can result in post traumatic

osteoarthritis, for example ACL injury, meniscus injury, chondral injury, etc.

Description: Consists of five subscales: pain, other symptoms, function in daily living, function in sport and recreation, and knee-related quality of life. Minimum clinically important difference had not yet been established.

Source: Ewa Koos, Department of Orthopedics, Lund University Hospital, S-221 85 Lund Sweden. Email: Ewa.Roos@ort.lu.se.

Other Relevant Measures

Fibromyalgia Impact Questionnaire

Purpose: Assesses health status of adults diagnosed with fibromyalgia and to evaluate treatment effects.

Description: 10-item self-report. Score 0-100 with higher score indicates poorer health status. Missing or N/A items made lead to underestimated severity of disability as physical function components have been found to been non-linear. Score below 60 suggests **not work disabled**; above 79 suggests work disabled (83% of respondents).

Source: CS Burckhardt, SR Clark, RM Bennett, Contact C Burckhardt, Oregon Health & Science University, Portland, OR 97239, US, Email: burckhac@ohsu.edu.

Integrating Outcome Measures into the Physical Therapy Management of Injured Workers

Risk factors for delayed recovery and return to work following soft tissue injury can be detected through the routine use of risk factor screening measures. Once a risk factor has been identified, physical therapists can choose to manage simply by being aware of the issue, adopting management strategies to address the issue, or referring the worker to others for intervention. Some measures that screen for risk factors can also be used for evaluation along with other measures that have been developed specifically for the purpose of detecting change in status over the course of treatment. For screening purposes, measures must be used at initial assessment. For evaluation, measures should be administered at initial assessment, discharge, and ideally at another point following discharge. Furthermore, measures can be used as teaching and motivational tools, and for goal setting. What follows are steps to consider when using outcome measures illustrated through a scenario about the disability management of an injured worker named “Jim”.

Step 1 – Choose Relevant Screening and Evaluation Measures

Select a battery of research-based and easily completed questionnaires to address risk factor identification and performance evaluation. Many of the more useful freely available measures are found in the outcome measures folder following this appendix. Permission was obtained from the developers for physical therapists to copy and use clinically. Other commercial measures are also available (i.e. *Beck Depression Inventory, SF-36*). Measures can be chosen for monitoring a specific body site or condition, general health and wellness, or psychological and cognitive factors such as fear, anxiety, or depression. Your choice of measure depends largely on the facility you work in and population served.

Jim attends a physical therapy facility clinic for initial assessment for his work-related lower back pain. Jim has already been off work for two weeks and has been referred by a family doctor who the therapist has a close working relationship with.

The receptionist asks Jim to confirm the area of the body that has been injured. She ensures that Jim is comfortable with completing the forms independently. He is provided with the Oswestry Disability Questionnaire (ODQ), the Numerical Pain Rating Scale (NPRS), and the Fear Avoidance Beliefs Questionnaire (FABQ). Jim takes 10 minutes to complete the paperwork, including consent forms.

Step 2 – Calculate and Interpret the Measures’ Scores

Scores from measures must be calculated and interpreted according to the guidelines set out by the developers. We have supplied these measures and scoring guidelines where available. Avoid modifying measures or interpreting results beyond what the guidelines recommend.

Jim's score of 85/100 on the ODQ corresponds with someone who believes himself to be "severely disabled". His pain is rated 9/10 on the NPRS. His score is 36/42 on the work subscale of the FABQ and 21/24 on the physical activity subscale indicates he believes his pain is an indicator of a severe underlying problem and that he should avoid activity due to pain.

Step 3 – Conduct a History and Clinical Exam Building on Questionnaire Scores

The physical therapist should conduct a routine physical examination, looking for red flags or other signs of serious pathology. Careful observation of a patient's response to examination should also be made. Testing of non-organic signs is also helpful.

Building on Jim's responses to the questionnaire scores, the physical therapist undertakes a very careful history of present illness. This includes specific questions about Jim's work and home activities. Anxiety about the condition is noted as indicated by Jim's statements, "It must be very serious if it's this painful. I'll never get better. No one knows what's wrong. I need an MRI to find out what's wrong, and only a specialist can tell that, and I won't get better because this is serious pain". Jim also expresses the following thoughts about his likelihood of returning to work, "I don't think my boss will ever take me back. My co-workers will be mad if I'm on modified duties. How am I going to pay my bills?" Given the high questionnaire scores and reported history, the physical therapist also decides to administer a depression inventory. The depression score is moderately high, however, Jim is not considering suicide at this time.
Throughout the physical examination, the physical therapist looks for signs that indicate physical impairment, injury, and mechanical pain patterns. No specific findings are noted. However, signs of abnormal illness behaviours (i.e. positive Waddell's non-organic signs) are noted. Jim also appears hesitant to move or bend his back during the assessment. The physical therapist notes that Jim displays considerable anxiety throughout the examination as indicated by his facial expression and body postures.

The physical therapist recognizes through the combination of questionnaire scores, history, physical examination, and careful observation throughout the interaction with Jim that he is at risk of delayed recovery and prolonged work loss.

Step 4 – Develop a Plan to Manage the Risk Factors Deemed Primary Barriers to Return to Work

The model outlined in *Disability Management of Injured Workers: A best practices resource guide for physical therapists* should be used in developing a return-to-work plan. The guide provides detailed information for doing this and the important interactions required for a successful return to work.

The physical therapist develops a plan with Jim to manage the identified risk factors that includes reducing Jim's anxiety through careful reassurance and education about the condition, pain management through advice to stay active and other self-management strategies, and increasing functional ability through participation in a daily goal-oriented

activity program performed in the clinic and a plan to begin appropriate work duties. Return to work is a primary goal and a plan is created to negotiate rapid return to work through discussion with other stakeholders assisting Jim.

Knowing that a concerted effort will need to be made to overcome Jim's fear and anxiety as well as re-integrate him to the worksite, telephone calls are immediately made to his case manager and family physician to discuss the return-to-work plan. Through discussion with the case manager, it is agreed the physical therapist will directly contact the employer to determine if modified duties are available. Through discussion with the family physician, it is agreed that a consistent message will be given to Jim related to his back pain including reassurance about its benign nature and the importance of staying active. A timeline of two weeks is agreed upon to evaluate whether improvement is being seen with the plan outlined.

Within the first week a call is made to Jim's employer who states modified work duties and hours are available. The employer states he is eager to have Jim back as soon as possible and that Jim is a very productive employee. The physical therapist tells the employer that it would be a good idea for him and possibly some of Jim's co-workers to contact Jim voicing their support for his return.

At the next physical therapy session, the physical therapist tells Jim about the available modified duties and the employer's satisfaction with his work. Arrangements are made for Jim to return to a light duty position for 4 hours per day one week after the initial physical therapy assessment.

Step 5 – Monitor Improvement

Repeat administration of evaluation measures is done at a time in the future deemed adequate for meaningful change to have occurred. This will depend on the nature of the patient's diagnosis as well as the clinical construct being measured (i.e. strength, pain, mobility).

After two weeks, the ODI and NPRS are repeated. Jim's score on the ODI has reduced by over 50% to 40/100 and his pain rating has reduced to 3/10. These are interpreted as meaningful improvements. This feedback is provided and Jim states he is definitely feeling much better.

Jim's employer has been contacted and modified duties arranged. Jim had started working a lighter-duty position for 4 hours per day after the first week. Based on the positive improvements seen on the outcome measures, a decision is made to increase his hours to full-time while continuing to do modified duties.

After four weeks, Jim's score on the ODI has reduced to 20/100 and his pain rating has reduced to 1/10. Even though his pain is not totally gone, he is independent in a home exercise program and has learned strategies for managing his pain. The decision is

made to increase Jim's workload to regular duties and discharge from physical therapy, with the advice to phone the facility if problems arise.

After four more weeks (eight weeks after initial assessment), the facility's receptionist contacts Jim at work to determine whether he is still working. He states he is back to regular duties and that he only experiences back pain intermittently. He says he is continuing his home exercises and these help prevent the pain.

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