HAWAII STATE DEPARTMENT OF LABOR & INDUSTRIAL RELATIONS

Creating an Environment of Expectations

2005 Administrative Rules for Workers' Compensation Reform

Educational Seminar
Thursday, June 23, 2005
8:30 a.m. - 12:00 p.m. &
1:30 p.m. - 5:00 p.m.

830 Punchbowl St. Honolulu, HI 96813 | Ph: (808) 586-8842 / Fax: (808) 586-9099 | Email: dlir.director@hawaii.gov | Hawaii.gov/labor

PRESENTERS

Department of Labor and Industrial Relations

Nelson Befitel, Director of Labor and Industrial Relations
Gary Hamada, Administrator, Disability Compensation Division
James Hardway, Special Assistant to the Director

Keynote Speakers

Stephen L. Demeter, M.D.

Dr. Stephen L. Demeter has treated injured workers in Ohio, Arizona and Hawaii. He currently serves as the Director of Disability Evaluations and IMEs at Kaiser Permanente, Hawaii. He is board certified in pulmonary medicine, occupational medicine, internal medicine, disability evaluation, and critical care medicine. Dr. Demeter is a former professor and Head of Pulmonary and Critical Care Medicine at Northeastern Ohio Universities College of Medicine. He is also the past president of the American Academy of Disability Evaluating Physicians. He has authored numerous publications on occupational medicine, including the American Medical Association's reference to Disability Evaluation (2nd Ed).

Robert Sussman, M.D.

Dr. Robert Sussman currently serves as the medical director at the The Medical Corner, specializing in family and occupational medicine. He is Board Certified by the American Board of Family Practice and the American College of Occupational & Environmental Medicine (ACOEM). He is licensed in Pennsylvania and Hawaii, and treated injured workers in Hawaii's workers' compensation system since 1987. He is a member of the ACOEM and the Hawaii Independent Physician's Association.

Philip LeFevre, Work Loss Data Institute

Mr. Phil LeFevre is an Account Executive with Work Loss Data Institute (WLDI) where he worked in client services for his entire professional career. Phil has worked side-by-side with the editorial staff at WLDI in the development and presentation of disability duration and medical treatment guidelines from the *Official Disability Guidelines* product line, to reflect both evidence-based methodology and changing market demand for increased functionality and scalability, to make tangible and accessible the results of the latest important and emerging medical studies. Phil's work has been published in the 2003, 2004 and 2005 editions of *Official Disability Guidelines – Treatment in Workers' Comp*, 2002's *OSHA Durations Report* and the *Journal of Disability Medicine,* September 2002.

Notice

Today's seminar presentation and the written materials in this handout are intended as a guide on the current law and administrative rules governing Hawaii's workers' compensation system, and are not intended to replace any rule or statute or as a substitute for legal counsel. Decisions pertaining to each case should be determined based on the specific facts and circumstances of the case and pertinent law.

SYLLABUS

8:30 -8:40 a.m.
(1:30 – 1:40 p.m.)
Opening Remarks (Nelson Befitel, Moderator)

8:40 - 9:00 a.m.
(1:40 – 2:00 p.m.)
New Hearings and Claims Resolution Process (Gary Hamada)
- The Application and Response for a Hearing
- The Hearings Process
- Improving Efficiency, Transparency, Predictability and Accountability
- The Alternative Dispute Resolution Process

9:00 - 9:15 a.m.
(2:00 – 2:15 p.m.)
Restorative Service Plan (James Hardway)
- Purpose, Goals
- Requirements

9:15 - 10:00 a.m.
(2:15 – 3:00 p.m.)
Overview of "Evidence-Based Medicine" and the ODG (Phil LeFevre)
- What is "evidence-based medicine"?
- What are medical guidelines?
- How do medical guidelines benefit injured workers, physicians, case managers and attorneys?
- ACOEM/ODG Interplay
  - Brief explanation of first seven chapters of ACOEM
  - How they are supposed to work together with ODG under Hawaii's rules
- Background on the ODG
  - What is the Work Loss Data Institute?
  - Where did they get their information?
  - Why will ODG work in Hawaii?
  - How will they positively affect the workers' compensation system?
  - Accessing and using ODG Treatment Guidelines

10:00 - 10:15 a.m.
(3:00 – 3:15 p.m.)
BREAK

10:15 - 11:30 a.m.
(3:15 - 4:30 p.m.)
Case History/Analysis (Stephen Demeter, M.D, and Robert Sussman, M.D.)
- Treatment Guidelines vs. No Treatment Guidelines
- Examples of how guidelines benefit injured workers, medical providers, employers, etc.

11:30 - 11:40 a.m.
(4:30 – 4:40 p.m.)
Alternative Treatment Plans (Nelson Befitel)
- Submitting a valid alternative treatment plan
- What should be submitted
- Factors that will be considered for approval

11:40 - 12:00 p.m.
(4:40 – 5 p.m.)
Closing Remarks - Questions and Answers (Time Permitted)
- All written questions will be responded to via e-mail or posted on www.hawaii.gov/labor

* Parentheses ( ) denote afternoon session

Opening Remarks

Nelson Befitel

Creating an Environment of Expectations

2005 Administrative Rules for Hawaii's Workers' Compensation Reform

EDUCATIONAL SEMINAR

June 23, 2005

Nelson Befitel, Moderator

Welcome to DLIR's Educational Seminar

- Educational/Informational Seminar on New Administrative Rules.
- Respect time of fellow attendees and panel members.
- Control unnecessary disruptions.
- Turn off ringer on cellular phones.

Welcome to DLIR's Educational Seminar

Questions and Comments

- **Write them on index cards.**
- **Questions will be taken after entire presentation is done, as time permits**
- **Post Seminar**
  - ❑ **DLIR will respond to your questions by e-mail.**
  - ❑ **FAQ's will be posted on DLIR's website: hawaii.gov/labor**

Goals of Workers' Comp

- **Ensure injured workers receive quality medical care that is necessary and reasonable.**

- **Ensure injured workers promptly receive disability benefits and necessary vocational training that they are entitled to.**

- **Ensure costs and insurance premiums are affordable for businesses.**
  - **Should not serve as a barrier to doing business in Hawaii.**

What to Expect?

Hearings and Resolution Process

- **Modernized hearings process that brings efficiency, transparency, predictability, and accountability.**
- **Hearings scheduled and disputes resolved in a fair and more timely manner.**
- **Disputes resolved by an impartial hearings officer.**
- **DCD Hearings Officer**
  - **Not advocate for worker or employer, but advocate of the law and steward of the work comp system.**
  - **Judicially trained by the National Judicial College.**
  - **Subject to review to ensure consistency and fairness.**

What to Expect?

Medical Care and Treatment of Injured Workers

- **Diagnosis and treatment. Based on the most current "best practices" of medicine by requiring the use of ODG Treatment Guidelines.**

- **Rules allow flexibility. May treat more expansively than what the ODG guidelines specify if:**
  - ❑ **Specific case requires such type of treatment; and**
  - ❑ **There is objective justification based on "evidence-based medicine" to support treatment.**

Today's Agenda

- **The Improved Hearings Process**
  Mr. Gary Hamada, Administrator, DLIR Disability Comp. Div.
- **The Restorative Service Plan (RSP)**
  Mr. James Hardway, Assistant to the Director
- **Overview of the ODG**
  Mr. Phil LaFevre, Work Loss Data Institute
- **Case Analysis (New System vs. Old System)**
  Stephen Demeter, M.D. (Kaiser Permanente Hawaii)
  Robert Sussman, M.D. (The Medical Corner)
- **Alternative Treatment Plans**
  Nelson Befitel, DLIR Director

"Progress is impossible without change, and those who cannot change their minds cannot change anything."

-- Albert Einstein

New Hearings
and
Claims Resolution Process

Gary Hamada

The Improved Claims Hearings and Resolution Process

Gary Hamada, Administrator
DLIR Disability Compensation Division (DCD)

June 23, 2005

The New Administrative Rules

- **We now have basic rules on:**
  - **The "discovery" or exchange of evidence in preparation for a hearing.**
  - **The scheduling of hearings.**
  - **The expectation and conduct of the parties during the hearings process.**
  - **The alternative dispute resolution process.**

The New Administrative Rules

- **Encourage parties to resolve their disputes without a hearing.**
- **Eliminate appearance of favoritism when it comes to scheduling.**
- **Ensure hearings are scheduled and held in an orderly and efficient manner.**
- **Result in more cases being resolved in a timelier manner.**
- **Eliminate "unwritten rules."**

Discovery Rules

- "Interrogatories" limited to 20 questions.

- Depositions allowed only under certain circumstances:
  - Responses to interrogatories are insufficient; or
  - All parties agree to deposition.

- Additional Discovery
  - Only if "reasonable and necessary"; or
  - Upon agreement of the parties.

HAR Section 12-10-65

Requesting a Hearing

- **File only if unable to resolve dispute.**

- **Written requests must contain certain information to prepare for hearing:**
  - ❑ **Issue(s) to be resolved;**
  - ❑ **Names of all witnesses; and**
  - ❑ **Notice to opposing party that they have 20 days to file a response.**
    - ✓ ***Use Department's form (WC 77 Request for Hearing).***

- **Request for hearing must be sent by certified mail.**
  - ➢ **Ensures other party (especially the unrepresented worker) receives notice of application of hearing.**

HAR Section 12-10-72.1

Response to Hearing Application

- **Must file response within 20 days after receiving opposing party's request for hearing.**

- **Must submit the following information to prepare for hearing:**
  - ❑ **Response to statement of the issue(s); and**
  - ❑ **Names of witnesses;**
    - ✓ ***Use Department's form (WC 77 Request for Hearing).***

HAR Section 12-10-72.1

Scheduling the Hearing

All hearings will be scheduled within 80 days from the Request for Hearing.

Expedited Hearings

- **Claimant (employee) may file for an expedited hearing in certain situations:**

  - ❑ **Employer (insurance carrier) failed to file a response to claimant's application for hearing; and**

  - ❑ **Claimant will "suffer severe economic hardship or severe physical or mental harm" if an expedited hearing is not held to determine merit of the case.**

HAR Section 12-10-72.1

Exchange of Documents & Witnesses

- **Exchange of Documents.** All documents that you want the hearings officer to consider must be provided to the Director and opposing party 15 days before the hearing.

This includes:

- ✓ Medical and hospital reports.
- ✓ IME report.
- ✓ Vocational reports.
- ✓ Records kept by employer.
- ✓ Deposition transcript.
- ✓ Written testimonies.

- Absent a showing of "good cause," documents not exchanged in accordance with this rule, will not be considered.

HAR Section 12-10-72.1

Exchange of Documents & Witnesses

- Naming Witnesses. Only witnesses named on Application for Hearing and Response will be allowed to testify at hearing.
  - ✓ Update/amend Application and Response as necessary.

- Exceptions. Unnamed witnesses may testify under limited circumstances:
  - ✓ Rebuttal Witness; or
  - ✓ "Good cause" for failing to name witness.
    - *Must establish compelling reason for failure to name witness.*

Exchange of Documents & Witnesses

Purpose of Rule:

- **Facilitate Settlement.** Encourage resolution by prompting parties to think about their case.
- **Ensure parties receive fair notice and opportunity to be heard.**
- **Expedite Hearing.** Allow the hearings officer and the parties sufficient time to prepare for the hearing.
  - Help define the parties' position and their goals.
  - Isolate issues and relevant documents and testimonies for hearing.

The Hearing Date!

The Hearing Date is a Firm Date;

it is not a suggested date.

A continuance generally delays the resolution of the claim at the expense of injured workers and employers.

Continuance of Hearing . . . Rarely Granted

- **Unless you have reached a settlement, be prepared to go to hearing.**

- ***Continuance will be granted only when there is "good cause" to continue. HAR Sec 12-10-72.1 provides certain situations that would constitute "good cause."***

Continuance of Hearing . . . Rarely Granted

- ***Absent additional grounds, the following generally do <u>not</u> constitute "good cause" :***

  - ***Not prepared for the hearing.***
  - ***Did not complete investigation and/or discovery.***
  - ***Did not obtain an IME report.***
  - ***Did not obtain witnesses' statements.***
  - ***Witness is unavailable for hearing.***
  - ***An agreement of the parties to continue case.***

HAR Sec 12-10-72.1

- ***Remember, the parties will generally have at least 80 days to prepare for the hearing.***

The Workers' Comp Hearing

- **No *Ex Parte* Communication. Hearings officer will not communicate with any party outside of the proceeding on matters relating to the case.**
  - **Exceptions. Scheduling or other purely administrative matters. Employer (Insurance Carrier) waives appearance for particular hearing (e.g., disfigurement determination).**
- **All Hearings Will be Recorded.**
  - **Ensure full and complete record of the hearing.**
  - **Allow Director to review the hearing and decision to ensure consistency, and proper application of the law.**
  - **Efficiency. Hearings officers are no longer required to handwrite or type the complete record of proceedings. Allow hearings officer to issue concise decision and order.**

The Hearings Officer's Decision

- **New format** – Addresses issues that are relevant to the case in a concise and easier-to-read format.
  I. Introduction (identification of parties and hearings officer, date of hearing)
  II. Parties' Position
  III. Issues
  IV. Findings of Fact
  V. Principles of Law
  VI. Conclusion of Law
  VII. Decision and Order

- **Goal** – Issue decisions in timelier manner.

Alternative Dispute Resolution

- Parties may obtain private third party to resolve dispute using two methods:
  - **Mediator.** The third party serves as a mediator (settlement-officer) to assist the parties in resolving their disputes.
  - **Private Referee.** The third party serves as a hearings officer to resolve dispute.

Alternative Dispute Resolution

- **Basic Requirements:**
  - ❑ Agreement must be in writing, executed by all parties after the work comp claim.
    - ➢ Standard arbitration clauses signed before injury (e.g., employment handbook/contract, employment application, etc.) are invalid.
  - ❑ Unless agreed by the parties, all costs are equally shared.
    - ➢ Employer may pay for the entire costs.
  - ❑ Mediator/Referee must submit recommended decision to the Director within 60 days of the hearing.
  - ❑ Parties may agree that the "decision" will be binding.

Alternative Dispute Resolution

- The recommended decision will be approved unless contrary to Chapter 386. (Deference will generally be given to the private referee's decision)

- If approved, the referee's decision will have the same effect as a Director's decision issued under Chapter 386.

- If the referee's decision is not modified or vacated by the Director, and the parties agreed that no appeal can be taken, the decision is binding on the parties.

THANK YOU FOR YOUR ATTENTION

Gary Hamada, Administrator
DLIR Disability Compensation Division (DCD)

Restorative Service Plan

James Hardway

Creating an Environment of Expectations

RESTORATIVE SERVICE PLAN

Presented by:
James P. Hardway
Special Assistant to the Director
June 23, 2005

teamwork

HAWAII STATE DEPARTMENT OF LABOR & INDUSTRIAL RELATIONS

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
Disability Compensation Division
P.O. BOX 3769, HI 96812
Phone (808) 586-9181 FAX: (808) 586-9219
Restorative Services Plan

Patient's Last Name:	First:	MI:	Attending Physician:	Date of Injury:
Height: / Weight:	Treating Provider of Service:		Discipline	
SSN:	Date of Birth:	Facility Name:		Phone:
Employer:		Facility Street Address:		Fax:
Current Occupation:		Facility City, State, Zip:		
Diagnosis Specific to Industrial Claim:		Other Diagnosis or Conditions that May Affect Recovery:		

List the essential occupational functions required in patient's job (e.g., physical requirements such as lifting, carrying, standing, sitting, reaching overhead or mental status):	Functional Findings Initial Visit	Functional Findings 8th Visit Date:	Functional Findings 14th Visit Date:
1.			
2.			
3.			
4.			
Hours working per shift/week			
Patient's Reported Average Pain Intensity (0 to 10 Scale)	/10	/10	/10
Attach a current Pain Diagram with each plan			
Treatment Plan for diagnosis pursuant to Sec. 12-15-32, HAR (1-8 Visits)	(include frequency)	Visits 9-14	Visits 15-20
Expected number of visits to regain essential occupational functions:			
Visits Attended/Prescribed for the Treatment Plan			
Provider Comments:			
Provider signature Date:			
Payor: Approval for Future Visits in deviation of ODG guidelines (Yes – No)		Visits 9-14	Visits 15-20
Payor: Signature Date			
Payor Comments			

*Please refer to the back section for specific instructions on the completion of the forms
Form - RSP1

teamwork

What are we addressing?

- No medical rational under the old rules for 15 treatments within 60 days before treatment authorization is required.
- Minimize over-utilization of the injured worker through needless or unnecessary treatments.

What are we addressing?

- **U.S. Average**
  - 30.6% of WC cases involve lost time*
  - 14.6% of claims are awarded Temporary Total Disability**
- **Hawaii Average**
  - 52.8% of WC cases involve lost time*
  - 36.8% of claims are awarded Temporary Total Disability**

What is a Restorative Service Plan (RSP)?

- Document to help facilitate Return-to-Work.
- Compliments and Justifies Medical Treatment Guidelines or Alternative Treatment Plans.
- Objective document that assists all parties to understand the nature and extent of the employee's injury and treatment.

Why a Restorative Service Plan?

- Protects injured employees by documenting functional improvement to show effectiveness.
- Protects Medical Providers by justifying "approved" alternative treatment guidelines.
- Protects Employers by ensuring that the medical care they are paying for is effective.
- Gives the Department the ability to make correct decisions in denying or approving controverted treatment plans.

Why a Restorative Service Plan?

- To effectively monitor requested tests.
- To assist compliance with treatment protocols.
- To effectively monitor the requested treatments.
- To assure compliance with the ODG or approved treatment plan.

Why a Restorative Service Plan?

- To effectively monitor the expected return to work.
- Ensure that everyone (DLIR, insurance carriers/employers, and physicians) are "all on the same page".
- Return the injured worker as quickly as possible to their job or move them into vocational rehabilitation for retraining.

What is Required on the Restorative Service Plan?

- Physical or mental functions necessary to perform job duties.
- Identify the functional deficits caused by the injury.
- Identify the minimal functional level to be attained in order to return to work.
- Provide a treatment protocol.
- Provide a timeline for treatment outcome.

Process

- The employer and adjuster are responsible for providing the minimum job functions to the provider.
- Physicians fill out the RSP form and submits with the WC-2 Physicians Report to the Employer.
- Physician Updates the RSP after the 8th, 14th, and 21st visit.

Issues and Resolutions

- Creating and describing treatment protocols based on written reference.
  - ODG and new revisions to RSP
- Employer doesn't send job functions.
  - Revisions to WC-1
- Too much paperwork and time for physicians who need to see a certain number of patients.
  - Revisions to RSP

Conclusion

- To substantiate effective courses of treatment.
- As a starting point for conversation when parties disagree regarding treatment.
- To assist the Department in decision making over controverted treatment.
- Eliminate “unnecessary” or “inappropriate” treatment.

Conclusion

We are all obligated to ensure that treatment restore the health and improve the individual function of the employee and return them to work.

END

Overview of "Evidence-Based Medicine" and the ODG

Phil LeFevre

Official Disability Guidelines

Overview of ODG from WLDI

June 23rd, 2005

Phil LeFevre
Work Loss Data Institute
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760-753-9992

Agenda

1. Background on WLDI
2. Define evidence-based medicine
3. Applications in treatment guides
4. Overview of ODG Treatment
5. Samples
6. Conclusions

Work Loss Data Institute

- Independent database development co. focused on workplace health and productivity, based in Encinitas, CA
- Publisher of ODG Treatment
- Contractor for ACOEM Guidelines
- S.M.E. Charles W. Kennedy, MD, founding member of Evidence-Analysis Committee for AAOS
- 80-Member Advisory Board

Definition: EBM

- Evidence-based medicine (EBM) is the conscientious, explicit & judicious use of current best evidence in making decisions about the care of individual patients
  - David L Sackett, William MC Rosenberg, JA Muir Gray, R Brian Haynes, W Scott Richardson, *Evidence-Based Medicine: What it is and what it isn't.* This article is based on an editorial from the British Medical Journal on 13th January 1996 (BMJ 1996; 312: 71-2)

Best Evidence?

- Critical appraisal of available scientific evidence; not clinical opinion or anecdotal reports
- Studies published in peer-reviewed medical journals (JAMA, etc)
- Evaluate the efficacy of treatment, potential associations, LOD

Treatment Guidelines

- Utilization review/management
- Clinical practice
- Apply principals of EBM
- Facilitate communication among all parties (on the “same page”)
- EBM makes this non-adversarial, and ultimately, defensible

Hawaii Rules

- Frequency/Extent of treatment in accordance with ODG Treatment
- In addition, the director references Chapters 1-7 of the ACOEM Occupational Medicine Practice Guidelines, as an expression of disability management philosophy
- The two do not overlap

ACOEM Guidelines.com

CONTENTS

How to Use this Site
Front Matter

I. Foundations Of Occupational Medicine Practice

1. Prevention
2. General Approach to Initial Assessment and Documentation
3. Initial Approaches to Treatment
4. Work-Relatedness
5. Cornerstones of Disability Prevention and Management
6. Pain, Suffering, and the Restoration of Function
7. Independent Medical Examinations and Consultations

II. Presenting Complaints

8. Neck and Upper Back Complaints
9. Shoulder Complaints
10. Elbow Complaints
11. Forearm, Wrist, and Hand Complaints
12. Low Back Complaints
13. Knee Complaints
14. Ankle and Foot Complaints
15. Stress-related Conditions
16. Eye

Appendix. Evidence-based Medicine: What does it mean? Why do we care?

ODG Treatment

- Focuses on treatment, does not cover Ch. 1-7 of ACOEM Guidelines
- Independent (not representative of just one single specialty society)
- Designed for UR/UM, in addition to clinical practice
- 3rd edition, updated annually
- Links from recs. to evidence

ODG Treatment

- Approved in NGC by Federal Agency for Healthcare Research & Quality
- Recommended by AADEP, AAOHN and ABIME
- Provider application courses by AADEP
- Adopted in OH, ND, FL, BC, ON, Bahamas, plus State Funds of MI & CO, and pre-proposal rules written in TX
- Being used/accepted in CA

ODG Treatment

- Available in textbook or Web version
- Can be integrated with internal claims/UR/software applications
- 50% discount offered to all Hawaii participants ($162.50)
- 30-day free trials available

Official Disability Guidelines

Welcome to www.odgtreatment.com

Disability Duration Guidelines (*Official Disability Guidelines* 10th Anniversary Edition)
Integrated with Treatment Guidelines (*ODG Treatment in Workers' Comp* 3rd ed.)

(Click on picture of books below to enter site)

Note: New Feature Recently Added to Return-to-Work Summary Guidelines click here for details

CONTENTS

Background & Description

Explanation of Medical Literature Ratings

Ankle & Foot (updated 6/2/05)

Burns (updated 5/3/05)

Carpal Tunnel Syndrome (updated 6/6/05)

Elbow (updated 6/2/05)

Eye (updated 5/3/05)

Fitness for Duty (updated 11/30/04)

Forearm, Wrist, & Hand (updated 5/1/05)

Hernia (updated 6/1/05)

Impairment Guidelines (updated 9/8/03)

Knee & Leg (updated 6/1/05)

Low Back (updated 6/6/05)

Neck (updated 6/6/05)

Pain (updated 6/6/05)

Shoulder (updated 6/2/05)

Stress/Mental (updated 5/26/05)

Work Loss Data Institute

Explanation of Medical Literature Ratings

(Ratings "1a" through "11c" noted under summary of each study)

Back to ODG - TWC Index

Ranking by Type of Evidence:

(click on links to go to explanation)

STUDIES

1. Systematic Review/Meta-Analysis
2. Controlled Trial – Randomized (RCT) or Controlled
3. Cohort Study - Prospective or Retrospective
4. Case Control Series
5. Unstructured Review

OTHER:

6. Nationally Recognized Treatment Guideline (from guidelines.gov)
7. State/Other Treatment Guideline
8. Foreign Treatment Guideline
9. Textbook
10. Conference Proceedings/Presentation Slides
11. Case Reports and Case Series

Ranking by Quality within Type of Evidence:

(click on links to go to explanation)

a. High Quality
b. Medium Quality
c. Low Quality

Ranking by Type of Evidence

1. Systematic Review/Meta-Analysis

Systematic Reviews: Written by reviewers who use explicit and rigorous methods to identify, critically appraise, and synthesize relevant studies from the published medical research. They use the process of systematically locating, appraising and synthesizing evidence from scientific studies in order to obtain a reliable overview. The function of a systematic review is: 1) to summarize the literature and 2) to provide new information that may not be readily apparent from individual studies where the effects are small, but become apparent in when the data from many studies are pooled together. Example: Cochrane Database of Systematic Reviews.

Meta-analysis: A kind of systematic review which is an overview which uses quantitative methods to summarize the results. A quantitative method of combining the

Basis for ODG Treatment

- Comprehensive, ongoing medical literature review
- Studies from peer-reviewed medical journals (JAMA, etc)
- Each ranked alpha-numerically
- Links from recommendations are provided to the supporting evidence, indexed in abstract form

ODG -TWC

Official Disability Guidelines - Treatment in Workers' Compensation
Integrated Treatment/Disability Duration Guidelines

Low Back - Lumbar & Thoracic (Acute & Chronic)

Back to ODG - TWC Index

CONTENTS

Treatment Protocols.....2

Codes for Automated Approval 5

Procedure Summary 7

Higher Priority References 23

Low Priority References.....41

(Click on any reference above to go to reference summary)

Reference Summaries.....45
(Including abstract, evaluation, and rating)

(Click on summary to go to full copy if included as a separate document)

Explanation of Medical Literature Ratings (see Contents for more detail):

Ranking by Type of Evidence:
1. Systematic Review/Meta-Analysis
2. Controlled Trial – Randomized (RCT) or Controlled
3. Cohort Study - Prospective or Retrospective
4. Case Control Series
5. Unstructured Review

OTHER:

6. Nationally Recognized Treatment Guideline (from guidelines.gov)
7. State Treatment Guideline
8. Foreign Treatment Guideline
9. Textbook
10. Conference Proceedings/Presentation Slides

ODG Treatment: 3 Sections

- Treatment Protocol (ideal, or recommended treatment plan)
- Codes for Auto-Approval (designed for auto-pay, streamline UR)
- **Procedure Summary** (lists all potential therapies, many of which are recommended as options)

Treatment Protocols

Identify Radicular Signs

- First visit: may be with Primary Care Physician MD/DO (50%), Orthopedist (33%), or Chiropractor (17%)
- Determine presence or absence of radiculopathy:
  - Sensation: Feeling pain radiating below the knee (calf or lower), not just referred pain (pain radiating to buttocks or thighs), & dermatological sensory loss
  - Straight leg raising test (sitting & supine), productive of leg pain
  - Motor strength and deep tendon reflexes
  - Document flexibility/ROM (fingertip test), muscle atrophy (calf measurement), local areas of tenderness, visual pain analog, sensation alternation
  - History
  - NOTE: Radiculopathy is often over-diagnosed. For unequivocal evidence of radiculopathy, refer to the *AMA Guides to the Evaluation of Permanent Impairment*, 5th Edition, page 382-383.
- Rule out "red flag" diagnoses, including diagnostic studies (See other treatment parameters for each of these):
  - Cauda Equina Syndrome [ICD9 344.6] (Schedule emergency procedure)
  - Fracture, Dislocation, Wound [ICD9 805.4, 805.5, 806.4, 806.5, 839.2, 838.3, 876, 911, 922.3, 926.11, 942, 952.2]
  - Cancer, Infection [ICD9 171.7, 195.8, 215.7]
  - Dissecting/Ruptured Aortic Aneurysm [ICD9 441.0]
  - Others (prostate problems, endometriosis/gynecological disorders, urinary tract infections, & renal pathology)

Without Radiculopathy (90% of cases)

[ICD9 724.2, 724.5, 724.8, 724.9, 846.0, 847.2, 847.9]

- Also first visit (day 1):
  - Prescribe decreased activity, if necessary, based on severity and difficulty of job; passive therapy with heat/ice (3-4 times/day), stretching, appropriate analgesia (i.e., acetaminophen) and/or anti-inflammatory (i.e., ibuprofen) [*Benchmark cost: $14*]; back to work except for severe cases in 72 hours, possibly modified duty. Avoid bed rest,
  - No X-Rays unless significant trauma (e.g., a fall)
  - If muscle spasms, then consider muscle relaxant with limited sedative side effects [*Benchmark cost: $44*] (Note: The purpose of muscle relaxants is to facilitate return to activity, but muscle relaxants have not been shown to be more effective than NSAIDs.)
  - REASSURE PATIENT: common problem (90% of patients recover spontaneously in 4 weeks)

> ODG Return-To-Work Pathways *(847.2 lumbar sprain & 724.2 lumbago)*
> Modified Duty --
> Mild, clerical/modified work: 0 days
> Severe, clerical/modified work: 3 days
> (See ODG Capabilities & Activity Modifications for Restricted Work under "Work" in Procedure Summary)

- Second visit (day 7 – about 1 week after first visit)
  - Document progress (flexibility, areas of tenderness, motor strength, straight leg raise – sitting & supine)
  - If still 50% disabled then prescribe manual therapy [*Benchmark cost: $250*]: Refer to massage therapist, chiropractor, physical therapist, or occupational

With Radiculopathy (10% of cases)
[ICD9 722.1, 722.2, 722.32, 722.52, 722.73, 722.83, 722.93, 724.0, 724.3, 724.4]

- Also first visit (day 1)
  - Same as non-radicular

> ODG Return-To-Work Pathways *(722.x intervertebral disc disorders)*
> Disc bulge --
> Mild cases with back pain, avoid strenuous activity: 0 days
> Herniated disc --
> Initial conservative medical treatment, clerical/modified work: 3 days

- Second visit (day 7 – about 1 week after first visit)
  - Same as non-radicular, but
  - Reassure, but if increased numbness or weakness of either leg, get back to provider in one day
  - Consider referral to musculoskeletal physician (Orthopedist/Physical Med/Sports Med)
- Third visit (day 14 – about 1 week after second visit)
  - Same as non-radicular, but
  - About 50% can be back at modified duty
  - If improvement, then add strengthening exercises, increased activity
  - Consider an ESI (Epidural Steroid Injection) for severe cases hoping to avoid surgery [*Benchmark cost: $676*] (Note: The purpose of ESI is to reduce pain and inflammation, restoring range of motion and thereby facilitating progress in more active treatment programs, but this treatment alone offers no significant long-term functional benefit.)
- Fourth visit (day 21 to 28 – about 1-2 weeks after third visit)
  - Document, if no improvement then:
  - First MRI (about 3% of total cases, or 30% of radicular cases) to confirm extruded disk with nerve root displacement [*Benchmark cost: $1,600*]
  - (MRI or CT **not** indicated without obvious clinical level of nerve root dysfunction, or before 3-4 weeks)
  - If MRI negative and surgery still justified by severity of symptoms, then combined myelogram & post-myelogram CT [*Benchmark cost: $750*]
  - Second MRI only if progession of neurological symptoms (less than 1% of cases)
  - If no improvement, consider prescribing 2nd ESI (7-10 days after 1st) [*Benchmark cost: $615*]; there should be a maximum of two ESI's, and the second ESI can be 7-14 days after the first, depending upon the patient's response and functional gain.
  - Refer to fellowship trained Spine Surgeon: Neurosurgeon (50%), Orthopedist (50%)
  - Before surgery screen for psychological symptoms that could affect surgical outcome (e.g., substance abuse, child abuse, work conflicts, somatization, verbalizations, attorney involvement, smoking)
  - Possibly refer to psychologist for testing (MMPI or better, Waddell test) [*Benchmark cost: $540*]

> ODG Return-To-Work Pathways *(722.x intervertebral disc disorders)*
> Initial conservative medical treatment, manual work: 28 days
> Initial conservative medical treatment, regular work if cause of disability: 84 days

- Surgery (three months or more – after appropriate work-up and consultation) (about 2% of total cases, or 20% of radicular cases) (See also ODG Indications for Surgery™ -- Discectomy in Procedure Summary.)

- Reassure, but if increased numbness or weakness or other leg, get back to provider in one day
  - Consider referral to musculoskeletal physician (Orthopedist/Physical Med/Sports Med)
- Third visit (day 14 – about 1 week after second visit)
  - Same as non-radicular, but
  - About 50% can be back at modified duty
  - If improvement, then add strengthening exercises, increased activity
  - Consider an ESI (Epidural Steroid Injection) for severe cases hoping to avoid surgery [*Benchmark cost: $676*] (Note: The purpose of ESI is to reduce pain and inflammation, restoring range of motion and thereby facilitating progress in more active treatment programs, but this treatment alone offers no significant long-term functional benefit.)
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  - (MRI or CT **not** indicated without obvious clinical level of nerve root dysfunction, or before 3-4 weeks)
  - If MRI negative and surgery still justified by severity of symptoms, then combined myelogram & post-myelogram CT [*Benchmark cost: $750*]
  - Second MRI only if progession of neurological symptoms (less than 1% of cases)
  - If no improvement, consider prescribing 2nd ESI (7-10 days after 1st) [*Benchmark cost: $615*]; there should be a maximum of two ESI's, and the second ESI can be 7-14 days after the first, depending upon the patient's response and functional gain.
  - Refer to fellowship trained Spine Surgeon: Neurosurgeon (50%), Orthopedist (50%)
  - Before surgery screen for psychological symptoms that could affect surgical outcome (e.g., substance abuse, child abuse, work conflicts, somatization, verbalizations, attorney involvement, smoking)
  - Possibly refer to psychologist for testing (MMPI or better, Waddell test) [*Benchmark cost: $540*]

ODG Return-To-Work Pathways *(722.x intervertebral disc disorders)*
Initial conservative medical treatment, manual work: 28 days
Initial conservative medical treatment, regular work if cause of disability: 84 days

- Surgery (three months or more – after appropriate work-up and consultation) (about 2% of total cases, or 20% of radicular cases) (See also ODG Indications for Surgery™ -- Discectomy in Procedure Summary.)
  - Review options/outcomes with patient, let patient decide
  - Simple discectomy/laminectomy, minimally invasive [*Benchmark cost: $17,400*]
  - Outpatient (23 hour stay)
  - Post-op pain, walking exercises

ODG Return-To-Work Pathways *(722.x intervertebral disc disorders)*
Discectomy, clerical/modified work: 28 days
Discectomy, manual work: 56 days
Discectomy, heavy manual work: 126 days to indefinite
Laminectomy, clerical/modified work: 28 days
Laminectomy, manual work: 70 days
Laminectomy, heavy manual work: 105 days to indefinite

	restoration of motion: (1) Intervertebral disc prostheses address more severe degeneration, and (2) nucleus replacement products are designed for moderate degeneration… While disc replacement as a strategy for treating degenerative disc disease has gained substantial attention, it is not possible to draw any conclusion concerning disc replacement's effect on improving patient outcomes. As a result, disc replacement is considered investigational and controversial."
Discectomy/laminectomy	Recommended for indications below. Surgical discectomy for carefully selected patients with sciatica/radiculopathy due to lumbar disc prolapse provides faster relief from the acute attack than conservative management, although any positive or negative effects on the lifetime natural history of the underlying disc disease are still unclear. (Gibson-Cochrane, 2000) (Malter, 1996) (Stevens, 1997) (Stevenson, 1995) (BlueCross BlueShield, 2002) (Buttermann, 2004) Standard discectomy and microdiscectomy are of similar efficacy in treatment of herniated disc. (Bigos, 1999) [Note: Surgical decompression of a lumbar nerve root or roots may include the following procedures: discectomy or microdiscectomy (partial removal of the disc) and laminectomy, hemilaminectomy, laminotomy, or foraminotomy (providing access by partial or total removal of various parts of vertebral bone).] **ODG Indications for Surgery™ -- Discectomy/laminectomy:** I. Symptoms/Findings (confirm presence of radiculopathy), requiring ONE of the following: A. L3 nerve root compression, requiring ONE of the following: 1. Severe unilateral quadriceps weakness/mild atrophy 2. Mild-to-moderate unilateral quadriceps weakness 3. Unilateral hip/thigh/knee pain B. L4 nerve root compression, requiring ONE of the following: 1. Severe unilateral quadriceps/anterior tibialis weakness/mild atrophy 2. Mild-to-moderate unilateral quadriceps/anterior tibialis weakness 3. Unilateral hip/thigh/knee/medial pain C. L5 nerve root compression, requiring ONE of the following: 1. Severe unilateral foot/toe/dorsiflexor weakness/mild atrophy 2. Mild-to-moderate foot/toe/dorsiflexor weakness 3. Unilateral hip/lateral thigh/knee pain D. S1 nerve root compression, requiring ONE of the following: 1. Severe unilateral foot/toe/plantar flexor/hamstring weakness/mild atrophy 2. Mild-to-moderate unilateral foot/toe/plantar flexor/hamstring weakness 3. Unilateral buttock/posterior thigh/calf pain II. Imaging Studies, requiring ONE of the following: A. Nerve root compression (L3, L4, L5, or S1) B. Lateral disc rupture C. Lateral recess stenosis Diagnostic imaging modalities, requiring ONE of the following: 1. MR imaging 2. CT scanning 3. Myelography 4. CT myelography & X-Ray III. Conservative Treatments, requiring ALL of the following: A. Activity modification (>= 2 months) B. Drug therapy, requiring at least ONE of the following: 1. NSAID drug therapy 2. Other analgesic therapy 4. Muscle relaxants 5. Epidural Steroid Injection (ESI) C. Support provider referral, requiring at least ONE of the following: 1. Manual therapy (massage therapist or chiropractor) 2. Physical therapy (teach home exercise/stretching) 3. Screen for psychological symptoms that could affect surgical outcome (Fisher, 2004)

Treatment Protocol

- Recommendation only, based on the evidence, for ideal cases
- Not to be used to deny care
- What to do, when to do it (when to go to MRI, surgery, etc)
- Provides benchmark costs, expected time away from work

Codes for Automated Approval

Note: Ideally each claim should be managed based on the details of the case using the Procedure Summary. The codes below are provided for payors without the resources to manage each case, who want to auto-pay the more routine claims based only on the diagnosis and procedure codes.

Diagnoses (without radiculopathy)

ICD9 Code	Name
724.2	Lumbago
724.5	Backache, unspecified
724.8	Other symptoms referable to back
846.x	Sprains and strains of sacroiliac region
847.x	Sprains and strains of other and unspecified parts of back
922.3x	Contusion of trunk

Procedures allowed:

CPT Code	Name	Maximum Occurrences
99204	Office/outpatient visit new	1
99213	Office/outpatient visit est.	6
99244	Office consult, mod complexity	1
97140	Manual therapy	6
98940	Spinal manipulation, one to two regions	
98925	Osteo Manipulation, 1-2 regions	
97001	Physical therapy evaluation	1
97110	Physical therapy procedure	6
97002	Physical therapy re-evaluation	1
97530	Therapeutic activities/exercises	6
90782	Therapeutic, prophylactic, or diagnostic injection	1

Diagnoses (with radiculopathy)

ICD9 Code	Name
722.x	Intervertebral disc disorders
724.0x	Spinal stenosis, other than cervical
724.3	Sciatica
724.4	Thoracic or lumbosacral neuritis or radiculitis, unspecified

Procedures allowed:

(same as above, plus the following)

Codes for Auto-Approval

- Maps CPT procedure codes to ICD9 diagnosis codes based on ideal TP
- Treatments supported in all cases up until “maximum occurrences”
- Designed for auto-pay, to streamline UR process when CPT requested
- Not to be used to deny care
- Can be integrated w/claims system

Procedure Summary – Low Back	
Procedure/topic	**Summary of medical evidence**
Activity restrictions	See Work.
Acupuncture	Not recommended for low back pain, but recommended for selected other conditions. Acupuncture has not been found effective in the management of back pain, based on several high quality studies, but there is anecdotal evidence of its success. Acupuncture is defined here to include all types of "dry needling" procedures (where no medication is injected) into cutaneous and subcutaneous tissues, muscles, or ligaments. Outcomes from trials are mixed, with some lower-quality trials producing positive results, but trials with higher validity scores tending to be negative. There is a tendency for patient expectations to influence the outcome independently of the treatment itself. (Tulder-Cochrane, 2000) (Cherkin, 2001) (van Tulder, 1999) (Smith, 2000) (Cherkin, 2003) (Giles, 2003) (Itoh, 2004) A recent high-quality meta-analysis concluded that the data do not allow firm conclusions about the effectiveness of acupuncture for acute low-back pain. For chronic low-back pain, acupuncture is more effective than no treatment or sham treatment immediately after treatment but it is not effective over the long term, and it is no more effective than any other conventional or "alternative" treatments. (Furlan-Cochrane, 2005) Note: See the Pain Chapter for conditions where acupuncture is recommended. **ODG Acupuncture Guidelines (See the Pain Chapter for conditions where it is recommended):** Initial trial of 3-4 visits over 2 weeks With evidence of objective functional improvement, total of up to 8-12 visits over 4-6 weeks
Adhesiolysis	Under study. Adhesiolysis is an epidural catheterization procedure used to treat chronic back pain by eliminating fibrous tissue from the epidural space. Local anesthetic and steroid are injected into the epidural space. Lysis of adhesions is then carried out by slow and intermittent injections of hypertonic saline. Current evidence on the safety and efficacy of this procedure does not appear adequate for it to be used without special arrangements for consent and for audit or research. Given the extremely low level of evidence available for percutaneous epidural neuroplasty (epidural neurolysis, lysis of epidural adhesions), it is recommended that this procedure be regarded as experimental at this time. (Gerdesmeyer, 2003) (Heavner, 1999) (Belozer, 2004) (BlueCross BlueShield, 2004) (Boswell, 2005)
Aerobic exercise	Recommended. Aerobic exercise is beneficial as a conservative management technique, and exercise of as little as 20 minutes twice a week can be effective in managing low back pain. (Malmivaara, 1995) (Sculco, 2001) (Liddle, 2004) (Kool, 2004) (Oleske, 2004)
Age adjustment factors	Recommended. Age is a significant predictor of return-to-work for low back pain, with one high quality study showing that each 5-year increase in age was associated with a 10.5% increase in the odds of remaining on disability at 6 months. (Okurowski, 2003) (Reiso, 2003) (Luo, 2004) Data from the CDC NHIS show a similar effect in disability durations. (Denniston, 2002)
Annuloplasty (IDET)	See IDET.
Antidepressants	Recommended as an option in chronic cases. A recent comprehensive review of clinical trials on the efficacy and safety of drugs for the treatment of low back pain concludes that available evidence supports the effectiveness of antidepressants in chronic LBP. (Schnitzer, 2004) (Staiger, 2003) (Note: This is different from the 1994 AHCPR Low Back Guideline, which concluded "Recommend Against" for Antidepressants.) (Bigos, 1999) See the Stress & Mental Chapter for Antidepressants - SSRI's versus tricyclics. See also the Pain Chapter
Anti-inflammatory medications	Recommended. Anti-inflammatories are the traditional first line of treatment, to reduce pain so activity and functional restoration can resume. (vanTulder-Cochrane, 2000) A comprehensive review of clinical trials on the efficacy and safety of drugs for the treatment of low back pain concludes that available evidence supports the effectiveness of non-selective nonsteroidal anti-inflammatory drugs (NSAIDs) in acute and chronic LBP, of muscle relaxants in acute LBP, and of antidepressants in chronic LBP. (Schnitzer, 2004) See Nonprescription Medications. See also the Pain Chapter. Note: There is also a school of thought that anti-inflammatories may delay healing of sprains as they do in fractures. (Talmage, 2002) This has not been proven by quality studies, so anti-inflammatory medications are recommended if they help the patient return to normal functional activities by reducing pain. See Return to work.
Aquatic therapy	Under study. There may be advantages to weightless running in back pain recovery. (Burns, 2001)
Arthrodesis	Definition: Arthrodesis is the fusion of a joint. See Fusion.
Arthroplasty	See Disk prosthesis.

Procedure Summary

- Most important feature of ODG
- Lists all potential therapies, associated with each condition
- Includes surgical procedures, physical medicine modalities, diagnostic/imaging tests
- Alphabetical order

Procedure Summary

- For each, provides summary of existing medical evidence
- Each entry begins with:
  - “Recommended…”
  - “Not Recommended”
  - “Under Study”

Procedure Summary

- Continues with summary of evidence
- Includes frequency and duration of care, where appropriate
- Includes patient selection criteria, where appropriate
- References cited and hyper-linked
- If not covered, no ruling

Tulder MW VA, Cherkin DC, Berman B, Lao L, Koes BW, Acupuncture for low back pain, *Cochrane Database Syst Rev* 2000;(2):CD001351

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BACKGROUND: Although low back pain is usually a self-limiting and benign disease that tends to improve spontaneously over time, a large variety of therapeutic interventions are available for the treatment of low back pain. OBJECTIVES: The objective of this review was to assess the effects of acupuncture for the treatment of non-specific low back pain. SEARCH STRATEGY: We searched the Cochrane Complementary Medicine Field trials register, the Cochrane Controlled Trials Register (1997, issue 1), Medline (1966 - 1996), Embase (1988 - 1996), Science Citation Index and reference lists of articles. SELECTION CRITERIA: Randomised trials of all types of acupuncture treatment that involves needling for subjects with non-specific low back pain. DATA COLLECTION AND ANALYSIS: Two reviewers blinded with respect to authors, institution and journal independently assessed trial quality and extracted data. MAIN RESULTS: Eleven trials were included. The methodological quality was low. Only two trials were of high quality. Three trials compared acupuncture to no treatment, which were of low methodological quality and provide conflicting evidence. There was moderate evidence from two trials that acupuncture is not more effective than trigger point injection or transcutaneous electrical nerve stimulation (TENS). There was limited evidence from eight trials that acupuncture is not more effective than placebo or sham acupuncture for the treatment of chronic low back pain. REVIEWER'S CONCLUSIONS: The evidence summarised in this systematic review does not indicate that acupuncture is effective for the treatment of back pain.

Publication Types: Review PMID: 10796434

Rating: 1b, Meta Analysis

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Tulder MW van, Blomberg SEI, de Vet HCW, van der Heijden GJMG, Bronfort G, Bouter LM. Traction for low back pain with or without radiating symptoms (Protocol for a Cochrane Review). In: *The Cochrane Library,* Issue 3, 2002.

Low back pain is a major health problem among populations in western industrialized countries, and a major cause of medical expenses, absenteeism and disablement (van Tulder 1995). Although low back pain is usually a self-limiting and benign disease which tends to improve spontaneously over time, a large variety of therapeutic interventions is available for the treatment of low back pain (van Tulder 1997b).

We have previously conducted a systematic review of the effectiveness of traction for back and neck pain (van der Heijden 1995). Traction is a widely used treatment for low back pain and it is often provided in combination with other treatment modalities. The most commonly used traction techniques are manual traction (i.e. the traction is exerted by the therapist, using arms and/or legs of the patient), inverted suspension (i.e. the traction is exerted by gravitational forces, through the body weight of the patient), bed rest traction (i.e. the traction is exerted by a pulley and weights) and motorized traction (i.e. the traction is exerted by a motorized pulley). Lumbar traction uses a harness (with velcro strapping) which is put around the lower rib cage and around the iliacal crest. Duration and level of force exerted through this harness can be varied in a continuous or intermittent mode. Only motorized traction and bed rest traction are inexhaustible and can therefore be standardized satisfactorily. With the other techniques the forces exerted are limited by total body weight and the strength of the patient or therapist. In applying traction force, counter forces depending on the patient's physical constitution must be taken into account, such as lumbar muscle tension, lumbar skin stretch and abdominal pressure. If the patient is lying on the traction table, the friction of the body on the table provides the main counter force during traction. These counter forces can be reduced by as much as 85% by using a friction free table-top, and by altering the angle of pull. As a result of this the exerted force can be reduced, and the risks of heavy traction disappear.

Procedure Summary

- Links lead recommendations to studies that support
- Provided in abstract form, ranked, highlighted, indexed
- Updated throughout year
- Can copy/paste and print
- Accountability/credibility

Procedure Summary

- Not “cookbook medicine”
- Many therapies work, therefore they are recommended as options
- Not every case has to follow the same road to recovery
- Doctor/patient can choose therapy they are most comfortable with

Procedure Summary

- Many therapies commonly used in WC are not effective
- They should be avoided, therefore are not recommended
- Waste money, delay recovery
- Can also be harmful to injured workers (invasive, dangerous)

	recommended. See Surface electromyography.)
Epidural steroid injections (ESI's)	Recommended as an option prior to surgery when there are radicular signs. Although epidural injections of steroids may afford short-term improvement in leg pain and sensory deficits in patients with sciatica due to a herniated nucleus pulposus, this treatment seems to offer no significant long-term functional benefit, and the number of injections should be limited to two, and only as an option for short-term relief of radicular pain after failure of conservative treatment and as a means of avoiding surgery and facilitating return to activity. (There is no evidence to support the use of invasive epidural injections of steroids, local anesthetics, and/or opioids as a treatment for acute low back pain without radiculopathy.) (Carette, 1997) (Bigos, 1999) (Hopwood, 1993) (Rozenberg, 1999) (Kay, 1994) (Khot, 2004) (Buttermann, 2004) (Buttermann2, 2004) (Samanta, 2004) (Dashfield, 2005) While the effects of the injection tend to be temporary - providing relief from pain for one week up to one year - an epidural can provide sufficient pain relief to allow the patient to progress with their rehabilitation program. Many types of physicians can be qualified to perform an epidural steroid injection, including an anesthesiologist, radiologist, neurologist, physiatrist and surgeon. Using fluoroscopy (live x-ray) for guidance, the physician directs a needle toward the epidural space. Fluoroscopy is considered important in guiding the needle into the epidural space, as controlled studies have found that medication is misplaced in 13% to 34% of epidural steroid injections that are done without fluoroscopy. The purpose of ESI is to reduce pain and inflammation, restoring range of motion and thereby facilitating progress in more active treatment programs. ESI use three approaches: transforaminal, translaminar (midline), and caudal. There is good evidence to support a preference for a transforaminal approach. The evidence also suggests that the transforaminal approach can deliver medication to the target tissue with few complications and is therefore used to identify the specific site of pathology. Needle Placement: Spinal imaging (fluoroscopic guidance) is required for all transforaminal epidural steroid injections. Since injections performed without radiographic guidance result in an increased risk of incorrect needle placement, spinal imaging is recommended for caudal and translaminar injections if available within 30 miles of the patient's home. Contrast epidurograms allow one to verify the flow of medication into the epidural space. Time to produce effect: Local anesthetic, approximately 30 minutes; corticosteroid, 48 to 72 hours for 80% of patients and 2 weeks for 20%. Whether injections are repeated depends upon the patient's response to the previous injection session. Subsequent injection sessions may occur after 1 to 2 weeks if patient response has been favorable. Injections can be repeated after a hiatus of three months if the patient has demonstrated functional gain and pain returns or worsens. If ESIs are repeated in the future, there should be increasing duration of relief and continued functional gain. Optimum duration in practice: Usually 1 to 3 sessions of injection(s), depending upon each patient's response and functional gain. Maximum duration in practice: Up to 3 to 4 sessions of injections are done as per the patient's response to pain and function. Patients should be reassessed after each injection session. If a patient does not experience any back pain or leg pain relief from the first epidural injection, further injections will probably not be beneficial. Epidural steroid injections should not be performed on patients whose pain is from a tumor or infection, and if suspected, an MRI scan should be done prior to the injection to rule out these conditions. Injection of multiple levels concurrently: not recommended since the medication from a single injection may move freely up and down the spine. There is no role for a "series" of injections. Each injection should be individually evaluated for clinical efficacy (diagnostically and/or therapeutically). If complete, but only temporary pain relief occurs after transforaminal epidural injection, another type of treatment should be considered. One study showed that after fluoroscopically guided ESIs, 32% reported more than 2 months of pain relief, 39% reported less than 2 months of pain relief, and 29% reported no relief from the injection. (Delport, 2004) (Botwin, 2002) (Vad, 2002) (Colorado, 2001) (CMS, 2004) We recommend a maximum of two ESIs in most circumstances, and only when there is documented radiculopathy (by exam, imaging, or neuro-testing) which is unresponsive to conservative treatment. We do not require imaging such as an MRI prior to injection; the evidence is mixed and some guidelines recommend it, while others do not. (Manchikanti , 2003) (ICSI, 2004) (Cigna, 2004) **Criteria for the use of Epidural steroid injections:** *Note: The purpose of ESI is to reduce pain and inflammation, restoring range of motion and thereby facilitating progress in more active treatment programs, and avoiding surgery, but this treatment alone offers no significant long-term functional benefit.* 1) Radiculopathy must be documented (by exam, imaging, or neuro-testing) 2) Initially unresponsive to conservative treatment (exercises, physical methods, NSAIDs and muscle relaxants) 3) Surgery (discectomy) may be an option if more conservative therapies fail 4) Injections should be performed using fluoroscopy (live x-ray) for guidance 4) A maximum of no more than a total of two ESIs in most circumstances 5) The subsequent injection may occur after 1 to 2 weeks if patient response has been favorable to the first injection
Ergonomics interventions	Under study. There was no good-quality evidence on the effectiveness of ergonomics or modification of risk factors in

Procedure Summary

- ESI: Recommended as option prior to surgery in radicular cases
- To avoid surgery, allow for the restoration of function
- Help return to activity

Fusion (spinal)	Not recommended in the absence of fracture, dislocation, or instability. There is no scientific evidence about the long-term effectiveness of fusion for degenerative disc disease compared with natural history, placebo, or conservative treatment. There is no good evidence from controlled trials that spinal fusion is effective for treatment of any type of low back problem, in the absence of spinal fracture or dislocation, or spondylolisthesis if there is instability and motion in the segment operated on. Patients with increased instability of the spine after surgical decompression at the level of degenerative spondylolisthesis may be candidates for fusion. It is important to note that, although it is being done, lumbar fusion for general back pain very seldom cures the patient. A recent study has shown that only 29% assessed themselves as "much better" in the fusion group versus a 17% complication rate (including 9% life threatening or re-operation). Another clinical trial found that the success rate of lumbar fusion was less than or equal to noninvasive therapy -- excercises for three weeks and a lecture. (Gibson-Cochrane, 2000) (Fritzell, 2001) (Savolainen, 1998) (Wetzel, 2001) (Bigos, 1999) (Washington, 1995) (DeBarard, 2001) (Ivar Brox, 2003) (Deyo, 2004) A recent clinical trial concluded that patients with chronic low back pain who followed cognitive intervention and exercise programs improved significantly in muscle strength compared with patients who underwent lumbar fusion. (Keller, 2004) A recent study on improving quality through identifying inappropriate care found that use of guideline-based Utilization Review (UR) protocols resulted in a denial rate for lumbar fusion 59 times as high as denial rates using non-guideline based UR. Lacking review criteria linked to clinical evidence, UR organizations may become "risk averse" in denying care. (Wickizer, 2004) Lumbar spinal fusion surgeries use bone grafts, and are sometimes combined with metal devices, to produce a rigid connection between two or more adjacent vertebrae. The therapeutic objective of spinal fusion surgery for patients with low back problems is to prevent any movement in the intervertebral spaces between the fused vertebrae, thereby reducing pain and any neurologic deficits. Various theoretical rationales are given for the use of fusion in patients with low back problems. One theory postulates that in cases of significant spinal instability (abnormally increased motion at an intervertebral level), fusion prevents painful compression of the neural structures. Another controversial theory holds that, in some cases, back symptoms arise from the disc itself and fusion relieves symptoms by greatly reducing forces compressing the disc. Disc degeneration at the mobile segment next to a lumbar spinal fusion is now considered a potential long-term complication of spinal fusion that can necessitate further surgical intervention and adversely affect outcomes. (Park, 2004) The profit motive and market medicine have had a significant impact on clinical practice and research in the field of spine surgery. (Weiner, 2004) **While not recommended, Patient selection criteria if Fusion is to be performed anyway:** For chronic low back problems, fusion should not be considered within the first 3 months of symptoms, except for fracture or dislocation. Indications for spinal fusion may include: 1) Neural arch defect Spondylolytic spondylolisthesis, congenital unilateral neural arch hypoplasia. 2) Segmental Instability - Excessive motion, as in degenerative spondylolisthesis, surgically induced segmental instability. 3) Primary Mechanical Back Pain/ Functional Spinal Unit Failure - Multiple pain generators objectively involving two or more of the following: (a) Internal disc disruption (poor success rate if more than one disc involved), (b) Painful motion segment, as in annular tears, (c) Disc resorption, (d) Facet syndrome, and or (e) Ligamentous tear 4) Revision surgery for failed previous operation(s) if significant functional gains are anticipated. Revision surgery for purposes of pain relief must be approached with extreme caution due to the less than 50% success rate reported in medical literature. 5) Infection, tumor, or deformity of the lumbosacral spine that cause intractable pain, neurological deficit and/or functional disability. **Pre-Operative Surgical Indications Required:** Pre-operative clinical surgical indications for spinal fusion include all of the following: 1) All pain generators are identified and treated; and 2) All physical medicine and manual therapy interventions are completed; and 3) X-ray, MRI, or CT/Discography demonstrating disc pathology or spinal instability; and 4) Spine pathology limited to two levels; and 5) Psychosocial screen with confounding issues addressed. 6) For any potential fusion surgery, it is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of fusion healing. (Colorado, 2001) (BlueCross BlueShield, 2002) Presurgical predictors of poor outcomes from fusion are number of prior low back operations, low houshold income at time of injury, older age, lawyer involvement, and the presence of depression. (DeBarard, 2001) In acute spinal cord injury (SCI), if the spine is unstable following injury, surgical fusion and bracing may be necessary. (Bagnall-Cochrane, 2004)
Fusion, endoscopic	Not recommended. Endoscopic spinal fusion may have advantages over open surgery, but the procedure should be limited to conditions outlined for open fusion above (spinal fracture, dislocation, or spondylolisthesis). (Knight, 2003) (Endius, Inc., Plainville, MA, produces the FDA-approved Atavi™ Atraumatic Spine Fusion System.)
Hardware	See Fusion. Much of the growth of spinal fusion has been driven by the sales of new types of spinal implant hardware. (Viscogliosi, 2005)
Heat therapy	Recommended. Limited studies show continuous low-level heat wrap therapy to be superior to both acetaminophen and

Procedure Summary

- Fusion: Not recommended in the absence of fracture, dislocation or instability
- No scientific benefit otherwise
- Debilitating procedure, 17% complication rate, life-threatening
- Can cost about $50k

Manipulation	Recommended as an option. Medical evidence shows good outcomes from the use of manipulation in acute low back pain without radiculopathy. If manipulation has not resulted in functional improvement in three to four weeks, it should be stopped and the patient reevaluated. For patients with symptoms lasting longer than one month, manipulation may be safe, but efficacy has not been proven. While not proven by high quality studies, a trial of manipulation for patients with radiculopathy may also be an option. There is consensus on its utility among practitioners who perform it, when radiculopathy is not progressive, and studies support its safety. As with any promising intervention in the absence of definitive high quality evidence, careful attention to patient response to treatment is critical. Many passive and palliative interventions can provide relief in the short term but may risk treatment dependence without meaningful long-term benefit. Such interventions should be utilized to the extent they are aimed at facilitating return to normal functional activities, particularly work. (Andersson-NEJM, 1999) (Cherkin-NEJM, 1998) (Mohseni, 1998) (Aure, 2003) (Pengel, 2002) (Assendelft, 2003) (Assendelft-Cochrane, 2003) (Cherkin, 2003) (Licciardone, 2003) (Giles, 2003) (Grunnesjo, 2004) (Bronfort, 2004) (Hoiriis, 2004) (Oliphant, 2004) (Koes, 2004) (Legorreta, 2004) Many studies showed measured improvement within the first few weeks or 3-6 visits of chiropractic treatment, although improvement tapered off after the initial sessions. If chiropractic treatment is going to be effective, there should be some outward sign of subjective or objective improvement within the first 3-6 visits. These findings suggest the value of initial chiropractic treatment for low back conditions, but question the need for extended treatment, or at least encourage the need for reassessment after a few weeks of treatment. (Burton, 2000) (Hurwitz, 2002) (MD Consult, 2003) (Stig, 2001) (Niemsto, 2003) (Haas, 2004) (Haas2, 2004) The current draft, "Best Practices: Chiropractic Management of Low Back Pain", prepared by the Council on Chiropractic Guidelines and Practice Parameters, provides a comprehensive listing and rating of all clinical trials involving manipulation for low back problems. (CCGPP, 2004) Manipulation, as used in these studies, is defined as a process of physiological movement which goes beyond the passive range of motion into the paraphysiological zone, which may involve high velocity with or without recoil. This form of manipulation ("diversified") is the most commonly used by chiropractors; there is another form ("flexion-distraction") which is very commonly utilized in the management of different types of lower back conditions (including those of suspected disc herniation), but there are limited studies. Manipulation differs from mobilization, which may require a lesser skill level. **ODG Chiropractic Guidelines:** Therapeutic care -- Mild: up to 6 visits over 2 weeks Severe: Trial of 6 visits over 2 weeks Severe: With evidence of objective functional improvement, total of up to 18 visits over 6-8 weeks, avoid chronicity Elective care -- As needed
Manipulation under anesthesia (MUA)	Not recommended in the absence of vertebral fracture or dislocation. In the appendicular skeleton, manipulation with the patient under anesthesia (MUA) may be performed as a treatment of arthrofibrosis, particularly of the shoulder (i.e., frozen shoulder) or knee. In the spine, manipulation under anesthesia may be performed as a closed treatment of vertebral fracture or dislocation. In the absence of vertebral fracture or dislocation, MUA, performed either with the patient sedated or under general anesthesia, is intended to overcome the conscious patient's protective reflex mechanism, which may limit the success of prior attempts of spinal manipulation or adjustment in the conscious patient. Manipulation under anesthesia (MUA) cannot be recommended at the present time. Existing studies are not high quality and the outcomes were not great, plus the procedure is expensive and has risks. There is a need for high quality studies before recommending this. (West, 1999) (Kohlbeck, 2002) (BlueCross BlueShield, 2004) (Aetna, 2004)
Massage	Recommended as an option. Some proven efficacy in the treatment of acute low back symptoms, based on quality studies, and there is substantial anecdotal evidence. (Furlan-Cochrane, 2002) (Werners, 1999) (Cherkin, 2001) (Cherkin, 2003) (Sherman, 2004) See Manipulation for recommended frequency and duration of treatment.
Mattress firmness	Under study. A recent clinical trial concluded that patients with medium-firm mattresses had better outcomes than patients with firm mattresses for pain in bed, pain on rising, and disability. A mattress of medium firmness improves pain and disability among patients with chronic non-specific low-back pain. (Kovacs, 2003)
McKenzie method	Recommended as an option. Interexaminer reliability of the McKenzie lumbar spine assessment in performing clinical tests and classifying patients with low back pain into syndromes are good and statistically significant when the examiners have been trained in the McKenzie method. (Kilpikoski, 2002) (Cherkin, 1998) (Bronfort, 2004) (Clare, 2004)
Medications	See more specific listings: Antidepressants, Anti-inflammatory medications, Colchicine, Muscle relaxants, Nonprescription Medications, Opioids, & Oral corticosteroids. For chronic pain see the PAIN Chapter of *ODG Treatment*.

Procedure Summary

- Manipulation (chiropractic): recommended as option
- Frequency, duration of care provided
- Massage: recommended as option
- PT: recommended as option
- Each can be continued beyond noted visits with objective signs toward functional restoration

(PNT)	information. (Condon, 2002) (BlueCross BlueShield, 2004) See also Neuromodulation devices (completely different meaning).
Percutaneous vertebroplasty (PV)	See Vertebroplasty.
Physical therapy (PT)	Recommended as an option. There is strong evidence that physical methods, including exercise and return to normal activities, have the best long-term outcome in employees with low back pain. Direction from physical and occupational therapists can play a role in this. Studies also suggest benefit from early use of aggressive physical therapy ("sports medicine model"), training in exercises for home use, and a functional restoration program, including intensive physical training, occupational therapy, and psychological support. (Zigenfus, 2000) (Linz, 2002) (Cherkin-NEJM, 1998) (Rainville, 2002) (Jousset, 2004) (Rainville, 2004) See also specific physical therapy modalities, as well as Exercise and Work conditioning. [Physical therapy is the treatment of a disease or injury by the use of therapeutic exercise and other interventions that focus on improving posture, locomotion, strength, endurance, balance, coordination, joint mobility, flexibility, activities of daily living and alleviating pain. (BlueCross BlueShield, 2005)] **ODG Physical Therapy Guidelines –** Allow for fading of treatment frequency (from up to 3 visits per week to 1 or less), plus active self-directed home PT **Sprains and strains of back:** 10 visits over 5 weeks **Lumbago:** 9 visits over 8 weeks **Intervertebral disc disorders:** Medical treatment: 10 visits over 8 weeks Post-surgical treatment: 34 visits over 16 weeks **Spinal stenosis:** 10 visits over 8 weeks **Sciatica:** 10-12 visits over 8 weeks
Pilates	See Yoga.
Powered traction devices	See Vertebral axial decompression (VAX-D). See also Traction.
Prolotherapy, also known as sclerotherapy	Not recommended. There are conflicting studies concerning the effectiveness of prolotherapy, also known as sclerotherapy, in the low back. Lasting functional improvement has not been shown. The injections are invasive, may be painful to the patient, and are not generally accepted or widely used. Therefore, the use of prolotherapy for low back pain is not recommended at this time. (Colorado, 2001) (Yelland-Cochrane, 2004) (Yelland2, 2004) (Hooper, 2004) A recent study concluded that ligament injections resulted in significant and sustained reductions in pain and disability, but no attributable effect was found for prolotherapy injections over saline injections. (Yelland, 2004) And, a recent meta analysis concluded, "On the basis of the scarce body of literature critically reviewed to date, the clinical efficacy of prolotherapy in treating osteoarthritis, low back pain, and other musculoskeletal conditions remains inconclusive." (Kim, 2004) See the Pain Chapter for more information and references.
Psychological screening	Recommended as an option prior to surgery. Before referral for surgery, clinicians should consider referral for psychological screening to improve surgical outcomes, possibly including standard tests such as MMPI (Minnesota Multiphasic Personality Inventory) and Waddell signs. (Scalzitti, 1997) (Fritz, 2000) (Gaines, 1999) (Gatchel, 1995) (McIntosh, 2000) (Polatin, 1997) (Riley, 1995) (Block, 2001) A recent study concluded that psychological distress is a more reliable predictor of back pain than most diagnostic tests. (Carragee, 2004)
Racz neurolysis	See Adhesiolysis.
Radiofrequency neurotomy	Under study. There is good evidence to support radiofrequency neurotomy in the cervical spine but benefits beyond one year are not yet established. Evidence in the lumbar spine is conflicting, but radiofrequency neurotomy may be an effective means of reducing pain in patients carefully selected on the basis of controlled differential dorsal medial branch diagnostic blocks. (Dreyfuss, 2000) (Leclaire, 2001) (VanKleef, 1999) (Manchikanti, 2003) (Niemisto-Cochrane, 2003) See also Facet Rhizotomy. See also the Neck Chapter for ODG Indications for Treatment.
Radiography (x-rays)	Not recommended in the absence of red flags. (See indications list below.) Lumbar spine radiography should not be recommended in patients with low back pain in the absence of red flags for serious spinal pathology, even if the pain has persisted for at least 6 weeks. However, some providers feel it "may" be appropriate when the physician believes it would aid in patient expectations and management. Indiscriminant imaging will result in false positive findings, such as disc bulges, that are

	stabilization system that isolates specific muscle groups. (Costs for a typical program consist of 2 days per week for 8 weeks equaling $1900.) The evidence suggests that MedX may help to increase lumbar muscle strength; however, studies do not clearly show MedX's efficacy over other exercise programs. (Washington, 2003)
Microcurrent electrical stimulation (MENS devices)	Not recommended. Based on the available evidence conclusions cannot be made concerning the effect of Microcurrent Stimulation Devices (MENS) on pain management and objective health outcomes. See the Pain Chapter for more information.
Microdiscectomy	Recommended. Standard discectomy and microdiscectomy are of similar efficacy in treatment of herniated disc. (Bigos, 1999) See Discectomy/laminectomy.
Modified duty	See Work.
MR neurography	Under study. MR neurography may be useful in isolating diagnoses that do not lend themselves to back surgery, such as sciatica caused by piriformis syndrome in the hip. (Filler, 1996) (Dailey, 1996)
MRI's (magnetic resonance imaging)	Recommended for indications below. MRI's are test of choice for patients with prior back surgery. Repeat MRI's are indicated only if there has been progression of neurologic deficit. (Bigos, 1999) (Mullin, 2000) (ACR, 2000) (AAN, 1994) (Aetna, 2004) Magnetic resonance imaging has also become the mainstay in the evaluation of myelopathy. An important limitation of magnetic resonance imaging in the diagnosis of myelopathy is its high sensitivity. The ease with which the study depicts expansion and compression of the spinal cord in the myelopathic patient may lead to false positive examinations and inappropriately aggressive therapy if findings are interpreted incorrectly. (Seidenwurm, 2000) There is controversary over whether they result in higher costs compared to X-rays including all the treatment that continues after the more sensitive MRI reveals the usual insignificant disc bulges and herniations. (Jarvik-JAMA, 2003) In addition, the sensitivities of the only significant MRI parameters, disc height narrowing and anular tears, are poor, and these findings alone are of limited clinical importance. (Videman, 2003) Imaging studies are used most practically as confirmation studies once a working diagnosis is determined. MRI, although excellent at defining tumor, infection, and nerve compression, can be too sensitive with regard to degenerative disease findings and commonly displays pathology that is not responsible for the patient's symptoms. With low back pain, clinical judgment begins and ends with an understanding of a patient's life and circumstances as much as with their specific spinal pathology. (Carragee, 2004) See also ACR Appropriateness Criteria™. **Indications for imaging -- Magnetic resonance imaging:** - Thoracic spine trauma: with neurological deficit - Lumbar spine trauma: trauma, neurological deficit - Lumbar spine trauma: seat belt (chance) fracture (If focal, radicular findings or other neurologic deficit) - Uncomplicated low back pain, suspicion of cancer, infection - Uncomplicated low back pain, radiculopathy (>= 1 month conservative therapy) - Uncomplicated low back pain, prior lumbar surgery - Uncomplicated low back pain, cauda equina syndrome - Myelopathy (neurological deficit related to the spinal cord), traumatic - Myelopathy, painful - Myelopathy, sudden onset - Myelopathy, stepwise progressive - Myelopathy, slowly progressive - Myelopathy, infectious disease patient - Myelopathy, oncology patient
Muscle relaxants	Recommended as an option in acute cases. OK for acute spasms. A comprehensive review of clinical trials on the efficacy and safety of drugs for the treatment of low back pain concludes that available evidence supports the effectiveness of muscle relaxants in acute LBP. (Schnitzer, 2004) Muscle relaxants are commonly used for the treatment of low back problems. Pharmacologically, these are usually benzodiazepines, other sedative medications, or antihistamine derivatives. The therapeutic objective of muscle relaxants is to reduce low back pain by relieving muscle spasm. However, the concept of skeletal muscle spasm is not universally accepted as a cause of symptoms, and the most commonly used muscle relaxants have no peripheral effect on muscle spasm. Muscle relaxants are an option in the treatment of patients with acute low back problems. While probably more effective than placebo, muscle relaxants have not been shown to be more effective than NSAIDs. No additional benefit is gained by using muscle relaxants in combination with NSAIDs over using NSAIDs alone. Muscle relaxants have potential side effects, including drowsiness in up to 30 percent of patients. When considering the optional use of muscle relaxants, the clinician should balance the potential for drowsiness against a patient's intolerance of other agents. (VanTulder,

Procedure Summary

- MRI: recommended where appropriate
- ODG Indications for Imaging provided ("patient selection criteria")

	See also the Neck Chapter for ODG Indications for Treatment.
Radiography (x-rays)	Not recommended in the absence of red flags. (See indications list below.) Lumbar spine radiography should not be recommended in patients with low back pain in the absence of red flags for serious spinal pathology, even if the pain has persisted for at least 6 weeks. However, some providers feel it "may" be appropriate when the physician believes it would aid in patient expectations and management. Indiscriminant imaging will result in false positive findings, such as disc bulges, that are not the source of painful symptoms and do not warrant surgery. A history that includes the key features of serious causes will detect all patients requiring imaging. (Kendrick, 2001) (Bigos, 1999) (Seidenwurm, 2000) (Gilbert, 2004) (Gilbert2, 2004) (Yelland, 2004) According to the American College of Radiology, "It is now clear from previous studies that uncomplicated acute low back pain is a benign, self-limited condition that does not warrant any imaging studies." (ACR, 2000) A Recent quality study concludes that MRI is no better than x-rays in management of low back pain, if the cost benefit analysis includes all the treatment that continues after the more sensitive MRI reveals the usual insignificant disc bulges and herniations. (Jarvik-JAMA, 2003) The new proposed HEDIS (Health plan Employer Data Information Set) report card on the use of imaging for low back is scheduled to go into effect on Jan 1, 2005. This new standard is the first one in which the issue is over utilization. In young and middle-aged adults, with new episodes of mechanical LBP, without any indication of comorbid complications, the new standard assumes that there is no indication for imaging. (HEDIS, 2004) See also ACR Appropriateness Criteria™. **Indications for imaging -- Plain X-rays:** - Thoracic spine trauma: severe trauma, pain, no neurological deficit - Thoracic spine trauma: with neurological deficit - Lumbar spine trauma: pain, tenderness - Lumbar spine trauma: trauma, neurological deficit - Lumbar spine trauma: seat belt (chance) fracture - Uncomplicated low back pain, trauma, steroids, osteoporosis, over 70 - Uncomplicated low back pain, suspicion of cancer, infection - Myelopathy (neurological deficit related to the spinal cord), traumatic - Myelopathy, painful - Myelopathy, sudden onset - Myelopathy, infectious disease patient - Myelopathy, oncology patient
Range of motion (ROM)	See Flexibility.
Return to work	Recommended. The strongest medical evidence regarding potential therapies for low back pain indicates that having the patient return to normal activities has the best long-term outcome. There are many therapies, both invasive and noninvasive, whose purpose is to cure the pain, but there is no strong evidence that they accomplish this as successfully as therapies that focus on restoring functional ability, without focusing on the pain. (Elders, 2000) (Scheer, 1995) (Scheer, 1996) (Allen, 1999) (Hagen-Cochrane, 2000) (Hilde-Cochrane, 2002) (Malmivaara-NEJM, 1995) (Waddell, 1997) (Indahl, 1995) (Indahl, 1998) (Philadelphia Panel, 2001) (Buchbinder, 2001) (Buchbinder-BMJ, 2001) (AAOS, 2000) (Karjalainen, 2003) (Staal, 2003) (Staal, 2004) (Jousset, 2004) (Koes, 2004) However, modified duty may be necessary, since there is evidence for a dose-response relation between physical workload and LBP of longer duration, and unavailability of light duties on return to work plus a job requirement of lifting for three fourths of the day or more all were significant, independent determinants of LBP chronicity. (Fransen, 2002) (Hartvigsen, 2003) (Harkness, 2003) (See ODG Capabilities & Activity Modifications for Restricted Work under "Work" in Procedure Summary.) Studies that support the "return to activity" paradigm do not necessarily indicate that LBP is a self-limiting cindition that will heal itself. (Pengel, 2003) (Hestbaek, 2003) There is strong epidemiological evidence that most workers with LBP are able to continue working or to return to work within a few days or weeks, even if they still have some residual or recurrent symptoms, and that they do not need to wait till they are completely pain free. (Carter, 2000) Unfortunately, existing data shows that after a first compensated episode of back pain, the time to return to work is long and the proportion not returning is high. About 50% of workers had not returned to work after 112 days of follow up. At the end of this study period (maximum follow up time was 1228 days), 75.4% had returned to work, 6.5% had not, and a similar percentage had retired, gone into vocational training, or returned to school. (*Note: this means that only about 50% of those off work after 3 months eventually returned to work, but most of those never returning to work actually retired or went into other activities.*) (Infante-Rivard, 1996) See also Work.
Sclerotherapy	See Prolotherapy.

Procedure Summary

- Indications for radiography provided
- Return-to-work: Recommended
- Strongest medical evidence indicates returning to normal activity (modified duty as necessary) accomplishes pain relief
- Can education injured workers

HIGHER PRIORITY REFERENCES

HISTORY AND PHYSICAL EXAMINATION

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Conclusions

- Apply principals of EBM to improve patient outcomes in workers' comp
- Reduce excessive/unnecessary utilization of medical services and the costs associated
- Make it easier for patients to get needed care
- Identify/target ineffective, harmful procedures, reducing risks for patients
- Reduce administrative "friction" by being clear to providers about what treatments will get paid for, and why, based on scientific evidence

Conclusions (continued)

- Open the lines of communication among all parties, allowing for a framework for discussion based on important and emerging studies from each of the peer-reviewed medical journals
- Improve patient satisfaction through prompt, responsible delivery of health care
- Improve outcomes by focusing on restoration of functional capacity (not "chasing the pain")
- Recognize early RTW opportunities, and use appropriate activity modification

Conclusions (continued)

- Quickly identify effectiveness of any procedure
- Automate payment for appropriate treatment
- Reduce delayed recovery rates with effective, concurrent management of treatment & return-to-work, thus curbing indemnity costs
- Help good employees get back on their feet in good time, safely, easily and effectively
- Put evidence-based medicine to work for you

Official Disability Guidelines™

Case History/Analysis

Stephen Demeter, M.D.
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THE TREATMENT OF HAWAII'S INJURED WORKERS USING TREATMENT PROTOCOLS

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“IF IT AIN’T BROKE, DON’T FIX IT”

- Ann Landers

THE TREATMENT OF HAWAII'S INJURED WORKERS USING TREATMENT PROTOCOLS

- IS IT NECESSARY?
- IS IT DESIRABLE?
- IS IT PRACTICAL?
- IS IT POSSIBLE?
- WHAT IS THE COST?
- WHY DO IT?

GOAL IN TREATING THE INJURED WORKERS OF HAWAII

- **OUR MUTUAL GOAL, FIRST, LAST, AND ALWAYS, IT TO RETURN THE INJURED WORKER TO AS FUNCTIONAL A STATE AS POSSIBLE, IN AS SHORT OF A TIME AS POSSIBLE, WITH THE LEAST ECONOMIC REPERCUSSIONS ON HIM/HER AND HIS/HER FAMILY**

CASE HISTORY

Mr. E.F. is a 48-year-old male who worked as an air-conditioning installer for the past 20 years. In the course of his employment, he would routinely install duct work for the air conditioning systems in various homes and office buildings. This often entailed overhead work during this installation.

HISTORY OF INJURY

On the day of his injury, Mr. F. was installing duct work. As he was coming down from a ladder, he missed the last step and fell. As he fell backward, in order to avoid falling and hitting his head on the concrete floor, he twisted to the right. He struck the floor with his right hip and outstretched right hand. He immediately complained of pain in his hip, hand, right arm, and right shoulder.

EMERGENCY ROOM

He was taken, by his supervisor, to the emergency room where he was seen and evaluated. Mr. F. had pain in the same locations as noted previously. X-rays were taken of his hip and right upper extremity. No fractures or dislocations were seen. He was prescribed pain medication and told to stay off work until cleared by his family physician.

TREATMENT BY FAMILY PHYSICIAN

Mr. F. obtained an office visit with his primary care physician two days later. His injury occurred on a Tuesday, May 1. When seen on Thursday, May 3, he continued to have significant pain in all the previously described areas. His doctor kept him off work and prescribed pain medications (NSAIDs and narcotics), a muscle relaxer, and told him to get some rest and use heat. He had a return visit on Monday, May 7.

TREATMENT BY FAMILY PHYSICIAN – VISIT 2

On Monday, May 7, Mr. F. was significantly better. He could walk and do most normal activities. He continued to have some discomfort in the previously described areas but "it was livable" with the medications. The only exception was his right shoulder. Mr. F. said that he could hardly move his arm because of the pain in his shoulder. He couldn't brush his teeth or comb his hair. Putting on his clothes was very difficult.

TREATMENT BY FAMILY PHYSICIAN – VISIT 2

His doctor knew that Mr. F. could not go back to work with that degree of difficulty in his right shoulder/arm, considering the type of job that he had, so he kept his patient off work for another week and continued to recommend the same medications. Acupuncture and massage were ordered for pain relief.

TREATMENT BY FAMILY PHYSICIAN – VISIT 3

Mr. F. was seen on Tuesday, May 15. He continued to be off work. His right shoulder pain was poorly controlled with ibuprofen three times a day and a narcotic at bedtime. Occasionally, he would take an extra dose through the night when the pain would awaken him. He told his doctor that he had not yet started the massage treatments and acupuncture. He was to come back in 10 days for a follow-up visit.

TREATMENT BY FAMILY PHYSICIAN – VISIT 4

On May 25, Mr. F. was no better. He continued to have significant pain in his right shoulder. He continued to have significant problems with activities that involved placing his arm above 90 degrees. The physical examination was unchanged. His doctor continued him off work and the same medications but decided to obtain an x-ray of Mr. F.'s collar bone with weights to make sure that he didn't have a dislocation. He considered physical therapy but decided to wait for the x-rays to come back. Mr. F. was scheduled for another appointment in two weeks. Massage and acupuncture were helping with his pain and were continued.

TREATMENT BY FAMILY PHYSICIAN – VISIT 5

On June 9, Mr. F. was no better. He continued to have significant pain with movement. His examination was showed diminished range of motion (ROM) in his right shoulder. The x-rays were negative for fracture or dislocation. Mr. F. told his doctor that the massage and acupuncture were helping.

TREATMENT BY FAMILY PHYSICIAN – VISIT 6

Mr. F was no better two weeks later. He was still not working. Dr. Y. thought that a cortisone injection might help so he injected the shoulder with a cortisone preparation.

TREATMENT BY FAMILY PHYSICIAN – VISIT 7

Three weeks later, due to a vacation, Dr. Y. saw Mr. F. again. Things were unchanged. The cortisone shot helped somewhat, but the improvement only lasted about 10 days. On examination, visible atrophy was seen in the right shoulder region. The ROM was declining. Pain persisted, especially with activities, or through the night when Mr. F. would roll on his right side. His medications were ibuprofen, three times a day, one or two narcotic pills at night, and an occasional muscle relaxant to help him sleep. Dr. Y. discontinued the acupuncture and massage and ordered physical therapy.

TREATMENT BY FAMILY PHYSICIAN – VISITS 8 & 9

After another 3 weeks, Dr. Y. found his patient unchanged. The PT had been started 10 days ago and the patient had attended 3 sessions (ordered twice a week). He injected Mr. F.'s shoulder again. Two weeks later, things were unchanged. Dr. Y. then referred Mr. F. to an orthopedic surgeon for care.

TREATMENT BY ORTHOPEDIC SURGEON

Mr. F. was able to see the orthopedist on September 3. He continued to have pain with activities and during the night. He continued to be off work. His medications were ibuprofen - 3/d, a narcotic – 1 or 2 through the night, and an occasional muscle relaxer at bedtime. He had received 2 steroid injections in his shoulder, massage therapy and acupuncture without benefit. He was currently going to PT twice a week. A stress x-ray of his shoulder was negative. On examination, there was some shoulder atrophy with weakness, diminished ROM, and pain on palpation. An MRI was ordered.

TREATMENT BY ORTHOPEDIC SURGEON VISIT 2

Two weeks later, Mr. F. was seen again. His PT had been increased to 3 times a week and he was complaining of increased pain. He ran out of his narcotics. The MRI had not been approved. Dr. Z. injected the patient's shoulder with a cortisone preparation.

TREATMENT BY ORTHOPEDIC SURGEON VISIT 3

A month later, the patient was seen again. Approval for the MRI still had not been issued. Mr. F. was still not working. Dr. Z. wrote a letter to the insurance company requesting the MRI. The PT, that had run out 2 weeks earlier, was re-started.

TREATMENT BY ORTHOPEDIC SURGEON VISIT 4

Another month passed. The MRI was eventually performed showing a partial thickness rotator cuff tear. Dr. Z. continued the PT and returned the patient to work at light duty. He wrote a treatment plan that included arthroscopic surgery. Dr. Z. again injected the patient's shoulder with a cortisone preparation.

TREATMENT BY ORTHOPEDIC SURGEON VISIT 5

A month later, the patient continued to take the same medications, continued to receive PT, and, on examination, had continued pain on palpation, weakness, and diminished ROM. Mr. F. did not feel as though he was making any progress in PT and had missed a number of sessions. The surgical treatment plan had not been approved and the patient was ordered to have an IME to determine the nature of and proper treatment for his injury.

TREATMENT BY ORTHOPEDIC SURGEON VISIT 6

Two months passed and Mr. F. was again seen by Dr. Z. The IME had been performed but the results were not available yet. Mr. F. was not working as no light duty existed. He continued to miss frequent PT sessions. He continued to have pain with activities and through the night. His ROM was worsening as was his weakness.

TREATMENT BY ORTHOPEDIC SURGEON VISIT 7

On 3/17, Mr. F. was seen in follow-up. The surgical request had been denied. Aggressive PT and a work hardening program was suggested by the IME physician. Dr. Z. wrote an angry letter to the insurance company regarding the surgical denial. He discussed with his patient the need for the PT and agreed with the work hardening. Dr. Z. again injected the patient's shoulder with a cortisone preparation.

TREATMENT BY ORTHOPEDIC SURGEON VISIT 8

Two months later (5/17), Mr. F. was again seen. He was a little better. His pain had diminished and he no longer took the narcotics or muscle relaxers. He was still not working. He had been reasonably faithful with the PT. His strength had increased somewhat. Dr. Z. injected his shoulder again and recommended a Functional Capacity Evaluation.

TREATMENT BY ORTHOPEDIC SURGEON VISIT 9

Six weeks later, Dr. Z reviewed the FCE with Mr. F. It indicated that the patient could only perform duties at a light-medium level of manual labor due to deconditioning. The ROM of the right shoulder was significantly reduced and it was further recommended that the patient perform no above shoulder activities. Dr. Z. signed off the case and returned the patient to Dr. X., saying that he had nothing further to add to the care at that point.

MR. F. – FINAL DIAGNOSES AND DISPOSTION

1. **PARTIAL TEAR OF THE ROTATOR CUFF**
   - PARTIALLY DUE TO INDUSTRIAL INJURY
   - PARTIALLY DUE TO DEGENERATIVE DISEASE
2. **FROZEN SHOULDER**
   - MARKEDLY DIMINISHED ROM ABOVE SHOULDER LEVEL
3. **DISUSE ATROPHY OF SHOULDER GIRDLE**

SINCE HE COULD NO LONGER PERFORM THE TYPE OF WORK THAT HE HAD ONCE PERFORMED, MR. F. WAS REFERRED TO VOCATIONAL REHABILITATION

SUMMARY OF THE CASE

- TOTAL TIME – 14 MONTHS; OFF WORK ENTIRE TIME
  - LIGHT DUTY HAD BEEN RECOMMENDED BUT WAS UNAVAILABLE IN THE MOST RECENT 7 MONTHS
- RETURN TO WORK – IN FUTURE, PENDING VOC REHAB RECOMMENDATIONS/RE-TRAINING
- TOTAL COSTS INCLUDED:
  - EMERGENCY ROOM - 1
  - PCP – 9 VISITS
  - ORTHOPEDIST – 9 VISITS
  - ACUPUNCTURE – 24 VISITS
  - MASSAGE THERAPY – 24 VISITS
  - PHYSICAL THERAPY – 108 VISITS (including work hardening)
  - FUNCTIONAL CAPACITY EVALUATION – 1
  - MRI – 1
  - X-RAY – 2
  - INTRA-ARTICULAR CORTISONE INJECTIONS – 6
  - VOCATIONAL REHABILITATION EVALUATION
  - INDEPENDENT MEDICAL EVALUATION

ODG

Initial Diagnosis

- First visit: with Primary Care Physician MD/DO (100%)
- Initial evaluation should include:
  - Determine the type of trauma (direct trauma, fall, repetitive motion, twisting incident, etc.).
  - Test the range-of-motion of the joint (normal, mild restriction, severe restriction, or complete restriction).
  - An initial evaluation of the shoulder requires accurate diagnosis of shoulder injuries by careful inspection and palpation of the shoulder area. Although the shoulder is generally swollen, the injury is usually defined by direct tenderness over the injured area
- .

ODG

Determine "degenerative changes" versus "acute trauma":

- **Degenerative changes** (*Go to Initial Conservative Treatment*)

Lesions of the rotator cuff are a continuum, from mild inflammation and degeneration to full avulsions. Studies of normal subjects document the universal presence of degenerative changes and conditions, including full avulsions without symptoms. Conservative treatment has results similar to surgical treatment but without surgical risks. Surgical outcomes are much better in younger patients with a rotator cuff tear, than in older patients, who may be suffering from degenerative changes in the rotator cuff. Impingement Syndrome, shoulder tendonitis, shoulder sprain, and subacromial bursitis are all closely related entities with the same etiology. They involve friction, abrasion, and inflammation of the rotator cuff and the long head of the biceps tendon with the subacromial arch (anterior lip of the acromion, coraco-acromial ligament and acromioclavicular joint). These conditions involve consequences of aging or repetitive use, or a combination thereof, such as:

THIS CASE IS COMPLICATED AND MAY BE AN ACUTE ON TOP OF CHRONIC – CARE IS BEGUN WITH THE CHRONIC MODEL

"CONSERVATIVE TREATMENT"

- **Mild/Moderate -- Initial Conservative Treatment** (90% of cases)
- · Also first visit (day 1):
  - o Prescribe alteration of activity (home & work), no overhead work, stretching (gentle range-of-motion exercises), appropriate analgesia (i.e., acetaminophen) and/or anti-inflammatory (i.e., ibuprofen) [*Benchmark cost: $14*], back to work -- modified duty: if condition caused by job, possible ergonomic evaluation of job
- ODG Return-To-Work Pathways
- Medical treatment (stage 1 or 2, impingement, no tear), modified work: 0 days
  Medical treatment (impingement, no tear), manual work: 7 days
- (See ODG Capabilities & Activity Modifications for Restricted Work under "Work" in Procedure Summary)

"CONSERVATIVE TREATMENT"

- · Second visit (day 14 – about 2 weeks after first visit)
  - o Document progress
  - o If not significantly improved then prescribe physical therapy (gentle range-of-motion exercises plus exercises that strengthen the rotators and stabilize the scapula) should be started for home exercise training [*Benchmark cost: $250*]: Refer to Physical Therapist (50%) or Occupational Therapist (50%) for up to 3 visits per week for 2 weeks

SECOND VISIT TOO SOON (1 WEEK)

MASSAGE AND ACCUPUNCTURE ORDERED

"CONSERVATIVE TREATMENT"

- · Third visit (day 28 – about 1 month after first visit)
  - o Document progress
  - o Further relaxation and pain control can be achieved by injecting an anesthetic under the acromion (laterally or anteriorly) into the shoulder joint.
- o Corticosteroid injection trial [*Benchmark cost: $276*]. Should be performed by musculoskelatally trained physician. Sprains of the rotator cuff cause swelling within a closed space and add an element of chronic impingement which may be slow to resolve. By decreasing swelling, local infiltration of the rotator cuff with corticosteroids may quicken the resolution of this problem. Repeat corticosteroid injection may be necessary, but should not be done any sooner than every two weeks, up to a maximum of three injections. Injection should be avoided in patients under 30 years of age.
  - o If prescribe therapy, then continue therapist, change from passive to active modality, up to 2 visits per week, teach home exercises.

TOO SOON (2 WEEKS)
NO PHYSICAL THERAPY – MT AND AC CONTINUED

“RTW PATHWAYS”

- ODG Return-To-Work Pathways
- Medical treatment (impingement, no tear), manual overhead work: 28 days
  Medical treatment, regular work if cause of disability: 42 days
  Medical treatment, heavy manual work: 42 days
- · Fourth visit (day 42 – about 6 weeks after first visit)
  - o Refer for Imaging

PATIENT NOT ABLE TO RTW – GO TO MRI; VISIT 4 – 3 WEEKS; SECOND X-RAY; MRI NOT DONE OR EVEN CONSIDERED FOR MANY MORE MONTHS

“AGGRESSIVE TREATMENT”

- **Aggressive Treatment** (10% of cases)
- [*Benchmark cost: $2,621*]
- · Include imaging as above.

“AGGRESSIVE TREATMENT”

- · Arthroscopy, Shoulder, Surgical: Rotator cuff repair, with decompression of subacromial space with partial acromioplasty, with or without coracoacromial release. Performed by Orthopaedic Surgeon (90%) or General Surgeon (10%) on an outpatient or 23-hour basis. May be endoscopic. Decompression/acriomoplasty alone should be performed after at least six weeks of conservative treatment.
- · Post-surgical treatment:
- o Physical/Occupational Therapy: A short course *may* be needed; if so then Post-surgical treatment (endoscopic): 14 visits over 8 weeks; Post-surgical treatment (open): 20 visits over 10 weeks

ODG PATHWAYS

- ODG Return-To-Work Pathways
- Arthroscopic surgical repair/acromioplasty (stage 3), clerical/modified work: 28-56 days
  Arthroscopic surgical repair/acromioplasty, manual work, non-dominant arm: 56-90 days
  Arthroscopic surgical repair/acromioplasty, manual work, dominant arm: 70-90 days
  Open surgery (stage 3), clerical/modified work: 42-56 days
  Open surgery, manual work, non-dominant arm: 70-90 days
  Open surgery, manual work, dominant arm: 90-106 days
  Open surgery, heavy manual work if cause of disability: indefinite

ACUPUNCTURE

- Recommended as indicated below. Several small clinical trials have found acupuncture to be effective on shoulder pain, but referral is dependent on the availability of experienced providers with consistently good outcomes. Among those shoulder indications, found to have positive outcomes from acupuncture, were rotator cuff tendonitis, frozen shoulder, subacromial impingement syndrome, and rehab following arthroscopic acromioplasty. (Kleinhenz, 1999) (Sun, 2001) (Romoli, 2000) (Nabeta, 2002) (Gilbertson, 2003) (Guerra, 2003) (He, 2004) (Vickers, 2004) (Grant, 2004) (Michener, 2004) (Guerra de Hoyos, 2004) On the other hand, a recent trial did not show any benefit of acupuncture compared with placebo TENS when added to the exercise treatment of rotator cuff tendinitis. (Razavi, 2004) Acupuncture was of benefit over placebo in improving a measure of shoulder function at four weeks, but by four months, the difference between the acupuncture and placebo groups, while still statistically significant, was no longer likely to be clinically significant. There is little evidence to support or refute the use of acupuncture for shoulder pain although there may be short-term benefit with respect to pain and function. (Green-Cochrane, 2005)
- **ODG Acupuncture Guidelines:**
- Initial trial of 4-6 visits over 2 weeks
- With evidence of objective functional improvement, total of up to 12-18 visits over 4-6 weeks

EXERCISE

- Recommended. Shoulder disorders may lead to joint stiffness more often than other joint disorders. Therapeutic exercise, including strengthening, should start as soon as it can be done without aggravating symptoms. Pendulum exercises are usually tolerated by the patient even when discomfort is pronounced, and range of motion can be preserved by this method. Lifting and working at 90 degrees (the position of abuse) as well as overhead work should be proscribed or restricted during the first few weeks after onset of problems due to acute rotator cuff tear, AC joint strain or separation, and impingement syndrome. (Verhagen-Cochrane, 2004) Exercise was demonstrated to be effective in terms of short term recovery in rotator cuff disease, and longer term benefit with respect to function. Combining mobilization with exercise resulted in additional benefit when compared to exercise alone for rotator cuff disease. When compared to exercises, ultrasound is of no additional benefit over and above exercise alone. Supervised exercise regime is of benefit in the short and long term for mixed shoulder disorders and rotator cuff disease. (Green-Cochrane, 2003) (Michener, 2004) (Grant, 2004) For adhesive capsulitis, injection of corticosteroid combined with a simple home exercise program is effective in improving shoulder pain and disability in patients. Adding supervised physical therapy provides faster improvement in shoulder range of motion. When used alone, supervised physical therapy is of limited efficacy in the management of adhesive capsulitis. (Carette, 2003)

MRI

- Recommended as indicated below. Magnetic resonance imaging (MRI) and arthrography have fairly similar diagnostic and therapeutic impact and comparable accuracy, although MRI is more sensitive and less specific. Magnetic resonance imaging may be the preferred investigation because of its better demonstration of soft tissue anatomy. (Banchard, 1999) Subtle tears that are full thickness are best imaged by MR arthrography, whereas larger tears and partial-thickness tears are best defined by MRI, or possibly arthrography, performed with admixed gadolinium, which if negative, is followed by MRI. (Oh, 1999) The results of a recent review suggest that clinical examination by specialists can rule out the presence of a rotator cuff tear, and that either MRI or ultrasound could equally be used for detection of full-thickness rotator cuff tears. (Dinnes, 2003) Shoulder arthrography is still the imaging "gold standard" as it applies to full-thickness rotator cuff tears, with over 99% accuracy, but this technique is difficult to learn, so it is not always recommended. Magnetic resonance of the shoulder and specifically of the rotator cuff is most commonly used, where many manifestations of a normal and an abnormal cuff can be demonstrated. The question we need to ask is: Do we need all this information? If only full-thickness cuff tears require an operative procedure and all other abnormalities of the soft tissues require arthroscopy, then would shoulder arthrography suffice? (Newberg, 2000)
- **Indications for imaging -- Magnetic resonance imaging (MRI):**
- - Acute shoulder trauma, suspect rotator cuff tear/impingement; over age 40; normal plain radiographs
- - Subacute shoulder pain, suspect instability/labral tear

PHYSICAL THERAPY

- Recommended. Positive (limited evidence). See also specific physical therapy modalities by name. For impingement syndrome significant results were found in pain reduction and isodynamic strength. (Bang, 2000) (Verhagen-Cochrane, 2004) There is poor data from non-controlled open studies favouring conservative interventions for rotator cuff tears, but this still needs to be proved. Considering these interventions are less invasive and less expensive than the surgical approach, they could be the first choice for the rotator cuff tears, until we have better and more reliable results from clinical trials. (Ejnisman-Cochrane, 2004) Self-training may be as effective as physical therapist-supervised rehabilitation of the shoulder in post-surgical treatment of patients treated with arthroscopic subacromial decompression. (Anderson, 1999) For adhesive capsulitis, injection of corticosteroid combined with a simple home exercise program is effective in improving shoulder pain and disability in patients. Adding supervised physical therapy provides faster improvement in shoulder range of motion. When used alone, supervised physical therapy is of limited efficacy in the management of adhesive capsulitis. (Carette, 2003) Use of a home pulley system for stretching and strengthening should be recommended. (Thomas, 2001) Physical modalities, such as massage, diathermy, cutaneous laser treatment, ultrasonography, transcutaneous electrical neurostimulation (TENS) units, and biofeedback are not supported by high quality medical studies, but they may be useful in the initial conservative treatment of acute shoulder symptoms, depending on the experience of local physical therapists available for referral.

PHYSICAL THERAPY

- **ODG Physical Therapy Guidelines –**
- Allow for fading of treatment frequency (from up to 3 visits per week to 1 or less), plus active self-directed home PT
- **Adhesive capsulitis:**
- 16 visits over 8 weeks
- **Rotator cuff syndrome:**
- Medical treatment: 10 visits over 8 weeks
- Post-surgical treatment: 24 visits over 14 weeks
- **Dislocation of shoulder:**
- 12 visits over 12 weeks
- **Acromioclavicular joint dislocation:**
- AC separation, type III+: 8 visits over 8 weeks
- **Sprains and strains of shoulder and upper arm:**
- 9 visits over 8 weeks
- **Sprained rotator cuff:**
- Medical treatment: 10 visits over 8 weeks
- Post-surgical treatment: 24 visits over 14 weeks

SHOULDER INJECTIONS

- Recommended as indicated below. For rotator cuff disease, corticosteroid injections are superior to physical therapy interventions for short-term results, and a maximum of three are recommended. (Green-Cochrane, 2003) If pain with elevation is significantly limiting activities, a subacromial injection of local anesthetic and a corticosteroid preparation may be indicated after conservative therapy (i.e., strengthening exercises and NSAIDs) for two to three weeks, but the evidence is not yet overwhelming, and the total number of injections should be limited to no more than three. (van der Heijden, 1996) (Green-Cochrane, 2002) (Grant, 2004) A recent meta-analysis concluded that subacromial corticosteroid injection for rotator cuff disease and intra-articular injection for adhesive capsulitis may be beneficial although their effect may be small and not well maintained. (Buchbinder-Cochrane, 2003) On the other hand, for post-traumatic impingement of the shoulder, subacromial injection of methylprednisolone had no beneficial impact on reducing the pain or the duration of immobility. (McInerney, 2003) Steroid injections compared to physical therapy seem to have better initial but worse long-term outcomes. One trial found mean improvements in disability scores at six weeks of 2.56 for physical therapy and 3.03 for injection, and at six months 5.97 for physical therapy and 4.55 for injection. (Hay, 2003) For adhesive capsulitis, injection of corticosteroid combined with a simple home exercise program is effective in improving shoulder pain and disability in patients. Adding supervised physical therapy provides faster improvement in shoulder range of motion. When used alone, supervised physical therapy is of limited efficacy in the management of adhesive capsulitis. (Carette, 2003) (Arslan, 2001) Subacromial injections of corticosteroids are effective for improvement for rotator cuff tendonitis up to a 9-month period. They are also probably more effective than NSAID medication. Higher doses may be better than lower doses for subacromial corticosteroid injection for rotator cuff tendonitis. (Arroll, 2005)

SURGERY FOR ROTATOR CUFF TEARS

- Recommended as indicated below. Repair of the rotator cuff is indicated for significant tears that impair activities by causing weakness of arm elevation or rotation, particularly acutely in younger workers. However, rotator cuff tears are frequently partial-thickness or smaller full-thickness tears. For partial-thickness rotator cuff tears and small full-thickness tears presenting primarily as impingement, surgery is reserved for cases failing conservative therapy for three months. The preferred procedure is usually arthroscopic decompression, but the outcomes from open repair are as good or better. Surgery is not indicated for patients with mild symptoms or those who have no limitations of activities. (Ejnisman-Cochrane, 2004) (Grant, 2004)
- Lesions of the rotator cuff are best thought of as a continuum, from mild inflammation and degeneration to full avulsions. Studies of normal subjects document the universal presence of degenerative changes and conditions, including full avulsions without symptoms. Conservative treatment has results similar to surgical treatment but without surgical risks. Studies evaluating results of conservative treatment of full-thickness rotator cuff tears have shown an 82-86% success rate for patients presenting within three months of injury. The efficacy of arthroscopic decompression for full-thickness tears depends on the size of the tear; one study reported satisfactory results in 90% of patients with small tears. A prior study by the same group reported satisfactory results in 86% of patients who underwent open repair for larger tears. Surgical outcomes are much better in younger patients with a rotator cuff tear, than in older patients, who may be suffering from degenerative changes in the rotator cuff. Referral for surgical consultation may be indicated for patients who have: Activity limitation for more than three months, plus existence of a surgical lesion; Failure of exercise programs to increase range of motion and strength of the musculature around the shoulder, plus existence of a surgical lesion; Clear clinical and imaging evidence of a lesion that has been shown to benefit, in both the short and long term, from surgical repair; Red flag conditions (e.g., acute rotator cuff tear in a young worker, glenohumeral joint dislocation, etc.). Suspected acute tears of the rotator cuff in young workers may be surgically repaired acutely to restore function; in older workers, these tears are typically treated conservatively at first. Partial-thickness tears are treated the same as impingement syndrome regardless of MRI findings. Outpatient rotator cuff repair is a well accepted and cost effective procedure. (Cordasco, 2000) Difference between surgery & exercise was not significant. (Brox, 1999)

SURGERY FOR ROTATOR CUFF TEARS

- **ODG Indications for Surgery™ -- Rotator cuff repair:**
- **Criteria** for rotator cuff repair with diagnosis of full thickness rotator cuff tear AND Cervical pathology and frozen shoulder syndrome have been ruled out:
- **1. Subjective Clinical Findings:** Shoulder pain and inability to elevate the arm; tenderness over the greater tuberosity is common in acute cases. PLUS
- **2. Objective Clinical Findings:** Patient may have weakness with abduction testing. May also demonstrate atrophy of shoulder musculature. Usually has full passive range of motion. PLUS
- **3. Imaging Clinical Findings:** Conventional x-rays, AP, and true lateral or axillary views. AND Gadolinium MRI, ultrasound, or arthrogram shows positive evidence of deficit in rotator cuff.
- **Criteria** for rotator cuff repair OR anterior acromioplasty with diagnosis of partial thickness rotator cuff repair OR acromial impingement syndrome (80% of these patients will get better without surgery.)
- **1. Conservative Care:** Recommend 3 to 6 months: Three months is adequate if treatment has been continuous, six months if treatment has been intermittent. Treatment must be directed toward gaining full ROM, which requires both stretching and strengthening to balance the musculature. PLUS
- **2. Subjective Clinical Findings:** Pain with active arc motion 90 to 130 degrees. AND Pain at night (Tenderness over the greater tuberosity is common in acute cases.) PLUS
- **3. Objective Clinical Findings:** Weak or absent abduction; may also demonstrate atrophy. AND Tenderness over rotator cuff or anterior acromial area. AND Positive impingement sign and temporary relief of pain with anesthetic injection (diagnostic injection test). PLUS
- **4. Imaging Clinical Findings:** Conventional x-rays, AP, and true lateral or axillary view. AND Gadolinium MRI, ultrasound, or arthrogram shows positive evidence of deficit in rotator cuff.
- (Washington, 2002)

CRITERIA MET IN THIS PATIENT

RETURN TO WORK

- Under study. Quantitative exposure-response relationships have been established between current work with highly elevated arms and clinically verified shoulder disorders. For current upper arm elevation above 90 degrees, a duration increment of 1% of the daily working hours was associated with odds ratios of 1.23 for supraspinatus tendinitis, 1.16 for shoulder pain with disability, and 1.08 for shoulder pain without disability. (Svendsen, 2004) See also Return to work.
- **ODG Capabilities & Activity Modifications for Restricted Work:**
  Modified work: No overhead work (reaching above shoulder) plus no reaching to shoulder level (90 degree position); no holding arm in abduction or flexion; pulling and pushing not more than 8 lbs up to 4 times/hr; lifting and carrying up to 5 lbs 3 times/hr; single arm upper extremity work using injured arm for light work only; possible immobilization by abduction brace, sling, or clavicle brace; no climbing ladders.
  Manual work: Reaching above shoulder not more than 12 times/hr with up to 15 lbs of weight; reaching to shoulder up to 15 times/hr with up to 25 lbs of weight; holding arm in abduction or flexion up to 12 times/hr with up to 15 lbs of weight; pulling and pushing up to 60 lbs 20 times/hr; lifting and carrying up to 40 lbs 15 times/hr; single upper extremity work using injured arm for moderate work only (full use of non-injured arm); possible immobilization by abduction brace, sling, or clavicle brace; climbing ladders up to 50 rungs/hr.

TIME LINE - ODG

- MRI – ORDER DAY 43 (7 WEEKS)
- 3 MONTHS (12 WEEKS) OF CONTINUOUS TREATMENT
- FOLLOWED BY SURGERY AND REHABILITATION
- "WORST CASE SCENARIO" – RETURN TO WORK 90 DAYS AFTER OPERATION
- TOTAL = 6 MONTHS AFTER INJURY

SUMMARY OF THE CASE:

	CASE EXAMPLE	ODG MODEL
TIME OFF WORK	60 WEEKS	26 WEEKS
RETURN TO WORK	UNKNOWN	26 WEEKS
RETURN TO NORMAL JOB	NO	MAYBE

SUMMARY OF THE CASE:

	CASE EXAMPLE	ODG MODEL
MASSAGE THERAPY SESSIONS	24	0
CORTISONE INJECTIONS	6	3
OTHERS	FCE, IME, VOC REHAB EVAL	NONE
X-RAYS	2	1
MRI	1	1

SUMMARY OF THE CASE:

	CASE EXAMPLE	ODG MODEL
PCP VISITS	9	4+
TIMING OF MRI	6 MONTHS; PERMISSION ISSUES	4 WEEKS
PHYSICAL THERAPY SESSIONS	46	108
ACCUPUNC-TURE SESSIONS	24	MAX. 18; ? DECREASE PT
SURGERY	NO (TOO LATE, TOO LITTLE ?)	YES

SUMMARY OF THE CASE: TREATMENTS BEYOND ODG

- TOTAL TIME OFF– 8 MONTHS EXTRA
- TOTAL EXTRA COSTS INCLUDED:
  - PCP – 2 VISITS
  - ORTHOPEDIST – 3 VISITS
  - ACUPUNCTURE – 3-15 VISITS
  - MASSAGE THERAPY – 24 VISITS
  - PHYSICAL THERAPY – 68 VISITS
  - FUNCTIONAL CAPACITY EVALUATION – 1
  - INTRA-ARTICULAR CORTISONE INJECTIONS – 3
- TREATMENT INCLUDED MULTIPLE EXAMPLES OF TREATMENTS THAT HAVE NO SCIENTIFIC VALIDITY AND, AS SEEN IN THIS CASE, WERE OF NO VALUE

WHAT ARE OUR GOALS IN TREATING HAWAII'S INJURED WORKERS?

IDEALLY,

- **TO RESTORE THE IW TO PRE-INJURY HEALTH**
- **AS QUICKLY AS POSSIBLE**
- **WITH NO LOSS OF INCOME**
- **TO HIS/HER NORMAL JOB**

WHAT ARE OUR GOALS IN TREATING HAWAII'S INJURED WORKERS?

REALISTICALLY,

- TO RESTORE THE IW TO OPTIMUM HEALTH/STATUS VIS-À-VIS HIS/HER INJURY
- AS QUICKLY AS POSSIBLE
- WITH THE LEAST POSSIBLE LOSS OF INCOME
- TO RESTORE THE IW TO AS CLOSE TO HIS/HER NORMAL JOB AS POSSIBLE

SUMMARY OF THE CASE:

WHAT ARE THE DIFFERENCES?

1. SPEED
2. EFFICIENCY
3. THE FOREST IS NOT OVERLOOKED WHEN SEEING THE TREES
4. ECONOMIC COST
5. SCIENTIFIC VALIDITY

SUMMARY OF THE CASE:

WHAT ARE THE DIFFERENCES FOR THE PATIENT?

1. **EARLIER AND BETTER RETURN TO WORK**
2. **LESS LOSS OF INCOME**
3. **ENHANCED RETURN TO OPTIMAL HEALTH STATUS**

SUMMARY OF THE CASE:

WHAT ARE THE DIFFERENCES?

THE TWO PRECEEDING SLIDES REFLECT OBVIOUS DIFFERENCES. BUT, THERE ARE SOME OTHER DIFFERENCES THAT REFLECT THE MEDICAL LITERATURE REGARDING DELAYS IN TREATMENT AND OFF-WORK STATUS

SUMMARY OF THE CASE:

WHAT ARE THE DIFFERENCES?

THERE IS SUFFICIENT MEDICAL EVIDENCE, THAT IS SUFFICIENTLY SCIENTIFICALLY SOUND, THAT SUPPORTS THE CONCEPT OF INCREASED MORBIDITY AND INCREASED MORTALITY IN INDIVIDUALS WHO ARE OFF WORK, EVERYTHING BEING EQUAL

BUT IN ORDER TO DO THIS, WE MUST CHANGE OUR APPROACH TO THESE INJURED WORKERS

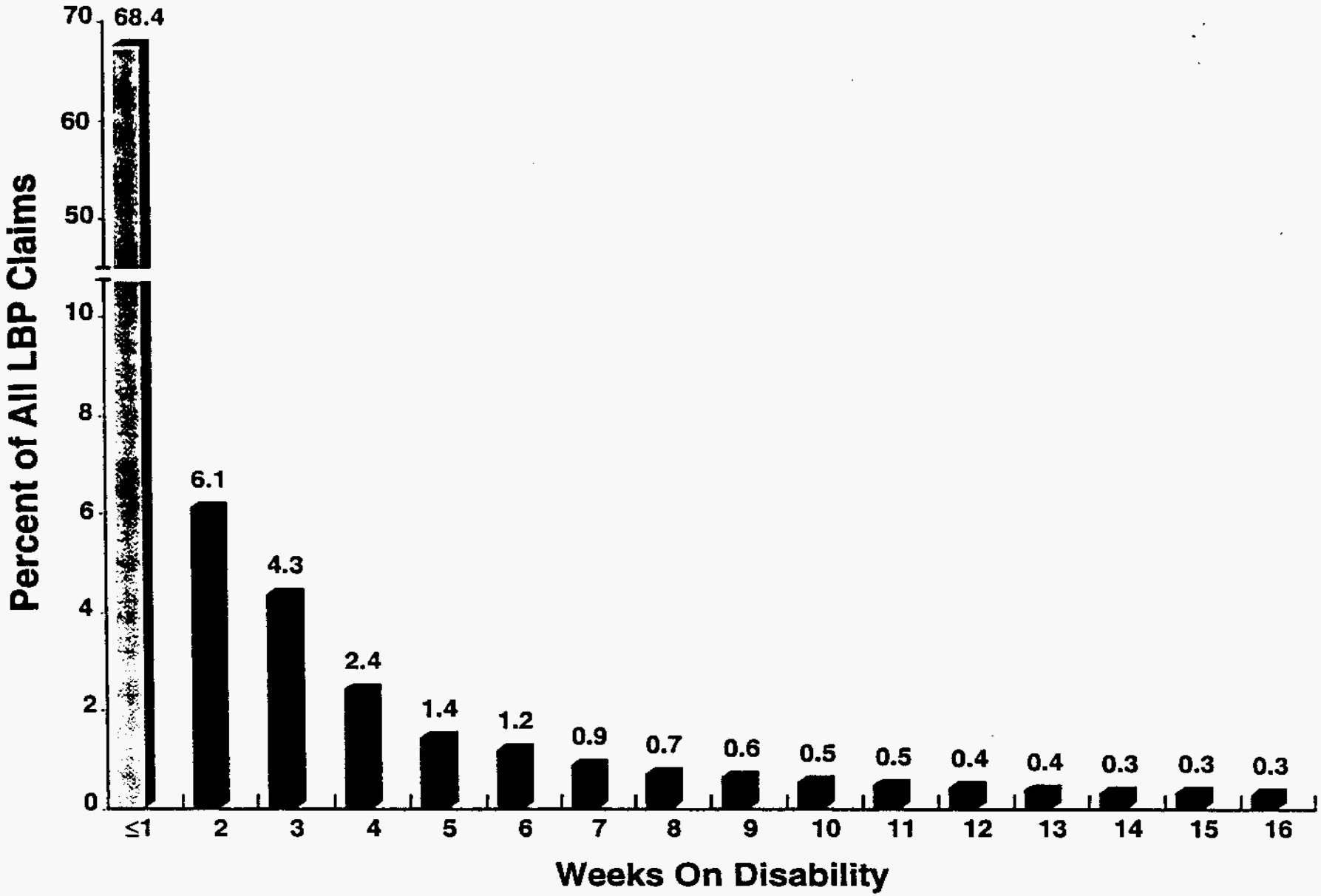
A MAJOR PARADIGM SHIFT IS NECESSARY

- **THE GOAL OF TREATMENT MUST EMPHASIZE A RETURN TO FUNCTION AS SOON AS POSSIBLE**
- **THE GOAL *CANNOT* BE A RETURN TO WORK ONLY WHEN THE INJURED WORKER IS PAIN FREE**

WHY?

REASONS FOR RTW AS SOON AS POSSIBLE

- REDUCE MORBIDITY
- REDUCE MORTALITY
- ENHANCE THE PROSPECT OF RETURNING TO WORK WITH NO LOSS OF POSTION, WAGE, INCOME, OR STATUS

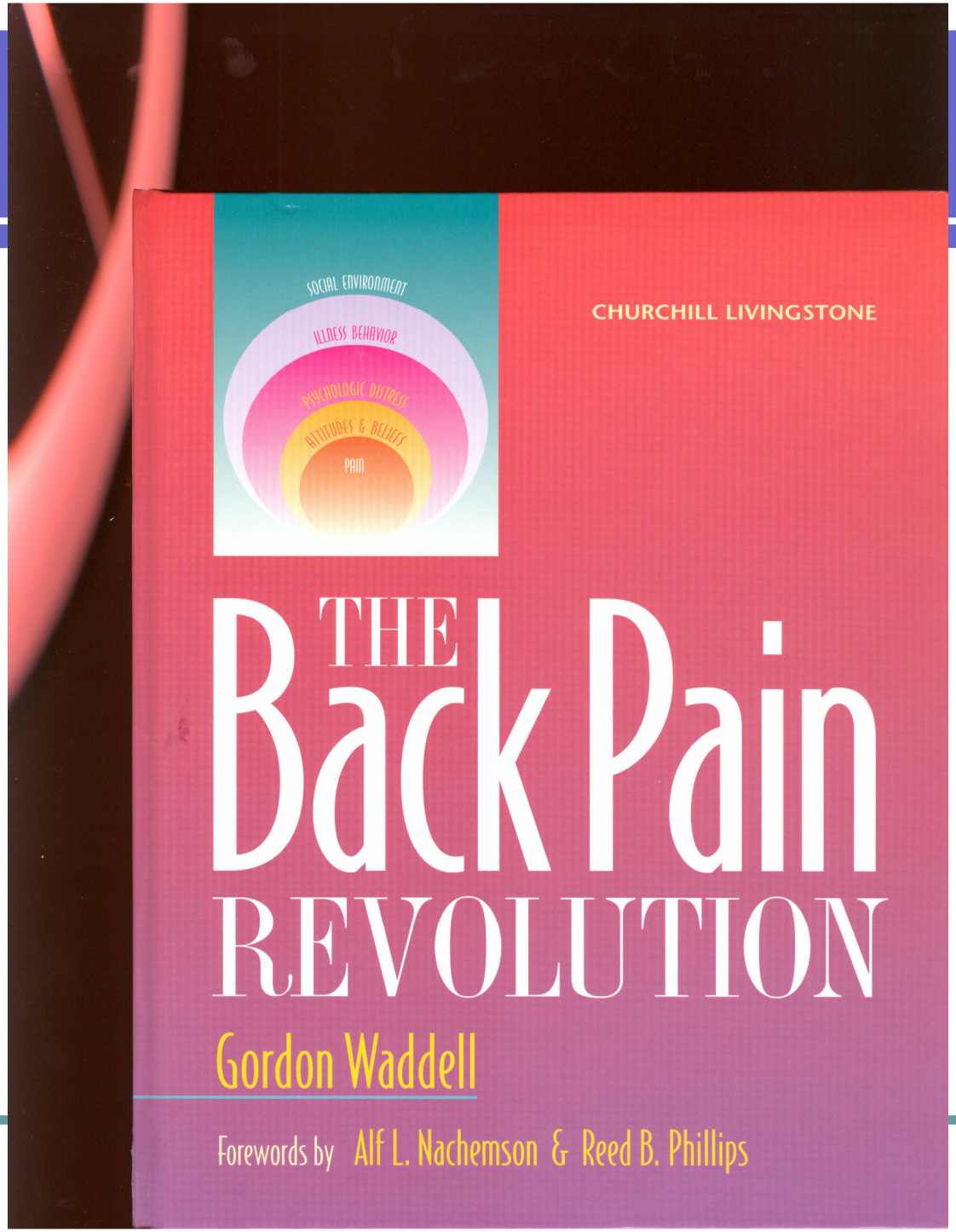


Distribution of length of disability (LOD) in weeks. The histogram indicates that 68.4% of claims have a LOD of one week (zero to seven days). These are comprised of zero-cost claims (17.0%), medical-only claims (49.2%), and remaining claims with a duration of seven days or less (2.1%). Note that zero-cost and medical-only claims have zero disability days.

REASONS FOR RTW AS SOON AS POSSIBLE

Table 7.6 Probability of return to work as a function of time off work

Time off work	Odds of still being off work one year later
Day 1	1–10%
1 month	20%
6 months	>50%
2 years (or lose job, which may be much earlier)	Up to 100%


SOCIAL ENVIRONMENT
ILLNESS BEHAVIOR
PSYCHOLOGIC DISTRESS
ATTITUDES & BELIEFS
PAIN
CHURCHILL LIVINGSTONE
THE Back Pain REVOLUTION
Gordon Waddell
Forewords by Alf L. Nachemson & Reed B. Phillips

Box 9.5 Effects of prolonged bed rest

- Catabolic, poor tissue nutrition, depressed metabolism
- Progressive loss of bone mineral and bone strength
- Stiffness due to loss of joint and soft tissue mobility, connective tissue contracture, fibrosis and adhesions
- Muscle wasting, 3% loss of muscle strength per day, decrease in time to fatigue, reduced endurance
- Loss of neuromuscular coordination and balance
- Ligaments lose strength
- Poorer healing, increased scar tissue formation
- Systemic effects
  - — loss of cardiovascular fitness
  - — anemia and thrombosis
  - — respiratory and renal stagnation
  - — endocrine changes
  - — immune system, lowered resistance
- Loss of sensory and mental acuity
- Psychologic distress, depression
- Lower pain tolerance

An explanation for patients

- Back pain is a symptom, not a disease. Most back pain is not due to any serious disease or damage in your back
- Back pain is usually a symptom of *physical dysfunction*. Your back is simply not moving and working as it should. It is unfit or out of condition
- Recovery and relief of pain depend on getting your back moving and working again and restoring normal function

Box 7.1 Information for patients

- We can reassure them honestly that their pain is likely to improve
- Most people either stay at work or can return to work quickly, even if they still have some pain
- Back pain often recurs. Attacks may settle over several years, but back pain sometimes becomes chronic. However, even chronic back pain does not inevitably continue forever, and about one-third of people improve spontaneously each year
- It may also help to tell them that most people with back pain do manage to continue most activities and to work despite their pain

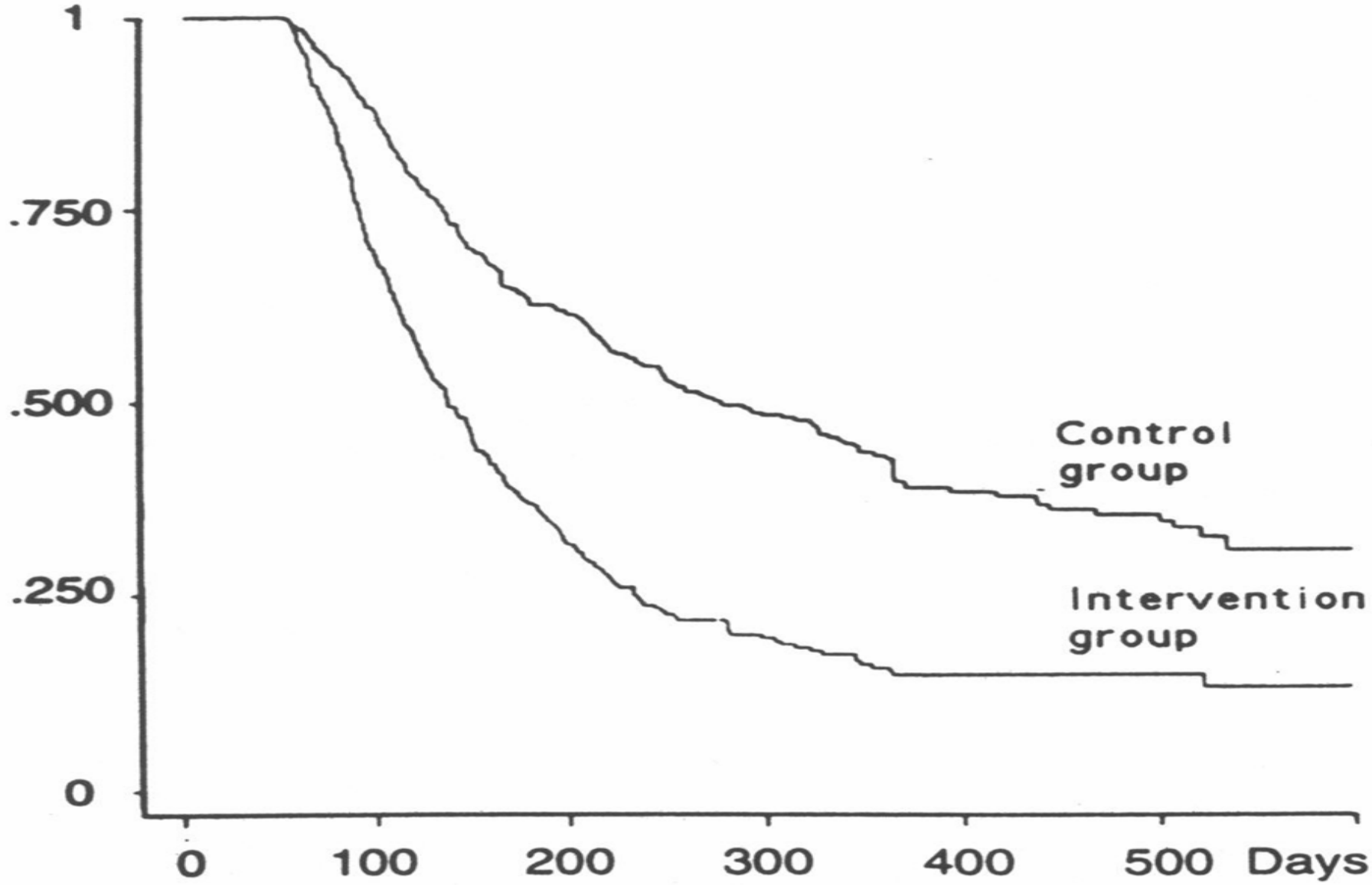


Figure 1. Sickness leave rates in the control group and the intervention group expressed as a survival analysis, where survival is defined as still on sickness leave.

UNEMPLOYMENT AND MORTALITY

A note on the effect of unemployment on mortality

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Abstract

In this note we test ifunemployment has an effect on mortality using a large individual level data set of nearly 30,000 individuals in Sweden aged 20-64 years followed-up for 10-17 years. We follow individuals over time that are initially in the same health state, but differ with respect to whether they are employed or unemployed (controlling also for a number of individual characteristics that may affect the depreciation of health over time). Unemployment significantly increases the risk of being dead at the end of follow-up by nearly 50% (from 5.36 to 7.83%). In an analysis of cause-specific mortality, we find that unemployment significantly increases the risk of suicides and the risk of dying from "other diseases" (all diseases except cancer and cardiovascular), but has no significant effect on cancer mortality, cardiovascular mortality or deaths due to "other external causes" (motor vehicle accidents, accidents and homicides).

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***JEL classification:* II2; J60**

***Keywords:* Unemployment; Mortality; Health**

1. Introduction

High unemployment is a central concern in many economies and it is important to assess how individuals are affected by unemployment. Unemployment typically involves an in-come loss for the individual, and several studies also suggest that it leads to a reduction in happiness and general well-being (Clark and Oswald, 1994; Winkelmann and Winkelmann, 1998; Theodossiou, 1998). It has furthermore been argued that unemployment may be a health hazard, and many studies in the public health field have shown that unemployed

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UNEMPLOYMENT AND MORTALITY

In this note we test if unemployment has an effect on mortality using a large individual level data set of nearly 30,000 individuals in Sweden aged 20-64 years followed-up for 10-17 years. We follow individuals over time that are initially in the same health state, but differ with respect to whether they are employed or unemployed (controlling also for a number of individual characteristics that may affect the depreciation of health over time).

UNEMPLOYMENT AND MORTALITY

Unemployment significantly increases the risk of being dead at the end of follow-up by nearly 50% (from 5.36 to 7.83%). In an analysis of cause-specific mortality, we find that unemployment significantly increases the risk of suicides and the risk of dying from "other diseases" (all diseases except cancer and cardiovascular), but has no significant effect on cancer mortality, cardiovascular mortality or deaths due to "other external causes" (motor vehicle accidents, accidents and homicides).

UNEMPLOYMENT AND MORTALITY

	NUMBER OF DEATHS (%)	EFFECT OF UNEM	PLOYMENT
		ABSOLUTE RISK	RELATIVE RISK
ALL CAUSE MORTALITY	1521 (100%)	2.467	1.460
CANCER	595 (39.1%)	-0.095	0.955
CARDIOVASCULAR	560 (36.8%)	0.520	1.262
OTHER DISEASES	214 (14.1%)	1.350	2.877
SUICIDES	67 (4.4%)	0.329	2.477
OTHER EXTERNAL	85 (5.6%)	-0.036	0.882

SUMMARY:

EARLY RETURN TO WORK – WHY?

- **DECREASED MORBIDITY**
- **DECREASED MORTALITY**
- **RETENTION OF JOB**
- **RETENTION OF ABILITY TO DO JOB**
- **PATIENT SATISFACTION**

SUMMARY:

EARLY RETURN TO WORK – WHY?

- **DECREASED COSTS TO:**
  - **PATIENT**
  - **EMPLOYER**
  - **WORKERS' COMPENSATION SYSTEM**

SUMMARY:

EARLY RETURN TO WORK – WHY?

SUMMARY:

EARLY RETURN TO WORK – WHY?

IT'S THE RIGHT THING TO DO!

SUMMARY:

EARLY RETURN TO WORK – HOW?

- **DEDICATED HEALTH PERSONNEL**
- **DEDICATED EMPLOYERS**
- **DEDICATED "SYSTEM"**

SUMMARY:

EARLY RETURN TO WORK – HOW?

- DEDICATED HEALTH PERSONNEL
  - EARLY RETURN TO WORK
  - WORKING WITH TREATMENT PROTOCOLS
- DEDICATED EMPLOYERS
  - LIGHT DUTY/ACCOMODATION
  - JOB DESCRIPTIONS
- DEDICATED "SYSTEM"
  - WOKING WITH TREATMENT PROTOCOLS
  - FLEXIBILITY WITHIN THOSE PROTOCOLS

COULD THIS BE DONE ANY OTHER WAY?

PERHAPS, BUT THIS ISN'T A BAD WAY TO TRY TO CHANGE A SYSTEM THAT HAS ITS INHERENT FLAWS

GOAL IN TREATING THE INJURED WORKERS OF HAWAII

- **OUR MUTUAL GOAL, FIRST, LAST, AND ALWAYS, IT TO RETURN THE INJURED WORKER TO AS FUNCTIONAL A STATE AS POSSIBLE, IN AS SHORT OF A TIME AS POSSIBLE, WITH THE LEAST ECONOMIC REPERCUSSIONS ON HIM/HER AND HIS/HER FAMILY**

Alternative Treatment Plans

Nelson Befitel

Alternative Treatment Plans

Nelson Befitel, Director
Department of Labor and Industrial Relations
June 23, 2005

The Starting Point
ODG Guidelines

All diagnosis and treatment guidelines in the ODG are considered medically necessary and appropriate.

Question:

What if the treating physician believes that he/she must deviate from the ODG in treating the claimant?

Answer:

The treating physician must submit an "alternative" treatment plan (e.g. treat the injured worker more expansively than prescribed by the ODG).

Submitting An Alternative Treatment Plan

- **Technical Requirements. HAR Section 12-15-32(b) provides what the proposed plan must contain in order for it to be approved.**

- **Evidence-Based Medicine. One of the factors we will consider in determining whether an "alternative" treatment plan should be approved is whether it is based on "evidence-based medicine."**

What facts will be considered in determining whether the "evidence-based medicine" requirement is met?

- Whether the proposed treatment plan is necessary and appropriate to cure and relieve the claimant from the workplace injury.
- Whether the proposed treatment plan has been adequately established to cure and relieve the claimant from the workplace injury.
- Whether the proposed treatment plan has been subjected to peer review and publication.
- The degree of community and or national acceptance of the treatment plan.

Resolving Disputes of Alternative Treatment Plans

- The parties are encouraged to resolve their dispute regarding any treatment plan.
- If the parties are unable to resolve their disputes, either party may request a hearing under HAR Section 12-15-32.
- If appropriate, a decision on the record may be issued without a hearing (e.g., there are no facts in dispute).

Coming Soon

- Employee Handbook
- Employer Handbook
- Revised Webpage
- Frequently Asked Questions

Conclusion

The goal of Hawaii's workers' compensation system is to provide quality medical care to occupationally injured or ill workers at a reasonable cost to the employers.