New York State
Workers' Compensation Board

New York
Mid and Low Back Injury
Medical Treatment Guidelines©

First Edition

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TABLE OF CONTENTS

GENERAL GUIDELINE PRINCIPLES 1

A.1 MEDICAL CARE 1

A.2 RENDERING OF MEDICAL SERVICES 1

A.3 POSITIVE PATIENT RESPONSE 1

A.4 RE-EVALUATE TREATMENT 1

A.5 EDUCATION 1

A.6 DIAGNOSTIC TIME FRAMES 2

A.7 TREATMENT TIME FRAMES 2

A.8 SIX-MONTH TIME FRAME 2

A.9 DELAYED RECOVERY 2

A.10 ACTIVE INTERVENTIONS 2

A.11 ACTIVE THERAPEUTIC EXERCISE PROGRAM 3

A.12 DIAGNOSTIC IMAGING AND TESTING PROCEDURES 3

A.13 SURGICAL INTERVENTIONS 3

A.14 PRE-AUTHORIZATION 4

A.15 PERSONALITY/PSYCHOLOGICAL/PSYCHOSOCIAL EVALUATIONS 4

A.16 PERSONALITY/PSYCHOLOGICAL/PSYCHOSOCIAL INTERVENTION 5

A.17 FUNCTIONAL CAPACITY EVALUATION (FCE) (14) 5

A.18 RETURN-TO-WORK 5

A.19 JOB SITE EVALUATION 6

A.20 GUIDELINE RECOMMENDATIONS AND MEDICAL EVIDENCE 6

A.21 EXPERIMENTAL TREATMENT 7

A.22 INJURED WORKERS AS PATIENTS 7

A.23 SCOPE OF PRACTICE 7

B INTRODUCTION 8

B.1 HISTORY TAKING AND PHYSICAL EXAMINATION 8

B.1.a History of Present Illness 8

B.1.b Past History 9

B.1.c Physical Examination 9

B.1.d Spinal Cord Evaluation 10

B.1.e Relationship to Work 11

B.1.f Red Flags 11

B.2 IMAGING/ANATOMICAL TESTS 11

B.3 LABORATORY TESTING 11

B.3.a Complete Blood Count (CBC) 12

B.3.b Rheumatalogic, Infection or Connective Tissue Disorder 12

B.3.c Metabolic Bone Disease 12

B.3.d Liver and Kidney Function 12

B.4 FOLLOW-UP DIAGNOSTIC IMAGING AND TESTING PROCEDURES 12

C DIAGNOSTIC STUDIES 13

C.1 IMAGING STUDIES 13

C.1.a Roentgenograms (X-Rays) 13

C.1.b Magnetic Resonance Imaging (MRI) 14

C.1.c Computerized Tomography (CT) 16

C.1.d Myelography (Including CT Myelography and MRI Myelography) 16

C.1.e Bone Scans 17

C.1.f Fluoroscopy 17

C.1.g Single Proton Emission Computed Tomography (SPECT) 17

C.1.h Ultrasound (Diagnostic) 17

C.1.i Videofluoroscopy 17

C.2 OTHER TESTS/PROCEDURES: 18

C.2.a Electrodiagnostic Studies (EDS-includes Needle EMG's) 18

C.2.b Surface Electromyography (Surface EMG) 19

C.2.c Diagnostic Facet Blocks 19

C.2.d Lumbar Discography 19

C.2.e CT/MRI Discography 19

C.2.f Myeloscopy 19

C.2.g Thermography 20

D THERAPEUTIC PROCEDURES-NON-OPERATIVE 20

D.1 Acupuncture 20

D.2 Appliances 21

D.2.a Shoe Insoles and Shoe Lifts 21

D.2.b Kinesiotaping and Taping 22

D.2.c Lumbar Supports 22

D.2.d Magnets 22

D.2.e Mattresses, Water Beds, and Sleeping Surfaces (None with Sciatica) 22

D.3 Bedrest 23

D.4 Biofeedback 23

D.5 Electrical Therapies 24

D.5.a Interferential Therapy 24

D.5.b Transcutaneous Electrical Neurostimulation (TENS) 24

D.5.c Percutaneous Electrical Nerve Stimulation (PENS) 25

D.5.d Microcurrent Electrical Stimulation 25

D.5.e Electrical Nerve Block 25
D.5.f Electrical Stimulation (Unattended) 26
D.5.g Transcutaneous Neurostimulator (TCNS) 26
D.5.h H-Wave Stimulation 26
D.5.i High-Voltage Galvanic 26
D.5.j Iontophoresis 26
D.6 Injection Therapies 26
D.6.a Lumbar/Transforaminal/Epidural Injections 26
D.6.b Intradiscal Steroids 29
D.6.c Chemonucleolysis (Chymopapain and Collagenase) 29
D.6.d Tender and Trigger Point Injections 29
D.6.e Diagnostic Facet Joint Injections (Intra-articular and Nerve Blocks) 30
D.6.f Therapeutic Facet Joint Injections 31
D.6.g Facet Joint Hyaluronic Acid Injections 31
D.6.h Sacroiliac Joint Injections 31
D.6.i Prolotherapy Injections 32
D.6.j Platelet Rich Plasma (PRP) 32
D.7 Medications 32
D.7.a Acetaminophen 32
D.7.b Anti-Depressants 33
D.7.c Anti-Seizure Drugs 34
D.7.d Colchicine (Oral and IV Colchicine) 35
D.7.e Complementary and Alternative Methods 36
D.7.f Other creams and ointments 37
D.7.g Vitamins 37

D.7.h Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) 37

D.7.i Opioids – Oral, Transdermal, and Parenteral 39

D.7.j Skeletal Muscle Relaxants 41

D.7.k Systemic Glucocorticosteroids (aka "Steroids") 43

D.7.l Tramadol 43

D.7.m Tumor Necrosis Factor-A Inhibitors 44

D.8 Sleep Posture 44

D.9 Therapy: Active 45

D.9.a Therapeutic Exercise 45

D.9.b Aerobic Exercises 45

D.9.c Strengthening and Stabilization Exercises 46

D.9.d Aquatic Therapy (Including Swimming) 47

D.9.e MEDX Machine 48

D.9.f Yoga 48

D.10 Therapy: Passive 49

D.10.a Manipulation 49

D.10.b Manipulation under Anesthesia (MUA) and Medication-Assisted Spinal Manipulation (MASM) 50

D.10.c Massage (Manual or Mechanical) 50

D.10.d Mobilization (Joint) 51

D.10.e Mobilization (Soft Tissue) 52

D.10.f Superficial Heat and Cold 52

D.10.g Diathermy 53

D.10.h Infrared Therapy 53

D.10.i Ultrasound 53

D.10.j Low Level Laser Therapy 53

D.10.k Myofascial Release 53

D.10.l Neuroflexotherapy 54

D.10.m Reflexology 54

D.10.n Traction 54

D.10.o Vertebral Axial Compression (VAX-D) And Other Decompressive Devices 54

D.11 Radiofrequency Neurotomy, Neurotomy, and Facet Rhizotomy 54

D.11.a Radiofrequency Neurotomy, Neurotomy, and Facet Rhizotomy 54

D.11.b Dorsal Root Ganglia Radiofrequency Lesioning 55

D.11.c Intradiscal Electrothermal Therapy (IDET) 55

D.11.d Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT) .. 55

E THERAPEUTIC PROCEDURES: OPERATIVE 55

E.1 Discectomy, Microdiscectomy, Sequestrectomy, Endoscopic Decompression 55

E.2 Adhesiolysis 56

E.3 Decompressive Surgery (Laminotomy/Facetectomy, Laminectomy) 57

E.4 Spinal Fusion 57

E.5 Electrical Bone Growth Stimulators 58

E.6 Disc Replacement 59

E.7 Vertebroplasty and Kyphoplasty 61

E.8 Sacroiliac Surgery 61

E.9 Intraoperative Monitoring 61

E.10 Implantable Spinal Cord Stimulators 61

A GENERAL GUIDELINE PRINCIPLES

The principles summarized in this section are key to the intended application of the New York State Medical Treatment Guidelines.

Medical Care

A.1 MEDICAL CARE

Medical care and treatment required as a result of a work-related injury should be focused on restoring functional ability required to meet the patient's daily and work activities and return to work, while striving to restore the patient's health to its pre-injury status in so far as is feasible.

A.2 RENDERING OF MEDICAL SERVICES

Any medical provider rendering services to a workers compensation patient must utilize the Treatment Guidelines as provided for with respect to all work related injuries and or illnesses.

A.3 POSITIVE PATIENT RESPONSE

Positive results are defined primarily as functional gains which can be objectively measured. Objective functional gains include, but are not limited to, positional tolerances, range of motion, strength, endurance, activities of daily living, cognition, psychological behavior, and efficiency/velocity measures which can be quantified. Subjective reports of pain and function should be considered and given relative weight when the pain has anatomic and physiologic correlation.

A.4 RE-EVALUATE TREATMENT

If a given treatment or modality is not producing positive results, the provider should either modify or discontinue the treatment regime. The provider should evaluate the efficacy of the treatment or modality 2 to 3 weeks after the initial visit and 3 to 4 weeks thereafter. Reconsideration of diagnosis should also occur in the event of poor response to a rational intervention.

Education

A.5 EDUCATION

Education of the patient and family, as well as the employer, insurer, policy makers and the community should be a primary emphasis in the treatment of work related injury or illness. Practitioners must develop and implement effective educational strategies and skills. An education-based paradigm should always start with communication providing reassuring information to the patient. No treatment plan is complete without addressing issues of individual and/or group patient education as a means of facilitating self-management of symptoms and prevention of future injury.

Time Frames

A.6 DIAGNOSTIC TIME FRAMES

Diagnostic time frames for conducting diagnostic testing commence on the date of injury. Clinical judgment may substantiate the need to accelerate or decelerate the time frames discussed in this document.

A.7 TREATMENT TIME FRAMES

Treatment time frames for specific interventions commence once treatments have been initiated, not on the date of injury. Obviously, duration may be impacted by disease process and severity, patient compliance, as well as availability of services. Clinical judgment may substantiate the need to accelerate or decelerate the time frames discussed in this document.

A.8 SIX-MONTH TIME FRAME

Since the prognosis drops precipitously for returning an injured worker to work once he/she has been temporarily totally disabled for more than six months, the emphasis within these guidelines is to move patients along a continuum of care and return-to-work within a six-month time frame, whenever possible.

A.9 DELAYED RECOVERY

For those patients who are failing to make expected progress 6-12 weeks after an injury, reexamination in order to confirm the accuracy of the diagnosis should be made. Thereafter, consideration of an alternate treatment program should be made. This may include an interdisciplinary rehabilitation program and may also include a psychosocial evaluation.

Treatment Approaches

A.10 ACTIVE INTERVENTIONS

Active interventions emphasizing patient responsibility, such as therapeutic exercise and/or functional treatment, are generally emphasized over passive modalities, especially as treatment progresses. Generally, passive and palliative interventions are viewed as a means to facilitate progress in an active rehabilitation program with concomitant attainment of objective functional gains.

A.11 ACTIVE THERAPEUTIC EXERCISE PROGRAM

Active therapeutic exercise program goals should incorporate patient strength, endurance, flexibility, range of motion, coordination, and education. This includes functional application in vocational or community settings.

A.12 DIAGNOSTIC IMAGING AND TESTING PROCEDURES

Clinical information obtained by history taking and physical examination should be the basis for selection and interpretation of imaging procedure results. All diagnostic procedures have variable specificity and sensitivity for various diagnoses.

When a diagnostic procedure, in conjunction with clinical information, provides sufficient information to establish an accurate diagnosis, a second diagnostic procedure will be redundant if it is performed only for diagnostic purposes. At the same time, a subsequent diagnostic procedure (that may be a repeat of the same procedure, when the rehabilitation physician, radiologist or surgeon documents the study was of inadequate quality to make a diagnosis) can be a complementary diagnostic procedure if the first or preceding procedures, in conjunction with clinical information, cannot provide an accurate diagnosis.

It is recognized that repeat imaging studies and other tests may be warranted by the clinical course and to follow the progress of treatment in some cases. It may be of value to repeat diagnostic procedures (e.g. imaging studies) during the course of care to reassess or stage the pathology when there is progression of symptoms or findings, prior to surgical interventions and therapeutic injections when warranted, and post-operatively to follow the healing process. Regarding CT examinations, it must be recognized that repeat procedures result in an increase in cumulative radiation dose and associated risks.

A.13 SURGICAL INTERVENTIONS

Contemplation of surgery should be within the context of expected functional outcome. The concept of "cure" with respect to surgical treatment by itself is generally a misnomer. All operative interventions must be based upon positive correlation of clinical findings, clinical course

and imaging and other diagnostic tests. A comprehensive assimilation of these factors must lead to a specific diagnosis with positive identification of pathologic condition(s). For surgery to be performed to treat severe pain, there should be clear correlation between the pain symptoms and objective evidence of its cause

A.14 PRE-AUTHORIZATION

All diagnostic imaging, testing procedures, non-surgical and surgical therapeutic procedures within the criteria of the medical treatment guidelines and based on a correct application of the medical treatment guidelines are considered authorized, with the exception of following procedures: Lumbar Fusion, Artificial Disc Replacements, , Vertebroplasty, Kyphoplasty, Electrical Bone Growth Stimulators, Spinal Cord Stimulators, Anterior Acromioplasty of the Shoulder, Chondroplasty, Osteochondral Autograft, Autologous Chondrocyte Implantation, Meniscal Allograft Transplantation and Knee Arthroplasty (Total or Partial Knee Joint Replacement). These are not included on the list of pre-authorized procedures. Providers who want to perform one of these procedures must request pre-authorization from the carrier before performing the procedure.

A.15 PERSONALITY/PSYCHOLOGICAL/PSYCHOSOCIAL EVALUATIONS

In select patients, diagnostic testing procedures may be useful when there is a discrepancy between diagnosis, signs, symptoms, clinical concerns or functional recovery. Psychological testing should provide differentiation between pre-existing depression versus injury-caused depression, as well as post-traumatic stress disorder, and other psychosocial issues that may include work or non-work related issues.

For those patients who fail to make expected progress 6-12 weeks after an injury and whose subjective symptoms do not correlate with objective signs and tests, reexamination in order to confirm the accuracy of the diagnosis should be made. Formal psychological or psychosocial evaluation may be considered.

A professional fluent in the primary language of the patient is strongly preferred. When such a provider is not available, services of a professional language interpreter must be provided.

Frequency: One time visit for evaluation. If psychometric testing is indicated by findings in the initial evaluation, time for such testing should not exceed an additional two hours of professional time.

A.16 PERSONALITY/PSYCHOLOGICAL/PSYCHOSOCIAL INTERVENTION

Following psychosocial evaluation, when intervention is recommended, such intervention should be implemented as soon as possible. This can be used alone or in conjunction with other treatment modalities.

- Time to produce effect: 2 to 8 weeks
- Optimum duration: 6 weeks to 3 months
- Maximum duration: 3 to 6 months. Counseling is not intended to delay but to enhance functional recovery. For select patients, longer supervision may be required, and if further counseling is indicated, documentation of the nature of the psychological factors, as well as projecting a realistic functional prognosis, should be provided by the authorized treating practitioner every 4 to 6 weeks during treatment.

Return to Work

A.17 FUNCTIONAL CAPACITY EVALUATION (FCE) (14)

Functional capacity evaluation is a comprehensive or more restricted evaluation of the various aspects of function as they relate to the patient's ability to return to work. Areas such as endurance, lifting (dynamic and static), postural tolerance, specific range-of-motion, coordination and strength, worker habits, employability, as well as psychosocial, cognitive, and sensory perceptual aspects of competitive employment may be evaluated. Components of this evaluation may include: (a) musculoskeletal screen; (b) cardiovascular profile/aerobic capacity; (c) coordination; (d) lift/carrying analysis; (e) job-specific activity tolerance; (f) maximum voluntary effort; (g) pain assessment/psychological screening; (h) non-material and material handling activities; (i) cognitive; (j) visual; and (k) sensory perceptual factors.

In most cases, the question of whether a patient can return to work can be answered without an FCE.

A.18 RETURN-TO-WORK

For purposes of these guidelines, return-to-work is defined as any work or duty that the patient is able to perform safely. It may not be the patient's regular work. Ascertaining a return-to-work status is part of medical care, should be included in the treatment and rehabilitation plan, and normally addressed at every outpatient visit. A description of patient's status and task limitations is part of any treatment plan and should provide the basis

for restriction of work activities when warranted. Early return-to-work should be a prime goal in treating occupational injuries given the poor return-to-work prognosis for a patient who has been out of work for more than six months.

A.19 JOB SITE EVALUATION

The treating physician may communicate with the employer or his designee, either in person or by telephone, to obtain information regarding the demands of the patient's pre-injury job, including a description of the exertional demands of the job, the need for repetitive activities, load lifting, static or awkward postures, or any other factors that would pose a risk of re-injury or impedance of convalescence. When return to work at the patient's previous job task/setting is not feasible, given the clinically determined restrictions on the patient's activities, inquiry should also be made about modified duty work settings, and a similar set of questions should be posed by the physician about work activities/demands in modified duty jobs.

Ideally, the physician would gain the most information from an on-site inspection of the job settings and activities; but it is recognized that this may not be feasible in most cases. If job videos/CDs/DVDs are available from the employer, these can contribute valuable information.

Frequency: 1 or 2 calls

- 1st call: Patient is in a functional state where the patient can perform some work.
- 2nd call: Patient has advanced to state where the patient is capable of enhanced functional demands in a work environment

The physician shall document the conversation on a form prepared by the Workers' Compensation Board.

Other

A.20 GUIDELINE RECOMMENDATIONS AND MEDICAL EVIDENCE

The Workers Compensation Board [the Department and its Advisors including medical and other professionals] have not independently evaluated or vetted the scientific medical literature used in support of the guidelines, but have relied on the methodology used by the developers of various guidelines utilized and referenced in these Guidelines.

A.21 EXPERIMENTAL TREATMENT

Medical treatment that is experimental and not approved for any purpose, application or indication by the FDA is not permitted under these Guidelines.

A.22 INJURED WORKERS AS PATIENTS

In these Guidelines, injured workers are referred to as patients recognizing that in certain circumstances there is no doctor- patient relationship.

A.23 SCOPE OF PRACTICE

These Guidelines do not address scope of practice or change the scope of practice.

B INTRODUCTION

B.1 HISTORY TAKING AND PHYSICAL EXAMINATION

History taking and physical examination establish the foundation/basis for and dictate subsequent stages of diagnostic and therapeutic procedures. When findings of clinical evaluations and those of other diagnostic procedures are not consistent with each other, the objective clinical findings have greater weight. The medical records should reasonably document the following:

B.1.a History of Present Illness

A detailed history, taken in temporal proximity to the time of injury, should primarily guide evaluation and treatment. The history should include:

B.1.a.i Mechanism of Injury: This includes details of symptom onset and progression. The mechanism of injury should include a detailed description of the incident and the position of the body before, during, and at the end of the incident. Inclusion of work body postures, frequency during the workday and lifting/push/pull requirements should be included in the absence of a known specific incident.

B.1.a.ii Location of pain, nature of symptoms, and alleviating/ exacerbating factors (e.g. sitting tolerance). The history should include both the primary and secondary complaints (e.g., primary low back pain, secondary hip, groin pain).

B.1.a.iii The use of an accepted pain assessment tool, (e.g. the Visual Analog Scale [VAS]) is highly recommended, especially during the first two weeks following injury, to assure that all work-related symptoms, including pain, are being addressed.

B.1.a.iv Presence and distribution of lower extremity numbness, paresthesias, or weakness, especially if precipitated or worsened by coughing or sneezing.

B.1.a.v Alteration in bowel, bladder or sexual function.

B.1.a.vi Prior occupational and non-occupational injuries to the same area including specific prior treatment, history of specific prior motor vehicle accidents, chronic or recurrent symptoms, and any functional limitations.

B.1.a.vii History of emotional and/or psychological reactions to the current injury/illness

B.1.a.viii Ability to perform job duties and activities of daily living.

B.1.b Past History

B.1.b.i Comprehensive past medical history.

B.1.b.ii Review of systems includes symptoms of rheumatologic, neurologic, endocrine, neoplastic, infectious, and other systemic diseases.

B.1.b.iii Smoking history.

B.1.b.iv Vocational and recreational pursuits.

B.1.b.v History of depression, anxiety, or other psychiatric illness.

B.1.c Physical Examination

Guided by the medical history, should include accepted tests and exam techniques applicable to the area being examined, including:

B.1.c.i Vital signs

B.1.c.ii General inspection, including posture, stance and gait.

B.1.c.iii Visual inspection

B.1.c.iv Palpation

B.1.c.v Lumbar range of motion, quality of motion, and presence of muscle spasm. Motion evaluation of specific joints may be indicated.

B.1.c.vi Examination of thoracic spine and pelvis.

B.1.c.vii Nerve tension testing;

B.1.c.viii Sensory and motor examination of the lower extremities with specific nerve root focus.

B.1.c.ix Deep tendon reflexes

B.1.c.x If applicable, abdominal examination, vascular examination, circumferential lower extremity measurements, or evaluation of hip or other lower extremity abnormalities.

B.1.d Spinal Cord Evaluation

In cases where the mechanism of injury, history, or clinical presentation suggests a possible severe injury, additional evaluation is indicated. A full neurological examination for possible spinal cord injury may include:

B.1.d.i Sharp and light touch, deep pressure, temperature, and proprioceptive sensory function;

B.1.d.ii Strength testing;

B.1.d.iii Anal sphincter tone and/or perianal sensation;

B.1.d.iv Presence of pathological reflexes.

B.1.d.v Spinal cord lesions should be classified according to the American Spine Injury Association (ASIA) impairment scale.

ASIA IMPAIRMENT SCALE
A=Complete: No motor or sensory function is preserved in the sacral segments S4-S5 B=Incomplete: Sensory but not motor function is preserved below the neurological level and includes the sacral segments S4-S5 C=Incomplete: Motor function is preserved below the neurological level, and more than half of key muscles below the neurological level have a muscle grade less

than 3 D=Incomplete: Motor function is preserved below the neurological level, and at least half of key muscles below the neurological level have a grade of 3 or more E= Normal: motor and sensory function are normal

A worksheet which details dermatomes and muscle testing required is available from ASIA.

B.1.e Relationship to Work

This includes a statement of the probability that the illness or injury is work-related. If further information is necessary to determine work relatedness, the physician should clearly state what additional diagnostic tests or job information is required.

B.1.f Red Flags

Certain findings, "red flags," raise suspicion of potentially serious and urgent medical conditions. Assessment (history and physical examination) should include evaluation for red flags. In the low back, these findings or indicators may include: acute fractures, dislocations, infection, tumor, progressive neurologic deficit or cauda equina syndrome, and extra spinal disorders. Further evaluation/consultation or urgent/emergent intervention may be indicated and the Low Back Guidelines incorporate changes in clinical management triggered by the presence of "red flags."

B.2 IMAGING/ANATOMICAL TESTS

Imaging studies should not be routinely performed without indications.

Physicians should be aware that "abnormal" findings on x-rays, magnetic resonance images, and other diagnostic tests are frequently seen by age 40 even in asymptomatic individuals. Bulging discs continue to increase after that point and by approximately age 60, will be encountered in a majority of patients. This requires that a careful history and physical examination be conducted by a physician in order to correlate historical, clinical, and imaging findings prior to diagnosing and attributing a patient's complaints to the finding on imaging. The focus of treatment should be improving symptoms and function, and not the correction of abnormalities on imaging studies.

B.3 LABORATORY TESTING

Laboratory tests are rarely indicated at the time of initial evaluation, unless there is a suspicion of systemic illness, infection, neoplasia or underlying rheumatologic disorder, connective tissue disorder, or other findings based on history and/or physical examination. Laboratory tests can provide useful diagnostic information. Tests include, but are not limited to:

B.3.a Complete Blood Count (CBC)

Complete blood count (CBC) with differential can detect infection, blood dyscrasias, and medication side effects.

B.3.b Rheumatalogic, Infection or Connective Tissue Disorder

Erythrocyte sedimentation rate (ESR), rheumatoid factor (RF), anti-nuclear antigen (ANA), human leukocyte antigen (HLA), and C-reactive protein (CRP), among others, can be used to detect evidence of a rheumatologic, infection, or connective tissue disorder.

B.3.c Metabolic Bone Disease

Serum calcium, phosphorous, uric acid, alkaline phosphatase, and acid phosphatase can detect metabolic bone disease.

B.3.d Liver and Kidney Function

Liver and kidney function may be performed for prolonged anti-inflammatory use or other medications requiring monitoring.

B.4 FOLLOW-UP DIAGNOSTIC IMAGING AND TESTING PROCEDURES

One diagnostic imaging procedure may provide the same or distinctive information as does another procedure. Therefore, prudent choice of a single diagnostic procedure, a complement of procedures, or a sequence of procedures will optimize diagnostic accuracy, and maximize cost effectiveness (by avoiding redundancy), and minimize potential adverse effects to patients.

All imaging procedures have a degree of specificity and sensitivity for various diagnoses. No isolated imaging test can assure a correct diagnosis. Clinical information obtained by history taking and physical examination should form the basis for selecting an imaging procedure and interpreting its results.

Magnetic resonance imaging (MRI), myelography, or computed axial tomography (CT) scanning following myelography may provide useful information for many spinal disorders. When a diagnostic procedure, in conjunction with clinical information, provides sufficient information to establish an accurate diagnosis, the second diagnostic procedure will be redundant if it is performed only for diagnostic purposes. At the same time, a subsequent diagnostic procedure (that may be a repeat of the same procedure, when the rehabilitation physician, radiologist or surgeon documents that the study was of inadequate quality to make a diagnosis) can be a complementary diagnostic procedure if the first or preceding procedures, in conjunction with clinical information, cannot provide an accurate diagnosis. Usually, preference of a procedure over others depends upon availability, a patient's tolerance, and/or the treating practitioner's familiarity with the procedure.

It is recognized that repeat imaging studies and other tests may be warranted by the clinical course and to follow the progress of treatment in some cases. It may be of value to repeat diagnostic procedures (e.g. imaging studies) during the course of care to reassess or stage the pathology when there is progression of symptoms or findings, prior to surgical interventions and therapeutic injections when warranted, and post-operatively to follow the healing process. Regarding CT examinations, it must be recognized that repeat procedures result in an increase in cumulative radiation dose and associated risks.

C DIAGNOSTIC STUDIES

C.1 IMAGING STUDIES

C.1.a Roentgenograms (X-Rays)

Recommendations:

C.1.a.i Routine x-rays are not recommended for acute non-specific LBP. In the absence of red flags (indicators of potentially serious disease, such as fever or major trauma), imaging tests are not recommended in the first 4-6 weeks of LBP symptoms.

C.1.a.ii X-rays are recommended for acute LBP with red flags for fracture or serious systemic illness, subacute LBP that is not improving, or chronic LBP, as an option to rule out other possible conditions.

C.1.a.iii X-rays are an option to rule out other possible conditions. If MRI is used as imaging, plain x-ray may not be needed. MRI is a more sensitive and more specific test, which is much more costly, but which avoids gonadal radiation, which for those still in the age group to potentially reproduce is a significant consideration.

Frequency/Duration: Obtaining x-rays once is generally sufficient. For patients with chronic LBP, it may be reasonable to obtain a second set months or years subsequently to re-evaluate the patient's condition, particularly if symptoms change.

C.1.a.iv Flexion and extension views are recommended:

For evaluating symptomatic spondylolisthesis in which there is consideration for surgery or other invasive treatment or occasionally in the setting of trauma.

- Frequency/Duration: Obtaining flexion and extension and lateral flexion and extension views are generally needed no more frequently than every few years, in the absence of a rapidly changing clinical course.

C.1.b Magnetic Resonance Imaging (MRI)

MRI is considered the gold standard in diagnostic imaging for defining anatomy because it has the greatest resolution of any test currently available. While CT remains an important analytical tool especially for evaluating bony or calcified structures of the spine, due to the greater resolution of MRI, particularly with respect to soft tissue of the spine (nerve root compression, myelopathy to evaluate the spinal cord and/or differentiate/rule out masses), there is less need for using CT at the current time. Ferrous material/metallic objects in tissue is a contraindication for the performance of an MRI.

Inadequate resolution on the first scan may require a second MRI using a different technique. A subsequent diagnostic MRI may be a repeat of the same procedure when the rehabilitation physician, radiologist or surgeon documents that the study was of inadequate quality to make a diagnosis. All questions in this regard should be discussed with the MRI center and/or radiologist.

Recommendations:

C.1.b.i MRI is not recommended for acute LBP or acute radicular pain syndromes in the first 6 weeks, in the absence of red flags.

C.1.b.ii MRI is recommended for patients with acute LBP during the first 6 weeks if they have demonstrated progressive neurologic deficit, cauda equina syndrome, significant trauma with no improvement in atypical symptoms, a history of neoplasia (cancer), or atypical presentation (e.g., clinical picture suggests multiple nerve root involvement.

C.1.b.iii MRI is recommended for acute radicular pain syndromes in the first 6 weeks if the symptoms are severe and not trending towards improvement and both the patient and the physician are willing to consider prompt surgical treatment, assuming the MRI confirms ongoing nerve root compression.

- Frequency/Duration: Repeat MRI imaging without significant clinical deterioration in symptoms and/or signs is not recommended.

C.1.b.iv MRI is recommended for patients with subacute or chronic radicular pain syndromes lasting at least 6 weeks, in whom the symptoms are not trending towards improvement, if both the patient and surgeon are considering prompt surgical treatment, assuming the MRI confirms ongoing nerve root compression.

C.1.b.v In cases where an epidural glucocorticosteroid injection is being considered for temporary relief of acute or subacute radiculopathy, MRI at 3 to 4 weeks (before the epidural steroid injection) may be reasonable (see Injection Therapies, Epidural Steroid Injections).

C.1.b.vi MRI is recommended as an option for the evaluation of select chronic LBP patients in order to rule out concurrent pathology unrelated to injury. This should rarely be considered before 3 months and failure of several treatment modalities (including NSAIDs, aerobic exercise, other exercise, and considerations for manipulation, acupuncture).

C.1.b.vii Standing or weight-bearing MRI is not indicated for any back or radicular pain syndrome or condition. In the absence of studies demonstrating improved patient

outcomes, this technology is currently considered experimental.

C.1.c Computerized Tomography (CT)

Due to the far greater resolution of MRIs, particularly with respect to the soft tissue structures of the spine, there is much less need for CT at the current time. However, CT remains a good test to evaluate bony or calcified structures of the spine. CT is most useful to evaluate the spine in patients with contraindications for MRI (most typically an implanted metallic-ferrous device). CT is not invasive (minimally invasive when contrast is needed), has low potential adverse effects, but is costly and entails radiation exposure.

Recommendations:

C.1.c.i Routine CT is not recommended for acute, subacute, or chronic non-specific LBP or for radicular pain syndromes.

C.1.c.ii CT (or MRI) is recommended for those with acute or subacute radicular pain syndrome that has failed to improve within 4 to 6 weeks and there is consideration for an epidural glucocorticoid injection or surgical discectomy (see Injection Therapies, Epidural Steroid Injections).

C.1.c.iii CT is useful in patients with an indication for MRI who cannot undergo MRI examination due to contraindications such as implanted metallic-ferrous device or significant claustrophobia.

Frequency/Duration: Obtaining serial CT exams is not recommended, although if there has been a significant worsening in the patient's history of examination, repeat imaging may be warranted.

C.1.d Myelography (Including CT Myelography and MRI Myelography)

Myelography is invasive, has complications and is costly. It has almost entirely been replaced by MRI and other imaging procedures.

Recommendations:

C.1.d.i Myelography (as well as CT myelography and MRI myelgraphy) is not recommended as the first diagnostic study for the diagnosis of lumbar root compromise.

C.1.d.ii Myelography, including CT myelography, is recommended only in uncommon specific situations (e.g., implanted metal that preclude MRI, equivocal findings of disc herniation on MRI suspected of being falsely positive, spinal stenosis, and/or a post-surgical situation that requires myelography).

C.1.e Bone Scans

Recommendations:

C.1.e.i Bone scanning is not recommended for routine use in LBP patients.

C.1.e.ii Bone scanning is a good diagnostic test for specific situations which involve a minority of patients and may be useful in diagnosing suspected metastases, infection (osteomyelitis), inflammatory arthropathies and fractures.

This technology is generally not used for evaluation of most occupational LBP situations.

C.1.f Fluoroscopy

Recommendations:

C.1.f.i Fluoroscopy is not recommended for the evaluation of acute, subacute, and chronic LBP.

C.1.g Single Proton Emission Computed Tomography (SPECT)

Recommendations:

C.1.g.i SPECT is not recommended, and aside from cases of suspected inflammatory arthropathies not diagnosed by more common tests, there is no current evidence that it has a role in the evaluation of patients with back pain and related disorders.

C.1.h Ultrasound (Diagnostic)

Recommendations:

C.1.h.i Diagnostic ultrasound is not recommended for patients with LBP.

C.1.i Videofluoroscopy

Recommendations:

C.1.i.i Videofluoroscopy is not recommended for the assessment of acute, subacute, or chronic LBP patients.

C.2 OTHER TESTS/PROCEDURES:

C.2.a Electrodiagnostic Studies (EDS-includes Needle EMG's)

EDS include needle EMG,peripheral nerve conduction studies (NCS) and motor and sensory evoked potentials. Needle EMG is usually what substantiates the diagnosis of radiculopathy or spinal stenosis in patients with back pain and/or radiculopathy problems. Needle EMG can help determine if radiculopathy is acute or chronic. NCS are done in addition to needle EMG to rule out other potential causes for the symptoms, (co-morbidity or alternate diagnosis involving peripheral nerves) and to confirm radiculopathy. It is recommended and preferred that EDS in the out-patient setting be performed and interpreted by physicians board-certified in Neurology or Physical Medicine and Rehabilitation.

Recommendations:

C.2.a.i EDS are not recommended for patients with acute, subacute, or chronic back pain who do not have significant leg pain or numbness.

C.2.a.ii EDS (must include needle EMG and NCS) are recommended where a CT or MRI is equivocal and there are ongoing complaints of pain, weakness, and/or numbness/parasthesias that raise questions about whether there may be a neurological compromise that may be identifiable. This means leg symptoms consistent with radiculopathy, spinal stenosis, peripheral neuropathy, etc.

Nerve conduction studies are done in addition to the needle EMG both to rule out other potential causes for the symptoms (co-morbidity or alternate diagnosis involving peripheral nerves, e.g. compression neuropathies) and to confirm radiculopathy, but the testing must include needle EMG

C.2.a.iii EDS is recommended where there is failure of suspected radicular pain to resolve or plateau after waiting 4 to 6 weeks (to provide for sufficient time to develop EMG abnormalities as well as time for conservative treatment to resolve the problems), equivocal imaging findings, e.g. on CT or MRI studies, and suspicion by history and physical examination that a neurologic condition other than radiculopathy may be present instead of or in addition to radiculopathy.

C.2.b Surface Electromyography (Surface EMG)

Recommendations:

C.2.b.i There is no established indication for the use of surface EMG in LBP diagnosis and it is not recommended.

Surface EMG may be of use in biofeedback training and gait analysis for neurologic disorders, but it has no established use in any adult back pain scenario.

C.2.c Diagnostic Facet Blocks

See Injection Therapies, Diagnostic Facet Joint Injections

C.2.d Lumbar Discography

Recommendation

Discography, whether performed as a solitary test or when paired with imaging (e.g., MRI), is not recommended for acute, subacute, chronic LBP or radicular pain syndromes. Improvement in surgical outcomes has not been shown to follow the use of discography, and there is evidence that performing discography on normal discs is associated with an enhanced risk of degenerative changes in those discs in later years.

C.2.e CT/MRI Discography

Recommendations: See Lumbar Discography above.

C.2.f Myeloscopy

Recommendations:

Myeloscopy is not recommended for acute, subacute, or chronic LBP, spinal stenosis, radicular pain syndromes or post-surgical back pain problems.

C.2.g Thermography

Recommendations:

Thermography is not recommended for the assessment of acute, subacute, or chronic LBP, or radicular pain patients.

D THERAPEUTIC PROCEDURES-NON-OPERATIVE

Before initiation of any therapeutic procedure, the authorized treating provider, employer, and insurer must consider these important issues in the care of the patient.

First, patients undergoing therapeutic procedure(s) should be released or returned to modified or restricted duty during their rehabilitation at the earliest appropriate time.

Second, cessation and/or review of treatment modalities should be undertaken when no further significant subjective or objective improvement in the patient's condition is noted. If patients are not responding within the recommended duration periods, alternative treatment interventions, further diagnostic studies or consultations should be pursued.

Third, providers should provide and document education to the patient. No treatment plan is complete without addressing issues of individual and/or group patient education as a means of facilitating self-management of symptoms.

Lastly, for those patients who fail to make expected progress 6-12 weeks after an injury and whose subjective symptoms do not correlate with objective signs and tests, reexamination in order to confirm the accuracy of the diagnosis should be made. Formal psychological or psychosocial evaluation may be considered.

Home therapy is an important component of therapy and may include active and passive therapeutic procedures as well as other modalities to assist in alleviating pain, swelling, and abnormal muscle tone.

The following are listed in alphabetical order.

D.1 Acupuncture

Recommendations:

D.1.a.i Routine use of acupuncture is not recommended for acute, subacute LBP, radicular pain. Although it is not high cost and its use is not associated with high potential for patient harm, it is not recommended.

D.1.a.ii Acupuncture is recommended for select use in chronic LBP as an adjunct to more efficacious treatments.

D.1.a.iii Acupuncture may be recommended as treatment of chronic LBP as a limited course during which time there are clear objective and functional goals that are to be achieved.

Consideration for time-limited use in chronic LBP patients without underlying serious pathology is as an adjunct to a conditioning program that has both graded aerobic exercise and strengthening exercises. Acupuncture is only recommended to assist in increasing functional activity levels more rapidly and the primary attention should remain on the conditioning program.

This intervention is not recommended for patients not involved in a conditioning program, or who are non-compliant with graded increases in activity levels.

Frequency/Duration:

a. There are different patterns which are used in quality studies. These range from weekly for a month to 20 appointments over 6 months; however the norm is generally no more than 8 to 12 sessions.

b. An initial trial of 5 to 6 appointments would appear reasonable in combination with a conditioning program of aerobic and strengthening exercises.

c. Future appointments should be tied to improvements in objective measures and would justify an additional 6 sessions, for a total of 12 sessions.

Discontinuation: Resolution, intolerance, or non compliance, including non-compliance with aerobic and strengthening exercises.

D.2 Appliances

Include: shoe insoles, shoe lifts, kinesiotaping and taping, lumbar supports, magnets, mattresses and sleeping surfaces.

D.2.a Shoe Insoles and Shoe Lifts

Recommendations:

D.2.a.i These interventions are recommended for the treatment of acute, subacute, or chronic LBP or radicular pain syndrome in the presence of significant leg-length discrepancy.

In the absence of significant leg length discrepancy, these are not recommended.

D.2.b Kinesiotaping and Taping

Recommendations:

D.2.b.i Kinesiotaping and taping are not recommended for the treatment of acute, subacute, or chronic LBP or radicular pain syndromes or other back-related conditions.

D.2.c Lumbar Supports

Recommendations:

D.2.c.i Lumbar supports may be useful for specific treatment of spondylolysis, documented instability, or post-operative treatment in the absence of significant leg length discrepancy.

D.2.c.ii Lumbar supports are not recommended for the prevention or treatment of other LBP conditions.

D.2.d Magnets

Recommendations:

D.2.d.i The use of magnets is not recommended.

D.2.e Mattresses, Water Beds, and Sleeping Surfaces (None with Sciatica)

Recommendations:

D.2.e.i It is recommended that patients select mattresses, pillows, bedding, or other sleeping options that are most comfortable for them.

D.2.e.ii There is no recommendation regarding mattresses other than that providers should be aware that ordering patients to sleep on firm mattresses or on the floor may be incorrect.

D.2.e.iii There is no quality evidence to guide recommendations regarding other optimal sleeping surfaces (e.g., bedding, water beds, and hammocks).

D.3 Bedrest

Recommendations:

D.3.a.i Bed rest is not recommended for the management of acute, subacute or chronic LBP, radicular pain syndromes including sciatica or other back pain related problems including spondylolisthesis, spondylolysis, spinal stenosis, facet related pain, or pain thought to be related to the sacroiliac joint.

There is no quality evidence that these conditions are successfully treated with bed rest and there are also likely adverse effects. Although it is non-invasive, it is costly, has no documented benefits and is expected to be associated with higher morbidity.

D.3.a.ii Bed rest is recommended in the management of unstable spinal fractures.

Although there are no quality studies evaluating the role of bed rest in the management of unstable spinal fractures or cauda equina syndrome, there is consensus that these require bed rest or other marked activity limitations to prevent adverse events. Although bed rest is costly and has no documented benefits, the hazard of mobilization in this setting is theoretically catastrophic, thus this treatment strategy is recommended.

D.4 Biofeedback

Recommendations:

D.4.a.i Biofeedback is not recommended in patients with acute or subacute LBP. It is suggested that other treatments for which there is quality evidence of efficacy are more appropriate.

D.4.a.ii Biofeedback is recommended for select patients with chronic LBP, as a component of an interdisciplinary approach.

Patients with moderate to severe chronic LBP with sufficient symptoms that multiple treatment options have failed, particularly including NSAIDs, progressive aerobic exercise program, other exercises, and potentially manipulation or acupuncture. These select patients must also be willing to learn about biofeedback and motivated to comply with the treatment regimen which requires self discipline.

- Frequency/Duration: 4 to 6 sessions for initial effect, 10 to 12 sessions to acquire skill within the multidisciplinary program.
- Maximum Duration: 12 to 16 sessions. Further supervised treatments unlikely to be needed unless there is objective evidence of further improvement that is continuing through and to that time. Patients are discharged at that time to continue biofeedback exercises at home.
- Discontinuation: Lack of objective progress, Non-tolerance, noncompliance or resolution of LBP

D.5 Electrical Therapies

D.5.a Interferential Therapy

Recommendations:

D.5.a.i Interferential therapy is not recommended for treatment of acute, subacute, chronic LBP, chronic radicular pain syndromes, or other back-related conditions.

D.5.b Transcutaneous Electrical Neurostimulation (TENS)

Recommendations:

D.5.b.i TENS is not recommended for acute LBP, subacute LBP, or acute radicular pain syndromes.

D.5.b.ii TENS is recommended for select use in chronic LBP or chronic radicular pain syndrome as an adjunct for more efficacious treatments.

TENS (single or dual channel) may be recommended as treatment for chronic LBP when clear objective and functional goals are being achieved, which includes reductions in medication use. TENS is used as adjunctive treatment in chronic pain conditions to support graded aerobic exercise and strengthening exercises. In those not involved in a conditioning program, or who are non-compliant with graded increases in activity levels, this intervention is not recommended. There is no quality evidence that more complex TENS units beyond the single or dual channel models are more efficacious, thus, those models are not recommended.

- Frequency/Duration: TENS units should be tried prior to purchase to demonstrate efficacy and increase function. Two or three visits with a therapist may be necessary to instruct the patient in the application and use of the unit and to determine the most effective electrode placement and current parameters.
- Discontinuation: Resolution, intolerance or non-compliance, including non-compliance with aerobic and strengthening exercises.

D.5.c Percutaneous Electrical Nerve Stimulation (PENS)

Recommendations:

D.5.c.i PENS is not recommended for acute, subacute LBP or radicular pain syndromes.

D.5.c.ii As PENS is still an investigational treatment, it is not recommended outside of research settings for chronic non-radicular LBP.

D.5.d Microcurrent Electrical Stimulation

Recommendations:

D.5.d.i Microcurrent electrical simulation is not recommended for acute, subacute, or chronic LBP or radicular pain syndrome patients, as other therapies are believed to be more efficacious and less costly.

D.5.e Electrical Nerve Block

Electrical Nerve Block (WCB) is not recommended.

D.5.f Electrical Stimulation (Unattended)

Electrical Stimulation (unattended) (WCB) is not recommended. For the purposes of these guidelines, unattended means that the physician or therapist is not physically present with the patient on a 1:1 basis when treatment is being administered.

D.5.g Transcutaneous Neurostimulator (TCNS)

TCNS (WCB) is not recommended.

D.5.h H-Wave Stimulation

Recommendations:

D.5.h.i H-wave simulation is not recommended for acute, subacute, or chronic LBP or radicular pain syndromes.

D.5.i High-Voltage Galvanic

Recommendations:

D.5.i.i High-voltage galvanic is not recommended for the treatment of acute, subacute, or chronic LBP or radicular pain syndromes or other back-related conditions.

D.5.j Iontophoresis

Recommendations:

D.5.j.i Iontophoresis is not recommended for the treatment of acute, subacute, or chronic LBP or radicular pain syndromes or other back-related conditions.

D.6 Injection Therapies

D.6.a Lumbar/Transforaminal/Epidural Injections

Recommendations:

Lumbar/Transforaminal/Epidural Injections must be fluoroscopically guided, except in cases where radiation exposure is contraindicated and ultrasound evaluation of needle placement may be used.

D.6.a.i An epidural glucocorticosteroid injection is an option for acute or subacute radicular pain syndromes.

Its purpose is a few weeks of partial pain relief while hopefully awaiting spontaneous improvement. An epidural steroid injection may provide short-term improvement, which may assist in successfully accruing sufficient time to ascertain whether conservative care will succeed.

The term "option" in the paragraph above means there is no requirement that a patient receive and fail treatment with epidural glucocorticosteroids, especially repeated injections, prior to discectomy.

These injections must be fluoroscopically guided except in cases where radiation exposure is contraindicated and ultrasound evaluation of needle placement may be used.

- Frequency/Duration: It is recommended that each injection be scheduled separately, and effects of each injection be evaluated, depending upon patient response (improved function and pain reduction) rather than scheduling a "Series of 3." Medications most often used in randomized controlled studies were triamcinolone and methylprednisolone combined with an anesthetic. The anesthetic has most often been bupivacaine. There are no head to head comparisons of different medications to ascertain the optimum medication(s) and/or dose(s).

- Maximum Duration: 3 injections may be done in one year depending upon patient response (improved function and pain reduction).

- Discontinuation: A second epidural steroid injection is not recommended if following the first injection there has been resolution of the symptoms of the acute radicular pain syndrome, particularly resolution of leg symptoms, or a decrease in symptoms to a tolerable level. If there has not been a response to a first epidural injection, there would be no recommendation for a second epidural injection, a 2nd injection is not recommended. In patients who respond with a pharmacologically appropriate 3 to 6 weeks of temporary, partial relief of leg pain, but who then have a worsening of leg pain and function, and who are not (yet) interested in surgical discectomy, a repeat epidural steroid

injection is an option. Generally, there are not believed to be benefits beyond 3 injections for a given episode of radicular pain. Patients requesting a fourth injection should be counseled for discectomy, or considered to have chronic radicular symptoms for which epidural steroids are not recommended.

D.6.a.ii Is an option for radicular pain syndromes lasting at least 3 weeks having been treated with NSAIDs and without evidence of trending towards spontaneous resolution.

Consideration may also be given for an optional short course of an oral glucocorticosteroid before an injection.

- Frequency/Duration: Same as acute or subacute radicular pain above
- Discontinuation: Same for acute or subacute radicular pain above

D.6.a.iii Epidural glucocorticosteroid injections are an option for second-line treatment for acute flare ups of spinal stenosis, although the evidence is less robust than it is for herniated discs.

- Frequency/Duration: It is recommended that each injection be scheduled, and the effects of each injection be evaluated depending upon patient response (improved function and pain reduction) before additional injections are considered, rather than scheduling a "Series of 3."
- Maximum Duration: 3 injections may be done in one year depending upon patient response (improved function and pain reduction).
- Discontinuation: Resolution of the symptoms of spinal stenosis, or decrease in symptoms to a tolerable level.

D.6.a.iv Is an option for symptoms of spinal stenosis of at least 1 to 2 months, with prior treatment that has included NSAIDs and progressive exercise.

- Frequency/Duration: It is recommended that each injection be scheduled, and the effects of each injection be evaluated depending upon patient

response (improved function and pain reduction) before additional injections are considered, rather than scheduling a "Series of 3."

- Maximum Duration: 3 injections may be done in one year depending upon patient response (improved function and pain reduction).
- Discontinuation: Resolution of the symptoms of spinal stenosis, or decrease in symptoms to a tolerable level.

D.6.a.v Epidural glucocorticosteroid injections are not recommended for acute, subacute or chronic LBP in the absence of significant radicular symptoms.

D.6.a.vi They are also not recommended as first or second line treatment in individuals with LBP symptoms that predominate over leg pain.

D.6.a.vii They are not recommended as treatment for any chronic LBP problem.

D.6.b Intradiscal Steroids

Recommendations:

D.6.b.i Intradiscal steroid injections are not recommended for the treatment of acute LBP.

There is no quality evidence on the value of intradiscal steroid injections in those with acute LBP. There is also no quality evidence that these injections improve on the natural history of acute LBP.

D.6.b.ii This treatment strategy is not recommended for management of subacute or chronic LBP.

D.6.c Chemonucleolysis (Chymopapain and Collagenase)

This procedure, while a successful treatment, is not available in the U.S. due to serious adverse effects.

D.6.d Tender and Trigger Point Injections

Recommendations:

D.6.d.i Trigger and/or tender point injections are not recommended for treatment of acute LBP. There are other more efficacious treatment strategies available.

D.6.d.ii Trigger or tender point injections may be reasonable second or tertiary options for subacute or chronic LBP that is not resolving with more conservative means (e.g., NSAID, progressive aerobic exercises, other exercises).

These injections are recommended to consist solely of a topical anesthetic (e.g., bupivacaine). Repeated injections should be linked to subjective and objective improvements. The use of therapeutic injections without participation in an active therapy program or in the context of maintaining employment is not recommended. An alternative option to these injections is acupuncture.

- Frequency/Duration: It is recommended to allow at least 3 to 4 weeks between injections. If the results are not satisfactory after the first set of injections, a second set is reasonable. If there are not subjective and objective improvements at that point, further injections are not recommended.

- Discontinuation: Resolution, intolerance or completing two set(s) of injections without materially affecting the condition.

D.6.e Diagnostic Facet Joint Injections (Intra-articular and Nerve Blocks)

Recommendations:

D.6.e.i One fluoroscopically guided (except in cases where radiation exposure is contraindicated and ultrasound evaluation of needle placement may be used) diagnostic facet joint injection, except in cases where radiation exposure is contraindicated (eg. pregnancy) ultrasound evaluation of needle placement may be used, per side per level may be recommended for patients with chronic LBP that is significantly exacerbated by extension and rotation or associated with lumbar rigidity, and not alleviated with other conservative treatments (e.g., medication, aerobic exercise, other exercise, manipulation) in order to determine whether specific interventions targeting the facet joint are recommended. Repeated diagnostic injections in the same level(s) are not recommended.

Maximum Duration: One diagnostic facet joint injection per side per level, not to exceed two levels.

D.6.e.ii Diagnostic facet joint injections are not recommended for acute, subacute LBP, or sciatic pain

D.6.f Therapeutic Facet Joint Injections

Recommendations:

D.6.f.i Fluoroscopically guided (except in cases where radiation exposure is contraindicated and ultrasound evaluation of needle placement may be used) therapeutic facet joint injections may be considered for a select group of patients with chronic LBP who have completed a full course of conservative management, including but not limited to medication, modalities, active exercises, and have chronic low back pain believed to be the result of facet dysfunction (see Diagnostic Facet Joint Injections D.6.e).

- Optimal Duration: 2-3 injections for each applicable joint per year depending upon patient response (improved function and pain reduction) not to exceed two levels.
- Maximum: 3 injections may be done in one year depending upon patient response (improved function and pain reduction).

D.6.g Facet Joint Hyaluronic Acid Injections

Recommendations:

D.6.g.i Are not recommended

D.6.h Sacroiliac Joint Injections

Recommendations:

D.6.h.i Sacroiliac joint corticosteroid injections are recommended as a treatment option for patients with a specific cause of sacroiliitis, meaning a work related aggravation of proven rheumatologic inflammatory arthritis involving the sacroiliac joints.

D.6.h.ii Sacroiliac joint injections are recommended for the treatment of sacroiliac joint sprain/dysfunction.

Sacroiliac sprain may present with local tenderness corresponding to the anatomical sacroiliac joint. Such presentation is an extra-axial finding, without radiation, and may be the result of inflammation or trauma. The pain may be acute, subacute or chronic

- Frequency/Duration: If the results after the first injection are not satisfactory, fluoroscopic guidance must be used for the second injection except in cases where radiation exposure is contraindicated (eg. pregnancy) ultrasound evaluation of needle placement may be used. Subsequent injections are not recommended unless significant improvement is noted after the initial injections.

D.6.i Prolotherapy Injections

Recommendations:

D.6.i.i Prolotherapy is not recommended for acute, subacute, or chronic LBP, or for any radicular pain syndrome.

D.6.j Platelet Rich Plasma (PRP)

PRP(WCB) not recommended.

D.7 Medications

D.7.a Acetaminophen

Actaminophen is an effective analgesic with antipyretic but not anti-inflammatory activity. Acetaminophen is generally well tolerated, causes little or no gastrointestinal irritation, and is not associated with ulcer formation. Acetaminophen has been associated with liver toxicity when the recommended daily dose is exceededor in patients who chronically use alcohol. Patients may not realize that many over-the-counter preparations may contain acetaminophen. The total daily dose of acetaminophen should not exceed 4 grams per 24-hour period from all sources, including narcotic-acetaminophen combination preparations. Patients who consume three or more alcoholic drinks per day are at greater risk for liver toxicity, and consideration should be given to the use of other analgesics or limiting the acetaminophen dose to 2 grams per 24-hour period from all sources. Monitoring liver function via blood testing for use beyond 10 days is advisable.

Recommendations:

D.7.a.i Acetaminophen is a reasonable alternative to NSAIDs, although evidence suggests it is modestly less efficacious.

D.7.a.ii Acetaminophen is recommended for treatment of LBP with or without radicular symptoms, particularly for those with contraindications for NSAIDs.

- Optimum Duration: 7 to 10 days.
- Maximum Duration: Chronic use as indicated on a case-by-case basis.

D.7.b Anti-Depressants

Recommendations:

D.7.b.i Tricyclic antidepressants (TCAs) are recommended for the treatment of chronic LBP that is not fully treated with NSAIDs and an exercise program. This intervention may be helpful where there is nocturnal sleep disruption and mild dysthymia.

- Frequency/Duration: Generally prescribed at a very low dose at night and gradually increased (e.g., amitriptyline 25 mg QHS, increase by 25 mg each week) until a sub-maximal or maximal dose is achieved, sufficient effects are achieved, or adverse effects occur. Most practitioners use lower doses, (e.g., amitriptyline 25 to 75 mg a day to avoid the adverse effects and necessity of blood level monitoring), as there is not evidence of increased pain relief at higher doses. Imipramine is less sedating, thus if there is carryover daytime sedation, this may be a better option.
- Discontinuation: Resolution of pain, intolerance, or development of adverse effects.

Tricyclic antidepressants (TCAs) are recommended for the treatment of radicular pain.

There is limited evidence that TCAs result in modest reductions in pain ratings in the treatment of radicular pain compared with placebo.

Recommendations regarding usage, frequency, duration and discontinuation are as above for chronic LBP.

D.7.b.ii The selective serotonin reuptake inhibitors, (e.g., paroxetine, as well as bupropion and trazodone) are not recommended for treatment of chronic LBP. They may be recommended for the treatment of chronic LBP with concomitant depression.

There is strong evidence that treatment with these SSRI medications is not of benefit; thus their use is not recommended for the management of chronic LBP without depression.

Absent other indicators of a need for such treatment, this intervention is not recommended for the management of acute or subacute LBP.

D.7.c Anti-Seizure Drugs

Recommendations:

Topiramate

D.7.c.i Topiramate is recommended for limited use in select chronic LBP patients, where there has been failure of multiple other modalities including trials of different NSAIDs, aerobic exercise, specific stretching exercise, strengthening exercise, tricyclic antidepressants, distractants, and manipulation.

- Frequency/Dose: This medication is initiated by gradually increasing the dose. It has been initiated with a beginning dose of 50 mg and increasing by 50 mg a week. The most appropriate steady dose is unclear, but appears to be 300 mg. Patients should be carefully monitored for the development of adverse events.

- Discontinuation: Resolution, development of adverse effects, or failure to adhere to a functional restoration program. Careful monitoring of employed patients is indicated due in part to elevated risks for central nervous system (CNS) sedating effects.

Topiramate is not recommended for neuropathic pain, including peripheral neuropathy.

Carbamazepine

D.7.c.ii Carbamazepine is recommended as a potential adjunct for chronic radicular or neuropathic pain after attempting other treatments (e.g., other medications, aerobic exercise, other exercise, manipulation).

While there is not quality evidence for treatment of chronic radicular LBP, this may be tried if other medications have failed. Oxcarbazepine and lamotrigine may be useful agents to try if the results from carbamazepine are insufficient for pain relief.

- Frequency/Duration: Frequency and dosing are based on the medication prescribed
- Discontinuation: Resolution of LBP, lack of efficacy, or development of side effects that necessitate discontinuation. Careful monitoring of employed patients is indicated due to elevated risks for CNS sedating effects.

Gabapentin and Pregabalin

D.7.c.iii Gabapentin is recommended for peri-operative management of pain to reduce need for opioids, particularly in those with side effects from opioids.

- Discontinuation: Resolution or intolerance. Careful monitoring of employed patients is indicated due in part to elevated risks for CNS-sedating effects.

Gabapentin may be considered for the treatment of severe neurogenic claudication from spinal stenosis or chronic radicular pain syndromes with limited walking distance.

- Discontinuation: Resolution or intolerance. Careful monitoring of employed patients is indicated due in part to elevated risks for CNS-sedating effects.

Gabapentin is not recommended for chronic non-neuropathic pain or LBP

D.7.d Colchicine (Oral and IV Colchicine)

Recommendations:

D.7.d.i Oral and IV colchicine are not recommended for acute, subacute, or chronic LBP.

D.7.e Complementary and Alternative Methods

Recommendations:

Complementary and alternative treatments other than specifically defined below, do not have quality evidence and do not have evidence of efficacy for the treatment of acute, subacute, or chronic LBP, or radicular pain syndromes, or other back-related conditions and are not recommended.

Harpagoside

D.7.e.i In carefully selected patients, harpagoside is recommended for treatment of acute, subacute or chronic LBP.

There is evidence that for acute, subacute, or chronic back pain syndromes harpagoside reduces pain more than a placebo in a dose-dependent manner. For acute, subacute, chronic LBP in patients in whom NSAIDs are contra-indicated or not tolerated, harpagoside is a reasonable consideration. However, long-term safety is unclear and caution is warranted about long-term treatment with this compound.

- Discontinuation: Resolution of LBP, lack of efficacy, or development of adverse effects necessitate discontinuation. Not recommended for use more than 3 months until more evidence of efficacy is available.

Capsaicin, "Sports Creams" and Other Creams and Ointments

Recommendations:

D.7.e.ii Capsicum is recommended for treatment of acute and subacute back pain, or temporary flare-ups of chronic LBP.

Providers should be aware that there are other treatments that appear to likely have greater efficacy (e.g., medications, progressive exercise program, etc.). However, capsicum may be a useful adjunct. These compounds may also be used in those patients who prefer

topical treatments over oral treatments and other more efficacious treatments, but have only mild LBP.

- Discontinuation: Resolution of LBP, lack of efficacy, or development of adverse effects that necessitate discontinuation. Recommended not to be used more than 1 month as the costs become high and the patient should be transitioning to an active treatment program.

Long-term use of Capsicum is not recommended. Capsicum appears superior to Spiroflor. Other creams and ointments may be useful, although there is no quality evidence to guide recommendations.

D.7.f Other creams and ointments

May be used for treatment of acute, subacute, or chronic LBP. However, there is no evidence of efficacy. Other agents and medicines have evidence of efficacy.

D.7.g Vitamins

Recommendations:

The use of vitamins in the absence of documented deficiencies or other nutritional deficit states for acute, subacute, chronic, or post-operative LBP patients and for patients with radiculopathy is not recommended.

D.7.h Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

Nonsteroidal Anti-Inflammatory Drugs (NSAIDS) are useful for pain and inflammation. In mild cases, they may be the only drugs required for analgesia. There are several classes of NSAIDS, and the response of the individual patient to a specific medication is unpredictable. For this reason, a range of NSAIDS may be tried in each case with the most effective preparation being continued. Patients should be closely monitored for adverse reactions. The US Food and Drug Administration advises that many NSAIDS may have an increased risk of serious cardiovascular thrombotic events, myocardial infarction, stroke, which can be fatal and increased risk of serious adverse GI events including bleeding, ulceration and perforation of the stomach and intestines.

Generally, older generation (COX-1, non-selective) NSAIDS are recommended as first-line medications. Second-line medications should generally include one of the other COX-1 medications.

While COX-2 selective agents generally have been recommended as either third- or fourth-line medications to use when there is a risk of gastrointestinal complications, misoprostol, sucralfate, histamine 2 blockers and proton pump inhibitors are also gastro-protective. COX-2 selective agents may still be used for those with contraindications to other medications, especially those with a history of gastrointestinal bleeding or past history of peptic ulcer disease.

Selective COX-2 inhibitors should be used with great caution in patients with ischemic heart disease and/or stroke and avoided in patients with risk factors for coronary heart disease. Patients with known cardiovascular disease or multiple risk factors for cardiovascular disease should have the risks and benefits of NSAID therapy for pain discussed. In these patients, it appears to be safest to use acetaminophen or aspirin as the first-line therapy. If needed, NSAIDS that are non-selective are preferred over COX-2 specific drugs. Even a relative lack of COX-2 selectivity does not completely eliminate the risk of cardiovascular events, and in that regard, all drugs in the NSAID spectrum should only be prescribed after thorough consideration of risk benefit balance. Patients who receive COX-2 inhibitors should take the lowest effective dose for the shortest time necessary to control symptoms. In patients receiving low-dose aspirin for primary or secondary cardiovascular disease prevention, to minimize the potential for the NSAID to counteract the beneficial effects of aspirin, aspirin should be taken 2 hours before or at least 8 hours after the NSAID. (Antman 07).

Recommendations:

D.7.h.i NSAIDs are recommended for the treatment of acute, subacute, chronic, or post-operative LBP. Over-the counter (OTC) agents may suffice and may be tried first.

- Frequency/Duration: In most acute LBP patients, scheduled dosage, rather than as needed, is generally preferable. As needed (PRN) prescriptions may be reasonable for mild, moderate or chronic LBP. Discontinuation: Resolution of symptoms, lack of efficacy, or development of adverse effects that necessitate discontinuation.

D.7.h.ii NSAIDs are recommended for treatment of acute or chronic radicular pain syndromes, including sciatica.

- Frequency/Duration: In acute radicular pain syndromes, scheduled dosage, rather than as

needed, is generally preferable. PRN prescriptions may be reasonable for mild, moderate, or chronic radicular pain.

- Discontinuation: Resolution of symptoms, lack of efficacy, or development of adverse effects that necessitate discontinuation. It should be noted that resolution of radicular symptoms generally takes significantly longer than does resolution of acute LBP.

Those patients at substantially increased risk for gastrointestinal bleeding, who also have indications for NSAIDs, should be considered for concomitant prescriptions of cytoprotective medications, particularly if longer term treatment is contemplated.

Individuals considered being at elevated risk include history of prior gastrointestinal bleeding, elderly, diabetics, and cigarette smokers. There are four commonly used cytoprotective classes of drugs: Misoprostol, sucralfate, histamine type 2 receptor blockers (famotidine, ranitidine, cimetadine, etc.), and proton pump inhibitors (esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole). There is not believed to be substantial differences in efficacy for prevention of gastrointestinal bleeding. There also are combination products of NSAIDs/misoprostol (e.g., arthrotec).

- Frequency/Duration: Frequency as recommended.
- Discontinuation: Intolerance, development of adverse effects, or discontinuation of the NSAID.

D.7.i Opioids – Oral, Transdermal, and Parenteral

Narcotics should be primarily reserved for the treatment of severe back pain. In mild-to-moderate cases of pain, narcotic medication should be used cautiously on a case-by-case basis. Adverse effects include respiratory depression, the development of physical and psychological dependence, and impaired alertness. This medication has physically addictive properties and withdrawal symptoms may follow abrupt discontinuation.

Narcotic medications should be prescribed with strict time, quantity, and duration guidelines, and with definitive cessation

parameters. Pain is subjective in nature and should be evaluated using a scale to rate effectiveness of the narcotic prescribed.

- Optimum Duration: 3 to 7 days.
- Maximum Duration: 2 weeks. Use beyond two weeks is acceptable in appropriate cases.

Any use beyond the maximum should be documented and justified based on the diagnosis and/or invasive procedures.

Recommendations:

D.7.i.i Routine use of opioids for treatment of any acute, subacute, or chronic LBP condition is not recommended. There is quality evidence that other medications and treatments are superior to opioids.

D.7.i.ii Limited use of opioids is sometimes needed for treatment of acute LBP patients with severe pain. Opioids may be recommended as adjuncts to more efficacious treatments (especially NSAIDs, muscle relaxants, progressive aerobic exercise, manipulation, and directional exercise). Parenteral administration outside of obvious acute trauma or surgical emergency conditions is almost never required, and requests for such treatments are clinically viewed as red flags for substance abuse. Caution should be used in prescribing opioids for patients with a history of depression, personality disorder, substance addiction, or abuse including alcohol or tobacco.

- Frequency/Duration: Generally prescribed at night or when patients are not at work. Lower doses are preferable as they tend to have better safety profiles. Taper off in 2 weeks
- Discontinuation: Resolution of pain, improvement to the point of not requiring these medications, intolerance or adverse effects, non-compliance, surreptitious medication use, or use beyond 2 weeks.

D.7.i.iii Limited use of opioids for post-operative pain management is recommended as adjunctive therapy to more effective treatments.

For post-operative pain management, a brief prescription of opioids as adjuncts to more efficacious treatments

(especially NSAIDs, muscle relaxants, progressive aerobic exercise, and directional exercise) is often required, especially for lumbar fusion and other more invasive procedures.

- Frequency/Duration: Generally prescribed as needed throughout the day, then later only at night, before weaning off completely.
- Discontinuation: Resolution of pain, improvement to the point of not requiring these medications, intolerance or adverse effects, non-compliance, surreptitious medication use, or use beyond 2 to 3 weeks for less extensive procedures. Use for up to 6 weeks may be necessary during recovery from more extensive surgical procedures.

D.7.j Skeletal Muscle Relaxants

Recommendations:

D.7.j.i Muscle relaxants are not recommended for mild to moderate acute LBP due to problems with adverse effects, nor are they recommended for chronic use in subacute or chronic LBP (other than acute exacerbations).

D.7.j.ii Muscle relaxants are recommended for selected cases of moderate to severe acute LBP as a second-line treatment.

For most cases, these agents are not recommended, since other medications, progressive walking and other exercises will be sufficient to control the symptoms. Generally, it is recommended that these agents be prescribed nocturnally initially and not during workdays or when patients plan to operate motor vehicles. Caution should be used in prescribing skeletal muscle relaxants for those with a history of depression, personality disorder, substance addiction and/or abuse, including alcohol or tobacco. If a muscle relaxant is felt to be necessary in patients with those problems, cyclobenzaprine should be the first drug tried, since its chemical structure resembles a tricyclic antidepressant, and since addiction and abuse of this drug typically do not occur.

Frequency/Duration: This initial dose should be taken in the evening. It is not recommended that the first dose be taken prior to starting a work shift, or operating a motor vehicle or machinery.

Daytime use is acceptable in circumstances in which the patient has experienced onlyminimal CNS-sedating effects and little concern about sedation compromising the patient's function or for the patient's or others' safety. There is no evidence of benefit from higher doses of medication (e.g., cyclobenzaprine 10 mg over 5 mg). If significant daytime somnolence results, then the medication may need to be discontinued, particularly if it interferes with performance of the aerobic exercise and other components of the rehabilitation plan. Another option is to decrease a dose of cyclobenzaprine by 50% to as little as 2.5 mg. Discontinuation: Resolution of the pain, non-tolerance, significant sedating effects that carry over into the daytime, or other adverse effects.

D.7.j.iii Muscle relaxants are recommended as second- or third-line agents for acute radicular pain syndromes or acute post-surgical pain thought to be musculoskeletal in nature.

Other agents may be more efficacious for relieving radicular pain. Generally, muscle relaxants should be prescribed nocturnally initially and not during workdays or when patients plan on operating motor vehicles.

Frequency/Duration: The initial dose should be in the evening. Daytime use is acceptable in circumstances in which the patient has experienced onlyminimal CNS-sedating effects and little concern about sedation compromising the patient's function or for the patient's or others' safety. If significant daytime somnolence results, then the medication may need to be discontinued, particularly if it interferes with the performance of aerobic exercise and other components of the rehabilitation plan.

- Optimum Duration: 1 week
- Maximum Duration: 2 weeks (or longer if used only at night).

- Discontinuation: Resolution of the pain, non-tolerance, significant sedating effects that carry over into the daytime, or other adverse effects.

D.7.k Systemic Glucocorticosteroids (aka "Steroids")

Recommendations:

D.7.k.i Glucocorticosteroids are not recommended for acute, subacute, or chronic LBP without radicular pain or mild to moderate radiculopathy

D.7.k.ii Oral steroids are not recommended for axial pain.

D.7.k.iii Glucocorticosteroids are recommended for treatment of acute severe radicular pain syndromes for purposes of obtaining a short-term reduction in pain.

- Frequency/Duration: It is unclear whether parenteral administration or oral administration is more efficacious. In the absence of evidence, it is suggested that oral administration is preferable due to lower invasiveness and costs. It is recommended that only one course (5 to 14 days) of oral medication (i.e.: tapering dose of methylprednisolone) be prescribed for a given episode of radicular pain. If additional treatment is needed, epidural steroid injections are preferable, since they better target the medication to the affected tissue.

D.7.k.iv Intravenous steroids are recommended in the setting of an acute neurological emergency and should be confined only to the hospital setting.The dose and duration of the intravenous steroids should be determined in consultation with spinal cord experts. The risk of permanent neurological damage from acute spinal cord compression generally outweighs the risk of pharmacologic side effects of steroids in an emergency situation.

D.7.l Tramadol

Recommendations:

D.7.l.i Tramadol is useful in relief of pain and has been shown to provide pain relief equivalent to that of commonly prescribed NSAIDs.

Although Tramadol may cause impaired alertness, it is generally well tolerated, does not cause gastrointestinal ulceration, or exacerbate hypertension or congestive heart failure. Tramadol should be used cautiously in patients who have a history of seizures or who are taking medication that may lower the seizure threshold, such as monoamine oxidase (MAO) inhibitors, SSRIs, and tricyclic antidepressants.

- Maximum Duration: 2 weeks. Use beyond 2 weeks is acceptable in appropriate cases.

This medication has physically addictive properties and withdrawal symptoms may follow abrupt discontinuation. It is not recommended for those with prior opioid addiction.

D.7.m Tumor Necrosis Factor-A Inhibitors

Recommendations:

D.7.m.i Tumor necrosis factor-α inhibitors are not recommended for treatment of radicular pain syndromes.

D.7.m.ii Tumor necrosis factor-α inhibitors are not recommended for treatment of acute, subacute or chronic LBP.

D.8 Sleep Posture

Recommendations:

D.8.a.i Alteration of sleep posture may be recommended in acute, subacute or chronic LBP that results in nocturnal awakening, particularly if not amenable to other treatments.

The most appropriate sleep posture is that which is most comfortable for the patient. If a patient habitually chooses a particular sleep posture, it would appear reasonable to recommend altering posture to determine if there is reduction in pain or other symptoms.

- Discontinuation: Non-tolerance.

D.8.a.ii There is no quality evidence that specific commercial products have roles in primary prevention or treatment of acute, subacute or chronic LBP.

D.9 Therapy: Active

D.9.a Therapeutic Exercise

Therapeutic Exercise (WCB) with or without mechanical assistance or resistance, may include isoinertial, isotonic, isometric and isokinetic types of exercises. Indications include the need for cardiovascular fitness, reduced edema, improved muscle strength, improved connective tissue strength and integrity, increased bone density, promotion of circulation to enhance soft tissue healing, improvement of muscle recruitment, improved proprioception and coordination, increased range of motion and are used to promote normal movement patterns. Therapeutic exercise can also include complementary/ alternative exercise movement therapy (with oversight of a physician or appropriate healthcare professional).

- Time to Produce Effect: 2 to 6 treatments.
- Frequency: 3 to 5 times per week.
- Optimum Duration: 4 to 8 weeks.
- Maximum Duration: 8 weeks.

D.9.b Aerobic Exercises

Recommendations:

D.9.b.i Aerobic exercise is recommended for treatment of all patients with acute, subacute and chronic LBP, although most available evidence is from studies treating chronic LBP patients. Consideration should be given, however, to whether an evaluation is required prior to institution of vigorous exercises for those with significant cardiac disease, or significant potential for cardiovascular disease. For most patients, a structured, progressive walking program on level ground or no incline on a treadmill is recommended. There has been some controversy about whether bicycling is helpful or harmful from a biomechanical perspective (lordosis) and the back muscles are less active with bicycling, thus it may be less

appropriate. Yet, if bicycling is the preferred exercise for the patient, it is believed to be far superior to performing no aerobic exercise. For those patients who desire other aerobic exercises, there are no specific data, although there are indications that imply that there is a direct correlation between benefit and the amount of aerobic activity that results in higher MET expenditure. Therefore, the activity that the patient will adhere to is believed to be the one most likely to be effective, given that compliance is a recognized problem.

- Frequency/Duration: For patients with chronic LBP, walking at least 4 times per week at 60% of predicted maximum heart rate (220-age = maximum heart rate) is recommended. One successful study benchmarked 20 minutes during Week 1, 30 minutes during Week 2, and 45 minutes after that point. For acute or subacute LBP patients, a graded walking program is generally desired, often using distance or time as minimum benchmarks. For example, a patient can start with 10 to 15 minutes twice a day for 1 week, and increase in 10 to 15 minute increments per week until at least 30 minutes per day is achieved.

- Discontinuation: Aerobic exercise should be discontinued when there is intolerance (rarely occurs) or development of other disorders. Nearly all patients should be encouraged to maintain aerobic exercises on a long-term basis for both prevention of LBP (see below), and to maintain optimal health.

D.9.b.ii For post-operative patients aerobic exercise is recommended.

In the absence of quality evidence to support this recommendation, it is suggested that the acute, subacute, chronic LBP guideline above for aerobic exercise be used for treatment of post-operative LBP patients.

D.9.c Strengthening and Stabilization Exercises

Recommendations:

D.9.c.i For acute, subacute, or chronic LBP, or post-operative LBP patients, strengthening exercises are recommended

for treatment of LBP. Specific strengthening exercises, such as stabilization exercises, are helpful for the prevention and treatment (including post-operative treatment) of LBP.

As evidence of efficacy of aerobic exercises appears greater, these exercises should be added after either aerobic exercises have already been instituted and additional treatment is needed, or in situations where both are felt to be required. Exercises should be taught and then performed by the patient in a home exercise program. For those patients who do not improve, follow up appointments to verify technique and compliance (by exercise log books) are recommended. Some patients, particularly those lacking motivation to be in a home exercise program may benefit from a supervised exercise program, although there are questions about long-term compliance among patients with chronic LBP. More intensive programs with more intensive exercises and direct supervision with active coaching have been shown to be effective for chronic LBP.

- Frequency/Duration: Home program frequency is 1 to 2 times a day for acute LBP, and two to three times a day for subacute or chronic LBP.
- Discontinuation: Indications to discontinue strengthening exercises include development of a strain in the course of treatment or failure to improve.

D.9.c.ii Abdominal strengthening exercises particularly as either a sole or central goal of a strengthening program are not recommended for treatment or prevention of LBP.

Strengthening of abdominal muscles (e.g., rectus abdominus and obliques with sit-up exercises) is a frequent goal of LBP rehabilitation or prevention programs. There is no quality evidence that these exercises are effective, there is evidence that suggests they are not effective, and there are other treatment strategies with proven or at least suggested greater efficacy.

D.9.d Aquatic Therapy (Including Swimming)

Recommendations:

D.9.d.i A trial of aquatic therapy is recommended for the treatment of subacute or chronic LBP in a patient who meets criteria for a referral for supervised exercise therapy and has co-morbidities (e.g., extreme obesity, significant degenerative joint disease, etc.) that preclude effective participation in a weight-bearing physical activity. Osteoarthritis of the knee is not a clear contraindication to a walking program, rather walking may be therapeutically indicated based on high quality evidence.

- Frequency/Duration: A program should generally begin with 3 to 4 visits per week. The patient must have demonstrated evidence of functional improvement within the first 2 weeks to justify additional visits. The program should include up to 4 weeks of aquatic therapy with progression towards a land-based, self-directed physical activity or self-directed aquatic therapy program by 6 weeks.
- Discontinuation: Non-tolerance, failure to progress, or reaching a 4 to 6 week time frame.

For all other subacute and chronic LBP patients, and for all acute LBP, aquatic therapy is not recommended as other therapies are believed to be more efficacious.

D.9.e MEDX Machine

Recommendations:

D.9.e.i Use of a MedX machine to strengthen the lumbar spine is not recommended for acute, subacute or chronic LBP or for any radicular pain syndrome.

D.9.f Yoga

Recommendations:

D.9.f.i There is some evidence to support the effectiveness of yoga therapy in alleviating symptoms and decreasing medication use in for patients with uncomplicated LBP.

- Frequency/Duration: 2 to 5 times per week.
- Time to Produce Effect: 2 to 6 treatments
- Optimum Duration: 4 weeks

- Maximum Duration: Reassess after 8 weeks

D.10 Therapy: Passive

D.10.a Manipulation

Manipulative treatment (not therapy) (WCB)is defined as the therapeutic application of manually guided forces by an operator to improve physiologic function and/or support homeostasis that has been altered by the injury or occupational disease, and has associated clinical significance.

Contraindications to manipulation may include joint instability, fractures, severe osteoporosis, infection, metastatic cancer, active inflammatory arthritides, and signs of progressive neurologic deficits, myelopathy, vertebrobasilar insufficiency, or carotid artery disease. Relative contraindications include stenosis, spondylosis, and disc herniation.

D.10.a.i Manipulation is recommended for treatment of acute and sub-acute back pain when tied to objective measures of improvement.

- Time to produce effect for all types of manipulative treatment: 1 to 6 treatments.
- Frequency: Up to 3 times per week for the first 4 weeks as indicated by the severity of involvement and the desired effect, then up to 2 treatments per week for the next 4 weeks with re-evaluation for evidence of functional improvement or need for further workup. Continuance of treatment will depend upon functional improvement.
- Optimum Duration: 8 to 12 weeks.
- Maximum Duration: 3 months. Extended durations of care beyond what is considered "maximum" may be necessary in cases of re-injury, interrupted continuity of care, exacerbation of symptoms, and in those patients with comorbidities.

D.10.a.ii There is no efficacy for chronic treatment (manipulation several times a month for years) and chronic treatment is not recommended.

D.10.a.iii There is no evidence that prophylactic treatment is effective, either for primary prevention (before the first episode of pain) or for secondary prevention (after recovery from an episode of back pain) and prophylactic treatment is not recommended.

D.10.b Manipulation under Anesthesia (MUA) and Medication-Assisted Spinal Manipulation (MASM)

Recommendations:

- MUA and MASM are not recommended in acute, subacute or chronic LBP patients.

D.10.c Massage (Manual or Mechanical)

Massage (Manual or Mechanical) (WCB) consists of manipulation of soft tissue with broad-ranging relaxation and circulatory benefits. This may include stimulation of acupuncture points and acupuncture channels (acupressure), application of suction cups and techniques that include pressing, lifting, rubbing, pinching of soft tissues by or with the practitioner's hands. Indications include edema (peripheral or hard and non-pliable edema), muscle spasm, adhesions, the need to improve peripheral circulation and range of motion, or to increase muscle relaxation and flexibility prior to exercise.

As with all passive therapies, massage must be accompanied by exercise and patient education. Objective benefit (functional improvement along with symptom reduction) must be demonstrated in order for further treatment to continue.

D.10.c.i Massage is recommended for select use in subacute and chronic LBP as an adjunct to more efficacious treatments consisting primarily of a graded aerobic and strengthening exercise program.

- Time to Produce Effect: Immediate.
- Frequency: 1 to 2 times per week.
- Optimum Duration: 6 weeks.
- Discontinuation: Resolution, intolerance, lack of benefit, or non-compliance with aerobic and strengthening exercises

D.10.c.ii Massage is recommended as a treatment for acute LBP and chronic radicular syndromes in which LBP is a substantial symptom component

- Time to Produce Effect: Immediate.
- Frequency: 1 to 2 times per week.
- Optimum Duration: 6 weeks.
- Discontinuation: Resolution, intolerance or lack of benefit.

D.10.c.iii Massage is recommended for patients with sub-acute and chronic LBP without underlying serious pathology, such as fracture, tumor, or infection.

- Time to Produce Effect: Immediate.
- Frequency: 1 to 2 times per week.
- Optimum Duration: 6 weeks.
- Discontinuation: Resolution, intolerance or lack of benefit.

D.10.c.iv Mechanical devices for administering massage are not recommended.

D.10.d Mobilization (Joint)

Mobilization (WCB) consists of passive movement involving oscillatory motions to the vertebral segment(s). The passive mobility is performed in a graded manner (I, II, III, IV, or V), which depicts the speed and depth of joint motion during the maneuver. It may include skilled manual joint tissue stretching. Indications include the need to improve joint play, segmental alignment, improve intracapsular arthrokinematics, or reduce pain associated with tissue impingement. Mobilization should be accompanied by active therapy. For Level V mobilization, contraindications include joint instability, fractures, severe osteoporosis, infection, metastatic cancer, active inflammatory arthritides, and signs of progressive neurologic deficits, myelopathy, vertebrobasilar insufficiency, or carotid artery disease. Relative contraindications include stenosis, spondylosis, and disc herniation.

- Time to Produce Effect: 6 to 9 treatments.

- Frequency: Up to 3 times per week.
- Optimum Duration: 4 to 6 weeks.
- Maximum Duration: 6 weeks.

D.10.e Mobilization (Soft Tissue)

Mobilization of soft tissue (WCB) is the skilled application of muscle energy, strain/counter strain, myofascial release, manual trigger point release, and other manual therapy techniques designed to improve or normalize movement patterns through the reduction of soft tissue pain and restrictions. These can be interactive with the patient participating or can be with the patient relaxing and letting the practitioner move the body tissues. Indications include muscle spasm around a joint, trigger points, adhesions, and neural compression. Mobilization should be accompanied by active therapy.

- Time to Produce Effect: 4 to 9 treatments.
- Frequency: Up to 3 times per week.
- Optimum Duration: 4 to 6 weeks.
- Maximum Duration: 6 weeks.

D.10.f Superficial Heat and Cold

Superficial heat and cold (WCB) are thermal agents applied in various manners that lower or raise the body temperature for the reduction of pain, inflammation, and/or effusion resulting from injury or induced by exercise. It includes application of heat just above the surface of the skin at acupuncture points.

Recommendations:

D.10.f.i Recommended for acute pain, edema, and hemorrhage, need to increase the pain threshold, reduce muscle spasm, and promote stretching/flexibility. Cold and heat packs can be used at home as an extension of therapy in the clinic setting.

- Time to Produce Effect: Immediate
- Frequency/Duration: Frequency: 2 to 5 times per week

- Optimum Duration: 3 weeks as primary, or intermittently as an adjunct to other therapeutic procedures up to two months.

D.10.g Diathermy

Recommendations:

D.10.g.i Diathermy is not recommended for treatment of any LBP-related conditions.

D.10.h Infrared Therapy

Recommendations:

D.10.h.i For those circumstances where this intervention is used for treatment of acute LBP, it is recommended to only be provider-based treatment and only performed in conjunction with an active exercise program, with frequency not to exceed 4 visits.

D.10.i Ultrasound

Recommendations:

D.10.i.i In situations where deeper heating is desirable, a limited trial of ultrasound for the treatment of LBP is reasonable, but only if performed as an adjunct with exercise.

- Frequency/Duration: 3 times per week.
- Time to produce effect: 6 to 15 treatments.
- Optimum Duration: 4 to 8 weeks.
- Maximum Duration: 8 weeks.

D.10.j Low Level Laser Therapy

Recommendations:

D.10.j.i Low level laser therapy is not recommended for treatment of LBP.

D.10.k Myofascial Release

Recommendations:

D.10.k.i Myofascial release is not recommended for the treatment of acute, subacute, or chronic LBP or radicular pain syndromes or other back-related conditions.

D.10.l Neuroflexotherapy

Recommendations:

D.10.l.i Neuroflexotherapy (WCB) is not recommended for treatment of acute, sub-acute, or radicular pain; or for moderate to severe chronic LBP.

D.10.m Reflexology

Recommendations:

D.10.m.i Reflexology is not recommended for treatment of chronic LBP.

D.10.m.ii Reflexology is not recommended for treatment of other LBP conditions (acute, subacute, and other spinal conditions).

There is not evidence of efficacy and there is evidence that other interventions are efficacious.

D.10.n Traction

Traction is not recommended for treatment of acute, subacute, chronic LBP or radicular pain syndromes.

D.10.o Vertebral Axial Compression (VAX-D) And Other Decompressive Devices

Recommendations:

D.10.o.i Vax-D or other spinal decompressive devices is not recommended for acute, sub-acute, chronic or radicular pain syndromes.

D.11 Radiofrequency Neurotomy, Neurotomy, and Facet Rhizotomy

D.11.a Radiofrequency Neurotomy, Neurotomy, and Facet Rhizotomy

Recommendations:

D.11.a.i Radiofrequency neurotomy, neurotomy, and facet rhizotomy may be considered as procedures of last resort in patients with chronic LBP.

D.11.a.ii For patients in whom facet joint injections have been therapeutically successful, the use of radiofrequency neurotomy, neurotomy, and facet rhizotomy may be indicated.

D.11.b Dorsal Root Ganglia Radiofrequency Lesioning

Recommendations:

D.11.b.i Radiofrequency lesioning of the dorsal root ganglia is not recommended for chronic sciatica.

Radiofrequency lesioning is invasive, has adverse effects and is costly. It has been shown to not be efficacious in a well-designed, high-quality study.

D.11.c Intradiscal Electrothermal Therapy (IDET)

Recommendations:

D.11.c.i IDET is not recommended for treatment of acute, subacute, chronic LBP, or any other back-related disorder.

D.11.d Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT)

Recommendations:

D.11.d.i Percutaneous Intradiscal Radiofrequency Thermocoagulation is not recommended for treatment of acute, subacute or chronic LBP, particularly including discogenic LBP.

E THERAPEUTIC PROCEDURES: OPERATIVE

E.1 Discectomy, Microdiscectomy, Sequestrectomy, Endoscopic Decompression

Recommendations:

E.1.a.i Lumbar discectomy is recommended as an effective operation to speed recovery in patients who have radiculopathy due to ongoing nerve root compression, who continue to have significant pain and functional limitation after 6 to 12 weeks and who have been provided appropriate conservative therapy during which time they experienced noprogressive neurological deficits.

E.1.a.ii All of the following should be present: 1) radicular pain syndrome with current dermatomal pain and/or numbness, or myotomal muscle weakness - consistent with a herniated disc at the corresponding level; 2) imaging findings by MRI or CT with/out myelography that confirm persisting nerve root compression at the level and on the side predicted by the history and clinical examination; 3) continued significant pain and functional limitation after 6 to 12 weeks and who have been provided appropriate conservative therapy during which time they experienced noprogressive neurological deficits.

Patients who are candidates for discectomy should be informed that (other than for cauda equina syndrome and the rare progressive major neurologic deficit), there is evidence that there is no need to rush surgical decisions, since there is no difference in long-term functional recovery whether surgery is performed early or delayed. Open discectomy, microdiscectomy, and endoscopic discectomy are all potentially appropriate ways to perform discectomy. The decision as to which of these procedures to choose should be left to the surgeon and the patient, until quality evidence becomes available to provide evidence-based guidance.

E.1.a.iii Discectomy is not recommended as treatment of acute, subacute, or chronic LBP without radiculopathy.

E.1.a.iv Percutaneous discectomy (nucleoplasty), laser discectomy, and disc coblation therapy are not recommended as treatment for any back or radicular pain syndrome.

E.2 Adhesiolysis

Recommendations:

E.2.a.i Adhesiolysis is not recommended for acute, subacute, or chronic LBP, spinal stenosis, or radicular pain syndromes.

E.3 Decompressive Surgery (Laminotomy/Facetectomy, Laminectomy)

Recommendations:

E.3.a.i Decompression surgery is recommended as an effective treatment for patients with symptomatic spinal stenosis (neurogenic claudication) that is intractable to conservative management.

E.4 Spinal Fusion

Lumbar Fusion is not included on the list of pre-authorized procedures. Providers who want to perform one of these procedures must request pre-authorization from the carrier before performing the procedure.

Recommendations:

E.4.a.i Lumbar fusion is recommended as a treatment for spinal stenosis when concomitant instability has been proven. Lumbar fusion is not recommended for spinal stenosis without instability.

Indications: All of the following should be present: 1) neurogenic claudication (leg pain and/or numbness with standing or walking); 2) imaging findings, by MRI, or CT/myelogram that confirm the nerve roots compressed are consistent with the neurological symptoms; 3) lack of responsiveness or unsatisfactory response(s) to adequate conservative treatment over a minimum 6 to 8 week period that may or may not include an epidural steroid injection.

E.4.a.ii Lumbar fusion is recommended as an effective treatment for isthmic spondylolisthesis.

E.4.a.iii Lumbar fusion is recommended as an effective treatment for degenerative spondylolisthesis.

E.4.a.iv There are no scientific studies, but consensus is that if a patient is having the third lumbar discectomy on the

same disc, that spine fusion at the time of discectomy is an option.

E.4.a.v Lumbar fusion is not recommended as a treatment for patients with radiculopathy from herniated nucleus pulposus (disc herniation) or for patients with chronic LBP after lumbar discectomy.

E.4.a.vi Lumbar fusion is recommended as a treatment for Degenerative Disc Disease/"Discogenic Back Pain"/"Black Disc Disease" without instability in selected patients for whom non-surgical management has failed to relieve symptoms and improve function (WCB). If available, an intensive Functional Rehabilitation Program should be tried first.

E.5 Electrical Bone Growth Stimulators

Electrical Bone Growth Stimulators are not included on the list of pre-authorized procedures. Providers who want to perform one of these procedures must request pre-authorization from the carrier before performing the procedure.

Recommendations

E.5.a.i Non invasive Electrical Bone Growth Stimulators (WCB) as an adjunct to spinal fusion surgery for those at high risk for pseudoarthrosis, including one or more of the following fusion failure risk factors:

1) One or more previous failed spinal fusion(s)

2) Grade II or worse spondylolisthesis

3) Fusion to be performed at more than one level

4) Presence of other risk factors that may contribute to non-healing:

- Current smoking
- Diabetes
- Renal disease
- Other metabolic diseases where bone healing is likely to be compromised (eg: significant osteoporosis)

- Active alcoholism
- Morbid obesity BMI >40

E.5.a.ii Non-invasive Electrical Bone Growth Stimulators (WCB) may be considered as treatment for individuals with failed spinal fusion. Failed spinal fusion is defined as a spinal fusion that has not healed at a minimum of 6 months after the original surgery, as evidenced by serial x-rays over

E.6 Disc Replacement

Artificial Disc Replacement is not included on the list of pre-authorized procedures. Providers who want to perform one of these procedures must request pre-authorization from the carrier before performing the procedure.

Recommendations:

E.6.a.i Artificial disc replacement (WCB) is recommended as treatment for lumbar degenerative disc disease at one level with radiculopathy that is unresponsive to conservative management.

The following criteria must be met:

1. Skeletally mature patient without renal failure, severe diabetes, osteoporosis, severe spondylosis, severe facet pathology, lumbar instability, localized fracture, or localized or systemic infections.

AND

2. Single-level disc degeneration of L3 to S1 confirmed by imaging studies such as CT or MRI, with **one** of the following diagnoses:

• Herniated disc; **or**

• Osteophyte formation; **or**

• Loss of disc height

AND

3. The patient must present with **symptoms**, which must correspond with the planned level of disc replacement:

• Intractable radiculopathy (nerve root compression) and/or myelopathy (functional disturbance or pathological change in the spinal cord) causing radicular pain in the lower extremity; **or**

• Functional and/or neurological deficit.

AND

4. Six weeks of nonoperative alternative treatments have failed. These treatments may include physical therapy, medications, braces, chiropractic care, bed rest, spinal injections or exercise programs. Documentation of treatments and failure to improve is required.

The disc must be approved by the U.S. Food and Drug Administration (FDA). All other artificial disc systems are considered experimental and investigational.

All other indications, including multilevel degenerative disc disease, are considered experimental and investigational.

Artificial disc replacement is NOT recommended under the following conditions, since safety and effectiveness of the replacement discs has not been established for patients with:

• Previous surgical intervention at the involved level;

• Prior or proposed fusion at an adjacent cervical level;

• More than one lumbar level requiring artificial disc replacement;

• Clinically compromised vertebral bodies at the affected level due to current or past trauma (including but not limited to the radiographic appearance of fracture callus, malunion or nonunion).

• Active systemic infection or infection at the operating site;

• Allergy to titanium, polyurethane, or ethylene oxide residues;

• Osteoporosis defined as a DEXA bone mineral density T score equal to or worse than -2.5.

E.7 Vertebroplasty and Kyphoplasty

Vertebroplasty and Kyphoplasty are not included on the list of pre-authorized procedures. Providers who want to perform one of these procedures must request pre-authorization from the carrier before performing the procedure.

Recommendations:

E.7.a.i Vertebroplasty and Kyphoplasty (WCB) may be considered for treatment of select patients with vertebral body compression fractures with associated chronic or severe pain. Patients who have had fractures despite bisphosphonate therapy are particularly appropriate candidates. Recent placebo-controlled studies have questioned the efficacy of vertebroplasty, and the evidence warranting this recommendation will be monitored closely.

E.8 Sacroiliac Surgery

Recommendations:

E.8.a.i SI joint fusion surgery and other SI joint surgical procedures are not recommended.

E.9 Intraoperative Monitoring

Intraoperative Monitoring is a common intraoperative electrodiagnostic technique that may include somatosensory evoked potentials (SSEP),motor evoked potentials (MEP), or pedicle screw monitoring. The monitoring procedure may be used to evaluate spinal cord integrity and screw placement during the operative procedure. The use of intraoperative monitoring can be anticipated to become more common as percutaneous spinal procedures gain greater acceptance

E.10 Implantable Spinal Cord Stimulators

Spinal Cord Stimulators are not included on the list of pre-authorized procedures. Providers who want to perform one of

these procedures must request pre-authorization from the carrier before performing the procedure.

Recommendations:

E.10.a.i Spinal cord stimulators (WCB) are recommended for treatment of selected patients with chronic LBP, specifically patients with failed back surgery syndrome, i.e. who have persistent severe and disabling LBP despite having been provided with conventional non-surgical treatments and having undergone surgical treatment that failed to relieve symptoms and improve function and no other treatment options are available. If available, an intensive Functional Rehabilitation Program should be tried before the use of a spinal cord stimulator. No patient can undergo insertion of a spinal cord stimulator before a thorough psychological evaluation indicates that there are no significant psychosocial factors that would predict poor response.

If no such psychosocial factors are identified, conditional pre-authorization must be obtained from the payor for a trial of device effectiveness. Once conditional pre-authorization is received a trial of effectiveness must be conducted prior to implantation, employing a methodology that includes random switching of the spinal cord stimulator on and off, with the patient blinded to the on/off status, during which the patient must keep a pain diary. If there is consistent reduction of pain when the stimulator is active (on), and recurrence of pain is consistently recorded during "off" periods, the device can be concluded to be effective, and implantation can be performed.

Sources:

This Medical Treatment Guideline is adopted, with modification, from ACOEM's[1] Occupational Medicine Treatment Guidelines for Low Back Disorders with supplementation from the State of Colorado's Low Back Medical Treatment Guidelines.

1

[1] Recommendations modified from ACOEM's Occupational Medicine Treatment Guidelines for Low Back Disorders are indicated by (WCB).

Index

Acetaminophen, 32, 55

ACTIVE INTERVENTIONS, 2, 8

ACTIVE THERAPEUTIC EXERCISE PROGRAM, 3, 8

Acupuncture, 20, 21

Adhesiolysis, 56

Anti-Depressants, 33, 55

Anti-Seizure Drugs, 34, 55

Appliances, 21

Bedrest, 23

Biofeedback, 23

Bone Scans, 17

Chemonucleolysis, 29

Colchicine, 35, 55

Complete Blood Count (CBC), 12

Computerized Tomography (CT), 16

Decompressive Devices, 54, 55

DELAYED RECOVERY, 2, 8

Diagnostic Facet Joint Injections, 30

DIAGNOSTIC IMAGING AND TESTING PROCEDURES, 3, 8, 12

DIAGNOSTIC STUDIES, 13

DIAGNOSTIC TIME FRAMES, 2, 8

Disc Replacement, 58

EDUCATION, 1, 8

Electrical Therapies, 24

Electrodiagnostic Studies (EDS), 18

EXPERIMENTAL TREATMENT, 7, 8

Facet Joint Hyaluronic Acid Injections, 31

Fluoroscopy, 17

GENERAL GUIDELINE PRINCIPLES, 1

GUIDELINE RECOMMENDATIONS AND MEDICAL EVIDENCE, 6, 8

High-Voltage Galvanic, 26

History of Present Illness, 8

HISTORY TAKING AND PHYSICAL EXAMINATION, 8

H-Wave Stimulation, 25

IMAGING STUDIES, 13

IMAGING/ANATOMICAL TESTS, 11

Injection Therapies, 26

INJURED WORKERS AS PATIENTS, 7, 8

Interferential Therapy, 24

Intradiscal Electrothermal Therapy, 55

Intradiscal Steroids, 29

INTRODUCTION, 8

Iontophoresis, 26

JOB SITE EVALUATION, 6, 8

Kinesiotaping and Taping, 22

LABORATORY TESTING, 11

Liver and Kidney Function, 12

Lumbar Supports, 22

Lumbar/Transforaminal/Epidural Injections, 26

Magnetic Resonance Imaging (MRI), 14

Magnets, 22

Manipulation under Anesthesia (MUA), 53, 55

Massage, 53, 55

Massage (Manual or Mechanical), 53

MEDICAL CARE, 1, 8

Medication-Assisted Spinal Manipulation (MASM), 53, 55

Medications, 27, 32, 55

Metabolic Bone Disease, 12

Microcurrent Electrical Stimulation, 25

Mobilization (Joint), 52

MRI Discography, 19

Myelography, 16, 17

Myeloscopy, 19

Myofascial Release, 51, 55

Needle EMG's, 18

Nerve Blocks, 30

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), 37, 55

Opioids – Oral, Transdermal, and Parenteral, 39, 55

Past History, 9

Percutaneous Electrical Nerve Stimulation (PENS), 25

Percutaneous Intradiscal Radiofrequency Thermocoagulation (PIRFT), 55

PERSONALITY/PSYCHOLOGICAL/PSYCHOSOCIAL EVALUATIONS, 4, 8

PERSONALITY/PSYCHOLOGICAL/PSYCHOSOCIAL INTERVENTION, 5, 8

Physical Examination, 9

POSITIVE PATIENT RESPONSE, 1, 8

Prolotherapy Injections, 32

Red Flags, 11

RE-EVALUATE TREATMENT, 1, 8

Reflexology, 51, 55

Relationship to Work, 11

RETURN-TO-WORK, 5, 8

Rheumatalogic, Infection or Connective Tissue Disorder, 12

Roentgenograms, 13

Sacroiliac Joint Injections, 31

Sacroiliac Surgery, 60

SCOPE OF PRACTICE, 7, 8

Shoe Insoles and Shoe Lifts, 21

Single Proton Emission Computed Tomography (SPECT), 17

SIX-MONTH TIME FRAME, 2, 8

Skeletal Muscle Relaxants, 41, 55

Sleep Posture, 44, 55

Sleeping Surfaces, 22

Spinal Cord Evaluation, 10

Spinal Cord Stimulators, 60

Spinal Fusion, 57

Steroids, 42, 55

Surface Electromyography, 19

Surface EMG, 19

SURGICAL INTERVENTIONS, 3, 8

Systemic Glucocorticosteroids, 42, 55

Tender and Trigger Point Injections, 29

THERAPEUTIC PROCEDURES-NON-OPERATIVE, 20

Thermography, 20

Traction, 54, 55

Tramadol, 43, 55

Transcutaneous Electrical Neurostimulation (TENS), 24

TREATMENT TIME FRAMES, 2, 8

Tumor Necrosis Factor-A Inhibitors, 44, 55

Ultrasound, 17, 26, 50

Ultrasound (Diagnostic), 17

Vertebral Axial Compression (VAX-D), 54, 55

Vertebroplasty and Kyphoplasty, 60

Videofluoroscopy, 17, 18