Philippine Academy of Rehabilitation Medicine (PARM):

Clinical Practice Guidelines on the Diagnosis and Management of Low Back Pain (2011)

FOREWORD

The formulation of this clinical practice guideline in stroke/low back pain is the answer to the clamour of standardizing our approach to these common Physiatric problems.

We are proud to say that these work comply with the highest standard based on evidence based medicine appropriate for the Philippine setting.

Every reference in that was examined and summarized has the most up to date quality evidence the current data on prevention, diagnosis and prognosis. Therapy formulation is the highest risk/benefit cost effective that is available in our setup. The other purpose of this manuscript is to standardize physiatric care that can be recommended to the Philippine Health insurance Corporation (PHIC) and HMO.

This will be made available to each Physiatrist and will be coordinated with other members of the medical team concern in the treatment of low back pain and stroke.
It is the goal of the proponent of this study to update accordingly to meet the changes in time.

The Philippine Academy of Rehabilitation Medicine CPG Committee will commit to update and revise this CPG so as to set standard locally and internationally.

Mabuhay ang PARM!

Sylvan Lorenzo, MD, FPARM
President
Philippine Academy of Rehabilitation Medicine (2011)

FOREWORD

"Much of outcomes research is a systematic attempt to exploit what is known and make it better." – Kevin Kelly

Recognizing the need to make clinical practice guidelines for two of the most common cases Filipino Physiatrists see in their respective institutions, the Philippine Academy of Rehabilitation (PARM) has poured its time and resources in research. After two years of data gathering, brainstorming, drafting and editing, it is with great pleasure and pride to present to you the PARM Clinical Practice Guidelines for Stroke Rehabilitation and Low Back Pain.

The brainchild of the indefatigable Dr. Consuelo Suarez together with the collaborative effort of the members of the Academy, this would not have been possible without the invaluable contribution of Prof. Karen Grimmer-Somers who acted as our resource speaker and workshop moderator. Long flights from Australia, horrendous traffic in Manila and modest accommodations were never a hindrance for her to pursue this noteworthy endeavour with us. *Maraming salamat Prof. Somers sa lahat ng iyong tulong.*

This project started during the term of my predecessor, Dr. Sylvan Lorenzo, who was as passionate as the rest of the incumbent Executive Board to see this project to its implementation stage. We believe that this milestone will create a positive and lasting mark in the medical community both locally and internationally. PARM-funded, both clinical practice guidelines boasts of being independent, unbiased and at its core, the true essence of research.

Research creates new knowledge and new knowledge we gained. All of these in pursuit of the best care we can give our patients. In the end, they are the reason why we are called doctors.

The vocation we have chosen demands continuous education. Learning goes beyond after we got our licenses and passed our specialty board exams. Physiatry involves a diverse group of patients applying evolving means of treatment and using the basic, to the innovative, to the most advanced modality and equipment there is available. This is to achieve the Academy's mission to promote and

advance the field of rehabilitation medicine and elevate the standards of practice through training, education, research and service thereby improving the quality of life of the Filipino people.

The PARM's vision to be a nationally-recognized and globally-accepted society of dynamic, compassionate and highly competent rehabilitation medicine specialists is in our horizon. The PARM Clinical Practice Guidelines for Stroke Rehabilitation and Low Back Pain are just some of the tools in making it a reality. We therefore challenge each and every member of the Academy to make a commitment to further their education, develop their skills, dream big and be at the forefront of comprehensive healthcare of the Filipino people.

Mabuhay tayong lahat! Mabuhay ang PARM!

Bonifacio S. Rafanan Jr., MD, FPARM
President
Philippine Academy of Rehabilitation Medicine (2012)

Contents

Glossary

Acupuncture – Refers to the insertion of a solid needle into any part of the human body for disease prevention, therapy or maintenance of health. There are various other techniques often used with acupuncture, which may or may not be invasive. Acupuncture should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT, nurse), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice

Acute low back pain – Refers to pain with or without functional limitation lasting less than 4 weeks (1 month).

Analgesic – Refers to an agent that relieves pain without causing loss of consciousness.

Back schools – A class, course, or educational program in body mechanics, posture, and back care aimed at preventing back pain.

Cauda Equina Syndrome – Refers to compression on nerve roots from the lower cord segments, often resulting in urinary retention or incontinence from loss of sphincter function, bilateral motor weakness of the lower extremities and saddle anesthesia.

Chemonucleolysis – Refers to the treatment of herniated discs with intradiscal injections of an enzyme extracted from papaya (chymopapain).

Chronic low back pain – Refers to pain with or without functional limitation lasting more than 12 weeks (3 months).

Cold therapy – Refers to the use of cold applied as cold packs or ice to the back with superficial penetration to soft tissues.

Degenerative spine disorders – Refers to a group of conditions that involve a loss of normal structure and function in the spine, usually associated with the normal effects of aging, but also may be caused by infection, tumors, muscle strains, or arthritis.

Diagnostic intra-articular facet joint blocks – Involves the injection of local anesthetic under fluoroscopic guidance into the facet (zygoapophysial) joints.

Diagnostic sacroiliac joint block – Involves the injection of local anesthetic into or around the sacroiliac joint in order to evaluate whether the sacroiliac joint is the source of low back pain.

Diagnostic selective nerve root block – Involves the injection of local anesthetic around spinal nerves under fluoroscopy.

Disc bulge – Refers to a condition wherein the disc that has expanded in circumference without any break in the continuity of the annulus fibrosus.

Extruded disc – Refers to a tear in the outer annulus fibrosus with a leak of the nucleus pulposus that remains contained or attached to the disc wall.

Femoral stretch – Also called reversed SLR which consist of extension of hip with the knee straight and patient in prone position. This maneuver puts traction on the femoral nerve or L3 root and exacerbates pain in a femoral neuropathy or L3 radiculopathy.

Heat therapy – Refers to the use of heat applied as warm packs or heated blankets to the back with superficial penetration to soft tissues.

Herniated disc – Refers to a localized displacement of the nucleus polposus beyond the normal margins of the intervertebral disc space due to a disruption in the annulus fibrosus.

Interferential therapy – Refers to a modality that uses two alternating signals of slightly different frequency to produce analgesia.

Isthmic spondylolisthesis – Refers to a condition of a forward slippage of one vertebra over another, which may or may not be associated with demonstrable instability.

Laser (Light Amplification by Stimulated Emission Radiation) therapy – Refers to a low-power form of electromagnetic energy with a wavelength within the visible or the infrared section of the electromagnetic spectrum.

Local injections – Local injections involve the placement of a local anesthetic (with or without corticosteroid) into the muscles or soft tissues of the back via a catheter.

Lumbar supports – Refer to an external appliance in the form of braces and corsets worn to passively support the low back.

Massage – Refers to medical massage, which is a system of manually applied techniques designed to reduce pain, establish normal tissue tension, create a positive tissue environment and to normalize the movement of the musculoskeletal system. This does not pertain to therapeutic massage which is usually performed by masseurs working in a SPA-type setting and is described as a general, feel-good massage, i.e shiatzu, swedish, thai, traditional "hilot," acupressure, and reflexology, which may be provided in "spas," at home, or other centers.

Mckenzie's exercises – An exercise-based intervention in which patients are instructed to perform exercises to centralize symptoms and prevent peripheralization, using techniques relying on patient-generated forces such as specific repeated movements and sustained postures.

Muscle relaxant – Refers to drugs which act on the central nervous system (CNS) to relax muscles.

Narcotic – Refers to a drug derived from opium or compounds similar to opium.

Neurogenic claudication – Refers to symptoms of leg pain (and occasionally weakness) on walking or standing, relieved by sitting or spinal flexion, and associated with spinal stenosis.

Non-specific low back pain – The preferred diagnostic term for pain occurring primarily in the low back, where the clinician has excluded serious underlying conditions (such as cancer, infection, or cauda equina syndrome), spinal stenosis radiculopathy, or another specific spinal cause (such as, vertebral compression fracture or ankylosing spondylitis.

Opioid analgesics – Also known as narcotic analgesics, are pain relievers that act on the central nervous system.

Prolotherapy – (Also referred to as sclerotherapy), prolotherapy is a technique that involves the repeated injection of irritants into ligaments and tendinous attachments in order to trigger an inflammatory response.

Prone knee bend – Carried out in prone position. Test is considered positive if on passive flexion, symptoms are reproduced.

Radiculopathy – Dysfunction of a nerve root associated with pain, sensory impairment, weakness, or diminished deep tendon reflexes in the nerve root distribution.

Red flags – Refers to clinical features observed in the history-taking and physical examination (e.g, age over 50years, unexplained weight loss, previous history of cancer, no improvement in low back pain after a month, recent history of trauma and prolonged use of corticosteroid) that could indicate a serious spinal pathology and require further investigation.

Ruptured disc – Refers to a disc tear or break of the annulus fibrosus, allowing some or all of the nucleus pulposus to leak out of the disc structure.

Sciatica – Refers to pain radiating down the leg below the knee in the distribution of the sciatic nerve, suggesting nerve root compromise due to mechanical pressure or inflammation.

Sequestered disc – Refers to a free fragment, which is a piece of a spinal disc, that breaks away from the main disc structure and escapes through a tear in the annulus, therefore maintains no connection with the disc of origin.

Shortwave diathermy – Refers to a deep heating modality that produces heat by conversion of electromagnetic energy to thermal energy.

SLR (Straight Leg Raising) – Positive if with posterior pain below the knee with 30 and 70 degrees of straight leg raising while patient is lying back.

Slump test – A test whose aim is to reproduce the subject's symptoms and then be able to alter the symptoms by releasing a component distant from the site of pain. Components: Thoracic and cervical extension, knee extension (pseudo-SLR), foot dorsiflexion, release of cervical flexion (to determine symptom response).

Spinal mobilization – Refers to passive, slow, and usually repeated motion of axial traction and/or rotation and/or translatory gliding with increasing amplitude in order to improve restricted articular mobility.

Spinal mobilization – Passive, slow, and usually repeated motion of axial traction and/or rotation and/or translatory gliding with increasing amplitude in order to improve restricted articular mobility.

Spinal stenosis – Refers to narrowing of the spinal column that causes pressure on the spinal cord, or narrowing of the neural foramina.

Steroid – Refers to a general class of chemical substances that are structurally related to one another and share the same chemical skeleton (a tetracyclic cyclopenta[a]phenanthrene skeleton).

Sub-acute low back pain – Refers to pain with or without functional limitation lasting more than 4 weeks (1 month) but within 12 weeks (3 months).

Tolerance – Refers to a decrease in sensitivity to a drug.

Traction – Refers to a technique used to stretch soft tissues and to separate joint surfaces or bone fragments by use of a pulling force of sufficient magnitude and duration while resisting movement of the body with an equal and opposite force. Traction may be classified into continuous/passive or intermittent/dynamic.

Transcutaneous Electrical Nerve Stimulation (TENS, TNS) – Refers to the procedure of applying controlled, low voltage electrical pulses to the nervous system by passing electricity through the skin via electrodes placed on the skin to modify pain perception.

Ultrasound therapy – Refers to a deep heating modality that involves the use of high-frequency acoustic energy to produce thermal and non-thermal effects.

Viniyoga – Refers to an approach to Yoga that adapts the various means and methods of practice to the unique condition, needs and interests of each individual - giving each practitioner the tools to individualize and actualize the process of self-discovery and personal transformation.

Wasserman test (**or *Wassermann-Boschi's maneuver***) – Used to evaluate higher roots (L1, L2 and L3), with the patient tested on prone position, the physician slowly extends the patient's hip. It is considered positive for high lumbar radiculopathy, when the patient reported pain in the corresponding dermatomes (accentuation of pain in the anterior thigh).

Yellow flags – Refers to indicators of psychosocial, workplace and other factors that increase the risk of developing persistent low back pain.

1 Introduction

1.1 THE NEED FOR A GUIDELINE

Low back pain (LBP) remains one of the most common adult musculoskeletal conditions seen in a Rehabilitation Medicine Specialist's (Physiatrist) clinic. Apart from its frequency, the influence of LBP on afflicted individuals' functional activities presents a great amount of concern. It is believed to be the most common cause of decreased productivity among the working population. The persistent and/or recurrent nature of LBP carries with it the propensity to incur high costs of treatment, notwithstanding the need for immediate relief from pain and discomfort, to improve function and prevent disability. Given the presently struggling economic state of the Philippines, it is vital to properly manage the growing population of LBP patients, if only to prevent labor cost wastage on the part of employers and lost wages among workers. It is important for clinicians to remember that early return to work with sustained and significantly improved primary outcomes results from prompt skilled medical care and rational intervention.

The application of evidence to guide clinical practice has been a global challenge for almost all health professionals (Grol & Grimshaw 2003), more so in developing countries such as the Philippines, where scant resources and sometimes even out of date practices are still being delivered (Agarwal et al. 2008). Evidence-based healthcare practices are not well established, particularly in terms of understanding evidence-based practice (EBP), development of guidelines, or application of guidelines in making decisions regarding patient care (McDonald et al. 2010, Short et al. 2010). However, there have been some pioneering initiatives done in this area by medical societies in the Philippines, such as the Philippine Rheumatological Association (Guidelines for gout, osteoarthritis and osteoporosis) and the Stroke society (Guidelines for stroke) within the recent years (Li-Yu et al. 2011, Philippine Rheumatological Association 2008a,b, Stroke Society of the Philippines 2010). To practice in an evidence based manner requires clear understanding of EBP concepts, applying the concepts in practice and a changed and sustainable thinking, of which all are still slowly in progress in the Philippines (Dizon et al. in review). Lack of resources (financial and intellectual), low priority given to research and lack of evidence based training and skills are just some of the reasons why health practice in Asia (where the Philippines is located) are still not completely based on current research (McDonald et al. 2010). With the increasing prevalence in chronic conditions, in particular, low back pain, the need to provide the best care for patients in both preventive and rehabilitative aspects of care is crucial, thus

the need for widespread understanding of EBP and applying the best evidence in the form of locally applicable clinical guidelines to underpin practice in the Philippines.

1.2 CLINICAL GUIDELINES SUPPORTING EVIDENCE-BASED PRACTICE

"*Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances*" (Field & Lohr 1992). Over the last 15 years, well-credentialed guideline development groups have set international standards for guideline construction (eg Scottish Intercollegiate Guidelines Network (SIGN), New Zealand Guidelines Group (NZGG), National Health and Medical Research Council, Australia (NHMRC), UK NHS National Institute for Clinical Excellence (NICE). These groups provide clinicians, policy-makers and clinicians with ready access to high-quality clinical guidelines on a range of topics.

Essential components of guideline development include systematic literature searches, clear inclusion and exclusion criteria, and evidence appraisal. However, despite international investment in this process, there remains a lack of detail in how guidelines should be developed, the evidence reported, and recommendations worded (Turner et al. 2008). Moreover, there is inconsistent nomenclature, with terms such as guidelines, recommendations, care pathways and protocols meaning different things in different settings (Kumar et al. 2010).

The GLIA group (GuideLine Implementability Appraisal) (Shiffman et al. 2005) provides advice on wording guideline recommendations to reflect the strength of the underpinning evidence, and to encourage implementation of best-evidence into practice. The ADAPTE group (from Canada and Europe) provides a guideline adaptation process to layer existing evidence underpinning existing recommendations with new literature (ADAPTE Collaboration 2007). Critical appraisal tools such as AGREE (Appraisal of Guidelines Research and Evaluation) provide criteria to assess the independence of guideline developers, the clarity of guideline purpose, its scope and end-users, the transparency of clinical questions, and how the literature was searched, appraised, extracted and synthesized, how recommendations were worded, and guidelines revised (AGREE 2010).

There is no widely-accepted approach to presenting or reporting the strength of the body of evidence underpinning guideline recommendations. Approaches include providing summaries of the evidence, reporting the hierarchy and/ or methodological quality, providing reference lists, or a considered judgment of the strength of the body of evidence using a ranking (letter or number). The GRADE group (Guyatt et al. 2010) and

Australia's National Health and Medical Research Council (NHMRC) FORM approach (Hillier et al. 2011) provide suggestions as to how to assess the strength of the body of evidence for guideline recommendations.

1.2.1 GETTING GUIDELINES INTO PRACTICE

There is increasing research regarding the importance of guideline implementation, separate to the guideline-writing process. This research highlights that no matter how well a guideline is constructed, it will not implement itself. Planned approaches are required to embed recommendations into widespread and sustainable practice, and to evaluate the effectiveness of the guideline, in changing practice and improving health outcomes. There is also a growing body of research into adapting Western country guidelines for other Western countries.For instance, the ADAPTE Collaboration provides a framework on how to systematically adapt guidelines to specific cultural and organizational settings using three phases, nine modules and 24 steps (ADAPTE Collaboration 2007). However the ADAPTE framework has not been applied to resource-limited developing countries, with different healthcare systems, healthcare provider relationships and education, and patient need. It is for this reason that we propose our innovative, simple and practical approach to contextualise guidelines from developed countries, for use in the Philippines.

The production of these guidelines was based on the notion that 'contextualization' and 'adaptation' are not synonymous. Guideline writing involves semantics (ADAPTE Collaboration 2007, Kumar et al. 2010, Shiffman et al. 2005, Turner et al. 2008), where the best words are chosen to translate evidence into persuasive and adoptable clinical recommendations. The purpose behind our work was to ensure that existing high quality recommendations could be readily adopted by Filipino healthcare providers by putting them into local contexts and demonstrating their relevance. Our contextualization process fills the gap between expected (evidence-based) practice and 'usual' Filipino practice, by providing PARM Endorsements and PARM Context Points that should assist Filipino healthcare providers to understand what is currently the best available evidence, and to do the best they can, with local resources in their local environment, to put evidence into practice. Thus there was no intent to adapt existing guideline recommendations by rewording, revision or updating the evidence, as this process would not have achieved our purpose. There was no local expertise or even the will to do this, and we had limited resources and time. There was a far more urgent need to embed existing evidence widely to educate healthcare providers about evidence-based guidelines, improve local practices and make the best of available resources. Thus our intention in contextualising existing recommendations was to make it simple for

Filipino healthcare providers who knew little about evidence-based practice, to provide the best possible healthcare, with minimum training and least impost.

1.3 CLINICAL CARE PATHWAY IN LOW BACK PAIN

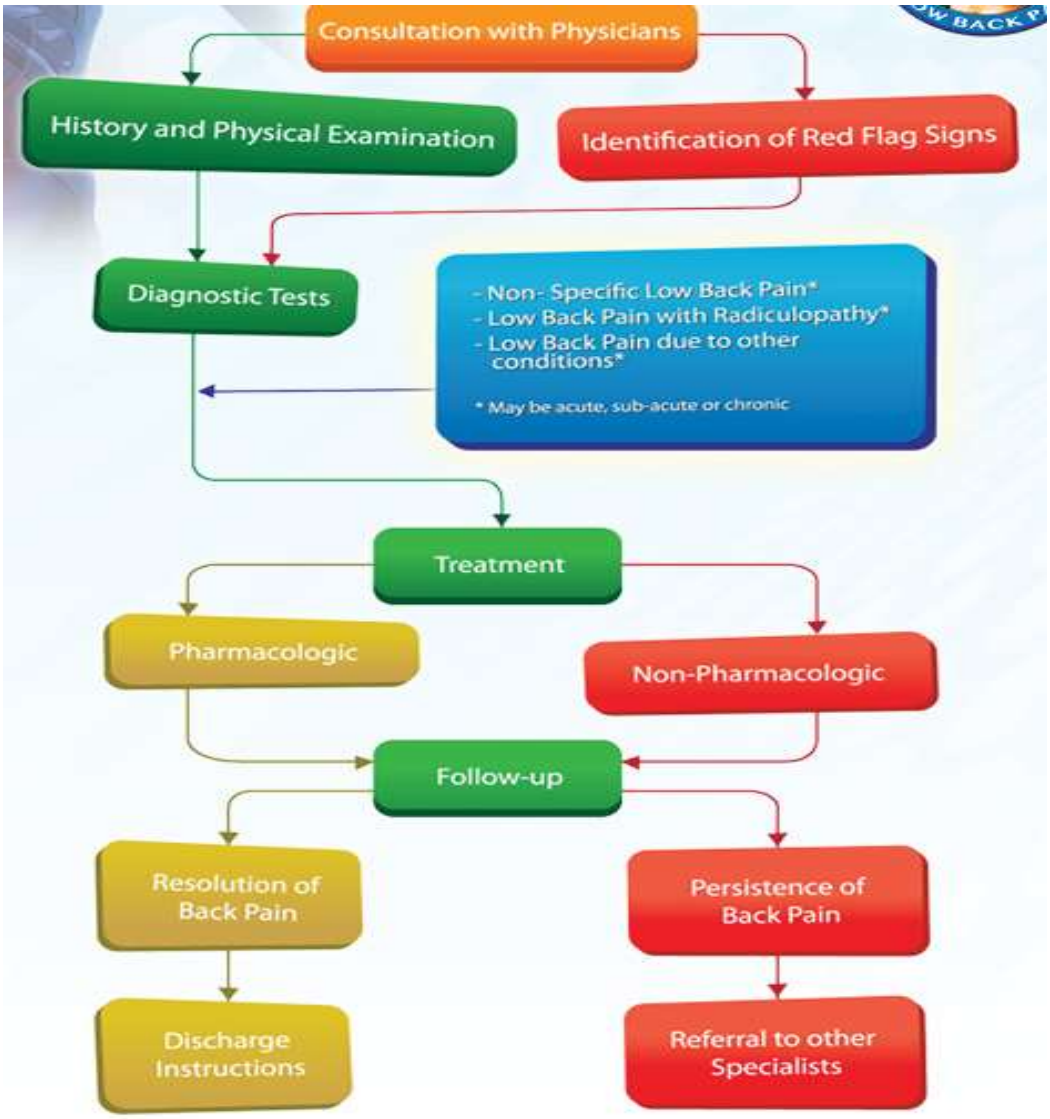

Figure 1. Example of a typical patient journey involving the evaluation, diagnosis and treatment of low back pain

2 Methodology

2.1 PURPOSE AND SCOPE

The team which prepared this document, comprising of Rehabilitation Medicine Specialists (Physiatrists), aim to establish evidence-based guidelines for the rehabilitation of patients suffering from acute, sub-acute and chronic low back pain. This encompasses recommendations for evaluation and diagnosis of low back pain, administration of various treatment modalities and criteria for referral to other specialists.

This guideline was therefore formulated in order to:

1. Identify appropriate clinical and diagnostic approaches to the evaluation of low back pain;
2. Determine rational pharmacologic and non-pharmacologic treatment strategies for low back pain based on current evidence, aimed at improving primary outcomes and reducing disability, and
3. Establish criteria for referral to other specialists as necessary for further management and focused care.

End users: Physiatrists handling patients with low back pain of varying duration.

2.2 DATE OF PRODUCTION : March 2011 – September 2012

DATE OF REVISION : 2014

2.3 GUIDELINE SEARCH PROCESS

The following electronic databases were searched for existing international clinical practice guidelines (CPGs): PubMed, Google Scholar, National Institute for Health and Clinical Excellence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), National Health and Medical Research Center (NHMRC), New Zealand Guidelines Group (NZGG), National Guidelines Clearinghouse (NGC). The key words used were: Clinical Guidelines, Practice Guidelines, low back pain, acute/sub-acute/chronic low back pain and rehabilitation.

Inclusion criteria for the selected CPGs were:

1. Documents available in full text;
2. Published in the English language; and
3. Publication date from 2007-2011.

2.4 CRITICAL APPRAISAL

Selected CPGs which met the inclusion criteria were methodologically assessed using the International Center for Allied Health Evidence (iCAHE) Guideline Appraisal Checklist. This tool is composed of 6 categories (with a total of 14 items) namely: availability (3 items), dates (3 items), underlying evidence (4 items), guideline developers (2 items), guideline purpose/users (1 item) and ease of use (1 item) (Table 1). CPGs with scores of 10 or higher were eligible for inclusion. Only guidelines which provided a summary of their own recommendations were included in this project.

Table 1. iCAHE critical appraisal tool for clinical guidelines.

1. Availability
Is the guideline readily available in full text?
Does the guideline provide a complete reference list?
Does the guideline provide a summary of its recommendations?
2. Date
Is there a date of completion available?
Does the guideline provide an anticipated review date?
Does the guideline provide dates for when literature was included?
3. Underlying Evidence
Does the guideline provide an outline of the strategy they used to find underlying evidence?
Does the guideline use a hierarchy to rank the quality of the underlying evidence?
Does the guideline appraise the quality of the evidence which underpins its recommendations?
Does the guideline link the hierarchy and quality of underlying evidence to each recommendation?
4. Guideline Developers
Are the developers of the guideline clearly stated?
Does the qualifications and expertise of the guideline developer(s) link with the purpose of the guideline and its end users?
5. Guideline purpose and users
Are the purpose and target users of the guideline stated?
6. Ease of use
Is the guideline readable and easy to navigate?
TOTAL SCORE

2.5 EXTRACTION OF RELEVANT DATA FOR CARE PATHWAY

The following data or recommendations were extracted from each guideline:

a. History, physical examination and diagnostic evaluation tools;
b. Pharmacological treatment options;
c. Conservative (non-pharmacological) management;
d. Invasive management;
e. Surgical intervention, and
f. Referral to other specialists and instructions for follow-up.

2.6 CONTEXTUALIZATION

PARM applied the fourth and fifth elements of the NHMRC FORM tool (Hillier et al. 2011) to assess the *generalizabiliy* and *applicability* of the included recommendations to Filipino settings. There was no consideration of first three FORM elements of evidence strength (evidence-base, consistency and clinical impact) for any included guideline, as to do so would have violated the PARM contextualization process. Moreover, the PARM group did not assign an evidence level (A-D) to generalizability and applicability of any PARM endorsement, although this grading is the basis of the FORM guide for *de novo* guideline development (Hillier et al. 2011). Rather PARM focused on discussion of generalizability and applicability of summarized recommendations, to determine whether the PARM Endorsement was sufficient to guide practice decisions, or whether PARM Context Points were also required to contextualize the endorsed recommendation(s) within the patient journey. Where there was confusion in interpreting recommendations to the Filipino patient journey, or where the included guideline recommendations were contradictory, the group went back to the original references for clarification. If required, the level of the PARM endorsement was debated and consensus arrived at, with a final decision from the working group chair in the absence of consensus.

To assist in standardising the guideline contextualization process, a PARM writing guide was established (see Box 1). This guide establishes a uniform framework for summarising differently-worded recommendations and differently-reported strengths of the body of evidence for recommendations extracted from the included guidelines, relevant to a particular situation in the Filipino patient journey. The Guide is to be used in the event that there are:

- more than one relevant recommendation extracted from the relevant guidelines, which addresses a particular aspect of the Filipino patient journey, and/or
- different methods of reporting the underpinning strength of the body of evidence of the relevant recommendations from the included guidelines.

Box 1. PARM standard writing guide.

Key: High quality evidence can be variously described in the included guidelines, as Levels I or II, A or B.
Moderate quality evidence can be variously described in the included guidelines as Levels II or III, B or C
Low quality evidence can be variously described in the included guidelines as Levels III or IV, C or D.

Key: The volume of literature underpinning the recommendations was classified as low volume (3 references or less), moderate volume (4-7 references) or high volume (8+ references). Where a recommendation in the included guidelines was supported only by Good Practice Points (expert opinion in the absence of evidence, or inconsistent evidence), these were noted in the summary table as GPPs, and not given a level of evidence

Each relevant recommendation from each included guideline was assessed using the following parameters: level of evidence, uniformity of thought, and volume, consistency and age of references. The level of evidence was rated as consistent or inconsistent based on the homogeneity of the evidence level assigned by the different clinical practice guidelines. Uniformity of thought was graded as uniform or variable based on similarity of the findings of the different clinical practice guidelines as to the effectiveness or ineffectiveness of a treatment modality and reliability of diagnostic procedure or physical examination. The volume of references was graded as low if the number of references was less than or equal to three, moderate if the number was between four and seven, and high if the volume was greater than eight. The age of the references was assessed as current if 50% of the papers cited were published later than 2006 and non-current if the majority of the papers were published prior to 2006.

All relevant recommendations (to the patient journey) were collated in a table for each element of the journey, along with the underpinning levels of evidence, and the guideline reference from which the recommendation had been extracted. Each included recommendation set was rated according to the Philippine Academy of Rehabilitation Medicine (PARM) guide for evidence rating, outlined in Table 2.

Table 2. PARM guide for summarizing the underpinning strength of the body of evidence of included recommendations.

Recommendation	Strength of the body of evidence
1. There is strong evidence	Consistent grades of high quality evidence with uniform thought[1], and at least a moderate volume of references to support the recommendation(s)
2. There is evidence	A mix of moderate and high quality evidence with uniform thought and at least a low volume of references OR A mix of high and low quality evidence with uniform thought, and high volume of references OR High level evidence coupled with GPPs, and at least moderate volume of references OR One Level I paper with at least moderate volume references
3. There is some evidence	Single level II (A) paper OR Inconsistent grades of high and low evidence with uniform thought and moderate volume references OR Consistent grades of low level evidence with uniform thought and at least a moderate volume of references
4. There is conflicting evidence	A mix of levels of evidence with non-uniform thought, irrespective of the volume of references with or without GPPs
5. There is insufficient evidence	Low or inconsistent levels of evidence with low volume references with or without GPPs
6. There is no evidence	Absence of evidence for any aspect of the patient journey

2.7 PARM ENDORSEMENTS

PARM determined uniform wording with which to endorse recommendations based on the level of evidence (outlined in Table 3). These descriptions ranged from clear statements about efficacy for those with strong evidence (PARM strongly endorses) to those with conflicting evidence of efficacy (PARM suggests).

Table 3. PARM guide for writing recommendations.

1. PARM strongly endorses	When there is strong evidence as determined by the criteria in the table above
2. PARM endorses	When there is evidence as determined by the criteria in the table above
3. PARM recommends	When there is some evidence as determined by the criteria in the table above
4. PARM suggests	When there is insufficient or conflicting evidence as determined by the criteria in the table above
5. PARM does not endorse	There is no evidence as determined by the criteria in the table above

[1] 'Uniform thought' was the term coined by the PARM group to identify when differently worded recommendations from different guidelines had the same intent. This assisted PARM to resolve the issue of different wording of recommendations, despite using the same underpinning references.

2.8 PARM CONTEXT POINTS

Each set of recommendations along the patient journey, for which PARM writes an endorsement statement, is then considered in terms of generalizability and applicability to Filipino healthcare. Generalizability and applicability are addressed using a novel approach, PARM Context Point, which are written to provide a framework in which the PARM endorsed recommendation can be applied, considering local service delivery issues of 'how', 'who', 'when', 'why', 'what', 'what with'. The PARM Context Points consider aspects of the Donabedian (1988) quality framework (Structure, Process) in order to define the important elements of service delivery underpinning evidence-based care. This assists PARM to take into account issues such as training of healthcare providers to comply with recommendations, availability of, and access to, trained healthcare providers across the Philippines, access to appropriate diagnostic and assessment processes, availability of resources and what to do when resources are unavailable, and alternative diagnostic or management approaches which could be adopted in the absence of capacity to provide guideline-recommended healthcare. This process of contextualizing recommendations to local conditions addresses the fourth pillar of evidence-based practice as discussed by Hoffmann et al (2010, Figure 1.1, p.4) (the other pillars being the research evidence, clinician reasoning and patient choice).

To assist in writing the PARM Context Points, a standard framework was developed, which outlined the elements that needed to be in place for minimum best-practice care to be provided equitably across the Philippines. Elements which addressed more advanced standard care were also considered in this framework. This provides guidance to clinicians wherever they may practice in the Philippines, regarding essential equipment, standards and resources, training and workforce, in order to provide evidence-based care.

2.9 GUIDELINES

A total of eight guidelines were identified in the internet search which met the inclusion criteria (available in full text, published in English, and released not earlier than 2006). These were fitted to the patient journey, and all were retained as potentially useful.

After critical appraisal, the eight CPGs were deemed fit for inclusion in this project. These guidelines are the following:

1. Negrini S, Giovannoni S, Minozzi S, Barneschi G, Bonaiuti D, Bussotti A, et al. Diagnostic therapeutic flow-charts for low back pain patients: The Italian clinical guidelines. *Eura Medicophys* 2006; 42(2):151-70. URL: http://www.minervamedica.it/

2. NICE 2009 Low back pain. Early management of persistent nonspecific low back pain. National Institute for Health and Clinical Excellence (NICE) Clinical Guideline 88. URL: http://publications.nice.org.uk/low-back-pain-cg88
3. TOP 2009 Guideline for the evidence-informed primary care management of low back pain. Edmonton (AB): Toward Optimized Practice. URL: http://www.mhalliance.on.ca/doclibrary/GuidelinesforLowBackPain.pdf
4. CLIP 2007 Agency for Health & Social Services. Montreal, Canada: Clinic on Low-Back Pain in Interdisciplinary Practice Guidelines. URL: http://collections.banq.qc.ca/ark:/52327/bs47125
5. ICSI 2010 Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement. URL: www.icsi.org/low_back_pain/adult_low_back_pain__8.html
6. WorkCoverSA 2010. Clinical practice guideline: Managing acute-subacute low back pain. Adelaide: WorkCover Corporation. URL: http://www.workcover.com/site/treat_home/guidelines_by_injury_type/acutesubacute_low_back_pain.aspx
7. Chou R, Qaseem A, Snow V, Casey D, Cross JT Jr, Shekelle P, et al. Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society. *Ann Intern Med* 2007; 147:478-91. URL: http://annals.org/article.aspx?volume=147&issue=7&page=478
8. Chou R, Loeser J, Owens D, Rosenquist RW, Atlas SJ, Baisden J, et al. Interventional therapies, surgery, and interdisciplinary rehabilitation for low back pain: An evidence-based clinical practice guideline from the American pain society. *Spine* 2009; 34:1066-77. URL: http://journals.lww.com/spinejournal/Abstract/2009/05010/Interventional_Therapies,_Surgery,_and.14.aspx

2.9.1 RESULTS

The eight included clinical practice guidelines were critically appraised using the iCAHE tool. The iCAHE scores of the guidelines, shown in Table 4, qualified them for use as reference guidelines in our project. Appendix 1 shows the full methodology of scores for each included CPG.

Table 4. iCAHE scores of the included clinical practice guidelines and the assigned tag used in the PARM low back pain guideline.

Clinical practice guideline	Year	iCAHE score	Assigned tag in PARM CPG
Negrini et al.	2006	13	ITALIAN
National Institute for Clinical Excellence	2009	13	NICE
Towards Optimized Practice	2009	12	TOP
Clinic on Low-Back Pain in Interdisciplinary Practice (CLIP) Guideline	2007	11	CLIP
Institute for Clinical Systems Improvement	2010	14	ICSI
WorkCover (South Australia) Corporation	2010	12	WORKCOVERSA
Chou et al. (2007)	2007	12	ACP-APS
Chou et al. (2009)	2009	12	APS

2.9.2 GUIDELINE CLASSIFICATION OF EVIDENCE STRENGTH

The tables below provide an outline of the levels of evidence and recommendation grades used by each of the clinical practice guidelines included.

Table 5. ITALIAN guideline classification of evidence strength. Taken from Negrini et al. (2006).

Grade of recommendation	
A	Strong recommendation for all patients. This is applied to recommendations based on high quality evidence, group I or II (A), or to recommendations on problems or treatments that it is not possible to study with RCTs (e.g. some psychological aspects, patient information, ethics) or data of clinical experience and not disputable (A*)
B	There are doubts as to whether the execution of the procedure should always be recommended for all patients, but its execution should be carefully considered.
C	There is a deep uncertainty pro or versus the recommendation. This refers to procedures where there are no conclusions according to the literature because of the absence ofRCTs or contrasting results from existing studies.
Levels of evidence	
I	Evidence from many RCTs and or from SRs of RCT
II	Evidence from only one RCT
III	Evidence from nonrandomized cohort studies with concurrent or historical controls or their SRs
IV	Evidence from retrospective case/control studies or their SRs
V	Evidence from case series
VI	Evidence based on expert opinions, consensus conference committees or members of their guidelines team.

Table 6. NICE guideline classification of evidence strength. Taken from NICE (2009).

Level of evidence	Type of evidence
1++	High-quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1+	Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
1-	Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias
2++	High-quality systematic reviews of case–control or cohort studies High-quality case–control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2+	Well-conducted case–control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2-	Case–control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal
3	Non-analytical studies (for example, case reports, case series)
4	Expert opinion, formal consensus

Table 7. TOP guideline classification of evidence strength. Taken from TOP (2009).

Grade of recommendations	
Do	The Guideline Development Group (GDG) accepted the original recommendation, which provided a prescriptive direction to perform the action or used the term "effective" to describe it. The GDG supplemented a recommendation or created a new one, based on their collective professional opinion, which supported the action.
Not recommended	The GDG accepted the original recommendation, which provided a prescriptive direction "not" to perform the action; used the term "ineffective" to describe it; or stated that the evidence does "not support" it. • The GDG supplemented a recommendation or created a new one, based on their collective professional opinion, which did not support the action.
Do not know	The GDG accepted the original recommendation, which did not recommend for or against the action or stated that there was "no evidence", "insufficient or conflicting evidence", or "no good evidence" to support its use. • The GDG supplemented a recommendation or created a new one, based on their collective professional opinion, which was equivocal with respect to supporting the action.
Evidence source	
SR	Systematic review
RCT	Randomized control trial
NRT	Non-randomized trial
G	Guideline
EO	Expert opinion

Table 8. CLIP guideline classification of evidence strength. Taken from CLIP (2007).

Levels of evidence	
Strong	Based on consistent findings in several high quality studies.
Moderate	Based on consistent findings in lesser quality studies, particularly with small number of subjects.
Low	Based on the results of only one study or inconsistent findings in several studies.
Absent	Based on studies with no comparison group, on theoretical considerations or on expert consensus.

Table 9. ICSI guideline classification of evidence strength. Taken from ICSI (2010).

Levels of evidence: Primary reports of new data collections	
Class A	Randomized, controlled trial
Class B	Cohort study
Class C	Non-randomized trial with concurrent or historical cohorts • Case control study • Study of sensitivity & specificity of a diagnostic test • Population-based descriptive study
Class D	Cross-sectional study • Case series • Case report
Reports that synthesize or reflect upon collections of primary reports	
M	Meta-analysis • Systematic review • Decision analysis • Cost-effectiveness analysis
R	Consensus statement • Consensus report • Narrative review
X	Medical opinion

Table 10. WORKCOVERSA guideline classification of evidence strength. Taken from WorkCoverSA (2010).

Grade of recommendation	
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution

Table 11. ACP-APS guideline classification of evidence strength. Taken from ACP-APS (2007) and APS (2009).

Strength of overall evidence		
Good	Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes (at least two consistent, higher-quality trials).	
Fair	Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, size, or consistency of included studies; generalizability to routine practice; or indirect nature of the evidence on health outcomes (at least one higher-quality trial of sufficient sample size; two or more higher-quality trials with some inconsistency; at least two consistent, lower-quality trials, or multiple consistent observational studies with no significant methodological flaws).	
Poor	Evidence is insufficient to assess effects on health outcomes because of limited number or power of studies, large and unexplained inconsistency between higher-quality trials, important flaws in trial design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.	
American college of physicians clinical practice guidelines grading system		
Quality of evidence	Strength of recommendation	
	Benefits do or do not clearly outweigh risks	Benefits and risks and burdens are finely balanced
High	Strong	Weak
Moderate	Strong	Weak
Low	Strong	Weak
Insufficient evidence to determine net benefits or harms		

Table 12. A summary of the low and high evidence ratings for each of the included clinical guideline practices.

Guideline	**Low evidence**	**High evidence**
ITALIAN	B, C, III – VI	A, I, II
NICE	1-, 2-, 3, 4	1++, 1+, 2++, 2+
TOP	Do – EO, NR	Do – SR, G
CLIP	Moderate, Low, Absent	Strong
ICSI	C, D, X, R	A, B, M
WORKCOVERSA	C, D	A, B
ACP-APS	Poor	Good, Fair
APS	Low	High, Moderate

2.10 FILLING THE GAPS

During the discussions among the developers, some potential obstacles or deficiencies to the proper implementation of the guidelines were determined. Primarily, the health care delivery system in the Philippines is usually centered in the urban areas in different provinces. Rehabilitation centers in these cities aregenerally more equipped, especially in terms of diagnostic facility, highly-specialized therapeutic interventions and subspecialty care. While the availability of more specialized interventional methods is scarce in the rural areas, owing to lack of equipment or experience, it is imperative that all physiotherapy centers have the basic modalities for pain relief, such as thermal agents, traction machines and electrotherapeutic devices. Likewise, emphasis is given to the role of therapeutic exercises and continuation of physical activity as important components in the management of non-specific low back pain in any setting. If the need arises for specialized diagnostic modalities, invasive treatment or surgical intervention(which are currently only available in the urban areas), every physiatrist must know when it is clinically-sound to have the necessary equipment installed, in order to save patients time and financial resources which would otherwise be spent on unnecessary travel to the city.

Also, it has been observed that the knowledge on evidence based practice (EBP) of low back pain among PARM members is minimal. They must therefore be well-versed with the principles of EBP to ensure successful implementation of the CPGs. It is suggested that all PARM members acquire appropriate training on the concepts and application of EBP through seminars and workshops.

2.11 GUIDELINE DEVELOPERS

The PARM working committee on this guideline is composed of the following members:

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3 Evaluation and diagnosis of low back pain

Low back pain (acute and chronic) is a prevalent condition in most Western and most people will be affected by back pain at some time in their lives. It is a particular challenge because it is so common, demanding of medical resources and a major cause of physical, psychological and social disability. Most of the time, back pain is benign and self-limiting. A complete and focused medical history and physical examination is important in the evaluation of low back pain to determine the cause of the symptoms. Patient's responses and findings may raise suspicion of serious underlying condition. In the absence of signs of dangerous conditions, there is no need for special studies since most of patients will recover spontaneously. Imaging of the lumbar spine and other diagnostic exams should be used in the evaluation of low back pain if specific pathology needs to be confirmed after a thorough history and physical examination.

3.1 EVALUATION

3.1.1 MEDICAL HISTORY

Table 13. Low back pain patient medical history.

Recommendation	Guideline	Level of evidence	Reference
There is strong evidence that performing a full patient evaluation (history- taking, physical and neurologic examination, functional status and psychosocial risk factor assessment) and conducting diagnostic triage is important in the evaluation and diagnosis of low back pain.	TOP CLIP ITALIAN ICSI APS-ACP	DO - SR High A M Moderate	ICSI 2006 Van Tulder et al. 2004 Koes et al. 2001 Negrini et al. 2006 Bigos et al. 1994 Chou et al. 2007 Deyo et al. 1992
Consistent level of evidence – High volume – Non-Current – Uniform thought			
There is insufficient evidence that patients presenting with red flag signs (see Appendix 2) indicate a serious pathology and require referral for immediate evaluation and treatment.	TOP CLIP ITALIAN	DO - EO Moderate B	ICSI 2006 ICSI 2006 Koes et al. 2001 Koes et al. 2001
Consistent level of evidence – Low volume – Non-current – Uniform thought			
There is evidence that identifying yellow flag signs or psychosocial risk factors (see	TOP	DO - SR	ICSI 2006 Van Tulder et al.

Appendix 2) can contribute to better management of low back pain.			2004
	ICSI	R, B, C	Bigos et al. 1991 Chan et al. 1993 Deyo et al. 1992 Fritz et al. 2003 Kroenke et al. 2003 New Zealand Guideline Group 2004 Spitzer 1987
	APS-ACP	Moderate	Fayad et al. 2004 Pengel et al. 2003 Pincus et al. 2002
Inconsistent level of evidence – High volume – Non-current – Uniform thought			
There is strong evidence that a comprehensive re-evaluation, including a general assessment should be done for patients not improving after four - six weeks	ICSI TOP	M DO - G	Chou et al. 2007 ICSI 2006 Van Tulder et al. 2004
	CLIP	Moderate	Davidson & Keating 2002
	APS	Moderate	Hestbaek et al. 2003 Pengel et al. 2003
Consistent level of evidence – Moderate volume – Non-Current – Uniform thought			

- PARM strongly endorses performing a full patient evaluation (e.g., history-taking, physical and neurologic examination, functional status and psychosocial risk factor assessment) and conducting diagnostic triage is important in the evaluation and diagnosis of low back pain.
- PARM strongly endorses performing a comprehensive re-evaluation with general assessment in low back pain patients not improving after four to six weeks.
- PARM endorses identifying yellow flag signs or psychosocial risk factors (see Appendix 2) to better manage low back pain patients.
- PARM suggests immediate evaluation and treatment of low back pain patients presenting with red flag signs (see Appendix 2) indicating a serious pathology.

3.1.2 PHYSICAL EXAMINATION

3.1.2.1 NON-SPECIFIC LOW BACK PAIN

Table 14. Physical examination for non-specific low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is strong evidence that performing a full patient physical and neurologic examination, functional status and psychosocial risk factor assessment are important in the management of low back pain.	TOP	DO - SR	ICSI 2006 Van Tulder et al. 2004
	CLIP	High	ICSI 2006 Koes et al. 2001
	ITALIAN	A	Koes et al. 2001
	ICSI	M	Chou et al. 2007
	APS	Moderate	Deyo et al. 1992 Bigos et al. 1994
Consistent level of evidence – High level – Moderate volume – Uniform thought			

- PARM strongly endorses performing a full physical and neurologic examination, functional status and psychosocial risk factor assessment for patients with low back pain. See Appendix 2 for more details.

3.1.2.2 LOW BACK PAIN WITH RADICULOPATHY

Table 15. Physical examination for low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence that congruence of neurologic signs and symptoms increases sensibility and specificity of neurological exam. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is some evidence that a positive straight leg raise (SLR) test (the best-studied physical exam maneuver) is sensitive but not specific while a crossed leg SLR is specific but not sensitive for patients with radiculopathy secondary to disc herniation. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006

There is some evidence that pain distribution has good sensibility for patients with radiculopathy secondary to disc herniation. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is some evidence that SLR in the elderly can be normal even if there is radicular damage. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is insufficient evidence that doing the slump test can diagnose or exclude lumbar disc herniations with nerve root compression in patients with severe clinical presentation of acute and sub-acute low back pain. *Consistent level of evidence – Low volume – Current – Uniform thought*	WORK-COVERSA ICSI	C R,C	WorkCoverSA 2010 Butler 2000 Supik & Broom 1994
There is insufficient evidence that among the range of active movement assessment techniques used, the provocative active side bend assessment, either alone or as part of a flexion-extension-rotation assessment, is the most reliable test to replicate symptoms. *Low volume – Current*	WORK-COVERSA	C	WorkCoverSA 2010
There is insufficient evidence that a positive neural tension test (e.g., straight leg raise, slump, prone knee bend, femoral stretch) performed bilaterally is due to a nerve root or discogenic pathology. *Consistent level of evidence – Low volume – Non-current – Uniform thought*	ICSI	R C	Butler 2000 Supik & Broom 1994
There is some evidence that steppage due to complete L4 L5 damage requires immediate surgical evaluation *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is insufficient evidence that leg pain/pain below the knee increases the probability of radiculopathy *Low volume – Current*	ITALIAN	B	Negrini et al. 2006

There is insufficient evidence that a positive Wassermann, a reduced or absent patellar reflex and a reduction in knee extension strength are the result of an L3 sciatica. *Low volume – Current*	ITALIAN	B	Negrini et al. 2006
There is insufficient evidence that a positive Wassermann/SLR, a reduced or absent patellar reflex, a reduction in foot dorsiflexion and knee extension strength, and deterioration of medial foot sensibility are the result of an L4 sciatica. *Low volume – Current*	ITALIAN	B	Negrini et al. 2006
There is insufficient evidence that a positive SLR, present Achilles reflex, reduced toe dorsal flexion strength and deterioration of back foot sensibility are the result of an L5 sciatica. *Low volume – Current*	ITALIAN	B	Negrini et al. 2006
There is insufficient evidence that a positive SLR, reduced/absent Achilles reflex, reduced foot plantar flexion, deterioration of lateral foot sensibility is a result of an S1 sciatica. *Low volume – Current*	ITALIAN	B	Negrini et al. 2006

- PARM recommends considering congruence of signs and symptoms to symptoms increase sensibility and specificity of the neurological exam of a patient with low back pain.
- PARM recommends the following in low back pain patients with probable radiculopathy secondary to disc herniation:
    a. doing the SLR test and crossed leg SLR test;
    b. mapping pain distribution;
    c. not to rule out radiculopathy in elderly patients with normal SLR test, and
    d. immediate referral for surgical evaluation of low back pain patients with steppage.
- PARM suggests the following in low back pain patients with probable radiculopathy secondary to disc herniation:
    a. doing the slump test to patients with severe clinical presentation of acute or sub-acute low back pain;

b. performing the "provocative active side bend" assessment, either alone or as part of a flexion-extension-rotation assessment;
c. performing one or more of the neural tension tests (e.g., straight leg raise, slump, prone knee bend, femoral stretch) bilaterally;
d. checking for leg or below the knee pain, and
e. performing Wasserman test, SLR test, patellar and Achillestendon reflex test, foot sensibility (e.g., lateral, medial and back), muscle strength test (e.g., knee extension, foot dorsi- and plantarflexion, toe dorsiflexion) and foot (e.g., medial, lateral and back) sensibility.

3.2 DIAGNOSIS

3.2.1 NON-SPECIFIC LOW BACK PAIN

Table 16. Diagnosis of non-specific low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is strong evidence that diagnostic imaging tests such as radiographs, CT and MRI are not useful in the evaluation of acute non-traumatic, and non- specific cases of low back pain.	TOP ICSI CLIP	DO - SR M High	ICSI 2006 Chou et al. 2007 Hayden et al. 2005a Jarvik & Deyo 2002 Philadelphia Panel 2001 Van Tulder et al. 1997
	ITALIAN WORK-COVERSA NICE	A B 1++	Negrini et al. 2006 WorkCoverSA 2010 Kendrick et al. 2001a
	APS	Moderate	Deyo et al. 1987 Gilbert et al. 2004 Jarvik & Deyo 2002 Kendrick et al. 2001b Kerry et al. 2002
Consistent level of evidence – High volume – Not current – Uniform thought			
There is insufficient evidence that an absence of expected improvement or worsening of the condition, may warrant ordering an x-ray to be done.	WORK-COVERSA ICSI	B M,C	WorkCoverSA 2010 Deyo & Diehl 1986 Liang & Komaroff 1982
Inconsistent level of evidence – Low volume – Non-current – Uniform thought			

There is some evidence that in patients with chronic LBP or acute low back pain who are not improving, lumbar spine x-rays may be required prior to performing a CT or MRI scan. In this case, views should be limited to anterior-posterior (AP) and lateral (LAT) without requesting oblique views. *Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought*	TOP WORK-COVERSA ITALIAN ICSI	NR B A M,C	ICSI 2006 WorkCoverSA 2010 Negrini et al. 2006 Deyo & Diehl 1986 Liang & Komaroff 1982
There is insufficient evidence to recommend laboratory blood tests in the absence of red flag signs. *Low volume – Current*	TOP	DO - EO	ICSI 2006

- PARM strongly endorses against the use of diagnostic imaging tests such as radiographs, CT and MRI in evaluating acute non-traumatic and non-specific cases of low back pain.
- PARM recommends to acute or chronic low back pain patients who are not improving, to have an x-ray of the lumbar spine (AP and lateral views, without oblique views) prior to a CT or MRI.
- PARM suggests:
  a. requesting for an xray in the absence of expected improvement or with worsening of the patient's condition, and
  b. laboratory blood tests in the absence of red flag signs.

3.2.2 LOW BACK PAIN WITH RADICULOPATHY

Table 17. Diagnosis of low back pain with radiculopathy.

Recommendation	**Guideline**	**Level of evidence**	**Reference**
There is some evidence that in the first 4-6 weeks of low back pain, CT scan and MRI are not recommended if there is no highly-painful sciatica nor progressive motor deficit. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is strong evidence that after 4-6 weeks of low back pain, CT scan or MRI are recommended if surgery is considered, and/or severe or progressive neurologic deficits are present.	ITALIAN APS	A Moderate	Negrini et al. 2006 Loblaw et al. 2005 Todd 2005 Tsiodras & Falagas 2006

Consistent level of evidence – Moderate volume – Current – Uniform thought

There is some evidence that when a diagnostic test is indicated in low back pain patients with or without radiculopathy, MRI is preferred. However, when MRI is contraindicated, then CT scan can be an alternative.	ITALIAN ICSI APS	A R R C D Moderate	Negrini et al. 2006 ACR 2006 Bischcoff et al. 1993 Modic et al. 1986 NASS 2007 Jarvik & Deyo 2002
Inconsistent level of evidence – Moderate Volume – Current – Uniform thought			
There is some evidence that in first 4 weeks of low back pain, EMG sensibility to predict radicaular damage is low. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is some evidence that neurophysiological expert evaluation is useful when etiological or level diagnosis are uncertain, or prognostic information is required, or to monitor/document objectively functional deficit. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006

- PARM strongly endorses that after 4 – 6 weeks of low back pain, CT scan or MRI are recommended if surgery is considered and/or severe or progressive neurologic signs and symptoms are present.
- PARM recommends when a diagnostic test is indicated in low back pain, with or without radiculopathy an MRI is preferred. However, CT scan is an alternative when MRI is contraindicated.
- PARM recommends neurophysiological expert evaluation when etiological or level diagnosis are uncertain, prognostication information is required, or to monitor/document low back pain objectively.
- PARM does not recommend ordering for CT scan and MRI in the first 4-6 weeks unless there is highly-painful sciatica or progressive motor deficit.
- PARM does not recommend EMG exam in the first four weeks of low back pain, since it does not predict radicular pain.

3.2.3 LOW BACK PAIN DUE TO OTHER SPECIFIC CONDITIONS

Table 18. Diagnostic examinations for low back pain due to other specific conditions.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence that x-rays may assist in determining the diagnosis of patients with low back pain after lumbar blunt trauma or acute injuries (fall, motor-vehicle accidents, motorcycle, pedestrian, cyclists, etc). *Low volume – Current*	WORK-COVERSA	B	WorkCoverSA 2010
There is insufficient evidence that standard standing and dynamic x-ray can be done in cases of spinal instability, spondylolisthesis. *Low volume – Current*	ITALIAN	B	Negrini et al. 2006
There is some evidence that x-ray of whole spine in standing is useful in scoliosis. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is some evidence that CT scan or MRI is useful in spinal stenosis. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is insufficient evidence that blood and urine exams, acute phase reactants, x-ray of the spine and sacro-iliac joints are useful in rheumatologic or spondyloarthritic cases of back pain *Low volume – Current*	ITALIAN	B	Negrini et al. 2006

- PARM recommends ordering x-rays in patients with low back pain after lumbar blunt trauma or acute injuries (fall, motor-vehicle accidents, motorcycle, pedestrian, cyclists, etc) to assist in diagnosis.
- PARM recommends x-ray of the whole spine (in standing) in patients with scoliosis.
- PARM recommends CT scan or MRI in patients with spinal stenosis.
- PARM suggests ordering standing standard and dynamic x-ray in cases of spinal instability and spondylolisthesis

- PARM suggests requesting for blood and urine exams, acute phase reactants and x-ray of the spine and sacroiliac joints in patients with rheumatologic or spondyloarthritic cases of back pain.

3.3 PARM CONTEXT POINTS

3.3.1 NON-SPECIFIC LOW BACK PAIN

Table 19. Context points for minimum and additional standard care of practice for history and evaluation of non-specific low back pain.

	Minimum standard care of practice	**Additional standard care of practice**
Practice method	Medical history Physical examination Neurologic examination Functional status Psychosocial risk assessment Diagnostic triage Red flag signs (appendix 1) Yellow flag signs (appendix 2)	No diagnostic imaging tests are needed, ie. LS spine x-rays, CT scans, MRI
Equipment	X-ray after 4-6 weeks	CT or MRI after 4-6 weeks
Workforce	Attending physician Radiologist	Physiatrist Radiologist
Training	Within competency	Witihin competency
When is it done	Upon consultation	None
Reassessment using at least one standard outcome measure	Four to six weeks * if not improving, may request for LS spine x-rays (AP and lateral views)	Four to six weeks

3.3.2 LOW BACK PAIN WITH RADICULOPATHY

Table 20. Context points for minimum and additional standard care of practice for history and evaluation of low back pain with radiculopathy.

	Minimum standard care of practice	**Additional standard care of practice**
Practice Method	Refer to Non-specific LBP and include Provocative Tests	Refer to Non-specific LBP
Equipment	None	EMG, CT, MRI machines
Workforce	Attending physician Physiatrist Neurologist Orthopedic surgeon	Physiatrist Neurologist Orthopedic surgeon Electromyographer Radiologist
Training	Within competency	Within competency
When is it done	Upon consultation	Upon consultation

Reassessment using at least one standard outcome measure	Four to six weeks	Four to six weeks * if not improving, may request for CT, MRI, EMG-NCV

3.3.3 LOW BACK PAIN DUE TO OTHER SPECIFIC CONDITIONS

Table 21. Context points for minimum and additional standard care of practice for history and evaluation of low back pain due to other specific conditions.

	Minimum standard care of practice	**Additional standard care of practice**
Practice Method	Refer to Non-specific LS spine X-ray (standing view) for scoliosis, (dynamic) for spinal instability/spondylolisthesis; X-ray (SI jts) bld; urine test; acute-phase reactants for spondyloarthropathy	CT scans MRI
Equipment	X- ray machine	CT or MRI machine for Spinal stenosis
Workforce	Attending physician Physiatrist Neurologist Orthopedic surgeon Neurosurgeon Rheumatologist Radiologist	Attending physician Physiatrist Neurologist Orthopedic surgeon Neurosurgeon Rheumatologist Radiologist
Resources	X-ray room	MRI/CT scan room
Training	Within competency	Within competency
When is it done	Upon consultation	Upon consultation
Reassessment using at least one standard outcome measure	Four to six weeks * if not improving, may request for LS spine x-rays (AP and lateral views)	Four to six weeks * if not improving, (persistent pain or with progressive motor deficit) may request for LS spine x-rays (AP and lateral views) prior to CT or MRI

4 Acute low back pain

4.1 NON-SPECIFIC ACUTE LOW BACK PAIN

4.1.1 CONSERVATIVE MANAGEMENT

4.1.1.1 PHARMACOLOGIC MANAGEMENT

Table 22. Pharmacologic management of non-specific acute low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is strong evidence that acetaminophen is an effective treatment for acute non-specific low back pain. It is to be considered as the first line of drug; it should not be given >3 grams/day.	TOP ITALIAN WORK-COVERSA NICE APS-ACP	SR A A 1++ Good	Van Tulder et al. 2004 Negrini et al. 2006 Australian Acute Musculoskeletal Pain Guidelines Group 2003 Roelofs et al. 2008 Milgrom et al. 1993 Van Tulder et al. 2000a,b
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is strong evidence that non-steroidal anti-inflammatory drugs (NSAIDs) are effective to decrease pain for acute non-specific low back pain and recommended for short term treatments when paracetamol alone is insufficient.	CLIP TOP ITALIAN WORK-COVERSA NICE APS-ACP	Strong SR A B 1++ Good	Bogduk 2004 Jackson 2004 Van Tulder & Waddell 2000 Van Tulder et al. 2005 Van Tulder et al. 2004 Negrini et al. 2006 WorkCoverSA 2010 Roelofs et al. 2008 Van Tulder et al. 2000a,b
Consistent level of evidence – High volume – Non-current – Uniform thought			
There is insufficient evidence to judge the efficacy of antidepressants for treatment of acute non-specific low back pain. *Low volume – Non-current*	CLIP	Absent	Bogduk 2004 Schnitzer et al. 2004 Van Tulder & Waddell 2000

There is strong evidence that the efficacy of non-benzodiazepines is greater than benzodiazepines for acute non-specific low back pain.	CLIP	Strong	Van Tulder et al. 2005
	APS-ACP	Fair	Basmajian 1978 Boyles et al. 1983 Hennies 1981 Hingorani 1966 Moll 1973
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is insufficient evidence that non-opioids are as efficacious as NSAIDS for pain relief in patients with acute non-specific low back pain. *Low volume – Non-current*	CLIP	Low	Bogduk 2004 Jackson 2004 Van Tulder & Waddell 2000
There is some evidence to preferentially prescribe weak opioids or preferentially prescribe NSAIDs for people with acute non-specific low back pain who obtain insufficient benefit from paracetamol. *Low volume – Current*	NICE	1++	Roelofs et al. 2008
There is some evidence of superiority of opioids compared to non-opioids in the treatment of acute non-specific low back pain.	CLIP	Low	Bogduk 2004 Jackson 2004 Van Tulder & Waddell 2000
	APS-ACP	Fair	Baratta 1976 Wiesel et al. 1980
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is evidence that the effect of opioid or compound analgesics is similar to NSAID treatment of acute low back pain.	TOP	SR	Australian Acute Musculoskeletal Pain Group 2003
Oral opioids may be necessary to relieve severe musculoskeletal pain. It is preferable to administer a short-acting agent at regular intervals, rather than on a pain-contingent basis. Ongoing need for opioid analgesia is an indication for reassessment	WORK-COVERSA	B	Australian Acute Musculoskeletal Pain Guidelines Group 2003
Consistent level of evidence – Low volume – Non-current – Uniform thought			

There is strong evidence that muscle relaxants are more effective than placebo in the treatment of acute non-specific low back pain, particularly for muscle spasm. However, due to adverse effects it should not be recommended routinely and the patient should be advised about possible side effects.	TOP CLIP ITALIAN WORK-COVERSA	SR Strong A B	Van Tulder et al. 2004 Van Tulder et al. 2005 Negrini et al. 2006 WorkCoverSA 2010
	APS-ACP	Good	Cochrane Back Review Group 2003 Van Tulder et al. 2003
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is conflicting evidence that a combination of muscle relaxant and NSAIDs or analgesic is effective in the treatment of acute non-specific low back pain.	CLIP	Strong (relaxant +NSAIDs efficacy> placebo)	Van Tulder et al. 2005
	ITALIAN	C (muscle relaxants don't give additional effect to NSAIDs)	Negrini et al. 2006
Inconsistent level of evidence – Low volume – Current – Variable thought			
There is insufficient evidence not to recommend oral steroids for the treatment of acute non-specific low back pain.	TOP	EO (do not recomm-end)	ICSI 2006
	ITALIAN	C (do not recomm-end)	Negrini et al. 2006
Consistent level of evidence – Low volume – Current – Uniform thought			
There is some evidence that systemic corticosteroid is not effective in the treatment acute non-specific low back pain	APS-ACP	Fair (not effective)	Finckh et al. 2006 Friedman et al. 2006 Haimovic & Beresford 1986 Porsman & Friis 1979
Moderate volume – Current			

- PARM strongly endorses the use of acetaminophen as first line drug in the treatment of acute non-specific low back pain.
- PARM strongly endorses the use of NSAIDs as second drug if acetaminophen is not sufficient in the treatment of acute non-specific low back pain.
- PARM strongly endorses the use of muscle relaxants in the treatment of acute non-specific low back pain, particularly for muscle spasm and should not be recommended routinely due to its adverse effects.
- PARM strongly endorses the use of non-benzodiazepines over benzodiazepines in the treatment of acute non-specific low back. PARM endorses the use of opioid or compound analgesic for severe acute non-specific low back pain.
- PARM recommends to preferentially prescribe weak opioids or NSAIDs for people with acute non-specific low back pain who obtain insufficient benefit from acetaminophen or NSAIDs.
- PARM recommends that either opioids or non-opioids may be used in the treatment of acute low back pain. However, opioids are not superior to non-opioids in its efficacy.
- PARM suggests the combination of muscle relaxant and NSAIDs or analgesic in the treatment of acute non-specific low back pain if acetaminophen or NSAIDs alone have failed to reduce pain.
- PARM suggests the use of antidepressants for the treatment of acute non-specific low back pain.
- PARM suggests that non-opioids are as efficacious as NSAIDS for pain relief in patients with acute non-specific low back pain.
- PARM does not suggest the use of oral nor systemic steroids for the treatment of acute non-specific low back pain.

4.1.1.2 PHYSICAL ACTIVITY, THERAPEUTIC EXERCISE WITH RELATED INTERVENTIONS, EDUCATION & ADVICE

Table 23. Non-pharmacologic management (physical activity, therapeutic exercise with related interventions, education and advice) of acute non-specific low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is strong evidence against bed rest as treatment for patients with acute non-specific low back pain. If the patient must rest, it should be limited to no more than two days.	TOP	SR (against)	Australian Acute Musculoskeletal Pain Guidelines Group 2003 ICSI 2006 Van Tulder et al. 2004
	CLIP	Strong (against)	Hagen et al. 2005 Van Tulder et al. 2004

	ITALIAN	A (against)	Negrini et al. 2006
	ICSI	R (against)	New Zealand Guidelines Group 2004

Consistent level of evidence – Moderate volume – Current – Uniform thought

There is strong evidence that patients with acute non-specific low back pain should be advised to remain physically active.	CLIP	Strong	Hilde et al. 2005 Van Tulder et al. 2004
	ITALIAN	A	Negrini et al. 2006
	ICSI	M	Waddell et al. 1997
	TOP	SR	ICSI 2006 Van Tulder et al. 2004

Consistent level of evidence – Moderate volume – Non-current – Uniform thought

There is conflicting evidence that therapeutic exercise is useful in managing acute non-specific low back pain.	TOP	SR	ICSI 2006 Van Tulder et al. 2004
	WORK-COVERSA	B	WorkCoverSA 2010
	APS-ACP	Good (not effective)	Hayden et al. 2005a,b

Consistent level of evidence – Moderate volume – Non-current – Variable thought

There is strong evidence against prescribing any specific exercise program over another in managing acute non-specific low back pain.	ITALIAN	A (against)	Negrini et al. 2006
	TOP	SR (insuff-icient)	ICSI 2006 Van Tulder et al. 2004
	CLIP	Strong (against)	Hayden et al. 2005a
	WORK-COVERSA	A (insuff-icient)	WorkCoverSA 2010

Consistent level of evidence – Moderate volume – Current – Uniform thought

There is insufficient evidence that the McKenzie exercise approach is beneficial for patients with acute non-specific low back pain.	CLIP	Low	Clare et al. 2004

Low volume – Non-current

There is conflicting evidence against back schools (i.e. control posture, reduce stress, and modify work activity) in managing acute non-specific low back pain.	ITALIAN	A (absent)	Heymans et al. 2005 Negrini et al. 2006
	CLIP	(insuff-icient)	
	TOP	SR (against)	Van Tulder et al. 2004

WORK-COVERSA	A (insuff-icient)	Australian Acute Musculoskeletal Pain Guidelines Group 2003
ITALIAN	A (against)	Negrini et al. 2006
APS-ACP	Poor (unable to estimate)	Heymans et al. 2004, 2005

Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought

- PARM strongly endorses that patients with acute non-specific low back pain remain physically active and to avoid bed rest. If the patient must rest, it must be limited to no more than two days.
- There is strong evidence against prescribing any specific exercise program over another in managing acute non-specific low back pain.
- PARM suggests therapeutic exercise as a treatment option in acute non-specific low back pain.
- PARM suggests back school (i.e. control posture, reduce stress, and modify work activity) in patients with acute non-specific low back pain. PARM suggests McKenzie approach as a possible exercise option for acute non-specific low back pain.

4.1.1.3 PHYSICAL AGENTS, MODALITIES, TRACTION & LUMBAR SUPPORTS

Table 24. Non-pharmacologic management (physical agents, modalities, traction & lumbar supports) of acute non-specific low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is conflicting evidence on the efficacy of the use of heat therapy in the treatment of acute non-specific low back pain.	CLIP	Absent (insuff-icient evidence)	Nadler et al. 2002 Van Tulder et al. 2004
	ITALIAN	A (not useful)	Negrini et al. 2006
	ICSI	A (recommend)	Nadler et al. 2002
	WORK-COVERSA	B (evidence of improvement)	WorkCoverSA 2010
	APS-ACP	Good (moderate)	French et al. 2006

Inconsistent level of evidence – Moderate volume – Current – Variable thought

There is conflicting evidence on the efficacy of cold packs in the treatment of acute non-specific low back pain.	CLIP	Absent (insufficient evidence)	Nadler 2004 Van Tulder et al. 2004
	TOP	DO - EO (recommend)	ICSI 2006
	ICSI	A (recommend)	Nadler et al. 2002
Inconsistent level of evidence – Moderate volume – Non-current – Variable thought			
There is some evidence on the benefits of Interferential therapy, alone or in combination with Manipulative Therapy in the treatment of acute non-specific low back pain. *Low volume – Current*	WORK-COVERSA	B	WorkCoverSA 2010
There is some evidence on the efficacy of laser therapy in the treatment of acute non-specific low back pain. *Low volume – Current*	NICE	1++	Yousefi-Nooraie et al 2007
There is insufficient evidence on the efficacy of Shortwave Diathermy in the treatment of acute non-specific low back pain.	CLIP	Absent	Nadler 2004 Van Tulder et al. 2004
	APS-ACP	Poor	Rasmussen et al. 1979
Consistent level of evidence - Low volume – Non-current – Uniform thought			
There is conflicting evidence against the use of Transcutaneous Electrical Nerve Stimulation (TENS) in the treatment of acute non-specific low back pain.	CLIP	Low (cannot be recommended)	Nadler 2004 Philadelphia Panel 2001 Van Tulder et al. 2004
	TOP	DO - SR (not recommended)	Van Tulder et al. 2004
	ITALIAN	A (not useful)	Negrini et al. 2006
	NICE	1+(no improvement) 1-(no improvement) 1-(with improvement)	Deyo et al. 1990a Jarzem et al. 2005a,b
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is conflicting evidence that Ultrasound is useful in the treatment of	CLIP	Absent (insufficient evidence)	Nadler 2004

acute non-specific low back pain.	ITALIAN	A (not useful)	Negrini et al. 2006
Inconsistent level of evidence – Low volume – Non-current – Variable thought			
There is conflicting evidence that lumbar supports are useful for patients with acute non-specific low back pain.	CLIP	Low (can be recommended)	Van Tulder et al. 2004
	ITALIAN	A (not useful)	Negrini et al. 2006
Inconsistent level of evidence – Low volume – Non-current – Variable thought			
There is strong evidence that continuous traction is not beneficial in the management of acute non-specific low back pain.	TOP	DO - SR (do not use)	Vroomen et al. 2000
	CLIP	Strong (cannot be recommended)	Harte et al. 2003 Nadler 2004 Philadelphia Panel 2001
	ITALIAN	A (not useful)	Negrini et al. 2006
	WORK-COVERSA	A (adverse effects reported)	Australian Acute Musculoskeletal Pain Guidelines Group 2003
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			

- PARM strongly endorses against the use of continuous traction in acute non-specific low back pain.
- PARM recommends the use of Interferential therapy and Laser therapy as treatment options in the treatment of acute non-specific low back pain.
- PARM recommends against the use of TENS in patients with acute non-specific low back pain.
- PARM suggests the use of heat, cold, shortwave diathermy, Ultrasound and lumbar supports in the treatment of acute non-specific low back pain.

4.1.1.4 OTHER NON-INVASIVE PROCEDURES

Other non-invasive procedures for management of non-specific acute low back pain include massage, manipulation and mobilization.

Table 25. Non-pharmacologic management (other non-invasive procedures: massage, manipulation & mobilization) of acute non-specific low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is conflicting evidence on the usefulness of massage in managing	ITALIAN	A (against)	Negrini et al. 2006

acute non-specific low back pain.	CLIP	Absent (recommended)	Cherkin et al. 2003 Furlan et al. 2005a
	TOP	SR (against)	Van Tulder et al. 2004
	APS-ACP	Poor (unable to estimate)	Godfrey et al. 1984
Inconsistent level of evidence – Moderate volume – Non-current – Variable thought			
There is evidence that spinal manipulation can improve outcomes in patients with acute non-specific low back pain.	CLIP	Moderate (recommended)	Van Tulder et al. 2000b
	TOP	SR (recommended)	Van Tulder et al. 2004
	ITALIAN	A (recommended)	Negrini et al. 2006
	ICSI	MN (recommended)	Ottenbacher & Difabio 1985 Shekelle et al. 1992
	WORK-COVERSA	B (insufficient)	WorkCoverSA 2010
	APS-ACP	Fair (small to moderate)	Assendelft et al. 2003, 2004
Inconsistent level of evidence – High volume – Non-current – Uniform thought			
There is insufficient evidence that spinal mobilization may be beneficial in the management of acute non-specific low back pain.	CLIP ICSI	Moderate M	Bronfort et al. 2004 Ottenbacher & Difabio 1985 Shekelle et al. 1992
Inconsistent level of evidence – Low volume – Non-current – Uniform thought			

- PARM endorses spinal manipulation as possible treatment option in patients with acute non-specific low back pain.
- PARM suggests massage and spinal mobilization as possible treatment options for acute non-specific low back pain.

4.1.2 INVASIVE MANAGEMENT

Invasive management of non-specific acute low back pain include epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection and botulinum toxin injection.

Table 26. Invasive management (epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection & botulinum toxin injection) of acute non-specific low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is conflicting evidence against the use of epidural spinal injection as treatment for acute non-specific low back pain.	TOP	SR (do not use)	Van Tulder et al. 2004
	CLIP	Absent (insufficient evidence)	Van Tulder et al. 2000b
Inconsistent level of evidence – Low volume – Non-current – Variable thought			
There is conflicting evidence that acupuncture is useful in patients with acute non-specific low back pain.	TOP	NR (not recommended)	Australian Acute Musculoskeletal Pain Group 2003
	CLIP	Low (may be recommend)	Manheimer et al. 2005
	ITALIAN	A (not effective)	Negrini et al. 2006
	APS-ACP	Poor (unable to estimate)	Manheimer et al. 2005 Furlan et al. 2005b,c
Inconsistent level of evidence – Moderate volume – Non-current – Variable thought			

- PARM suggests epidural spinal injection and acupuncture as treatment options in acute non-specific low back pain.

4.2 ACUTE LOW BACK PAIN WITH RADICULOPATHY

4.2.1 CONSERVATIVE MANAGEMENT

4.2.1.1 PHARMACOLOGIC MANAGEMENT

Table 27. Pharmacologic management of acute low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence that paracetamol is effective in reducing pain for acute low back pain with radiculopathy.	ITALIAN	A	Negrini et al. 2006
Low volume – Current			
There is conflicting evidence that NSAID is effective in reducing pain for acute low back pain with radiculopathy.	ITALIAN APS-ACP	A Fair (not effective)	Negrini et al. 2006 Vroomen et al. 2000
Consistent level of evidence - Low volume – Current – Variable thought			

There is some evidence that muscle relaxant is effective in reducing pain for acute low back pain with radiculopathy. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is some evidence that tramadol is effective in reducing pain for acute low back pain with radiculopathy. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is some evidence that paracetamol with light opioid can be an effective alternative when NSAIDs or paracetamol alone do not control pain. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is conflicting evidence that systemic corticosteroid is useful for a short period in the treatment of acute low back pain with radiculopathy. *Inconsistent level of evidence – Moderate volume – Current – Variable thought*	ITALIAN APS-ACP	C Fair (not effective)	Negrini et al. 2006 Finckh et al. 2006 Haimovic & Beresford 1986 Porsman & Friss1979
There is some evidence that anti-epileptic drug is effective in the treatment of low back pain with radiculopathy. *Low volume – Non-current*	APS-ACP	Fair	Khoromi et al. 2005 Mc Cleane 2001 Yildirim et al. 2003

- PARM recommends the use of paracetamol, and muscle relaxants as treatment options in reducing pain for acute low back pain with radiculopathy.
- PARM recommends the use of paracetamol with light opioid as an effective alternative when NSAIDs or paracetamol alone do not control pain.
- PARM recommends the use of anti-epileptic drugs in the treatment of acute low back pain with radiculopathy.
- PARM suggests NSAID and short-term use of systemic corticosteroid in the treatment of acute low back pain with radiculopathy.

4.2.1.2 PHYSICAL ACTIVITY, THERAPEUTIC EXERCISE WITH RELATED INTERVENTIONS, EDUCATION & ADVICE

Table 28. Non-pharmacologic management (physical activity, therapeutic exercise with related interventions, education & advice) of acute low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence to avoid bed rest in acute low back pain with radiculopathy, except for 2-4 days in severe cases. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is some evidence that it is useful to advice acute low back patients with radiculopathy to remain physically active within limits of pain, and to return early to work accompanied by activity modifications. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006

- PARM recommends acute low back pain patients with radiculopathy to avoid bed rest (except for 2-4 days in severe cases), to remain physically active within limits of pain, and to return early to work accompanied by activity modifications.

4.2.1.3 PHYSICAL AGENTS, MODALITIES, TRACTION & LUMBAR SUPPORTS

Table 29. Non-pharmacologic management (physical agents, modalities, traction & lumbar supports) of acute low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence that heat is not useful in the treatment of acute sciatica. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is some evidence that TENS is not useful in the treatment of acute sciatica. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is insufficient evidence that ultrasound is not useful in the treatment of acute sciatica *Inconsistent level of evidence – Low volume – Current – Uniform thought*	ITALIAN APS-ACP	A Poor	Negrini et al. 2006 Nwuga 1983

There is some evidence that continuous traction has no effect in acute low back pain with radiculopathy.	APS-ACP	Fair	Clarke et al. 2005, 2006 Harte et al. 2003 Vroomen et al. 2000
Moderate volume – Non-current			

- PARM suggests the use of ultrasound in the treatment of acute low back pain with sciatica.
- PARM does not recommend the use of heat, TENS nor continuous traction in the treatment of acute low back pain with radiculopathy.

4.2.1.4 OTHER NON-INVASIVE PROCEDURES

Other non-invasive procedures for management of acute low back pain with radiculopathy include massage, manipulation, mobilization,

Table 30. Non-pharmacologic management (other non-invasive procedures: massage, manipulation & mobilization) of acute low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence that massage is not useful in treating acute low back pain with radiculopathy. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is insufficient evidence for the benefit of spinal manipulation in managing acute low back with radiculopathy. *Low volume – Current*	ITALIAN	B	Negrini et al. 2006

- PARM does not recommend massage in the management of acute low back pain with radiculopathy.
- PARM suggests spinal manipulation in the treatment of acute low back with radiculopathy.

4.2.2 INVASIVE MANAGEMENT

Invasive management of acute low back pain with radiculopathy include epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection and botulinum toxin injection.

Table 31. Invasive management (epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection & botulinum toxin injection) of acute low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence to use epidural spinal injection in acute low back pain with radiculopathy.	TOP CLIP	SR Low	Van Tulder et al. 2004 Van Tulder et al. 2000b
	ITALIAN	B	Negrini et al. 2006
Inconsistent level of evidence – Low volume – Non-current – Uniform thought			
There is some evidence that acupuncture is useful in acute low back pain with radiculopathy. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006

- PARM recommends acupuncture and epidural spinal injection as treatment options for acute low back pain with radiculopathy.

4.3 ACUTE LOW BACK PAIN DUE TO OTHER SPECIFIC CONDITIONS

4.3.1 PHYSICAL AGENTS, MODALITIES, TRACTION & LUMBAR SUPPORTS

Table 32. Non-pharmacologic management (physical agents, modalities, traction & lumbar supports) of acute low back pain due to other specific conditions.

Recommendation	Guideline	Level of evidence	Reference
There is insufficient evidence supporting the use of lumbar supports and orthoses in patients with low back pain secondary to spinal stenosis and spinal instability	ITALIAN	B/C	Negrini et al. 2006
Consistent level of evidence – Low Volume – Current – Uniform thought			

- PARM suggests lumbar supports in the treatment of acute low back pain in patients with low back pain secondary to spinal stenosis and spinal instability.

4.4 PARM CONTEXT POINTS

4.4.1 NON SPECIFIC LOW BACK PAIN

Table 33. Context points for minimum and additional standard care of practice for non-specific acute low back pain.

	Minimum standard care of practice	**Additional standard care of practice**
Practice Method	- medications (acetaminophen, nsaids, opioids, muscle relaxants, non-benzodiazepines, combination of muscle relaxant with NSAID/analgesic, antidepressants) - Remain physically active and to avoid best rest (if needed, limit to no more than two days; Continue usual activity, including work, within the limits permitted by the pain) - avoid bed rest - therapeutic exercise(Self-treating with an exercise program not specifically designed for the patient may aggravate symptoms) - advise about risk factors(Patients should limit/pace any activity or exercise that causes spread of symptoms (peripheralization) such as: laundry, carrying/lifting/pushing that requires straining, riding tricycles or jeepneys, farming/gardening, and prolonged sitting or standing) - back school - electrophysical agents: heat, cold, ultrasound - lumbar support - massage	- shortwave diathermy - interferential therapy - laser therapy - spinal manipulation^{++} - spinal mobilization^{++} - *acupuncture^{+} - *epidural spinal injection^{+}
Workforce	Physiatrist Physical therapist Orthotist/Medical Distributor	Physiatrist Anesthesiologist Pain specialist Trained in spinal manipulation/spinal mobilization/ acupuncture/ epidural spinal injection
Resources	-physical therapy room -electrophysical agents	-physical therapy room -electrophysical agents -operating room
Training	Within competency	Within competency
When is it done	Upon consultation	Upon consultation
Reassessment	Four to six weeks	Four to six weeks

using at least one standard outcome measure	Pain scale before and after intervention	No. of referrals for invasive procedures

* Consider invasive procedure when conservative management fails

[+] Acupuncture should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT, nurse), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice.

[++] Spinal manipulation and/or Spinal Mobilization should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice.

[+++] Epidural spinal injection should be given only by a professional who is registered to practice in the Philippines (i.e. physician), with recognized and credible training, approved by the Professional Regulation Commission (PRC); and can provide documented evidence of safe and evidence-based practice.

4.4.2 LOW BACK PAIN WITH RADICULOPATHY

Table 34. Context points for minimum and additional standard care of practice for acute low back pain with radiculopathy.

	Minimum standard care of practice	**Additional standard care of practice**
Practice Method	- medications (paracetamol, muscle relaxants, paracetamol + light opioid, anti-epileptic, NSAID, short-term systemic corticosteroid) - Remain physically active and continue usual activity, including work, within the limits permitted by the pain. - limit bed rest (2-4 days for severe cases) - return early to work accompanied by activity modification - electrophysical agent: ultrasound	- spinal manipulation [++] - *acupuncture[+] - *epidural spinal injection[+++]
Workforce	Physiatrist Physical therapist	Physiatrist Anesthesiologist Pain specialist Trained in acupuncture/spinal manipulation/epidural spinal injection
Resources	-physical therapy room -electrophysical agents	-physical therapy room -electrophysical agents -operating room
Training	Within competency	Within competency
When is it done	Upon consultation	Upon consultation
Reassessment	Four to six weeks	Four to six weeks

using at least one standard outcome measure	Pain scale before and after intervention	No. of referrals for invasive procedures

* Consider invasive procedure when conservative management fails

[+] Acupuncture should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT, nurse), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice.

[++] Spinal manipulation and/or Spinal Mobilization should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice.

[+++] Epidural spinal injection should be given only by a professional who is registered to practice in the Philippines (i.e. physician), with recognized and credible training, approved by the Professional Regulation Commission (PRC); and can provide documented evidence of safe and evidence-based practice.

4.4.3 LOW BACK PAIN DUE TO OTHER SPECIFIC CONDITIONS

It should be noted that only lumbar support was suggested as treatment for acute low back pain due to other specific conditions.

5 Sub-acute low back pain

5.1 NON-SPECIFIC SUB-ACUTE LOW BACK PAIN

5.1.1 CONSERVATIVE MANAGEMENT

5.1.1.1 PHARMACOLOGIC MANAGEMENT

Table 35. Pharmacologic management of non-specific sub-acute low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is strong evidence that acetaminophen is effective for treatment of sub-acute non-specific low back pain. It is to be considered the first line drug not to exceed 3g/day.	TOP	SR	VanTulder et al. 2004
	ITALIAN	A	Negrini et al. 2006
	WORK-COVERSA	A	Australian Acute Musculoskeletal Pain Guidelines Group 2003
	APS-ACP	Good	Hickey 1982 Lee et al. 2004 Towheed et al. 2006 Wegman et al. 2004 Zhang et al. 2004
Consistent level of evidence – High volume – Non-current – Uniform thought			
There is some evidence that NSAIDs is equal to acetaminophen in pain reduction in sub-acute non-specific low back pain. It is the second choice drug.	TOP	SR	Van Tulder et al. 2004
	CLIP	Low	Van Tulder et al. 2005
	ITALIAN	A	Negrini et al. 2006
	WORK-COVERSA	B	WorkCoverSA 2010
	APS-ACP	Good	Berry et al. 1982 Schnitzer et al. 2004
Inconsistent level of evidence – Moderate volume – Non-Current – Uniform thought			
There is some evidence on superiority of opioids compared to non-opioids in the treatment of sub-acute non-specific low back pain.	CLIP	Low	Bogduk 2004 Jackson 2004 Van Tulder et al. 2000b
	APS-ACP	Fair	Baratta 1976 Hale et al. 2005
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			

There is some evidence that muscle relaxant is effective in relieving sub-acute low back pain. *Inconsistent level of evidence – Low volume – Non-Current – Variable thought*	ITALIAN APS-ACP	A Poor	Negrini et al. 2006 Basmajian 1978 Browning et al. 2001
There is some evidence that antidepressant (tricylic antidepressant) is effective in relieving sub-acute and chronic low back pain *Low volume – Non-current*	APS-ACP	Good	Salerno et al. 2002 Schreiber et al. 2001 Staiger et al. 2003
There is insufficient evidence that anti-epileptic drugs are effective in the treatment of sub-acute and chronic low back pain *Low volume – Current*	APS-ACP	Poor	Muehlbacher et al. 2006
There is some evidence that benzodiazipines are effective in the treatment of sub-acute and chronic low back pain *Low volume – Non-Current*	APS-ACP	Fair	Arbus et al. 1990 Basmajian 1978 Salzmann et al. 1992
There is some evidence that Tramadol is effective in the treatment of sub-acute and chronic low back pain. *Low volume – Non-current*	APS-ACP	Fair	Metscher et al. 2001 Müller et al. 1998 Schnitzer et al. 2000

- PARM strongly endorses the use of acetaminophen for the treatment of sub-acute low back pain. It is to be considered the first line drug not to exceed 3g/day.
- PARM recommends the use of NSAIDs as second line of drug in the treatment of sub-acute low back pain.
- PARM recommends that either opioids and non-opioids may be used in the treatment of sub-acute low back pain. However, opioids are not superior to non-opioids in its efficacy.
- PARM recommends muscle relaxants, tricyclic antidepressants, benzodiazepines and tramadol in the treatment of sub-acute low back pain.
- PARM suggests the use of anti-epileptic drugs in the treatment of sub-acute non-specific low back pain.

5.1.1.2 PHYSICAL ACTIVITY, THERAPEUTIC EXERCISE WITH RELATED INTERVENTIONS, EDUCATION & ADVICE

Table 36. Non-pharmacologic management (physical activity, therapeutic exercise with related interventions, education & advice) of non-specific sub-acute low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence against bed rest as treatment for patients with sub-acute non-specific low back pain.	TOP	SR (against)	Australian Acute Musculoskeletal Pain Group 2003 ICSI 2006 Van Tulder et al. 2004
	CLIP	Low (against)	Hagen et al. 2005
	ITALIAN	A (against)	Negrini et al. 2006
Inconsistent level of evidence – Moderate volume – Current – Uniform thought			
There is strong evidence that patients with sub-acute non-specific low back pain should be advised to remain physically active.	CLIP	High	Hagen et al. 2005 Hilde et al. 2005 Van Tulder et al. 2000b
	TOP	SR	ICSI 2006 Van Tulder et al. 2004
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is strong evidence that therapeutic exercise is useful in managing sub-acute non-specific low back pain.	TOP	SR	ICSI 2006 Van Tulder et al. 2004
	WORK-COVERSA	B	WorkCoverSA 2010
	NICE	1++	Hayden et al. 2005a, b
	APS-ACP	Good	Clare et al. 2004 Hayden et al. 2005a,b Kool et al. 2004 Liddle et al. 2004 McNeely et al. 2003 UK BEAM Trial Team 2004
Consistent level of evidence – High volume – Non-Current – Uniform thought			
There is some evidence against prescribing any specific exercise program over another in managing sub-acute non-specific low back pain.	CLIP	High (against)	Hayden et al. 2005a Philadelphia Panel 2001
	WORK-COVERSA	A (insufficient)	WorkCoverSA 2010

	ITALIAN	C recommended	Negrini et al. 2006
	TOP	SR (insufficient)	ICSI 2006 Van Tulder et al. 2004
Inconsistent level of evidence – Moderate volume – Current – Uniform thought			
There is insufficient evidence for the benefit of individualized or client-specific exercises in patients with sub-acute non-specific low back pain. *Low volume – Current*	ITALIAN	C	Negrini et al. 2006
There is insufficient evidence that the McKenzie exercise approach is beneficial for patients with sub-acute non-specific low back pain.	CLIP APS-ACP	Moderate Good	Clare et al. 2004 Machado et al. 2006
Inconsistent Level of evidence - Low volume – Current – Uniform thought			
There is conflicting evidence that back schools (i.e. control posture, reduce stress, and modify work activity) are useful in managing sub-acute non-specific low back pain.	TOP	SR (against)	Van Tulder et al. 2004
	ITALIAN	C recommended	Negrini et al. 2006
	APS-ACP	Fair (small effect)	Elders et al. 2000 Heymans et al. 2004, 2005 Maier-Riehle & Härter 2001
Inconsistent level of evidence –Moderate volume – Non-Current – Variable thought			

- PARM strongly endorses that patients with sub-acute non-specific low back pain remain physically active.
- PARM strongly endorses therapeutic exercise as a treatment option in sub-acute non-specific low back pain.
- PARM recommends avoidance of bed rest among patients with sub-acute non-specific low back pain.
- PARM recommends against prescribing any specific exercise program over another in managing sub-acute non-specific low back pain.
- PARM suggests McKenzie approach or individualized/client-specific programs as possible exercise options for sub-acute non-specific low back pain.
- PARM suggests back schools (i.e. control posture, reduce stress, and modify work activity) and Viniyoga in the management of sub-acute non-specific low back pain.

5.1.1.3 PHYSICAL AGENTS, MODALITIES, TRACTION & LUMBAR SUPPORTS

Table 37. Non-pharmacologic management (physical agents, modalities, traction & lumbar supports) of non-specific sub-acute low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is conflicting evidence on the efficacy of heat therapy on the treatment of sub-acute non-specific low back pain.	CLIP	Absent (insufficient evidence)	Van Tulder et al. 2000b
	WORK-COVERSA	B evidence of improvement	WorkCoverSA 2010
Inconsistent level of evidence – Low volume – Non-current – Variable thought			
There is insufficient evidence on the efficacy of cold in the treatment of sub-acute non-specific low back pain.	CLIP	Absent (insufficient evidence)	Van Tulder et al. 2000b
	TOP	DO - EO (recommend)	ICSI 2006
Consistent level of evidence – Low volume – Non-current – Variable thought			
There is some evidence on the efficacy of Interferential therapy, alone or in combination with other modalities in the treatment of sub-acute non-specific low back pain.	WORK-COVERSA	B (insuffic-ient evidence)	WorkCoverSA 2010
	APS-ACP	Poor (unable to estimate)	Hurley et al. 2001, 2004 Werners et al. 1999
Inconsistent level of evidence – Moderate volume – Non-Current – Uniform thought			
There is insufficient evidence on the efficacy of Shortwave diathermy in the treatment of sub-acute non-specific low back pain.	CLIP	Absent (insuffic-ient evidence)	Van Tulder et al. 2000b
	APS-ACP	Poor (not effective)	Gibson et al. 1985
Consistent level of evidence – Low volume – Non-current – Uniform thought			
There is insufficient evidence against the use of TENS in the treatment of sub-acute non-specific low back pain	CLIP	Absent (insuffic-ient evidence)	Philadelphia Panel 2001

	TOP	NR not recommended	Van Tulder et al. 2004
	APS-ACP	Poor (unable to estimate)	Khadilkar et al. 2005

Consistent level of evidence – Low volume – Non-current – Uniform thought

There is insufficient evidence on the efficacy of Ultrasound in the treatment of sub-acute non-specific low back pain.	CLIP	Absent (insufficient evidence)	Van Tulder et al. 2004
	APS-ACP	Poor (unable to estimate)	Ansari et al. 2006

Consistent level of evidence - Low volume – Non-current– Uniform thought

There is some evidence that lumbar supports are useful for patients with sub-acute low back pain.	CLIP	Absent (insufficient evidence)	Valle-Jones et al. 1992 Van Tulder et al. 2004
	NICE	1++ (limited evidence)	Van Duijvenbode et al. 2008
	APS-ACP	Poor (unable to estimate)	Jellema et al. 2001 Van Tulder et al. 2000c

Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought

There is evidence that continuous traction is not beneficial in the management of sub-acute low back pain.	TOP	SR (do not use)	Australian Acute Musculoskeletal Pain Group 2003 Van Tulder et al. 2004
	CLIP	Low cannot be recommended	Harte et al. 2003 Philadelphia Panel 2001
	WORK-COVERSA	A (reported adverse effects)	Australian Acute Musculoskeletal Pain Guidelines Group 2003
	NICE	1++ (no improvement, some adverse effects)	Clarke et al. 2006
	APS-ACP	Fair not effective for continuous	Clarke et al. 2005, 2006 Harte et al. 2003 Vroomen et al. 2000

Inconsistent level of evidence – High volume – Non-current – Uniform thought

There is some evidence in the use of laser therapy for sub-acute non-specific low back pain	APS-ACP	Poor	Basford et al. 1999 Gur et al. 2003 Klein & Eek 1990 Longo et al. 1988 Soriano & Rios 1988 Toya et al. 1994
Moderate volume – Non-current			

- PARM endorses against using continuous traction in treating patients with sub-acute non-specific low back pain.
- PARM recommends the use of Interferential Therapy, lumbar supports and laser therapy in the treatment of sub-acute nonspecific low back pain.
- PARM suggests the use of heat, cold, Shortwave diathermy, TENS and Ultrasound in the treatment of sub-acute nonspecific low back pain.

5.1.1.4 OTHER NON-INVASIVE PROCEDURES

Other non-invasive procedures for conservative management of non-specific sub-acute low back pain include massage, manipulation, mobilization,

Table 38. Non-pharmacologic management (other non-invasive procedures: massage, manipulation & mobilization) of non-specific sub-acute low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is conflicting evidence on the usefulness of massage in patients with sub-acute non-specific low back pain.	CLIP	Low recommended	Furlan et al. 2005a
	TOP	SR (against)	Van Tulder et al. 2004
	APS-ACP	Fair (moderate effect)	Cherkin et al. 2001, 2003 Furlan et al. 2002a,b Melzack et al. 1983
Inconsistent level of evidence – Moderate volume – Non-current – Variable thought			
There is evidence that spinal manipulation can improve outcomes in patients with sub-acute non-specific low back pain.	CLIP	Low recommended	Van Tulder et al. 2000b
	TOP	SR recommended	Van Tulder et al. 2004
	WORK-COVERSA	B (insufficient)	WorkCoverSA 2010
	ICSI	M recommended	Ottenbacher & Difabio 1985 Shekelle et al. 1992
	APS-ACP	Good (moderate)	Bronfort et al. 2004 Brown et al. 2005 Cherkin et al. 2003 Ferreira et al. 2002, 2003 Fritz et al. 2005 UK BEAM Trial Team 2004 Vroomen et al. 2000 Woodhead & Clough 2005
Inconsistent level of evidence – High volume – Non-current – Uniform thought			
There is insufficient evidence that spinal mobilization may be useful in the management of sub-acute non-specific low back pain.	CLIP ICSI	Moderate M	Bronfort et al. 2004 Ottenbacher & Difabio 1985 Shekelle et al. 1992
Inconsistent level of evidence – Low volume – Non-current – Uniform thought			

- PARM endorses spinal manipulation as a possible treatment option for sub-acute non-specific low back pain.

- PARM suggests massage and spinal mobilization as possible treatment options for sub-acute non-specific low back pain.

5.1.2 INVASIVE MANAGEMENT

Invasive management of non-specific sub-acute low back pain includes epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection and botulinum toxin injection.

Table 39. Invasive management (epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection & botulinum toxin injection) of non-specific sub-acute low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is conflicting evidence that epidural spinal injection should not be used as treatment for patients with sub-acute non-specific low back pain.	TOP	SR (do not use)	Van Tulder et al. 2004
	CLIP	Absent (insufficient evidence)	Van Tulder et al. 2000b
Inconsistent level of evidence – Low volume – Non-current – Variable thought			
There is conflicting evidence that patients with sub-acute non-specific low back pain should be advised acupuncture.	TOP	NR not recommended	Australian Acute Musculoskeletal Pain Group 2003
	CLIP	Low (recommend)	Furlan et al. 2005b
	APS-ACP	Fair (moderate effect)	Brinkhaus et al. 2006 Cherkin et al. 2001 Furlan et al. 2005a,b Manheimer et al. 2005 Thomas et al. 2006 Witt et al. 2006
Inconsistent level of evidence – High volume – Non-Current – Variable thought			
There is some evidence that facet joint steroid injection shows no improvement when used in sub-acute non-specific low back pain. *Low volume – Current*	NICE	1+ (no improvement)	Boswell et al. 2007

- PARM recommends that facet joint steroid injection showed no improvement when used in sub-acute non-specific low back pain.

- PARM suggests patients with sub-acute non-specific low back pain should be advised acupuncture.
- PARM suggests that epidural spinal injection should not be used as treatment for patients with sub-acute non-specific low back pain.

5.2 SUB-ACUTE LOW BACK PAIN WITH RADICULOPATHY

5.2.1 CONSERVATIVE MANAGEMENT

5.2.1.1 PHYSICAL AGENTS, MODALITIES, TRACTION & LUMBAR SUPPORTS

Table 40. Non-pharmacologic management (physical agents, modalities, traction, lumbar supports) of sub-acute low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is insufficient evidence supporting the use of lumbar supports and orthoses in patients with low back pain secondary to spinal stenosis and spinal instability *Low volume – Non-current*	ITALIAN	B/C (can not always recommend; no conclusions to recommend or not)	Negrini et al. 2006
There is some evidence that the use of continuous traction has no effect in managing sub-acute low back pain with radiculopathy. *Moderate volume – Non-current*	APS-ACP	Fair (No effect)	Clarke et al. 2005, 2006 Harte et al. 2003 Vroomen et al. 2000

- PARM suggests the use of lumbar supports in the treatment of sub-acute low back pain secondary to spinal stenosis and instability of undetermined duration.
- PARM does not recommend the use of continuous traction in the management of sub-acute non-specific low back pain.

5.2.1.2 INVASIVE MANAGEMENT

Invasive management of sub-acute low back pain with radiculopathy includes epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection and botulinum toxin injection.

Table 41. Invasive management (epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection & botulinum toxin injection) of sub-acute low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence that epidural spinal injection may be used as treatment for patients with sub-acute low back pain with radiculopathy. *Low volume – Non-current*	TOP	SR	Van Tulder et al. 2004

- PARM recommends that epidural spinal injection may be used as treatment for patients with sub-acute low back pain with radiculopathy.

5.3 PARM CONTEXT POINTS

5.3.1 NON-SPECIFIC LOW BACK PAIN

Table 42. Context points for minimum and additional standard care of practice for non-specific sub-acute low back pain.

	Minimum standard care of practice	Additional standard care of practice
Practice Method	-medications (acetaminophen, NSAID, opioids, muscle relaxants, TCA, benzodiazepines, tramadol, anti-epileptic) -remain physically active and continue usual activity, including work, within the limits permitted by the pain -avoid bed rest -therapeutic exercise (Self-treating with an exercise program not specifically designed for the patient may aggravate symptoms) -advise on posture control, reduce stress and physical efforts; Patients should limit/pace any activity or exercise that causes spread of symptoms (peripheralization) such	-laser therapy -interferential therapy -shortwave diathermy -*spinal manipulation^{++} -*spinal mobilization^{++} -*acupuncture^{+} -*facet joint steroid injection^{+++}

	as: laundry, carrying/lifting/pushing that requires straining, riding tricycles or jeepneys, farming/gardening, and prolonged sitting or standing -back school -Viniyoga -electrophysical agents: heat, cold, tens, ultrasound -lumbar support -massage	
Workforce	Physiatrist Physical therapist	Physiatrist Anesthesiologist Pain specialist Trained in acupuncture/spinal manipulation/spinal mobilization/facet joint steroid injection
Resources	-physical therapy room -electrophysical agents	-physical therapy room -electrophysical agents -operating room
Training	Within competency	Within competency
When is it done	Upon consultation	Upon consultation
Reassessment using at least one standard outcome measure	Four to six weeks Pain scale before and after intervention	Four to six weeks

* Consider invasive procedure when conservative management fails

[+] Acupuncture should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT, nurse), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice.

[++] Spinal manipulation and/or Spinal Mobilization should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice.

[+++] Facet joint steroid injection should be given only by a professional who is registered to practice in the Philippines (i.e. physician), with recognized and credible training, approved by the Professional Regulation Commission (PRC); and can provide documented evidence of safe and evidence-based practice.

5.3.2 LOW BACK PAIN WITH RADICULOPATHY

It should be noted that there are few recommendations given to the treatment sub-acute low back pain with radiculopathy.

Table 43. Context points for minimum and additional standard care of practice for sub-acute low back pain with radiculopathy.

	Minimum standard care of practice	**Additional standard care of practice**
Treatment	Lumbar support	*Epidural spinal injection [+++] (for spinal stenosis, spinal instability)
Workforce	Physiatrist Physical therapist	Physiatrist Anesthesiologist Pain specialist Trained on epidural spinal injection
Resources	-physical therapy room -electrophysical agents	-physical therapy room -electrophysical agents -operating room
Training	Within competency	Within competency
When is it done	Upon consultation	Upon consultation
Reassessment using at least one standard outcome measure	Four to six weeks Pain scale before and after intervention	Four to six weeks No. of referrals for invasive procedures

* Consider invasive procedure when conservative management fails

[+++] Epidural steroid injection should be given only by a professional who is registered to practice in the Philippines (i.e. physician), with recognized and credible training, approved by the Professional Regulation Commission (PRC); and can provide documented evidence of safe and evidence-based practice.

6. CHRONIC LOW BACK PAIN

6.1 NON-SPECIFIC CHRONIC LOW BACK PAIN

6.1.1 CONSERVATIVE MANAGEMENT

6.1.1.1 PHARMACOLOGIC MANAGEMENT

Table 44. Pharmacologic management of non-specific chronic low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is strong evidence that acetaminophen and NSAIDs are effective treatment for chronic non-specific low back pain. No one NSAID is more effective than another.	NICE TOP ITALIAN APS-ACP	1++ SR A Good	Roelofs et al. 2008 Calgary Health Region 2005 Negrini et al. 2006 Berry et al. 1982 Hickey 1982 Lee et al. 2004 Schnitzer et al. 2004 Towheed et al. 2006 Wegman et al. 2004 Zhang et al. 2004
Consistent level of evidence – High volume – Non-current – Uniform thought			
There is conflicting evidence that anti-depressants are effective in the treatment of chronic non-specific low back pain.	TOP ITALIAN CLIP NICE APS-ACP	DO – SR (TCA-small to mod effect) A Low (advantage for tricyclic and tetracyclic) 1++ (TCA and SSRI were not found to be more effective than placebo in reducing pain) Good	Calgary Health Region 2005 Negrini et al. 2006 Bogduk 2004 Schnitzer et al. 2004 Urquhart et al. 2008 Salerno et al. 2002 Schreiber et al. 2001 Staiger et al. 2003
Inconsistent level of evidence – High volume – Non-current – Uniform thought			

There is some evidence that muscle relaxants are effective in the treatment of chronic non-specific low back pain.	TOP	DO - SR (cyclo-benzaprine)	Calgary Health Region 2005
	ITALIAN	A	Negrini et al. 2006
	CLIP	Low (advantage for non benzo-diazepine)	Bogduk 2004 Schnitzer et al. 2004
	APS-ACP	Poor	Basmajian 1978 Browning et al. 2001
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is some evidence that short-term use of opioids can be used in the treatment of chronic non-specific low back pain, but only after unsuccessful trial of non-opioid analgesics.	TOP	SR (codeine)	Calgary Heath Region 2005
	NICE	1+ (oxy-morphone)	Katz et al. 2007
	CLIP	Low	Bogduk 2004 Schnitzer et al. 2004
	APS-ACP	Fair	Baratta 1976 Hale et al. 2005
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is insufficient evidence that anti-epileptic drugs are effective in the treatment of chronic low back pain *Low volume – Current*	APS-ACP	Poor	Muehlbacher et al. 2006
There is some evidence that benzodiazipines are effective in the treatment of chronic low back pain *Low volume – Non-current*	APS-ACP	Fair	Arbus et al. 1990 Basmajian 1978 Salzmann et al. 1992
There is some evidence that tramadol is effective in the treatment of chronic low back pain *Low volume – Non-current*	APS-ACP	Fair	Metscher et al. 2001 Müller et al. 1998 Schnitzer et al. 2000

- PARM strongly endorses the use of acetaminophen and NSAIDs in the treatment of chronic non-specific low back pain.
- PARM recommends the use of opioids (i.e., codeine, oxymorphone), muscle relaxants (i.e., cyclobenzaprine, non-benzodiazepine), benzodiazepines and tramadol in the treatment of chronic non-specific low back pain, after an unsuccessful trial of non-opioid analgesic.

- PARM recommends the use of anti-depressants and anti-epileptic drugs in the treatment of chronic non-specific low back pain.

6.1.1.2 PHYSICAL ACTIVITY, THERAPEUTIC EXERCISE WITH RELATED INTERVENTIONS, EDUCATION & ADVICE

Table 45. Non-pharmacologic management (physical activity, therapeutic exercise with related interventions, education & advice) of non-specific chronic low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is strong evidence against bed rest as treatment for patients with chronic non-specific low back pain.	CLIP	High (Against)	Hagen et al. 2005 Nadler 2004 Pande 2004 Van Tulder et al. 2004 Philadelphia Panel 2001
	ITALIAN	A (Against)	Negrini et al. 2006
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is strong evidence that therapeutic exercise is beneficial in managing chronic non-specific low back pain.	TOP	SR	Calgary Health Region 2005 ICSI 2006
	NICE	1++	Hayden et al. 2005a, b
	ITALIAN	A	Negrini et al. 2006
	ICSI	M, A	Abenhaim et al. 2000 Frost et al. 1998 Hansen et al. 1993 Lindström et al. 1992a,b Manniche et al. 1988 Scheer et al. 1997 Van Tulder et al. 1997
	APS-ACP	Good	Clare et al. 2004 Hayden et al. 2005a,b Kool et al. 2004 Liddle et al. 2004 McNeely et al. 2003 UK BEAM Trial Team 2004
Consistent level of evidence – High volume – Non-current – Uniform thought			
There is strong evidence against prescribing any specific exercise program over another in managing chronic non-specific low back pain.	CLIP	High (against)	Hayden et al. 2005a, b Nadler 2004 Van Tulder et al. 2004

	ICSI	M (against)	Abenhaim et al. 2000 Scheer et al. 1997
	TOP	SR (against)	ICSI 2006
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is strong evidence for the benefit of individualized or client-specific exercises in patients with chronic non-specific low back pain.	CLIP	High	Hayden et al. 2005a, b Nadler 2004 Van Tulder et al. 2004
	ITALIAN	A	Negrini et al. 2006
	TOP	SR	ICSI 2006
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is insufficient evidence that the McKenzie exercise approach is beneficial for patients with chronic non-specific low back pain.	CLIP	Low	Clare et al. 2004
	APS-ACP	Good	Machado et al. 2006
Inconsistent level of evidence - Low volume – Current – Uniform thought			
There is some evidence that back schools (i.e. control posture, reduce stress, and modify work activity) are useful in managing chronic non-specific low back pain.	NICE	1++	Heymans et al. 2005
	ITALIAN	A	Negrini et al. 2006
	CLIP	Moderate	Heymans et al. 2005 Van Tulder et al. 2004
	APS-ACP	Fair	Elders et al. 2000 Heymans et al. 2004, 2005 Maier-Riehle & Härter 2001
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			

- PARM strongly endorses that patients with chronic non-specific low back avoid bed rest and be managed with therapeutic exercises.
- PARM strongly endorses individualized or client-specific exercise programs in managing chronic non-specific low back pain.
- PARM strongly endorses against prescribing any specific exercise program over another in managing chronic non-specific low back pain.
- PARM recommends back schools (i.e. control posture, reduce stress, and modify work activity) in patients with chronic non-specific low back pain.
- PARM suggests McKenzie exercise approach and Viniyoga as possible management option for chronic non-specific low back pain.

6.1.1.3 PHYSICAL AGENTS, MODALITIES, TRACTION & LUMBAR SUPPORTS

Table 46. Non-pharmacologic management (physical agents, modalities, traction, lumbar supports) of non-specific chronic low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is insufficient evidence that thermal therapy (heat) is not useful in chronic non-specific low back pain. *Low volume – Current*	ITALIAN	B (no evidence of efficacy)	Negrini et al. 2006
There is some evidence for the role of low level laser therapy in chronic non-specific low back pain.	NICE	1++ (weak evidence for improvement)	Yousefi-Nooraie et al. 2007
	APS-ACP	Poor (unable to Estimate)	Basford et al. 1999 Gur et al. 2003 Klein & Eek 1990 Longo et al. 1988 Soriano & Rios 1998 Toya et al. 1994
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is some evidence against the use of transcutaneous electrical nerve stimulation (TENS) for chronic non-specific low back pain.	CLIP	Low cannot be recommended	Khadilkar et al. 2005 Maher 2004 Nadler 2004
	TOP	DO NOT – SR (as a sole treatment)	Calgary Health Region 2005
	APS-ACP	Poor (Unable to Estimate)	Khadilkar et al. 2005 Manheimer et al. 2005
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is insufficient evidence on the efficacy of therapeutic ultrasound for chronic non-specific low back pain.	CLIP	Low cannot be recommended	Maher 2004 Philadelphia Panel 2001
	APS-ACP	Poor (unable to estimate)	Ansari et al. 2006
Consistent level of evidence - Low volume – Non-current- Uniform thought			

There is some evidence against the usefulness of lumbar supports in patients with chronic non-specific low back pain.	CLIP	Absent (insufficient evidence)	Jellema et al. 2001 Maher 2004 Van Tulder et al. 2004
	ITALIAN	B (no evidence of efficacy)	Negrini et al. 2006
	NICE	1++ (cannot be recommended -limited evidence)	Van Duijvenbode et al. 2008
	APS-ACP	Poor (unable to estimate)	Jellema et al. 2001 Van Tulder et al. 2000c
Inconsistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is strong evidence that continuous traction is not beneficial in the management of chronic non-specific low back pain.	CLIP	High cannot be recommended	Maher 2004 Nadler 2004 Van Tulder et al. 2004
	NICE	1++ (cannot be recommended - limited evidence)	Clarke et al. 2006
	APS-ACP	Fair (not effective for continuous)	Clarke et al. 2005, 2006 Harte et al. 2003 Vroomen et al. 2000
Consistent level of evidence – Moderate volume – Non-current – Uniform thought			
There is insufficient evidence that interferential therapy is useful in the treatment of chronic nonspecific low back pain *Low volume – Non-current*	APS-ACP	Poor (unable to estimate)	Hurley et al. 2001, 2004 Werners et al. 1999

- PARM strongly endorses against using continuous traction in the treatment of patients with chronic non-specific low back pain.
- PARM does not endorse the use of thermal therapy (heat) in the treatment of chronic non-specific low back pain.
- PARM recommends low-level laser in the treatment of chronic non-specific low back pain.
- PARM does not recommend the use of transcutaneous electrical stimulation and lumbar support in the treatment of chronic non-specific low back pain.
- PARM suggests use of therapeutic ultrasound and interferential therapy in the treatment of chronic non-specific low back pain.

6.1.1.4 OTHER NON-INVASIVE PROCEDURES

Other non-invasive management of non-specific chronic low back pain includes massage, manipulation and mobilization.

Table 47. Non-pharmacologic management (other non-invasive procedures: massage, manipulation & mobilization) of non-specific chronic low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is evidence that massage is useful in the treatment of chronic non-specific low back pain.	CLIP	Low	Cherkin et al. 2003 Furlan et al. 2005a Maher 2004 Van Tulder et al. 2004
	TOP	SR	Calgary Health Region 2005
	ITALIAN	A	Negrini et al. 2006
	APS-ACP	Fair (Moderate)	Cherkin et al. 2001, 2003 Furlan et al. 2002a,b Melzack et al. 1983
Inconsistent level of evidence – High volume – Non-current – Uniform thought			
There is evidence that spinal manipulation can improve outcomes in patients with chronic non-specific low back pain.	CLIP	Low (recommended)	Assendelft et al. 2003 Bronfort et al. 2004 Maher 2004
	TOP	SR (insufficient)	Calgary Health Region 2005
	ITALIAN	A (recommended)	Negrini et al. 2006
	ICSI	M (recommended)	Ottenbacher & Difabio 1985 Shekelle et al. 1992
	APS-ACP	Good (Moderate)	Bronfort et al. 2004 Brown et al. 2005 Cherkin et al. 2003 Ferreira et al. 2002, 2003 Fritz et al. 2005 UK BEAM Trial Team 2004 Vroomen et al. 2000 Woodhead & Clough 2005
Inconsistent level of evidence – High volume – Non-current – Uniform thought			

There is evidence that spinal mobilization is beneficial in the management of chronic non-specific low back pain.	ICSI ITALIAN	M A	Ottenbacher & Difabio 1985 Shekelle et al. 1992 Negrini et al. 2006
Consistent level of evidence – Low volume – Non-current – Uniform thought			

- PARM endorses spinal mobilization and massage in the management of chronic non-specific low back pain.
- PARM suggests spinal manipulation as a possible treatment option for chronic non-specific low back pain.

6.1.2 INVASIVE MANAGEMENT

Invasive management of non-specific chronic low back pain includes epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection and botulinum toxin injection.

Table 48. Invasive management (epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection & botulinum toxin injection) of non-specific chronic low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is insufficient evidence that prolotherapy may be useful as treatment for patients with chronic non-specific low back pain.	TOP	SR	Calgary Health Region 2005
	CLIP	Absent	Yelland et al. 2004
	NICE	1++	Dagenais et al. 2007
Inconsistent level of evidence – Low volume – Non-current – Uniform thought			
There is evidence that therapeutic acupuncture is beneficial in managing chronic non-specific low back pain.	TOP	SR	Calgary Health Region 2005
	CLIP	Low	Furlan et al. 2005b Manheimer et al. 2005
	ITALIAN	B	Negrini et al. 2006
	NICE	1++, 1+, 1+, 1+, 1+,1-	Brinkhaus et al. 2006 Furlan et al. 2005b Haake et al. 2007 Witt et al. 2006
	APS-ACP	Fair (moderate effect)	Brinkhaus et al. 2006 Cherkin et al. 2001 Furlan et al. 2005a,b Manheimer et al. 2005 Thomas et al. 2006 Witt et al. 2006
Inconsistent level of evidence – High volume – Non-current – Uniform thought			
There is insufficient evidence that epidural spinal injection does not provide benefit in patients with chronic non-specific low back pain.	CLIP	Low (no effect)	Nelemans et al. 2001 Van Tulder et al. 2004
	ITALIAN	B (no evidence)	Negrini et al. 2006
Low volume – Non-current			
There is insufficient evidence that trigger point & ligamentous injection does not show benefit in patients with chronic non-specific low back pain.	ITALIAN	B (no evidence)	Negrini et al. 2006
Low volume – Current			

There is insufficient evidence that Viniyoga is beneficial in patients with chronic non-specific low back pain. *Low volume – Non-current*	APS-ACP	Fair (moderate)	Sherman et al. 2005
There is conflicting evidence that facet joint steroid injection is useful in managing chronic non-specific low back pain.	ITALIAN	B (no evidence)	Negrini et al. 2006
	NICE	1+ (yes)	Boswell et al. 2007
Inconsistent level of evidence – Low volume – Current – Uniform thought			
There is insufficient evidence that botulinum toxin injection has no effect in patients with chronic non-specific low back pain. *Low volume – Current*	ITALIAN	B (no effect)	Negrini et al. 2006

- PARM endorses therapeutic acupuncture as beneficial in managing chronic non-specific low back pain.
- PARM suggests that prolotherapy and facet joint steroid injection are treatment options for chronic non-specific low back pain.
- PARM suggests that botulinum toxin injection, epidural spinal injection, trigger point injection & ligamentous injection do not provide benefit in patients with chronic non-specific low back pain.

6.1.2.1 SURGICAL MANAGEMENT OF CHRONIC NON-SPECIFIC LOW BACK PAIN

Table 49. Surgical management of non-specific chronic low back pain.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence that intradiscal electrothermal therapy (IDET) may not benefit patients with chronic non-specific low back pain. *Low volume – Current*	NICE	1+	Freeman-Brian 2006
There is some evidence that percutaneous intradiscal radiofrequency thermocoagulation (PIRFT) may not benefit patients with chronic non-specific low back pain.	NICE	1+	Freeman-Brian 2006

Low volume – Current

There is some evidence that spinal fusion is advised to patients who have severe chronic non-specific low back pain.	NICE ITALIAN APS-ACP	1+ C Fair	Ibrahim et al. 2008 Brox et al. 2003, 2006 Fairbank et al. 2005 Fritzell et al. 2001 Negrini et al. 2006

Inconsistent level of evidence – Moderate volume – Current – Uniform thought

There is conflicting evidence that radiofrequency facet joint denervation is useful in chronic non-specific low back pain.	NICE	1+ (no effect)	Leclaire et al. 2001
		1- (with benefit)	Nath et al. 2008
		1+ (with benefit)	Van Wijk et al. 2005

Inconsistent level of evidence – Low volume – Non-current – Variable thought

- PARM recommends spinal fusion to patients who have severe chronic non-specific low back pain.
- PARM does not recommend intradiscal electrothermal therapy (IDET) nor percutaneous intradiscal radiofrequency thermocoagulation (PIRFT) to patients with chronic non-specific low back pain.
- PARM suggests radiofrequency facet joint denervation in chronic non-specific low back pain.

6.2 CHRONIC LOW BACK PAIN WITH RADICULOPATHY

6.2.1 PHYSICAL AGENTS, MODALITIES, TRACTION & LUMBAR SUPPORTS

Table 50. Non-pharmacologic management (physical agents, modalities, traction & lumbar supports) of chronic low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence on the usefulness of traction in managing chronic low back pain with radiculopathy.	APS-ACP	Fair (no effect)	Clarke et al. 2005, 2006 Harte et al. 2003 Vroomen et al. 2000

Low volume – Non-current

- PARM does not recommend traction in the treatment of chronic low back pain with radiculopathy.

6.2.2 INVASIVE MANAGEMENT

Invasive management of chronic low back pain with radiculopathy includes epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection and botulinum toxin injection.

Table 51. Invasive management (epidural spinal injection, facet joint steroid injection, acupuncture, prolotherapy, trigger point injection & botulinum toxin injection) of chronic low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence on the usefulness of epidural spinal injection in managing chronic low back pain with radiculopathy. *Low volume – Non-current*	TOP	SR (with effect)	Calgary Health Region 2005

- PARM recommends epidural spinal injection in managing chronic low back pain with radiculopathy.

6.2.3 SURGICAL MANAGEMENT

Table 52. Surgical management of chronic low back pain with radiculopathy.

Recommendation	Guideline	Level of evidence	Reference
There is some evidence on the usefulness of laminectomy with or without fusion compared to non-surgical treatment of patients with spinal stenosis with or without degenerative spondylolisthesis. *Moderate volume – Current*	APS-ACP	Good	Osterman et al. 2006 Peul et al. 2007, 2008 Weber 1983 Weinstein et al. 2006

- PARM recommends laminectomy with or without fusion compared to non-surgical treatment of patients with spinal stenosis with or without degenerative spondylolisthesis.

6.3 CHRONIC LOW BACK PAIN DUE TO OTHER SPECIFIC CONDITIONS

6.3.1 CONSERVATIVE MANAGEMENT

6.3.1.1 PHYSICAL AGENTS, MODALITIES, TRACTION & LUMBAR SUPPORTS

Table 53. Non-pharmacologic management (physical agents, modalities, traction & lumbar supports) of chronic low back pain due to other specific conditions.

Recommendation	Guideline	Level of evidence	Reference
There is insufficient evidence supporting the use of lumbar supports in patients with spinal instability. *Low volume – Current*	ITALIAN	B/C (can not always recommended; no conclusions to recommend or not)	Negrini et al. 2006
There is insufficient evidence for the usefulness of continuous traction in patients with spinal stenosis. *Low volume – Current*	ITALIAN	C (no conclusions to recommend or not)	Negrini et al. 2006

- PARM suggests the use of lumbar supports in the treatment of chronic low back pain secondary to spinal stenosis and instability.
- PARM suggests the use of continuous traction in patients with spinal stenosis.

6.3.1.2 OTHER NON-INVASIVE PROCEDURES

Other non-invasive procedures for management of chronic low back pain due to other specific conditions include massage, manipulation and mobilization.

Table 54. Non-pharmacologic management (other non-invasive procedures: massage, manipulation & mobilization) of chronic low back pain due to other specific conditions.

Recommendation	Guideline	Level of evidence	Reference
There is insufficient evidence that mild massage is useful in the treatment of chronic low back pain with disc herniation. *Low volume – Current*	ITALIAN	C	Negrini et al. 2006
There is insufficient evidence that mild spinal manipulation is useful in the treatment of chronic low back pain with disc herniation. *Low volume – Current* \	ITALIAN	C	Negrini et al. 2006
There is some evidence against the use of spinal manipulation and mobilization in chronic low back pain with spinal instability. *Low volume – Current*	ITALIAN	A	Negrini et al. 2006
There is insufficient evidence against the use of spinal manipulation and mobilization in chronic low back pain associated with adult painful scoliosis. *Low volume – Current*	ITALIAN	B	Negrini et al. 2006

- PARM does not recommend spinal manipulation and mobilization in chronic low back pain with spinal instability.
- PARM suggests mild massage and mild manipulation in chronic low back pain with disc herniation.
- PARM does not suggest spinal manipulation and mobilization for chronic low back pain associated with painful scoliosis

6.3.2 SURGICAL MANAGEMENT

Table 55. Surgical management of chronic low back pain due to other specific conditions.

Recommendation	Guideline	Level of evidence	Reference
There is insufficient evidence that surgery is useful in chronic low back pain due to spinal instability.	ITALIAN	B	Negrini et al. 2006
Low volume – Current			
There is insufficient evidence that artificial disc placement is beneficial for single-level degenerative disc disease from L3 or L4 to S1 who have chronic back pain.	APS	Fair	Blumenthal et al. 2005 Zigler et al. 2007
Low volume - Current			
There is some evidence that laminectomy with or without fusion is useful compared to non-surgical treatment of patients with chronic low back pain due to spinal stenosis with or without degenerative spondylolisthesis.	ITALIAN APS-ACP	A GOOD	Negrini et al. 2006 Amundsen et al. 2000 Malmivaara et al. 2007 Weinstein et al. 2007, 2008
Consistent level of evidence – Moderate volume – Current – Uniform thought			
There is insufficient evidence that spinal fusion is effective in adult painful scoliosis.	ITALIAN	B	Negrini et al. 2006
Low volume – Current			
There is some evidence that immediate surgery is not indicated for presence of a disc extrusion or sequestration, without a trial of conservative therapy, and unaccompanied by severe or uncontrolled pain, and/or profound or progressive neurologic symptoms.	ICSI	R R D R D C D D D	Bozzao et al. 1992 Buttermann 2002 Deyo et al. 1990b Gundry & Heithoff 1993 Henmi et al. 2002 Komori et al. 1996 Matsubara et al. 1995 Saal 1996 Spitzer 1987
Consistent level of evidence – High volume – Non-current – Uniform thought			
There is some evidence that the use of interspinous spacer device is more effective than non-surgical treatment for patients with chronic low back pain due to 1-2 level spinal stenosis relieved by flexion.	APS-ACP	Fair	Anderson et al. 2006 Hsu et al. 2006 Zucherman et al. 2004, 2005

There is insufficient evidence that lumbar fusion is beneficial for chronic low back pain due to common degenerative changes.	APS	Fair	Brox et al. 2003, 2006 Fairbank et al. 2005 Fritzell et al. 2001
		C	Negrini et al. 2006

Consistent level of evidence –Moderate volume – Current – Uniform thought

- PARM recommends laminectomy, with or without fusion, in chronic low back pain due to spinal stenosis with or without degenerative spondylolisthesis.
- PARM recommends the use of interspinous spacer device as treatment for chronic low back pain due to disc herniation or spinal instability.
- PARM suggests lumbar fusion surgery for common degenerative discorders.
- PARM recommends fusion surgery as treatment for chronic low back pain due to adult painful scoliosis with who also has one or more of the following: more than 50 degrees Cobb's angle, progression of curve of more than 10 degrees, lateral listhesis (rotational instability), or an important trunk decompensation.
- PARM does not recommend immediate surgery for presence of a disc extrusion or sequestration, without a trial of conservative therapy, unaccompanied by severe or uncontrolled pain and/or profound or progressive neurologic symptoms.
- PARM suggests artificial disc replacement for single-level degenerative disc disease.

6.4 CHRONIC LOW BACK PAIN DUE TO EXTRAPULMONARY TUBERCULOSIS OF THE SPINE

In the presence of red flag signs and concomitant low back pain, infection of the spine should be ruled out. One of the most common infections in our country is extrapulmonary Tuberculosis of the Spine (more popularly known as Pott's Disease). The treatment regimen as recommended in the National TB Program Manual of Procedures, 2005, RP, DOH are as follows:

1. Initial 2 months of Fixed-dose combination of Isoniazid, Ethambutol, Rifampicin, Pyrazinamide
2. Next 10months of Fixed-drug combination of Isoniazid, Rifampicin

For those with spinal instability, we recommend prescription of spinal orthoses for 3-6 months; and to repeat spinal x-rays, before weaning.

For those with progressive neurologic deficit despite adequate medical treatment, then, surgery should be considered.

6.5 PARM CONTEXT POINTS

6.5.1 NON-SPECIFIC CHRONIC LOW BACK PAIN

Table 56. Context p**o**ints for minimum and additional standard care of practice for non-specific chronic low back pain.

	Minimum standard care of practice	**Additional standard care of practice**
Practice Method	-medications (acetaminophen, nsaids, opioids, muscle relaxants, benzodiazepines, tramadol, antidepressants, anti-epileptics) -avoid bed rest (remain physically active and continue usual activity, including work, within the limits permitted by the pain) -therapeutic exercise (Self-treating with an exercise program not specifically designed for the patient may aggravate symptoms) - Viniyoga -back school (advise on posture control, stress reduction and work activity modification; Patients should limit/pace any activity or exercise that causes spread of symptoms (peripheralization) such as: laundry, carrying/lifting/pushing that requires straining, riding tricycles or jeepneys, farming/gardening, and prolonged sitting or standing. -electrophysical agents: ultrasound -massage	-laser therapy -interferential therapy -spinal manipulation^{++} -spinal mobilization^{++} -prolotherapy^{+++} -acupuncture^{+} -facet joint steroid injection^{+++} Surgical intervention -spinal fusion -radiofrequency facet joint denervation
Workforce	Physiatrist Physical therapist	Physiatrist Anesthesiologist Pain specialist Orthopedic surgeon Neurosurgeon Trained in spinal manipulation/spinal mobilization/acupuncture/prolotherapy/facet joint steroid injection

Resources	-physical therapy room -electrophysical agents	-physical therapy room -electrophysical agents -operating room
Training	Within competency	Within competency
When is it done	Upon consultation	Upon consultation
Reassessment using at least one standard outcome measure	Four to six weeks Pain scale before and after intervention	Four to six weeks

* Consider invasive procedure when conservative management fails
** Consider surgical procedure when conservative management fails and accompanied by severe or uncontrolled pain, and/or profound or progressive neurologic symptoms
[+] Acupuncture should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT, nurse), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice.
[++] Spinal manipulation and/or Spinal Mobilization should be given only by a professional who is registered to practice in the Philippines (i.e. physician, PT), with recognized and credible training, approved by any of the following: Professional Regulation Commission (PRC), Department of Health (DOH), or their respective professional organization/s; and can provide documented evidence of safe and evidence-based practice.
[+++] Epidural steroid injection, facet joint steroid injection and prolotherapy should be given only by a professional who is registered to practice in the Philippines (i.e. physician), with recognized and credible training, approved by the Professional Regulation Commission (PRC); and can provide documented evidence of safe and evidence-based practice.

6.5.2 CHRONIC LOW BACK PAIN WITH RADICULOPATHY

There are very few guidelines on the treatment of chronic low back pain with radiculopathy.

Table 57. Context points for minimum and additional standard care of practice for chronic low back pain with radiculopathy.

	Minimum standard care of practice	**Additional standard care of practice**
Practice method	-None	-epidural spinal injection[+++] Surgical intervention -laminectomy with or without fusion
Training	None	Within competency
Workforce	None	Training in epidural spinal injection Surgeon
Resources		Operating room
When is it done	None	When conservative management fail

6.5.3 CHRONIC LOW BACK PAIN DUE TO OTHER CONDITIONS

Surgical interventions have been recommended in the treatment of these conditions. They would entail advanced care of practice which could be performed in tertiary hospitals. They are considered if conservative management fails and accompanied by severe or uncontrolled pain, and/or profound or progressive neurologic symptoms.

Table 58. Context points for additional standard care of practice for chronic low back pain due to other conditions.

Conditions		**Additional standard care of practice**
-chronic discogenic back pain	Treatment	Lumbar spinal fusion
-spinal instability		Lumbar spinal fusion
- spinal stenosis w/ or w/o degenerative spondylolisthesis		Laminectomy w/ or w/o fusion Artificial disc placement
- single-level degenerative disc disease (L3 or L4 to S1)		Interspinous spacer device Lumbar spinal fusion
- Disc herniation	Workforce	Orthopedic surgeon
-adult painful scoliosis with the following conditions:		Neurosurgeon Anesthesiologist
1. More than 50 degrees cobb's angle	Resources	-operating room -equipment for spinal fusion
2. Progression of curve of more than 10 degrees	Training When is it done	-within competency -when conservative management fails
3. Lateral listhesis (rotational instability)		
4. An important trunk decompensation		

Abbreviations

AGREE	Appraisal of Guidelines Research and Evaluation
AP	Anterior Posterior
CLIP	Clinic on Low-Back Pain in Interdisciplinary Practice Guidelines
CPG	Clinical Practice Guidelines
CT scan	Computed Tomography scan or Computed Axial Tomography (CAT scan)
EBP	Evidence Based Practice
EMG	Electromyography exam
GDG	Guideline Development Group
GPP	Good Practice Points
iCAHE	International Centre for Allied Health Evidence (University of South Australia)
ICSI	Institute for Clinical Systems Improvement
IDET	Intradiscal Electrothermal Therapy
LAT	Lateral
LBP	Low back pain
MRI	Magnetic Resonance Imaging
NCV	Nerve Conduction Velocity
NGC	National Guidelines Clearinghouse
NHMRC	National Health and Medical Research Center
NICE	National Institute for Health and Clinical Excellence
NSAIDs	Non-steroidal Anti-inflammatory Drugs
NZGG	New Zealand Guidelines Group
PARM	Philippine Academy of Rehabilitation Medicine
PIRFT	Percutaneous Intradiscal Radiofrequency Thermocoagulation
SIGN	Scottish Intercollegiate Guidelines Network
SLR	Straight Leg Raise test
SSRI	Selective serotonin reuptake inhibitors
TCA	Tricyclic antidepressants
TENS/TNS	Transcutaneous Electrical Nerve Stimulation
TOP	Toward Optimized Practice
WorkCoverSA	WorkCover Corporation (South Australia)

Index

FIGURES

TABLES

Appendix 1. iCAHE critical appraisal tool for clinical practice guidelines

Table A1. iCAHE scores for each included clinical practice guideline.

Criteria	ITALIAN	ICSI	CLIP	NICE	WORK-COVERSA	TOP
1. Availability						
Is the guideline readily available in full text?	1*	1	1	1	1	1
Does the guideline provide a complete reference list?	1	1	1	1	1	1
Does the guideline provide a summary of its recommendations?	1	1	1	1	1	1
2. Date						
Is there a date of completion available?	0	1	1	1	0	0
Does the guideline provide an anticipated review date?	1	1	0	0	0	0
Does the guideline provide dates for when literature was included?	1	1	0	1	1	1
3. Underlying evidence						
Does the guideline provide an outline of the strategy they used to find underlying evidence?	1	1	0	1	1	1
Does the guideline use a hierarchy to rank the quality of the underlying evidence?	1	1	1	1	1	1
Does the guideline appraise the quality of the evidence which underpins its recommendations?	1	1	1	1	1	1
Does the guideline link the hierarchy and quality of underlying evidence to each recommendation?	1	1	1	1	1	1
4. Guideline developers						
Are the developers of the guideline clearly stated?	1	1	1	1	1	1
Does the qualifications and expertise of the guideline developer(s) link with the purpose of the guideline and its	1	1	1	1	1	1

end users?						
5. Guideline purpose and users						
Are the purpose and target users of the guideline stated?	1	1	1	1	1	1
6. Ease of use						
Is the guideline readable and easy to navigate?	1	1	1	1	1	1
TOTAL SCORES	**13**	**14**	**11**	**13**	**12**	**12**

* 1 = criterion met ; 0 = criterion not met

Appendix 2. Clinical evaluation of low back pain

Below are the elements of pertinent history taking and physical examination of low back pain to establish a significant relationship with the aim of giving behavioral counseling and start secondary prevention. History and PE are enough to evaluate and diagnose LBP, and propose the treatment.

I. Important to take note in the history are the following:

Age
Pain evaluation Localization
Pain characteristics
Radiation
Pain schedule
Posture pain relationship
Functional and working impairment
Previous treatment effect
Physical and psychosocial risk factors
Professional risk factors

RED FLAGS

- Violent trauma (such as a fall from height or anautomobile accident)
- Constant, progressive, non-mechanical pain
- Thoracic or abdominal pain
- Pain at night that is not eased by a prone position
- History of or suspected cancer, HIV or other pathologies that can cause back pain
- Chronic corticosteroid consumption
- Unexplained weight loss, chills or fever
- Significant and persistent limitation of lumbar flexion
- Loss of feeling in the perineum (saddle anesthesia), recent onset of urinary incontinence

The risk of a serious condition may be higher in those under 20 or over 55 years of age. Particular attention must be paid to the previously mentioned signs and symptoms in patients in these age groups.

YELLOW FLAGS

- Belief that pain and activity are harmful
- 'Sickness behaviors' (like extended rest)

- Low or negative moods, social withdrawal
- Treatment beliefs do not fit best practice
- Problems at work, poor job satisfaction
- Heavy work, unsociable hours (shift work)
- Overprotective family or lack of support

II. Clinical Evaluation of Low Back Pain

Pain and/or functional limitation of the trunk

Pain during spinous process, facet joints, ligament and muscle palpation

Neurological examination

Strength testing

- Ankle dorsiflexion strength (able to heel walk)
- Great toe dorsiflexion strength
- Plantar flexion (able to toe walk)
- Hip flexors

Reflex testing

- Ankle and knee reflexes
- Knee extension

Sensory testing

- A sensory exam to evaluate the medial, dorsal and lateral aspects of the foot and the medial and lateral calf

Special tests

Postural evaluation

Gait analysis

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