

Musculoskeletal Health Network and Neurosciences & the Senses Health Network

Spinal Pain Model of Care

Prepared by the Spinal Care
Working Party
4 May 2009



Government of **Western Australia**
Department of **Health**



© **Department of Health, State of Western Australia (2009).**

Copyright to this material produced by the Western Australian Department of Health belongs to the State of Western Australia, under the provisions of the Copyright Act 1968 (C'wth Australia). Apart from any fair dealing for personal, academic, research or non-commercial use, no part may be reproduced without written permission of the Health Networks Branch, Western Australian Department of Health. The Department of Health is under no obligation to grant this permission. Please acknowledge the WA Department of Health when reproducing or quoting material from this source.

Suggested Citation:

Department of Health, Western Australia. Spinal Pain Model of Care. Perth: Health Networks Branch, Department of Health, Western Australia; 2009.

Important Disclaimer:

All information and content in this Material is provided in good faith by the WA Department of Health, and is based on sources believed to be reliable and accurate at the time of development. The State of Western Australia, the WA Department of Health and their respective officers, employees and agents, do not accept legal liability or responsibility for the Material, or any consequences arising from its use.



Table of Contents

Acknowledgements	5
Executive Summary	7
Methodology	9
1. Background	10
1.1 What Is Spinal Pain?	10
1.2 Contribution to the Burden of Disease	11
1.3 Service Utilisation by People Living with Spinal Pain	13
2. Issues Around the Management of Spinal Pain	16
2.1 Evidence for Treatment Efficacy	16
2.2 Early Management of Acute Non Specific Spinal Pain in the Primary Care Setting	18
2.3 Achieving Adherence to Guidelines	19
2.4 Implications for Western Australia	20
3. Current Services for People Living With Spinal Pain in Western Australia	21
3.1 Overview	21
4. Major Gaps in Current Services for Spinal Pain	25
4.1 Lack of Community Awareness re Spinal Pain	25
4.2 Limited Education and Adherence to Management Guidelines for Spinal Pain	25
4.3 Limited Access to Timely Specialist Multidisciplinary Assessment and Holistic Patient-Centred Management	25
4.4 Shortage of Medical, Nursing and Allied Health Workforce	25
4.5 Lack of Communication and Integrated Care Pathways between Health Sectors	26
4.6 Lack of Community Based Services for Spinal Pain	26
4.7 Lack of Self Management Resources and Education for Spinal Pain	26
4.8 Area of Unmet Need - Spinal Pain and Mental Health Disorders	26
4.9 Lack of Coordination and Integration with Occupational Health and Safety Sectors	27
4.10 Gaps in Clinical Data and Data Management	27
5. Future Model of Care	28
5.1 Overview	28
5.2 Risk Reduction	28
5.3 Best Practice Guidelines - Management of Spinal Pain	29
5.4 Self Management of Spinal Pain	30
5.5 Service Improvement	30



5.6 Workforce Capacity.....	31
6. Horizon Scanning.....	32
6.1 Future Innovations Regarding Medications.....	32
6.2 New Program Initiatives.....	32
7. Key Recommendations.....	33
8. A Strategy for Implementation of the Model of Care.....	36
9. Evaluation	38
Glossary	39
References	40
Appendices	43
Appendix 1: Clinical Guidelines: Diagnosis and Treatment of Low Back Pain	43
Appendix 2: Review of Evidence: Treatment Interventions for Spinal Pain.....	44
Appendix 3: Red and Yellow Flags for Assessment of Acute Low Back Pain	45

Index of Tables

Figure 1. Hospitalisation Rate For Spinal Pain by 5 Year Age Group, WA 2005/2006.....	14
Figure 2. Time Trend in Age Standardised Hospital Separation Rate for Spinal Pain, WA, 1999/00 – 2005/06.....	14
Figure 3. Time Trend in Average Length of Hospital Stay by Aboriginality, WA 1999/00 – 2005/06.....	15



Acknowledgements

The development of the Spinal Pain Model of Care was dependent on the collective contribution of Spinal Care Working Party, a joint collaborative between the Musculoskeletal Health Network and the Neurosciences and Senses Health Network. The time, expertise and continued willingness to attend meetings and a collaborative approach to the development of this model were invaluable, and ensure that the document incorporates the views from a broad range of stakeholders committed to improving systems for people in Western Australia living with spinal pain.

Members of the joint Spinal Care Working Group include:

Dr Roger Goucke (Co Chair)	Consultant, Head of Department, Pain Management, Sir Charles Gairdner Hospital
Robyn Timms (Co Chair)	Head of Department, Physiotherapy, Fremantle Hospital & Health Service
Dr James Anderson	Consultant Radiologist, Department of Diagnostic and Interventional Radiology, Royal Perth Hospital (Wellington Street Campus)
Assoc Prof David Buchanan, MA PhD	Consumer representative
Mrs Kathryn Devereux	Acting Deputy Director, Ambulatory Care, North Metropolitan Area Health Service
Nicky Fortescue	Senior Physiotherapist, Royal Perth Hospital (Shenton Park Campus)
Carl Graham	Clinical Psychologist, Pain Medicine Unit, Fremantle Hospital, Fremantle Hospital & Health Service
Dr Bret Hart	Public Health Physician, Public Health Unit , North Metropolitan Area Health Service
Kevin Lau	Senior Physiotherapist, Head of Department, Graylands Hospital
Mr Gabriel Lee	Neurosurgeon
Jan Mountford	Senior Physiotherapist, Department of Neurosciences, Sir Charles Gairdner Hospital
Assoc Prof Richard L Prince	School of Medicine and Pharmacology, SCGH Unit, University of Western Australia Endocrinologist, Sir Charles Gairdner Hospital
Dr John Quintner	Consultant Physician in Pain Medicine, Pain Unit, Fremantle Hospital, Fremantle Hospital & Health Service



Scott Sargant	Adjunct Lecturer, School of Pharmacy, Curtin University of Technology
Professor Kevin P Singer	Director, The Centre for Musculoskeletal Studies, The University of Western Australia
Dr Helen Slater, PhD, FACP	Senior Lecturer, School of Physiotherapy, Curtin University and Clinical Consultant, Pain Medicine Centre, Royal Perth Hospital
Dr Benedict Wand	Senior Lecturer, School of Health Sciences, University of Notre Dame (Fremantle Campus)

The Executive Advisory Group of the Musculoskeletal Health Network is also acknowledged for their executive support and expertise in overseeing the activities of the Spinal Care Working Party, including feedback and editing of the many iterations of the document, along with Nerida Croker, Senior Development Officer, and Kim Goodman, Development Officer, Health Networks Branch, Department of Health Western Australia.



Executive Summary

Spinal pain is common in Western Australia. Not only is it common but it is costly, involving the individual sufferers, the health service and the community in general.

Apart from loss of income and a decrease in quality of life for the individual, society also suffers from loss of productivity for those still in the workforce (presenteeism). Access Economics has estimated that the total cost of persistent pain in Australia in 2007 was \$34.3 billion or \$10,847 per person with pain. While these figures were calculated on all persons with chronic pain, the North Sydney Area Health study identified back pain as comprising 45% of this total.

Health care costs are spread across both State and Federal budgets, and include substantial medication costs, multiple attendances to general practitioners and emergency departments and admissions to secondary and tertiary hospitals. Individuals complaining of spinal pain also generate multiple requests for radiological imaging. One challenge for the working party was to try and rationalise the assessment and treatment options for spinal pain and provide evidence for a better use of current health care resources.

Spinal pain can be relatively easily classified into specific and non specific causes. Specific causes which include those serious conditions that require urgent surgical assessment can be identified by using well know “red flag” screening lists. (For example IV drug misuse, fever - infection, history of malignancy, weight loss – tumour, neurological symptoms and signs, urinary retention – cauda equina syndrome etc). Other specific causes of spinal pain with limited treatment options can also be identified eg spinal degenerative disease, the so called “failed back surgery syndrome”. Many individuals however, have non specific back pain which now has reasonable evidence based treatment to guide practitioners. There is evidence also that if appropriate therapy is instituted in acute episodes progression to the chronic stage can be minimised. The treatment of chronic spinal pain is much more challenging.

We have reviewed the evidence for the non surgical management of spinal pain recognising that surgery is required in only a limited number of patients with specific conditions. Surgical intervention may best be considered in centres where appropriate pre operative assessment and post operative rehabilitation and care planning can occur to optimise the efficacy of the intervention.

The issues relating to the wide variety of practitioners providing advice and treatment for people with spinal pain are discussed. Community care may be offered by pharmacists, chiropractors, general practitioners and a range of allied health practitioners but primarily physiotherapists in private practice. Secondary care in hospitals is limited as is tertiary care. The difference in approach to treatment is wide despite reasonable evidence. There is a need to unify treatment options and a recommendation for education of treatment providers at undergraduate level is made.

For established practitioners a need for agreement on treatment guidelines is identified and a mechanism for dissemination is required, the existing HDWA Diagnostic Imaging Pathway is recommended.

As chronic spinal pain is so common and well suited for self management a community awareness program along the successful lines as used in Victoria was reviewed. The evidence from this initiative to engage not only the individuals affected



but also their health care providers, is compelling and is recommended for Western Australia.

Other recommendations focus on the varied funding sources between the State and Commonwealth. These should involve Care Planning and the use of the Enhanced Primary Care initiatives for Medicare funding for Allied Health involvement in spinal pain treatment. The recognition of spinal pain as a “chronic disease” and the use of chronic disease management strategies with the development of multidisciplinary teams in community or at secondary hospitals is recommended.

While the current disparate and widely varied access to a wide range of treatment options is acknowledged by the working party our hope is to consolidate the evidence, secure adequate funding together with a trained workforce in order to come to terms with spinal pain in the Western Australian community.

Key Recommendations for Western Australian Spinal Pain Model of Care

1. Increase knowledge of active pain management strategies for spinal pain in the community.
2. Develop workforce capacity, through interprofessional education for all health care providers.
3. Support initiatives which improve earlier access to positive outcome – based services for spinal pain across the health continuum
4. Promote best practice for spinal pain management, including integrated care pathways across sectors
5. Promote consumer self management of spinal pain across the continuum of health
6. Facilitate information and communication technology tools and support systems for management of spinal pain in Western Australia



Methodology

Health Networks

Clinical networking has been recommended by the Health Reform Implementation Taskforce as a means of providing “a new focus across all clinical disciplines toward prevention of illness and injury and maintenance of health”. The Clinical Service Framework provides the foundation for the development of clinical networks and strengthens the commitments described within the Department of Health Strategic Intent 2005-2010.¹

Health Networks were established in 2006 as part of the reform of WA Health. The strategic role of Health Networks is to provide advice and direction on where and how services should be delivered. A summary of this strategic intent is often captured in a model of care which outlines best practice patient care delivery. The main objective of a Model of Care is to ensure that people get the right care, at the right time, by the right team and in the right place.²

Both the Musculoskeletal Health Network and the Neurosciences and the Senses Health Network identified spinal pain as a priority, and this aligns with other national priorities for musculoskeletal conditions. The Spinal Care Working Party (consisting of members from both Health Networks) was convened in June 2007 to develop a Model of Care for people living with spinal pain in Western Australia. To assist with identifying best practice over the continuum of health, literature was reviewed. The current consumer pathway for accessing services for spinal pain in Western Australia was mapped, to assist with identifying gaps in service delivery.

Using this information, this Model of Care has been written with the aim of providing sustainable services for people living with spinal pain in Western Australia, including primary prevention and management across the continuum of health.

Model of Care

The Spinal Pain Model of Care has been developed to meet the purpose and vision outlined in “Strategic Intent 2005 – 2010” (DOH 2005)¹ and the Clinical Services Framework (2005)³ to deliver a healthy WA. This Model of Care should be readily accessible and efficiently provided. The Area Health Services are, and will remain responsible for, the implementation of models of care, with the Musculoskeletal and Neurosciences and the Senses Health Networks supporting changes to service delivery through improved co-ordination between health services and through partnerships with other health care providers, key stakeholders, consumers and the community.

This model of care uses a holistic patient-centred approach to the provision of services for people living with spinal pain in Western Australia. It outlines best practice through the application of a set of service principles across identified clinical streams and patient flow continuums.

It should be viewed as a dynamic process, which will evolve over time to include new research findings for improving health care along with information gathered through the consultation process.



1. Background

Spinal pain is common and places a high economic and personal burden on the community and the individual. This burden includes the use of hospital and primary care services, disruptions to daily life, and lost productivity through functional limitations and activity restrictions. Spinal pain is the most common musculoskeletal problem managed by General Practitioners (GPs) followed closely by arthritis.⁴

Consumer comment:

Just what is wrong with me and when will the pain go away? This single question is the most pertinent question facing any consumer with acute onset back pain.

The working party has focussed primarily on the most common type of spinal pain namely Low Back Pain. Low Back Pain is usually defined as pain, muscle tension or stiffness localized below the costal margin and above the inferior gluteal folds, with or without leg pain (sciatica).

The overarching principles regarding assessment, treatment and service delivery are applicable to thoracic and cervical pain as well.

1.1 What Is Spinal Pain?

Pain has often been regarded as a symptom that serves as a warning signal of an underlying disease process. Within this (biomedical) model, the goal of treatment has been to identify and address the pathology causing pain in the expectation that this would lead to its resolution.

However, there is accumulating evidence to suggest that continuing noxious inputs result in a multitude of consequences that impact on the individual. This may include changes in neurological receptor function, mood dysfunction, inappropriate cognitions, and disruption to daily occupation, including work and social activities.

Genetic, psychological and social factors may all contribute to the perception and expression of persistent pain. Optimal outcomes in the management of persistent pain may be achieved not simply by attempting to remove the cause of the pain, but by addressing both the consequences of and the contributors to persistent pain.⁵

1.1.1 Classification of Spinal Pain

Spinal pain is difficult to classify and to find suitable descriptive terms that are useful for practitioners and patients alike.⁶ Back pain can be grouped using a diagnostic anatomical/pathology descriptive classification. It is suggested that less than 20% of all presentations for back pain in the community will fall into this group and have a clinically diagnosable **specific cause**. The rest of the patients with back pain can be classified as **non specific**. Depending on how long the patient has had the pain, back pain can be classified as:



Acute Low Back Pain (<3 months)

Acute Low Back Pain is a common self-limiting condition in most people. On initial history and examination using the “red flag” identifiers (see Appendix 3) it is usually clinically possible to identify all serious causes of acute back pain. The red flags help to exclude any specific causes of serious underlying pathology (e.g. spinal tumours, fractures due to trauma or osteoporosis, inflammatory disease or extensive neurological complications). Identification of red flags will require further investigation and specific therapy.

Once specific causes of Acute Low Back Pain have been excluded “non specific Low Back Pain” is best managed by appropriate assessment, explanation (and reassurance), advice about staying active and conveying the expectation for recovery. The use of simple analgesics and/or manual therapy together with advice against bed rest for more than 2 days has a strong evidence base.

Chronic Spinal Pain (> 3 months)

When pain lasts longer than 3 months or beyond the time when an acute injury would be expected to have healed, the patient’s presentation becomes more complex, often, not surprisingly, with more psychological features. These include complaints of poor or non-refreshing sleep, tiredness, depression and poor concentration. Pain at this stage is often said to be “chronic”. Chronic back pain is a more complex condition but the same red flags still apply and a similar initial treatment approach to that taken with Acute Low Back Pain can be recommended.

Chronic spinal pain however can be very difficult to treat and can be a major cause of disability, with significant impacts on occupation and employment. Chronic spinal pain is almost certainly easier to prevent than treat and is often associated with increased psychological risk.⁷ The current model for managing established Chronic Low Back Pain encompasses the biopsychosocial paradigm.

Recurrent Spinal Pain

Recurrent spinal pain is also fairly common and probably best treated in a similar way to acute pain episodes.

1.1.2 Risk Factors for Spinal Pain

A significant proportion of the disease burden for spinal pain may be attributed to, unhealthy diet, physical inactivity and obesity. An individual’s occupation will also contribute, as can poor posture.

Prevention strategies can be specifically designed to target risk factors and build on the strengths of individuals and the community to minimise the risk of spinal pain. By addressing these multiple lifestyle risk factors, the impact of chronic diseases can be reduced, population health enhanced and health system sustainability improved.

1.2 Contribution to the Burden of Disease

Non specific spinal pain continues to be one of the major health burdens in western society. Included in the calculation of burden are ‘the use of hospital and primary care services, disruptions to daily life, and lost productivity through functional limitations and activity restriction.⁴ The World Health Organisation [WHO 2000]⁸ projects the consumption of 25% of all health budgets on musculoskeletal conditions, with the major proportion of this expenditure directed to spinal care.



In Australia, back pain costs exceed \$15 billion per annum with back disorders consistently within the top ten of the most expensive health care presentations.⁹ The prevalence of spinal problems in the community is endemic,¹⁰ increasing and compounded by the shift towards ageing populations.¹¹ The lifetime prevalence rates are 60-80%, one-year prevalence 50% and point prevalence 15% to 30%.^{12, 13}

Spinal pain is the second most common presentation to a General Practitioner (GP), despite 39% of clients not seeking medical care at all.¹³ It affects men and women equally and the incidence increases with age.¹⁴ Most episodes of spinal pain resolve within a month (75-90%), however 25-50% of cases are persistent and recurrent.¹³

1.2.1 Prevalence

The actual incidence and prevalence of musculoskeletal conditions such as arthritis and spinal pain are difficult to determine reliably. In the absence of disease registers and other sources of suitable information, these data are difficult to obtain. Self reported prevalence rates (the best approximations) lie between 9 and 20% with the differences largely being due to the questions asked of respondents.¹⁵

The self-reporting of illness however is both complex and dynamic and dependant on the respondent's knowledge and attitudes.⁴ In the ABS 2003 Survey of Disability, Ageing and Carers, 9% (1,766,000) self reported back problems or dorsopathies.¹⁶

The following statistics relating to the prevalence of back pain in Australia in 2001 were taken from the AIHW analysis of ABS 2001 National Health Survey :⁴

- 20.9% (3,937,000) population self-reported having back pain or disc disorders
- 20.7% (1,993,000) female population self-reported having back pain/disc disorders
- 21.0% (1,944,000) male population self-reported having back pain/ disc disorders

Recent Western Australian data has highlighted the prevalence of back pain an elderly population and documented its daily frequency (22% of community living elderly women). The authors demonstrated a decrease in the physical aspects of their quality of life (SF36) and an association between back pain and increased mortality.

1.2.2 Morbidity

Using the Kessler Psychological Distress Scale (K10) adults with a musculoskeletal condition reported higher levels of psychological distress. Both anxiety and depression are more common in people with chronic back pain. These conditions require recognition and appropriate treatment. The best model of care for managing these comorbidities is the biopsychosocial approach, using multidisciplinary service delivery.⁴

1.2.3 Mortality

Most arthritis and musculoskeletal conditions are disabling but not fatal.¹⁷ Approximately five deaths per 100,000 persons were recorded in 2003 in Australia due to these conditions.⁴ Death is not a common direct outcome from spinal pain, however individuals suffering from chronic pain whatever its cause have a significantly higher suicide rate. The prevention of this serious outcome may be addressed by managing anxiety and depression effectively.



1.2.4 Costs

In Western Australia the unit costs for the delivery of pain medicine services for chronic non-malignant pain (eg Low Back Pain) can be estimated to be in a range from \$1186 to \$1190 per new patient assessed in a tertiary pain management centre. After the common cold, back pain is the leading cause of lost workdays.¹⁸

The Access Economics report of November 2007 “The high price of pain: the economic impact of persistent pain in Australia”⁹ provides a detailed economic evaluation of the cost burden across a wide range of payors. The total cost of persistent pain in 2007 was estimated to be over \$32 billion. The Northern Sydney Area Health study identified that up to 46% of the cause of chronic pain was back or spinal pain showing the large dollar value which can be attribute to this condition.

1.3 Service Utilisation by People Living with Spinal Pain

This section provides an overview of the health services utilisation by people living with spinal pain, including tertiary hospital admissions in Western Australia.

1.3.1 Primary Health Care

In 2003–04, arthritis and musculoskeletal conditions were the category most frequently managed by GPs (17 per 100 encounters), closely following respiratory conditions. They accounted for 12% of problems managed by GPs that year. Back complaint was the most common condition followed by osteoarthritis.⁴

According to the 2001 National Health Survey, about 23% of people with arthritis and musculoskeletal conditions had consulted an allied or other health professional within the previous two weeks of the survey. The professionals most frequently consulted were pharmacists (by 5% of the population), physiotherapists and chiropractors (4%). Persons aged 65 and over are more likely to have visited at least one allied or other health professional than people in younger age groups.⁴

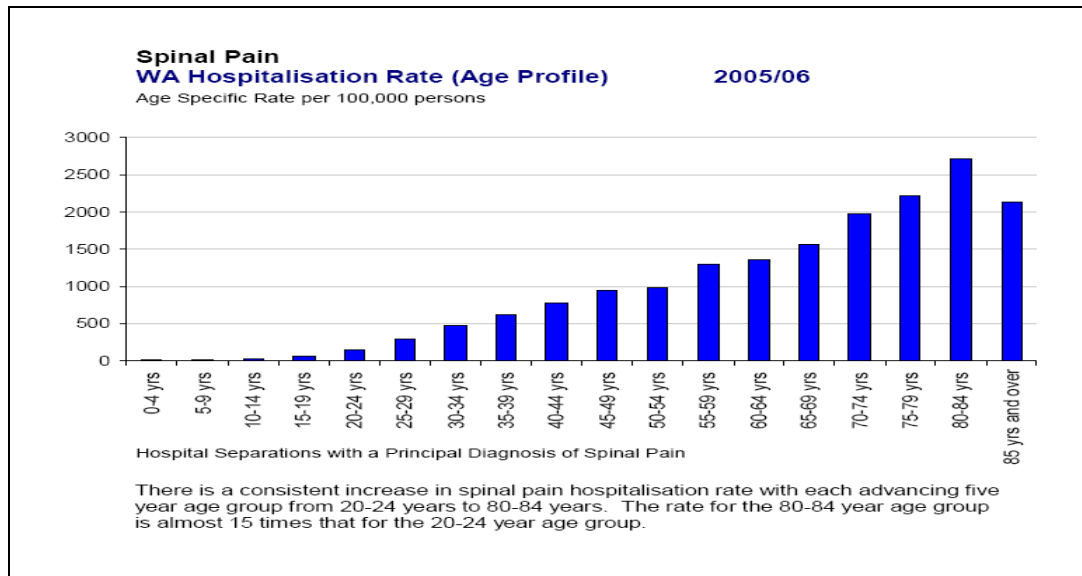
A recent study by Walker, Muller and Grant, “Low Back Pain in Australian Adults, Health Provider Utilisation and Care Seeking (January 2003), revealed that Chiropractors were the second most utilised practitioner sought for care (19.1%) after medical care (22.4%) for back pain.

1.3.2 Hospital Usage in Western Australia

Figure 1 below demonstrates that in Western Australia’s public and private hospitals (2005 - 2006), there was a consistent increase in the hospitalisation rate for spinal pain with each advancing five year age group, with people aged 80 – 84 years having the highest hospitalisation rate.



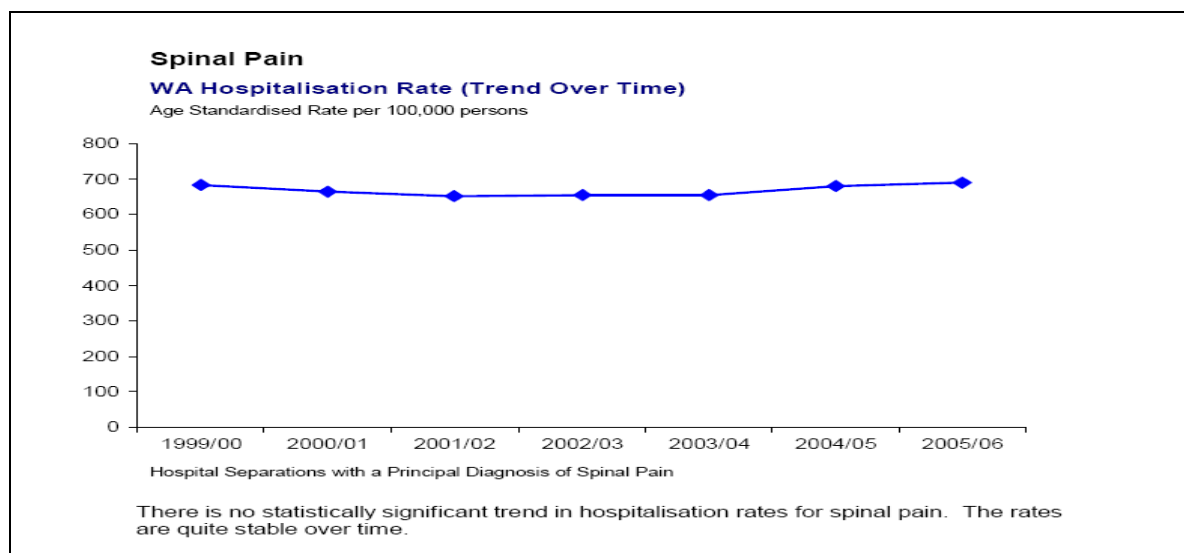
Figure 1. Hospitalisation Rate For Spinal Pain by 5 Year Age Group, WA 2005/2006.



Source: Epidemiology Branch, Department of Health WA. WA Hospital Morbidity Data System 2008.

Figure 2 below indicates that there has not been any statistically significant trend in hospitalisation rates for spinal pain over the period from 1999 – 2006, and that the rates are quite stable over time.

Figure 2. Time Trend in Age Standardised Hospital Separation Rate for Spinal Pain, WA, 1999/00 – 2005/06



Source: Epidemiology Branch, Department of Health WA. WA Hospital Morbidity Data System 2008.



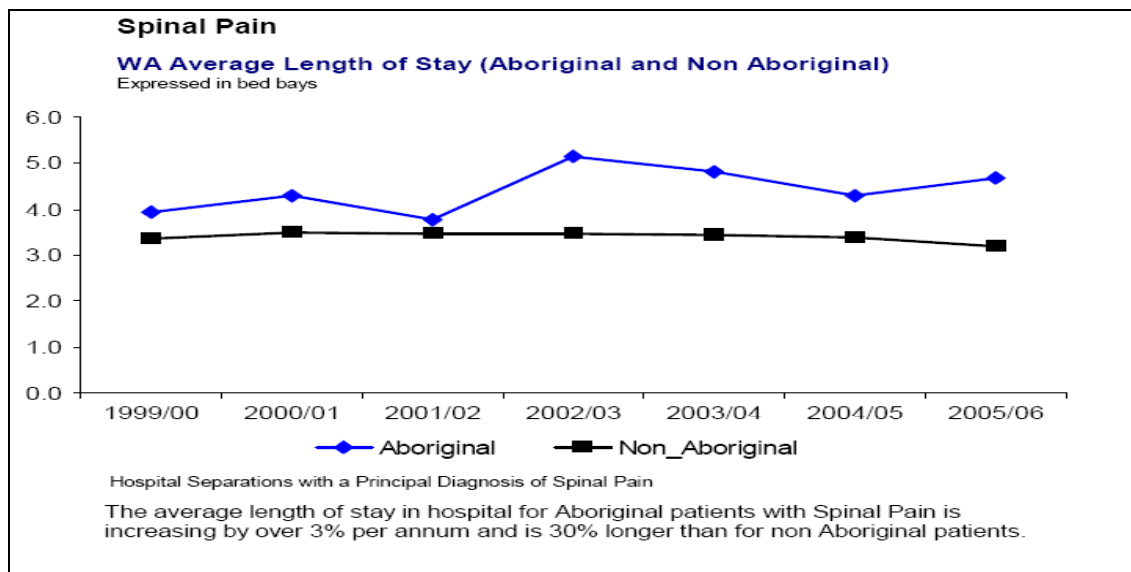
Aboriginal and Torres Strait Islander Populations

There are significant variations across population groups in terms of incidence, prevalence, prevention, management and associated health outcomes for different conditions such as spinal pain. Of particular note are the health inequalities evident in people living in rural and remote area, particularly Indigenous people and those with lower socioeconomic status. These groups have significantly poorer health outcomes and have higher levels of health risk factors.

Data from the Department of Health Epidemiology Department (Figure 3) reveal that hospitalisation rates for Non Indigenous people with spinal pain in Western Australia are almost double that of the Indigenous population.

Over the period from 1999 to 2006 (as the graph below indicates), the length of stay for Indigenous patients has increased by over 3% per annum. The average length of stay in hospitals for Indigenous patients with spinal pain is 30% longer than for non Indigenous patients.

Figure 3. Time Trend in Average Length of Hospital Stay by Aboriginality, WA 1999/00 – 2005/06



Source: Epidemiology Branch, Department of Health WA. WA Hospital Morbidity Data System 2008.



2. Issues Around the Management of Spinal Pain

There is a vast body of literature exploring the management of Low Back Pain. Over 1000 randomised controlled trials have been performed and this information has been synthesised in many systematic reviews and practice guidelines. There is considerable consistency between guidelines in their treatment recommendations, particularly amongst the more recent documents.

2.1 Evidence for Treatment Efficacy

The summary of treatment efficacy applies primarily to acute non specific back pain and is presented here and in Appendix 2. It is drawn from a selection of recent key, multidisciplinary evidence reviews supported by reference to recent well-performed randomised controlled trials where appropriate.

2.1.1 Conservative Treatment of Spinal Pain

The aims of conservative management of spinal pain are to:

- Identify potentially serious causes of Acute Low Back Pain (< 5%) “Red Flags”
- Promote effective self management of symptoms through the provision of timely and appropriate advice
- Maximise functional status and minimise disability

Consistent recommendations are to:

- discourage bed rest
- do not advise back specific exercises
- reassure the person (favorable prognosis, hurt does not equal harm)
- encouraging them to stay active: continue ordinary activities (including work)
- prescribe medication if necessary, and
- consider spinal manipulation for pain relief

Effective communication is vital, using printed materials and correct information albeit in neutral terms. Communication methods need to be adapted to meet the needs and abilities of each patient, checking that information has been understood. Explanation is important and psychosocial “yellow flags” should be addressed particularly in the workers compensation setting, the aim being to work with patients to develop a management plan.

Pharmacological Treatment

Evidence is insufficient to identify one medication as offering a clear overall nett advantage because of complex tradeoffs between benefits and harms. However, paracetamol is of benefit for mild to moderate pain. Where paracetamol is insufficient the short term use of Non Steroidal Anti Inflammatory Drugs (NSAIDS) if not contraindicated may be of value.

Short term use of oral opioids may be necessary, however evidence for efficacy is limited - especially for use over 3 months and the risk/benefit ratio is high. Muscle relaxants such as diazepam are not recommended due to adverse effects such as sedation and dependence.

It is imperative to recognise that each drug is associated with a unique set of risks and benefits and there is little evidence on long term (> 4 weeks) use of any of the above-mentioned medications, particularly in relation to long-term harms.

**Consumer comment:**

Consumers and clinicians alike must be able to distinguish between drug dependency and addiction and the improved quality of life that appropriate pain management can bring to some clients even those with an the so-called 'addictive personality'. The Model of Care needs to take into account pain management issues relating to both under and over prescribing of opioid medications.

There is evidence that the issues of reassurance and empowerment (eg an agreed management plan) are rated highly by Australian consumers higher than pain relief.¹⁹

2.1.2 Surgical treatment of Specific Spinal Pain

In regard to specific spinal pain, treatment will relate to the condition diagnosed and its urgency (eg tumour, fracture).

2.1.2.1 Invasive Treatment Options

The European Guidelines²⁰ suggest lumbar fusion only be used in carefully selected patients who have not benefited from intensive multidisciplinary treatment.

Surgery for nerve root pain appears to offer faster relief of symptoms than conservative care, but it is unclear if there are any differences in long term outcomes²¹⁻²³. The high level of protocol violations in these trials makes it difficult to arrive at definitive conclusions.

2.1.2.2 Conservative vs Invasive Treatment of Lumbar Spinal Conditions

In the majority of patients with radicular back or leg pain caused by nerve root compromise within the lumbar spine, conservative management leads to improvement or resolution of symptoms. However, in patients who continue to have disabling pain despite conservative measures or significant neurological deficits from nerve root compression, appropriate lumbar spinal surgery is typically associated with a high success rate.

In contrast, the indications and role of surgery to treat patients with isolated back pain, particularly in the absence of structural abnormality or instability, remain controversial.

Currently, there are no established guidelines in the management of patients with symptomatic degenerative lumbar spine conditions. The definition of "conservative" management remains poorly defined. It remains unclear what the optimal duration of conservative therapies should be prior to consideration of surgical options. Review of the published scientific literature shows a relative paucity of good quality randomised controlled studies in the field of spinal surgery. Whilst there are best practice guidelines available, few "gold standards" exist in clinical practice.

While the advent of spinal instrumentation has expanded the range of spinal pathologies which may be addressed surgically, the sheer multitude of instrumentation options and constantly evolving new technologies has paradoxically added much greater complexity to the decision-making process in patient management.

Current guidelines for the use of interventional procedures for spinal pain are available.²⁴ They show reasonable short to medium term benefit for a number of procedures including therapeutic facet joint injections, epidural steroid injections, selective nerve root injections. All spinal interventions are only recommended in the setting of a comprehensive multidisciplinary assessment and as part of a



comprehensive management plan which will involve a range of treatment options. This presents a challenge in areas where there is limited access to a multidisciplinary team, particularly rural and remote areas.

2.2 Early Management of Acute Non Specific Spinal Pain in the Primary Care Setting

Because of the complexity and lack of effective management options for persistent pain, it is essential to identify and effectively treat those patients initially presenting with acute non specific back pain.

After confirming the biomedical or organic components, an assessment of the relative contributions and dynamics of other factors must be attempted, such as psychosocial and environmental influences affecting the individual living with spinal pain. For example a number of psychosocial “yellow flags” (see Appendix 3) have been found to be useful in predicting failure to return to work after back injury.

There is increasing clinical evidence that appropriate early effective management of acute pain will minimise the transition to persistent pain. This includes implementing Acute Low Back Pain guidelines (eg advice to continue ordinary activity, avoid bed rest, the use of simple analgesics and short-term non-steroidal anti-inflammatory drugs. Non-drug treatment strategies should be instituted early. These include, encouragement of self management principles, reassurance, education, lifestyle modification, exercise, and reducing adverse factors (eg, weight loss for back, hip and knee pain, avoiding repetitive trauma).

Apart from good quality care that adheres to the general spinal pain management imperatives to keep active, to resolve the pain as quickly as possible and not to over-medicalise the problem - there is no one solution to the management of back pain once it becomes chronic.

Many approaches from the multidisciplinary team can be used although the literature shows that the impact of additional interventions over and above good quality care is small.²⁵ There is little absolute evidence (except patient or provider propensity) to recommend one form of intervention over another (see Appendix 2).

However, there is work from one group that use of a treatment based classification system to promote matching of conservative care to the patient’s presentation leads to improved outcome in Acute Low Back Pain.²⁶⁻²⁸

**Consumer comment:**

Consumers need to access practical advice when the gamut of passive treatment and diagnostic tests fail to make sense of their pain. In the absence of any service that is able to enact this they simply are more likely to over access health facilities that are unable to help them and add to the national cost of spinal pain – often unnecessarily. They also begin a tired and well trodden path of isolation, and so-called psych-social adversity.

2.3 Achieving Adherence to Guidelines

The New Zealand Acute Low Back Pain Guide⁷ provides a best practice approach, taking into account relevant evidence, for the effectiveness of treatment of Acute Low Back Pain for the prevention of chronic pain and disability. It follows an extensive review of the international literature and wide consultation with professional groups in New Zealand.

The New Zealand Acute Low Back Pain Guide incorporates the “Guide to Assessing Psychosocial Yellow Flags In Acute Low Back Pain”. The yellow flags provide an overview of risk factors for long-term disability and work loss, and an outline of methods to assess these. Identification of those ‘at risk’ should lead to appropriate early management targeted towards the prevention of chronic pain.

2.3.1 Uptake of Clinical Guidelines

Consistent use of clinical guidelines is often disappointing and many barriers have been identified.²⁹ Many clinicians do undertake management according to guidelines, however when patients fail to recover, clinicians then diverge from the guidelines.³⁰ This highlights the gap between scientific evidence, policy interventions, health care delivery and health outcomes.

2.3.2 Attitudes, Beliefs and Behaviours of Health Professionals

It is difficult to change medical and health professionals’ entrenched attitudes, beliefs and behaviour and this failure is strongly linked to patient expectations. Changing clinician behaviour is an acknowledged challenge.

General practitioners in the Netherlands were surveyed to assess their response to back pain management guidelines.³¹ They said they were well informed about the guidelines and mostly agreed with the content but most did not adhere due to patients’ experiences in the past and general practitioners’ interpretations of their preferences. General practitioners stated that they were inclined to give in to patients’ demands, for example the request for radiographic films or a referral to a physical therapist.³²

A qualitative exploration of physiotherapists’ pain beliefs within the context of a clinical situation was conducted by Daykin and Richardson (2004)³³. The findings suggest that in order to maximize the rehabilitation potential of patients with Chronic Low Back Pain, physiotherapists need to be aware that their pain beliefs may influence their management of these patients.³³

Attempts to change physiotherapists’ clinical management of patients with Low Back Pain following an evidence-based education package using local opinion leaders to deliver the best evidence, failed to change their practice.³⁴



2.4 Implications for Western Australia

The package of conservative care recommended for delivery by GP's in the context of clinical trials is effective for Acute Low Back Pain. However, many trials use an intensity of intervention that may be difficult to achieve with current service provision and systems in Western Australia.

Similar claims can be made for effective treatment of Chronic Low Back Pain. The treatment that has strongest support is intensive multimodal rehabilitation (>100 contact hours). Routine access to this type of care is currently very limited in Western Australia. This point is also important given the recommendation that surgery for a number of Chronic Specific Low Back Pain conditions should only be considered for those who have not benefited from multidisciplinary rehabilitation.

The evidence for treatment of non red flag conditions for chronic spinal pain is controversial and limited.



3. Current Services for People Living With Spinal Pain in Western Australia

This section provides an overview of services currently available in Western Australia for people living with spinal pain, across private and public sectors.

3.1 Overview

Current services for people living with spinal pain in the community are provided by State and Commonwealth Departments of Health, as well as the private sector. Health services for people with spinal pain are often directed at pain control and improvement in function and health-related quality of life.

Services, treatment and care options for people with spinal pain cover a wide variety of settings for different phases/types of spinal care. People with Spinal Pain may receive care at/from multiple locations (including the broad spectrum of information sourced via the Internet) including:

- **Primary care:** first point of contact may include general practitioner, chiropractor, physiotherapist; pharmacist, exercise physiologist or trainers at local gymnasium; complementary medicine practitioners such as osteopath, naturopath, massage therapist; acupuncturist.
- **Secondary care:** may involve attendance at emergency departments for spinal pain, and referral to outpatient services such as physiotherapy.
- **Tertiary care:** can involve emergency admission, as well as referral to specialist clinics in a tertiary hospital (eg. pain management, rheumatology, neurology, neurosurgery).

There are differing funding arrangements for the various health services, and an absence of a standardised approach to service provision or delivery for people with spinal pain. Therefore, consumers have to negotiate a maze when trying to access these services, often basing choices on past experiences, word of mouth, cost, and ease of access to care in a timely manner. The quality of the care which consumers receive will vary enormously depending on the approach and local configuration of services, and may not incorporate evidence-based practice.

There are various drivers to clinical management by health service providers (eg. time, income in private practice, professional interest and skill, resources). There is no formal network or structure in WA to link health practitioners working with clients with spinal pain.

3.1.1 General Practice

GPs are the most common providers of health care for people with spinal pain. Back complaints were the most common musculoskeletal condition managed by GPs', even with 39% of individuals deciding not to seek assistance from a GP.

The most common strategies used by GP's for the management of musculoskeletal conditions includes medication (71%), referral (13.9%), pathology (11.1%) and imaging (18.9%).⁴

Treatment by the GP attracts a Medicare rebate although a payment to cover the fee gap may still be required. Referrals to medical specialists and other health professionals in private or public services is often initiated or recommended by the general practitioner, although cost is often a significant factor.



General Practitioners in a recent survey conducted by Osborne Division of General Practice (43% response rate), identified access/referral to pain management services as being in the top 10 priorities for their Division (personal written communication from Robyn Timms, Chief Physiotherapist Fremantle Hospital to Terina Grace, CEO Osborne Division of General Practice, December 11, 2007).

3.1.2 Private Specialists

General Practitioners can refer people with spinal pain to a range of private medical specialists, and payment is at least in part covered by Medicare rebate. Referrals to a private specialist are usually seen in a reasonable timeframe, compared to those on long waitlists to see medical specialists in the public sector.

3.1.3 Specialist Medical Service via Outpatient Clinics at Tertiary Hospitals

Referral to a specialist medical outpatient clinic at a tertiary hospital may allow access to a range of medical specialities including Orthopaedics, Neurosurgery, Neurology, Pain Medicine, or Rheumatology. The waiting time for attending these clinics varies across sites and specialities. GPs may refer their patient to a variety of clinics and to a number of sites at the same time in an attempt to obtain an earlier appointment for their patient with spinal pain.

Clients may be on the waitlist for these clinics for some time, in some cases for years, which may result in progression of symptoms and further impact on quality of life, employment, and psychosocial welfare during the waiting period. Earlier access to conservative management and education whilst waiting for specialist medical services would be of benefit to people living with spinal pain in WA.

There has been some work to streamline these processes by the WA Health Reform Implementation Taskforce (HRIT), such as development of Clinical Priority Access Criteria (CPAC) framework and reform of the referral process.

3.1.4 Pharmacy

Retail pharmacists are widely recognised as operating at the junction of self care and primary care and have the potential to contribute to both appropriate referral of patients into the health care system and to longitudinal support of pharmacotherapy regimens. Demand for low cost supports, medical aids and other non-drug products often leads self care seekers to pharmacies.

Optimising medication assistance for patients on long term pharmacotherapies relies on adequate information exchange between care providers. Consumers presenting for repeat over the counter analgesic supplies will report they have consulted their Doctor who recommended the treatment they are seeking. Whether the consult has been recent, or has ever happened, is sometimes difficult to determine. This can lead to sub-optimal or inappropriate therapy, analgesic overuse and subsequent hyperalgesia and/or iatrogenesis. Consumers prescribed long term pharmacotherapies typically seek advice on efficacy, adverse effect profile, and monitoring of the medication from their pharmacist.

Given there is no formal referral structure between pharmacists and primary and secondary care physicians and allied health workers, referral of patients presenting with back pain relies largely on discussions to motivate and educate consumers in an effort to influence their health seeking behaviour.

The opportunity to both provide ongoing compliance and medication advice, appropriate self management education, and referral of at-risk patients would be improved by Pharmacists having access to more objective information about the



consumer's medical history and current situation, to ensure discussions are held in light of relevant facts.

3.1.5 Multidisciplinary Allied Health Services - Public System

Tertiary public hospital allied health services tend to be focussed on inpatient care but do provide limited outpatient services in their respective "catchment areas". There is limited to little access for general practitioner referral into the outpatient service.

Referrals for multidisciplinary services for people with spinal pain can be made to secondary hospitals/sites and some tertiary sites depending on entry criteria for the service. Secondary services are located at Bentley, Swan Districts, Joondalup, Kwinana, Armadale, Rockingham, Mandurah, Lockridge and Osborne Park. Each site may have different admission criteria, waitlist times, triage systems, service availability, management structure and resources. It is not uncommon for clients to be on a waitlist for over 6 months and up to 12 months depending on the triage pathway of the client and service resources available.

Secondary health services also provide a broad range of other outpatient services including: ambulatory care (outpatient) appointments for post-inpatient episodes, post surgical rehabilitation, and general ambulatory care services. The nett result is that people requiring immediate intervention are often on a waitlist. Those suffering chronic spinal pain may be triaged as a low priority in the currently under resourced ambulatory care services.

3.1.6 Multidisciplinary Allied Health Services - Private System

Access to private Allied Health (AH) Services has improved through recent Medicare funding introduced in 2007, (Enhanced Primary Care {EPC}). There is provision via referral from a GP, for a consumer to receive a maximum/total of five interventions a year from a range of AH professionals. The Allied Health service must be recommended in the person's EPC plan as part of the management of the condition.

General Practitioners can refer to a range of professionals including a Chiropractor, Dietitian, Mental Health Worker, Occupational Therapist, Osteopath, Physiotherapist, Podiatrist, Clinical Psychologist, or Exercise Physiologist - in any configuration up to the maximum/total of five visits in a 12 month period.

Access to these services relies on the GP completing a comprehensive referral and/or the client's knowledge of these options in order to request it. The providers must have a valid Medicare Australia provider number. There is increasing utilization of chiropractic services within the EPC program by about 80% per year over the past two years.

According to the Australian Bureau of Statistics National Health Survey 2004 -2005 of those of those who consulted health professionals other than general medical practitioners 29% consulted a chemist, 16% (436.1k respondents) consulted physiotherapist and 16% (432.6k respondents) consulted a chiropractor.

3.1.7 Emergency Department

In many cases, people with spinal pain self refer to an Emergency Department (ED). From ED, a person with spinal pain may be referred to a medical outpatient clinic or referred back to their GP. People who require admission through an ED presentation may have had an episode of spinal pain that could have been prevented, or better managed in the community. The person may have presented to ED after attempting unsuccessfully to source treatment in the community.

**Consumer Comment:**

Being 'treated like a junkie' is deeply offensive to people who have pain that they expect to be treated for in the health system.

3.1.8 Hospital Admission

If a person with spinal pain is admitted to hospital from the Emergency Department, they could be allocated to a range of medical teams varying from General Medicine to Aged Care. Depending on which team the patient is admitted under, they may experience a longer length of inpatient stay as the spinal condition may fall outside the primary clinical interest of the admitting physician, resulting in the patient being managed on an outlying ward.

In Western Australia, the overwhelming majority of lumbar spinal operations are performed in metropolitan hospitals by either neurosurgeons or spinal orthopaedic surgeons. Under the current 'dual' system of health care, patients with medical insurance coverage may elect to undergo surgery in private hospitals while the remainder are treated in public teaching hospitals. Currently, public waitlists for spinal surgery are substantial and surgeons have a constant need to triage patients.

If the client is admitted as an inpatient to a private hospital, costs are covered by private insurance although gap payments are often required for hospital accommodation, procedures or equipment.

This can add to the costs of health care for people with spinal pain, unless related to a work injury where costs are covered by the employer under Occupational Health and Safety legislation. These are important considerations in light of lost work days and income related to spinal pain.

3.1.9 Community Based Programs & Services

People with spinal pain can seek help and support from many community based organisations and services such as those provided by private domiciliary nursing (eg Silver Chain) and allied health professionals (e.g. group classes, physiotherapy, chemists, chiropractors and podiatrists).

Consumers may also seek assistance via non-profit organisations such as the Independent Living Centre (ILC) for information on assistive equipment, the Arthritis Foundation of WA (AFWA) for group exercise, hydrotherapy programs, and self management education programs, and Carers Australia WA.

Access to services such as the Community Physiotherapy Services (CPS) is available across the metropolitan area however service provision and access is generally targeted to the over 65 age group. There has been limited growth in these services to meet demand and access is not consistent across the metropolitan area and very minimal in country areas. A new initiative called "Back to Activity" has been trialled through Community Physiotherapy Services (see under Horizon Scanning).



4. Major Gaps in Current Services for Spinal Pain

This section provides an overview of gaps in current services for people living with spinal pain in WA, across private and public sectors.

4.1 Lack of Community Awareness re Spinal Pain

There is a need to increase community and health provider awareness about the importance of healthy environments that reduce risk factors and support protective behaviours for prevention of spinal pain by a public media campaign, like programs conducted in NSW and Victoria.¹³ Information on how to reduce the risk of developing back pain should be widely available to consumer and health care providers.

4.2 Limited Education and Adherence to Management Guidelines for Spinal Pain

Currently there is a lack of GP and allied health education in WA in regard to an evidence based approach to the assessment, management and prevention of spinal pain, specifically Low Back Pain.

For other types of spinal pain (eg cervical and thoracic spinal pain), there is also limited clinical consensus and management guidelines for GPs and health practitioners in WA.

4.3 Limited Access to Timely Specialist Multidisciplinary Assessment and Holistic Patient-Centred Management

It is essential to ensure people living with spinal pain have timely access to health professionals, who can undertake a biopsychosocial assessment. Referral to a psychologist, counsellor or social worker may be appropriate as well as information on local and national support groups for people living with spinal pain.

As stated above, there is the ability for GPs to refer clients to multidisciplinary health professionals utilising the Enhanced Primary Care initiative funded by Medicare, however uptake is variable.

A minority of people presenting to hospital either as inpatients or to specialist out patient services (approx 5-10% of all back pain referrals) might benefit from surgery. For these patients there should be a convenient and responsive specialist spinal surgery service, including comprehensive post-operative rehabilitation.

Patients should be supported in preparing for and recovering from surgery. This should include pre-operative assessment and discharge planning involving relevant healthcare and other related follow-up including vocational support etc. For individuals who don't require surgery, early review by a multidisciplinary team either in the emergency department or ward is required to optimise outcome.

4.4 Shortage of Medical, Nursing and Allied Health Workforce

There are GP shortages and access issues in some areas, in particular rural, remote and some metropolitan areas. The Royal Australian College of General Practitioners³⁵ has recently highlighted that general practice is in the midst of a workforce crisis with a well documented shortage of general practitioners and other professionals (such as practice nurses) integral to general practice.



There is also a shortage of other health practitioners, such as allied health and nursing, across all sectors.

4.5 Lack of Communication and Integrated Care Pathways between Health Sectors

General Practitioners and multidisciplinary teams need to work as an integrated whole to achieve best practice in spinal care, however there is no uniform approach to the triage and treatment of spinal pain patients in WA.

Currently, referral to specialist medical and multidisciplinary services for clients with ongoing persistent pain involves significant time delays. Communication between GP's and other health care providers across State and Commonwealth sectors is lacking, as there is no integrated care pathway to facilitate timely care or shared information across the health sectors.

The ability for direct referral to specialists in the neuromusculoskeletal field by appropriately qualified manual therapists (such as chiropractors and specialist physiotherapists) should be considered in the future model of care. This would streamline the system significantly.

4.6 Lack of Community Based Services for Spinal Pain

There is limited access for services such as pain management programs, chronic disease management programs, self management courses and community programs that target spinal pain which GPs can refer to. Delays in accessing appropriate services increases the probability of a chronic condition and will impact on other aspects of the person's life, such as employment and relationships.

There are currently no dedicated spinal pain programs being regularly provided by the Chronic Disease Management Teams under Ambulatory Care, or Community Physiotherapy Services (eg. hydrotherapy) although a "Back to Activity" program was recently trialled via Community Physiotherapy Services (see 6.2 Program Initiatives).

4.7 Lack of Self Management Resources and Education for Spinal Pain

In a recent gap analysis undertaken by The Royal Australian College of General Practitioners (2006³⁵), it was noted that patient self-management strategies for spinal pain, whilst still in their infancy have been found to be effective in different groups, including chronic back pain. Promotion of these programs in a non-institutional setting, such as community venues, closer to home with flexible delivery (weekend and evening programs) would be ideal.

The availability to provide self management education and exercise courses, such as pain management programs currently provided at tertiary sites, should be available in areas of need, such as outer metropolitan and country areas.

4.8 Area of Unmet Need - Spinal Pain and Mental Health Disorders

Diagnosis of spinal pain for people with mental health disorders can be difficult due to the general neglect of the physical needs of patients in a psychiatric setting, related to the difficulty of dealing with the symptoms of the mental disorders.³⁶

This is compounded by the reluctance of people with mental disorders to discuss their physical complaints or the propensity to express their complaints in a psychotic way. This occurs especially in patients with Schizophrenia who have also been reported to



have higher thresholds of pain.³⁷ In addition mental health services are often provided by independent and separate services.

There is a strong possibility that a physical illness in someone suffering from a mental disorder will not be diagnosed or prioritized.³⁶ This can occur even when the physical illness is either causing or exacerbating the mental disorder.

4.9 Lack of Coordination and Integration with Occupational Health and Safety Sectors

In Western Australia, if the spinal pain has resulted from a workplace injury it is funded by third party insurance. In WA, no formal statewide mechanism has been developed to coordinate and integrate occupational health services available to workers who have sustained spinal (or any) injury in the course of their employment.³⁸

Each claim for compensation is determined by the relevant insurance company, which then funds particular treatment(s) that it considers to be “reasonable”. Such a fragmented approach has been shown elsewhere to have major adverse effects on both the quality of services and health outcomes for recipients of Workers’ Compensation.³⁹

The Manga Report⁴⁰ from Canada reports that since low-back pain is of such significant concern to workers’ compensation, more constructive relationships between chiropractors, physicians, physiotherapists, Board staff and consultants should be promoted to assess policy, procedures and treatment of workers with back injuries. This should be on an interdisciplinary basis with other professional, technical and managerial staff to facilitate an integrated approach to management of injured workers, leading to very significant reductions in direct and indirect costs⁴⁰.

4.10 Gaps in Clinical Data and Data Management

Although the majority of the workload in spinal pain is being undertaken in an outpatient/ambulatory setting, there is a lack of capture of any meaningful information in this setting. Data management in this ambulatory setting would be of major importance especially in relation to diagnostic categories, drug therapy/prescribing information, and other clinical co-morbidities.

The development of a database aids in the development of clinical trials by facilitating patient identification and recruitment, improves patient management through audits, for instance in monitoring drug treatment, and rationalization of services. Services could be improved by identifying idiosyncratic frequencies of patient recall.

Ideally, a single IT system linked to all centres in WA would be preferable. Such information would also be of immense value to hospital administrators in relation to numeric data, patterns and trends of spinal pain and would assist in hospital planning. There would be an important secondary benefit in terms of the huge potential for clinical research in spinal pain.



5. Future Model of Care

5.1 Overview

The future Spinal Pain Model of Care is based on the discussion and evidence presented in the early part of this document. This section sets out the key elements of a future model of care for the management of spinal pain across Western Australia. The model focuses on the following areas:

- Risk reduction
- Best practice
- Self-management
- Service improvement
- Access to multidisciplinary treatment
- Workforce capacity

A key factor to successful outcomes is to ensure the broad endorsement of consistent treatment approaches across all disciplines. Delivery of consistent messages from clinicians of different disciplines and in different health sectors presents a real barrier to the best practice for spinal care.

To date there has been no general targeted education campaign for spinal care in WA, unlike other states. Many people still believe that bed rest is the best way for them to manage an episode of back pain. Depending on the professional education, experience and beliefs of the health professional, some health service providers also continue to reinforce this incorrect message.⁴¹

There is an opportunity through the Health Network processes to encourage educational institutes to align their taught curricula to include agreed key spinal care messages, which will involve both community self-management along with discipline-specific care based on best practice.⁴² This strategy is critically important as formative undergraduate education imprints lasting concepts about future clinical management, despite the rhetoric of continuing professional education.

When spinal pain is ongoing, best practice recommends that the person be able to access services that offer early assessment and management which is evidence based and identifies warning signs of serious disease. Where these warning signs are present, practitioners should be able to refer to specialist assessment and treatment without delay.

5.2 Risk Reduction

Information should be widely available on how to reduce the risk of developing back pain, and the most effective methods for managing the pain. Primary prevention strategies that increase community and health provider awareness about the importance of healthy environments should be strengthened. Lifestyle choices, such as maintaining regular physical activity levels, helps to keep people mobile. Healthy eating carries benefits in terms of generalised health, and the prevention of obesity reduces strain on joints.



Protective behaviours for the prevention of spinal pain and the best strategies for coping with or managing spinal pain should be publicised by a targeted mass media campaign (using television, print media, internet and radio) aimed at changing the broader community's beliefs about spinal pain and encouraging self-management to avoid over-medicalisation.

A key factor to the successful outcomes of such a campaign is to ensure the broad endorsement of the messages by all disciplines. Delivery of consistent messages from clinicians of different disciplines across different sectors is a real enabler to best practice spinal care.

Of concern is the current evidence that positive outcomes tend to favour better educated, health conscious sections of the community through 'preaching to the converted' and social inequalities may persist despite preventive health promotion.⁴³

5.3 Best Practice Guidelines - Management of Spinal Pain

The future model of care aims to promote best practice for the management of spinal pain in Western Australia, crossing Commonwealth and State health departments and other sectors. It is recommended that a "network of excellence" for Spinal Care be established in order to develop consistent protocols and integrated pathways between health care providers, agencies and organizations involved in service provision for people living with spinal pain (and their carers).

Best practice guidelines need to be endorsed and customised for Western Australia, and then disseminated across the State to promote consistency across the health continuum for people living with spinal pain. It is important to focus on two areas, as shown below.

5.3.1 Early Detection & Assessment

People with back pain should have prompt access to practitioners who are able to identify warning signs of serious disease. Detection of red flag conditions (Appendix 3) is relatively simple and cost effective yet can be missed. If these conditions are widely recognised and therefore detected, the emphasis for the majority of back pain sufferers can safely be self-management.

Adherence to WA recommendations with regard to investigation of people with back pain using WA Department of Health Diagnostic Imaging Pathways.⁴⁴

5.3.2 Pain Relief

People with back pain should have access to up-to-date practitioners who can provide pain control using current guidelines. As previously discussed adherence to best practice is complex and difficult to achieve.

It is important to encourage educational institutes to align their taught curricula to the key spinal care messages, which includes both community self-management alongside discipline specific care models of best practice. This strategy is critically important as formative undergraduate education imprints lasting concepts about clinical management despite the rhetoric of continuing professional education. Clinicians should provide patients with evidence based information on spinal pain with regard to their expected course, advise patients to remain active, and provide information about effective self-care options for managing spinal pain.

Information technology infrastructure is needed to ensure access to best practice guidelines and to support the provision of integrated delivery of services to people living with spinal pain in WA. This should provide information to health care providers



and consumers. People with spinal pain require access to clear, accurate and consistent information from health professionals.

5.4 Self Management of Spinal Pain

Health services, the voluntary sector and other agencies should provide information, advice and facilities to enable people to self manage episodes of spinal pain in the community, and provide guidance on whether and when to seek medical advice. The chiropractic profession, for example, has long focussed on maintenance and preventative health care programs for more optimal neuromusculoskeletal function.

Ensuring that all people with chronic conditions have a multidisciplinary assessment and management plan to maximize their health and wellbeing will promote consumer self-management across the continuum of health. People need access to information and facilities to assist them to make informed choices about their options, including self-management of their pain, pacing to increase activities, slow and steady weaning from over-reliance on medication.

The most cost effective way to deliver the education component of self-management principles is in groups. Community Physiotherapy and the Chronic Disease Management teams, Ambulatory Care Division, are establishing services which provide community based group treatment for those with chronic diseases. Staff receive specialised education and training for specific disease types. Clients attend for a finite time period or for ongoing treatment dependent on their needs. These programs need replicating and then should be widely advertised into the community.

Self-Management theory and training should be integrated into all relevant undergraduate courses. The current workforce should be encouraged to gain skills in client self-management in all settings.

Australian Better Health Initiative (ABHI)

Spinal pain is ideally suited to self management, particularly chronic spinal pain. It is recommended that spinal pain is included in the ABHI Chronic disease self-management programs currently being developed. ABHI funding should be available for GP divisions.

5.5 Service Improvement

Appropriate management of spinal pain across the continuum of health necessitates the **establishment of integrated care pathways** between General Practice, other primary care providers, secondary and tertiary sectors, and between inter-governmental agencies and departments (which can also cross State and Commonwealth boundaries).

Early triage models for people living with spinal pain should be developed to ensure that “flags” are identified and appropriate action taken to minimize the impact of spinal pain, with the aim of timely referral for multidisciplinary assessment. The UK Musculoskeletal Services Framework⁴⁵ promotes the multidisciplinary team approach providing integrated shared care and a single assessment process.

This framework recommends that Physiotherapists be more accessible in primary care for assessment, diagnosis and treatment of spinal pain and to assist with referral to other health professionals.⁴⁵ Trained as primary care providers, chiropractors are also well positioned to provide initial assessment, diagnosis and treatment for patients with spinal pain and to assist with referral to other practitioners. Numerous studies have demonstrated that low tech, low cost and mechanistic



method of treatment and home care type of management, such as that offered by chiropractors and other allied health practitioners, delivers significant savings in cost and recovery.

This requires further exploration into the **expansion of Enhanced Primary Care items under Medicare** (perhaps along the lines of Mental Health Better Health Outcomes Initiatives) to promote increased access to multi disciplinary services and assessment.

Increased resources at secondary sites are recommended, including access to a full Multidisciplinary Team along with expanded multidisciplinary Ambulatory Care programs which include services for spinal pain, plus greater use of telehealth in rural and remote areas. **Improved referral systems** across and between sectors to enable the Multidisciplinary Team (MDT) to make timely referrals for assessment and provision of services for people living with spinal pain closer to home also need to be developed.

Implementation of the WA Model of Care for Spinal Pain will require collaboration between the WA Country Health Service, Metropolitan Area Health Service planners and the Musculoskeletal Health Network to **redesign service delivery and resources** for management of spinal pain (eg shift from tertiary to secondary, establish triage facilities in country areas, increased use of telehealth services).

Development of an **inter-sectorial government taskforce** including Workcover (WA) & WA Department of Health should be considered to review the current situation, benchmark against other states and make recommendations for improving Western Australia's Workers' Compensation and Occupational Health and Safety systems. This may include possible legislation changes.

An **information technology infrastructure** that supports the provision of integrated delivery of services to people living with spinal pain in WA should be developed. Health care providers and consumers with spinal pain need timely access to information on how to best manage their conditions.

5.6 Workforce Capacity

In order to provide timely coordinated and efficient care for spinal pain across the continuum of health and to fulfill the complex health service requirements of people living with spinal pain, the workforce requires training (or access to training) in the management of spinal pain. Therefore, the future model of care recommends development of tools and systems which facilitate education and training of the workforce, multi-skilling and shared care models.

The core "triage" multidisciplinary team would need to have sufficient training and experience to enable the process to operate effectively. Health professionals would need access to, and the provision of, postgraduate training such as online courses.

Ongoing interprofessional development to support compliance with guidelines and to motivate people to work in these specialty areas should be encouraged.

Alternative models of workforce should be investigated to help meet future demands across all professions. Examples may include use of extended scope practitioners for screening and triage, multi-skilled therapy assistants, and physician assistants.



6. Horizon Scanning

6.1 Future Innovations Regarding Medications

In many clinical pain syndromes, painful sensations are greatly amplified to the extent that normally innocuous sensations, such as light touch or warmth, are perceived as pain. Presently available drugs are ineffective in controlling such pain in most patients, abolishing the pain in only few. Why do they fail? These drugs were developed to target neurons that transmit nociceptive ('pain') information. However, glia (cells that provide structural support for the nerve cells) have been recognized as powerful modulators of "nociception", and could hold the key to the control of clinical pain and present a new target for drug discovery.⁴⁶ Glial modulator drugs may be on the market in the foreseeable future.

6.2 New Program Initiatives

6.2.1 Back to Activity

Two 10 week pilot programs called "Back to Activity" have recently been completed in Armadale and Heathridge. These programs of back education, exercises, goal setting, pacing and relaxation were funded and delivered via Community Physiotherapy Services with the content of the program designed by the physiotherapist and occupational therapist from Sir Charles Gairdner Hospital (SCGH) Pain Management Department. It is hoped that these group programs will be repeated and expanded to offer the courses on a regular basis. This will allow direct GP referrals and should help ease the pressure from secondary hospital physiotherapy departments for people referred primarily for spinal exercise programs. Evaluation of these programs in the WA setting is occurring.

6.2.2 Physiotherapy Triage & Multidisciplinary Assessment

Another innovation to improve long waiting lists for spinal pain assessment at Sir Charles Gairdner Hospital (SCGH) and Royal Perth Hospital (Shenton Park Campus) is a physiotherapy triage program, which aims to help manage the waitlists for surgical review of back pain patients through the use of Physiotherapy screening and assessment. Figures from the SCGH program shows that of 268 patients assessed by the physiotherapist only 19% needed referral to the surgeon. The remaining patients were offered either pain management (14%) or referral to Medicare covered physiotherapy where possible. At Fremantle Hospital and Health Service the triage has focussed on reviewing referrals that have been on an orthopaedic surgical list for spinal pain for over 4 years.

The Pain Management team at Fremantle Hospital & Health Service received a State Health Research Grant to trial a new model of implementing a multidisciplinary assessment, for clients that have been referred to their unit. The introduction of patient triage questionnaires and implementation of Self-Training Educative Pain Sessions (STEPS), an 8 hour pre-clinic inter-professional group sessions program, has helped to eliminate the 2 year waitlist for people with persistent pain at Fremantle hospital.



7. Key Recommendations

1. **Increase knowledge of active pain management strategies for spinal pain in the community.**
 - 1.1 Formulate clear public health messages. Implement a targeted mass media campaign regarding positive outcomes associated with active pain management strategies.
 - 1.2 Direct consultation with consumers to aid development of health delivery to meet their needs.
2. **Develop workforce capacity, through interprofessional education for all relevant health care providers.**
 - 2.1 Establish dedicated resources for training of existing and future anticipated workforce.
 - 2.2 Develop initiatives which increase workforce capacity to provide efficient evidence based best practice for spinal pain across health sectors.
 - 2.3 Encourage integrated interprofessional practice for spinal pain management by assessment of alternative service delivery models. This may include workforce changes (eg. extended scope practitioners, upskilling therapy assistant) and service delivery models (eg pre-clinic patient group education, integrated clinics).
3. **Support initiatives which improve earlier access to positive outcome-based services for spinal pain across the health continuum**
 - 3.1 Improve timely access to multi-disciplinary team assessment and service delivery at secondary and tertiary hospitals (eg. triage by physiotherapists/nurses in Accident and Emergency departments to include early individual patient education).
 - Develop clear referral guidelines and criteria for all spinal pain services across Western Australia.
 - Implement alternative wait list pilot projects.
 - Consider design of alternative service delivery models for example
 - Outreach team from tertiary site to outer metropolitan sites.
 - Collaboration between private organisations, public health system, and other government agencies including the mental health sector.
 - 3.2 Support expansion of ambulatory care services to increase capacity for provision of interdisciplinary care for spinal pain closer to the home, for example
 - Physiotherapy Services, Community and Private
 - Chiropractic Services, Community and Private
 - Community based chronic disease management teams
 - Rehabilitation in the Home, and
 - Telehealth
 - 3.3 Develop integrated care pathways with General Practitioners and other primary care health providers to facilitate early management of Low Back Pain across health sectors.



- 3.4** Foster research to track patients with spinal pain across the health continuum, for example:
- Transition through primary, secondary and tertiary care.
 - Transition from Child and Youth services to Adult care.
 - Through systems of personal injury compensation
 - Rationalisation and integration of services provided in both public and private sectors.

4. Promote best practice for spinal pain management, including integrated care pathways across sectors

- 4.1** Implement ongoing interprofessional education of health professionals and consumers in best practice management of spinal pain
- Develop a network of excellence for spinal care in Western Australia.
 - Expansion of training & conferencing in rural & remote areas using invited interprofessional teams and telehealth support.
 - Encouraging access to, and use of, the WA Department of Health's Diagnostic Imaging Pathways website at www.imagingpathways.health.wa.gov.au
 - Developing an Interactive web portal with current best practice guidelines, online resources, and links to training modules for continuing interprofessional development
- 4.2** Formulate State-wide Clinical Guidelines for Best-Practice Management of Spinal Pain with a planned regular review and updates.
- 4.3** Undertake targeted education of General Practitioners and other primary health care providers with evidence based guidelines and outcome assessment.
- 4.4** Promote ongoing research and training opportunities in relation to best practice evidence based management of spinal pain
- Encourage participation in State Health Research Grants and Healthways projects
 - Establish links with Universities, the Combined Universities Centre for Rural Health (CUCRH), WA GP Divisions, and vocational organisations for undergraduate and post graduate training and research opportunities
 - Target funding for National Health & Medical Research Council (NHMRC) specifically through the new partnerships funding mechanism
 - Support research into risk factors for the prevention of spinal pain across all age groups as this will allow implementation of educative strategies.
 - Support research into the early management of spinal pain to reduce the prevalence of persistent pain and disability.



5. Promote Consumer Self Management across the Continuum of Health

- 5.1** Increase access to spinal pain self management programs in the community.
- 5.2** Target private and community based physiotherapy services to engage the patient in early self-management activities.
- 5.3** Increase capacity of tertiary care facilities to provide early interprofessional care to empower patients through increasing knowledge and active pain management strategies (skills).
- 5.4** Develop partnerships between Non-Governmental Organizations and State and Commonwealth sectors and services, for example
 - Australian Better Health Initiatives in self management
 - Arthritis Foundation of WA, Osteoporosis Australia
- 5.5** Support interprofessional teams in training and research in the area of self management for spinal pain
 - Establish links with universities, vocational training, community and consumer organizations

6. Develop Information and Communication Technology Tools and Support Systems for Management of Spinal Pain

- 6.1** Develop and promote access to information and communication technology which supports the provision of integrated, evidence based delivery of services to people living with spinal pain in Western Australia, for example
 - A web-map of state wide services with information covering 'inclusion/exclusion' criteria, 'how best to access this service' and summary of the spectrum of group programs and individual services.
 - Electronic referral and communication systems across sectors
 - Telehealth development for group education and individual consultations.
 - Interactive Web portal, including access to Diagnostic Imaging Pathways
 - Mobile technology
 - Consider direct patient access to evidence based health information and feedback via a peer-reviewed government accredited web-site.
- 6.2** Develop Information Technology systems to enable tracking of patients with spinal pain across the health continuum (see above 3.4), for example
 - Population Registry with outcome data collection.
 - Consider using web-based interfaces for databases.
 - Develop direct access web-based triage facility
 - Develop secure electronic integrated medical notes



8. A Strategy for Implementation of the Model of Care

The Spinal Care Working Party understands these recommendations require different resource and time allocations for implementation. Given this, a strategy for the phased implementation of recommendations is proposed below:

- **Phase 1:** Achievable within existing resources and current service provision.
- **Phase 2:** Require further planning and development (some interim project support).
- **Phase 3:** Require additional human resources, funding and endorsement (require significant additional recurrent expenditure).

To demonstrate how the proposed recommendations could be implemented over time, they have been grouped under the three phases for consideration, as follows:-

Phase 1: Achievable within existing resources and current service provision.

- Direct consultation with consumers to aid development of health delivery to meet their needs
- Promote ongoing research and training opportunities in relation to best practice evidence based management of spinal pain
- Support interprofessional teams in training and research in the area of self management for spinal pain
- Establish links with universities, vocational training, community and consumer organizations
- Promote ongoing research and training opportunities in relation to best practice evidence based management of spinal pain
- Develop partnerships between Non-Governmental Organizations and State and Commonwealth sectors and services

Phase 2: Require further planning and development (some interim project support).

- Formulate State-wide Clinical Guidelines for Best-Practice Management of Spinal Pain with a planned regular review and updates.
- Implement ongoing interprofessional education of health professionals and consumers in best practice management of spinal pain
- Improve timely access to multi-disciplinary team assessment and service delivery at secondary and tertiary hospitals (eg. triage by physiotherapists/nurses in Accident and Emergency departments to include early individual patient education).
- Encourage integrated interprofessional practice for spinal pain management by assessment of alternative service delivery models. This may include workforce changes (eg. extended scope practitioners, upskilling therapy assistant) and service delivery models (eg pre-clinic patient group education, integrated clinics).
- Develop integrated care pathways with General Practitioners and other primary care health providers to facilitate early management of Low Back Pain across health sectors.
- Undertake targeted education of General Practitioners and other primary health care providers with evidence based guidelines and outcome assessment.



Phase 3: Require additional human resources, funding and endorsement (require significant additional recurrent expenditure)

- Establish dedicated resources for training of existing and future anticipated workforce.
- Formulate clear public health messages. Implement a targeted mass media campaign regarding positive outcomes associated with active pain management strategies.
- Develop initiatives which increase workforce capacity to provide efficient evidence based best practice for spinal pain across health sectors.
- Develop Information Technology systems to enable tracking of patients with spinal pain across the health continuum
- Develop and promote access to information and communication technology which supports the provision of integrated, evidence based delivery of services to people living with spinal pain in Western Australia, for example
- Support expansion of Ambulatory Care services to increase capacity for provision of interdisciplinary care for spinal pain closer to the home



9. Evaluation

After the Spinal Pain Model of Care is endorsed by the State Health Executive Forum, the next step in the process is to have a set of agreed guidelines to assist with implementation. The Models of Care Implementation Review Group has been established with representation from Area Health services, Health Reform Implementation Taskforce, Health Finance and Health Networks, to act as a conduit for facilitating, monitoring and reporting on implementation of models of care.

At this point in time, the working group further considers that a reasonable timeframe for the evidence base supporting this Model of Care to be reviewed would be a minimum of three years, given the horizon scan and current research. As mentioned above, stakeholders involved with implementation, particularly the Area Health Services, would develop local performance indicators for measuring implementation projects related to the model of care. This may be done in collaboration with the Musculoskeletal Health Network and the Neurosciences and the Senses Health Network via the Model of Care Review Implementation Committee.

The development of State-wide Clinical Guidelines for Best-Practice Management of Spinal Pain and further Model Of Care implementation projects (established within 12 months after endorsement of the model by the State Health Executive Forum) aimed at improving access to multi-disciplinary team assessment and service delivery could be key indicators that the model of care is being used as intended, to facilitate improved care and services for people living with spinal pain in Western Australia.

The Spinal Pain Model of Care is a dynamic living strategy and the Musculoskeletal and Neurosciences and Senses Health Networks will play a collaborative and important role in overseeing the implementation of policy developed by members of the health network.



Glossary

ABHI	Australian Better Health Initiative
ABS	Australian Bureau of Statistics
AH	Allied Health
AIHW	Australian Institute of Health and Welfare
AFWA	Arthritis Foundation of WA
CPAC	Clinical Priority Access Criteria
CPS	Community Physiotherapy Services
CUCRH	Combined Universities Centre for Rural Health
DOH	Department of Health
ED	Emergency Department
EPC	Enhanced Primary Care
GP	General Practitioner
HDWA	Health Department of Western Australia
HRIT	WA Health Reform Implementation Taskforce
ILC	Independent Living Centre
IT	Information Technology
MOC	Model of Care
MDT	Multidisciplinary Team
NHMRC	National Health & Medical Research Council
NSAIDS	Non Steroidal Anti Inflammatory Drugs
SCGH	Sir Charles Gairdner Hospital
STEPS	Self-Training Educative Pain Sessions
WHO 2000	World Health Organisation



References

1. Department of Health Western Australia. Strategic intent 2005-2010. Perth: Department of Health Western Australia; 2005.
2. Department of Health Western Australia. An Overview of the Model of Care. Perth: Health Networks Branch, Department of Health Western Australia; 2007.
3. Department of Health Western Australia. WA Health Clinical Services Framework 2005 - 2015. Perth: Department of Health Western Australia; 2005.
4. Australian Institute of Health and Welfare. Arthritis and musculoskeletal conditions in Australia 2005. Canberra: Australian Institute of Health and Welfare; 2005.
5. Siddall PJ, Cousins MJ. Persistent pain as a disease entity: implications for clinical management. *Anesthesia and Analgesia* 2004;99(2):510-20.
6. Bogduk N. What's in a name? The labelling of back pain. *Medical Journal of Australia* 2000;173:400-1.
7. New Zealand Guidelines Group. New Zealand acute low back pain guide. New Zealand; 2004.
8. World Health Organisation. The Bone and Joint Decade. *Acta Orthopaedica* 2000;281.
9. Access Economics. The high price of pain: the economic impact of persistent pain in Australia; 2007.
10. Harkness EF, Macfarlane GJ, Silman AJ, McBeth J. Is musculoskeletal pain more common now than 40 years ago?: two population-based cross-sectional studies. *Rheumatology* 2005;44:890-5.
11. Sambrook PN, Seeman E, Phillips SR, Ebeling PR. Preventing osteoporosis: outcomes of the Australian Fracture Prevention Summit. *Medical Journal of Australia* 2002;176:1-16.
12. Walker BF, Muller R, Grant W. Low back pain in Australian adults: prevalence and associated disability. *Journal of Manipulative Physiological Therapeutics* 2004;27(4):238-44.
13. Buchbinder R, Jolley D, Wyatt M. Breaking the back of back pain. *Medical Journal of Australia* 2001;175(9):456-7.
14. Manladakis N, Gray A. The economic burden of back pain in the UK. *Pain* 2000;84:95-103.
15. Australian Institute of Health and Welfare. Australia's Health 2004. Canberra: Australian Institute of Health and Welfare (AIHW Cat no AUS 44); 2004.
16. Australian Bureau of Statistics. Survey of disability, ageing and carers. In; 2003.
17. Calkins E. The geriatric group. In: Isenberg DA, Madison PJ, Woo P, Klars D, Breedveld FC, eds. *Oxford Textbook of rheumatology*. Oxford: Oxford Medical Publications; 1993:19-29.
18. Wildenhaus KJ. Feeling the economic effects of back pain. *AHIP Coverage* 2004;45(3):78-80, 2, 4.
19. McGuirk B, King W, Govind J, Lowry J, Bogduk N. Safety, efficacy and cost effectiveness of evidence-based guidelines for the management of acute low back pain in primary care. *Spine* 2001;26:2615-22.



20. Airaksinen O, Brox JI, Cedraschi C, et al. European guidelines for the management of chronic nonspecific low back pain. *European Spine Journal* 2006;15(Supp 2):192-300.
21. Gibson JNA, Waddell G. Surgical interventions for lumbar disc prolapse *Spine* 2007;32(16):1735-47.
22. Osterman H, Seitsalo S, Karppinen J, Malmivaara A. Effectiveness of microdiscectomy for lumbar disc herniation: a randomized controlled trial with 2 years of follow-up. *Spine* 2006;31(21):2409-14.
23. Peul WC, van Houwelingen HC, van den Hout WB, et al. Surgery versus prolonged conservative treatment for sciatica. *New England Journal of Medicine* 2007;356(22):2245-56.
24. Boswell MV, Trescot AM, Datta S, et al. Interventional techniques: evidence-based practice guidelines in the management of chronic spinal pain. *Pain Physician* 2007;10:7-111.
25. van Tulder M, Malmivaara A, Hayden J, Koes. B. Statistical significance versus clinical importance: trials on exercise therapy for chronic low back pain as example. *Spine* 2007;32:1785-90.
26. Brennan GP, Fritz JM, Hunter SJ, Thackeray A, Delitto A, Erhard RE. Identifying subgroups of patients with acute/subacute "nonspecific" low back pain: results of a randomized clinical trial. *Spine* 2006;31:623-31.
27. Childs JD, Piva S, Fritz J. Responsiveness of the numeric pain rating scale in patients with low back pain. *Spine* 2005;30(11):1331-4.
28. Fritz J, Delitto A, Erhard R. Comparison of classification-based physical therapy with therapy based on clinical practice guidelines for patients with acute low back pain: a randomized clinical trial. *Spine* 2003; 28(13):1363-71.
29. van Tulder M, Annette Becker A, Bekkering T, et al. European guidelines for the management of acute nonspecific low back pain in primary care. *European Spine Journal* 2006;15(Supp 2):169-91.
30. Waddell G. Health care systems research. *Pain* 2006;124(1-2):7-8.
31. Schers H, Braspenning J, Drijver R, Wensing M, Grol R. Low back pain in general practice: reported management and reasons for not adhering to the guidelines in The Netherlands. *British Journal of General Practice* 2000;50(457):640-4.
32. Schers H, Wensing M, Huijsmans Z, van Tulder M, Grol R. Implementation barriers for general practice guidelines on low back pain: a qualitative study. *Spine* 2001;26(15):348-53.
33. Daykin AR, Richardson B. Physiotherapists' pain beliefs and their influence on the management of patients with chronic low back pain. *Spine* 2004;29(7):783-95.
34. Stevenson K, Lewis M, Hay E. Does physiotherapy management of low back pain change as a result of an evidence-based educational programme? *Journal of Evaluation in Clinical Practice* 2006;12(3):365-75.
35. Royal Australian College of General Practitioners. The RACGP quality framework for Australian General Practice - gap analysis. In; 2006.
36. Lawrence D, Holman CDJ, Jablensky AV. Duty to care: preventable physical illness in people with mental illness Perth: University of Western Australia; 2001.
37. Goldman LS. Medical illness in patients with schizophrenia. *Journal of Clinical Psychiatry* 1999;60 (Supp 21):10-5.



38. Workcover Western Australia. WorkCover Western Australia Authority Annual Report 2006-2007. Perth: Government of Western Australia; 2007.
39. Wickizer TM, Franklin G, Plaeger-Brockway R, Mootz RD. Improving the quality of workers' compensation health care delivery: the Washington State Occupational Health Services Project. *Milbank Quarterly A Journal of Public Health and Health Care Policy* 2001;79(1):5-33.
40. Manga P, Angus D, Papadopoulos C, Swan W. The effectiveness and cost-effectiveness of chiropractic management of low-back pain. Ottawa: Kenilworth Publishing; 1993.
41. Arthritis and Musculoskeletal Alliance. Standards of care for people with back pain. In. London: Arthritis and Musculoskeletal Alliance; 2004
42. Woolf AD, Walsh NE, Akesson K. Global core recommendations for a musculoskeletal undergraduate curriculum. *Annals of the Rheumatic Diseases* 2004;63:517-24.
43. Schneider S, Hauf, Schiltenswolf M. Back care programs for health promotion-representative user profiles and correlates of participation in Germany. *Preventative Medicine* 2005;40:227-38.
44. Department of Health Western Australia. Diagnostic Imaging Pathways - Musculoskeletal/Trauma. In; no date.
45. Department of Health United Kingdom. The musculoskeletal services framework. London UK; 2006
46. Watkins LR, Maier SF. Glia: a novel drug discovery target for clinical pain. *Nature Reviews Drug Discovery* 2003;Dec;2(12):973-85.

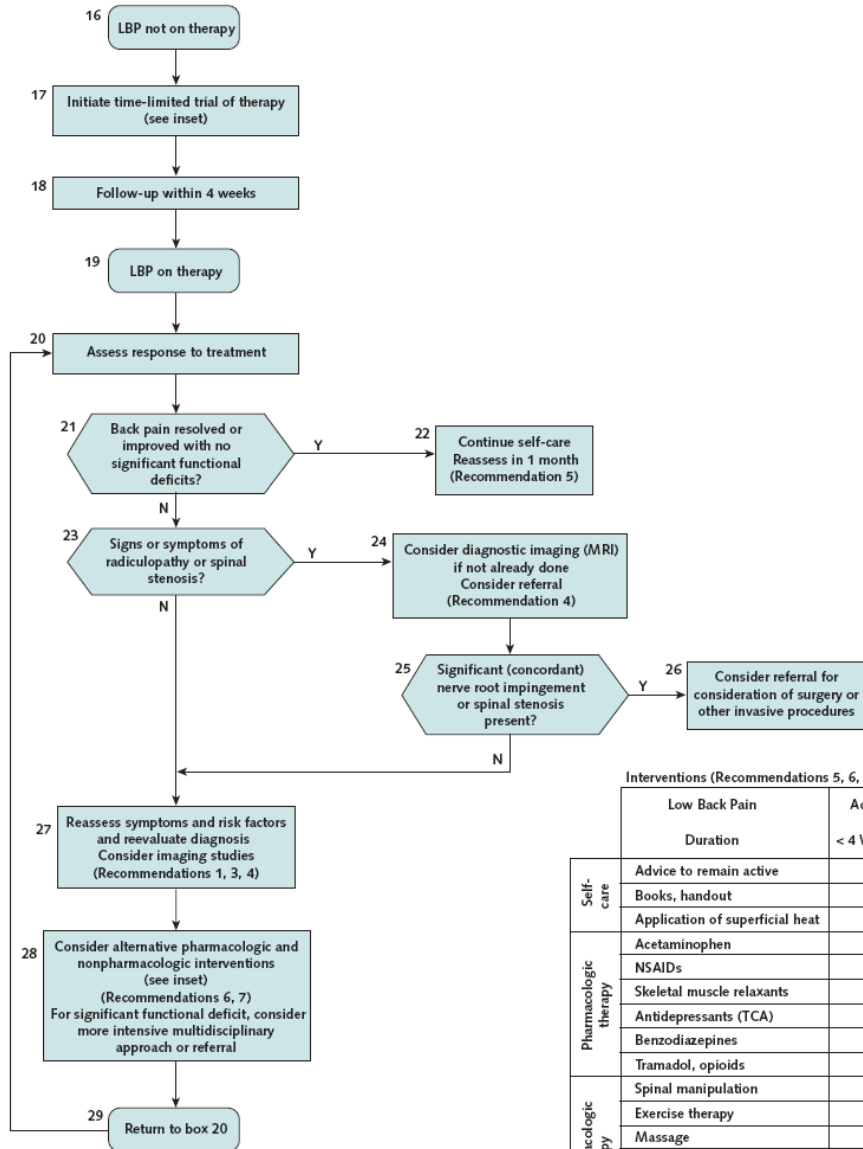


Appendices

Appendix 1: Clinical Guidelines: Diagnosis and Treatment of Low Back Painⁱ

CLINICAL GUIDELINES | Diagnosis and Treatment of Low Back Pain

Figure 2. Management of low back pain (LBP).



Interventions (Recommendations 5, 6, 7)

		Low Back Pain Duration	Acute < 4 Weeks	Subacute or Chronic > 4 Weeks
Self-care	Advice to remain active		•	•
	Books, handout		•	•
	Application of superficial heat		•	
Pharmacologic therapy	Acetaminophen		•	•
	NSAIDs		•	•
	Skeletal muscle relaxants		•	
	Antidepressants (TCA)			•
	Benzodiazepines		•	•
Nonpharmacologic therapy	Tramadol, opioids		•	•
	Spinal manipulation		•	•
	Exercise therapy			•
	Massage			•
	Acupuncture			•
	Yoga			•
	Cognitive-behavioral therapy			•
Progressive relaxation			•	
	Intensive interdisciplinary rehabilitation			•

• Interventions supported by grade B evidence (at least fair-quality evidence of moderate benefit, or small benefit but no significant harms, costs, or burdens). No intervention was supported by grade A evidence (good-quality evidence of substantial benefit).

MRI = magnetic resonance imaging; NSAIDs = nonsteroidal anti-inflammatory drugs; TCA = tricyclic antidepressants.

ⁱ Chou R, Qaseem A, Snow V, Casey D, Cross JT Jr, Shekelle P, et al. Diagnosis and treatment of low back pain: recommendations from the American College of Physicians/American Pain Society. *Annals of Internal Medicine* 2007;147(7):1-38.



Appendix 2: Review of Evidence: Treatment Interventions for Spinal Pain

Acute Non-specific Low Back Pain		
Deemed to be effective	Unknown effectiveness	Ineffective or harmful
Paracetamol (for mild to moderate pain), NSAID's (for more severe pain), skeletal muscle relaxants, education about the problem, advice to stay active, promote self efficacy, spinal manipulation, heat wrap therapy, Multidisciplinary treatment for sub acute LBP,	Antidepressants, antiepileptic drugs, opioids, acupuncture, back schools, behavioural therapy, multidisciplinary treatment (for ALBP), TENS/IFT, LASER, short wave diathermy, massage, traction, lumbar supports, ultrasound, yoga and EMG/biofeedback	Bed rest and specific back exercises
Chronic Non-specific Low Back Pain		
Deemed to be effective	Unknown effectiveness	Ineffective or harmful
tricyclic antidepressants, NSAID's, skeletal muscle relaxants, supervised exercise, intensive multidisciplinary treatment programmes, acupuncture, psychological interventions, spinal manipulation and back schools Fair evidence for efficacy: opioids (for severe/disabling pain), Benzodiazepines	Massage, EMG biofeedback, lumbar supports, LASER, heat and ultrasound	Traction, TENS and short wave diathermy
Nerve root pain		
Deemed to be effective	Unknown effectiveness	Ineffective or harmful
Spinal manipulation and anti-epileptic drugs e.g. Gabapentin	Traction	NSAID's and systemic corticosteroids

Invasive Treatment

Acute Non-Specific Low Back Pain		
Deemed to be effective	Unknown effectiveness	Ineffective or harmful
None of the reviewed documents endorsed invasive treatment in the management of acute non specific lower back pain. There is little high quality evidence on invasive treatment for acute nerve root pain. There are strong clinical grounds for considering surgery in patients with significant, progressive neurological loss or signs of cauda equina involvement		
Chronic Non Specific Low Back Pain		
Deemed to be effective	Unknown effectiveness	Ineffective or harmful
Lumbar fusion (better than unstructured conservative care, but no better than intensive multidisciplinary conservative care)	Facet joint injections, trigger point injections, intradiscal injections, prolotherapy, radiofrequency facet denervation, intradiscal radiofrequency lesioning, intradiscal electrothermal therapy, disc replacement, dynamic fusion	



Appendix 3: Red and Yellow Flags for Assessment of Acute Low Back Pain

Red Flags

<http://www.imagingpathways.health.wa.gov.au/includes/pdf/backpain.pdf>

These features on history and examination may help to increase the yield of lumbar radiography and have been adapted from criteria proposed by others.

- Recent significant trauma or milder trauma if patient is >50.
- Unexplained weight loss.
- Fever.
- Compromised immune system.
- History of cancer.
- Intravenous drug use.
- Osteoporosis or steroid use.
- Suspicion of ankylosing spondylitis.
- Age >70.
- Compensation issues.

There is no convincing evidence that the sensitivity and specificity of these red flags is sufficient to exclude serious underlying disease but they may help to reduce unnecessary use of plain radiography.

Yellow Flags (Psychosocial) - main categoriesⁱⁱ

Clinical assessment of Yellow Flags may identify the risk of long-term disability, distress and work loss due to

Yellow Flags indicate psychosocial barriers to recovery. They include:

- Belief that pain and activity are harmful
- 'Sickness behaviours' (like extended rest)
- Low or negative moods, social withdrawal
- Treatment that does not fit t best practice
- Problems with claim and compensation
- History of back pain, time-off, other claims
- Problems at work, poor job satisfaction
- Heavy work, unsociable hours
- Overprotective family or lack of support

ⁱⁱ New Zealand Guidelines Group. New Zealand Acute Low Back Pain guide. New Zealand; 2004. Accessed June 2008. Available at http://www.nzgg.org.nz/guidelines/0072/acc1038_col.pdf



Delivering a **Healthy WA**

Health Networks Branch
Level 1, 1 Centro Ave
Subiaco
Western Australia 6008