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- Motor weakness
- Sensory level

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Referral

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Go to Persistent low back pain management

Pharmacological information

Key messages for this pathway


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1 Background information

Quick info:

Scope of pathway:
- assessment of simple (non-specific mechanical) low back pain not attributed to a serious pathology in adults within primary care
- appropriate evidence-based intervention based on assessment
- assessment, treatment, and management of sciatica – lumbar radicular pain

Out of scope:
- management of low back pain due to other specific causes eg:
  - cauda equina syndrome
  - ankylosing spondylitis
  - vertebral fracture
- assessment and management of lower back pain caused by non-spinal causes
- low back pain in pregnancy
- cervical and thoracic back pain
- children under age 18 years
- secondary care management
- tertiary care management

Definitions:
- low back pain is defined as tension, soreness and/or stiffness in the area between the bottom of the rib cage and the buttock creases [1]
- simple (non-specific mechanical) low back pain is defined as low back pain that is not attributable to a recognisable, specific pathology
- in clinical practice, there are no sharp distinctions between acute, subacute, and persistent low back pain; however, for research purposes the following definitions have been described:
  - acute – pain present for less than 6 weeks (although some guidelines define this as pain present for less than 4 weeks, and others as less than 3 months)
  - persistent non-specific mechanical (simple) low back pain – pain present for more than 6 weeks (although some guidelines define this as being more than 12 weeks)
  - subacute – has been used to describe pain that is of intermediate duration (typically 6-12 weeks), although many guidelines and literature sources do not refer to subacute chronicity at all
- radicular pain or nerve root pain or radiculopathy is a:
  - shooting, lancinating, or electric shock type of pain radiating to below the knee often in the foot and/or toes in a dermatomal distribution
  - can be associated with muscle weakness, numbness, or tingling and change in reflexes
- neuropathic pain is pain resulting from a lesion or disease of somatosensory nerves. It is associated with altered pain sensation, areas of numbness or burning, and can be continuous or intermittent [2]
- sciatica is unilateral, well-localised pain that approximates the dermatomal distribution of the sciatic nerve and usually radiates to the foot or toes. It goes below the knee to the ankle/dorsum or sole of the foot, usually down the back or outside of the leg

Incidence and prevalence:
- simple low back pain accounts for 85-95% of acute low back – more serious conditions are rare [3,4]
- 70-84% of adults experience simple mechanical low back pain during their lifetime [4]
- back pain is a leading cause of disease burden in Australia

Prognosis:
- 70% of people who take sick leave due to low back pain return to work within 1 week, and 90% within 2 months [4]
- there is a high recurrence rate – between 44-80% within a year [4]
- usually self-limiting but 2-7% will develop persistent non-specific back pain [4]

Risk factors for developing low back pain:
- maintaining the same posture for long periods
- certain movements such as bending, twisting, and lifting
Low Back Pain - assessment

• lifting heavy objects
• vibration of the whole body, eg from driving heavy machinery
• obesity

Complications:
• persistent pain and depression
• disability; functional changes, loss of mobility, weight gain
• loss of employment or family, & divorce
• inappropriate use of strong opioids, and problems with tolerance, dependence & side effects such as hyperalgesia & constipation.

Risk factors for disability or delayed return to work include:
• psychological or behavioural factors (predictors)
• social and economic factors
• occupational factors

Risk factors for chronic non-malignant pain:
• fear avoidance beliefs; avoiding activity because of fear of pain, or of exacerbating injury
• depressed mood
• distress and anxiety
• early disability or decreased function
• high initial pain levels
• increased age
• poor general health status
• non-organic signs
• compensation dependency
• anger
• prior life traumas (including PTSD)

References:

2 Information & resources for clinicians and patients

Quick info:

Videos
Brainman Short Video: Understanding pain - what to do about it in less that five minutes?
Brain man stops his opioids
Ted Talk: Why things hurt
Ted Talk: The mystery of chronic pain

Websites
Australian Pain Management Association Resources, including:
• Persistent pain toolkit
• Learning to live with persistent pain
• pain support groups directory
• help for carers information
Other consumer support organisations
Low Back Pain - assessment
A-Z Frankston-Mornington Peninsula local pathways > Low back and radicular pain > Low back and radicular pain

- Chronic Pain Australia
- Better Health Channel
- Other useful links, Frankston Pain Management Service

Books
- Butler D & Moseley GL (2013) Explain Pain, Noigroup publications
- Nicholas M, Molloy A, Tonkin L, Beeston L, Manage Your Pain 3rd Ed

Associated lifestyle factors
Also consider individualised information on lifestyle factors impacting on pain
- http://moodgym.anu.edu.au
- http://beacon.anu.edu.au
- Quitline
- Narcotics Anonymous
- Alcoholics Anonymous
- Gamblers Anonymous

Standardised Clinician assessment tools:
(used by TAC, Workcover and subacute pain management clinics in public health services)
- The Keele STarT Back tool
- Brief Pain Inventory
- DASS - 21
- PSEQ; Pain Self Efficacy Questionnaire
- PCS; Pain Catastrophising Scale
- Combined EPPOC initial assessment

Clinical Guidelines:
- RACGP pain management guidelines (for residential care facilities)
- RACGP guidelines for opioid use; part 1
- RACGP guidelines for opioid use; part 2
- Opioids in Chronic Non-Malignant pain
- Pain Management Guide
- Pain Australia National Pain Strategy

Procedural Information for Patients:
- Epidural Steroid Injection
- Image guided nerve root sleeve injection
- Percutaneous Discectomy (Nucleoplasty)
- Vertebroplasty

3 Pharmacological information

Quick info:
- Principles of pharmacological intervention for pain management:
  - pharmacology is one method of analgesia - other non-pharmacological methods (eg self-management strategies and physical therapy) should also be used
  - pharmacological approaches have, at best, only moderate effects in reducing pain and disability
  - pharmaceutical therapeutic guidelines indicate that drugs used in chronic non-malignant pain work for one third of patients and at best reduce pain by only 30-50%
• short use ('burst') is more beneficial than prolonged use - avoid dependance on opiates (reassess)
• discuss risks and benefits of potential medications, particularly discuss potential side effects and plan to mitigate these eg NSAID at lowest effective dose for the shortest time.
• agree goals of therapy before prescribing and adjust choice of medications to meet the needs of the individual
• give medication an adequate therapeutic trial and agree this period with the patient before initiating further treatment - some medications may require dose titration and optimisation over several weeks before reaching maximum therapeutic effect
• use as a step-wise approach to management
• functional improvement is the goal rather than reduction in pain scale scores
• if not working, stop the medication
• consider rational polypharmacy of drug class combinations to produce better efficacy with fewer adverse effects (lower doses of individual medications are required)
• opioids:
  • do not use multiple types of opioids
  • limited course - more than two weeks will create withdrawal issues
  • monitor use & compliance
  • monitor side effects
  • There is no good evidence of benefit in long term opioid use.
  • pain specialist review recommended if not effective at <120mg morphine equivalent opioid equivalence chart
• identify and treat, where possible, specific sources of pain and base the initial choice of medication on the severity and type of pain

Principles of managing ongoing analgesic therapy include the 4 ‘A’s:
• analgesia - is the medication still providing useful pain relief?
• adverse effects - what side effects is the patient experiencing and can these be managed more effectively?
• activity – does the patient maintain suitable physical and psychosocial functioning?
• adherence – is the patient taking medication as agreed in the management plan?

References:
RACGP pain management guidelines (for residential care facilities)
RACGP guidelines for opioid use: part 1
RACGP guidelines for opioid use: part 2
Pharmaceutical therapeutic guidelines

Systematic reviews:
Eisenberg E, McNicol E, Carr DB. Opioids for neuropathic pain. Cochrane Database Syst Rev 2006; CD006146

4 Aboriginal and Torres Strait Islander patients

Quick info:
Compared with non-Indigenous Australians, A&TSI people suffer worse health, have a shorter life expectancy and access primary care less often.
A&TSI people have a diverse and varied culture.
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A-Z Frankston-Mornington Peninsula local pathways > Low back and radicular pain > Low back and radicular pain

To improve the quality of health services to A&TSI people, medical practitioners need an understanding of A&TSI health issues and must develop a culturally aware and appropriate service.

5 Key messages for this pathway

Quick info:
Serious pathology is only around 1% in patients with back pain in primary care.
Clinicians should use simple non alarmist language.
It is important to advised or reassure patients that the majority of back pain presentations are not serious.
  • expectation is that they will get better
  • initial approach is to stay active
  • unless red flags or specific serious medical pathology is suspected, diagnostic tests such as X-ray or MRI scan for persistent pain are not appropriate
  • avoid catastrophising

Psychosocial factors:
  • are stronger predictors of outcome than physical examination or severity of pain
  • yellow flags are psychosocial factors that increase the risk of a patient developing/perpetuating:
    • persistent pain
    • long-term disability
    • work loss with lower back pain
  • early screening for yellow flags important:
    • leads to early management to facilitate recovery and reduce long term disability
    • once psychosocial factors are established, they are difficult to undo

6 Clinical Presentation

Quick info:
The information in this care map applies to both a patient with an acute painful episode and one who has persistent non-malignant pain.
The incidence of serious pathology in patients with back pain in primary care is around 1%.
Aims of clinical assessment:
  • exclude red flags – see Red flag node in this pathway
  • identify any neurological deficit requiring urgent specialist management
  • assess functional limitations caused by the pain
  • identify any yellow flags
  • determine clinical management options
Assess and manage the patient using a biopsychosocial approach.
It is important the patient:
  • takes an active role in the pathway
  • draws on their own experience
  • adopts self-management approaches
Unless specific serious medical pathology is suspected, diagnostic tests such as X-ray or MRI scan for acute non-specific pain or persistent pain are not appropriate.
For definitions of pain and types of pain refer to the Background information node.

7 Assess for Red Flags

Quick info:
Low Back Pain - assessment

The incidence of serious pathology in patients with back pain in primary care is around 1%, with vertebral fracture the most common.

Red flags are factors that help to identify potentially serious conditions and the need for further investigation and referral. In isolation, individual factors have weak predictive value, which can lead to unnecessary investigation.

The more red flags, the higher the likelihood of serious pathology.

Red flag pathology may lie outside the lumbar region.

Red flag criteria:

With respect to back pain, presence of \( \geq 1 \) factors that apply to symptoms:

- follows a fall, blow to your back or other injury
- is constant or intense
- worsens during rest or at night
- spreads down one or both legs/arms
- causes weakness, numbness or tingling in one or both legs/arms
- is associated with new bowel or bladder problems
- is accompanied by fever
- is accompanied by unexplained weight loss
- a history of cancer, osteoporosis, steroid use, or drug or alcohol abuse

Adapted from Mayo Clinic symptom checker

10 Biopsychosocial history

Quick info:

**Initial priority** - identify serious pathology

See RED FLAGS! and Suspected serious pathology nodes.

**History:**

Biopsychosocial approach. This focuses on three core elements:

- biological factors
- psychological factors
- social functioning

**Biological:**

- pain:
  - onset of pain, frequency and duration
  - location, radiation - is there leg pain?
  - type and character
  - aggravating & relieving factors
  - baseline for pain and function

- neurological symptoms:
  - sensory, weakness, bladder/bowel dysfunction
  - neuropathic pain suspected, consider screening tool eg pain detect (self reported tool),
  - previous injuries / pre-existing symptoms / response to treatment

- symptoms to suggest pathology is outside of spine, eg dysuria, abdominal pain, claudication

- nerve root pain (will affect explanation and type of analgesia considered):
  - leg pain usually worse than back pain
  - sharp, shooting, neuropathic type pain below knee (L2-3 nerve root pain – remains above the knee, but is rare), often in dermatomal pattern

**Psychosocial:**

- identify trigger for consultation – may not be pain but the problem it’s causing, eg: time off work
- assess demands of patients work, activities of daily living, and recreation
Signs of significant impact on patients life include:
- unable to sleep
- losing time off work
- relationship difficulties
- depression
- disability
- history of mental illness

Patients with chronic non-malignant pain may present with symptoms and signs incongruent with a biomedical explanation; this in its own right cannot be considered as malingering.

**NB: Consider serious pathology during initial risk assessment.**

11 Spinal Cord Pathology - Cauda equina syndrome - Motor weakness - Sensory level

Quick info:

**Cauda equina syndrome:**
- Requires immediate referral to hospital.
- current or imminent compression of the lumbosacral nerve roots resulting in neurogenic bladder and bowel dysfunction
- most common finding is urinary retention (90% sensitive)

Symptoms typically include:
- urinary retention, but a range of urinary symptoms may be present, eg:
  - increased frequency/urge
  - incontinence
  - Note-not all urinary retention is due to cauda equina
  - severe low back pain and bilateral nerve root pain
  - perineal (saddle) anaesthesia
  - loss of anal tone
  - faecal incontinence
  - constipation
  - multilevel bilateral motor deficits

Most people do not have bilateral leg pain – however, most do have leg pain.

**Foot drop and other significant motor weakness in the lower limb:**
- may be due to neurological motor deficit (nerve root compression)
- consider phoning a neurosurgeon or referring to the Emergency Department
- requires urgent investigation as delay may lead to permanent neurological deficit

**Sensory Level** is the most caudal dermatome with normal sensation. Sensory Loss below a spinal cord level may be due to spinal cord pathology such as:
- Infarction; Haemorrhage; Transverse myelitis, HIV, Polio & Syphilis; B12 or Copper deficiency; Decompression Sickness; Radiation therapy; & tumours
- requires rapid evaluation and treatment as delay may lead to permanent neurological damage

12 Other Serious pathology suspected

Quick info:
The incidence of serious pathology in patients with back pain in primary care is around 1%:
- fracture (most common)
- cancer
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- infection
- inflammatory disease
- pathology outside lumbar spine (eg MI, PE, abdominal medical conditions)

Fracture: suspect if:
- history of trauma or osteoporosis
- structural deformity on examination

Cancer:
- most significant risk factor is history of previous cancer (lung, breast, prostate most common)
- consider new onset if the patient:
  - is older than age 55 years (increased risk with age)
  - unexplained weight loss
  - night sweats
  - constant progressive non mechanical pain
  - thoracic pain (2/3rds of spinal metastases are thoracic)

Infection including osteomyelitis & discitis: suspect if:
- history of fever/systematically unwell
- intravenous drug use
- recent infection

Inflammatory disease (Less than 1% of cases in primary care): suspect if:
- younger age
- awakening in the second part of night
- alternating buttock pain
- morning stiffness longer than 30 minutes
- pain improves with exercise

Consider pathology outside the lumbar spine:
- ischaemia, eg myocardial infarction (MI)
- acute abdomen, eg pancreatitis, aortic aneurysm, renal calculi
- pulmonary embolism (PE)
- infection
- metastasis

Patients at particular risk of serious pathology:
- people younger than 20 years or older than 50
- immunocompromised people, including patients on immunosuppressive medications, eg corticosteroids
- even minor trauma in the elderly may need investigation of possible trauma injury

13 Assess for Yellow Flags

Quick info:
Yellow flags are psychosocial factors that are associated with greater risk of a patient developing/perpetuating:
- persistent pain
- long-term disability
- work loss with lower back pain

Management outcome will tend to be poor if these are not assessed and managed appropriately.
Assessing for yellow flags should:
- identify patients at risk
- lead to early management that targets factors that can facilitate recovery and reduce long term disability
Psychosocial factors and emotional distress are strong predictors of outcome in lower back pain. They contribute to a "central maladaptation".

There is emerging evidence for the effectiveness of early interventions, especially those targeting relevant psychosocial factors [7].

Examples of yellow flags:
- negative attitude that back pain is harmful or potentially disabling
- fear avoidance behaviour & reduced activity levels
- expectation that passive rather than active treatment will be of benefit
- tendency to depression, social withdrawal, low morale
- social, work or financial problems
- multiple life stressors
- previous life traumas

Consider early referral to psychologist using mental health plan.

Psychologist listings on NHSD (Frankston, Mornington, Rosebud, Hastings)

References:

14 Investigation of suspected serious pathology

Quick info:
Consider appropriate investigations for people with red flag symptoms or suspected serious pathology:

Blood tests:
- full blood count (FBC)
- erythrocyte sedimentation rate (ESR) >20 is suggestive
- C-reactive protein (CRP)

Xray or MRI:
- Only if fracture, tumour or other serious pathology is suspected.

Further investigation as guided by the suspected pathology is out of the scope of this pathway.

15 Refer to Emergency Department

Quick info:
When referring to ED, phone calls to the admitting officer and referral letters with accurate medication list and copies of test results aid management.

Peninsula Health
Frankston ED consultant
- phone; 9784 7196
16 Physical Examination

Quick info:
The aim of examination is to assess:
- functional limitation
- presence of any neurological abnormalities
- observation of patient’s posture, movement, behaviour

Specific examination of areas indicated by history, eg abdomen.

Back:
- palpation-midline vs paravertebral & lumbar vs sacral tenderness/deformity
- range of movement / painful arc
- gait / mobility (sitting, standing, lying down)

Neuro exam:
- muscle power
- reflexes
- sensation

- straight leg raise (SLR) is positive if limited by leg rather than back pain

Quick guide to back pain with leg pain:
- 90% of symptomatic disc herniations occur at levels L4/5 and L5/S1

Quick neurological assessment for this includes:
- ask patient to squat - knee strength and knee reflex test L4
- ask patient to walk on their heels - great toe and foot dorsiflexion strength test L5
- ask patient to walk on their toes - foot plantar flexion and ankle reflexes test S1
- SLR: reproduction of pain

3 Minute Low Back Examination

17 REFERRAL Neurosurgeons Orthopaedic surgeons

Quick info:
Management of specific causes of back pain is outside the scope of this pathway.
Patients should be referred to the appropriate specialist, as determined by the clinical picture.
Due to the wide range of possible referral options for both private and public practice, this pathway is unable to provide a comprehensive list.

See the Acute Low Back Pain - Management page for management strategies while waiting for patient to see specialist.

Neurosurgeon and orthopaedic surgeon listings from The National Health Services Directory.

Not all neurosurgeons and orthopaedic surgeons perform spinal surgery. The following were known to provide spinal surgery locally at the time this pathway was developed.

Neurosurgeons
- Professor Richard Bittar, Precision Brain, Spine and Pain Centre, level 3/suite1, 24-28 Frankston-Flinders rd, Frankston, ph 1300773247 referral form. Provides a multidisciplinary service
18 Differential diagnosis

Quick info:
Consider the following differential diagnoses

• pathology in an adjacent structure
• malignancy
  • in the kidney
  • in the prostate
  • in the ovaries
  • myeloma
  • metastases
• infection
  • osteomyelitis and discitis
  • lower urinary tract infection (UTI)
  • pyelonephritis or perinephric abscess
  • pelvic inflammatory disease (PID)
  • shingles and post-herpetic neuralgia
  • endocarditis
  • viral syndromes
• other
  • renal calculi
  • hydronephrosis
  • aortic aneurysm
  • pancreatitis
  • endometriosis
  • ovarian cysts
  • dysmenorrhea
• inflammatory disorders
  • ankylosing spondylitis
  • polymyalgia rheumatica
  • coccydynia
• osteoporosis
• osteomalacia
• paget's disease and hyperparathyroidism
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- spondylosis
- spondylolisthesis
- gross scoliosis or kyphosis

NB Common findings such as osteoarthritis or lumbar spondylosis also occur in asymptomatic people and may not be the source of the pain.

19 Compensable patient

Quick info:
Is this an occupational injury?
- if yes, proceed with pathway as per usual, though engage in Work Cover injury management processes

Workcover Victoria
Consider early referral to occupational physiotherapist

Keep in mind that pain management services for compensable clients need to be provided by approved providers of TAC and WCA rehab services
Information for GPs on Workcover Network Pain Management Program
TAC Network Pain Management Program information and list of providers

If your patient’s work-related back pain is impacting on their capacity for work, they may be encouraged to contact their WCA agent to discuss accessing an occupational rehabilitation service

20 Initial investigation back pain

Quick info:
The correlation between radiological abnormality and symptoms is low and unreliable in simple back pain. For 85% of patients who present to primary care with back pain, symptoms cannot be accurately attributed to a specific cause or spinal abnormality.
X-ray and MRI are not appropriate for persistent pain unless specific serious medical pathology is suspected.
Avoiding these tests prevents reinforcing the idea that pain is due to a fixable mechanical cause.
Many people without symptoms show abnormalities on X-ray and MRI.
If the patient is presenting with known chronic non-malignant pain and no new diagnosis is being considered, do not carry on investigating - chronic pain in this context should be seen as a long-term condition.
Investigate if severe or progressive neurological deficits or red flags

21 Acute / subacute pain < 6 weeks

Quick info:
Acute back pain is defined as pain present for less than 6 weeks.
Episodes of acute back pain are common with 70-84% of adults experience non-specific mechanical low back pain during their lifetime.
Simple low back pain accounts for 85-95% of acute low back pain - more serious conditions are rare.
It is usually self-limiting but 2-7% will develop persistent non-specific back pain - 70% of people who take sick leave due to low back pain return to work within 1 week, and 90% within 2 months.
There is a high recurrence rate - between 44-80% within a year.
Risk factors for developing low back pain:
- maintaining the same posture for long periods
- certain movements such as bending, twisting, and lifting
- lifting heavy objects
- vibration of the whole body, e.g. from driving heavy machinery
- obesity (waist measure > 85cm)
22 Persistent pain

Quick info:
Persistent non-specific mechanical low back pain, is pain present for more than 6-12 weeks:

• non-specific mechanical low back pain is defined as low back pain that is not attributable to a recognisable, specific pathology, eg fracture, inflammatory disorder, ankylosing spondylitis, radicular syndrome
• treating chronic back pain as if it were a new episode of acute back pain can result in perpetuation of disability
• if the patient is presenting with known chronic non-malignant pain and no new diagnosis is being considered, do not carry on investigating - chronic pain in this context should be seen as a long-term condition
• patients with chronic non-malignant pain may present with symptoms and signs incongruent with a biomedical explanation; this in its own right cannot be considered as malingering
• most known risk factors for chronic low back pain are psychosocial

Psychosocial risk factors for persistent pain:
• fear avoidance beliefs (avoiding activity due to fear of pain or of causing further injury)
• depressed mood
• distress and anxiety
• early disability or decreased function
• high initial pain levels
• increased age
• poor general health status
• non-organic signs
• compensation dependency

Biopsychosocial history focuses on three core elements:
• biomedical factors
• psychological factors
• social functioning

It is important to understand these three elements in the chronic non-malignant pain assessment. Management outcome will tend to be poor if these three core elements are not assessed and managed appropriately. See Biopsychosocial history node in this pathway.
Overview

This document describes the provenance of the Peninsula Pathways, Low Back Pain pathway.

The Peninsula Pathways Program aims to improve the continuity of patient care between primary, community and hospital care settings in the Frankston-Mornington Peninsula region. Work groups comprising of experienced health professionals (GPs, specialists, nurses, allied health professionals) were established to review and localise pathways.

This pathway has been developed to improve outcomes for patients with low back pain.

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Editorial methodology

This care map has been based on the Metro North Brisbane Medicare Local Low Back Pain pathway and has been developed according to the Map of Medicine editorial methodology. The content of this Map of Medicine care map is based on high quality guidelines and practice-based knowledge provided by contributors with front-line clinical experience (see contributors section of this document). This localised version of the evidence-based, practice informed care map has been consulted by relevant stakeholder representatives.
Back pain

Surgery / Orthopaedics

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Conflicts of interest:
None declared

Disclaimers
It is not the function of the Pathways Program, Frankston-Mornington Peninsula Medicare Local to substitute for the role of the clinician, but to support the clinician in enabling access to know-how and knowledge. Users of the Map of Medicine are therefore urged to use their own professional judgement to ensure that the patient receives the best possible care. Whilst reasonable efforts have been made to ensure the accuracy of the information on this online clinical knowledge resource, we cannot guarantee its correctness and completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.