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Review and assess improvement within 2 weeks from onset of pain

No improvement or deterioration

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1 Background information

Quick info:
Scope:
- assessment, treatment, and management of non-specific mechanical low back pain not attributed to a serious pathology in adults within primary care
- assessment, treatment, and management of sciatica – lumbar radicular pain

Out of scope:
- management of low back pain due to specific causes such as:
  - cauda equina syndrome
  - malignancy
  - infection
  - fracture
- low back pain in pregnancy – see 'Normal pregnancy' care map
- children under age 18 years

Definition:
- 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]
- non-specific mechanical low back pain is defined as low back pain that is not attributable to a recognisable, known, specific pathology, eg:
  - infection
  - tumour
  - osteoporosis
  - fracture
  - structural deformity
  - inflammatory disorder, eg ankylosing spondylitis
  - radicular syndrome
  - cauda equina syndrome
- mechanical low back pain is not a homogenous condition, and there are likely to be subgroups of patients that respond to targeted therapies
- recognising mechanical back pain and therefore excluding inflammatory back pain is important
- 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 low back pain – pain present for more than 6 weeks and up to 12 months (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 tends to be in the distribution of a nerve root [119]:
  - a shooting, lancinating, or electric shock type of pain radiating to below the knee often in the foot and/or toes and approximating a dermatomal distribution
  - may be associated with muscle weakness, numbness, or tingling and change in reflexes
- neuropathic pain is pain that arises as a result of damage to, or dysfunction of, the system that normally signals pain - common features are [2]:
  - altered pain sensation
  - areas of numbness or burning
  - continuous or intermittent pain
- sciatica is unilateral, well-localised pain that approximates to the dermal distribution of the sciatic nerve and usually radiates to the foot or toes [4]:


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Back pain: injections and elective surgery (PLCV)

Local Care Maps - NDCCG > NDCCG PLCV > Back pain: injections and elective surgery (PLCV)

- sciatica pain goes below the knee to the ankle/dorsum or sole of the foot, usually down the back or outside of the leg [3]
- pain in the femoral distribution (L2,3,4) can go down the inner side of the leg below the knee [3]

Incidence and prevalence:
- non-specific low back pain accounts for 85-95% of acute low back pain [5,6] – more serious conditions are rare [6]
- 70-84% of adults experience non-specific mechanical low back pain during their lifetime [6] – prevalence is between 13% and 44% [6]

Prognosis:
- 70% of people who take sick leave due to low back pain return to work within 1 week, and 90% within 2 months [6]
- acute low back pain has a high recurrence rate of between 44-80% within a year [6]
- acute low back pain is usually self-limiting but 2-7% will develop persistent non-specific back pain [6]
- after 1 year, 33% may still experience moderate pain, and 15% may still have severe pain [6]

Risk factors for developing low back pain [6]:
- maintaining the same posture for long periods
- certain movements such as bending, twisting, and lifting
- lifting heavy objects
- vibration of the whole body, eg from driving heavy machinery
- obesity

Risk factors for disability or delayed return to work include [7]:
- psychological or behavioural factors (predictors)
- social and economic factors
- occupational factors

Complications include:
- persistent pain and depression
- disability and loss of employment
- inappropriate use of strong opioids, and problems with dependence

The British Pain Society state [3]:
This pathway represents a consensus opinion based on the best evidence available and practical common sense where evidence is not available. We are aware of several other pathways within the UK and have tried to ensure that these are reflected where possible. We accept that as the pathways are complex, there will always be the potential for pathways to be slightly different. However, the principles of supported self-management, cognitive behavioural therapy, and minimally invasive approaches are first-line and appear to be universal. More complex approaches, including opioids, require the input of specialists in the field (secondary and tertiary care).

References:
[1-10,119]
Please see the care map's Provenance for details.

2 Information resources for patients and carers

Recommended resources for patients and carers, produced by organisations certified by The Information Standard:
- ‘Back and neck pain’ (PDF) from the British Brain & Spine Foundation at http://brainandspine.org.uk
- ‘Back pain’ (URL) from Bupa at http://www.bupa.co.uk
- ‘Back pain: patient perspective articles’ (URL) from the British Brain & Spine Foundation at http://brainandspine.org.uk
- ‘Injections for chronic back pain’ (URL) from Bupa at http://www.bupa.co.uk
- ‘Low back pain: understanding NICE guidance’ (PDF) from the National Institute for Health and Clinical Excellence at http://www.nice.org.uk
- ‘Non-rigid stabilisation techniques for the treatment of low back pain: understanding NICE guidance’ (PDF) from the National Institute for Health and Clinical Excellence at http://www.nice.org.uk
- ‘Non-specific Lower Back Pain in Adults’ (PDF) from Patient UK at http://www.patient.co.uk
Back pain: injections and elective surgery (PLCV)

Local Care Maps - NDCCG > NDCCG PLCV > Back pain: injections and elective surgery (PLCV)

- ‘Percutaneous disc decompression using coblation for lower back pain - information for the public’ (PDF) from the National Institute for Health and Clinical Excellence at http://www.nice.org.uk
- ‘Percutaneous intradiscal electrothermal therapy for low back pain: understanding NICE guidance’ (PDF) from the National Institute for Health and Clinical Excellence at http://www.nice.org.uk
- ‘Prolapsed Disc (Slipped Disc)’ (PDF) from Patient UK at http://www.patient.co.uk

For details on how these resources are identified, please see Map of Medicine’s document on Information Resources for Patients and Carers (URL).

The following resources are recommended by the British Pain Society:

- NHS Direct (URL) – 0845 4647
  - written information from a variety of charities or locally from the pain service
- Healthy Working Wales
- National Exercise Referral Scheme (NERS)
  - Health at Work advice line – this is for small and medium-sized businesses with easy access to professional occupational health telephone advice
- Backcare (URL) provides information sheets and booklets on a whole range of back care related issues:
  - helpline
  - forums
  - local groups
  - information on local and regional resources
- Arthritis Care (URL) provides information sheets on all aspects of arthritis:
  - a helpline
  - forums
  - self-management groups/courses on a local and regional level
- National Osteoporosis Society (URL) provides:
  - information
  - support groups
  - a helpline
- Action on Pain (URL) provides:
  - information
  - a helpline
- Arthritis Research UK (URL) provides:
  - patient information
  - research information
  - advice on medication may also be sought from local community pharmacists
- Pain Concern (URL)
- Understanding and Managing Pain: information for patients (URL) from the British Pain Society
- ‘Mental health foundation podcasts’ (URL)
- ‘Airing Pain’ (URL) is a Radio Programme from Pain Concern (URL) covering all aspects of pain:
  - all programmes can be accessed via the website
  - access to leaflets on chronic pain and drug treatments
  - a helpline
  - forums
- The pain toolkit (URL) for self-management tool for people in chronic pain, also available in Gujarati (URL)
- ‘The Back Book’ [30]
- ‘Sheffield back pain’ (URL)
- ‘NHS Inform’ (URL)
- ‘Back care’ (URL)
- ‘Arthritis research’ (URL)
3 Updates to this care map

Quick info:
Local pathway enhanced by wording from international map: Date of publication: 19-Nov-2012

4 Pharmacological information

Quick info:
Principles of initial pharmacological management for patients:
- Pharmacology is one method of analgesia – other non-pharmacological methods (e.g., self-management strategies, physiotherapy) should also be explored with patients, as an over-reliance upon medication can be misplaced and send the wrong message to patients.
- Strong opioids should not be recommended at all in the non-specialist setting, unless for acute pain of 2 weeks duration.
- Identify and treat, where possible, specific sources of pain, and base the initial choice of medication on the severity and type of pain.
- Agree goals of therapy before prescribing and adjust choice of medications to meet the needs of the individual.
- Discuss risks and benefits of potential medications, particularly potential side effects.
- 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.
- Consider rational polypharmacy – appropriate use of analgesic combinations may produce improved efficacy and fewer adverse effects, as lower doses of individual medication as are required.
- Provide specific guidance on opioid analgesia – see British Pain Society guidelines (URL).

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?

Useful websites:
- UK Medicines Information (URL)
- Royal Pharmaceutical Society of Great Britain (URL)
- UK Clinical Pharmacy Association (URL)
- Primary Care Pharmacists Association (URL)
- PRODIGY (URL)
- British Pain Society (URL)
- Pain Community Centre (URL)

References:
[3,12-23]
Please see the care map's Provenance for details.

5 EVIDENCE ALERT JUNE 2015: NICE suspected cancer guideline updated

Quick info:
NICE has issued an update to its suspected cancer recognition and referral guideline (published June 2015), which could potentially contradict, or render obsolete, the information provided in this pathway.

We are working to update this pathway as soon as possible to align it with the revised NICE guideline, but if you have any questions or comments, please contact us at editorial@mapofmedicine.com.
6  Low back/leg pain - clinical presentation

Quick info:
This care map is intended for acute/persistent spinal pain, including radicular pain [3]:
- if the pain has been persistent for greater than 3-6 months (clinical judgement needed), or is an acute flare of chronic pain, consider using chronic pain care map
- to help distinguish chronic pain from acute it may be helpful to ask if there are ever periods when the patient is completely pain free

References:
[3] Please see the care map's Provenance for details.

7  History and examination

Quick info:
Summary [3]:
- screen for:
  - cauda equina
  - red flags
- establish whether the pain is back- or leg-dominant
- screen risk of persisting pain-related disability

Take a history, trying to identify [3]:
- cauda equina:
  - current or imminent compression of the lumbosacral nerve roots resulting in neurogenic bladder and bowel dysfunction
  - symptoms typically include:
    - severe low back pain and bilateral nerve root pain
    - urinary retention (may include increased frequency/urgency of urine)
    - saddle anaesthesia
    - loss of anal tone
    - faecal incontinence
    - multilevel bilateral motor deficits
- neuropathic pain – consider using a screening tool, such as:
  - S-LANSS questionnaire (self-report version of the Leeds Assessment of Neuropathic Symptoms and Signs pain scale)
  - painDETECT
  - DB4
- nerve root pain:
  - identifying nerve root pain will affect explanation and type of analgesia considered
  - features suggestive of nerve root pain include:
    - 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 sclerodermal pattern (follows direction down anterior, lateral, or posterior aspect of leg) or dermatomal pattern
    - positive straight leg rise (SLR)
    - positive crossed SLR
    - positive slump test
    - signs on motor and sensory nerve testing of leg

References:
[3] Please see the care map's Provenance for details.
8 MEDICAL EMERGENCY - cauda equina

Quick info:
Cauda equina [3]:
- current or imminent compression of the lumbosacral nerve roots resulting in neurogenic bladder and bowel dysfunction
- symptoms typically include:
  - severe low back pain and bilateral nerve root pain
  - urinary retention (may include increased frequency/urge)
  - saddle anaesthesia
  - loss of anal tone
  - faecal incontinence
  - multilevel bilateral motor deficits
- the presentation is a combination of symptoms
- the majority of people do not have bilateral leg pain – most do, however, have leg pain
- a range of urinary symptoms may be present, ranging from increased frequency through to incontinence

References:
[3,111]
Please see the care map's Provenance for details.

9 RED FLAG!

Quick info:
The incidence of serious pathology in patients with back pain in primary care is around 1%, with vertebral fracture the most common [3]:
- cancer [112]:
  - 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 (with increasing suspicion with increasing age)
    - unexplained weight loss
    - constant progressive non mechanical pain
    - thoracic pain (two out of three spinal metastases are in the thoracic region)
- infection, suspect if:
  - history of fever/systematically unwell
  - intravenous drug misuse
  - recent infection
- fracture, suspect if:
  - history of trauma or osteoporosis
  - structural deformity on examination
- 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 (typically longer than 30 minutes)
  - pain improves with exercise

Consider serious pathology in patients at particular risk [3]:
- people younger than age 20 years
- immunocompromised people, including patients on immunosuppressive medications, eg corticosteroids
Individually, many red flag symptoms have weak predictive value due to a high false positive rate, and can lead to a lot of unnecessary investigation. It is the use of weaker red flags in combination that increases the predictive value [3,112]:

• back pain is common in people older than age 55 and therefore is a weak red flag in isolation
• an acute episode of spinal pain in a person older than age 70 years is predictive of osteoporotic collapse
• low back pain affecting activity in a person younger than age 16 years is a strong red flag for cancer, as back pain is less common in this age group
• erythrocyte sedimentation rate (ESR) more than 50mm/h with packed cell volume (PCV) less than 30% is useful for predicting cancer

References:
[3,112]
Please see the care map's Provenance for details.

10 Investigations and management

Quick info:
Investigations should be made by individuals with the skills to organise and interpret them. Refer where necessary [3]. If red flags are present, consider [3]:
• immediate referral to A&E or orthopaedics for suspected cauda equina syndrome, fracture, or infection
• urgent referral to oncology for suspected cancer

NB: Be aware that some red flags have very high false-positive rates and as such have little diagnostic value in primary care settings. Careful clinical judgement to decide whether to investigate further or refer is needed [25].

Consider appropriate investigations for people with red flag symptoms [3,113,115]:

• cancer:
  • blood tests:
    • full blood count (FBC)
    • erythrocyte sedimentation rate (ESR) over 20 is suggestive
    • C-reactive protein (CRP)
    • bone profile
    • prostate-specific antigen (PSA) in men
    • protein electrophoresis (part of myeloma screen)
  • urine:
    • Bence-Jones proteins (part of myeloma screen)
  • limited MRI scan of the whole spine

• infection:
  • blood tests:
    • FBC
    • ESR
    • CRP
  • MRI scan (lumbo/thoracic)

• inflammatory disease:
  • blood tests:
    • FBC
    • ESR
    • CRP
    • HLA-b27
  • MRI scan (lumbo/thoracic and sacrum)
  • X-ray demonstrating sclerosis of sacroiliac joints can be helpful in diagnosing inflammatory disease, but:
    • is less sensitive
    • exposes the patient to radiation
12 Consider differential diagnoses

Quick info:
Consider the following differential diagnoses [3,10]:

- pathology in an adjacent structure
- malignancy:
  - in the kidney (see 'Kidney cancer' care map) or pelvis, eg:
    - prostate – see 'Prostate cancer' care map
    - ovaries – see 'Ovarian cancer' care map
  - myeloma – see 'Myeloma' care map
- metastases
- infection:
  - lower urinary tract infection (UTI) – see 'Lower urinary tract infection (UTI) in females' or 'Lower urinary tract infection (UTI) in males' care maps
  - pyelonephritis or perinephric abscess – see 'Acute pyelonephritis' care map
  - pelvic inflammatory disease (PID) – see 'Pelvic inflammatory disease (PID)' care map
  - shingles and post-herpetic neuralgia – see 'Shingles and postherpetic neuralgia' care map
  - endocarditis – see 'Infective endocarditis' care map
- viral syndromes
- other:
  - renal calculi – see 'Kidney stones' care map
  - hydronephrosis
  - aortic aneurysm
  - pancreatitis – see 'Acute pancreatitis' care map
  - endometriosis – see 'Endometriosis' care map
  - ovarian cysts
  - dysmenorrhoea – see 'Dysmenorrhoea' care map
- inflammatory disorders:
  - ankylosing spondylitis – see 'Seronegative arthritis' care map
  - polymyalgia rheumatica – see 'Polymyalgia rheumatica' care map
  - coccydynia
- osteoporosis – see 'Osteoporosis' care map
13 Advise reactivation, avoiding bed rest

Quick info:
Encourage reactivation [26,116,117]:
• recommend avoiding bed rest
• recommend maintaining regular activity
• discuss work
• gentle exercise can help treat subacute low back pain [115,118]
Address individual patient concerns and expectations – reassurance is important [27,28]:
• use printed and accurate online information [29] – see the 'Information resources for patients and carers' information point for details
• address expectations about investigations and 'quick fix cure'
• legitimise back symptoms, explain related symptoms, discuss likely prognosis
• acknowledge multifactorial nature of back pain
References:
[26-30,115-118]
Please see the care map's Provenance for details.

14 Provide appropriate pain relief

Quick info:
Pain relief can consist of:
• paracetamol [1,115,117]
• non-steroidal anti-inflammatory drugs (NSAIDs) [1,115,117]:
  • co-prescribe a proton-pump inhibitor (PPI) to people older than age 45 years [1]
• weak opioids [1,117]
• muscle relaxants, eg diazepam [31,115,117]
Do not offer:
• selective serotonin reuptake inhibitors (SSRIs) [6]
• anticonvulsants [119]
If radicular pain is prominent, consider additional neuropathic pain treatment in accordance with guidelines, eg [2,3,19,119,127-129]
• amitriptyline
• nortriptyline
• pregabalin
• gabapentin
NB: The use of amitriptyline or nortriptyline for this indication is outside of their marketing authorisations (product licences) in the UK [123].
References:
15  **Self care/management and patient education**

**Quick info:**
Patient education should commence early in the process and certainly at the first assessment [3,11]:

- it should not just be considered as giving patients information in the form of leaflets – the healthcare professionals (HCPs) also need to ask the patient how they best learn in order to improve their experience and involvement in care
- self-care and management underpins all activities within this care map and should be considered alongside each care point
- commissioners should commission structured education and appropriate resources and all HCPs should be able to refer patients to the peer support offered by Third Sector Organisations
- self-management information should be available even before the patient has accessed the service and can then be used as an adjunct to treatment after initial assessment – this is especially important for patients waiting to see specialist HCPs

Other methods of accessing information are available via [3]:
- telephone advice through NHS Direct
- written information from a variety of charities or locally from the pain service
- other organisations and websites – see the 'Information resources for patients and carers' information point for details

Self-care can include heat or cold treatments [115,117]

**References:**
[3,11,115,117]

Please see the care map's Provenance for details.

16  **Review and assess improvement within 2 weeks from onset of pain**

**Quick info:**
Perform an assessment, including improvement or deterioration in [3]:

- pain
- function
- response to analgesics

Address individual patient concerns and expectations – reassurance is important [27,28]:

- use printed and online information [29], see 'Information resources for patients and carers' information point for details
- address expectations about investigations and ‘quick fix cure’
- legitimise back symptoms, explain related symptoms, discuss likely prognosis
- acknowledge multifactorial nature of back pain

**Summary [3]:**
- screen red flags
- check the neurology
- establish whether the pain is back- or leg-dominant
- screen risk of persisting pain-related disability

**References:**
[3,27-30]

Please see the care map's Provenance for details.

19  **Consider referral if there is severe, refractory radicular pain/neurological deficit**

**Quick info:**

**Definitions [3]:**
• radicular pain – a shooting and/or lancinating pain with associated tingling, burning, or numbness in the distribution of a nerve root
• severe radicular pain – radicular pain that is disabling, intrusive, and prevents the patient from doing normal everyday tasks, including going to work
• neurological deficit – sensory and/or motor changes in the affected dermatome/myotome

References:
[1,3]
Please see the care map's Provenance for details.

20 PLCV eligibility criteria for back pain injections and elective surgery

Quick info:
Please read the referral criteria before referring the patient.

Discectomy for lumbar disc prolapse:
• criteria 1, 2 and 3 must all apply; AND
• at least one of criteria 4
  • criteria 1:
    • the patient is 18 years or older
  • criteria 2:
    • the patient has magnetic resonance imaging showing disc herniation (protrusion, extrusion, or sequestered fragment) at a level and side corresponding to the clinical symptoms
  • criteria 3:
    • symptoms persist despite some non-operative treatment for at least 6 to 8 weeks (eg, analgesics, physical therapy etc)
  • criteria 4:
    • the patient has a corresponding neurological deficit (asymmetrical depressed reflex, decreased sensation in a dermatomal distribution, or weakness in a myotomal distribution, altered bowel or bladder function); OR
    • the patient has radicular pain (below the knee for lower lumbar herniations, into the interior thigh for upper lumbar herniations) consistent with the level of spinal involvement; OR
    • there is evidence of nerve-root irritation with a positive nerve-root tension sign (straight leg raise – positive between 30° and 70° or positive femoral tension sign)

Posterior lumbar spinal fusion (Note: more than 2 level posterior lumbar spinal fusion and anterior lumbar spinal fusion are commissioned by NHS England):
• at least one of the following must apply:
  • unequivocal root compression
  • spinal stenosis
  • instability
  • failure of adequate conservative trial of >6 months duration

Spinal epidural injections:
• patient has chronic radicular pain only
• NB: not funded for patients who have non-specific low back pain

Facet joint injections:
• at least one of the following must apply:
  • a diagnostic/screening tool prior to radiofrequency denervation or surgery in order to show probability of benefit
  • as treatment where co-morbidities preclude other interventions
• NB: not funded for patients who have non-specific low back pain

Spinal decompression surgery:
• at least one of the following must apply:
  • spinal stenosis
  • unequivocal root compression

The following additional patient information must apply:
• The patient is willing to undergo a surgical procedure should it be offered.
• I have discussed with the patient the fact they will be referred for a possible procedure but there is no guarantee that a surgical intervention will be the preferred outcome following the consultation with the secondary care specialist.
Provenance certificate
Provenance certificate for this International Map of Medicine pathway for Back pain injection and elective surgery published on 19 November 2012.