**Radicular pain**

**Surgery > Orthopaedics > Spinal pain**

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**Background information**

- Lower limb radicular pain - specialist/multidisciplinary team assessment

**Information resources for patients and carers**

- Cauda equina
  - Refer to emergency department

**Updates to this care map**

- Severe radicular refractory pain/neurological deficit at 2 weeks
  - Consider urgent MRI and image-guided corticosteroid injection

**Pharmacological information**

- Moderate pain not settling
  - Consider MRI

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**Self care/management and patient education**

- Severe radicular pain/neurological deficit at 2 weeks
  - Conduct a biopsychosocial assessment and develop a management plan with the patient

- Consider surgical referral

- Follow individualised stepped management approach as part of an MDT approach

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**Interventional pain therapies**

- Intensive cognitive behavioural therapy (CBT)

---

**Complex medication management**

- High intensity cognitive behavioural therapy-based programmes

---

**Evaluate treatment success**

- Satisfactory outcome
  - Refer back to GP for shared care when appropriate
  - Go to pain - ongoing evaluation pathway

- Poor outcome - refer to specialised services
  - Surgey/repeat surgery
  - Consider spinal cord stimulator

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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
- 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:
  - 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:
  - 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
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- 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

Quick info:
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
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• ‘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)
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- ‘Patient information leaflets’ (URL) from ‘PRODIGY’ (URL)

3 Updates to this care map

Quick info:
Date of publication: 19-Nov-2012
This care map has been drafted using the Map of Medicine editorial methodology (URL) and represents best clinical practice according to the highest quality evidence available, including the following guidelines:
[1,2,5,10,12,13,48,50,53,95,100,110,114-117,120-124]
Further information was provided by the following references, including practice-based knowledge:
Please see the care map's Provenance for additional information on references, accreditations from national clinical bodies, contributors, and the editorial methodology.

4 Pharmacological information

Quick info:
Principles of initial pharmacological management for patients:
- pharmacology is one method of analgesia – other non-pharmacological methods (eg 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 Lower limb radicular pain - specialist/ multidisciplinary team assessment

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Quick info:
A specialist/multidisciplinary team (MDT) assessment looks at depression, medicines management, and barriers to reactivation, which includes:

- reviewing yellow flags – risks for developing and/or maintaining long-term pain and disability [115-117,121]:
  - belief that pain and activity are harmful
  - ‘sickness behaviours’ (like extended rest)
  - low or negative moods, social withdrawal
  - 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

If radicular pain co-exists with low back pain, see 'low back pain - specialist care' for management of low back pain.

References:
[3,115-117,121]
Please see the care map's Provenance for details.

6 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

References:
[3,11,115,117]
Please see the care map's Provenance for details.

7 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 frequency/urge)
  - saddle anaesthesia
  - loss of anal tone
  - faecal incontinence
  - multilevel bilateral motor deficits
  - the presentation is a combination of symptoms

References:
[3,11,115,117]
Please see the care map's Provenance for details.
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- 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 frequency through to incontinence

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

8 Severe radicular refractory pain/neurological deficit at 2 weeks

Quick info:
Definitions [3]:
- radicular pain or nerve root pain tends to be in the distribution of a nerve root [199]:
  - 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
- severe radicular pain – radicular pain that is disabling, intrusive, and prevents the patient from going to work
- neurological deficit – sensory and/or motor changes in the affected dermatome/myotome

References:
[3,199]
Please see the care map's Provenance for details.

9 Moderate pain not settling

Quick info:
Definition [3]:
- neuropathic radicular pain which is affecting quality of life, and is not controlled by medication

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

11 Consider MRI

Quick info:
Consider MRI if:
- radicular pain is present and not controlled by medication at 4-6 weeks [24]
- neurology is progressive and pain uncontrolled [3]

References:
[3,24]
Please see the care map's Provenance for details.

12 Consider urgent MRI and image-guided corticosteroid injection

Quick info:
Investigations should be made by individuals with the skills to organise, interpret, and act on them [3].
Increased frequency of lumbar MRI is associated with higher rates of spine surgery without clear differences in patient outcomes [24,113-115].
The British Pain Society Spinal Pain Working Group consensus opinion is that image-guided epidural steroid injections can be used [2,3,46,50,59,77,86,96-98,122]:
- for selected patients with unresolving, debilitating, acute radicular pain
- to provide pain relief and prevent disability
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NB: The use of corticosteroid preparations for epidural injection is outside of their marketing authorisation (product licence) in the UK [123].

References:
[2,3,23,24,46,50,59,77,86,96-98,113-115,122,123]
Please see the care map's Provenance for details.

13 Consider surgical referral

Quick info:
Consider surgical referral if neurology is progressive and pain uncontrolled, and [3]:
• image-guided steroid injection fails to control pain
• patient declines image-guided steroid injection
• patient prefers surgical treatment

Patients with severe radicular pain at 6 weeks from time of onset are more likely to [126]:
• benefit from early surgery in the longer term
• have less time off work that those whose treatment has been delayed by prolonged conservative management

References:
[3,59,126]
Please see the care map's Provenance for details.

14 Conduct a biopsychosocial assessment and develop a management plan with the patient

Quick info:
Conduct a biopsychosocial assessment and develop an individualised management plan in the context of multidisciplinary care [3].

Perform physical examination [3]:
• exclude serious pathology
• physical and neurological testing for a differential diagnosis of radiating pain and true radiculopathy

Take a subjective history to [3]:
• assess the effect of the radicular pain on the person’s function, quality of life, occupation, mood, sleep, relationships, and leisure activities
• establish the patient’s concerns, expectations, knowledge about their condition and understanding of possible prognoses, elicit fears about inevitable worsening and disability
• obtain a sense of resources on which patient can draw: family, friends, work colleagues, line manager/s, employer – are they supportive or sceptical?
• if appropriate, discuss the impact on their occupation, including short- and long-term ability to perform their job – are any adjustments to their workplace, tasks involved or working hours required to enable work to continue?
• consider co-morbidities and any interaction with the radicular pain
• consider if the pain requires neuropathic medication – ask about pain medication, including doses and frequency, timing, and side effects
• consider positions of comfort and other simple methods to relieve pain such as walking, distraction, heat/ice, and relaxation
• question about the patient’s attitude towards gentle activity

Review ‘yellow flags’ [115-117,121]:
• belief that pain and activity are harmful
• ‘sickness behaviours’ (like extended rest)
• low or negative moods, social withdrawal
• problems with claim and compensation
• history of back pain, time-off, other claims
• problems at work, poor job satisfaction
• heavy work, unsociable hours
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• overprotective family or lack of support

Key aspects of an individual management plan [3]:
• legitimise back symptoms, explain pain and related symptoms, and discuss likely prognosis
• provide effective explanation, advice, and reassurance, and use printed and online information to support messages
• discuss appropriate levels of activity including work (if appropriate); to avoid bed rest; the use of simple self-management strategies to reduce pain
• acknowledge the multifactorial nature of back pain and discuss psychosocial factors that might be contributing to pain
• address expectations, unhelpful influences, beliefs, and behaviours
• discuss sleep hygiene, relaxation, and compliance with pain medication
• actively monitor treatment progress for severe pain impacting normal life and function
• access psychological expertise, when required, to ensure progress
• consider the use of local resources to help support self-management: expert patient programmes, walking groups, etc

References:
[3,115-117,121]
Please see the care map's Provenance for details.

15 Follow individualised stepped management approach as part of an MDT approach

Quick info:
Consider using a decision grid, or similar resource, to help the patient make a choice [59].

General principles of intervention at specialist level should include [3]:
• clear explanations of why pain persists
• support to maximise function, usually through the use of activity management techniques such as pacing, including graded activity increase
• optimisation of pain relief both pharmacological and non-pharmacological
• care should be delivered as part of an overall management plan in conjunction with the patient

All interventions require that patients are selected carefully using the recommended criteria [3].

Review through close multidisciplinary working is recommended, including [3]:
• multidisciplinary biopsychosocial rehabilitation [3]
• a vocational rehabilitation approach can be successful in returning people to employment or to other productive activity [46-49]:
  • treatment programmes that do not address return to work issues are much less effective where re-employment is the desired outcome
  • these treatment programmes require practitioners with appropriate occupational rehabilitation skills
• physical therapy, which can be [3]:
  • group therapy
  • individual therapy

References:
[3,46-49,59,99]
Please see the care map's Provenance for details.

16 Interventional pain therapies

Quick info:
Ensure that a stepped care approach following guidance for neuropathic pain medicines has been followed [2,59].

Consider therapeutic spinal injections for nerve root pain [3]:
• within 8-12 weeks
• earlier if:
  • the patient is not coping
  • the patient’s work is at risk

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Epidural corticosteroid injection [3]:

- Injection of corticosteroid medication for the treatment of radiculopathies can be by the interlaminar or transforaminal epidural routes.
- Transforaminal injections appear to be superior to interlaminar injections in terms of accuracy of placement, and are considered by many to be the most appropriate technique, although other approaches may be considered with appropriate imaging.
- The evidence for efficacy of using selective nerve root blockade for diagnosis to guide surgical decision making is weak.
- The term ‘transforaminal epidural spinal injection’ (TFESI) is synonymous with the terms ‘nerve root injection/block’, ‘dorsal root ganglion block’ and ‘periradicular injection’.

All spinal interventions should be performed under fluoroscopic imaging [3,122]:

- There is a small risk of spinal cord damage.
- There is a small risk of the injection going into a blood vessel accidentally.

Consensus statement from the British Pain Society Pain Pathway Group:

Evidence supports the use of transforaminal epidural injections in patients with unresolved radicular pain [76,96,117].

It appears TFESI is most effective in those patients with contained disc protrusions and without significant nerve root compression [3]:

- They appear to be relatively safe and cost effective, however there is a small risk of permanent neurological damage due to accidental intravascular injection.
- They may represent a viable alternative to surgical intervention in selected patients.

Some specialists would consider image-guided epidural corticosteroid injections for spinal stenosis, normally in patients who are unwilling or unable to have surgery [77].

Some specialists would consider facet joint injections for facet joint inflammation and/or facet joint cysts demonstrated on MRI scan where they are implicated in radicular pain [78].

For persistent radicular pain due to foraminal stenosis, image-guided transforaminal epidural corticosteroid injection can be effective, and may have a surgery-sparing effect [97,98].

Follow recommendations for good practice in the use of epidural injection for the management of pain of spinal origin in adults [50,122].

Some specialists would consider minimally invasive disc interventions for persistent radicular pain in selected cases – ensure special arrangements are in place for consent, audit, or research [100].

Some specialists would consider pulsed radiofrequency (PRF) treatment for radicular neuropathic pain where root ganglion blocks have provided significant transient pain relief [101-103].

NB: The use of corticosteroid preparations for epidural injection is outside of their marketing authorisation (product licence) in the UK [123].

References:

[2,3,50,59,76,77,78,96-98,100-103,117,122,123,130]

Please see the care map's Provenance for details.
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• patients with a spondylolisthesis and stenosis may require fusion
• some patients benefit from distraction procedures

Some specialists would consider minimally invasive disc interventions for persistent radicular pain in selected cases – ensure special arrangements are in place for consent, audit, or research [100].

References:
[3,59,100,105-108]
Please see the care map's Provenance for details.

18 Complex medication management

Quick info:
Complex medication management should be prescribed by specialists appropriately trained and skilled in [3]:
• prescribing
• monitoring
• follow-up

Rational polypharmacy may permit lower doses of medication with improved efficacy and fewer adverse effects:
• strong opioids require careful consent, may cause harm, and should only be prescribed after appropriate consultation and discussion of the risks, including [12]:
  • inappropriate use
  • endocrine abnormalities
• opioids should be used for a trial period, or for as short a time as possible
• neuropathic pain analgesics may have an important role – see ‘Neuropathic pain’ care map for details
• consider strategies to maximise concordance, eg informed choice, help-line access [3]

Principles of managing ongoing analgesic therapy include the 4 ‘A’s [3]:
• 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 psychological functioning?
• Adherence – is the patient taking medication as agreed in the management plan?

Medications should be reviewed to [3]:
• minimise side-effects and harm
• ensure adherence

References:
[3,12,13,15,19,32-35]
Please see the care map's Provenance for details.

19 High intensity cognitive behavioural therapy-based programmes

Quick info:
High-intensity cognitive behavioural therapy (CBT)-based programmes (also known as pain management programmes or combined physiotherapy/psychology programmes) to a maximum of 12 sessions [3,65-70,124]:
• are psychologically-based rehabilitative treatments for people with chronic pain
• are delivered in a group setting by an interdisciplinary team working closely with patients
• reduce the disability and distress caused by chronic pain by teaching physical, psychological, and practical techniques to improve quality of life
• pain relief is not the primary goal, although improvements in pain have been demonstrated

Very high-intensity CBT-based programmes provide several weeks intensive treatment for very disabled patients and may also be effective [3]:
• there is no evidence on minimum intensity, but more intensive programmes provide greater gains [70]
• rehabilitation programmes may require more hours for the same effect [125]

References:
[3,12,13,15,19,32-35]
Medium-intensity programmes [3,65-70,124]:
  - are usually 8-12 sessions in length
  - are delivered to people with sufficient mobility to travel for treatment one or two times per week over 4-6 weeks
There is no specific evidence for multidisciplinary cognitive behavioural therapy in radicular pain, however there is no subgroup analysis suggesting outcomes are worse in this group [3].

Common inclusion criteria [3]:
  - presence of persistent pain causing significant disability and/or distress
  - the patient is able to communicate in the language in which treatment is conducted
  - a trained independent interpreter may facilitate successful participation
  - the patient is willing to participate

Common exclusion criteria [3]:
  - the patient has a limited life expectancy or rapidly deteriorating disease or condition
  - psychosis and severe cognitive impairment are contraindications

There are some obstacles which mean that the person is not usually suitable for PMP until they have been resolved [109]:
  - primary drug or alcohol problems
  - psychological or psychiatric problems which require urgent attention, or which preclude the use of cognitive and behavioural methods
  - severe disability such that the basic requirements of attending treatment exceed the patient’s current capacity – this depends in part on the physical characteristics of the treatment setting and access to it

References:
[3,65-70,109,124,109,125]
Please see the care map's Provenance for details.

20 Evaluate treatment success

Quick info:
Success can be measured in a number of ways. Overall principles include improvements in [3]:
  - reduction of pain
  - improvement in disability
  - reduction in distress due to pain

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

21 Poor outcome - refer to specialised services

Quick info:
Poor outcomes include high levels of [3]:
  - pain
  - distress
  - disability

A specialised pain management centre (PMC) [3]:
  - consists of key professionals in the area of complex pain and pain-associated disability
  - delivers the highest standards of:
    - patient care
    - research
    - audit output
    - teaching and training
  - delivers timely, skilled interventions to:
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- reduce or remove the cause(s) of pain
- enable patients to manage their pain with psychological and behavioural support
- provides patients with persistent disabling pain interventions and support that their local secondary pain service or another tertiary service have not been able to achieve

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

24 Surgery/repeat surgery

Quick info:
Consider repeat spinal surgery in selected cases by appropriately trained staff working in specialised services as part of a multidisciplinary team (MDT) [3].

References:
[3,59]
Please see the care map's Provenance for details.

25 Consider spinal cord stimulator

Quick info:
Spinal cord stimulators are recommended for chronic pain of neuropathic origin [110].

References:
[110]
Please see the care map's Provenance for details.

26 Intensive cognitive behavioural therapy (CBT)

Quick info:
Very high intensity cognitive behavioural therapy (CBT) -based programmes (also known as high-intensity combined physiotherapy/psychology programmes, residential pain management programmes) to a maximum of 24-30 sessions, are often recommended for the management of highly disabled patients [3].

There is no evidence on minimum intensity, but more intensive programmes provide greater gains [70].

References:
[3,70]
Please see the care map's Provenance for details.
Provenance certificate

Overview

This care map has been developed by the British Pain Society based upon quality-assessed evidence and practice-based knowledge from expert clinicians. Please see the Editorial Methodology section of this document for further information.

This care map was last updated on 19 November 2012.

To cite this care map, use the following format:


Accreditations

There are two levels of accreditation available to a care map:

- Accreditation of the clinical content by a relevant professional group
- Accreditation of the editorial methodology used

The clinical content of this care map is accredited by:

The British Pain Society

The editorial methodology used to create this care map is accredited by:

The Chief Knowledge Officer of the NHS

Editorial methodology

This care map has been developed based upon well-reputed secondary evidence: meta-analyses, systematic reviews, and guidelines. Inclusion and exclusion criteria have been applied to systematic reviews and meta-analyses retrieved from the searches to ensure that only high-quality information is selected, with the AGREE instrument deployed to assess the quality of guidelines.
The drafted care map has been developed by individuals with front-line clinical experience (see Contributors section of this document) who have been nominated by the British Pain Society, together with the editorial team at the Map of Medicine. The British Pain Society’s working party members include, amongst others, representatives from patients, primary care, interventionist and non-interventionist pain medicine, psychology, physiotherapy and chiropractic. Academics and those with experience of developing guidelines also support the working groups.

The care map has been reviewed by individuals with front-line clinical experience. Such individuals can nominate further references to be added to a care map; see the evidence summary at the start of the ‘References’ section for details.

Map of Medicine pathways are constantly updated in response to new evidence. Continuous evidence searching means that pathways can be updated rapidly in response to any change in the information landscape. Indexed and grey literature is monitored for new evidence, and feedback is collected from users year-round. The information is triaged so that important changes to the information landscape are incorporated into the pathways through the quarterly publication cycle.

References

The content of this care map is based on:

- high-quality guidelines and policy information [1,2,5,10,12,13,48,50,53,95,100,110,114-117,120-124]
- critically appraised meta-analyses, systematic reviews, and primary literature [6,7,14,15,17-20,22,24,26-29,31-37,39,41-45,49,51,52,55,57,59,60,62,64-76,78-80,82-84,86-92,96-99,101-109,112,118,125,126,128,130]
- safety and prescribing information [123]
- practice-based recommendations [3,4,8,9,11,16,21,25,30,38,40,46,47,54,56,58,61,63,77,81,85,93,94,111,113,119,127,129]

The evidence-based, practice-informed care map has been peer-reviewed by central committees within stakeholder groups.


The classification employed by Map of Medicine is as follows:

[G] guideline
[M] meta-analysis
[S] systematic review
[A] randomised controlled trial
[B] non-randomised prospective study
[C] retrospective study
[Q] cost- or decision-analysis
[P] performance measure or policy document
[E] practice-based information (expert opinion)

Contributors

British Pain Society Executive Committee Members:


Conflicts of interest:

BPS Honorary Treasurer Elect
Chairman of the Pain Patient Pathway Working Executive Group, BPS
Chairman NHS Clinical Reference Group - Specialised Pain Services
UCLH NHS Foundation Trust Pain Management Centre Department Lead
Chairman Taxonomy Committee, Pain of Urogenital Origin (PUGO), Special Interest Group of IASP
Committee member, Pelvic Pain Guidelines Committee, The European Association for Urology. Costs for the EAU covered by The European Association for Urology
Member of Specialist in Pain Medicine (SPIN), charity for international pain medicine network and education exchange
Invited to give lectures with expenses covered. Multiple book chapters and publications.
Partnership – Baranowski and Hearn, private practice

Professor Richard Langford: Consultant in Anaesthesia and Pain Medicine, Barts and The London NHS Trust, London.

Conflicts of interest:

Medical Director and Chair Operations Committee, Heart Centre, William Harvey Research Institute, Barts and the London School of Medicine and Dentistry

Honoraria and travelling expenses for speaking engagements: Boehringer Mannheim, Datex Ohmeda, Grunenthal GmbH, Grunenthal UK, GW Pharmaceuticals, Janssen-Cilag, Novartis, Johnson & Johnson/Ortho-McNeil USA, Pfizer (Searle/Pharmacia), CSL (Australia & NZ), Link, Bristol Myers Squibb, Javelin Pharmaceuticals, Pacira, Purdue (Napp/MundiPharma), Sanofi Pasteur

Funds paid to department as research grants and contract research income from: Astra-Zaneca, Cephalon, Datex Ohmeda, GlaxoSmithKline, Grunenthal GmbH, GW Pharmaceuticals, Janssen-Cilag, Menarini, Napp/Purdue, Newron, Novartis, Novo-Nordisk, Johnson & Johnson/Ortho-McNeil USA, Pain Therapeutics Inc., Pfizer (Searle/Pharmacia), Sanofi-Synthelabo, Skye Pharma, CSL (Australia & NZ), Javelin Pharmaceuticals, Mundipharma

Advisory board/consultancy activities: Astra-Zaneca, GlaxoSmithKline Grunenthal GmbH, GW Pharmaceuticals, Janssen-Cilag, Novartis, Ortho-McNeil USA, Pfizer (Searle/Parke-Davis/Pharmacia), Skye Pharma, Javelin Pharmaceuticals, Boots
Spinal pain
Medicine / Pain management

Dr Martin Johnson: GP (Yorkshire) & RCGP Clinical Champion for Chronic Pain, Huddersfield.

Conflicts of interest:
RCGP UK Clinical Champion for Pain
Hon Senior Lecturer in Community Pain (Cardiff University)
Hon Secretary to British Pain Society
Former Trustee of the Patent's Association & Action on Pain (until early 2012)
Member of Executive Committee of Chronic Pain Policy Coalition
Advisory Board's of Pain Concern & Pain UK
Have performed lectures & attended advisory boards for Lilly, Grunenthal, Pfizer, Napp (& Mundipharma), MSD, Nycomed, Flynn, AstraZeneca

Dr Cathy Price: Clinical Director, Southampton City Clinical Commissioning Group, University of Southampton, Southampton.

Conflicts of interest:
Consultant in Pain Medicine, University of Southampton FT
Clinical Director, Southampton City CCG
Consultant Advisor, National Institute of Health Research
External Examiner Masters in Pain Management on evidence based practice Cardiff University
Executive member chronic pain policy coalition
National Pain Audit Lead British Pain society
Advisory Board Member Janssen 2004 on fentanyl patches in chronic non malignant pain
Advisory capacity to Grunenthal on pain education programme 2009
Advisor National Pain Strategy Australia 2010

British Pain Society Spinal Pain Working Group:

Dr Sanjeeva Gupta: Consultant in Pain Medicine, Bradford Teaching Hospital NHS Foundation Trust, Bradford.

Conflicts of interest:
Chairman of the Spinal Pain Patient Pathway Group, BPS
Educational Meetings Advisor to the Faculty of Pain Medicine of the RCA, London
Past Chair of the IPM SIG of the BPS (till April 2012)
Founder and Past Chair, North England Pain Medicine Group (till May 2012)
Sponsored lecture tour: ASIPP Conference 2011
Sponsored to attend meetings in Europe regarding training in pain medicine procedures
Director – Pain Relief Solutions
Delivered lectures sponsored by drug companies
Editor of Pain Medicine books: Oxford Specialist Hand Book in Pain Medicine; Spinal Interventions in Pain Management;
Interventional Pain Management – A practical approach; Symptom Oriented Pain Management.
Co-director– Leeds Cadaver Course
Faculty for interventional pain medicine cadaver courses conducted by European Chapter of International Spinal Intervention Society, USA

Dr Stephen Ward: Consultant in Pain Medicine, Royal Sussex County Hospital, Brighton.

Conflicts of interest:
Board member – Faculty of Pain Medicine of the Royal College of Anaesthetists
Director – Back@work Ltd.
Shareholdings in Back@work Ltd.
Sponsored lecture tour: ASIPP Conference 2011
Dr Oliver Hart: General Practitioner, Sheffield.

Conflicts of interest:
- GP commissioning lead for MSK, Sheffield
- Speaker fees from Pfizer, Napp, Grunethal and Lilly pharmaceutical companies
- Director of Central Care Sheffield Ltd - primary care provider company
- Elected Council member to BPS

Dr Jonathan Hill: Research Physiotherapist, Keele University, Staffordshire.

Conflicts of interest:
- Council member of the Chartered Society of Physiotherapy
- Advisor to the Arthritis Research UK Patient Publications Committee

Dr Amanda C de C Williams: Reader in Clinical Health Psychology, University College London Hospitals Foundation Trust, London.

Conflicts of interest:
- On several committees of International Association for the Study of Pain, and editorial boards of several pain journals
- Paid lecture/workshops for Janssen, Astellas, Pfizer, and consultancy to Reckitt Benckiser


Conflicts of interest:
- NICE specialist advisor
- UK representative for the European Association of Neurosurgeons training committee
- Member of the Society of British Neurosurgeons
- Member of the AO Spine UK committee
- Vice Chair of the Metastatic Spinal Cord Compression regional group
- Consultancy with numerous spinal surgical devices, Medtronic, Depuy, Synthes, Nuvasive, Stryker Medical
- Advisory committee for Pioneer Surgical
- 2,500 shares in Alliance Surgical as founder member, since resigned

Dr Patrick Hill: Consultant Clinical Psychologist, The Dove Primary Care Centre, Birmingham.

Conflicts of interest:
- None declared

Mrs Ruth Sephton: Consultant MSK Physiotherapist, Knowsley Primary Care Trust, Merseyside.

Conflicts of interest:
- Chartered Society of Physiotherapy – Education Committee Member

Ms Elizabeth Killick: Patient Advocacy.

Conflicts of interest:
- None declared

Ms Christine Hughes: Patient Advocacy.

Conflicts of interest:
- None declared
Spinal Pain

Dr Tony Hammond: Consultant Physician, Kings Hill Medical Centre, Kent.

Conflicts of interest:
Numerous sponsored lectured by pharmaceutical companies including Pfizer, MSD, Roche, BMS, HCB

Dr Manohar Sharma: Consultant in Pain Medicine, The Walton Centre NHS Foundation Trust, Liverpool.

Conflicts of interest:
Treasurer, IPM SIG of BPS
Pain service lead at the Walton Centre, Liverpool
Has delivered lectures often sponsored by drug companies
Has been sponsored to attend meetings in Europe regarding training in pain medicine procedures and advances

Dr Ganesan Baranidharan: Consultant in Pain Medicine, Leeds Teaching Hospitals NHS Trust, Leeds.

Conflicts of interest:
NSUKI council member
Consultancy/advisory position: Astellas, St Jude
Sponsored lecture tours: Pfizer, NAPP, St Jude, Medtronic Arthrocare
Sponsored to attend meetings: St Jude

Dr Joan Hester: Consultant in Pain Medicine, King’s College Hospital NHS Foundation Trust, London.

Conflicts of interest:
Past board member of Faculty of Pain Medicine, Royal College of Anaesthetists
Past president of British Pain Society
Trustee of Specialists in Pain International Network
Trustee, King’s College Hospital Limb Reconstruction Trust
Member of Spinal Taskforce, Department of Health
Honorary President, St Wilfrid’s Hospice, Eastbourne
Honorary President Action-on-Pain
Member of City Chamber Choir, Head of Music, Ripe with Chalvington churches, East Sussex
Sponsored by Grunenthal to attend American Pain Society 2009, World congress on Pain 2010


Conflicts of interest:
NICE specialist advisor
UK representative for the European Association of neurosurgeons training committee
Member of the Society of British Neurosurgeons
Member of the AO Spine UK committee
Vice Chair of Metastatic Spinal Cord Compression regional group
Consultancy with numerous spinal surgical devices, Medtronic, Depuy, Synthes, Nuvasive, Stryker
Medical Advisory Committee for Pioneer Surgical
2,500 shares in Alliance Surgical as founder member, since resigned
Mr John Carvell: Emeritus Consultant Orthopaedic and Spinal Surgeon, Salisbury District Hospital, Wiltshire.

Conflicts of interest:
   Chair Spinal task force at the DH
   Chair Salisbury Independent Hospital Trust (Charitable)
   Member FTGA
   Chair of CRG for complex spinal surgery
   Public governor Salisbury NHS Foundation Trust

Dr Simon Dolin: Consultant in Pain Medicine, Western Sussex Hospitals NHS Trust, Sussex.

Conflicts of interest:
   Director of Fairy Tree Medical Ltd.

Dr Tim Williams: General Practitioner, Sheffield.

Conflicts of interest:
   Honorary lecturer, Cardiff University

Dr Karen Eastman: General Practitioner, The Vale Primary Care Centre, West Sussex.

Conflicts of interest:
   Member of Mid Sussex Clinical Commissioning Group’s Executive Board

Ms Keren Smallwood: Spinal nurse specialist, The Walton Centre NHS Foundation Trust, Liverpool.

Conflicts of interest:
   Conflicts of interest requested

Disclaimer

The British Pain Society

It is not the function of the British Pain Society 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 or completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.

The Chief Knowledge Officer of the NHS

It is not the function of the Chief Knowledge Officer of the NHS 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 or completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.