

# Low back and radicular pain: a pathway for care developed by the British Pain Society

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## Editor's key points

- Chronic spinal pain is common and can be associated with significant disability.
- Despite a lack of high-quality evidence in some areas practical clinical guidelines are needed.
- Best quality available evidence and expert multi-professional opinion have been used in this guideline.
- This guideline may be adapted for different healthcare systems to provide a structured management approach.

**Summary.** These consensus guidelines aim to provide an overview of best practice for managing chronic spinal pain reflecting the heterogeneity of low back pain. Most guidelines have covered only one aspect of spinal care and thus have been divisive and potentially worsened the quality of care. Additionally, some of the evidence base is subjective and of poor quality. The British Pain Society low back pain pathway has reached across all disciplines and involved input from patients. It is recognized, however, that there is an urgent need for further good-quality clinical research in this area to underpin future guidelines. Considerable work is still needed to clarify the evidence; however, foundations have been laid with this pathway. Key features include: risk stratification; clarification of intensity of psychological interventions; a logical progression for the management of sciatica; and decision points for considering structural interventions such as spinal injections and surgery.

**Keywords:** analgesics, opioid; injections, epidural; injections, spinal; low back pain; radiculopathy; sciatica; zygapophysial joint

This article is complementary to the low back and radicular pain pathway available on Map of Medicine<sup>1</sup> and highlights particular areas of practice and discussion points. It is a part of a series of articles which accompany the five British Pain Society (BPS) pathways, the others of which are: the initial assessment and early management of pain;<sup>2</sup> chronic widespread pain, including fibromyalgia;<sup>3</sup> pelvic pain;<sup>4</sup> and neuropathic pain<sup>5</sup> (see <http://bps.mapofmedicine.com/evidence/bps/index.html>). Of all the pathways produced, that of low back pain is probably the one that will evoke the strongest debate: this article seeks to provide a greater understanding of the issues which give evidence to these discussions and the pathway itself.

The number of people suffering with chronic pain in England varies between 14% of the youngest men and 59% of the oldest women (mean 31% men, 37% women).<sup>6</sup> As with many conditions, those in the poorest households are more likely to suffer in both frequency and severity of the complaint. Spinal pain accounts for ~20% of the UK's spending on healthcare; this staggering figure arises when the direct and indirect costs are taken into account.<sup>7</sup> The spending exceeds most other major medical conditions.

## Previous guidelines

In the UK, the National Institute for Health and Clinical Excellence (NICE) has produced guidance limited to the early management (<12 months) of persistent non-specific low back pain without radicular involvement<sup>8</sup> and, before this, there have been widely used guidelines such as those for low back pain by the Royal College of General Practitioners.<sup>9</sup> NICE Clinical Guideline 90 (management of long-term conditions and depression) covers pain<sup>10</sup> and NICE Public Health Guideline 19 (management of long-term sickness and incapacity for work) includes low back pain.<sup>11</sup> This guidance is fragmented and uncoordinated with respect to pain with a high potential for mixed and confusing messages for patients and clinicians. To date, available guidelines focus on many subsets of people, rather than what should be done for the group as a whole who are likely to need skills to manage a life long condition. There has been little use of a lifecycle approach to spinal pain.

Good-quality guidelines that address the needs of the majority and achieve a consensus are very much needed.

NICE adopts a comprehensive and transparent methodology, starting with an open selection process for its guideline development groups. Potential members apply for each defined standard and committees are structured to capture relevant stakeholders. The scope of work is defined by a process open to public comment. After this, NICE researchers, working to criteria set by the development group, select and assess the relevant evidence to produce the final guideline. NICE guidelines are specifically designed for use in NHS England and may therefore have some limitations when applied in different healthcare systems. NICE has considerable resources at its disposal (e.g. statisticians, health economists, project managers, policy experts, and access to the expert clinicians). Scholarly reviews published in journals are often written by a small number of experts in the field and may lack clinical and patient perspectives. In the UK, Royal Colleges, or other professional groups, often provide clarity in areas where there is considerable variation to improve the standards of care that their members and fellows provide. Usually, the skills mix is addressed but the details of how their standards should be measured are limited.

NICE produced a low back pain guideline in 2009 that was felt by some not to be consistent with best practice;<sup>12</sup> the issues have been debated elsewhere.<sup>13</sup> This led to subsequent confusion in commissioning healthcare for patients with back pain. This management methodology was to treat all spinal pain patients as a homogenous group rather than a broader, value-based approach which defines sub-populations who may benefit, and which may well lead to lower healthcare costs overall.<sup>14</sup> Other available NICE guidance covering low back pain from different scopes (CG90,<sup>10</sup> PH19)<sup>11</sup> is also not fully aligned.

## Development of the BPS guidelines

In order to deliver effective care in this complex area, many healthcare professionals need to be involved, something that can be difficult to achieve in some healthcare systems. The problem is compounded by the fact that the teamwork issues exist not only between different professions but also within them. The clinicians involved in managing patients with spinal pain include: doctors (e.g. general practitioners, rheumatologists, pain specialists, orthopaedic surgeons, neurosurgeons, and general physicians); physiotherapists (specialists, generalists, independent practitioners working within a medical team, running groups within the specialty, or with psychologists); nurses (e.g. nurse specialists working within a care pathway, with a spinal surgeon, or within a multidisciplinary pain team); psychologists (working independently, within a multi-professional team, and leading a multi-professional pain management programme); and occupational therapists.

Tribalism in healthcare is well established<sup>15</sup> and is no more evident than in the management of spinal pain. There needs to be organizational and cultural change to bring about the level of cooperation necessary to affect good-quality spinal care. The BPS is a specialist society that aims to improve the management of pain with an emphasis on a multi-professional

approach. It also has a strong patient and public involvement. It is, thus, well positioned to develop the necessary level of consensus to inform a clinical guideline.

The BPS spinal pain pathway guideline committee was a 19 member multidisciplinary group consisting of pain specialists, physiotherapists, psychologists, general practitioners with a special interest in pain medicine, a nurse pain specialist, patient representatives, a spinal surgeon, a neurosurgeon, and a rheumatologist (see Supplementary material, Appendix A). The pathway represents a consensus opinion based on the best available evidence and, where no evidence is available, common sense. It has been scrutinized by the UK Department of Health Spinal Taskforce and many aspects of the guideline were discussed more widely among professionals.

The pathway has been developed in collaboration with the Map of Medicine editorial team. The pathway is based on well reputed secondary evidence, as selected in accordance with the Map of Medicine's editorial methodology for developing care pathways. Practice based knowledge has been added by clinicians nominated by the BPS and by independent reviewers identified by the Map of Medicine editorial team. (For a detailed account of this methodology, see Supplementary material, Appendix B or [www.mapofmedicine.com](http://www.mapofmedicine.com).) Map of Medicine care pathways can be customized to reflect particular healthcare structures and provide comprehensive, evidence-based local guidance, and clinical decision support at the point of care.

The pathway is pragmatic and follows the patient's journey as seen by clinicians. Other pain pathways connect wherever relevant. The assessment and management of radicular pain was included as this condition often goes unnoticed for some time and contributes to significant distress and disability.

## Aims and objectives

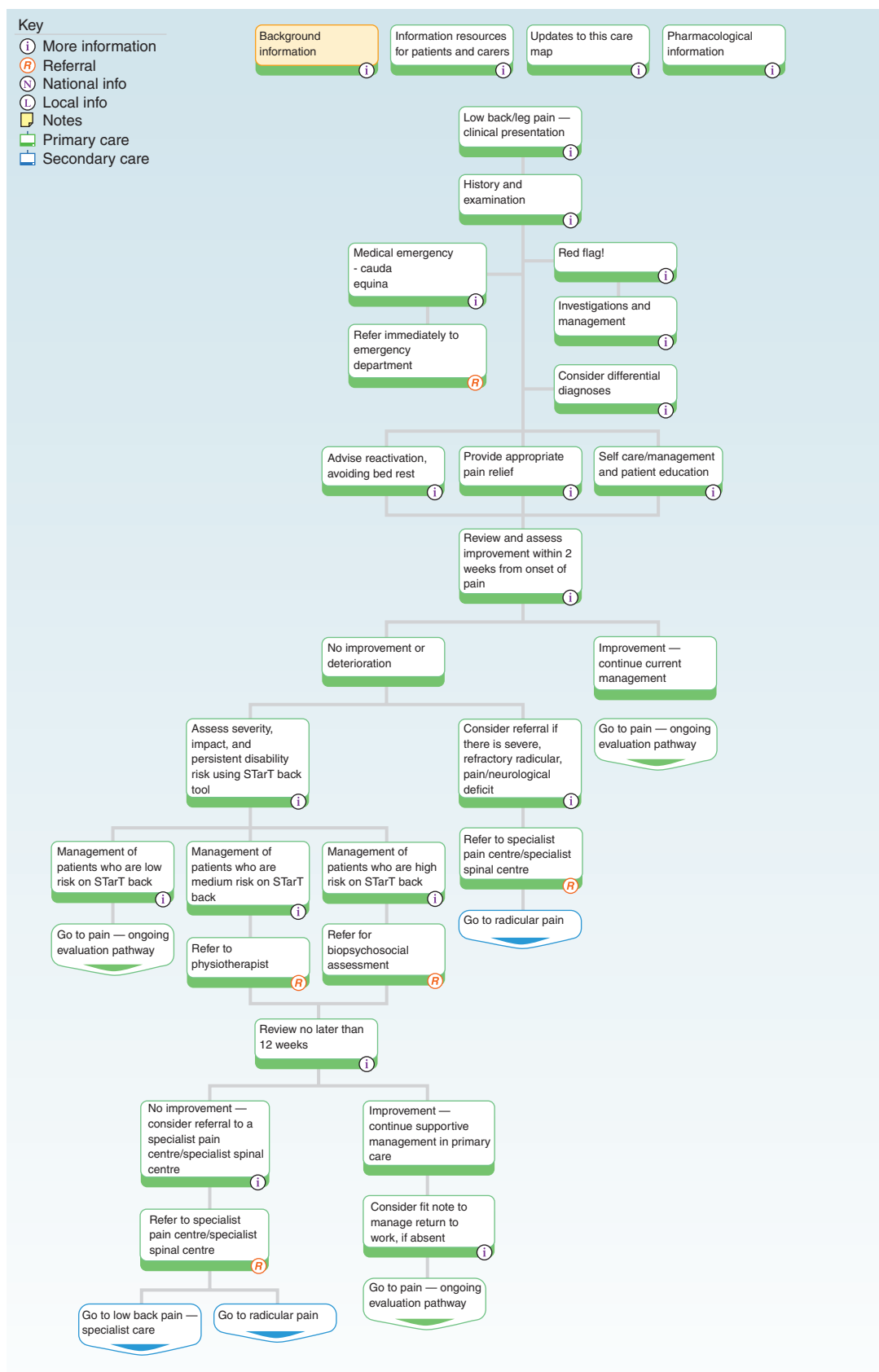
The spinal pain pathway describes the variety of different presentations of low back pain providing a list of its possible causes. Given the high incidence of low back pain, the aim was to focus on primary care management where the greatest volume of work presents. However, there is also guidance on specialist assessment and management. The inclusion of radicular pain allows for early treatment, potentially avoiding surgery. The guidance is in line with a recent systematic review recommending a stepped care approach.<sup>16</sup> The initial management is shown in Figure 1 and specialist management in Figure 2.

## Discussion points

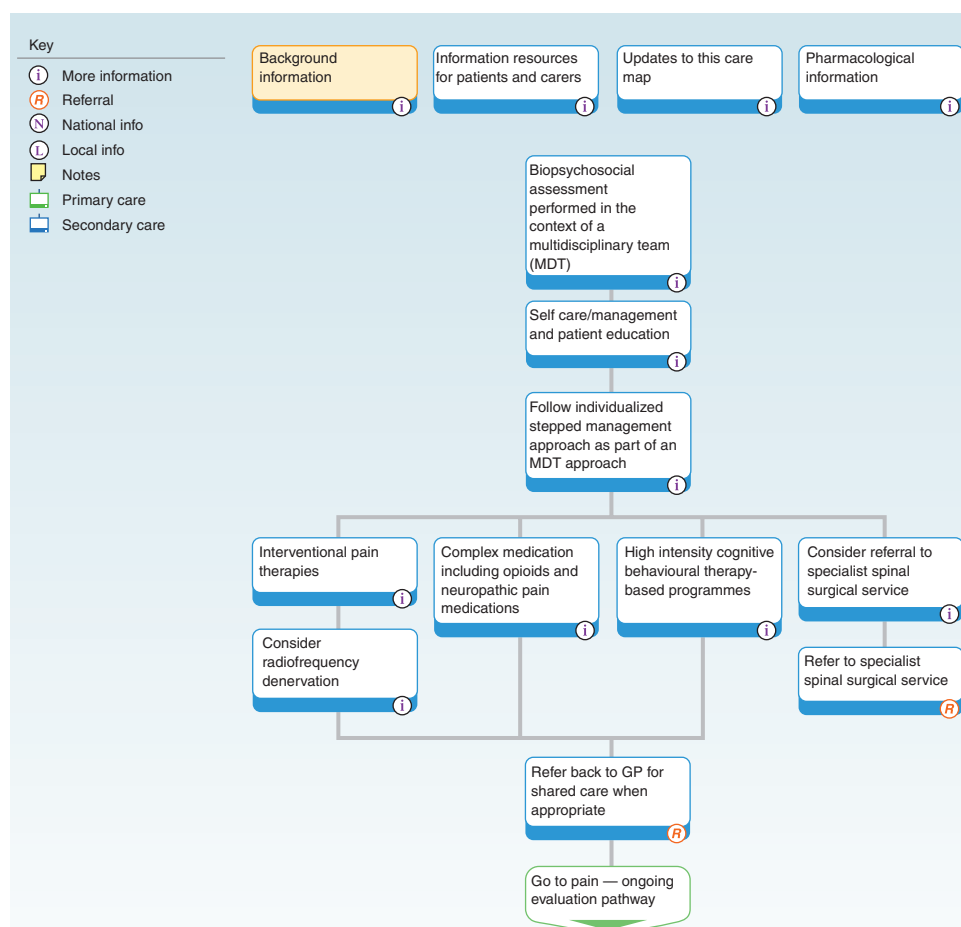
Nine discussion points have been selected as they represent areas of potential controversy.

### Self care

Most patients report that they have only very limited amounts of information on how to self-manage their back pain. The pathway devotes considerable effort in describing where to get self help beyond a simple leaflet. A variety of options are recommended including: links to online audio resources; telephone helplines; paper-based information; on-line



**Fig 1** Low back pain: general management.



**Fig 2** Low back pain: specialist management.

literature resources; approaching specialist healthcare charities working in pain or spinal disease; and other help, for example, from pharmacists and expert patient programmes.

Signposting to advice is often not enough, as back pain has such a significant impact on work and lifestyle. Direct support, reinforcement, and frequent contact are usually needed from primary care.

### Stratified care

There was consensus that one of the current approaches—physical therapy for all—is not working for people with low back pain. The initial publication of the Royal College of General Practitioner guidelines recommended staying active rather than resting with back pain and this represented a sea-shift in professional advice. The BPS guidelines now recommend the early use of the STarT Back tool<sup>17 18</sup> 2 weeks from onset of pain. This tool helps to predict whether someone is at low, medium or high risk for developing persistent disabling pain. This decision support tool helps clinicians to use available resources more appropriately and then make referrals in a

structured manner, driven by evidence. Low-risk patients are encouraged to self-manage their pain, medium-risk patients are referred to physiotherapy and a patient-centred management plan agreed, high-risk patients are referred to physiotherapy with the skills to provide a comprehensive biopsychosocial assessment and a patient-centred management plan.<sup>19</sup> This directs resources to the most needy and can reduce the number of treatments given to low-risk patients.

Stratified care is an innovative approach in the management of people with low back pain. The STarT Back tool identifies those at risk of chronic disability which is a step further than the 'yellow flag' approach upon which it is based. It has been highly researched and its cost-effectiveness is established. It would be best adopted by general practitioners but trials suggest considerable resistance. Further work is needed to overcome the barriers to adoption of the tool in primary care.

### Returning to work

Returning people to work should be an important goal of treatment. The National Pain Audit for Specialist Pain Services found

that work is the area of people's lives most disrupted by pain.<sup>20</sup> The BPS pathway recommends the use of 'fit notes' which are statements of fitness for work; they allow a general practitioner to provide a patient with more information on how a condition affects the ability to work. This is important because the workplace, or managing a return to work, can play an important part in helping people to recover from illness or injury. This may be helped with the support of vocational rehabilitation services in line with best evidence.<sup>11</sup> The integration of such services, with healthcare to support people with low back pain, is uncommon. Further research is needed to determine how best to implement this public health guidance.

### Clarifying the use of psychological therapies

While psychosocial factors are very important in generating disability from back pain, they are not the whole picture. The pathway identifies that there are two levels of psychological therapy for back pain: (i) low intensity, provided by a single professional after a treatment manual;<sup>21 22</sup> and (ii) high intensity multi-professional therapy, delivered by a specialist pain team. Having clear entry and exclusion criteria will help overburdened teams make the best use of an intensive intervention.

While lower intensity psychological therapy has been conclusively demonstrated as cost effective, higher intensity psychological therapies have yet to do this. The problems doing so are significant and were partially explored in the background to the NICE low back pain guidance but the scope of the guideline was too narrow to permit entry of trial data that included a mixed population. If this real-world sample is explored, many people with low back pain who may benefit from a higher intensity treatment also report widespread pain<sup>23</sup> and studies are difficult to construct with such a disparate group of presenting complaints. Added to this, staffing and skill levels are not well differentiated by the relevant professional bodies and a National Pain Audit carried out in England<sup>20</sup> has highlighted a dearth of properly experienced and skilled practitioners.

A recent systematic review concluded that psychological therapies can help people with chronic pain and reduce negative mood (depression and anxiety), disability, and, in some cases, pain. However, guidance is still required on the best content, duration, intensity, and format of treatment.<sup>24</sup> One significant issue is that current evidence is on clinical effectiveness alone; cost-effectiveness must be demonstrated to gain widespread implementation and may vary in different health-care systems.

### Interventional pain procedures

One of the important areas to address is the place of spinal injections in the management of low back pain. This has been neglected by other guidance and remains controversial with conflicting evidence, a multitude of opinions and potentially high cost. The controversy has increased as the NICE low back pain guidance stated that therapeutic substances should not be injected for non-specific low back pain. To take these discussions forward, it is essential to have clear time scales and diagnosis. Acute low back pain is a condition and

not a diagnosis and, in the absence of red flags, can be managed by pharmacotherapy, physical therapy, and advice regarding self-management. However, when pain is severe or persistent, it is important to diagnose the cause of low back pain to facilitate its management. With better understanding of the neuroanatomy of the spine and more advanced techniques that are now available, previous authors have suggested that it is possible to identify a diagnosis for persistent low back pain in ~70% of patients.<sup>25–30</sup> The remainder fall under the umbrella of 'non-specific' where the origins are poorly understood in scientific terms.

There was consensus within the pathway members that this is a specialist area guided by the following principals: selected brief interventions may reduce disability and are a therapeutic option; spinal interventions should be done under fluoroscopic (X-ray) guidance; good practice guidelines should also be followed, where available, such as the joint BPS, Faculty of Pain Medicine of the Royal College of Anaesthetists, and Association of Anaesthetists of Great Britain and Ireland guidelines.<sup>31</sup>

It is important to highlight that the outcomes of radiofrequency denervation have improved because of a deeper understanding of the neuroanatomy of the spine, improved patient selection and better radiofrequency ablation techniques; older studies which have not used appropriate selection criteria or techniques are out of date with respect to current standards.<sup>32–34</sup> Median branch blocks are recommended to diagnose pain of facet joint origin, followed by radiofrequency denervation when appropriate in the context of multidisciplinary care with clear threshold and exclusions being recommended.<sup>35</sup> There is emphasis on ongoing assessment after a trial of treatment to show evidence of response. It is suggested that close cooperation with other specialities (especially physiotherapy) is necessary to rehabilitate patients during the period of pain relief after interventions as this is hoped to decrease the number of interventions and improve quality of life.

The main challenge has been devising appropriate methodology to test the efficacy of steroid based facet joint injections which, although straightforward to perform, are expensive to deliver because of the need for an appropriate environment, trained personnel and expensive equipment (e.g. X-ray imaging). As a result, a consensus has been reached and the pathway states that therapeutic facet joint intra-articular injections are only to be done in the context of either special arrangements for clinical governance and clinical audit or research.

### Early access to specialist management for some

Some clinicians will no doubt consider the referral for specialist care to be very early: after the pathway, the minimum time from presentation to referral is 14 weeks. Patients in the UK often attend a specialist unit for the first time having gone through many unsatisfactory assessment and management cycles from different providers, finishing with a pain clinic several years after their problem started.<sup>36</sup> The recommended time scales in the current spinal pain pathway are: 3 months or



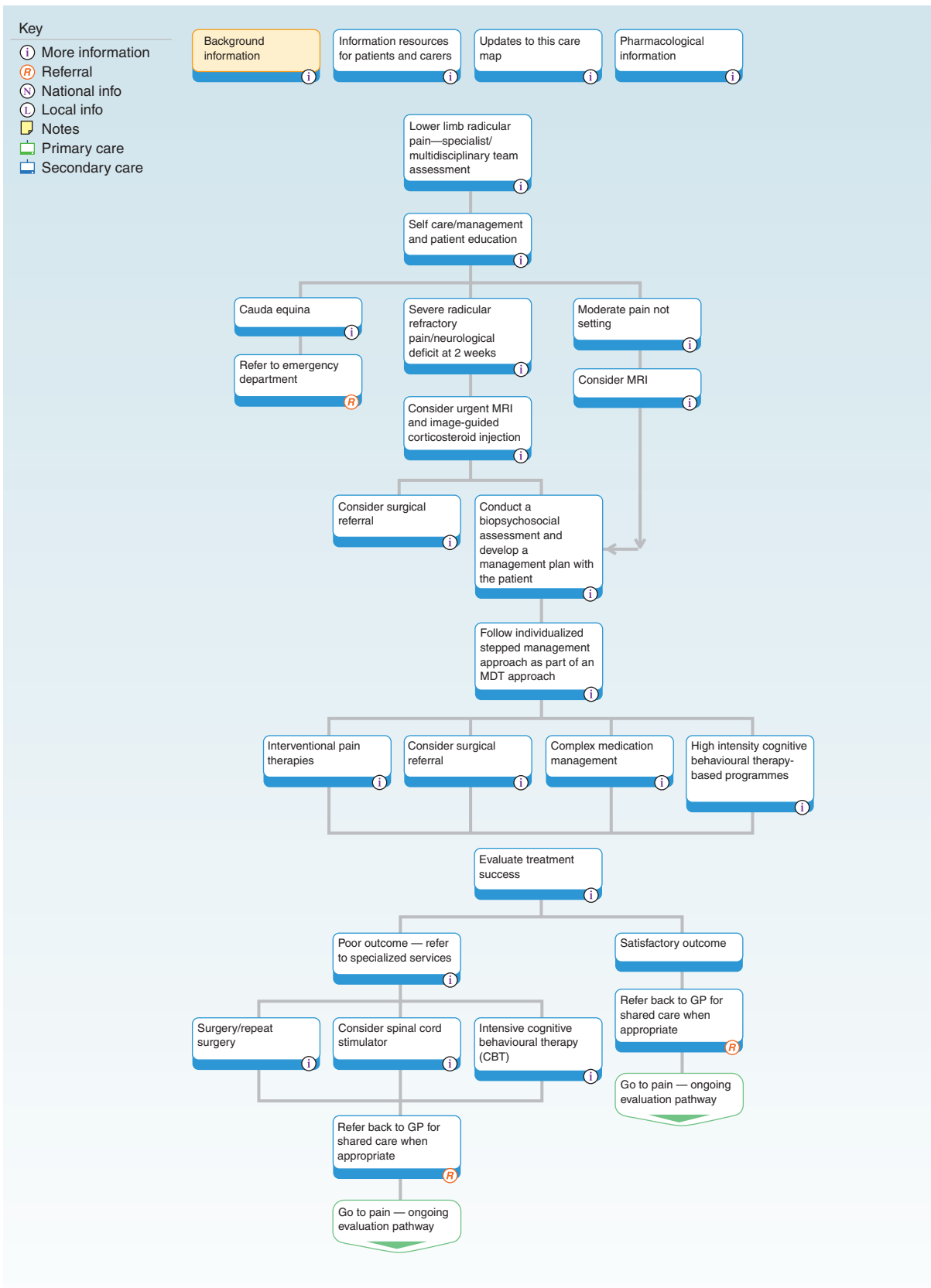


Fig 3 Radicular pain.

earlier for radicular pain; and 6 months for low back pain, or earlier if the pain is severe.

### Radicular pain

The provision of a care pathway for radicular pain (Fig. 3) is particularly welcome as it is an area that is poorly covered elsewhere. As neuropathic pain caused by radiculopathy often responds poorly to simple analgesics and neuropathic pain medications,<sup>37</sup> it is important that neuropathic pain is recognized and treated within a unique care pathway. There is much that can be done for this group with early investigation, pharmacotherapy, and invasive therapies. A stepped care approach has been recommended based upon a logical progression of ease of administration, severity of symptoms and known risks, and benefits.<sup>38</sup> The timing of treatment for severe radicular pain (i.e. disabling, intrusive, and prevents the patient from doing normal everyday tasks) or patients with neurological deficit (sensory or motor changes in the affected territory) is controversial with the consensus being that earlier referral (within 2 weeks of presentation) might help. Image guided steroid injections or surgery can be considered, depending on patient choice and clinical appropriateness.<sup>39–42</sup> The general consensus was that patients with less severe radicular pain should be referred to specialist services for assessment and management not later than 3 months (earlier if the pain is severe). The Health Technology Programme in the UK has recently put out a call for extensive research to answer these questions. In the interim, a consensus view of a wide range of stakeholders is necessary to guide decision making.

### Use of imaging techniques

MRI is not recommended at primary care level for spinal pain. This is because the test is too sensitive and not specific enough to allow screening for onward referral; therefore, it is not cost effective.<sup>43 44</sup>

The use of X-ray imaging to guide injections is a safety feature which is integral to best practice. Patients with pain problems deserve to know that the intended target for an injection was identified and achieved, so blind injections should not have a place in this group. The outcome of targeted epidural interventions for radicular pain is supported by evidence (see Radicular pain above). Ultrasound guidance is increasingly being used to facilitate spinal interventions; however, for targeted interlaminar epidural or transforaminal epidural steroid injections, fluoroscopic guidance is the gold standard.<sup>31</sup>

In everyone's practice, we have examples where the non-expert relies on expert reports rather than looking at the original information (e.g. EEGs and complex radiological imaging). We also all recognize that errors can occur. To mitigate errors in diagnosis or the spinal level that is to be treated, this guideline recommends that investigations for radicular symptoms be requested 'by individuals with the skills to organize, interpret and act on them'. In other words, only clinicians able to interpret the images should make requests for MRI imaging for radicular symptoms.

### Opioids

The pathway recommends tight restrictions for the use of strong opioids. The lowest dose possible should be used for the shortest time possible, and both efficacy and side-effects should be closely monitored with plans in case of treatment failure.<sup>45</sup> The use of opioids in the management of low back pain is controversial because of the lack of evidence of long-term benefit. Some may even go as far as to suggest they should not be used. In all cases, careful screening and awareness of potential problem use is necessary to avoid the level of harm seen internationally.<sup>46</sup>

### Conclusion

The spinal care pathway represents a leap forward for people with back pain, including those with radicular pain, with an end-to-end comprehensive plan. It is also based on high grade-level evidence as far as this is possible. During the development of this guideline, it has become evident where important gaps in knowledge exist and should be filled by research. It is a holistic guide to understand how treatments should be organized and the timelines for its provision. The identification and the management of neuropathic radicular pain has also been emphasized.

The pathway encourages self-management and early assessment using the STarT Back Tool to stratify patients and allocate resources based on this decision support. For patients who do not respond, the pathway encourages onward referral to a range of interventions that require time, close inter-professional working, and delivery within a biopsychosocial framework. The pathway embraces the concept of stepped care approach empowering patients to make informed choices regarding the available treatment options. For clinicians, it provides clear guidance regarding management options and recommends good practice to maintain consistency to obtain optimal results.

There is a good deal that is aspirational in this work because the resources will need to be identified for recommendations (e.g. access to psychologically based therapies). Despite the controversial elements, this is the first comprehensive guide for the care of a large group of patients who need to be able to enjoy more productive and less dependent lives. Future research should focus on covering the gaps identified and adopt a stepped care approach using recognized methodologies to achieve this. This pathway attempts to do what many others have not (i.e. engage all stakeholders, be inclusive in its decisions and avoid strong statements where uncertainty abounds).

### Authors' contributions

J.L.: first draft, subsequent edits, final submission. S.G.: second draft, extensive referencing, development of presentation, subsequent edits. C.P.: subsequent edits, rewriting as appropriate. A.P.B.: subsequent edits, rewriting as appropriate, collaboration with external party (Map of Medicine).

## Supplementary material

Supplementary material is available at *British Journal of Anaesthesia* online.

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## Declaration of interest

J.L. is a member of the medical charity SPIN (Specialists in Pain International Network) and a member of the British Pain Society. S.G. has received honorarium and gifts from pharmaceutical companies for lectures and attending meetings sponsored by pharmaceutical companies (e.g. Pfizer, Napp pharmaceuticals, Grunenthal Ltd). S.G. has organized meetings sponsored/supported by pharmaceutical companies and companies that manufacture equipment and disposables that are used in pain management procedures. S.G. has been: the Chair/Lead of the British Pain Society – Map of Medicine Spinal Pain Pathways; the chairman of the Interventional Pain Medicine Special Interest Group (IPM SIG) of the British Pain Society (BPS); the treasurer of the IPM SIG of the BPS. S.G. is now a member of the executive committee of the IPM SIG of the BPS. S.G. was the founder chairman of the North England Pain Group (NEPG) and is now a member of the executive committee of the NEPG. S.G. is a faculty and co-director of the Leeds cadaver course and is on the faculty for the European cadaver courses conducted by the International Spinal Intervention Society, USA. S.G. has been paid an honorarium for presenting at meetings and teaching on the cadaver courses. S.G. is: on the faculty and also the European co-ordinator for the 'Global Update in Pain meetings'; the Educational Meetings Advisor to the Faculty of the Pain Medicine (FPM) of the Royal College of Anaesthetists (RCA), London; a member of the Professional Standards Committee of the FPM of RCA; an examiner for the FPM of RCA; a member of the Education committee of the RCA. S.G. has also been paid travel and other expenses to attend meetings organized by the organizations mentioned above. C.P. is or has been: a Member of Department of Health Musculoskeletal Co-ordinating Group; Executive member Chronic Pain Policy Coalition; Elected Member British Pain Society Council; Chair of Healthcare Resource Pain Group to

the NHS Information Centre; Executive member of the BPS Pain Patient Pathway Maps Executive Committee and member of its Implementation Committee; Member of the medical charity SPIN (Specialists in Pain International Network); and a Member of the Professional Standards Committee of the FPM of RCA. C.P. also attended International Association for the Study of Pain sponsored by NAPP August 2012. A.P.B. is or has been: Chair of the NHSCB, Clinical Reference Group for Specialised Services Pain, England; Advisor on Specialised Commissioning to various professional bodies; Chair of Pain of Urogenital Origin Taxonomy Group; SIG of International Association for the Study of Pain (IASP); Member of European Association of Urology, Chronic Pelvic Pain working group; Executive member (Honorary Treasurer) of British Pain Society; Chair of the BPS Pain Patient Pathway Maps Executive Committee and member of its implementation Committee; Chair Scientific Committee 1st World Congress on Abdominal and Pelvic Pain; Member of the medical charity SPIN (Specialists in Pain International Network); Consultant on research Mundipharma; Vice-President, The Pain Subsection, The Royal Society of Medicine; Royal College of Anaesthetists, Regional Educational Advisor for Pain Medicine – North Thames (Central); Royal College of Anaesthetists, Regional Educational Advisor for Pain Medicine.

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