National Physiotherapy Low Back Pain Audit
Improving Back Care in Scotland
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FOREWORD

NHS QIS is delighted to publish this report which provides for the first time anywhere globally, evidence of the standard of physiotherapy management of low back pain throughout a whole country. Nationally led yet locally driven, the results of this work clearly show that the majority of patients with low back pain in Scotland are managed in line with best guidance. It also shows that significant improvements were brought about as a direct consequence of being involved in this work. What has been achieved is extremely positive but we should not be complacent, further improvement needs to happen. The most encouraging achievement however is that now there is an established framework being actively used by all NHS low back pain physiotherapy providers in Scotland (also some private providers) who are committed to continuing to support ongoing improvements and monitor their progress. Scotland's physiotherapy community is leading the way internationally in demonstrating the benefits to patient care and outcome of such an approach, one that is commended and advocated for wider consideration. Well done Scotland!

Lesley K Holdsworth PhD FCSP DPT
Head of Health Services Research & Effectiveness
1 EXECUTIVE SUMMARY

In 2008 NHS Quality Improvement Scotland (NHS QIS) published a systematic review on service delivery organisation for acute low back pain\textsuperscript{1} which recommended that the physiotherapy management of low back pain (LBP) should take account of existing evidence-based guidelines. However, similar to other countries worldwide, Scotland lacked a national view of whether the quality of the physiotherapy management of low back pain was compliant with national guidelines. Anecdotal evidence suggested that standards of care varied considerably.

The national physiotherapy low back pain audit (NPLBPA) was part of a programme of work established by NHS QIS which over one year developed a framework aimed at supporting NHSScotland in providing consistently applied high quality physiotherapy management of LBP in line with best evidence.

Data was gathered over two audit cycles, both lasting five weeks, between May–June 2008 and January–February 2009. Sixteen areas took part; all NHS boards in Scotland (n=14) plus two private provider sites.

At the end of the first audit cycle all areas were provided with a report that identified their own performance and a national overview. They were asked to consider local results and then respond by submitting a locally developed action plan to address issues and recommendations made.

A second cycle report, including final recommendations for the future physiotherapy management of LBP within Scotland, was also similarly presented.

The results demonstrated that the documented care of the physiotherapy management in line with national guidance increased considerably over the two cycles in all NHS boards and the two private provider sites in Scotland.

As a consequence of this work, a standardised framework for the continuous improvement of national standards has been identified and implemented, a mechanism which has the potential to demonstrate high standards of improving patient care.

All LBP service providers are committed to ongoing monitoring, sharing and continuous improvement.

There is a requirement for continuing improvement in line with best evidence, particularly in relation to the documentation of all factors associated with patients at risk of spinal fracture, red flags, Cauda Equina Syndrome (CES) and of neurological assessment on patients with nerve root pain (NRP).

Further information

For further information please contact Fraser Ferguson at fferguson@nhs.net.
2 BACKGROUND

Low back pain (LBP) has significant socio-economic consequences for the United Kingdom (UK) with most recent annual estimates reported to be £5 billion. Anecdotal evidence has suggested that LBP accounts for 30% of musculoskeletal physiotherapy outpatient activity and is the most common condition managed by physiotherapists within the NHS. Estimates from the Information Services Division (ISD) of NHS National Services Scotland suggested a referral rate of approximately 12,000 per annum. The validity of this figure was however challenged by the profession.

National clinical guidelines recommend that the following key elements are assessed and considered during routine assessment of patients with LBP. Clinical guidelines have been produced to guide physiotherapists in the assessment and management of LBP. They provide clear guidance from a range of sources including the Chartered Society of Physiotherapy and the Royal College of General Practitioners. The overwhelming majority of LBP referrals made to physiotherapy services are mechanical or chronic in nature and appropriate for conservative management (approximately 85%). Fortunately, serious pathology is rarely encountered but the assessment process should be thorough enough to ensure that, if present, this is identified and referred for medical management timeously. Examples of serious pathology that can present include carcinomas, spinal and nerve route compression. The following include those that can be indicators of potentially serious pathology:

- **Risk of spinal fracture**: patients with a history of osteoporosis and/or long term steroid use are significantly more at risk of spinal fracture.
- **Red flags**: can highlight the risk of serious spinal pathology.
- **Cauda Equina Syndrome (CES)**: is a potentially serious presentation requiring immediate surgical assessment.
- **Yellow flags**: are used to help identify patients who may be at risk of developing chronic pain.
- **Neurological assessment**: is advocated to accurately identify any neurological deficits associated with LBP. This includes assessment of passive straight leg raise (PSLR), reflexes, myotomes, and dermatomes and is advocated in patients with nerve root pain (NRP) (LBP referred to below the knee).

In addition, guidelines suggested that patients are provided with written educational material that is consistent and evidence-based. The Back Book is recognised as the gold standard patient publication for acute LBP.

In addition to assessment guidelines recent Scottish Government policy recommends that physiotherapists have direct and equitable access to a range of specialist services.
These include:

- Imaging
- Orthopaedic assessment for surgery
- Psychology
- Pain management services.

Anecdotal evidence has suggested however that the physiotherapy management of LBP and access to specialist services throughout Scotland was neither consistent nor followed evidence-based clinical guidelines.

2.1 Aim
To develop a framework that supports NHSScotland in providing consistently applied high quality physiotherapy management of LBP in line with best evidence.

2.2 Objectives
The audit had a number of distinctive objectives. To:

1. Establish the extent to which practice complied with validated guidelines.
2. Provide a framework and resources to support local services in considering, changing and improving clinical practice.
3. Demonstrate the impact of the implemented framework.

And in doing so:

4. Establish the actual number of patients seen by musculoskeletal outpatient physiotherapy services.
5. Provide an overview of their demographic and clinical profile.
3 PREPARATION AND METHODOLOGY

A multi-professional project steering group (Appendix 1) was established with a role to ratify a national dataset and to be responsible for reviewing any changes made to the project milestones (Figure 3–1). The steering group was also to be consulted prior to any planned dissemination of results, either to participants or through conference presentations.

Figure 3-1 Project milestone

A project manager was appointed to lead the project, reporting directly to the Head of Health Services Research & Effectiveness at NHS QIS. The project manager was assisted by a project officer and other NHS QIS resources.

Sixteen areas took part: all NHS boards (n=14) in Scotland plus two private providers. This included 186 individual NHS sites and three private sites which provide services for LBP patients.

To promote involvement and endorsement by the professional governing body of physiotherapy, the Chartered Society of Physiotherapy was represented and contributed to national meetings and throughout the project.

To promote engagement a named representative from each area volunteered to be a single point of contact to and from NHS QIS for the duration of the project (Appendix 2).

Two cycles of active data collection were planned; cycle one, May–June 2008 and cycle two, January–February 2009. In accordance with data protection legislation all data was anonymised with no patent identifiable information contained in the data submitted. An information sheet relating to patient consent was available to be given to patients (Appendix 3).
Two national meetings were planned. The first, in March 2008, to introduce the audit tool and dataset, and a second, in September 2008, to provide an opportunity to debate results and share and learn from experiences. Representatives from all participating areas were involved.

3.1 Data collection tool

An audit dataset (Appendix 4) was developed based on nationally-validated guidelines\(^3,4,6,7,9,12,13\). The data items contained within the dataset are detailed below in Figure 3–2.

**Figure 3-2 Data items contained within the dataset**

<table>
<thead>
<tr>
<th>DEMOGRAPHICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSESSMENT INFORMATION</td>
</tr>
<tr>
<td>PREVIOUS HISTORY OF LBP</td>
</tr>
<tr>
<td>PRESENT SYMPTOMS</td>
</tr>
<tr>
<td>FRACTURE AND OSTEOPOROSIS RISK</td>
</tr>
<tr>
<td>RED FLAG SCREENING</td>
</tr>
<tr>
<td>CAUDA EQUINA SYNDROME SCREENING</td>
</tr>
<tr>
<td>YELLOW FLAG ASSESSMENT</td>
</tr>
<tr>
<td>NEUROLOGICAL TESTING</td>
</tr>
<tr>
<td>DIAGNOSTIC TRIAGE</td>
</tr>
<tr>
<td>PATIENT MANAGEMENT STRATEGIES, INCLUDING:</td>
</tr>
<tr>
<td>PROVISION OF ADVICE</td>
</tr>
<tr>
<td>TREATMENT MODALITIES</td>
</tr>
<tr>
<td>DISCHARGE INFORMATION</td>
</tr>
<tr>
<td>CONTACT NUMBERS</td>
</tr>
<tr>
<td>DISCHARGE REASON AND FURTHER MANAGEMENT</td>
</tr>
<tr>
<td>OUTCOME MEASURES</td>
</tr>
</tbody>
</table>

The validated audit dataset was converted into a web-based collection tool\(^14\) (Appendix 5). This work was undertaken by Glasgow Caledonian University Health Sciences Division. The tool was then reviewed by a multi-professional group of national experts on the management of LBP and presented to representatives from all areas at the national meeting in March 2008. Participants were provided with training in its use and allowed three weeks in which to trial the tool within their own area prior to commencing data collection. The tool is available at www.nhshealthquality.org/nhsqis/4057.html.
3.2 Data collection periods

Prior to commencing data collection, an effort was made to quantify how many patients with LBP were referred annually to physiotherapy. Initially, ISD was approached, but could only provide an estimated annual referral rate to physiotherapy of 12,000 patients. As this estimate was received with a level of scepticism, NHS boards were asked to submit information about the number of LBP patient referrals received during the previous twelve months (2007).

The majority of areas reported challenges associated with providing this baseline referral information. The challenges reported related to both access to and reliability of available data.

Associated with this work, two cycles of active data collection took place; cycle one, May–June 2008 and cycle two, January–February 2009, at which time all outpatient physiotherapists were encouraged to record data on every musculoskeletal LBP patient discharged over each five week period. Between the two audit cycles, participating areas were provided with their own detailed results and recommendations, benchmarked against the national results. Each was encouraged to develop and implement an action plan to address issues identified locally. NHS QIS provided resources during this period to support sites develop and implement remedial action plans.
4 RESULTS

Key results in relation to the first cycle are contained in this section. A complete breakdown of all results can be found in Appendix 6–17 and at: http://www.nhshealthquality.org/nhsqis/4057.html

4.1 Summary of first cycle results

4.1.1 Baseline referral numbers: 2007 reported figures

Based on the information provided by participants, the number of LBP referrals reported during 2007 was 55,487 (56,796 including the two private provider sites).

Table 4–1 Reported number of LBP patients 2007

<table>
<thead>
<tr>
<th>Area</th>
<th>Reported number of LBP patients 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Castlebrae</td>
<td>334</td>
</tr>
<tr>
<td>NHS Ayrshire &amp; Arran</td>
<td>3,112</td>
</tr>
<tr>
<td>NHS Borders</td>
<td>1,349</td>
</tr>
<tr>
<td>NHS Dumfries &amp; Galloway</td>
<td>1,448</td>
</tr>
<tr>
<td>NHS Fife</td>
<td>4,260</td>
</tr>
<tr>
<td>NHS Forth Valley</td>
<td>3,349</td>
</tr>
<tr>
<td>NHS Greater Glasgow and Clyde</td>
<td>12,257</td>
</tr>
<tr>
<td>NHS Grampian^</td>
<td>5,248</td>
</tr>
<tr>
<td>NHS Highland</td>
<td>1,149</td>
</tr>
<tr>
<td>NHS Lanarkshire</td>
<td>8,238</td>
</tr>
<tr>
<td>NHS Lothian</td>
<td>8,957</td>
</tr>
<tr>
<td>NHS Orkney</td>
<td>281</td>
</tr>
<tr>
<td>NHS Shetland</td>
<td>509</td>
</tr>
<tr>
<td>NHS Tayside^</td>
<td>5,000*</td>
</tr>
<tr>
<td>NHS Western Isles</td>
<td>330</td>
</tr>
<tr>
<td>Spire Murrayfield</td>
<td>975</td>
</tr>
<tr>
<td>Totals</td>
<td>56,796</td>
</tr>
</tbody>
</table>

^ incomplete
* estimated

This equated to a mean NHS referral rate of 12 per 1,000 of the population although there was wide variation observed across Scotland, 6-23/1,000 (Figure 4–1).
4.2 Key clinical issues highlighted from the first cycle

Significant variation in practice was evident in relation to the documentation of factors, which could highlight the risk of spinal fracture, serious spinal pathology (red flags) and assessment of CES. Despite clear evidence for inclusion, in a considerable number no documentation was found in relation to:

Risk of spinal fracture

- Long term steroid use 40.4% (n=?
- History of osteoporosis 50.1% (n=?

Assessment of red flags

- Positive cough/sneeze 29.5% (n=358)
- Unexplained weight loss 33.6% (n=407)
- Past medical history of cancer 35.1% (n=426)
- Constant non-mechanical pain 36.1% (n=438)
- Thoracic pain 46.7% (n=566)
- Assessment of HIV/drug abuse 20.3% (n=246).

Assessment of CES

- Saddle anesthesia 28.6% (n=347)
- Altered bladder control 26.7% (n=324)
- Altered bowel control 28.9% (n=351)
- Widespread neurological changes 38.3% (n=464).
It was unclear however whether the omissions regarding red flag and CES were due to lack of documentation or application in practice, raising questions about patient safety.

There was reduced documentation also found in relation to:

- No documentation of any assessment of yellow flags 35.4% (n=347).
- 57.9% (n=229) had a full neurological assessment (PSLR, reflexes, myotomes, and dermatomes all carried out).
- In 57.5% (n=698) of patients, there was no documentation of any written information having been supplied.
- 23% (n=237) of acute LBP patients (n=483) were not supplied with the Back Book⊙.

4.3 What happened with the first cycle results?

Each area was sent detailed national results and recommendations together with their individual area results and recommendations. Each area was then encouraged to consider the implications of the recommendations for their services and complete an action plan template (Appendix 11).

4.4 Issues raised at second national meeting

A second national meeting was held in September 2008, which provided representatives from every area the opportunity to debate results, share ideas and learn from experiences. NHS QIS was also able to provide additional support and guidance to those present before the second cycle commenced.

In addition delegates raised a number of key issues:

- The need for equity of access to the Back Book⊙.
- A requirement for nationally-endorsed, consistent and evidence-based written patient information.
- A nationally-led educational project for LBP: pooled resources to develop training packages, which are of a basic level of competency and measurable by ongoing assessment and audit, irrespective of geographical location.
- Creation of links with already established high quality and valued web-based resources such as Working Backs Scotland.
- Develop ongoing mechanisms to monitor the management of LBP within NHSScotland, including equity of access to services and service levels.
- The production of a standardised subjective assessment tool for red flags and CES.
- Guidance on what evidence-based neurological testing should be carried out on LBP patients.
4.5 **Action plans**

Following the feedback day all action plans were expected to detail how issues raised in the first cycle were being addressed. The project team at NHS QIS worked on addressing the additional key issues raised.

A full summary of the key action plans and all completed action plans from each area can be found in Appendix 12 and Appendix 13. However, some of the notable actions include:

- Areas have submitted plans to pilot, introduce or increase self referral services.
- NHS boards are working towards ensuring that all clinical sites in their area use the same standardised triage form.
- The assessment of yellow flags is being incorporated into the self referral triage form.
- The dataset has been amended for the second cycle to emphasise the importance of neurological assessment for NRP (Appendix 14).
- Two patient information sheets were developed (Appendix 19 and Appendix 20) to cover acute LBP and acute LBP referred to the leg. An additional leaflet for chronic pain is still under development.
- Two standardised subjective assessment tools have been developed for use by all physiotherapists managing LBP.
5  RESULTS FROM TWO AUDIT CYCLES

Key results in relation to the second audit cycle and changes in practice identified are summarised in this section. A complete breakdown of all results can be found in Appendix 6–17 and at: http://www.nhshealthquality.org/nhsqis/4057.html.

5.1  Number of returns per area, results from first and second cycles

All areas returned data (n=2,157). The number of returns decreased between cycles in 16 of 17 areas (Figure 5–1).

Figure 5-1  Number of returns per area from first and second cycles

Data were collected on all LBP patients discharged from physiotherapy during the time periods identified previously. It must be considered that discharge numbers do not equate exactly to referral numbers. It is well documented that there are a proportion of patients (between 5–10%) who, although referred, are not seen by the physiotherapy service for a variety of reasons. However, this figure could be considered as a good proxy measure in the absence of any other reliable data.
5.2 Demographic and clinical profile of LBP patients: a national picture

Table 5.1 gives a demographic overview and a clinical picture of LBP patients who attend physiotherapy in Scotland. These findings are based on 2,147 data entries over two audit cycles. Additional information comparing referral mode, presentation of symptoms and duration of symptoms can also be found in Appendix 17.

Table 5–1 Demographic and clinical profile of LBP patients

<table>
<thead>
<tr>
<th>Gender</th>
<th>43.9% (917)</th>
<th>56.1% (1,173)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age group</th>
<th>0.7% (15)</th>
<th>2.1% (46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;16 years</td>
<td>10.3% (221)</td>
<td>19.1% (410)</td>
</tr>
<tr>
<td>21–30 years</td>
<td>24.7% (530)</td>
<td>24.5% (525)</td>
</tr>
<tr>
<td>31–40 years</td>
<td>51–64 years</td>
<td>65–74 years</td>
</tr>
<tr>
<td>41–50 years</td>
<td>22.4% (481)</td>
<td>31.6% (680)</td>
</tr>
<tr>
<td>51–64 years</td>
<td>62%</td>
<td>6.2%</td>
</tr>
<tr>
<td>&gt; 75 years</td>
<td>6.2%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initial presentation of symptoms</th>
<th>46% (990)</th>
<th>22.4% (481)</th>
<th>31.6% (680)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBP only</td>
<td>82.7%</td>
<td>11.7%</td>
<td>5.6%</td>
</tr>
<tr>
<td>LBP referred to knee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBP referred below the knee</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Onset of symptoms</th>
<th>9.3% (188)</th>
<th>22.2% (446)</th>
<th>12.9% (259)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No reported reason</td>
<td>82.7%</td>
<td>11.7%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Trauma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration of symptoms</th>
<th>55.6% (1,120)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 14 days</td>
<td></td>
</tr>
<tr>
<td>15–49 days</td>
<td></td>
</tr>
<tr>
<td>7–12 weeks</td>
<td></td>
</tr>
<tr>
<td>&gt;3 months</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LBP history</th>
<th>31% (641)</th>
<th>37.4% (774)</th>
<th>19% (393)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First onset</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recurrence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exacerbation of chronic</td>
<td>12.7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Employment status

<table>
<thead>
<tr>
<th>Employment status</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid employment</td>
<td>59.7%</td>
<td>1,240</td>
</tr>
<tr>
<td>Retired</td>
<td>25.1%</td>
<td>471</td>
</tr>
<tr>
<td>Unemployed due to LBP</td>
<td>2.7%</td>
<td>57</td>
</tr>
<tr>
<td>Unemployed not due to LBP</td>
<td>5.7%</td>
<td>118</td>
</tr>
<tr>
<td>Student</td>
<td>3.9%</td>
<td>80</td>
</tr>
</tbody>
</table>

### Work time absence due to present episode of LBP

<table>
<thead>
<tr>
<th>Absence duration</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=1 week</td>
<td>61.8%</td>
<td>631</td>
</tr>
<tr>
<td>1–2 weeks</td>
<td>11.1%</td>
<td>113</td>
</tr>
<tr>
<td>2 weeks–1 month</td>
<td>10.2%</td>
<td>104</td>
</tr>
<tr>
<td>&gt; 1 month</td>
<td>16.9%</td>
<td>173</td>
</tr>
</tbody>
</table>

### Percentage completing physiotherapy course in

<table>
<thead>
<tr>
<th>Contact frequency</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2 contacts</td>
<td>33.8%</td>
<td>717</td>
</tr>
<tr>
<td>3–4 contacts</td>
<td>31.3%</td>
<td>668</td>
</tr>
<tr>
<td>5–8 contacts</td>
<td>27.2%</td>
<td>578</td>
</tr>
<tr>
<td>&gt;8 contacts</td>
<td>7.7%</td>
<td>166</td>
</tr>
</tbody>
</table>

Mean; median; range 4.10; 3; 1–30

### Discharged from physiotherapy

<table>
<thead>
<tr>
<th>Discharge reason</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self care (including ‘on hold’)</td>
<td>82.8%</td>
<td>1,762</td>
</tr>
<tr>
<td>Did not complete treatment</td>
<td>6.8%</td>
<td>145</td>
</tr>
<tr>
<td>Referred for further medical review</td>
<td>10.9%</td>
<td>234</td>
</tr>
<tr>
<td>Referred for further other non-medical review</td>
<td>8.8%</td>
<td>201</td>
</tr>
</tbody>
</table>

Combined data from both audit cycles indicated that most LBP referrals to NHS physiotherapy were made by GPs (48% [n=1,038]) with 25.6% (n=554) being patient self referrals and 15% (n=325) GP suggested referrals (Figure 5–2). GP suggested referrals are classified as referrals made by patients themselves after having been advised to do so by their GP. This differs from true self referral due to the fact that the patient required a prompt from another healthcare professional rather than initiating the referral themselves. The source of referral varied considerably across Scotland.

### 5.3 Source of referral
There is a growing published body of evidence, which suggests that self referral as a mode of access has significant financial and patient benefits compared with other more traditionally used methods, such as GP referral. The use of self referral also differed greatly between NHS boards and consequently further investigation is warranted as to the reasons why.

### 5.4 Overall compliance with national guidelines

The results established that over two cycles, physiotherapy services throughout Scotland were able to demonstrate levels of compliance with national validated guidelines. Improvement was noted over the two cycles, and after the second cycle demonstrated that:

- 95.8% (n= 2,074) of patients were managed using diagnostic triage.
- 89.6% (n=1,938) of patients were encouraged to self manage.
- 84.9% (n=138) of patients had the prognosis of this episode of LBP explained.
- 87.1% (n=1,884) of patients were given advice to remain active.
Certain physiotherapy modalities are not advocated for LBP due to a lack of supporting evidence. These particularly relate to: traction, interferential therapy and short wave diathermy. On average over two audit cycles, gratifyingly, less than 1% received such modalities:

- 0.8% (n=18) of patients received traction.
- 0.8% (n=18) of patients received interferential therapy.
- 1% (n=22) of patients received short wave diathermy.

5.5 Compliance with national guidelines: key results from first and second cycles

5.5.1 Documentation of the risk of spinal fracture

Despite increasing over two cycles, few services could demonstrate compliance greater than 75%. This equates to more than one patient in four not being fully assessed for being at risk of spinal fracture (Figure 5–3).

Figure 5-3 Documentation of the risk of spinal fracture - osteoporosis
5.5.2 Documentation of red flag assessment

Overall, with the exception of HIV/drug abuse, there was an increase in the documentation of red flags (Figure 5–5).
Even after two cycles of audit there remained wide variation in compliance of documented evidence of ALL red flag questions (Figure 5–6). This was less than 80% in 15 of 16 areas. Nationally this figure equates to two in five patients not being fully assessed for red flags.

Figure 5-6  Compliance with recording all red flags on assessment

5.5.3 Documentation of Cauda Equina assessment

Overall, after the course of both cycles, documentation of all individual factors associated with the assessment of CES increased (Figure 5–7).

Figure 5-7  Documentation of Cauda Equina assessment - overall
Even after two cycles of audit, there remained wide variation across Scotland in the compliance with documented evidence of all Cauda Equina questions (Figure 5–8). Compliance was less than 80% in 7 of 16 areas. Nationally this figure equates to one in five patients not being fully assessed for CES.

**Figure 5-8  Documentation of all Cauda Equina questions on assessment**

5.5.4 Documentation of yellow flag assessment

Documentation of yellow flags increased in 16 of 17 areas over the two cycles (Figure 5–9). Nationally this equates to one in five patients not being fully assessed for yellow flags.

**Figure 5-9  Documentation of yellow flags**
There is little evidence to support the reliability of individual specific neurological testing for NRP, ie pain referred from the lumbar spine below the knee\(^3\) although a PSLR test has been recognised as the most accurate test\(^{5,21}\). Relevant clinical guidelines for the management of LBP recommend the assessment of NRP\(^3,5,7\). This neurological assessment can aid identification of patients with more severe LBP symptoms that are more likely to require further investigation (Appendix 17) and can therefore be seen as forming an integral part of the diagnostic triage of LBP.

5.5.5 Supply of written patient educational material

Although there was a minimal increase in the number of patients supplied with locally produced written material about their back pain, this equates to one in four patients being supplied with written education (Figure 5–10).

Figure 5-10 Provision of written patient information

Nationally there was a 10% increase in the provision of the Back Book\(^8\) for acute back pain patients (23% to 33%). Even after two cycles less than one in five acute LBP patients were being provided with the Back Book\(^8\) (Figure 5–11).
5.5.6 Documented full neurological assessment for NRP

There was increased documentation of a full neurological assessment being carried out on patients with NRP (Figure 5–12). However, even after two cycles of audit, variation remained across Scotland in the compliance with documented evidence of a full neurological assessment being carried out on patients with NRP.

Figure 5-12 Documented full neurological assessment for NRP
5.6 Access to specialist services

Questioning identified significant variation in physiotherapy access to specialist services. No NHS board reported direct physiotherapy access to all specialist services. Differences were also experienced within NHS boards and particularly related to where services were sited, i.e., primary or acute care. Two NHS boards reported no direct physiotherapy access to any of the identified specialist services.
6 KEY CONCLUSIONS

In terms of the physiotherapy management of patients with LBP, after two cycles of audit, across Scotland:

- Documented assessment of factors associated with risk of spinal fracture (long term steroid use and history of osteoporosis) increased from 60.5% and 53.8% to 77.4% and 78.5% respectively.
- Documented assessment of all factors listed for red flags (excluding HIV) increased from 33% to 64%.
- Documented assessment of all factors listed for identification of Cauda Equina increased from 59% to 83%.
- Documented assessment of yellow flags increased from 64.6% to 82.3%.
- Documented assessment of a full neurological assessment for NRP increased from 57.9% to 75.6%.
- Overall throughout Scotland, despite increasing over the two cycles, low levels of written patient information were provided.
- Documented provision of the Back Book\(^8\) for acute LBP increased from 23% to 33%.
- Documentation of a patient generated outcome increased from 66.4% to 79.8%.
- There has been considerable interest in this work and its potential impact expressed by a number of organisations/individuals including the Chartered Society of Physiotherapy.

6.1 Additional conclusions

In addition the following were identified:

- Despite demonstrating considerable improvements over the two cycles, these results indicate that further improvements are required if patients across Scotland are to receive consistently applied, high quality physiotherapy treatment.
- Physiotherapy services in all sites have identified plans for continuing to improve and monitor practice in line with validated guidance.
- Inequities in access exist in relation to physiotherapy direct access to specialist services on behalf of patients who are LBP sufferers.
- The number of low back referrals to physiotherapy has been historically under recorded.
7 RECOMMENDATIONS

All physiotherapy service providers should ensure that:

1. **Examination and management of all LBP patients follows the best evidence laid out in validated clinical guidelines, including ensuring that:**
   
   - All red flags are assessed and documented (Appendix 21 and Appendix 22).
   - All factors associated with CES are assessed and documented (Appendix 21 and Appendix 22).
   - A full neurological assessment (reflexes, myotomes, dermatomes and PSLR) is carried out on patients with NRP (referred pain from the lumbar spine below the knee).
   - Factors associated with high risk of spinal fracture (long term steroid use and history of osteoporosis) are assessed and documented.
   - Yellow flags are assessed and documented during initial assessment (Appendix 21 and Appendix 22).
   - All acute back pain patients should be supplied with consistent written information (Appendix 19 and Appendix 20).
   - The Back Book\(^8\) should be made available to all acute LBP patients.

2. They undertake regular auditing to monitor the issues as indicated above.

3. They achieve direct access to specialist services locally.
8 DISSEMINATION OF RESULTS

In addition to publication and wide distribution of the results, a web-based educational resource has been established:


This is aimed at a multidisciplinary audience of clinicians managing LBP. It contains key aspects of LBP assessment, clinical evidence sources, training resources and self evaluation tools. It also provides details of the national audit, the report of the results and the written patient information developed during the audit.
9 NEXT STEPS

- A network of LBP physiotherapy providers has been established throughout Scotland and they will continue to share practice issues, challenges and solutions through the NHS QIS allied health professional (AHP) clinical effectiveness networks and the Back Pain Education Scotland shared learning community.

- Local LBP service providers will be encouraged to undertake regular audit using the resources provided and to engage with local governance arrangements.

- Working in partnership with NHS24 and NHS Education for Scotland, provide nationally-developed resources for patient information and educational resources for clinicians.

- Working in partnership with the Chartered Society of Physiotherapy, explore the appropriateness of adopting this approach to quality improvement throughout the UK.
10 LIMITATIONS

Despite every effort to capture the physiotherapy management of all LBP patients during the data collection period, the study relied on individual physiotherapists collecting and supplying the required data. The difference between the numbers submitted during each cycle must question this.

It also has to be recognised that the audit was carried out in musculoskeletal outpatient physiotherapy departments and therefore the results can only reflect service provision in those locations. Audits should be carried out to measure the physiotherapy management of LBP in domiciliary and extended scope services.

It should also be considered that evidence of documented practice does not necessarily equate to actual clinical practice. Local service providers are advised that responsibility for ensuring the ongoing quality of LBP service provision should be determined locally.
11 ACKNOWLEDGEMENTS

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12 REFERENCES


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Additional web resources


13 APPENDICES

Appendix 1  Steering Group members
Appendix 2  List of regional representatives
Appendix 3  Consent form
Appendix 4  Dataset
Appendix 5  Data recording tool
Appendix 6  Area identifiers
Appendix 7  First cycle results (combined)
Appendix 8  First cycle results recommendations (combined)
Appendix 9  First cycle results recommendations (individual areas)
Appendix 10  Key issues and recommendations from the first cycle
Appendix 11  Action plan template
Appendix 12  Summary of key points from action plans submitted from first cycle
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Appendix 14  Amendment to dataset
Appendix 15  Second cycle results (combined)
Appendix 16  Results from two audit cycles
Appendix 17  Additional results: patient generated self referral and GP referral, acute and chronic, low back pain and nerve root pain
Appendix 18  Perceived benefits
Appendix 19  Advice sheet for acute low back pain
Appendix 20  Advice sheet for back pain and referred leg pain
Appendix 21  Low back pain screening questionnaire: red flags, Cauda Equina, yellow flags
Appendix 22  Glossary for low back pain screening questionnaire