An evaluation of prompt access to physiotherapy in the management of low back pain in primary care

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\textbf{Background.} Disability arising from low back pain (LBP) is a growing problem. Current primary care management of LBP has been criticized for its mechanistic basis and for delays in gaining access to specialist advice. Among recent recommendations made for improved management are functional explanatory models, a rehabilitative approach and early access to physical therapy. It is not known if these recommendations can be implemented in mainstream primary care.

\textbf{Objective.} The purpose of our study was to examine the feasibility, acceptability and component costs of providing a prompt access physiotherapy service for new episodes of LBP in primary care; to describe outcomes and compare them with other published interventions; and to explore the influence of the service on GPs’ approach to LBP.

\textbf{Methods.} Back pain clinics staffed by a physiotherapist were established in a group of demographically representative practices in a typical UK health authority. Adult patients with a new episode of LBP referred by their GPs were managed in accordance with recent recommendations. Data on pain, disability and well-being were collected at recruitment and some 12 weeks later. Patient diaries and interviews with GPs before and after the study provided qualitative data. Comparative costings were derived from national and local sources.

\textbf{Results.} A total of 614 patients, representing 3.2\% of the adult population, were referred, of whom 522 (85\%) were seen at the back pain clinics within 3–4 days, the majority within 72 h. Although this represents less than half the adult patients thought to be presenting to their GPs with LBP, patients exhibited levels of pain and disability comparable with those described in other studies of LBP in primary care. More than 70\% of patients required only a single clinic visit and <5\% were referred on to specialist orthopaedic or back pain rehabilitation services. At follow-up, levels of improvement were comparable with and time taken off work superior to those seen in other intervention studies of LBP in primary care. Prompt access to physiotherapy in primary care costs less per episode of LBP than conventional management. Qualitative data suggest that patients valued early access to the physiotherapist, particularly for the reassurance provided. Interviews with GPs revealed strong support for the service, in large part based on favourable feedback from patients.

\textbf{Conclusions.} For primary care patients with a new episode of LBP referred by their GP, prompt access to a dedicated physiotherapy service is both feasible and acceptable. Comparison with other published interventions suggests that it is also cost-effective and that a typical Primary Care Trust (PCT) would rapidly recoup the cost of additional physiotherapists. However, questions remain about the availability of sufficient physiotherapists to make such a service available nationally. The influence of the service upon GPs’ own approach to the management of LBP is likely to be gradual and to come about largely through positive feedback from patients.

\textbf{Keywords.} Low back pain, primary care, prompt access physiotherapy.

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\textbf{Introduction}

Like other industrialized nations, the UK is struggling with a serious and worsening ‘epidemic’ of disability from low back pain (LBP).\textsuperscript{1–3} A recent survey reported that in the previous 12 months, 40\% of UK adults experienced LBP for 1 day or more.\textsuperscript{4} The condition is one of the most common reasons for consultation with a
GP and for other health and social care utilization. Estimates of the direct costs of health care for LBP in 1998 were £1.6 billion, of which 35% represented private sector provision and the remainder services provided by the NHS. In addition to health service expenditure, disability payments and days lost from the workplace due to LBP represent massive public and private economic costs.

Two issues are central to the debate about how the problem of acute and chronic LBP should be managed: the disparity between reported symptoms and the presence of any demonstrable organic pathology; and the observed increase in levels of disability accompanying episodes of LBP. In most cases, a precise pathoanatomic cause cannot be found by examination or diagnostic testing. In some studies, psychosocial variables have been shown to be superior to physical signs as predictors of outcome, including chronicity. Physical impairment but also by complex social and cultural factors. For example, it has been suggested that current medical explanations of LBP may have disproportionate significance for patients; by encouraging rest rather than mobility, they may inhibit or even postpone recovery.

In 1994, the Clinical Standards Advisory Group (CSAG) reviewed the evidence relating to the condition and criticized current management, based on biomechanical explanations of LBP.

“There is a profound and widespread dissatisfaction with what is widely available to help people who suffer from LBP. It is now widely recognised that present healthcare and NHS services are unsatisfactory and are not solving the problem” (p. 8).

The CSAG urged the medical and allied professions to adopt a positive rehabilitative approach to the condition and produced recommendations on the management of LBP which form the basis of many local and national guidelines for therapists and doctors in the UK. With the aim of reducing the risk of symptoms and disability becoming entrenched, the CSAG recommended that, where appropriate, primary care patients with new episodes of LBP gain prompt access to specialist advice and, specifically, access to physical therapy within 72 h (p. 36).

Whilst the evidence supporting early access to physical therapy is persuasive within the NHS there are practical difficulties in implementing this recommendation. Despite the conclusion of the CSAG that their recommendations are overall ‘cost-neutral’, implementation requires health authorities/Primary Care Trusts (PCTs) to redistribute resources. Even where this can be achieved, physiotherapy departments may find it difficult to respond due to problems with staff recruitment, workload and professional development opportunities. Nevertheless, the case for widespread implementation of the CSAG recommendations on LBP would be strengthened by evidence that they are feasible, acceptable and effective in mainstream primary care.

The present study aimed to evaluate the outcomes of step-wise implementation of the CSAG recommendations in a representative sample of primary care in a typical UK health authority. Rather than attempt to influence the approach of GPs directly, we chose a strategy in which the main agent of change was to be a practice-based physiotherapy service, applying the recommendations of the CSAG and providing prompt access for new episodes of LBP referred by the participating GPs. We report the results of our evaluation of the service in terms of: feasibility; acceptability to patients and GPs; clinical outcomes in a large group of primary care patients with new episodes of LBP; and the component costs of managing LBP in this way. We consider the potential of a service of this kind to exert influence on GPs’ own approach to the management of LBP.

**Subjects and methods**

The study was based in Widnes, North Cheshire. North Cheshire Health Authority has a population of ~312,000 and socio-economic characteristics similar to England as a whole. Widnes is demographically representative of the health district in terms of age, population structure and deprivation indicators. From the population of Widnes, therefore, it was possible to select a group of demographically representative practice populations amounting to ~10% (30,000) of the district population. Information gained from this group could, therefore, be regarded as broadly representative of England.

**Recruitment of practices**

Having obtained local ethical committee approval, all 13 general practices in Widnes were first approached and asked if they were interested in joining the study; two declined or were unsuitable for practice-based physiotherapy clinics. A demographic profile of each of the remaining practices was created, based on age/sex composition and deprivation scores derived from the postcodes of patients. A group of practices (n = 5), whose demographic profiles were representative of Widnes as a whole, was selected; this included GPs working single-handed and in group practice of up to seven partners, with list sizes of ~2000–10,000 patients.

Following a presentation on the study and related issues by the authors, all 17 GPs in the selected practices agreed to refer patients with new episodes of LBP to the study and to make their medical and prescription...
records accessible to the research assistant. The total catchment population of patients aged 18–65 years eligible for inclusion in the study amounted to ~19 200.

Baseline data collection
In order to examine pre-existing prevalence of LBP within the study practices and assess how much therapist time was required in each practice, a sample of 2338 medical records (12%) selected at random was searched prior to the study. This search provided data on the local incidence of new episodes of LBP in the 18–65 year age group, the number of consultations per episode and how back pain was managed by the GP in terms of medication, investigation and referral.

Recruitment of subjects
For the duration of the study (the whole of 1997), we sought referral of any patient between the ages of 18 and 65 years presenting to the participating GPs with a new episode of LBP. Patients were excluded if they presented with ‘red flag’ signs or symptoms. A new episode was defined as the first recorded presentation for this condition within 6 months. Patients were identified by GPs in consultation and referred into the study. The process of referral was straightforward: patients were provided with an information pack by the GP and asked to return to reception to be booked into the next available practice-based clinic. The pack contained information about the study, a copy of the Royal College of General Practitioners Back Book21 and, in a randomly selected 20%, a back pain diary.22

Practice-based back pain clinics
In each practice, a back pain clinic staffed by the research physiotherapist (MAP) was established with the aim of providing access for patients wherever possible within 72 h of referral by their GP. Prior to consulting the research physiotherapist, a research assistant (JM) interviewed patients in order to gather data on: social characteristics; self-care; medication prescribed by the GP; pain levels, using a self-completed interval pain scale; disability, using the Roland and Morris Disability Questionnaire (RMDQ);23 and impact on general health and well-being, using the Short Form 36 (SF36).24

The physiotherapy intervention
A consistent clinical intervention comprising assessment, explanation, advice and treatment was adopted for patients referred to the clinics. This included a biopsychosocial approach and assessment based on the principles of McKenzie. The natural history of LBP and the implications of prolonged use of analgesics and anti-inflammatory drugs were discussed with them. Explanation and advice conformed to the recommendations of the CSAG5 and the Back Book21 by avoiding mechanistic models and encouraging activity whilst discouraging rest. Treatment, where indicated, reflected individual assessment and employed McKenzie or Cyriax manual therapies or exercise. The need for follow-up appointments for further treatment was decided on a case by case basis.

Where clinical assessment suggested serious pathology (CSAG ‘red flag’ cases), patients were referred back to their GP, while a fast-track referral system to a local orthopaedic surgeon was available for those patients with significant nerve root compression.

Where history, assessment or subsequent progress suggested the presence of ‘yellow flags’, prompt referral was available to a regional back pain rehabilitation service.

GP interviews
Two sets of semi-structured interviews were conducted by the research assistant (JM) with 17 GPs, before and after the study. Data from the first set of interviews are reported elsewhere. A framework of issues to be explored was derived from existing data on primary care research on LBP and refined using pilot interviews with four GPs not involved in the study. The process of analysis of transcripts was inductive, using well-established conventions of qualitative analysis.

Follow-up data collection
Twelve weeks after discharge from the back pain clinic, patients were reviewed by the research assistant. At this stage, data on current symptoms and self-treatment, further GP consultations, including GP-initiated treatment or referral, were gathered, and the RMDQ and SF36 were repeated. Patients were also asked to comment on their perceptions of the service. Again at this stage, in the presence of persistent symptoms or disability, the option existed to refer patients to back pain rehabilitation or orthopaedic services.

Economic evaluation
Our analysis was concerned only with the costs of a new episode of LBP between presentation to the GP and follow-up, some 12 weeks later. Although the analysis included costs to the patient, only costs to the NHS will be reported here.

The cost and resource elements included in the NHS component were: prescribed medication, hospital admissions (i.e. in-patient stays where the patient was admitted to hospital for one night or longer), GP appointments, other hospital and community services (i.e. visits to accident and emergency departments, diagnostic tests, out-patient appointments) and the physiotherapy intervention. Prescribed medications were costed at purchase price using the British National Formulary.31 Hospital in-patient stays were costed on the basis on the average for an overnight stay following orthopaedic surgery at a local district general hospital. The cost of GP services was based on a figure of
£16 per 8 min consultation and the number of GP surgery contacts per episode. Other hospital and community services such as X-rays, magnetic resonance imaging (MRI) scans, accident and emergency department attendance and appointments with orthopaedic consultants were costed using local data. The cost of physiotherapy was based on an hourly rate of £34.32.

Results

Baseline data
Analysis of the random sample of medical records in the participating practices indicated that, in the year prior to the study, 8.5% (95% confidence limits, 7.1–9.9%) of the population in the 18–65 age group had consulted with a new episode of LBP.

Subjects
Six hundred and fourteen patients, representing 3.2% of the adult population aged 18–65 years, were referred into the study by GPs during the course of 1 year. Of the 614, 522 (85%) were seen and assessed at a practice back pain clinic; 92 (15%) failed to attend their first appointment.

Patient characteristics
Patients' ages were normally distributed about a mean of 42 years (SD 12, range 18–65). Two hundred and fifty-four patients (49%) were female. Three hundred and seventy-eight patients (72%) were in paid employment (comparable figure for England 69.9%); 144 (28%) were not currently working, of whom 28 (5.4%) were unemployed (7.3%). Twenty-six (5%) were retired, 41 (8.6%) were homemakers, 45 (8.6%) were not seeking work due to disability (7.3%), and four (0.6%) were students or in training (5.0%).

Physiotherapy intervention
For the 522 patients who attended the back pain clinics, the average time from referral to clinic appointment was 4 days (median 3, mode 3). Of these, 322 (62%) were seen within 72 h. Three hundred and seventy-six patients (72%) were seen once and discharged; 82 (16%) were seen twice; 37 (7%) were seen three times; 20 (4%) four times; six (1%) five times; and one (<1%) six times. On average, the physiotherapist spent 47 min (SD = 13) per patient-episode.

Clinical outcomes
Of the 522 patients recruited, 90 (17%) were lost to follow-up at 3 months. However, in terms of age, sex, employment status, function (RMDQ), pain or general health (SF36) at presentation, the group lost to follow-up were not significantly different from those who were followed-up (n = 432).

Functional impairment. Figure 1 shows the distribution of patient’s RMDQ scores at presentation (n = 522) (mode 8, mean 10) on a scale of 1–24. Figure 2 shows the distribution of patient’s RMDQ scores at follow-up (n = 432) (mode 0, mean 3).

The mean RMDQ scores from presentation and follow-up were compared using a paired t-test. The decrease in functional impairment is highly significant (P = 0.0001).

Pain. Figure 3 shows the distribution of patient’s pain scores at presentation (n = 522) (mode 1, mean 4) on a
scale of 1–10. Figure 4 shows the distribution of patient’s pain scores at follow-up ($n = 432$) (mode 1, mean 1.5).

Mean pain scores from presentation and follow-up were compared using a paired $t$-test. The decrease in reported pain is highly significant ($P = 0.0001$).

**General health.** Table 1 shows the scores among study subjects for the dimensions of the SF36 at presentation ($n = 522$) and follow-up ($n = 432$) and, for comparison, scores from a normal community sample.$^{33}$

Using paired $t$-tests, statistically significant improvement ($P < 0.05$) between presentation and follow-up was found in four of the SF36 dimensions: bodily pain, physical role, social functioning and physical functioning. No significant changes were seen in emotional role, mental health, general health and energy and vitality. Inspection of Table 1 confirms that, with one exception (energy and vitality), the SF36 scores of study subjects at follow-up resemble subscale values from a normal community sample.$^{33}$

**Time off work.** Of patients in work ($n = 378$), 199 (53%) did not take time off work with their LBP. Of those patients who did take time off work, 109 (62%) felt able to return to work in $\leq 1$ week, 35 (19%) returned to work within 1–2 weeks, 31 (17%) returned to work within 2–4 weeks, while only four (2%) were off work for $>1$ month.

**Specialist referral**

At presentation, 10 patients (2%) were referred for orthopaedic consultation with signs of nerve root compression. Of these, two had MRI investigations followed by microdiscectomy. One patient had a spinal injection and the remaining seven patients were assessed and discharged without any further diagnostic or surgical intervention.

Fifteen patients (2.8%) were referred to the Back Rehabilitation Unit for assessment, of which five were admitted to the long programme (1 week) and four to the short programme (1 day) for multidisciplinary rehabilitation.

**Feasibility**

**Resources.** The use of a consulting room with examination couch and a minimal amount of therapeutic equipment was needed for the provision of LBP clinics. On this basis, all but one of the 13 practices in Widnes could have accommodated a practice-based physiotherapy clinic. Of the five practices involved in the study, four had an existing part-time attached physiotherapist and therefore the facilities required for the study, while the remaining practice made these available.

**Acceptability**

**To patients.** A randomly selected subsample of patients was issued with health diaries at recruitment to provide a twice-daily record of 1 week’s experience of LBP. Patients’ references to early contact with a physiotherapist for reassurance were uniformly positive. A full account of the qualitative analysis of the diary data has already been published.$^{22}$ In addition, details of referral uptake are published elsewhere.$^{19}$

At the 12 week follow-up, patients ($n = 432$) were asked to comment on their perceptions of the back pain clinics. After completing the battery of quantitative questionnaires, the question was posed to patients,

<table>
<thead>
<tr>
<th>SF36 dimensions</th>
<th>Mean SF36 scores at presentation (SD)</th>
<th>Mean SF36 scores at follow-up (SD)</th>
<th>Mean SF36 scores from a normal community samplea (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General health</td>
<td>68.8 (21.2)</td>
<td>72.0 (22.3)</td>
<td>72.2 (18.4)</td>
</tr>
<tr>
<td>Bodily pain</td>
<td>32.5 (20.4)</td>
<td>75.4 (25.0)</td>
<td>83.2 (19.2)</td>
</tr>
<tr>
<td>Energy/vitality</td>
<td>53.7 (21.8)</td>
<td>51.8 (10.7)</td>
<td>87.9 (18.8)</td>
</tr>
<tr>
<td>Role: emotional</td>
<td>83.1 (35.6)</td>
<td>92.9 (26.4)</td>
<td>87.9 (28.3)</td>
</tr>
<tr>
<td>Role: physical</td>
<td>23.8 (45.2)</td>
<td>81.1 (37.0)</td>
<td>88.2 (26.1)</td>
</tr>
<tr>
<td>Social functioning</td>
<td>67.4 (27.7)</td>
<td>87.2 (22.3)</td>
<td>86.7 (19.2)</td>
</tr>
<tr>
<td>Mental health</td>
<td>67.9 (19.3)</td>
<td>74.6 (19.8)</td>
<td>75.3 (15.4)</td>
</tr>
<tr>
<td>Physical functioning</td>
<td>57.0 (25.6)</td>
<td>83.7 (23.4)</td>
<td>87.8 (15.6)</td>
</tr>
</tbody>
</table>

a Hemingway et al. (1997).$^{31}$
“how did you feel about the back pain clinic?” and comments were noted.

References to the LBP clinics were customarily positive: 302 patients (70%) commented on the quality of explanation and reassurance derived from the physiotherapy contact(s).

“helped to explain causes/effects and remove any misconceptions.”

“better mentally after talking to the physiotherapist.”

“put my mind at rest, knowing it will get better and is not serious.”

Of the remaining patients, 87 (20%) expressed no strong positive or negative views on their experience of the LBP clinics, while 43 (10%) expressed their experience of the LBP clinic in ways that suggested the clinic visit did not meet their expectations:

“didn’t do anything.”

“I thought I was going to have some treatment, but was told it would get better on its own.”

“it was a waste of time because all he did was talk to me.”

To GPs and primary care staff. A series of interviews carried out after the study ended examined GPs perceptions of the clinics. While prompt access to physiotherapy for LBP was appreciated by GPs, many of their comments reflect feedback from patients. The following quotes from the GP post-study interviews were selected because they best represent the views of all GPs about their perceptions of the value of the practice-based LBP clinics, and are not illustrating unique or individual views.

“Very successful and greatly received by the patients.”

“I think my patients responded very well. They got seen quickly, they liked that.”

“The clinic was well received by patients.”

“I think early access is important, it is what the patient wants.”

“A vast improvement.”

“I would like us to have the project still going and the availability of the service as it was.”

“I’d love to see a back pain clinic.”

“We haven’t got instant access to physio anymore, that’s a great loss.”

“You’ve got to make sure that the physio is available. It is a sort of one-stop referral.”

“It was very beneficial to me and my work and especially the patients, and the feedback I have had from patients I’ve known quite well over the years has been very positive.”

The back pain clinics entailed additional work for practice reception staff in booking appointments and receiving patients. While receptionists’ views were not formally surveyed, they encompassed these tasks within their existing duties and, in all five practices, excellent working relationships with the physiotherapist and research assistant were maintained throughout the 12 months of the study. The presence of existing practice-based physiotherapists in four of the study practices was potentially a source of friction since the study raised questions about their present and future role in the management of LBP. In the event, relationships were cordial.

Economic analysis
In order to gain entry to the study, all 522 patients had at least one GP consultation. In addition, there were 67 GP consultations by 42 patients between referral and follow-up. Table 2 shows an analysis of the component costs of managing an episode of LBP in this study.

Discussion
The CSAG recommendations5 and more recent national guidelines34 make clear that improved outcomes require a sea change in the approach of primary care to managing LBP. Our decision to adopt a strategy, in which the provision of prompt access to in-house physiotherapy was to be the key change agent, imposed a number of limitations on the present study. First, a control group was not feasible if implementation of prompt access were to be evaluated across a systematically chosen population and pattern of practices, since some would argue that to withhold nationally recommended practice would be unethical.

| TABLE 2  Average component costs per episode of low back pain |
|------------------------------|------------------|
| Cost category                 | £        |
| Prescribed medication         | 8.34    |
| In-patient care               | 4.46    |
| GP consultations              | 20.67   |
| Other hospital and community services | 10.35 |
| Physiotherapy intervention    | 30.24   |
| Total cost                    | 74.06   |
Moreover, the number of existing studies indicating that early access was beneficial\textsuperscript{5,11} made it appropriate to focus this study on the feasibility and acceptability of implementation in primary care, while comparing cost and effectiveness with other published intervention studies. Secondly, our economic evaluation is limited to the duration of the episode and cannot reflect longer term issues involving either future costs (e.g. chronic disability from LBP) or potential cost savings (e.g. prevention of further episodes). Despite these limitations, we believe that the study reflects the operational realities of a prompt access physiotherapy service for new episodes of LBP in mainstream general practice and provides much needed data\textsuperscript{11,19} on the likely costs and effectiveness of such a service.

Our experience suggests that establishing clinics for LBP in primary care to provide prompt access to physiotherapy is feasible in the majority of practices and generally acceptable to referred patients and primary health care teams. While less than half the number thought to be presenting to their GPs with LBP were referred to clinics, the RMDQ and pain scores of patients recruited into the study were similar to those reported by studies of unselected patients with LBP in primary care.\textsuperscript{5,35} This suggests that factors other than severity were determining referral to the LBP clinics: specifically, variation among GPs in their attitude towards physiotherapy,\textsuperscript{36} and the well-attested observation that, in a significant number of patients, LBP reflects psychosocial problems for which physiotherapy is inappropriate.\textsuperscript{37} Moreover, the decision to refer is one in which the patient plays a part; there is some evidence that among the general public, physiotherapy is perceived as intimidating.\textsuperscript{38}

If the referral experience of the present study were to be replicated elsewhere, we calculate that LBP clinics would require \~1.5 h of physiotherapist time per week per GP principal with a list of 1800–2000 patients.\textsuperscript{19} For a PCT of average size (150 000), this amounts to 3–3.5 WTE physiotherapists. Whilst there would be a reduction in referrals to general community and hospital physiotherapy, given the current recruitment problems of the profession,\textsuperscript{14} it is not yet clear that manpower of this order is available nationally. Moreover, it is not known if a role dedicated to LBP care would prove generally acceptable to the physiotherapy profession.

With practice-based clinics, it proved feasible to provide access to physiotherapy within 3–4 days, and for the majority within 72 h of GP referral. Realization of the NHS target of no more than a 24 h delay before seeing an appropriate primary health care clinician\textsuperscript{39} would reduce the duration of an episode of LBP prior to treatment still further. Alternatively, self-referral to physiotherapy by primary care patients has been proposed.\textsuperscript{40} One benefit of prompt access identified by patients in the present study is the reassurance provided by contact with a physiotherapist early in an episode of LBP. Since the majority (72\%) were seen only once, confidence in managing the condition engendered in patients by modifying their interpretation of the meaning of the pain and how to react to, manage and cope with it\textsuperscript{41–43} appears to be an important benefit of early contact. This view is supported by the number of working patients in the present study who continued in or quickly returned to work: 53\% did not take any time off, while, of those that did, 62\% had returned to work within a week. In comparison, Malmivaara et al.\textsuperscript{15} showed that among patients with LBP treated by rest, 41\% were still out of work after 1 week, while among those assigned to an exercise programme, 36\% were still out of work at 1 week. For patients with LBP advised to continue ordinary activity, 20\% had not returned to work after 1 week\textsuperscript{20} compared with 18\% in the present study.

Whilst this was not a controlled study and can only report outcomes among patients who, with their GPs, chose to make use of this approach to the management of new episodes of LBP, more direct measures of effectiveness are also encouraging. By 12 weeks, highly significant improvement was observed in pain scores, RMDQ scores and in four dimensions of the SF36. In terms of early reduction in disability, the finding of a mean RMDQ reduction of 7 points at 3 months suggests that the approach used in this study is more effective than osteopathy and exercise programmes (mean RMDQ reduction of 5.4 points at 1 year and 3 points at 6 months, respectively\textsuperscript{9,44}). The presence of some residual disability in our patients at 12 weeks might be expected given the course of an episode of LBP in primary care.\textsuperscript{45} We conclude that for primary care patients with a new episode of LBP willing to make use of it, prompt access to an in-house physiotherapy service adopting the CSAG recommendations appears to produce outcomes by 12 weeks at least as beneficial as other published interventions.

However, two significant factors external to primary care contributed to this satisfactory overall outcome: (i) prompt orthopaedic intervention where this was clearly indicated, for example by evidence of nerve root compression; and, (ii) access to a back pain rehabilitation service where psychosocial factors might have indicated a higher risk of prolonged disability.\textsuperscript{27} As the CSAG envisaged, effective management of LBP in primary care includes identifying the small minority of patients (<5\% in the present study) who need these types of specialist referral. In our view, without the support of such services, physiotherapist-led back pain clinics in primary care will fail to deliver the improved outcomes anticipated by the CSAG. We would strongly recommend that commissioners take these factors into account when establishing early access back pain clinics.

It follows that a meaningful economic evaluation of our approach must include the cost of specialist referral and in-patient care for the minority, along with the
general costs of prescribed medication, GP consultations, other hospital and community services and the physiotherapy intervention. Using local and national data for this calculation leads to an average cost to the NHS of £74.06 per patient episode of LBP (Table 2). This cost compares favourably with that of £86.83 per patient to treat an episode of LBP using an exercise programme and £111.05 per patient when under the care of their GP.44 On this basis, an average PCT with a catchment population of 150,000 would recoup the salary costs of employing the 3–3.5 WTE physiotherapists required to provide this service within 12 months. However, we reiterate that our data can only provide a short-term view of cost-effectiveness. The potential of early physiotherapy intervention in LBP to reduce costs to the NHS through avoidance of drug side effects (e.g. from non-steroidal anti-inflammatory drugs11), prevention of future episodes and empowerment of patients to manage future episodes without help remains speculative.

As to primary care management of LBP in general, our strategy was not that this study would act in participating practices as a ‘Trojan horse’ for the wider recommendations of the CSAG. Rather, our aim was to influence GPs and their patients with LBP by sharing the workload of managing new episodes and providing an alternative model of care for those who chose to make use of it. From preliminary analysis of GP interviews after the 12 months of the study, it is clear that patient feedback was shaping physicians’ views on the value of physiotherapist-led LBP clinics in their practices. Further analysis of interview material is in progress in order to determine if the presence of a physiotherapist adopting rehabilitative methods has helped to change GPs’ own approaches to the primary care of LBP. However, we recognize that current medical practice for LBP is deeply rooted;28 the adoption of non-mechanistic explanatory models and a rehabilitative mind-set is likely to come about gradually and through a combination of factors. While the presence of a physiotherapist could well be directly instrumental, in our view, the key factor in promoting change is experiential learning46 and, in particular, positive feedback from patients about their experience of well-managed episodes of LBP.

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