A pilot redesign of a musculoskeletal physiotherapy service for low back pain

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CITATION
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Abstract
This paper describes the implementation and evaluation of a pilot redesign of the musculoskeletal physiotherapy service for low back pain (LBP). During the four-month period of the pilot there was a 30% increase in referral rate into the LBP service with a simultaneous reduction in the ‘did
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not attend’ (DNA) rate of more than 50%. The service was offered in three pathways representing increasing levels of severity and complexity. The majority of patients in all pathways improved and were satisfied with the service.

Keywords
low back pain; musculoskeletal physiotherapy; service development

Introduction
Approximately 30% of patients referred to the Cumbria Partnership NHS Foundation Trust Musculoskeletal (MSK) Physiotherapy Service, in one area of Cumbria, are referred because of LBP. The MSK physiotherapy team for this area undertook a four-month pilot, from January to May to redesign the service for patients with LBP. The team used the STarT Back predictor tool (Beneciuk et al., 2013) to stratify patients into one of three pathways. The aim of the pilot was to provide cost-effective treatment whilst simultaneously improving the quality of care, using current best practice.

Evidence shows that 94% of patients with LBP have a diagnosis that is mechanical in origin and 90% of these patients will improve with the correct advice and medication within six weeks. Five percent of patients will have unilateral nerve root involvement, with 50% of these patients improving within six weeks. The remaining 1% of patients will have ‘red flag’ symptoms that require urgent attention. Our objective for the redesign of the service was to target the patients most at risk of developing long-term LBP, who potentially wouldn’t improve without intervention. To reach this objective we provided an appointment within two weeks. The patients were assessed by an experienced member of the team, to provide the right amount of treatment at the right time.

Improving services during the redesign
• Additional ‘back classes’ and acupuncture clinics for patients in pathways 2 and 3 were created to comply with NICE (2009).
• Links were made with Carlisle Leisure Limited (CLL) to look at the feasibility/cost implications of running classes within the CLL facilities.
• Prior to the redesign, a member of the team was trained in psychologically informed physiotherapy (PIP), and during the pilot all staff had additional training on the management of chronic LBP and long-term conditions.

Methodology
The total number of referrals to the physiotherapy service received each year was calculated from the previous three years’ data; this indicated that 30% of patients were referred for LBP. Following an initial two-month audit, we predicted the percentage of patients who would be stratified into each of the three pathways (low risk, medium risk, and high risk).

Using this information, we created assessment clinics to accommodate patients referred with LBP and increased the assessment clinic capacity by 10–15% to allow for an initial potential increase in the referral rate to the new service. We allocated experienced team members to assess the patients on their initial appointment. Assessment clinics consisted of five or six 30-minute assessment slots across four clinical sites in the same areas. A broad spread of days and times were offered to meet patient needs, including some early evening appointments. We ensured there were sufficient resources within the team to accommodate the predicted number of patients that needed further appointments following the initial assessment.

Measures
• The STarT Back screening tool is a brief prognostic tool to assist clinicians to develop appropriate initial treatment pathways. The tool has been tested for psychometric properties, including reliability and validity in different settings internationally (Hill, 2011).
• The patient-specific functional scale (PSFS) outcome measure would measure the effectiveness of the treatment/advice given. The PSFS has been shown to be valid and responsive to change in musculoskeletal conditions such as neck pain, cervical radiculopathy, knee pain, and low back pain (e.g., Chatman et al., 1997; Pengel et al., 2004). The outcome is patient-centred with the patient specifying problems/goals of treatment.
The STarT Back screening tool and the PSFS outcome measures were completed before the first assessment and once again upon discharge. Patients stratified to pathway 1 were contacted by phone/letter to complete the outcome tools, approximately six weeks after the initial assessment.

**Patients taking part in the pilot**

We were able to compare activity within the pilot compared to the four-month period of the previous year. In 2012, there were 300 people referred; in 2013, during the pilot there were 405 people referred. This is an increase of over 30% in assessment appointments. In 2012, there was a DNA rate of 22%; in 2013, during the pilot there was a DNA rate of 10%. In 2012, the waiting time was over six weeks; in 2013, during the pilot the waiting time was less than two weeks.

A total of 380 patients were included in the pilot, 38 (10%) did not attend, 87 (23%) were in pathway 1, 153 (40%) were in pathway 2, and 102 (27%) were in pathway 3.

**Outcomes**

**The STarT Back tool** provides a consistent measure of the broad impact of the back problem for an individual. A lower score would indicate a lower risk of developing long-term chronic LBP (Hill, 2011). For pathway 1, the pre-treatment average score was 2.25 and at discharge it was 0.8. A total of 77% of the group improved in this period, 12% stayed the same, 11% of the group were worse at discharge. For pathway 2, the pre-treatment average score was 4.0 and at discharge it was 1.1. A total of 85% of the group improved in this period, 15% stayed the same, and none of the group was worse at discharge. For pathway 3, the pre-treatment average score was 6.3 and at discharge it was 2.6. A total of 92% of the group improved in this period, 8% stayed the same, and none of the group was worse at discharge.

The average overall improvement for all patients across the three pathways was good. Most patients have lowered their risk of developing chronic LBP. Unfortunately, a small proportion in pathway 1 had a score which became worse; these patients were picked up through the six-week ‘SOS’ system where patients are encouraged by the Physiotherapists to contact the department if they are not improving.

**PSFS** is used at pre-assessment and on discharge. A minimal detectable change is set at 2 points: 90% confidence interval (Stratford, 1995). The higher the PSFS score, the better the outcome for the patient. For pathway 1, the pre-treatment average score was 5.3 and the discharge average score was 7.4. A total 80% of the group improved in this period, 9% stayed the same, 11% of the group were worse at discharge. For pathway 2, the pre-treatment average score was 3.6 and at discharge the average was 6.7. Some 91% of the group improved in this period, 6% stayed the same, and 3% of the group were worse at discharge. For pathway 3, the average pre-treatment score was 3.3 and at discharge the average score was 6.3. A total 94% of the group improved in this period, 6% stayed the same, and none of the group was worse at discharge.

The average PSFS outcomes have increased in all pathways. Most pathway 1 patients improve with only a minimal package of care; a small proportion in pathway 1 had a score which became worse; these patients were picked up through the six-week SOS system.

**Patient experience**

Questionnaires were posted out to 50 patients from pathways 1, 2 and 3: these questionnaires included a self-addressed envelope for the Patient Experience team at the Carleton clinic.

For pathway 1, there were 22 responses (44% of the total); 58% reported they were very satisfied with the service, 27% were satisfied, 5% were uncertain, 5% were dissatisfied, and 5% were very dissatisfied. Positive comments related to the effectiveness of the treatments and positive views on the clinicians involved. Areas that could be improved were the time offered in the appointment, the environment of the appointment, and there were two comments on the difficulty of using the booking system.

For pathway 2, there were 23 responses (46% of the total responses); 65% reported they were very satisfied with the service, 13% were satisfied, 9% were uncertain, 9% were dissatisfied, and 6% were very dissatisfied. Positive comments related to the effectiveness of the treatments, positive views on the clinicians, and overall service involved. Areas that could be improved were discussion of possible side effects of treatment (soreness), and the gap between initial assessment and follow-up treatment.

For pathway 3, there were 15 responses (30% of the total responses); 80% reported they were very satisfied with the service, 13% were satisfied, 7% were uncertain, none
were dissatisfied or very dissatisfied. Positive comments related to the effectiveness of the treatments, positive views on the clinicians, and overall service involved. One respondent felt there was nothing that could be done to help them.

**GP experience of new service**

There have been no complaints from the GPs in the local area. However, despite sending questionnaires to all GP practices and emails to all practice managers, there has been no response from any of the GPs. The Commissioning Officer for the Carlisle Locality also discussed the questionnaire with the Carlisle Practice Managers at their July 2013 meeting. We therefore presume that GPs in the Carlisle Locality are not unhappy with the redesigned service.

**Staff experience**

There was generally positive experience reported by the staff involved. Comments included:

- **Good to see patients in less than 2 weeks from referral – reduced DNA rate and less frustrated patients due to the reduced wait.**
  
- **We have learnt how to be more streamlined with assessments.**
  
- **We have gained confidence that patients from Pathway 1 do not need a review appointment in the majority of cases.**
  
- **Great to identify P3 patients – so I can give them increased input to improve their outcome to treatment.**
  
Some concerns were expressed, these included:

- **Feel it is not equitable to see patients with LBP in less than 2 weeks – yet there is a larger waiting list for conditions that are not LBP.**
  
- **Feel 30 mins is not long enough to assess/and give advice to patients on P1 – feel rushed with some patients.**
  
- **A clinic of 5-6 LBP patients is exhausting and don’t look forward to the clinics.**
  
- **Some clinicians do not feel adequately trained in PIP for P3 patients.**

These concerns are being addressed by increasing the assessment slots to 45 mins to improve patient and staff satisfaction with the service: this would mean 40 mins for assessment and advice with 5 mins for paperwork after each assessment. An additional one day PIP training, focusing on low back pain, was completed in December 2013 for those staff who identified this as a personal development need, and a service development day in October 2013 looked at a possible service redesign for the remaining 70% of the service.

**Conclusion**

The aim of this pilot was to redesign the MSK physiotherapy service for patients with LBP in one area of Cumbria. Patients were stratified into one of three pathways using the STarT Back predictor tool (Hill, 2011) and appropriate treatment plans were developed, alongside best practice. We aimed to see all patients in less than two weeks, with patients being assessed by an experienced member of staff. Between January 2013 and May 2013 there was an increased referral rate into the LBP service by 30%, with a simultaneous reduction in the DNA rate of more than 50%. We aimed to improve patient, carer, staff and gp experience of the MSK physiotherapy service. Overall the team have achieved these objectives. The team were able to provide cost-effective treatment whilst simultaneously improving/maintaining the quality of care.

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