Sheffield spinal pathway audit cycle – pathways, mountains and the view from the top

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Abstract

There is good evidence to suggest that a proactive stratified approach to management of spinal pain, taking into account psychosocial as well as biological factors, can realise significant savings for health-care systems and perhaps more importantly, health benefits for society at large. This audit cycle report captures data on quality of care and patient flows before and after the mandating of changes to the referral pathways in primary care. These included the introduction of a simple one-sided referral proforma, bounce back of inappropriate referrals from secondary care to physiotherapy lead teams and implementation of the STarT tool, as a decision aid in primary care.

Keywords

Spinal pain, musculoskeletal pathway, clinical audit, referral, spinal specialist team, STarT

Key points

1. The use of a bounce back process has improved adherence to the spinal pathway.
2. The creation of a one-sided referral form with the minimum data set highlighted was widely accepted by clinicians and facilitated the bounce back process.
3. The use of a referral strategy based around the STarT tool in primary care did not increase numbers of referral to physiotherapy services.
4. The use of both the STarT tool and referral form significantly increased the quality of information communicated within referrals.
5. Educational events and traditional methods of communicating pathway changes were unsuccessful at ensuring adherence to new pathways of care.
6. Some caution that shifting patterns of complex and urgent referrals to physiotherapy teams could have a knock on effect, causing delays for less complex patients within the system.

Introduction

As a result of inconsistent and inequitable practice across the city, highlighted need by clinicians and patients and an emerging evidence base of best practice,^{1–4} a multidisciplinary team (MDT) developed and introduced a care pathway for back pain across Sheffield in 2008. This was further updated in April 2010, audited in June 2011 and re-audited in June 2012 to collate evidence of improvements to the management of patients with back pain. This article

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outlines the actions taken as a result of the 2011 audit and presents some results from 2012, specifically highlighting the changes that have been implemented and the improvements to the overall service.

Background and context

From the outset, the intention of the MDT has been to standardise the way in which patients are referred into the system, to maximise the available expertise within the community and ensure that referrals into acute care are both appropriate and warrant further specialist intervention.⁵ There is good evidence to suggest that a proactive stratified approach to management of spinal pain, taking into account psychosocial as well as biological factors, can improve outcomes for patients and realise significant savings for both health-care systems and society at large.^{2,6}

The pathway requires general practitioners (GPs) to formally assess the patient prior to referring them appropriately, either to the spinal specialist teams (SSTs) (either PhysioWorks or CarePlus), that is, for non-specific back pain, or to secondary care as 2-week wait or emergency referral, that is, the patient has red flags. If symptoms persist after an agreed programme of physiotherapy interventions, the SSTs have full access to appropriate investigations and the facility to discuss suitability, or directly refer patients, for specialist treatment. Full details of pathways are available at <http://www.sheffieldbackpain.com/>.

Despite the pathway being available, concerns were raised in 2011, indicating that it was not being adhered to and non-red-flag patients continued to be directly referred into orthopaedics and neurosurgery services and not into the SSTs for prior assessment and treatment.

Aims and objectives

The initial audit was undertaken during 2011 in order to understand how the pathway was influencing existing referral patterns both to SSTs and secondary care for spinal patients in Sheffield. This also provided an opportunity to gather evidence to support the messages being delivered to the wider GP population via a series of educational interventions. These consisted of two whole afternoon musculoskeletal learning events, for which GPs were given cover for clinical commitments, and a series of smaller educational sessions and email messages.

The original objectives of the audit were to

- Identify the number and nature of GP referrals for spinal conditions received by orthopaedics, neurosurgery and SSTs;

- Determine how well these match the current back pain pathway;
- Identify how often information crucial for effective triage of referrals by SSTs is included in the referral letter;
- Identify how often details of psychosocial factors are included in referrals.

Criteria and standards

The following criteria were developed in line with the back pain pathway:

1. Routine referrals into orthopaedics must come via the Spinal Specialist Team (100%).
2. Routine referrals into neurosurgery must come via the Spinal Specialist Team (100%).

A number of associated factors were also included within the audit in order to gain a baseline of existing practice and to elicit more detailed information about referral reasons and patterns in general. The details are as follows:

1. Referral type – emergency/urgent/routine/2-week cancer wait;
2. Pain type – neck, thoracic, lumbar, mixed or not specified;
3. Nerve root pain (e.g. referred pain to arm or leg, or ‘sciatica’, or ‘radiculopathy’) present or not;
4. Detail of timescale of symptoms – under 6 weeks, 6 weeks to 3 months, longer than 3 months or not recorded;
5. Surgical input required. If yes, details;
6. Detail of a psychosocial assessment (including use of STarT² back tool), or not recorded.

Logic dictates that the severity of 2–6 will determine the type of referral being made. Ideally, all of the information requirements outlined above should be recorded on the referral forms in order to inform the onward management and appropriate interventions for the patient.

Method

All consecutive paper referrals received by orthopaedics, neurosurgery, CarePlus and PhysioWorks within June 2011 and 2012 were anonymised, photocopied and sent to the Clinical Audit and Effectiveness Unit at the Sheffield Clinical Commissioning Group (SCCG) for analysis. This was limited to patients registered with a GP practice covered by SCCG.

In order to ensure consistency, the specific terminology, wording and detail were discussed and agreed

Table 1. Compliance to criteria and standards.

Criteria	Standard set	Standard achieved in 2011	Standard achieved in 2012
1a. Routine referrals into orthopaedics must come via the Spinal Specialist Team	100%	31% (17/54)	77% (24/31)
1b. Routine referrals into neurosurgery must come via the Spinal Specialist Team	100%	0%	28% (6/21)

Table 2. Number and nature of all Sheffield referrals made into the system. No emergency referrals were made by paper in either data collection period.

	2011		2012	
	Urgent	Routine	Urgent	Routine
Orthopaedic	11	54	3	31
Neurosurgery	1	18	4	21
CarePlus	13	155	13	121
PhysioWorks	29	440	70	341

prior to the audit commencing. The same auditor conducted the work for the 2011 and 2012 audits. Data validation was undertaken, and any data item queries thereafter were subsequently highlighted and resolved through discussion between the auditor and GP. The data were entered directly into a Microsoft® Excel template and then analysed.

Results

The results are captured in Tables 1–4 and in the graph showing referrals (Figure 1).

Discussion

Following the June 2011 audit, specific changes were made to the spinal pathway including,

- The introduction of a single-sided spinal referral form. This included mandatory minimum data sets for completion by the referrer, an example being the use of the STarT screening tool as a bio-psychosocial assessment indicator.
- The referral form was returned to the original referrer if the mandatory information had not been completed.
- Secondary care providers of orthopaedics and neurosurgery also agreed to redirect referrals to the appropriate SSTs that did not follow the local spinal pathway.
- It was also agreed that referrals back to the operating consultant for a problem directly related to previous spinal surgery would be an exception from this redirection.

- Both SSTs agreed to adopt a stratified approach to back pain management with treatment tailored to the long-term risk reduction of chronic back pain as assessed by the STarT tool. This is in line with published evidence of improved patient outcome and health economic benefit of this approach.²

The 2012 re-audit shows that considerably fewer GPs have bypassed the pathway and referred routine patients directly into orthopaedics (37 in 2011 down to 7 in 2012). The difference in referrals to neurosurgery, however, is not as marked (18 compared to 15).

Referrals to the SSTs saw a marked improvement in the recording of pertinent details relating to nerve root pain (14% in 2011 to 95% in 2012), the duration of symptoms and the type of pain, and this is due mainly to the introduction of the new referral form which specifically asks for this information to be included.

There is clear evidence indicating the importance of psychosocial assessment for the management of spinal pain, and there is a strong link between psychosocial risk factors and the likelihood of spinal pain to persist and become chronic. A stratified approach to treating patients according to the level of risk has demonstrated significant health and economic benefits, due to appropriate services being matched to patients according to the level of need, and the reduction of referrals of people with self-limiting symptoms likely to improve without the need for further support.^{2,5} The STarT tool is an easy method of classifying this need considering bio-psychosocial factors. Despite this, only 41% of all referrals made in 2011 recorded reference to psychosocial symptoms. The re-audit has shown a marked improvement in this figure rising to 96% for 2012.

In 2011, 56% of all referrals were made once symptoms had been present for over 3 months. This is traditionally the time at which spinal pain is considered to becoming chronic at which point, it is often harder to affect meaningful change in patients. The 2012 data show that more patients are being referred into the SSTs as urgent before the 3 month deadline, but the figure for all referrals for symptoms present for over 3 months remains high at 71%. It is, however, worth noting that a significant proportion of referrals from the data set in 2011 did not have the data recorded,

Table 3. Extent to which relevant pain information is included in both *routine and urgent* referrals to the SSTs.

	2011			2012		
	Nerve root	Duration	Pain type	Nerve root	Duration	Pain type
CarePlus	76 (45%)	115 (68%)	130 (76%)	129 (96%)	131 (97%)	133 (99%)
PhysioWorks	216 (46%)	376 (80%)	468 (99%)	392 (95%)	409 (99%)	409 (99%)

SST: Spinal Specialist Team.

Table 4. How often psychosocial details are included in routine Sheffield referrals (any or all of the following: yellow flag, psychosocial assessment and STarT tool).

	2011	2012
Orthopaedic	13 (24%), of these, details are recorded by SST: 5; GP: 8	23 (74%), of these, details are recorded by SST: 20; GP: 3
Neurosurgery	2 (11%), details are recorded by GPs	16 (76%), of these, details are recorded by SST: 6; GP: 10
CarePlus	59 (38%)	111 (92%)
PhysioWorks	194 (44%)	341 (100%)

SST: Spinal Specialist Team.

Figure 1. The following graph shows numbers of referrals to each team for 2011 and 2012.

whereas with the introduction of the new referral form, the data set for 2012 is almost 100% complete. It is therefore difficult to comment on whether this figure has changed. However, a note of caution must be raised that a possible side effect of mandating tools and using a bounce back process is that it may introduce a delay into the referral process. It is hoped that this delay would reduce with time as referrers become more

familiar with the process and don't fall foul of the bounce back processes.

The year 2012 saw fewer patients being seen by the SSTs at under 6 weeks. This could represent less low risk patients being sent through early on the pathway, or it might indicate a slowing in response to referrals by the SSTs. With a higher proportion of urgent cases now coming through SSTs, this is something to watch,

in order to ensure that the referral process is not extending the period that appropriate patients have to wait. However, it is also worth noting the significant drop in numbers of urgent cases being seen at greater than 3 months in secondary care. This may in fact illustrate that some patients simply present late in the system, and where previously were being seen by secondary care are now being managed in SSTs.

It has been interesting to capture the effect of mandating aspects of the pathway of care and using a 'bounce back to referrer' process to reinforce this. Prior to the 2011 audit, the implementation strategy had focused on high-quality educational events. Despite being well attended, with good feedback, there was only minimal behaviour change in terms of referral patterns and quality. Despite the STarT tool being recommended as an easy-to-use tool designed for primary care use, there was only minimal evidence of its use, and little evidence of alternative psychosocial assessment in the 2011 audit. However, significant changes occurred after the introduction of the bounce back process, leading to the conclusion that in this situation, it was a far more effective method of implementing behaviour change. Despite being effective at achieving evidence-based best practice, there is a risk that such changes are viewed as interfering with clinical autonomy.

The difficulty in implementing changes to referral patterns has been highlighted before, and the King's Fund report highlights the need for a system-wide approach.⁵ Within Sheffield, it is the conclusion of the authors that the wide stakeholder involvement and incremental approach to changes, with wide communication to local audiences, have enabled the system to tolerate mandated changes in the end.

Conclusion

This audit demonstrates the changes that occur in the flow of patients and the quality of data being communicated when specific changes are mandated in a pathway. The introduction of a referral strategy for spinal patients based around mandating the STarT tool as a way of screening for ongoing management has actually reduced the overall number of inappropriate cases with non-red flag back pain being referred on for further care. The majority of these are managed in a physiotherapy setting in the SSTs.

Although not captured in this audit, qualitative and quantitative feedback from the SST clinical leads has confirmed higher proportions of 'complex cases' in their case mix (full data expected to be published at a later date). This suggests that there are less simple cases of back pain (which are likely to resolve spontaneously) and a higher proportion of cases that are likely

to need ongoing support to return to normal function. In line with data from the STarT back trial, this change in case mix being seen by SSTs is likely to result in better overall outcomes for the population with spinal pain in Sheffield.

Using a simple one-sided referral form has been effective in ensuring that minimum data are communicated to specialist teams, and has been well tolerated by the primary care teams. There are some indicators where future attention needs to be focused in relation to monitoring the time to treatment by the SSTs, in order to assess whether any of the new processes contribute to delays in the system, or whether these delays are related to other factors (e.g. time to initial presentation at GP).

As a result of the re-audit, a number of further recommendations have been made to ensure that the service continues to respond:

- Continue the mandatory inclusion of a minimum data set in referrals to SSTs (including STarT score).
- Continue to ask secondary care providers of spinal surgical care to redirect referrals to SSTs that do not meet the criteria for direct referral to specialist secondary care.
- Monitor the time from symptom onset to time seen by SSTs to ensure the process is not adding additional delay to the patient journey.
- Plan further research/audit to investigate patient outcomes from the spinal pathway to demonstrate the overall value of different aspects of the pathway.
- Reinforce the redirection criteria and process to orthopaedic and neurosurgical secondary care surgical teams.

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Conflict of interest

The authors declare that there is no conflict of interest.

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