

## Research paper

# Evaluation of the impact of orthopaedic guidelines on referrals from primary care to a specialist department

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## ABSTRACT

**Introduction** This study was designed to assess the impact of written guidelines on general practitioner (GP) referrals to an orthopaedic outpatient department. We looked at referrals of six common, yet diverse, orthopaedic conditions and planned a prospective audit to assess the number of referrals from GPs before and after the provision of referral guidelines. A secondary part of the study involved assessing the 'usefulness' of the guidelines.

**Methods** All GP referral letters for new patients with the chosen conditions in a 13-week period were audited. Paper copies of referral guidelines were then distributed to all local GPs. After a period of four weeks for distribution, the process was repeated for a further 13 weeks. Each letter was analysed for its content of therapy or management already tried by the GP prior to referral, as suggested in the guidelines. A feedback questionnaire was sent to GPs in the Swindon Primary Care Trust to assess the distribution and use of the guidelines.

**Results** In total 471 referral letters were assessed, 304 before the provision of guidelines and 167

afterwards. The first 13-week period had 195 (64%) referrals that consisted of patients who either had not received the recommended management, or for whom this had not been mentioned in the referral letter. The second period had 103 (61%). There was no statistically significant difference ( $P = 0.49$ ) and therefore little evidence that the implementation of guidelines had an effect on the management of patients prior to referral or the consequent timing of seeking specialist opinion.

**Conclusion** The provision of orthopaedic written referral guidelines to GPs does not affect the pre-referral management of patients, or the overall number of referrals to the specialty. Further work with primary care trusts to develop a referral system that gives all the information required by the hospital specialist may help promote greater awareness of referral guidelines, and more strict criteria on the timing of referral.

**Keywords:** orthopaedics, referral guidelines

## How this fits in with quality in primary care

### What do we know?

It is known that there are very long waiting times for an orthopaedic outpatient appointment. There are numerous strategies for disseminating information to general practitioners. Written guidelines have a debated role.

### What does this paper add?

This paper shows that the provision of written guidelines to general practitioners has limited effect on referral practices to a specialist orthopaedic department for specific conditions.

## Introduction

The effectiveness of communication between health-care professionals has long been a matter for discussion in view of its great importance in correctly managing patients. With regard to the referral letter from a general practitioner (GP) to a hospital consultant, the information contained therein has a bearing on the allocation and prioritisation of the outpatient appointment. The letter should allow accurate assessment of the patient's needs and clinical condition, to provide optimal management.

Without guidelines for referral, it is conceivable that referral letters may sometimes not provide the necessary information for such decisions to be made. This consequently could result in increased workload, unnecessary attendances and suboptimal treatment prior to the outpatient consultation.

With this in mind the orthopaedic consultants at the Great Western Hospital, Swindon, created a set of referral guidelines for the most common orthopaedic conditions relating to the upper limb, lower limb, back and children. The guidelines were designed to identify those patients who would benefit from a specialist opinion at the optimum point in their management. They were discussed and approved by a GP representative of the Swindon Primary Care Trust (PCT). A selection of conditions were chosen for the study where guidance could have made an impact in advising treatment or management in primary care prior to referral, thereby avoiding an outpatient consultation. Osteoarthritis cases were excluded from the study as it was felt that this common condition was encountered frequently and referred appropriately in the majority of instances. Table 1 shows the referral criteria for each complaint.

The recommendations contained within the guidelines were based on the current evidence in the orthopaedic literature for managing the various conditions. Only treatment that was appropriate to primary care in the NHS was advised. The aim was to give advice to GPs on the management of specific orthopaedic conditions, in particular those conditions where orthopaedic surgical intervention has little to offer. It was also thought that this would have an impact on outpatient waiting lists, as patients would be dealt with more effectively by the GP, and unnecessary hospital appointments would be avoided. Thus we planned to distribute easy-to-follow referral guidelines to the GPs in the catchment area of the Great Western Hospital, and to audit the difference in referral content and numbers before and after dissemination of the guidelines.

**Table 1** Referral criteria for prior management of orthopaedic conditions before referral to outpatients

Complaint	Referral requirements
Anterior knee pain	Physiotherapy
Back pain	Physiotherapy Analgesia
Carpal tunnel syndrome	Splints Steroid injection
In-toeing	Details of age Duration
Sciatica	Physiotherapy Analgesia
Tennis elbow	Physiotherapy Steroid injection

## Methods

Copies of all referral letters from GPs to the orthopaedic department were reviewed over a 13-week period. All GP referral letters for new patients, whether posted or sent electronically, were included. Letters referring patients for six specific orthopaedic complaints, namely anterior knee pain, back pain, carpal tunnel syndrome, in-toeing in children, sciatica and tennis elbow were selected. The content of each referral letter was assessed using the orthopaedic department guidelines (see Table 1), which were composed at the start of the study.

The referral guidelines, produced by the orthopaedic consultants, were then distributed as hard copies to all GP practices in the hospital catchment area. After allowing four weeks to ensure distribution and awareness of the referral criteria, the referral letter audit process was repeated for a further 13-week period. GPs were unaware that a referral letter audit was being undertaken.

For each letter that did not meet the referral guideline criteria, the reason was recorded and collated.

The number of letters for each condition was obtained for each 13-week period (see Table 2). These were divided into two groups, referral criteria positive and referral criteria negative letters. The differences were analysed using a Fisher exact test for statistical significance. The reasons for being deemed referral criteria negative were totalled for both periods (see Table 3), and the statistical significance assessed using a Chi-squared test.

**Table 2** The number (percentages) of criteria positive (+ve) and criteria negative (-ve) referral letters for each orthopaedic condition, with totals

	Pre-guidelines		Post-guidelines		<i>P</i> value
	Criteria -ve <i>n</i> (%)	Criteria +ve <i>n</i> (%)	Criteria -ve <i>n</i> (%)	Criteria +ve <i>n</i> (%)	
In-toeing	5 (50)	5 (50)	3 (50)	3 (50)	1.0
Back pain	54 (54)	47 (47)	27 (51)	26 (49)	0.87
Sciatica	38 (71.5)	15 (28.5)	16 (64)	9 (36)	0.60
Knees	45 (61)	29 (39)	37 (72)	14 (28)	0.19
Tennis elbow	15 (88)	2 (12)	3 (43)	4 (57)	0.038
Carpal tunnel syndrome	38 (77)	11 (23)	17 (63)	10 (37)	0.19
Total	195 (64)	109 (36)	103 (61)	66 (39)	0.49

**Table 3** Reasons for referral letters being deemed criteria-negative

	Pre-guidelines		Post-guidelines	
	<i>n</i>	%	<i>n</i>	%
No physiotherapy	123	63	74	69
No analgesia	60	31	25	23
No injections	38	19	15	14

NB: the percentages do not add up to 100% as some letters failed for more than one reason, e.g. no physiotherapy or analgesia.

Following completion of the study a questionnaire was emailed to 29 GPs (in Swindon PCT) after the audit period, to request feedback on the usefulness and relevance of the distributed guidelines. Questions related to the availability of the guidelines, the breadth of complaints covered, and the usefulness of management information. There was also the opportunity for free-text comments. The responses could be returned by either email or post.

## Results

This study evaluated 471 referral letters to one orthopaedic department at a district general hospital during the study period. The results in Table 2 show the different number of criteria-positive and -negative referrals for each orthopaedic condition studied separated for the two 13-week periods. The only condition showing a significant reduction in the percentage

of criteria-negative referrals after the guidelines were distributed was tennis elbow ( $P = 0.038$ ). However, if an adjustment is made for the number of cases this ceases to be significant. All other conditions showed no significant difference in the number of criteria-negative referrals after the guidelines were distributed. In the 13-week period before the guidelines were issued 64% of referral letters did not meet the criteria for referral, while the corresponding figure after the guidelines were distributed was 61% ( $P = 0.489$ ).

The commonest reasons for a letter to be deemed as not meeting referral criteria included lack of physiotherapy treatment before referral, inadequate analgesia, or failure to administer a steroid injection. Table 3 shows the reasons and rates for criteria-negative referrals. As not all the evaluated conditions required each treatment modality, the absolute numbers were less important than the differences between pre- and post-guidelines ( $P = 0.26$ ). Therefore there was no evidence to suggest that the implementation of guidelines significantly affected the numbers of referrals

meeting the criteria set out in these guidelines in terms of pre-hospital management or timing of referral.

The feedback questionnaire was completed and returned by 16 (55%) out of 29 GPs contacted. The information returned showed that 13 (81%) out of 16 actually received the guidelines. Ten (62.5%) out of 16 felt the guidelines were clear in their recommendations, one didn't know, and five did not comment. GPs were asked to assess the guidelines for each individual condition, as being 'no help', 'helpful', or 'very helpful'. There were 80 assessments, of which 68 (85%) stated the guidelines were 'helpful', seven (9%) 'very helpful', and five (6%) 'no help'. All five replies of 'no help' were for different conditions. Finally, on the question of whether the guidelines were used, three replied 'often', six replied 'sometimes' and seven GPs admitted to never using them when referring patients.

## Discussion

Orthopaedic outpatient clinics, like most other specialties, have a lengthy waiting time for a new appointment. At our trust in 2003/2004 24.2% of patients referred by GP letter waited longer than 13 weeks for their initial appointment.<sup>1</sup> Therefore a robust system of referral is needed to ensure those patients most in need are seen soonest, and those patients who can be managed in primary care do not take sought-after places. The appointments are allocated by the orthopaedic consultants based on the content of the referral letter. Therefore the content of the letter is of paramount importance. The orthopaedic referral guidelines were designed with twin aims, firstly to ensure only relevant patients were referred and secondly to demonstrate the information required to enable appropriate appointment allocation. Our guidelines required a relevant history and examination in addition to basic management. It has been described in the literature how much the information contained within referral letters varies.<sup>2</sup> We found that the information included varied in its depth and relevance. The poorest section was current management, particularly which analgesic, if any, was being prescribed. It was not possible to distinguish whether a patient had not received a specific management option or whether the information was simply not included in the letter.

The GPs were not informed of the audit so as to avoid any confounding or 'Hawthorne effect'.<sup>9</sup> We decided not to include letters in the study where it was specified that the referral was due to patient request, as we did not intend these guidelines to be a restriction on patient choice.

It has been described previously in other specialties that GP referral guidelines do not affect either the

content of letters or the number of referrals.<sup>3</sup> However, we could find no published data regarding orthopaedic referrals. Although orthopaedic surgery does not differ markedly from any other specialty it does have a wide range of simple, non-pharmacological, management options which can easily be utilised in primary care. Many orthopaedic conditions are self-limiting over a relatively short time span, with the mainstay of treatment being symptomatic control.

Because the orthopaedic department works closely with the physiotherapy department, it is susceptible to demands being made in response to elongated physiotherapy appointment waiting times. Consequently guidelines would have no impact on patients with complaints requiring physiotherapy, as GPs will tend to refer to the service with the shortest waiting time, even though physiotherapy may be the optimum treatment.

An unexplained effect of the guidelines was the total reduction in referrals following their distribution, but not a change in the proportion of letters that were criteria-negative. The second 13-week period occurred over the summer months when it is possible there was a seasonal reduction in referrals. We could not find any study in the literature to support this hypothesis.

The GP questionnaire showed that the distribution of guidelines via normal mail was flawed, with some GPs not receiving them. The questionnaire results also showed that although the guidelines were generally perceived as clear, available and helpful, they had little effect on referral patterns. This perhaps demonstrates that other factors come to bear on GP referrals such as patient demands, physiotherapy waiting times and lack of time or expertise for GPs to perform procedures such as injections. It has also been recognised in experimental studies that passive approaches to disseminate information have limited effects.<sup>4</sup> Active learning, however, which is essentially interactive and participatory, has been shown to be more effective in producing change.<sup>5</sup>

The guidelines were composed based on the individual experiences of the consultant orthopaedic surgeons. It is difficult to assess the quality of any guidelines, as there are no widely accepted 'gold standards' with which to compare. Feedback from GPs did not include any comments on the content of the guidelines with regard to management requirements.

It has been proposed that GPs would benefit from feedback on cancer referrals, but this could be expanded to include all referrals.<sup>6</sup> Studies have also shown that GPs would welcome constructive feedback.<sup>7</sup> Comments from GPs regarding our guidelines included that referrals are driven by chronicity and severity of symptoms, and that if the guidelines were incorporated into the online referral form they would be used.

Alternative methods of relieving the orthopaedic service include physiotherapy specialists and GP

orthopaedic specialists to triage of referrals. These practitioners can also offer some treatments that GPs may not be able to provide, e.g. steroid injections.

For further study it would be useful to look at the number of new outpatient appointments in clinic whose attendance is deemed unnecessary when seen by a consultant. This could then be compared with the referral letter data. This may give more information as to whether treatment is not being instigated or is simply not documented. A previous study has shown that although a number of outpatient appointments are unnecessary, a significant proportion of those patients referred benefit from the appointment.<sup>8</sup> Therefore an idea of the information required by the patient could be obtained and made available to GPs, thus reducing referral numbers.

A criticism of the study is that it takes no account of the benefit patients may get from outpatient consultation, even if management is not altered. We appreciate that the study attempts to deal with referrals as 'black or white', but in the current climate in the NHS, with league table targets and increased patient choice, the emphasis is moving towards pure streamlined service provision.

## Conclusion

The provision of written referral guidelines to GPs for common orthopaedic conditions does not affect the proportion of referrals meeting guideline criteria. A more effective form of guidance is required, possibly electronic or web based. This could include the optimum management for a specific condition being displayed on an electronic referral form, with treatments that have been tried prior to referral marked with tick boxes, and free text for further history, examination and any other information pertaining to prior management in the community. A complementary strategy might include the provision of educational outreach visits, to actively discuss and encourage the use of the guidelines that have been created.

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## CONFLICTS OF INTEREST

None.

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