General practice based physiotherapy: its use and effect on referrals to hospital orthopaedics and rheumatology outpatient departments

A O'CATHAIN

M FROGGETT

M P TAYLOR

SUMMARY

Background. *In November 1992, a pilot scheme was established in Doncaster to provide an on-site physiotherapy service in six non-fundholding general practices covering a population of approximately 44 000 people.*

Aim. *The aim of the pilot scheme was to transfer a hospital-based physiotherapy service, to which general practitioners had direct access, to a primary care setting and to reduce referrals to an orthopaedics outpatient department.*

Method. *Use of physiotherapy services and referrals to orthopaedics and rheumatology before and during the first year of the scheme were monitored. Comparisons were made with data over the same time periods for general practices that were not in the scheme. The location of management of patients referred to physiotherapy was monitored for an eight-month period during the scheme.*

Results. *In the first year the scheme had a utilization rate of 31 per 1000 patients in the participating practices, representing a 164% increase over the hospital-based physiotherapy utilization rate for the year prior to the scheme. Eight per cent of physiotherapy patients received hospital-based treatment during the scheme. Changes in hospital outpatient referral rates attributable to the scheme were reductions of 8% to the orthopaedics department and 17% to the rheumatology department.*

Conclusion. *The increase in the use of the physiotherapy service was possibly caused, in part, by general practitioners sending patients to on-site physiotherapy who previously would have been referred to orthopaedics and, largely, by an increase in the treatment of patients who previously would not have been referred to hospital. Physiotherapy based in general practice can be a substitute for hospital-based physiotherapy and can contribute to a reduction in referrals to orthopaedics and rheumatology outpatient departments. However, it can result in an increase in use of physiotherapy services.*

Keywords: physiotherapy services; general practitioner services; general practitioner utilization; referral rates; referral to hospital for investigation.

Introduction

GENERAL practice based physiotherapy has been shown to be feasible[1] and is popular with general practice fundholders who perceive that there is poor access to hospital services.[2] Ten per cent of patients referred to an orthopaedics department have physiotherapy arranged for them after the initial referral,[3] which suggests that improving access to physiotherapy services might reduce referrals to orthopaedics outpatient departments.

In November 1992, Doncaster Health funded a pilot scheme of physiotherapy based in general practice as an alternative to a hospital-based service to which general practitioners had direct access. The aims of the scheme were to transfer hospital-based care to a primary care setting and to reduce referrals to orthopaedics departments. Six non-fundholding general practices participated in the scheme for a period of two years, for the treatment of only musculoskeletal disorders. The six practices were chosen because they volunteered to participate in the scheme, they had high use of the hospital-based physiotherapy service and they were located at a distance from the hospital where the physiotherapy was based. The hospital-based service remained available for practices not in the scheme. However, it was only available for practices in the scheme if the general practice based physiotherapist decided to manage the patient at the hospital. General practitioners in the scheme were requested to send patients to on-site physiotherapy who would previously have been referred to an orthopaedics department but who they considered could be managed by a physiotherapist.

Two full-time senior physiotherapists undertook two sessions per week in each of the general practices, with each session lasting approximately five hours. This paper is an evaluation of the first year of the scheme.

Method

The number of people having a first contact with (attendance at) the hospital-based physiotherapy service at Doncaster Royal Infirmary was routinely available, by financial year, for each non-fundholding general practice in Doncaster. Practice populations were obtained from the age–sex register at Doncaster Health. The practice lists of the six general practices that participated in the scheme totalled approximately 44 000 people (practice population). Number of contacts per 1000 of the practice population (contact rate) was compared for financial years before and during the scheme (April 1991 to March 1992 and April 1992 to March 1993, respectively). Contact rates for 35 non-fundholding Doncaster practices not in the scheme (total list size of about 175 000 people) were compared for the same time periods to determine the size of any change in contact rates not associated with the scheme. The scheme started in mid-November 1992, cutting across financial years. For the general practices in the scheme the number of first contacts with the physiotherapy service was collected for the one-year period from December 1992 to November 1993 for comparison with the number of first contacts in the financial year before the scheme, April 1991 to March 1992. Ideally, referral rates as well as contact rates would have been monitored; referral information, however, was not routinely available for the physiotherapy service. Two of the six general practices in the scheme previously referred a small number of patients to a hospital other than Doncaster Royal Infirmary for physiotherapy services.

From April 1992 to March 1993 non-fundholding general practices in Doncaster made 92% of their orthopaedic referrals to

A O'Cathain, MSc, research manager and M P Taylor, FRCGP, medical adviser, Doncaster Health. M Froggett, MA, MCSP, SRP, senior physiotherapist, Department of Physiotherapy, Doncaster Royal Infirmary.

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Doncaster Royal Infirmary. The number of referrals to the orthopaedics outpatient department of Doncaster Royal Infirmary was supplied by the hospital on a quarterly basis for each non-fundholding general practice in Doncaster before and during the scheme. For the practices in the scheme, referrals per 1000 of the practice population (referral rate) for the calendar year before the scheme (January–December 1992) and for the first calendar year of the scheme (January–December 1993) were compared. Similar comparisons were made for non-fundholding practices not in the scheme in order to determine changes in referral rates not associated with the scheme. As the scheme progressed, participating general practitioners perceived that they were reducing their referrals to the rheumatology outpatient department of Doncaster Royal Infirmary. Therefore, referrals to this department were monitored in the same way as referrals to the orthopaedics outpatient department.

For an eight-month period from April to November 1993, general practitioners participating in the scheme sent a referral form to the physiotherapists for each patient referred to the physiotherapy service, on which physiotherapists noted where the patient was managed.

The chi square test was used to compare changes in referral rates, based on the numbers of referrals.

Results

Use of the physiotherapy service

In the financial year April 1992 to March 1993, compared with the previous financial year, practices that were in the scheme increased their contact rates with the physiotherapy service by 79.5% whereas there was a 12.1% increase for practices that were not in the scheme (Table 1). However, this time period included only six months of the scheme. When the first year of the scheme (December 1992 to November 1993) was compared with the financial year April 1991 to March 1992, practices in the scheme increased their contact rates by 164.1%, that is, by a factor of 2.6, from 11.7 to 30.9 per 1000 of the practice population.

A referral form was completed for 549 of the 918 patients (59.8%) who had a first contact with on-site physiotherapy between April and November 1993. Forty two of these 549 patients (7.7%) were managed at the hospital. Physiotherapists in the scheme cited three main reasons for managing patients at the hospital: for use of gymnasium equipment; for expert opinion; and because the hospital location was more convenient for the patient than that of the general practice.

Referrals to the orthopaedics outpatient department

Details of referrals to the study hospital are presented in Table 1. In order to assess the change in orthopaedic referral rates attributable to the scheme, the calendar years 1992 and 1993 were compared. The differences in referral rates between these years for practices in the scheme and those not in the scheme were –12.0% and –2.0%, respectively. Figure 1 demonstrates that orthopaedic referrals by practices in the scheme decreased sharply in the first few months of the scheme. Therefore, the nine-month periods of January–September 1992 and April–December 1993 were compared to avoid this temporary period of reduction in referral rates from October 1992 to March 1993. The decrease in referral rates for the nine-month periods for practices in the scheme was 1.8 (–17.0%), statistically significantly different from the decrease of 1.1 (–9.1%) for practices not in the scheme ($\chi^2 = 14.6$, 1 degree of freedom (df), $P<0.001$). Thus, the reduction in referral rates attributable to the scheme was 0.7 per nine months (95% confidence interval (CI) 0.3 to 1.1). This amounted to a 7.9% reduction in referral rates attributable to the scheme when comparing nine-month periods.

Referrals to the rheumatology outpatient department

Results are presented in Table 1. In order to assess the change in rheumatology referral rates attributable to the scheme, the calendar years 1992 and 1993 were compared, as were the nine-month periods of January–September 1992 and April–December 1993. The differences in referral rates for practices in the scheme and those not in the scheme were –44.0% and –36.0%, respectively. The decrease in referral rates for the nine-month periods for practices in the scheme was 1.2 (–52.2%), statistically significantly different from the decrease of 0.7 (–35.0%) for practices not in the scheme ($\chi^2 = 9.5$, 1 df, $P<0.01$). Thus, the reduction in referral rates attributable to the scheme was 0.5 per nine months

Table 1. Numbers of first contacts with physiotherapy service and referrals to orthopaedics and rheumatology outpatient departments;[a] contacts and referrals per 1000 of the practice population for general practices in the scheme and those not in the scheme.

	Practices in scheme		Practices not in scheme	
	No. of contacts/referrals	Contact/referral rate	No. of contacts/referrals	Contact/referral rate
Physiotherapy first contacts in periods:				
April 1991 – March 1992	534	11.7	1158	6.6
April 1992 – March 1993	937	21.0	1296	7.4
December 1992 – November 1993	1345	30.9	–	–
Orthopaedic referrals in periods:				
April 1991 – March 1992	658	–	–	–
January – December 1992	565	12.5	2673	15.3
January – December 1993	481	11.0	2616	15.0
January – September 1992	488	10.6	2113	12.1
April – December 1993	383	8.8	1921	11.0
Rheumatology referrals in periods:				
January – December 1992	112	2.5	431	2.5
January – December 1993	59	1.4	280	1.6
January – September 1992	106	2.3	352	2.0
April – December 1993	50	1.1	230	1.3

[a]Departments at Doncaster Royal Infirmary.

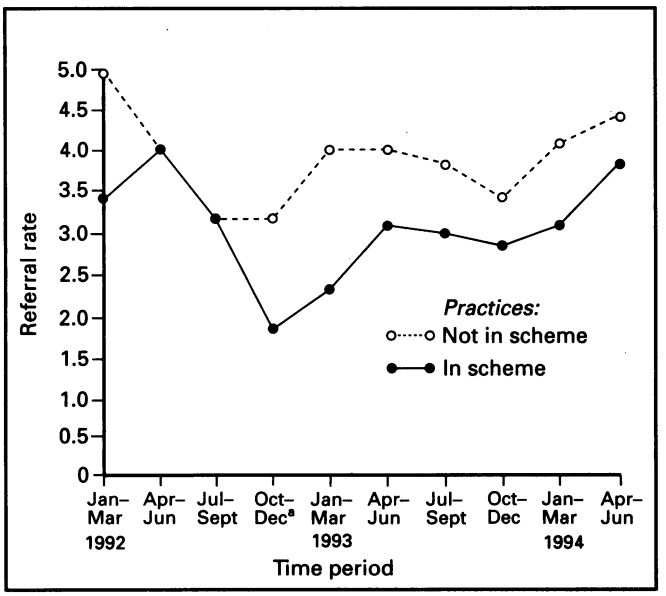

Figure 1. *Orthopaedic referrals per 1000 of the practice population for general practices in the scheme and those not in the scheme ([a]scheme introduced in mid-November 1992).*

(CI 0.1 to 0.8). This amounted to a 17.2% reduction in referral rates attributable to the scheme when comparing nine-month periods.

Discussion

In this scheme, general practice based physiotherapy substituted largely for hospital-based physiotherapy, unlike the introduction of minor surgery in general practice.[4] From the period of the scheme between April and November 1993 it was found that a small percentage (8%) of physiotherapy patients were managed at Doncaster Royal Infirmary, similar results to those found in another scheme.[2]

It was expected that, with physiotherapists working in the practices, general practitioners would have a better idea of the services that a physiotherapist can offer and would therefore change some previously inappropriate referrals to orthopaedics outpatient departments. In practice, there was an 8% reduction in orthopaedic referral rates probably attributable to the scheme, considerably smaller than a reduction of 25% shown elsewhere, from 14.4 to 10.8 per 1000 population per year.[2] However, it was similar to that expected from the results of a study which showed that 10% of orthopaedic patients had physiotherapy arranged for them after the initial referral.[3] The 17% reduction in referral rates to the rheumatology outpatient department found in this pilot scheme was smaller than a reduction of 44% shown elsewhere, from 7.3 to 4.1 per 1000 population per year.[2]

Referral rates were monitored for only one hospital. It could be argued that the decrease in referral rates to Doncaster Royal Infirmary was accounted for by an increase in referrals to other hospitals rather than to the on-site physiotherapy service. However, for practices in the scheme, the number of orthopaedic referrals to all hospitals between April 1992 and March 1993 was 21% fewer than the number of referrals between April 1991 and March 1992 to Doncaster Royal Infirmary alone (523 and 658 referrals, respectively).

In the first year of the scheme, use of general practice based physiotherapy was more than double that of the previous hospital-based physiotherapy service, based on data of first contacts with the physiotherapy service. There was a complicating factor of supplier-induced demand, in that two physiotherapists were supplied, where one physiotherapist would have been adequate to cover the previous hospital workload. Two physiotherapists were supplied because the number of patients who would previously have been referred to the orthopaedics department but were managed by a physiotherapist was not known before the establishment of the scheme. However, the physiotherapy service was used to its full capacity, and the physiotherapists had waiting lists. Use of the physiotherapy service was monitored for only Doncaster Royal Infirmary. Two of the six participating practices referred patients to a hospital other than Doncaster Royal Infirmary for physiotherapy services. However, numbers referred to the other hospital were small and the transfer of these patients to the general practice based service did not account for the increase in use of the physiotherapy service.

Introducing services into a general practice setting, which are normally provided in hospital, can result in an increase in use of that service.[5] A two-fold difference in utilization rates between general practice and hospital-based physiotherapy services has been found elsewhere,[6] with talk of 'mushrooming' and 'rocketing' demand for the service[2] and appointments rising by 600% (*General Practitioner* 1993; Aug 13:7). Part of the increase in use of the physiotherapy service in the Doncaster scheme was because some patients previously referred to the hospital orthopaedics and rheumatology departments were being managed by the on-site physiotherapist. However, the increase was possibly attributable in the main to people receiving physiotherapy who would not have received hospital-based physiotherapy before the scheme. It is possible that physiotherapy is a more cost-effective method of managing some conditions than management with drugs or otherwise. However, the effectiveness of physiotherapy has not been proven for many conditions[7] and it is important that its benefits are determined before the provision of physiotherapy is increased.

General practice based physiotherapy has become popular in recent years and there have been valuable contributions to the evaluation of this service.[1,6] It can substitute largely for hospital-based physiotherapy and can reduce referral rates to hospital outpatient departments of orthopaedics and rheumatology. However, it can result in an increase in use of a service which has not been shown to be effective.

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Address for correspondence

A O'Cathain, Doncaster Health, White Rose House, Ten Pound Walk, Doncaster DN4 5DJ.