

Evaluation of a general practitioner with special interest service for dermatology: randomised controlled trial

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Abstract

Objective To assess the effectiveness, accessibility, and acceptability of a general practitioner with special interest service for skin problems compared with a hospital dermatology clinic.

Design Randomised controlled trial.

Setting General practitioner with special interest dermatology service and hospital dermatology clinic.

Participants Adults referred to a hospital dermatology clinic and assessed by a consultant or the general practitioner with special interest service.

Suitable patients had non-urgent skin problems and had been identified from the referral letter as suitable for management by a general practitioner with special interest.

Interventions Participants were randomised in 2:1 ratio to receive management by a general practitioner with special interest or usual hospital outpatient care.

Main outcome measures Primary outcomes were disease related quality of life (dermatology life quality index) and improvement in patients' perception of access to services, assessed nine months after randomisation. Secondary outcomes were patient satisfaction, preference for site of care, proportion of failed appointments, and waiting times to first appointment.

Results 49% of the participants were judged suitable for care by the general practitioner with special interest service. Of 768 patients eligible, 556 (72.4%) were randomised (354 to general practitioner with special interest, 202 to hospital outpatient care). After nine months, 422 (76%) were followed up. No noticeable differences were found between the groups in clinical outcome (median dermatology life quality index score = 1 both arms, ratio of geometric means 0.99, 95% confidence interval 0.85 to 1.15). The general practitioner with special interest service was more accessible (difference between means on access scale 14, 11 to 19) and waited a mean of 40 (35 to 46) days less. Patients expressed slightly greater satisfaction with consultations with a general practitioner with special interest (difference in mean satisfaction score 4, 1 to 7) and at baseline and after nine months 61% said they preferred care at the service.

Conclusions The general practitioner with special interest service for dermatology was more accessible than hospital outpatient care and was preferred by patients, achieving similar clinical outcomes.

Trial registration ISRCTN31962758.

Introduction

The concept of general practitioners with special interests was promoted in the NHS Plan in 2000. They should offer care of equally high quality as consultants, although not the full breadth of services. Many such schemes have been established in several clinical disciplines, but evidence is lacking on their costs and benefits. A general practitioner with special interest service for dermatology was established in Bristol in 2001. Dermatology represents one of the most common causes for consultation in primary care and for referral to secondary care. More general practitioners with special interests are operating in dermatology than in any other clinical specialty, with the exception of diabetes.¹

We investigated the effectiveness, cost effectiveness, accessibility, and acceptability of the Bristol general practitioner with special interest dermatology service compared with usual hospital outpatient care. The findings from the economic evaluation are presented in an accompanying paper.²

Methods

The Bristol general practitioner with special interest dermatology service is staffed by a specialist nurse and two general practitioners with special interests who have a postgraduate diploma in practical dermatology, have been clinical assistants in dermatology for two years, and have been on the British Society of Dermatological Surgery skin surgery course.

A consultant dermatologist provides clinical support for two sessions per month. The service operates from a suburban health centre and provides care

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Criteria for exclusion from the service are on bmj.com



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Table 1 Diagnoses given in referral letters. Values are numbers (percentages) of patients

Diagnoses	General practitioner with special interest group (n=354)	Hospital outpatient group (n=202)	Combined (n=556)
Eczema, psoriasis	89 (25)	52 (26)	141 (25)
Urticaria, pruritus	21 (6)	13 (6)	34 (6)
Benign lesion*	32 (9)	15 (7)	47 (8)
Undiagnosed rash	45 (13)	16 (8)	61 (11)
Undiagnosed lesion	45 (13)	24 (12)	69 (12)
Keratosis, basal cell carcinoma	31 (9)	23 (11)	54 (10)
Moles	24 (7)	13 (6)	37 (7)
Infective condition	10 (3)	9 (4)	19 (3)
Acne, rosacea	13 (4)	10 (5)	23 (4)
Other	44 (12)	27 (13)	71 (13)

*For example, seborrhoeic wart, cyst, naevus.

for patients registered with the 29 general practices in one primary care trust. Patients see a general practitioner with special interest at their first appointment but may be followed up by a general practitioner with special interest or the specialist nurse, or referred to hospital outpatient care.

Patients with skin problems are referred by general practitioners to the outpatient dermatology clinic as usual. Suitability for management in the general practitioner with special interest service is assessed on the basis of the referral letter. All patients are considered suitable except those under specific exclusions (see bmj.com).

Randomisation and outcomes

We invited all patients suitable for general practitioner with special interest management to participate in the randomised controlled trial. We randomised patients individually in a 2:1 ratio to the general practitioner with special interest service or to usual hospital outpatient care, stratified by practice. The unequal randomisation ratio was chosen following a pilot phase. Allocation was blind to all patient details except a practice identifier.

Primary outcomes were disease related quality of life and accessibility of care. We assessed quality of life using the dermatology life quality index³ and also a single item measure of patient perceived improvement in which patients indicated on a 5 point Likert type scale whether their skin condition was better or worse. We devised four questions on the accessibility of care in relation to finding where to go for the appointment, travel, parking, and public transport. Secondary outcomes were patient satisfaction with the consultation (assessed using the consultation satisfaction questionnaire),⁴ satisfaction with facilities, patients' prefer-

ence for site of care, the proportion of patients failing to attend appointments, and waiting times from receipt of referral letter to first appointment. We collected data from patient questionnaires before randomisation, at the first appointment, six weeks after the appointment, and nine months after randomisation. We obtained further data from patients' medical records.

Sample size

Our sample size calculations were based on seeking to establish equivalence for effectiveness (dermatology life quality index) between the general practitioner with special interest service and hospital clinic. We calculated we needed 290 patients in the primary care arm and 145 patients in the hospital arm (see bmj.com). Assuming 20% attrition, we needed to recruit 544 patients.

Analysis

We used multiple regression to compare the primary outcomes at nine months, adjusting for baseline dermatology life quality index and stratification by practice, carried out on the principle of intention to treat. We examined the questions about access to care using factor analysis. We also analysed the responses to the individual question items descriptively. We assessed the secondary outcomes using linear or logistic regression as appropriate, in each case adjusted for practice. See bmj.com for details of statistical analysis.

Results

We recruited patients between 1 September 2002 and 31 October 2003. On the basis of the referral letters, 49% (987/2028) of referred patients seemed to be suitable for management by the general practitioner with special interest service; however, 219 were ineligible for the trial. Seventy two per cent (556/768) of eligible patients agreed to participate and were randomised—354 to the general practitioner with special interest service and 202 to hospital outpatient care. Questionnaires were completed by 435 (78%) patients at their first appointment, by 438 (79%) patients six weeks later, and by 422 (76%) patients nine months after randomisation.

Table 1 lists the diagnoses described in the referral letters. Patients in each group had similar characteristics at baseline.

Outcomes

We found no evidence of any noticeable difference between the trial arms in clinical improvement (table 2). A sensitivity analysis of the index incorporating the last observation carried forward to replace missing data had virtually no effect on these results.

Table 2 Primary outcome: quality of life. Values are medians (interquartile ranges) unless stated otherwise

Variables	General practitioner with special interest group	Hospital outpatient group	Ratio of geometric means (95% CI)	P value
Dermatology life quality index*:				
6 weeks after first appointment (n=436)	2 (0-5)	1 (0-3)	1.13† (0.96 to 1.33)	0.14
9 months after randomisation (n=418)	1 (0-4)	1 (0-3)	0.99‡ (0.85 to 1.15)	0.88
Single item measure of improvement§:				
6 weeks after first appointment (n=430)	4 (3-5)	4 (3-5)	1.05 (0.73 to 1.50)	0.80
9 months after randomisation (n=409)	4 (3-5)	4 (3-5)	1.17 (0.81 to 1.70)	0.40

*Higher scores represent worse quality of life.
 †Adjusted for baseline, stratification, and time since randomisation (n=429).
 ‡Adjusted for baseline and stratification (n=412).
 §Higher scores indicate greater improvement.

Table 3 Secondary outcome: patient satisfaction

Variables	Mean (SD) care by general practitioner with special interest (n=286)	Mean (SD) hospital outpatient care (n=149)	Difference in means* (95% CI)	P value
Consultation satisfaction questionnaire:				
Overall score (n=386)	71.05 (13.50)	65.93 (17.17)	4.09 (0.92 to 7.25)	0.01
Subscales:				
General satisfaction (n=418)	76.18 (18.04)	68.78 (23.29)	5.85 (1.76 to 9.93)	0.01
Professional care (n=413)	77.89 (15.49)	72.02 (19.82)	4.69 (1.15 to 8.24)	0.01
Depth of relationship (n=405)	60.03 (16.41)	58.69 (17.94)	0.68 (-2.84 to 4.21)	0.70
Perceived time (n=419)	69.02 (18.99)	61.57 (22.86)	6.59 (2.36 to 10.81)	0.002
Facilities scale (n=413)	79.83 (13.56)	74.71 (16.21)	4.59 (1.60 to 7.58)	0.003

Based on 435 responses to questionnaire 2. Denominators vary for different scales because of missing data. Scales scored from 0-100, with 100 representing maximum satisfaction.

*Multiple regression analysis adjusted for practice.

Patients found the general practitioner with special interest service to be more accessible than the outpatient clinic (mean access scores 76.1 and 60.5, respectively; adjusted difference between means 14, 95% confidence interval 11 to 19, $P < 0.001$). See bmj.com for details of accessibility.

Patients randomised to the general practitioner with special interest service were slightly more satisfied with their consultations than those randomised to the outpatient clinic, but the difference was small (table 3).

Before randomisation, 61% (328/537) expressed a preference to be seen at the general practitioner with special interest service. At the end of the trial 61% (255/416) of patients again preferred the general practitioner with special interest service, but an interaction test between baseline preference and trial arm in respect of final preference indicated that people were more likely to prefer future care in the setting in which they had actually been seen.

Fewer patients randomised to the general practitioner with special interest service failed to attend their initial appointment compared with those randomised to the outpatient clinic (6%, 18/318 *v* 11%, 21/197; $P = 0.04$). Including follow-up appointments, the proportion of all appointments not attended was similar in both arms (8%, 60/742 *v* 11%, 37/341; $P = 0.14$).

The main waiting time between the referral letter being received and a first appointment was much shorter for patients randomised to the general practitioner with special interest service than to the outpatient clinic (mean wait 72 days *v* 113 days; mean difference 40, 35 to 46; $P < 0.001$).

Of the patients randomised to the general practitioner with special interest service, 59% (181/307) attended at least one follow-up appointment, including 12% (38/307) who were seen at the hospital for follow-up. Of patients randomised to the outpatient clinic, 44% (79/181) were followed up, all at the hospital.

See bmj.com for diagnoses of patients made at their last consultation during the trial period. Details of investigations and procedures undertaken are given in the companion paper on economic evaluation.²

Discussion

A general practitioner with special interest service for dermatology provided care that was more accessible and preferred by patients than hospital outpatient care, with no evidence of important differences in clinical outcomes. Patients expressed slightly greater satisfaction with their consultations and with the facilities in the

service setting and also experienced shorter waiting times for their first appointment. About half of all the referrals made to the outpatient dermatology department seemed suitable for management by a general practitioner with special interest, and only 12% of those seen by a general practitioner with special interest had to be referred on to the hospital. However the finding that patients attending the general practitioner with special interest service were more likely to have follow-up appointments, along with other differences in the process of care, has consequences for the cost of the service (see accompanying paper²).

Our study provides rigorous evidence on the effectiveness of a general practitioner with special interest service. Although similar schemes are now widespread, the only previous evidence about their benefits comes from observational studies.⁵⁻⁸

The main limitation of this study is that it is based on one clinical specialty and one geographical area, so the findings may not be generalisable. However, dermatology is the second most common specialty chosen for general practitioner with special interest services in England,¹ so findings about accessibility and acceptability should be equally relevant to similar services.

Other weaknesses of this study include the possibility of recruitment or response biases. Only 72% of eligible patients agreed to participate in the trial, and those declining often cited a preference to be seen at the hospital rather than unwillingness to participate in research. If all suitable patients referred to the outpatient clinic were automatically transferred to the general practitioner with special interest service, then the overall level of satisfaction with the general practitioner with special interest service may be lower. This suggests that it is important that patients retain a choice about where they are seen.

Non-response bias is possible because follow-up was not complete and there were slightly different follow-up rates in the two arms; however, the sensitivity analysis on missing data indicates that this was unlikely to have influenced the central conclusions.

The findings from this study are consistent with earlier observational studies⁵⁻⁶ and also a recent Audit Commission study of new care pathways in primary care.⁷ Our findings also show clear parallels with earlier research about consultant outreach clinics.⁹ A systematic review concluded that the advantages of specialist outreach clinics were improvements in patient experience and access.¹⁰ No consistent differences were found in health outcomes, but outreach clinics were generally more costly than hospital outpatient clinics.

What is already known on this topic

General practitioner with special interest schemes are being developed throughout England

The aim is to improve access to specialist advice by providing a local service and a shorter waiting time than outpatient clinics

Evidence is lacking about whether this type of service produces equally good clinical outcomes to outpatient care or whether it improves accessibility or is acceptable to patients

What this study adds

Patients with non-urgent skin problems allocated to a general practitioner with special interest service had neither better nor worse health outcomes than those allocated to outpatient care

Patients referred to the service were seen more quickly, thought it was more accessible than the hospital, and were slightly more satisfied with their consultations and the facilities

Implications for policy

Our study provides support for the effectiveness, accessibility, and acceptability of this general practitioner with special interest service. However, as shown in the companion paper, these benefits come at considerable additional cost.² If the main purpose of these schemes is to increase capacity to reduce waiting times for appointments, it may be more efficient to achieve this by increasing capacity in hospital.

It is difficult to disentangle whether the benefits and costs of general practitioner with special interest services are related to the fact that the clinician is a general practitioner with special interest or to the community location of the service. Further research should

compare general practitioner with special interests working in hospital settings with those working in community clinics and should compare different models of skill mix such as employing specialist nurses rather than doctors.

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Economic evaluation of a general practitioner with special interest led dermatology service in primary care

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Abstract

Objective To carry out an economic evaluation of a general practitioner with special interest service for non-urgent skin problems compared with hospital outpatient care.

Design Cost effectiveness analysis and cost consequences analysis alongside a randomised controlled trial.

Setting General practitioner with special interest dermatology service covering 29 general practices in Bristol.

Participants Adults referred to a hospital dermatology clinic who were potentially suitable for management by a general practitioner with special interest.

Interventions Participants were randomised 2:1 to receive either care by general practitioner with special interest service or usual hospital outpatient care.

Main outcome measures Costs to NHS, patients, and companions, and costs of lost production. Cost effectiveness, using the two primary outcomes of dermatology life quality index scores and improved patient perceived access, was assessed by incremental cost effectiveness ratios and cost effectiveness acceptability curves. Cost consequences are presented in relation to all costs and both primary and secondary outcomes from the trial.

Results Costs to the NHS for patients attending the general practitioner with special interest service were £208 (\$361; €308) compared with £118 for hospital outpatient care. Based on analysis with imputation of missing data, costs to patients and



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