

A national evaluation of specialists' clinics in primary care settings

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SUMMARY

Background: Encouraged by the increased purchasing power of general practitioners (GPs), specialist-run clinics in general practice and community health care settings (known as specialist outreach clinics) have increased rapidly across England. The activities of local commissioning schemes within primary care groups are likely to accelerate this trend.

Aim: To evaluate the costs, processes, and benefits of specialists' outreach clinics held in GPs' surgeries, compared with hospital outpatient clinics.

Design of study: A case-referent (comparative) study comparing the characteristics of outreach clinics (cases) with matched outpatient control clinics.

Setting: Thirty-eight outreach clinics, compared with 38 matched outpatient clinics as controls, covering 14 hospital trust areas across England.

Method: Self-administered questionnaires were given to patients in both clinic settings. These covered processes, satisfaction, personal costs, and health status, with postal follow-up at six months to assess health outcomes. Self-administered questionnaires were also given to the specialists and GPs whose clinics were included in the study (individual patient clinical sheet and an attitude questionnaire), practice managers, and trust accountants (process and costs questionnaire). Evaluation of the costs, processes, and benefits of specialist outreach clinics versus hospital outpatient clinics was carried out by comparing questionnaire responses.

Results: In comparison with outpatients, outreach clinic patients spent less time on the waiting lists for appointments to see the specialist, they had shorter waiting times in clinics, fewer follow-up appointments, and were more likely to be completely discharged after the sampled attendance. Outreach patients were more satisfied than outpatients with the range of clinic process items asked about. Most doctors felt that the outreach clinic was 'worthwhile'. While patients' personal costs were lower in outreach than in outpatient clinics, NHS costs were more expensive per patient in outreach. The benefits of outreach clinics on patients' health status at six months' follow-up were relatively small.

Conclusions: Outreach clinics are a means of improving access to specialist services for patients, in addition to improving the efficiency and quality of health care. Most results were similar across specialties and areas. The benefits of the outreach service need to be weighed against their substantially higher NHS costs, in comparison with outpatient clinics. Outreach clinics are unlikely to be financially justifiable for NHS funding given that the impact on patients' health status was small.

Keywords: health care access; specialist care; ambulatory care; primary-secondary care interface.

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Introduction

ENCOURAGED by the increased purchasing power of general practitioners (GPs),^{1,4} specialist-run clinics in general practice and community health care settings (known as specialist outreach clinics) have increased rapidly across England.⁵ The activities of local commissioning schemes within primary care groups are likely to accelerate this trend.⁶ The main advantages claimed for specialist outreach clinics include improved patient satisfaction, better efficiency owing to reduced patient follow-up appointments, and lower non-attendance rates.⁷ The main disadvantages claimed include more difficult access to diagnostic facilities, less efficient use of consultant time, and reduced consultant cover and teaching time in hospitals.⁷ However, other investigators have focused on small numbers of clinics in a narrow range of selected specialties and have been unable to control for patient casemix in the clinics.⁸⁻¹¹ The consequence has been a lack of generalisable data about the costs and effectiveness of outreach clinics in comparison with outpatients.¹²

The analyses reported here are unique in that they are based on the largest evaluative study of outreach clinics undertaken so far and include a wide range of geographical areas both across London and England. A study of outreach clinics in London was conducted in parallel with an identical but separately funded study of outreach clinics in England outside London. The results from the pilot study and the England arm of the study have been reported elsewhere.^{13,14} This paper reports the results from the merged dataset of the two arms (London and England) of the study (neither the results from the London arm of the study, nor from the merged dataset, have been previously published).

Method

The aims of the study were to evaluate the costs, processes, and health benefits of specialist outreach clinics in comparison with hospital outpatient clinics. The specialties studied were cardiology, ear-nose-throat (ENT), general medicine, general surgery, gynaecology, paediatrics, and rheumatology. The study design was a case-referent study. The features of the specialists' outreach clinics (cases) were compared with the same specialists' outpatient clinics (controls) in all but three cases, where local outpatients' clinics were used instead. All specialists held consultant status. This design minimised variation between outreach and outpatients clinics owing to the effects of different specialists conducting them. A randomised controlled trial design was rejected by participating practices on grounds of the additional outpatient referral service costs that would be incurred by them (which the funding bodies were not prepared to meet).

HOW THIS FITS IN*What do we know?*

Outreach clinics in general practice have increased rapidly across England, although there has been little generalisable evidence about their costs and effectiveness.

*What does this paper add?*

- The process of care and patient satisfaction is higher in outreach than in outpatient clinics.
- The health benefits of outreach clinics are small.
- The costs of outreach clinics to the NHS are considerably

Self-administered questionnaires were given to patients in both clinic settings. These covered processes, satisfaction, personal costs, and health status, with postal follow-up at six months to assess health outcomes. Self-administered questionnaires were also given to the specialists and GPs whose clinics were included in the study (individual patient clinical sheet and an attitude questionnaire), practice managers, and trust accountants (process and costs questionnaire).

A screen of specialists (via the Royal College of Physicians Research Unit), trusts, and health authorities in England was conducted with the aim of identifying outreach clinics. The aim was to select the most common outreach specialties for inclusion in the study (with the exclusion of dermatology and orthopaedic outreach which was being evaluated by our collaborators in Manchester).^{10,11} Thirty-eight outreach clinics (19 in London and 19 across England) were selected from those identified by the screens and included in the study. Two of the clinics were run by the same specialist (in different areas of London). The same specialists' outpatients clinics were used as controls in all but three cases. In these three cases the study specialist had left NHS hospital practice (for private practice or clinical research) and thus the remaining three outpatient clinic controls were local outpatient clinics run by a different specialist. The clinics covered 14 hospital trust areas. The study regions included Yorkshire, Greater Manchester, Merseyside and Lancashire, Cheshire, Nottinghamshire, Leicestershire, Suffolk, Buckinghamshire, Warwickshire, Kent, Sussex, Devon, Essex, and outer and inner London. The sample size of clinics and patients satisfied calculations for statistical power (at 80% power and 95% level of confidence). The clinic sample was relatively large because of the multi-level nature of the data and cluster effects on patients (i.e. patients seeing the same doctor are likely to receive more similar treatment than patients under different doctors).

Measures

The process measures used included waiting list times, waiting times in clinics, number of follow-up attendances, process outcome of consultation, investigations and procedures performed, patient satisfaction, and clinicians' attitudes.^{10,13-15} Health status was measured using the Health Status Questionnaire-12, version 1 (HSQ-12.1),^{16,17} which is a short version of the Short-Form-36.¹⁸ Additional items measuring health and functioning were included.^{19,20} Specialists' ratings of severity were used to measure casemix.²¹

Conditions were classified using the International Classification of Diseases (ICD-10).²² Costs were calculated per patient and sites (outreach and outpatient) were compared. Costs included specialists' travel costs (outreach only), NHS staffing costs, overhead costs, patients' treatment and prescription costs, patients' personal costs (e.g. travel, costs of carers, child-minders), and time costs (travel and waiting times).^{11,23-26} Patients' sociodemographic characteristics were collected, including age, sex, economic activity, and social class.²⁷

Significant differences are presented by site (outreach/outpatients). All analyses controlled for patient casemix (measured by specialists' ratings of severity of condition; patient-reported health status; patient status of new or follow-up patient) and specialty (most specialty differences were reduced to non-significance once casemix was controlled for). Statistical tests included χ^2 tests, Student's *t*-tests, Wilcoxon tests, Mann-Whitney U-test, analyses of variance, and logistic regression analysis. In general, attention has not been drawn to differences that statistical tests suggest might have occurred by chance five or more times in 100. Variation in base numbers was owing to item non-response.

Response rates

Thirty-six specialists agreed to include their clinics in the study, representing 38 outreach clinics (as mentioned earlier, two specialist were duplicates as they each held two of the study outreach clinics), with 38 outpatient clinic controls. Consecutive outreach (OR) and outpatient (OP) clinic attenders were approached by a researcher and invited to participate in the study as they waited to see the doctor. Two hundred and forty-nine consecutive clinic visits were made to recruit the samples. Out of 3093 people approached (OR = 1501; OP = 1592), 95% (2925) outreach and outpatients consented to participate in the study as they attended the clinics and 5% (168) refused. The final patient response (return) rate to the baseline questionnaire was 76% (2344) of those approached, or 80% of those who consented; the response rate of OR was 79% (1179) of those approached; and the response rate of OP was 74% (1165) of those approached. The patients' response rate at follow-up was 69% (1614) (OR = 69% [809], OP = 69% [805]).

Thirty-seven of the 38 specialists' general questionnaires were returned. Clinical sheets for individual patients were returned by specialists for 82% (1300 out of 1501) of outreach and 79% (1256 out of 1592) of outpatients who consented to participate in the study (the number of specialist sheets completed exceeded the number of patients who returned their questionnaires). Sixty-one per cent (114/196) of the GPs with the outreach clinics (representing 36 out of the 38 practices) returned their outreach questionnaires (seven of these claimed that the questionnaire should be accepted as representative of the views of all the doctors in the practice [number of partners = six in four cases, eight in three cases — response rate not weighted accordingly]). Clinical sheets for individual patients were returned by GPs for 44% (666) of their 1501 outreach patients approached and who consented to participate. Outpatients GPs were not included in the study. Eighty-two per cent (31 out of 38) of

the outreach clinic practice managers and 100% (26) of outpatient clinic trust accountants responded.

Results

Access to the clinics

The outreach clinics were held every four weeks, on average, and they lasted for an average of three hours. They had between five and 28 appointment slots, in comparison with 3.5 hours and 8–50 appointment slots in the weekly outpatients. The outreach clinics had lower non-attendance rates than outpatient clinics: 10% (159) and 16% (294) respectively ($\chi^2 = 30.21$, degrees of freedom (df) = 1, $P < 0.001$).

On average, outreach patients waited 5.7 weeks (95% CI = 5.4 to 6.1) to see the specialist for their first appointment, which was 2.2 weeks less than outpatients, who waited on average 7.9 weeks (95% CI = 7.4 to 8.4, Students' t -test = 6.90, df = 1368.66, $P < 0.001$). Outreach patients' waiting times in the clinic were also 16.9 minutes less (95% CI = -19.2 to -14.5) than outpatients' waiting times: 15.9 minutes, (95% CI = 14.7 to 17.1) 32.8 minutes (95% CI = 30.8 to 34.8) respectively (t -test = -14.04, df = 1632.56, $P < 0.001$).

Outreach patients were more likely than outpatients to be completely discharged (as opposed to being referred to other services, therapy, surgery or given a follow-up appointment) after the sampled clinic attendance. This was significant for follow-up patients, but not for new patients: OR = 30% (115); OP = 21% (151) ($\chi^2 = 11.62$, df = 1, $P < 0.001$). However, outreach patients were also more likely than outpatients to report that they had been referred to the hospital site for surgery/investigation after the sampled attendance (43% [459] and 31% [314] respectively ($\chi^2 = 30.1$, df = 1, $P < 0.001$). The higher proportion of outreach patients referred on for surgery and investigation only partly reflected the higher proportion of new patients in outreach.

Casemix and health outcomes

The samples of outreach and outpatients were very similar in their distributions for sex, age, and clinical assessments of casemix (clinical ratings of severity). Thirty-one per cent (714) of all patients were male and 69% (1573) were female. Nine per cent (197) were aged under 16 years (e.g. ENT and paediatrics), 5% (121) were aged 16 to 25 years, 30% (706) were aged 25 to 45 years, 33% (769) were aged 45 to 65 years, and 23% (542) were aged 65 years or older. There were more new attenders among the outreach sample (65% [703]), in comparison with 31% (320) in outpatients ($\chi^2 = 241.4$, df = 1, $P < 0.00001$). Outreach patients had fewer mean previous attendances (6.0 [95% CI = 5.8 to 7.3]) than outpatients (3.0 [95% CI = 2.8 to 3.2]) (t -test = -9.30, df = 717.57, $P < 0.001$).

Table 1 shows patients' reported health status and changes at six months after the baseline clinic attendance (displaying the six scaled dimensions of the HSQ-12). Outreach patients were more likely than outpatients to significantly improve on the health perceptions and the pain dimensions (using t -tests), but these changes only achieved statistical significance at the 0.05 level of probability and actual point changes were relatively small. In contrast with the lack of differences in clinical ratings of severity, outreach

patients, at baseline, had slightly better reported health status than outpatients for three of the six scaled dimensions of the HSQ-12, health perceptions, physical functioning, and social functioning, and there were no differences between the two groups for the remaining three scaled dimensions for mental health, pain, and energy. This is likely to reflect their greater likelihood of being new attenders. Their slightly higher scores at follow-up on these same domains, in comparison with outpatients, reflects their higher starting point at baseline. Two of the eight dimensions of the HSQ-12 were dichotomous — role limitations (physical) and role limitations (mental). The results were similar. Other items asked about the impact of the condition on life and, similarly, there was either no difference between groups at follow-up or the detected improvements in outreach patients were slight. While patients' ratings of health status are likely to be more sensitive to outcome than clinicians' ratings of severity, all analyses reported here controlled for patients' reported health status and no reported differences between outreach and outpatients clinics were explained by variations in patients' or clinicians' ratings of health status or severity.

Patient and doctor satisfaction and attitudes

The main reasons reported by each GP practice for establishing the outreach clinic was to improve accessibility/convenience to patients (91% [31] of GP practices, 68% [25] of specialists) and to reduce waiting times for a specialist opinion (77% [27] of GP practices, 49% [17] of specialists). The main advantage of specialist outreach clinics reported by both GPs and specialists was improved patient access to the specialist (mentioned by 95% [109] of GPs and 86% [37] of specialists). The main disadvantage of outreach reported by GPs were infrequent or inflexible follow-up intervals, reflecting the frequency with which the clinic was held (52% [59]). The main disadvantage reported by specialists was the reduction in specialists' time in hospital (46% [17]). However, most of the GPs (97% [112]) and specialists (92% [34]) felt that the outreach clinic was worthwhile, and over half of the specialists (51% [19]) were planning other outreach clinics. Forty-two per cent (16) of the specialists held education/training sessions with the GPs, although just 24% (9) reported having regular contact with the GPs at the outreach clinics. Over half of the GPs reported that they had broadened their skills as a result of the outreach clinic.

Levels of satisfaction with the clinics were significantly higher among outreach patients than among outpatients (using χ^2 tests). This difference was greatest in relation to the convenience of the location of the clinic ('excellent'/'very good' = 81%:38%, $P < 0.001$), the waiting area in the clinic ('excellent'/'very good' = 60%:38%, $P < 0.001$), and the length of the wait at the clinic ('excellent'/'very good' = 61%:37%, $P < 0.001$). Patient satisfaction in relation to convenience, by site, is shown in Figure 1. The greater satisfaction of outreach patients in comparison with outpatients was significant in all specialties and was most pronounced in gynaecology and cardiology. Cardiology and gynaecology outpatients were the most satisfied on 11–12 of the 15 satisfaction items, in comparison with outpatients (data available on request from the authors).

Table 1. Change in HSQ-12 by site (for follow-up responders only) (\bar{x}).

	Health perception (n = 759)		Mental health (n = 653)		Physical function (n = 674)		Pain (n = 678)		Social function (n = 664)		Energy (n = 651)	
	OR	OP	OR	OP	OR	OP	OR	OP	OR	OP	OR	OP
Mean score at baseline	61.48	57.50	57.72	57.08	64.85	56.05	63.44	62.97	73.13	67.73	46.91	45.38
Mean score at follow-up	62.45	55.89	58.27	57.10	66.99	57.06	70.26	66.65	76.77	71.35	50.44	47.73
Mean change	0.97	-1.61	0.55	0.02	2.14	1.01	6.82	3.68	3.64	3.62	3.53	2.35
Mean difference in change (t-score) (P-value)	2.58 (2.14) (0.03)		0.53 (0.52) (0.61)		1.13 (0.74) (0.49)		3.14 (2.17) (0.03)		0.02 (0.01) (0.99)		1.18 (0.86) (0.39)	

OR = outreach; OP = outpatient.

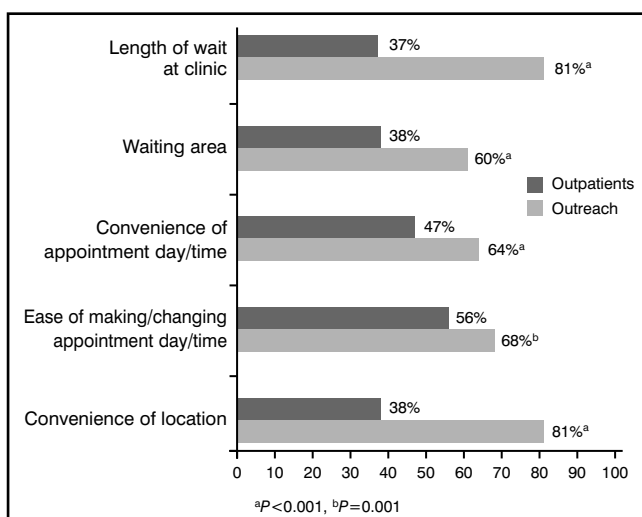


Figure 1. Patient satisfaction — convenience (% saying excellent/very good).

Costs to patients and the health service: prescriptions, treatments, and staffing

Table 2 shows that outpatients incurred significantly higher total personal costs than outreach patients. This was largely owing to greater travel costs for outpatients, explained by the greater distances they travelled. Their mean opportunity costs (time spent both on travel and in waiting) were also greater.

Table 3 shows that the mean total NHS treatment costs per patient were significantly higher in outreach than outpatients (treatment costs included prescribed medication, tests, investigations, and interventions, including therapy, surgery — cost breakdown available from the authors). Analysis of variance was carried out, which included clinical severity and new or follow-up patient status. This showed that site *per se* still had a significant effect on cost of treatment (tables available from the authors).

The mean medical and nursing staffing costs were also significantly higher in outreach. The mean opportunity cost of staff travel times and costs only applied to outreach clinic staff. The mean difference in these staffing and related costs per patient was significantly higher in all specialties in outreach in comparison with outpatients. The overhead (running) costs were not standardisable between hospitals and practices owing to differences between their methods of

accounting (details available from the authors).

Models of effective outreach

Different organisational features of the clinics and patient characteristics were modelled in relation to their effect on a selected number of cost and process (quality) indicators. The organisational features that were modelled, using analysis of variance, were the frequency and size of the clinic, and the clinic casemix (clinical severity; new versus follow-up patient mix). These variables were analysed in relation to their effect on the staffing costs of the clinics and process (quality) indicators — waiting times for first appointments, waiting times at the clinic, length of consultation, patient satisfaction with the wait for the appointment, patient satisfaction with the attention given to the patient by the consultant, and patient satisfaction with the overall visit. The variable that contributed the most, in each case was clinic size (grouped 1–5 patients, 6–10 patients, 11–15 patients, and more than 15 patients). The smaller clinics had the shortest waiting times, the longest consultation times, and the highest patient satisfaction, but were more expensive to staff. This was owing to the fact that the fixed costs of travelling to and from the clinic and setting it up were distributed across a smaller number of patients. As an example, Figure 2 illustrates the results for the model for patient satisfaction (the full tables and figures for each model and the figures for cost, consultation, and waiting times are available from the authors).

Conclusions

The study presented here is the largest evaluation of outreach clinics to date. The statistical power of the evaluation was enhanced by the merging of the two parallel datasets on clinics inside London and in England. In most cases, the results were similar across specialties and areas. The consistency of the results between the datasets enhances the external validity of the results. The multivariate analyses and modelling carried out indicated that any detected specialty and area differences were largely owing to differences in casemix and clinic size. The results were also similar to those reported for the pilot study and the England-only arm of the study.^{13,14} The higher reported costs of outreach were also consistent with evaluations of dermatology, orthopaedic, and ophthalmology outreach clinics.^{9–11} While there was a discrepancy between clinical ratings of severity

Table 2. Mean patient cost by site (\bar{x}).

	Mean travel cost	Mean cost of care for dependants	Mean opportunity cost	Mean total cost to patients
Outreach	0.82	0.05	3.09	3.96
Outpatients	2.08	0.11	6.21	8.40
Mean difference (t-test), P-value	1.26 (9.37), <0.001	0.06 (1.57), 0.12	3.12 (18.48), <0.001	4.44 (16.22), <0.001

Table 3. Mean NHS cost by site (\bar{x}).

	Mean treatment cost	Mean staffing cost	Mean total NHS cost
Outreach	135.21	14.38	149.59
Outpatients	96.26	10.53	106.79
Mean difference (t-test), P-value	38.95 (2.06), 0.03	3.85 (7.14), <0.001	4.44 (2.72), <0.007

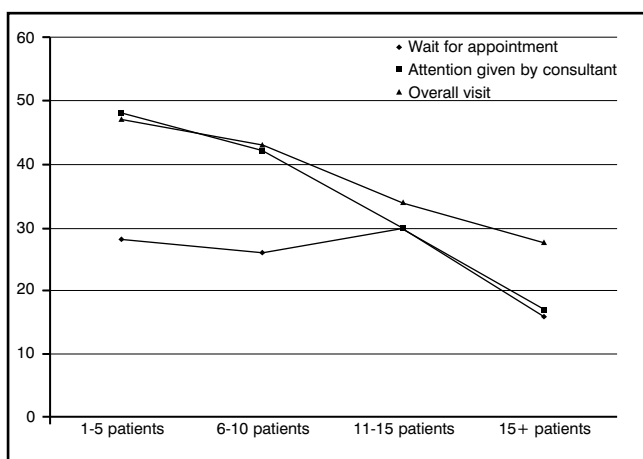


Figure 2. Clinic size effect on 'excellent' ratings to aspects of outreach clinic (%). For all three aspects, $P < 0.001$.

and patients' ratings of their health status, all analyses reported here controlled for both ratings; no reported differences between outreach and outpatients clinics were explained by variations in either of these variables.

The process of care in outreach clinics was superior to that in outpatients' clinics. Patient satisfaction was also higher in outreach than outpatients' clinics. However, the health benefits of outreach were small and the costs of outreach to the NHS were considerably higher than those of outpatients. An increase in outreach clinic size could reduce staffing and overhead costs per patient, but this is not an option for most practices unless outreach is shared with neighbouring practices. Clinic size was dependent largely on prevalence and nature of the condition. Local primary care commissioning and purchasing schemes might increase the number of outreach clinics shared between practices in the future (at present, few are shared in practice), thereby increasing patient volume in the clinics and making the clinics more financially viable. On the other hand, the modelling indicated that an increase in clinic size would lead to the loss of most of their benefits. It remains to be seen whether GPs would still favour this model of care in such circumstances.

Although less than half of the specialists held education/training sessions with the GPs and only about a quarter reported having regular contact with the GPs at the outreach clinics, outreach clinics merit longitudinal analysis

to assess their longer-term impact on the appropriateness of GPs' referrals to specialists, and on case management by GPs and specialists. It is possible that their financial viability will increase in the long run if closer collaboration with specialists led to clinical skill exchanges and enhanced patient management in the longer term.

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