Investigation of benefits and costs of an ophthalmic outreach clinic in general practice

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SUMMARY

Background. *With the advent of general practitioner fundholding, there has been growth in outreach clinics covering many specialties. The benefits and costs of this model of service provision are unclear.*

Aim. *A pilot study aimed to evaluate an outreach model of ophthalmic care in terms of its impact on general practitioners, their use of secondary ophthalmology services, patients' views, and costs.*

Method. *A prospective study, from April 1992 to March 1993, of the introduction of an ophthalmic outreach service in 17 general practices in London was undertaken. An ophthalmic outreach team, comprising an ophthalmic medical practitioner and an ophthalmic nurse, held clinics in the practices once a month. Referral rates to Edgware General Hospital ophthalmology outpatient department over one year from the study practices were compared with those from 17 control practices. General practitioners' assessments of the scheme and its impact on their knowledge and practice of ophthalmology were sought through a postal survey of all partners and interviews with one partner in each practice. Patient surveys were conducted using self-administered structured questionnaires. A costings exercise compared the outreach model with the conventional hospital ophthalmology outpatient clinic.*

Results. *Of 1309 patients seen by the outreach team in the study practices, 480 (37%) were referred to the ophthalmology outpatient department. The annual referral rate to this department from control practices was 9.5 per 10 000 registered patients compared with 3.8 per 10 000 registered patients from study practices. A total of 1187 patients were referred to the outpatient department from control practices. An increase in knowledge of ophthalmology was reported by 18 of 47 general practitioners (38%). Nineteen (40%) of 47 general practitioners took advantage of the opportunity for inservice training with the outreach team; they were more likely to change their routine practice for ophthalmic care or referral criteria for patients with cataracts or diabetes than those who did not attend for inservice training. The outreach scheme was popular with patients, for whom ease of access and familiarity of surroundings were major advantages. The cost per patient seen in the outreach clinics (£48.09) was about three times the cost per patient seen in the outpatient department (£15.71).*

Conclusion. *The model of ophthalmic outreach care in this pilot study was popular with patients and general practitioners and appeared to act as an effective filter of demand for care in the hospital setting. However, the educational impact of the scheme was limited. Although the unit costs (per patient) of the outreach scheme compared unfavourably with those of conventional outpatient treatment, potential health gains from this more accessible model of care require further exploration.*

Keywords: ophthalmology services; general practitioner services; health service costs; outreach clinics; cost-effectiveness.

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Introduction

DEMAND for ophthalmic care is high.[1] Hospital ophthalmology provider units are struggling to achieve contracted waiting time targets.[2] Demographic trends, technological developments and evidence of unmet need suggest that the demand for ophthalmic care will continue to rise.[3] Procedural changes within hospital ophthalmic outpatient departments can reduce waiting times[4] but, without a large expansion in the number of consultants, more radical approaches to the supply side of the referral process need to be investigated.

Many general practitioners do not feel confident to manage any but the simplest eye condition because they have received minimal exposure to ophthalmology during their training.[5] As a consequence, minor problems are referred to hospital where many new patients are discharged at their first visit.[6]

The present strategic preoccupation with investment in community-based care — 'shifting the balance'[7] — is based on the belief that such investment is likely to save costs by reducing the demands on secondary care. Outreach models bringing staff and equipment into primary care sites have the potential to influence referral activity both directly by filtering out unnecessary referrals and indirectly through educational contacts with primary health care professionals. With the advent of general practitioner fundholding in 1991, there has been growth in outreach clinics covering many specialties.[8] The cost-effectiveness of this model of service provision has been questioned.[9]

The aim of this pilot study was to evaluate an outreach model of ophthalmic care in terms of its impact on general practitioners, their use of secondary ophthalmology services, patients' views, and costs, by studying the first year of an ophthalmic outreach clinic scheme.

Method

All 86 general practices in the London borough of Barnet were offered the opportunity of participating in this prospective pilot study. Seventeen practices (20%) accepted the offer. Seventeen of the practices that did not accept the offer were selected as control practices. There were 63 general practitioners in the study practices serving 125 600 patients and 65 general practitioners in the control practices serving 125 500 patients; 55 general practitioners in the study practices participated throughout the year-long study, from April 1992 to March 1993. Study and control practices were matched as far as possible in terms of number of

partners, list size, sociodemographic characteristics of the electoral wards in which the patient populations resided and distance from the local hospital (Edgware General Hospital, London).

An ophthalmic outreach team, comprising an ophthalmic medical practitioner and an ophthalmic nurse, held clinics in each of the study practices for one day once a month. Outreach visits took place during surgery hours and required the use of one room and a waiting area. Up to 12 patients were booked into the morning session by the general practitioners. In the afternoon, clinics were less structured: for emergency referrals, minor operations and follow up of patients. The local hospital ophthalmology outpatient department to which the study and control practices referred patients was at Edgware General Hospital. This department employed a consultant ophthalmologist, a staff grade practitioner, a senior house officer, two nurses, two administrative staff and a part-time orthoptist. This facility comprised a small reception room, two waiting rooms, an examination room, a dark room and a treatment area. Self-referrals by patients and out-of-hours emergencies were dealt with at the outpatient department of Moorfields Hospital, London, thus bypassing the outreach clinic.

Activity data

Data were collected on the numbers of new patients from all study practices seen by the outreach team, diagnoses, referral numbers to the ophthalmology outpatient department and how patients were managed at the outreach clinics. Data on referral rates of the study practices to the ophthalmology outpatient department were collected by the outreach team and were compared with those of control practices serving the same postal districts.

General practitioners' learning opportunities and views

A questionnaire was sent to all study general practitioners at the end of the study year. Locums and general practitioners joining or leaving practices during the study year were excluded. The questionnaire explored learning opportunities (through hands-on learning sessions with the outreach team) taken up by the general practitioners, reported improvement in ability to diagnose and manage 14 named ophthalmic conditions, possible changes in their routine practice for ophthalmic care and changes in their referral policy for patients with cataracts or diabetes. M P undertook semi-structured interviews with one general practitioner from each practice, asking them for their opinions of the scheme and for suggestions for developing it.

Patient surveys

In six of the practices, over a four-month period, patients attending the outreach clinics were invited to complete a self-administered structured questionnaire. Over a two-week period, patients attending the hospital ophthalmology outpatient department were invited to complete the questionnaire. The questionnaire sought information on: modes of transport, distances travelled and journey times to the practice or hospital; waiting times at the practice or hospital; preferences for attending a clinic based at their general practice or the outpatient department; and, for those attending the clinics, their views on the service.

Costs

Data were compiled for the first year of the ophthalmic outreach scheme. The costs of the outreach service were compared with those of the conventional hospital ophthalmology outpatient department. Cost categories included in the computation were staffing (salaries), travel by the outreach team between practices, medication/disposables, overheads and depreciation in equipment. The total replacement cost of all equipment was calculated and straight-line depreciation over five years was assumed.

Results

Activity data

Once the scheme was established, the total monthly number of patients seen by the ophthalmic outreach team was fairly constant (mean of 109 patients, ranging from 104 to 136 between practices). There was, however, considerable variation between practices in annual referral rates to the outreach team, from 7.3 to 22.0 patients per 10 000 registered patients; the mean was 11.5 patients per 10 000 registered patients. Ten per cent of all patients with appointments booked did not attend the clinic. This represented from 3% to 33% of the bookings made by individual practices.

Of 1309 patients who attended ophthalmic outreach clinics over the first year of the scheme, 480 (36.7%) were subsequently referred to the Edgware General Hospital ophthalmology outpatient department; a total of 1187 patients were referred to this department from control practices. The annual referral rate from study practices to the ophthalmology outpatient department was 3.8 patients per 10 000 registered patients compared with 9.5 patients per 10 000 registered patients from control practices. The slightly greater number of patients referred to the outreach clinics or ophthalmology outpatient department from the study practices than from control practices was offset by the smaller number of patients in study practices than in control practices who referred themselves (self-referral or emergency) to the Moorfields Hospital outpatient department; 199 and 330 patients, respectively.

Of the 1309 patients who attended outreach clinics, 497 (38.0%) were aged 75 years or over. The following diagnoses were made by the ophthalmic outreach team for patients attending the clinics: external eye disease (31.5% of 1309 patients); cataract (27.4%); age-related macular degeneration (6.8%); glaucoma (4.4%); diabetes (3.1%); squint (3.0%); requires glasses (1.1%); and other diagnosis (32.2%). Several patients had more than one condition diagnosed.

A total of 829 patients (63.3%) were discharged on the first visit to the outreach clinic. Of the 480 patients who were referred to the ophthalmology outpatient department, 236 were placed on the waiting list for surgery (18.0% of the 1309 patients attending outreach clinics), 52 underwent an immediate minor operation (4.0%) and 192 were followed up at subsequent visits to the outreach team (14.7%).

General practitioners' learning opportunities and views

Of the 55 general practitioners in the study practices who participated throughout the study year, 47 (85.5%) completed the questionnaire. Nineteen (40.4%) of the general practitioners reported taking the opportunity for hands-on learning sessions with the ophthalmic outreach team, spending an estimated three hours with the team during the year (range 1–36 hours). An increase in knowledge of ophthalmology as a result of the scheme was reported by 18 general practitioners (38.3%) but only three (6.4%) reported learning new skills (for example, how to use a magnifier, slit lamp and ophthalmoscope, testing for glaucoma and excision of meibomian cysts).

The frequency of improvement in ability to diagnose and manage named ophthalmic conditions, reported by general practitioners in the study practices, is shown in Table 1. A higher proportion of those general practitioners who had spent time with the ophthalmic outreach team felt better able to manage one or more of the listed conditions compared with those who had not taken this opportunity (42.1% of 19 versus 17.9% of 28).

Table 1. General practitioners' reported improvement in ability to diagnose and manage named ophthalmic conditions as a result of inclusion of their practices in an ophthalmic outreach clinic scheme.

Ophthalmic condition	% of 47 GPs reporting improved ability to diagnose/manage condition
Blepharitis	*46.8*
Allergic conjunctivitis	*25.5*
Floaters	*23.4*
Stye	*21.3*
Bacterial conjunctivitis	*19.1*
Meibomian cyst	*19.1*
Postoperative management of cataract	*19.1*
Watering eye	*19.1*
Cataract	*17.0*
Diabetic retinopathy	*12.8*
Age-related macular degeneration	*10.6*
Corneal abrasion	*10.6*
Corneal foreign body	*6.4*
Chronic glaucoma	*4.3*

Thirty one general practitioners reported having altered their practice in any of three areas (use of one or more of 11 pieces of ophthalmic equipment, any of four simple ophthalmic procedures, referral criteria for patients with cataracts or diabetes); all 19 of the general practitioners who had spent time with the visiting outreach team and 12 of the 28 who had not taken advantage of this opportunity claimed to have changed their practice.

At interview, general practitioners highlighted the benefits for patients of being managed in familiar surroundings by staff they knew, at more convenient times. Seven of the 17 general practitioners (41.2%) felt that some elderly or disabled patients who faced difficulties getting to hospital might not otherwise have been seen. Other advantages were the facilities for some patients to book dates immediately for cataract surgery and ready access to a specialist ophthalmologist opinion. The general practitioners felt that the service reflected well on their practices overall.

The main disadvantages reported were logistic: the administrative burden placed on reception staff and the need to free a consulting room of sufficient size that could be darkened. General practitioners who had rarely made direct contact with the ophthalmic outreach team cited time pressure (12 of 17 interviewees) and limited interest in ophthalmology as the main reasons for this lack of direct contact.

Patient surveys

During the study periods for the patient surveys, 210 patients who attended ophthalmic outreach clinics and 246 patients who attended the hospital ophthalmology outpatient department received questionnaires; 157 (74.8% response rate) and 150 (61.0% response rate) completed questionnaires were collected.

Modes of transport used, distances travelled and journey times differed between the two groups of patients. A third (33.1%) of the patients who attended an outreach clinic at their doctor's surgery and 3.3% of those who attended the hospital ophthalmology outpatient department reported travelling by foot; 22.0% of the patients who attended the hospital had to travel over five miles compared with 1.3% of those who attended the surgery. Reported journey times to the surgeries were lower than to the hospital, with 73.9% and 18.7%, respectively, taking less than 10 minutes, and none and 12.0%, respectively, taking more than 50 minutes. Of the patients who attended the hospital, 33.3% reported paying to travel and 45.3% reported requiring an escort for the visit compared with 8.3% and 26.1%, respectively, of those who attended the surgery.

Of the 157 patients who attended an ophthalmic outreach clinic, 94.9% reported being seen within 30 minutes of the appointment time compared with 86.0% of the 150 patients who attended the hospital outpatient department. All patients who had had to wait at the surgery reported being seen within one hour of their appointment times. Some patients reported having waited for up to two and a half hours at the hospital.

The majority of patients attending either the outpatient department or a clinic based at their doctor's surgery were satisfied with the service they received. However, of 66 patients attending a surgery-based clinic who had previously attended the outpatient department, 64 (97.0%) expressed a preference for the surgery-based clinic. They gave as reasons the ease of access, more comfortable surroundings and familiarity of staff in the surgery.

Costs

The comparative costs per session of the two services are broken down in terms of staffing, travel, medication/disposables, overheads and depreciation in equipment (Table 2). A portable slit lamp (£5000) was the only additional item of equipment purchased for the outreach team. A mean of 8.2 new patients were seen in each outreach clinic session compared with 25.3 new patients in each ophthalmology outpatient session. The cost per patient seen by the outreach team (£48.09) was more than three times the cost per patient seen in the outpatient department (£15.71). The main reason for the relative inefficiency of the outreach clinic was therefore low patient throughput. Travelling, preparation and administration consumed much of the ophthalmic outreach team's time.

Discussion

Involvement in the ophthalmic outreach scheme led to a reduction in practices' referrals to the local hospital ophthalmology outpatient department. The outreach scheme appeared to act as an effective filter of demand for care in the hospital setting. The ophthalmic outreach team was able to manage 63% of patients referred to the clinics. Although the total number of patients receiving an ophthalmological appointment (in hospital or outreach clinic at the surgery) was slightly greater in study practices than in control practices, participating general practitioners did not appreciably lower their referral thresholds.

Some increase in total referral numbers may represent a legit-

Table 2. Comparative breakdown of costs per session of an ophthalmic outreach clinic (8.2 patients per session) and a hospital ophthalmology outpatient department (25.3 patients per session).

Item	Cost (£ per session) of item in ophthalmology	
	Outreach clinic	Outpatient department
Staffing	368.80	282.10
Travel	14.10	–
Medication/disposables	1.40	6.74
Overheads	–	11.03
Depreciation in equipment	10.04	97.70
Total	394.34	397.57
Cost per patient seen	48.09	15.71

imate response to previously unmet need. Studies of the prevalence of various common ophthalmic conditions in the community strongly suggest that much need is unmet.[3] Patients seen in the outreach clinics were similar to those seen in the hospital outpatient department both in terms of case-mix and their immediate management.[10] Extra pressure on the outreach service may have resulted from the redirection of patients previously sent to Edgware General Hospital and substitution of private ophthalmological referrals by outreach service referrals.

In a study of 112 specialist outreach schemes, only six were attended by general practitioners for inservice training.[8] The educational opportunities afforded by the visiting outreach team in this pilot study were taken up by a minority of general practitioners (40%). Many commented that they were unable to arrange time for the learning sessions. Few general practitioners involved in this scheme reported that their knowledge of ophthalmology had increased or that they had learned new skills as a result of the scheme, and few reported increases in ability to diagnose or manage ophthalmic conditions.

While most cases of ophthalmological misdiagnosis have no serious consequences for the patient,[11] hands-on training should aim at ensuring that common conditions can be easily differentiated and more serious conditions identified and referred. Most problems will continue to be managed solely by general practitioners and there is a need for ophthalmic services that can rapidly provide a specialist opinion.[12] The popularity of outreach schemes with patients remains the chief justification for this model of service provision. Ease of access and the appeal of comfortable and familiar surroundings were the main reasons cited in preference for the outreach clinic. The outreach scheme was popular with general practitioners for similar reasons.

Fundholding general practices have been especially keen to procure consultant outreach clinics but these arrangements are often short lived.[13] Many district health authorities are being pressured to invest in similar services for non-fundholding practices. In terms of costs per patient seen, the ophthalmic outreach scheme was more than three times more expensive than the hospital ophthalmology outpatient department. This was largely a result of the extra staffing costs incurred by and the relative inefficiency of outreach work. Approximately 40% of patients were seen in an outreach clinic and at the outpatient department. The differential costs per referral reaching hospital therefore make outreach even more expensive.

Differences between the study and control general practices' hospital referral rates must be interpreted with caution. No data were available for previous years. Study general practices were self-selected and their referral practices may have already differed from those of the controls. Assessment of the true cost-effectiveness of this scheme would have required more sophisticated analyses of case-mix and outcomes. The outreach scheme may particularly have benefited elderly patients or others facing difficulties with travel to hospital. Potential health gains to such patients have not been costed. Costs other than health service costs, for example patient time costs, require investigation. This outreach model might more appropriately serve geographically isolated areas.

In light of the assessments of the outreach clinics during the study year, the scheme was amended to become centralized on fewer satellite clinics serving more practices and then continued.

Although this pilot study indicated that the educational impact of the ophthalmic outreach scheme was limited and that the unit costs (per patient) of the scheme compared unfavourably with those of conventional hospital outpatient treatment, the potential health gains from this more accessible model of care require further exploration. Different ways of delivering better care closer to patients, such as rotating outreach teams or establishing smaller numbers of fixed satellite clinics, may provide the basis for more cost-effective models of service provision.

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Food for thought...

'Women with major depression were about five times more likely to have their depression recognized if they mentioned their psychiatric symptoms early in the consultation compared with those who either left it later to mention such symptoms or never mentioned them. Major depression was more likely to be recognized if no physical illness was present. After adjusting for physical illness, major depression was 10 times less likely to be recognized if the first psychiatric symptom was mentioned late in the consultation, or not mentioned at all, than if it was mentioned early in the consultation.'

Tylee A, Freeling P, Kerry S, Burns T. How does the content of consultations affect the recognition by general practitioners of major depression in women? November *Journal,* p.575.