COMMUNITY OPHTHALMOLOGY PILOT STUDY

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SUMMARY

A randomly selected sample of subjects over 75 years old or housebound in three London inner city general practices were screened for eye disease by an ophthalmologist and an ophthalmic trained nurse. All subjects were examined at specialist outreach clinics run at the surgery of their general practitioner (GP), except for the housebound who were assessed by domiciliary visit. Patients presenting to their GP with an eye problem during the study were also seen at the outreach clinic at the GP's request. Over the 3-month period of the study, 126 over-75s, 62 housebound and 35 GP referrals were seen. This pilot study found high prevalence rates of treatable eye disease in the elderly and housebound subjects and these are compared with the findings of other epidemiological surveys. The needs for health care provision to this sector of the community and the feasibility of providing it through outreach clinics are also discussed.

There is a growing body of epidemiological evidence that shows a high prevalence of treatable eye disease in the community which does not present to the hospital outpatient department, and this provides the premise on which our study is based.[1-3] Two population subgroups that have emerged as being particularly at risk are the elderly (75 years and over) and the disabled/housebound.[1,2,4,5] We therefore chose to screen samples of these subgroups for eye disease using a general-practice-based outreach clinic where we also accepted referrals from local general practitioners (GPs) over the duration of the study.

Our principal objectives were therefore to identify whether there was a need for a community-based eye service and to assess the feasibility of using an outreach clinic to provide such a service.

METHODS

We selected three inner city general practices with contrasting socioeconomic profiles: West Hampstead, Rotherhithe and Archway. West Hampstead represents the

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more affluent end of the spectrum and Rotherhithe the more deprived, with Archway in between. The features of these practices are shown in Table I.

Outreach Clinics

Six half-day clinics were held at each practice over a 3-month period. Each clinic was staffed by a Senior Registrar in ophthalmology and an experienced nurse with an Ophthalmic Nursing Diploma.

Clinic profiles were planned to allow 10 minutes per consultation, giving 18 appointments per clinic. Twelve of these appointments were reserved for screening the over-75s and the remaining six left unfilled to allow for GP referrals.

Subjects over 75 years were identified from age/sex registers and a random sample selected and invited once by letter to attend the screening clinic. A total of 24 per clinic were invited, assuming at least a 50% non-response rate.

A screening protocol was formulated and followed for each subject using a proforma, and these data were later transferred onto a database for subsequent analysis. It was originally intended to undertake direct data entry but, in practice, this was found to be too time-consuming and led to delayed clinic appointments.

Subjects were initially interviewed by the nurse, who then measured best corrected visual acuity and performed a basic anterior segment examination including intraocular pressure measurement using a Perkins applanation tonometer. The examination was then completed by the

Table I. Parameters of three inner London general practices

	Patients		No. GP partners	Jarman index[a]	House-bound
Location	Total	>75 yr			
Archway	12,392	609	6	(1) $n = 0$ (2) $n = 731$ (3) $n = 2,088$	~100
Rotherhithe	4,200	250	2	(1) $n = 65$ (2) $n = 80$ (3) $n = 3,012$	~50
West Hampstead	8,000	450*	5	NA	~75

NA, not available.
[a]Jarman index scores: high deprivation (1) = >50; medium deprivation (2) = 40–50; low deprivation (3) = 30–39.

Table II. Equipment costs for each outreach clinic

Item	Cost (£)
Portable slit lamp	2,618
Perkins tonometer	445
Spectacle indirect	452
28 dioptre lens	141
90 dioptre lens	100
LOCS II	135
Direct ophthalmoscope	93
Consumables	170
Total	4,154

ophthalmologist with the use of the portable slit lamp, 90 dioptre lens and, if indicated, indirect fundoscopy. The degree of cataract was quantified using the LOCS II system and particular note was made of any papillopathy or maculopathy.

If the examination was entirely normal, the subject was reassured; if not, then either treatment or hospital referral was recommended as appropriate.

All patients referred from their GPs were seen in the outreach clinics and managed similarly. The equipment used and its cost are shown in Table II.

RESULTS

Over-75s Screening

The average number of subjects over 75 years old seen per clinic was 7, which represented an attendance rate of 29%. This attendance rate was in fact equivalent to the response rate from the letters of invitation, since only those wishing to attend replied.

A total of 126 subjects were screened which represented 9.7% of all patients over 75 years old within the three practices. Of these, 61 (48%) had ocular symptoms, the majority (32/61) related to reduced visual acuity (Fig. 1).

In 20 (16%) subjects best corrected acuity of less than 6/18 in both eyes was found, which fulfils the World Health Organization criterion for low vision. A further 18 (14%) had less than 6/18 in one eye (Fig. 2). Thus a total of 38 (30%) subjects had best corrected visual acuity of less than 6/18 in one or both eyes. Of the 126 subjects screened, 78 (62%) had ocular pathology of some description whilst only the remaining 48 (38%) had normal eyes (Fig. 3). Of the 78 with ocular pathology, 32 (41%) had
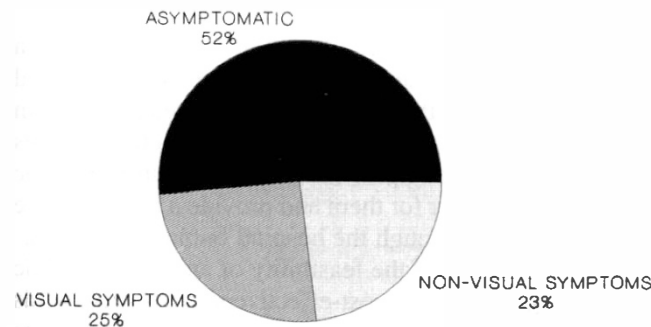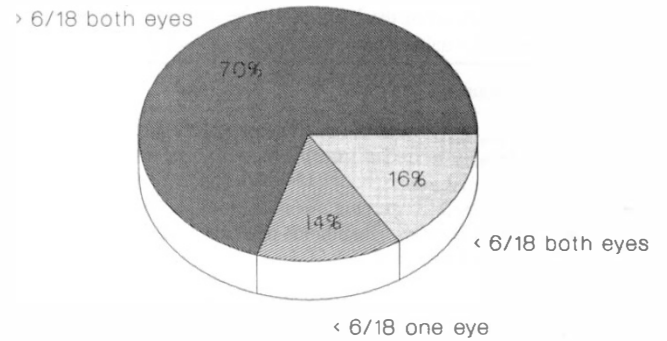

Fig. 2. *Reduced acuity in 126 patients over 75 years old.*

been previously seen by an ophthalmologist with their current eye problem.

Multiple pathology was present in a minority of the 78 cases and this increased the total number of pathological diagnoses to 99. These are listed in Table III and illustrated in Fig. 4.

We advised hospital follow-up for 20 (16%) subjects screened in the outreach clinics. Their diagnoses are listed in Table IV. Half the referrals were for cataract (15/31). Of the 20 patients referred, 9 had been previously seen at an eye hospital but 8 of these previous consultations were for a problem unrelated to the current one.

GP Referrals

During the 18 outreach clinics, 35 GP referrals were seen for an ophthalmological opinion. Of these, 10 (29%) were recommended for hospital referral, 12 (34%) were treated following advice given to their GP and the remaining 13 (37%) had no ocular pathology.

The results of the screening of housebound subjects are being accumulated for a separate study.

CONCLUSIONS

In our sample of over-75s (representing 9.7% of all patients in this age group) we found a high prevalence of treatable eye disease. This is eye disease that does not present to the hospital outpatient department by conventional routes.
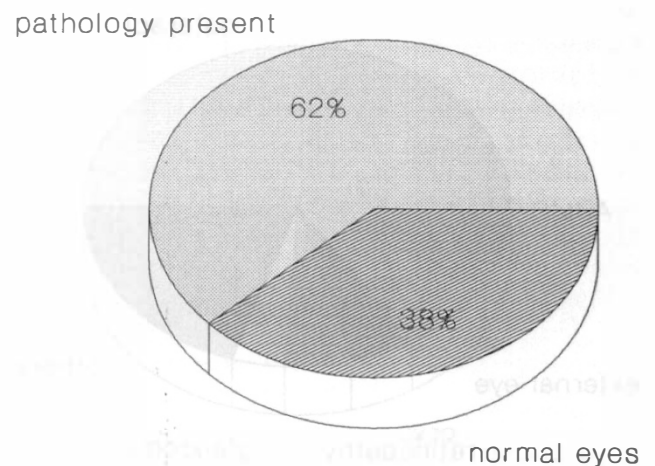

Fig. 1. *Ocular symptoms of 126 patients over 75 years old.*

Fig. 3. *Incidence of ocular pathology in 126 patients over 75 years old.*

Table III. Breakdown of the diagnoses (*n* = 99) found in 78 (62%) over-75s screened for ocular pathology (expressed as percentage)

Diagnosis	Percentage
Cataract	42
ARMD	16
External eye	8
B/CRVO	5
Retinopathy	5
Glaucoma/suspect	4
Others	20

ARMD, age-related macular degeneration; B/CRVO, branch/central retinal vein occlusion.

A high prevalence of treatable eye disease has been found in other epidemiological studies in a variety of different countries, with around 40% of 75 to 85-year-olds having a significant degree of cataract.[1,3,5,6] However, comparison with data from other surveys is difficult because of lack of agreement on definitive criteria for the conditions under study.

The central question that leads on from this finding is whether or not 'prevalence' is synonymous with 'need'. That is, does the presence of a disease in a community imply automatically a need to provide a service to treat it?

The problem rapidly becomes a semantic one that hinges upon the definition of the word 'need'. This has been addressed by the National Health Service Management Executive in a recent publication.[8] Their pragmatic definition of 'need' is the ability to benefit from effective health care. According to this criterion our study suggests that there certainly exists a need for a community-based eye service since there appears to be a high prevalence of treatable eye disease undetected within the community for which effective treatment is available.

However, needs assessment is a conceptually confused and technically difficult area and a variety of definitions of 'need' exist.[9] Examination of the situation is further complicated by the limitation of current information sources concerning the prevalence of disease in the community, such that the foundations upon which needs assessment is built are far from sound at the moment and the formal and
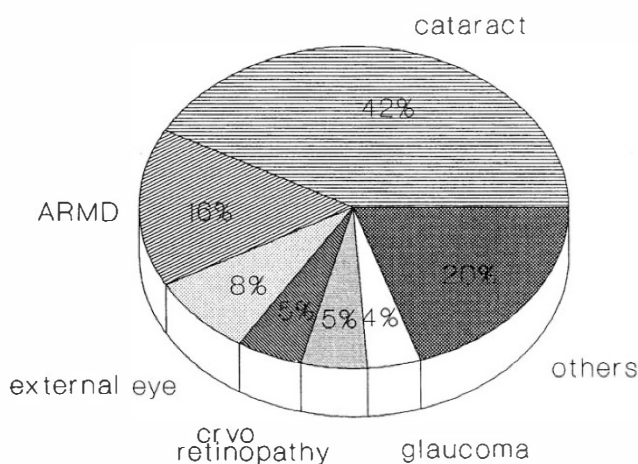
Table IV. Details of 31 diagnoses in the 20 screened over-75s referred for hospital follow-up[a]

Diagnosis	Number
Cataract	15
ARMD	3
B/CRVO	3
6th palsy	2
Ectropion	1
Aphakia	1
Diabetic maculopathy	1
Glaucoma	1
Myopic degeneration	1
Hypotropia	1
Corneal scar	1
Blepharitis	1

ARMD, active range of motion defect; B/CRVO, basal/central retinal vein occlusion.
[a]Nine subjects had multiple pathology.

accurate assessment of needs will inevitably be a complex and lengthy task.

Accepting that a need (as defined above) for a service exists, then logically the next step is to ask whether or not it is feasible both financially and practically to provide such a service in the form of an outreach clinic. We suggest that it is eminently feasible since these clinics are easy to organise and relatively cheap to equip (Table II), staff and run as suggested by a previous pilot study in ophthalmology in inner London.[10]

The grade of ophthalmologist that would be best suited to staff a community-based service would depend upon the stated objectives of that service. It could be envisaged as a consultant-based service offering the specialist expertise of an experienced senior clinician who could, for example, book patients for surgery at the time of examination. Alternatively it could be seen as a basic filtering service involving less highly trained staff who could screen out unnecessary referrals, pass on the more complex problems to the hospital outpatient department and deal with the intermediate cases on site.

A prime consideration in assessing the need for an outreach service is the appropriateness of the format for the local community. The three settings that we chose were inner city general practices within densely populated areas, with the corollary that minimal distances needed to be travelled by the considerable number of elderly patients involved. In a rural setting with a widely dispersed population the converse situation would apply and an outreach clinic would seem an inappropriate format for a community-based service.

All three practices were very keen for us to provide a continuing service. The GPs were delighted with the speed and convenience of the service, which offered a maximum waiting time of 2 weeks. An additional attraction for GPs who run fund-holding practices is that an outreach clinic could prove cheaper for them and provide a better service than is available through the hospital outpatient system.

The final arbiter of the feasibility of an outreach clinic service may well be its cost-effectiveness. At Moorfields Eye Hospital an outpatient visit costs £37, which includes all overheads but does not incorporate the capital cost of

Fig. 4. *Diagnostic breakdown of ocular pathology 78 subjects over 75 years old.*

the building. In our outreach clinics all overheads are met by the practice so that the cost per patient to the hospital is simply that of the equipment and staff time. This worked out as £23 per head for the first 500 patients and this figure will of course continue to decrease with increasing numbers of patients, since the capital cost of the equipment is incurred only once and the maintenance costs become staff salaries and consumables.

The results of our study suggest that there is a need for a community-based eye service and that, in our inner city setting, the outreach clinic appears to be a cost-effective and efficient method of meeting this need.

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