

Hospital Topics

Function of an ophthalmic "accident and emergency" department: results of a six month survey

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Abstract

A retrospective analysis was carried out of all patients attending the casualty department of Southampton Eye Hospital during 1 February to 31 July 1983. During the six month period 8092 patients made a total of 13 544 visits. Of these patients, 6178 were attending the hospital for the first time and 1914 had previously been seen in the outpatient clinic; many did not fall into the category of "accident and emergency." Some 37% of patients were managed by the ophthalmic nurse alone.

The findings show that the department was providing a service far in excess of its defined function, which suggests that the structure of the acute ophthalmic services may require change. Certainly the value of the ophthalmic nurse was beyond question, her active participation in management allowing the doctor more time with the more complex clinical problems and thus enhancing efficiency.

Introduction

The casualty department at Southampton Eye Hospital provides a 24 hour service for acute ophthalmic conditions in south west Hampshire, serving a population of about 410 000.¹ In addition, the area is subject to heavy through traffic, especially in the holiday season. The department also serves a large surrounding rural area, and at night the area covered is extended owing to the lack of acute ophthalmic services elsewhere. There are no restrictions of access for the general public.

The department is staffed by two residents during the morning and by an on call resident thereafter. At least one ophthalmic nurse is present throughout the 24 hours. Many patients are diagnosed and treated by a nurse, who arranges follow up by a doctor when necessary.

In a recent study, Vernon analysed new patients attending a casualty department.² We, however, believe that a study of all attenders—that is, including patients previously seen in the outpatient clinic—would be more representative of the function of this department, and to our knowledge such a study has not been reported. We therefore carried out a retrospective survey covering the six months 1 February to 31 July 1983. This period coincides with that studied by Vernon.

Methods

Casualty cards and outpatient clinic notes, where appropriate, were withdrawn from the hospital records department in order of the patients' attendance and analysed. Detailed information about each patient was recorded, including age, sex, type of referral, attendance details, diagnosis, and disposal. A comprehensive diagnostic index was devised to categorise patients in a way appropriate to the survey. When a patient had more than one diagnosis only the most serious was listed.

We include here those details relevant to the organisation of the casualty department, and a modified breakdown of figures according to diagnosis, with special mention of those diagnoses that we consider to be either important or of particular interest.

Results

During the six months 8092 patients visited the department on 13 544 occasions (mean 1.67 visits per patient). Of these, 6178 (76.3%) were new patients and 1914 (23.7%) had previously attended the outpatient clinic ("old" patients). A total of 1468 patients (18.1%) first attended between 6 pm and 8 am. The casualty service is directly available to the general public

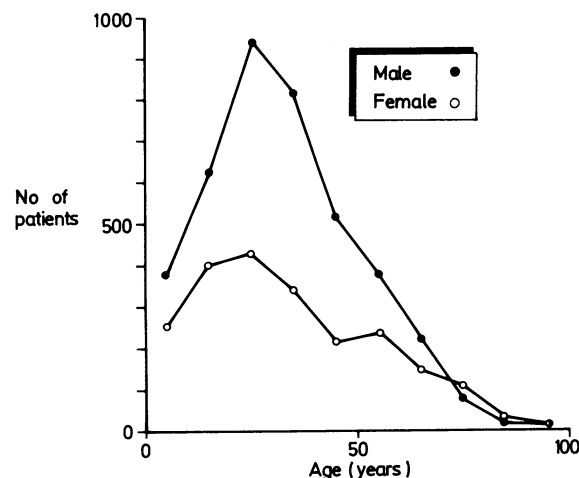


FIG 1—Age and sex distribution of new patients.

and 7273 patients (89.9%) attended as self referrals. Of the remainder, most (594; 7.3%) were referred by general practitioners (table I). Figures 1 and 2 show the age and sex distributions of the new and old patients. Altogether 453 patients (5.6%) were noted to have been only partially or unsuccessfully treated before attendance at the department. This figure includes prescribed treatment and first aid but excludes treatment with over the counter medicines.

At the first visit 4596 patients (56.8%) were diagnosed and treated by an ophthalmic nurse. Of these patients, 2952 (36.5% of the total, 64.2% of those seen by a nurse) required only this single visit. Having had their treatment

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TABLE I—Method of referral

Method of referral	No (%) of patients	Method of referral	No (%) of patients
Self referral	7273 (89.9)	From other hospital doctor	76 (0.9)
From general practitioner	594 (7.3)	From ophthalmic optician	53 (0.7)
From industrial nurse	96 (1.2)		
		Total	8092 (100.0)

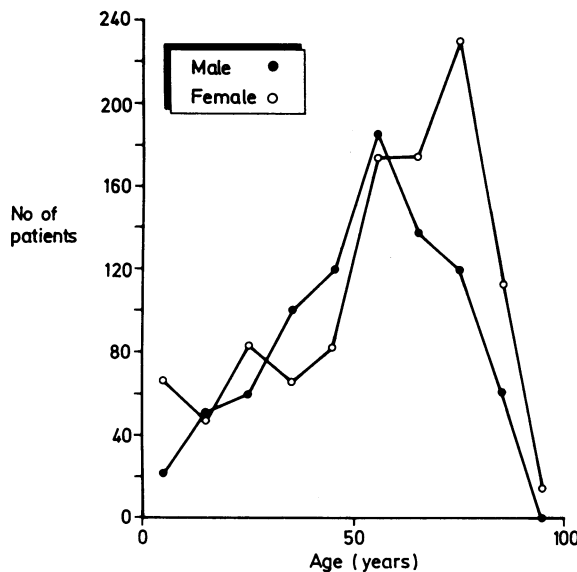


FIG 2—Age and sex distribution of old patients.

initiated, the others were asked to return, usually the next day, for review by a doctor.

The remaining patients attending for the first time (3496; 43.2%) were treated by a doctor, including all those referred to the department. All patients requiring a second or subsequent visit to the department were seen by a doctor except when simple advice on treatment was required (20 patients). In total the number of doctor consultations was 8928 (65.9%) and the number of nurse consultations 4616 (34.1%).

Most patients (6292; 77.8%) were successfully treated in the casualty department alone; 809 patients (10.0%) defaulted, presumably because they became symptom free. The remainder (12.2%) required further attention elsewhere (table II), mainly in the ophthalmic outpatient clinic (686; 8.5%), although 32 patients (0.4%) required redirection to an appropriate hospital specialist department. Forty four patients (0.5%) were discharged from follow up but reattended owing to persistence of symptoms. In no case was an important diagnosis missed.

The 686 patients referred to the ophthalmic outpatient clinic (table II) comprised 338 (5.5%) of the new patients and 348 (18.2%) of the old patients. Of those referred to the clinic, a disproportionate number (36.0%) had been referred urgently to the casualty department by general practitioners; 9.5% were referred by ophthalmic opticians.

The duration of symptoms before attendance at the department was extremely variable (fig 3). A total of 6446 patients (79.7%) attended within three days of the onset of symptoms, but a substantial number had had symptoms for much longer. The maximum recorded duration of symptoms

TABLE II—Method of disposal

Method of disposal	No (%) of patients	Method of disposal	No (%) of patients
Discharged	6292 (77.8)	Referred to general practitioner	101 (1.2)
Defaulted	809 (10.0)	Admitted to eye hospital	76 (0.9)
Referred to clinic	686 (8.5)	Referred to other hospital doctor	32 (0.4)
Referred for minor surgery	96 (1.2)		
		Total	8092 (100.0)

was 40 years. In those patients redirected to the ophthalmic outpatient clinic by the resident the mean duration of symptoms was 15 weeks.

In 3536 patients trauma was the presenting complaint and 5826 consultations were required (mean 1.65 visits per patient). Table III shows the anatomical sites of injury and table IV the method of injury, with notable examples. A more detailed analysis is being prepared.

Table V categorises those patients with inflammatory disease. Almost half (48.8%) had conjunctivitis of bacterial, viral, or allergic aetiology. There was only one notification of ophthalmia neonatorum during the period. Acute or recurrent uveitis provided 7.1% of all cases of inflammatory disease and required a total of 1151 patient visits (mean 4.41 visits per patient). Ninety eight patients with uveitis were referred to the outpatient clinic. One patient was admitted.

Table VI lists the most common "other diagnoses." Contact lens induced disease accounted for 217 patients and 450 consultations. In 233 cases a diagnosis was not made or was not clear in the casualty notes. Of these, no patient returned after treatment or reassurance.

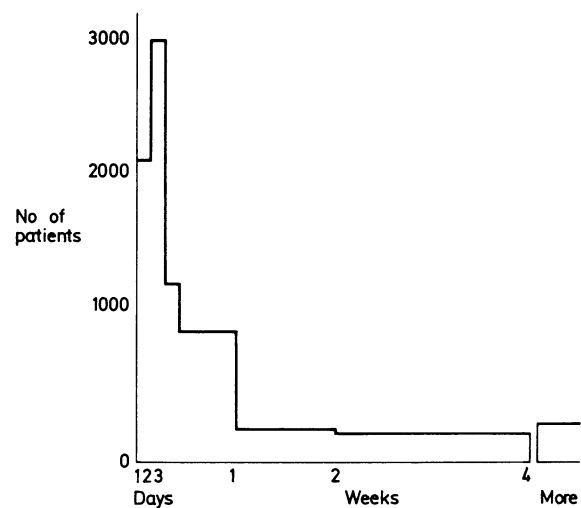


FIG 3—Duration of symptoms before attendance.

TABLE III—Types of injury among patients with trauma

Type of injury	No (%) of patients with trauma	Type of injury	No (%) of patients with trauma
Corneal abrasion/laceration	1392 (39.4)	Traumatic uveitis	26 (0.7)
Corneal foreign body	920 (26.0)	Comotio retinae	15 (0.4)
Conjunctival foreign body	542 (15.3)	Penetrating injury (no foreign body)	5 (0.1)
Other conjunctival trauma	457 (12.9)	Iridodialysis	4 (0.1)
Eyelid or adnexal injury	100 (2.8)	Penetrating injury (foreign body)	1
Other facial injury	44 (1.2)	Choroidal rupture	1
Hyphaema	28 (0.8)	Orbital fracture	1
		Total	3536 (100.0)

TABLE IV—Causes of injury among patients with trauma

Cause of injury	No (%) of patients with trauma	Cause of injury	No (%) of patients with trauma
Mechanical	1518 (42.9)	Radiational	178 (5.0)
Grinding	176	Arc eye	161
Assault	80	Recurrent Abrasions	32 (0.9)
Sport	78	Miscellaneous	122 (3.5)
Hammer and chisel	60	Cause unknown	1440 (40.7)
Road traffic accident	24		
Chemical	246 (7.0)		
Alkalis	13		
		Total	3536 (100.0)

TABLE V—Types of inflammation recorded

Type of inflammation	No (%) of patients with inflammation	Type of inflammation	No (%) of patients with inflammation
Conjunctivitis	1795 (48.8)	Episcleritis and scleritis	81
Acute eyelid inflammation	534 (14.5)	Lacrimal drainage problems	71
Chronic eyelid inflammation	388 (10.5)	Herpes zoster	36
Uveitis	261 (7.1)	Bacterial corneal ulcers	27
Dry eyes	225 (6.1)	Other corneal inflammation	25
Herpes simplex	103 (2.8)	Facial or sinonasal inflammation	17
Marginal corneal ulcers	101 (2.7)	Viral keratitis	16
		Total	3680 (100.0)

TABLE VI—Distribution of other diagnoses recorded

Diagnosis	No of patients	% Of total in series
Contact lens induced disease	217	
Posterior vitreous detachment and vitreous floaters	113	
Chronic maculopathies	37	
Chronic glaucoma	37	
Headache and facial pain	35	
Cataract and refractive errors	29	
Retinal breaks and degenerations	27	7.9
Intracranial or cerebrovascular disease	27	
Retinal artery occlusions	23	
Retinal vein occlusions	22	
Acute glaucoma	22	
Other diagnoses	54	
No diagnosis made	233	2.9
Total	876	10.8

Discussion

No other comprehensive study of all patients attending an ophthalmic accident and emergency department has been reported. Almost a quarter of the patients seen in our department were "old" patients with a tendency to more complex, recurrent, or chronic disease, which contributed substantially to the workload.

Analysis of the age and sex distribution of patients showed a preponderance of young men among new attenders, which reflects the higher occupational and recreational risk of trauma in this group. For old patients the distribution reflects the higher incidence of chronic and recurrent problems among the elderly and the larger number of women in this age group. Problems of vision and mobility within this age group are an additional burden on the department.

In a general accident and emergency department the principle of "duration of symptoms" is often used as a method of triage, placing the onus on the patient and the receptionist. In our series 36.0% of patients had had symptoms for three days or more and 8.6% for longer than one week. Clearly even under the broadest definition the term accident and emergency department is insufficient to describe its function. Patients often say that they attend the accident and emergency department in preference to seeking advice elsewhere, and this is reflected in the large number of common complaints and the wide spectrum of diagnoses. Why should the patient choose to visit an ophthalmic casualty department with non-acute symptoms rather than the general practitioner? Clearly the former has certain advantages, including guaranteed same day service (albeit with some waiting), specialised equipment, and specialist advice. Should

the choice of an ophthalmic casualty department as the primary care centre for all ophthalmic conditions be encouraged? This is certainly not necessary, but is it desirable? We believe that up to one fifth of our patients had conditions which could more suitably have been dealt with in an ophthalmic outpatient clinic. A considerable proportion of these patients were referred to the casualty department by general practitioners and ophthalmic opticians. There was also a substantial number of patients, notably those with uncomplicated conjunctivitis, who could quite adequately have been treated by a general practitioner. Nevertheless, ophthalmic symptoms often induce in the patient a fear out of all proportion to the severity of the disease and rapid reassurance is required.

At present, therefore, the ophthalmic casualty department is providing a service far in excess of its defined function. This is unsatisfactory and the alternatives are twofold. Firstly, as suggested by Vernon,² the department may take over as the primary care centre for all ophthalmic conditions, thus relieving the general practitioner of any responsibility for these patients. Appropriate staffing levels would be required, and this would create a unique situation in the hospital service. The obstacles to its formation would be manifold. Alternatively, first line management of non-emergency ophthalmic conditions by the general practitioner could be encouraged. For this to be successful a more comprehensive undergraduate training in ophthalmology would be mandatory to improve basic care to the standard that is expected in other aspects of medicine. At present the function of our department lies somewhere between a casualty service and a primary care centre, to the dissatisfaction of proponents of both alternatives. Does the structure of the acute ophthalmic services require change?

In our casualty department the ophthalmic nurse plays an active part in the management of patients, seeing some 57% of patients at the first visit and managing 37% alone. In total the nurses are responsible for 34% of all consultations. This active participation by nurses is becoming less common in ophthalmic casualty departments, and this is unfortunate: an experienced nurse is well able to deal with most minor trauma and with uncomplicated conjunctivitis (together accounting for over half of all patients in this series) without medical help. There appear to be no reservations by the general public about treatment by a nurse—indeed, the patient seems to appreciate the faster service in our department. Any patient may choose to see a doctor but in practice few insist on this. This system gives the doctor more time for the more complex clinical problems and we believe makes the department more efficient. Nursing participation is enthusiastic, though with rigorous safety controls (for example, nurses are not allowed to manage hyphaemas or prescribe topical steroids). We emphasise that we have had no clinical problems arising from this system and recommend it to our colleagues elsewhere.

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