

An audit of primary care referrals to the Ophthalmic Accident and Emergency Department of the Royal Victoria Eye and Ear Hospital, Dublin

Abstract

Aims: The objective of this audit was to determine the pattern of general practitioner referrals to the ophthalmic casualty department and to make recommendations to improve the service.

Methods: Clinical data were collected from the Accident and Emergency Department (A&E) case notes regarding patient demographics, reason for referral by GP, triage group, diagnosis and course of management.

Results: A total of 2,015 patients attended the A&E during the one-month study period, of whom 335 (16.6%) were GP referred. A total of 271 (80.9%) of these patients were non-urgent referrals. Non-painful and non-sight threatening conditions accounted for 172 (51.3%) referrals. The consistency of ocular examinations in the GP letters was poor, with only 16.4% recording visual acuity and 49.9% recording any examination findings.

Conclusion: There is a high rate of non-emergency referrals to the ophthalmic A&E. There is a need for better ophthalmic training for GPs, either as part of the existing training scheme or as part of continued education programmes. The introduction of a standard GP referral form with focused questions would allow better triage of these patients on arrival in the A&E department. The expansion of the role of the casualty nurse specialist would also help to alleviate pressure on this overburdened system.

Keywords: Ophthalmic, audit, accident and emergency, primary care.

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Introduction

The Royal Victoria Eye and Ear Hospital is a specialised hospital for ophthalmic and ear, nose and throat conditions. The ophthalmic division of the hospital provides a 24-hour, seven day per week, 'walk-in' accident and emergency service. There were over 30,000 patient attendances in 2008 with an average of 100 patients per day. The Accident and Emergency (A&E) Department is staffed by one full-time casualty doctor and one or two rostered senior house officers. The high number of patients presenting to the A&E poses

great challenges for the efficiency of the service. All of these patients are first seen and categorised by a triage nurse and are then assessed by a non-consultant hospital doctor (NCHD). The patients either self refer or are referred by their general practitioner (GP), optometrist or another hospital. The aim of this audit was to determine the nature and outcome of GP referrals to the A&E Department. We assessed the urgency of these referrals and analysed patient demographics, reason for referral, diagnosis and management plan.

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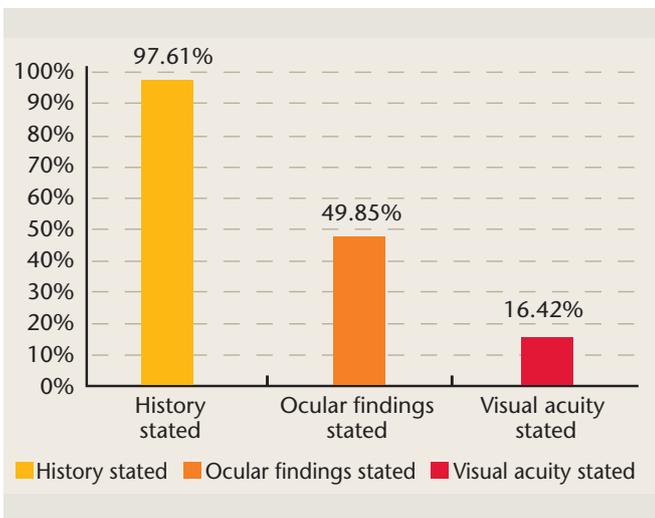


FIGURE 1: Characteristics of the GP referral letter.

Methods

This prospective audit was undertaken in the Royal Victoria Eye and Ear Hospital A&E from July 17, 2009, to August 17, 2009. All patients attending the ophthalmic A&E with a letter from their GP were enrolled in the study. Patients who were self-, hospital- or optician-referred, or attending for ear, nose and throat complaints, were excluded. The following information was collected from the case notes and referral letter: patient demographics; reason for referral by the GP (assessed from the documentation of relevant ophthalmic history, eye examination and visual acuity in the GP letter); triage time; triage category; diagnosis by NCHD; and, follow-up outcome. The data collected was categorised into predetermined categories and entered into an electronic database. This audit did not require ethical committee approval and patient confidentiality was ensured by strictly excluding the collection of patient personal data.

Results

The total attendance at the ophthalmic A&E during the course of this study was 2,015 patients. Some 335 (16.6%) of these patients were referred by their GP. An ophthalmic history was provided in 327 (97.6%) of these referrals, whereas ocular examination findings and visual acuity were documented in 167 (49.9%) and 55 (16.4%), respectively (Figure 1).

Patient demographic data showed a 1:1 male to female ratio, with a mean age of 46.5 years (standard deviation 20.4, range 26-67). Some 254 (76%) patients attended A&E during the hours of 9.00am to 5.00pm (Table 1). On arrival in A&E, the patients were triaged and categorised into four groups by the ophthalmic nurse specialist using the Manchester Triage System (Table 2).

The average triage time was 21 minutes. Some 271 (80.9%) patients did not require urgent consultation following triage. Those requiring urgent (should be seen in less than 60 minutes) and extremely urgent (should be seen in less than 10 minutes) attention made up 16.7% and 0.6% of the attendees, respectively (Figure 2). As shown in Table 3, a wide range of conditions was diagnosed by the NCHD. No

Table 1: Baseline demographics of study participants (n=335).

Characteristic	Number of patients	Percentage
Sex (no.) (%)		
Male	171	51%
Female	164	49%
Age (no.) (%)		
0-18 yrs	24	7%
18-64 yrs	235	70%
65+ yrs	76	23%
Time of arrival (no.) (%)		
9.00am to 5.00 pm	254	76%
5.00pm to 10.00pm	41	12%
10.00pm to 9.00am	40	12%

Table 2: The Manchester Triage System.

Red – less than 10 minutes	Green – less than 60 minutes	Blue – waiting for availability	Yellow – return for review
1. Penetrating injury	1. Corneal abrasion	1. Painless diplopia	
2. Chemical burn	2. Corneal conjunctiva, foreign body	2. Flashes and floaters	
3. Headache, sudden loss of visual acuity, elderly, frail, giant cell arthritis	3. Orbital cellulites	3. Recent non-specific blurred vision	
4. Painful third cranial nerve palsy, diplopic	4. Infectious conditions, adenovirus	4. Non-specific eye pain	
5. Acute glaucoma	5. Corneal ulcer, abscess	5. Mild conjunctivitis	
6. Crying babies with cloudy cornea	6. Welding flash	6. Trichiasis	
7. Hypopyon	7. Retinal detachment	7. Cyst (except in children)	
8. Severe eye pain	8. Hyphema	8. Blepharitis	
9. Intraocular foreign body	9. Recent surgery with complications	9. Dry eyes	
	10. Mental and physical disability		
	11. Rx in other hospital		
	12. Severe conjunctivitis		
	13. Children <5 years		

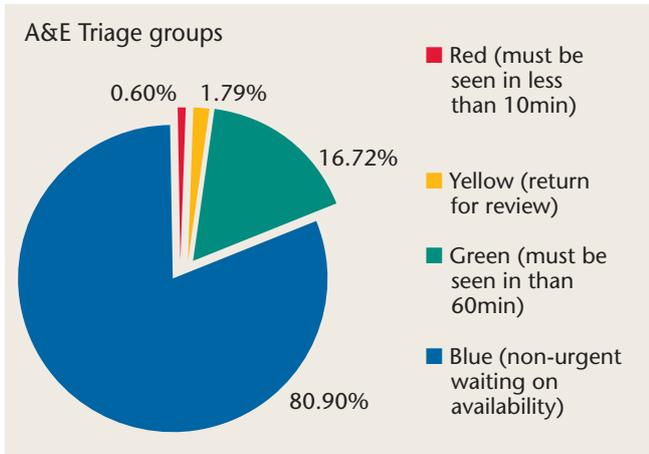


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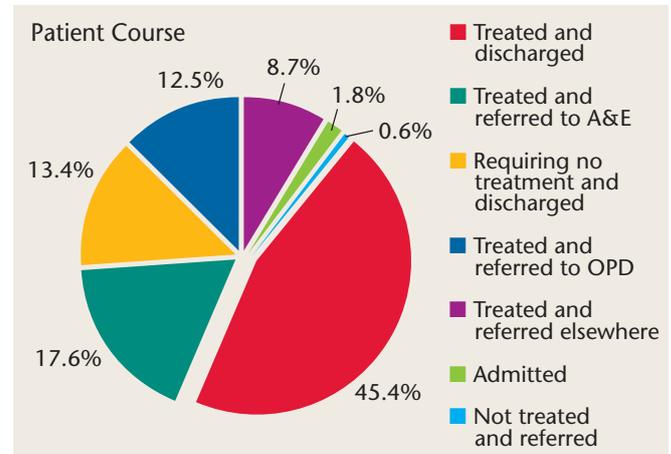


FIGURE 3: Patient management course after being seen by a non-consultant hospital doctor.

Table 3: Ophthalmic diagnoses of the study participants by the senior house officers.

Diagnosis	Cases (n=335)	%	Group*
Other	36	10.7%	5
No abnormality detected	35	10.4%	4
Conjunctivitis	35	10.4%	4
Foreign body	31	9.3%	2
Cyst	29	8.7%	4
Dry eye	23	6.9%	4
Uveitis	17	5.1%	3
Cataract	17	5.1%	4
Blepharitis	14	4.2%	4
Corneal abrasion	11	3.3%	2
Subconjunctival haemorrhage	9	2.7%	4
Posterior vitreous detachment	9	2.7%	1
Trauma	7	2.1%	3
Herpes zoster ophthalmics	7	2.1%	3
Pterygium	6	1.8%	4
Macular degeneration	5	1.5%	1
Scleritis	5	1.5%	3
Glaucoma	5	1.5%	3
Chemical injury	4	1.2%	3
Migraine	3	0.9%	4
Pre-septal cellulites	3	0.9%	3
Contact lens-related	3	0.9%	3
Diabetes	3	0.9%	1
Retinal vascular disease	2	0.6%	1
Third nerve palsy	2	0.6%	1
Retinal detachment	2	0.6%	1
Cerebro-vascular accident	2	0.6%	3
Corneal disease	2	0.6%	3
Optic neuritis	1	0.3%	1
Squint	1	0.3%	4
Giant cell arteritis	1	0.3%	3

*Abbreviations: 1: Sight-threatening; 2: Painful; 3: Painful and sight-threatening; 4: Neither; and, 5: Other.

Table 4: Diagnosis groups of the study participants (n=335) by the non-consultant hospital doctor.

Group	Description	Percentage
1	Sight-threatening	7.2%
2	Painful	14.0%
3	Painful and sight-threatening	16.7%
4	Neither	51.3%
5	Other	10.7%

abnormality was detected in 34 (10.4%) patients. Only 119 (35.5%) patients were found to have either a painful or sight-threatening condition (Table 4). A total of 152 (45.4%) patients were treated in A&E and discharged, 59 (17.6%) were treated and followed up in A&E, 45 (13.4%) were discharged without any treatment, and 42 (12.5%) were referred to the outpatient department. Patients with acute ocular emergencies requiring admission constituted only 1.8% of total referrals (Figure 3).

Discussion

The Ophthalmic A&E Department at the Royal Victoria Eye and Ear Hospital provides a dedicated round the clock emergency service. Patients attending the service by GP referral present with a wide variety of diagnoses and 80.9% of these cases were found to be non-urgent. As in all areas of clinical medicine, successful triage of referrals depends on the provision of adequate details regarding history and examination findings by the referring doctor. Only 16.4% of patients had a record of their visual acuity on the referral letter and the majority of these cases had been seen by an optometrist prior to visiting their GP. Similarly, an attempt to examine the eye had been documented by the referring GP in only 49.9% of cases. The introduction of an ophthalmic standard referral form, including patient and GP details and simple objective questions such as patient complaint, visual acuity and external eye signs, might encourage ophthalmic examination by GPs, provide better information for the triage nurse and facilitate speedier assessment.

A similar study was undertaken in 2001 by Fenton *et al*, which showed similar data where 17% of the patients referred to A&E were GP referred, while non-urgent referrals constituted 60-70% of patients. This is comparable to the results found in this audit, where only 16.6% were GP referred, of which 80.9% were non-urgent referrals.¹ Since their study, the A&E service has introduced an A&E triage system and a GP liaison office. The GP liaison office in the Royal Victoria Eye and Ear Hospital, which employs one GP liaison officer, was set up in November 2005 in order to facilitate communication between the A&E service and primary care. The GP liaison office has been a positive addition to the hospital's service, where GPs have direct access to the feedback given to patients sent to the A&E. It is important to strengthen the communication between the GP and the GP liaison office to facilitate an efficient system. The role of ophthalmic education for GPs must also be addressed. Currently, ophthalmology is not part of postgraduate GP training in Ireland. Consequently, GPs may lack confidence in the diagnosis and management of eye conditions. With appropriate training and supervision, GPs could develop their interest in ophthalmology. They can thereafter assist in the management of many patients with non-sight threatening eye conditions, which currently constitute a significant part of a GP's workload. A number of ophthalmology study days have been set up previously by the GP liaison office, but reintroduction of these ophthalmology study days for GPs would facilitate their continuing education.

Community ophthalmologists provide general ophthalmic care in wide areas of the country. By expanding this service, more non-emergency cases could be appropriately managed in the community. Not only would this decrease the burden on A&E but it would also benefit patients who will no longer have to travel significant distances to attend the Royal Victoria Eye and Ear Hospital in Dublin. The evolving role of the ophthalmic nurse specialist ensures effective time management and patient satisfaction, and decreases the workload of medical staff. After initial assessment by the triage nurse, simple ophthalmic cases such as meibomium cysts can be managed and discharged by the nurse without doctor involvement. A study by Buchen *et al* in 2003 showed that 22% of patients presenting to the eye casualty clinic were treated and discharged successfully, with 2.5% of patients returning unplanned. The study also showed that non-sight threatening external eye diseases that could be treated successfully by a trained specialist ophthalmic nurse were the most common presenting conditions.² These conditions include

foreign bodies, corneal abrasions, blepharitis, lid cysts, sub-conjunctival haemorrhages, conjunctivitis and dry eye. These conditions constituted 45% of the cases presenting to the Royal Victoria Eye and Ear Hospital in this audit, and therefore expansion of this service by ophthalmic nurse specialists in the Royal Victoria Eye and Ear Hospital A&E could lead to a decrease in waiting times and workload for medical staff and an increase in patient satisfaction. However, as demonstrated in a follow-up study by Buchan *et al*, the importance of clinical governance measures such as audit, risk management, clinical management protocols and continued medical education of ophthalmic nurse specialists would be required in order to maintain a high standard of clinical care in this model.³ Recently, a study in Scotland highlighted the impact of direct electronic optometric referral with ocular imaging to a hospital eye service.⁴ It has shown that electronic referral with images to the hospital eye service is a safe, speedy, efficient and clinically accurate system that avoids unnecessary consultation in 37% of cases. This scheme can potentially decrease transportation costs and waiting time for patients, and is associated with a direct financial saving, as outpatient appointments cost from £108 to £307 in Scotland. The limitation of the system has been demonstrated in four cases, where the diagnosis was wrong using imaging alone. Consideration should be given to the development of an electronic referral system for GPs referring patients to the Royal Victoria Eye and Ear Hospital A&E Department. In summary, this audit shows that a large percentage of patients attending the ophthalmic A&E following GP referral are non-urgent. These patients should be treated by GPs or ophthalmic nurse specialists, or referred to the outpatients department in order to decrease the burden on A&E. This study shows that more effort should be directed towards GP education, the development of management guidelines for common ophthalmic conditions, the introduction of a standard referral form and an increase in ophthalmic nurse specialist involvement in patient assessment and management. These changes would aid the development of a more efficient emergency service and significant improvements in patient satisfaction.

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