

The role of ophthalmic triage and the nurse practitioner in an eye-dedicated casualty department

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Abstract

Purpose To evaluate the appropriateness of triage decisions in a busy ophthalmic casualty department and to assess the diagnostic and management skills of eye-dedicated nurse practitioners.

Methods Three hundred and one consecutive patients attending the Birmingham and Midland Eye Centre (BMEC) accident and emergency (A&E) department over a 2 week period were included in this prospective study. Patients were categorised in terms of urgency in concordance with strict guidelines, and the agreement between the final diagnosis and this system of prioritisation was then investigated. To evaluate nurse practitioner (NP) skills, all patients seen and managed by a NP were also assessed by the most senior doctor in casualty at the time in a masked fashion. Waiting times and a breakdown of waiting times were also calculated.

Results Upon establishment of a diagnosis, triage category allocation was found to be appropriate in all 301 cases. Fifty patients (16.67%) were seen by the NP. Of these the supervising doctor concurred with the NP diagnosis in all cases and with the proposed management in 96% of cases. The mean waiting time (\pm SD) was 83.43 ± 45.84 min, with a range of 5–335 min. The delay before being attended to was greater for less urgent cases as categorised by the triage system.

Conclusion This study confirms the high standard of diagnostic and management skills of the ophthalmic NP and indicates that the triage system of patient prioritisation is accurate. Waiting times in the A&E department remain unacceptable and ways of addressing this include improved ophthalmic training of general practitioners, diverting a greater proportion of non-acute cases to the primary care clinic and expanding the role of the NP.

Key words Casualty, Nurse practitioner, Triage

The purpose of an ophthalmic casualty department is to manage ocular emergencies. However, previous studies have shown that a substantial proportion of those attending ophthalmic accident and emergency (A&E) departments have non-acute problems that would be more appropriately referred to the ophthalmic outpatient department and that the majority of conditions seen could be accurately treated by the general practitioner (GP).^{1–3} Nevertheless, the guarantee of same-day service and a specialist opinion in an eye-dedicated A&E department indicates that inappropriate GP referrals and self-referrals are likely to continue.

The wide variation in the severity of conditions seen and the high attendance has prompted many ophthalmic casualty units to introduce a triage system that allocates a patient to the appropriate category of urgency. Furthermore, the role of the nurse practitioner (NP) in ophthalmology has been expanded in recent years in an effort to provide a cost-effective means of reducing waiting times while maintaining a high standard of patient care.

The casualty department of the Birmingham and Midland Eye Centre (BMEC) provides a 24 h service for acute ophthalmic conditions. This unit relies on a triage system and a NP if it is to deliver an efficient service. We prospectively evaluated the performance of the NP and the triage system in our unit.

Materials and methods

All patients attending the A&E department of the BMEC over a 2 week period were included in this study. Attached to each patient's casualty card was a specially designed form to collect the following information: source of referral, demographic data, presenting complaint, triage category, diagnosis, management, plan for follow-up, waiting time. The ophthalmic triage is based on a colour-coding system, the different categories of urgency being allocated a red, yellow, green or white card. In addition, certain

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presenting complaints are not seen in the A&E department but are diverted to the appropriate clinics, including the primary care clinic (watery eyes, ectropion, entropion and glaucoma suspects) and the 'lid lump' clinic (chalazia and other lid lesions).

Category red is reserved for those conditions that need to be seen immediately and includes perforating eye injuries, severe trauma, alkali burns, total hyphaema, complete loss of visual acuity over the previous 48 h and acute medical conditions. Patients with partial loss of visual acuity within the previous 48 h, ocular pain, blunt trauma or acute medical conditions, in addition to young children (0-3 years) and those requiring admission, are classed in category yellow and should be seen within half an hour.

We aim to see category green complaints within 1 h of arrival. These include diplopia, blurred and distorted vision of recent onset (within the previous 48 h), iritis, episcleritis, allergic eye disease, corneal ulcers, suture-related complaints and post-operative problems, as well as in-patients at other hospitals, ambulance patients and children between 4 and 10 years of age.

The NP attends to category white conditions, some of which may require follow-up in the primary care clinic. These include subconjunctival haemorrhage, dry eyes, trichiasis, blepharitis, conjunctivitis (bacterial and viral), corneal abrasions and corneal foreign bodies. For the purposes of this study, all category white patients were reviewed by the casualty doctor in a masked fashion in order to assess whether the NP diagnosis and management were appropriate.

Results

Four hundred and seventy-two patients attended our A&E department during the study period. Only 301 of these cases had sufficiently completed audit forms to be included in the study (we excluded all partially completed forms). The mean age (\pm SD) of the group was 45.98 ± 23.93 years and the male-to-female ratio was 65:35. The relative proportions of each ethnic group were: Caucasian 228 (76%), Asian 38 (12.67%), Afro-Caribbean 22 (7.33%), Oriental 13 (4.33%).

The triage colour-coding system categorised patients as follows: red 31 (10.33%), yellow 31 (10.33%), green 188 (62.67%), white 50 (16.67%). These code allocations were deemed appropriate in all cases when reviewed by the supervising doctor, who was the most senior grade of doctor in the department at the time.

The mean waiting time (\pm SD) was 83.43 ± 45.84 min, with a range of 5–335 min. The delay before being attended to was greater for less urgent cases (Table 1). The time interval between triage assessment and consultation with the ophthalmologist was the greatest source of delay for all our cases, regardless of the triage category. Fifty patients (16.67%) were seen by the NP. The supervising doctor saw all these patients subsequently without knowledge of the NP's diagnosis or proposed management plans. The doctor concurred with diagnosis in all cases and with the proposed

Table 1. Mean and range of waiting times for different triage categories at the ophthalmic casualty department of the Birmingham and Midland Eye Centre

Waiting time	Triage category			
	Red	Yellow	Green	White
Mean	47.6	88.1	143.7	54.3
Range	5–112	10–133	20–335	5–181

management in 96% of cases (48 patients). Discrepancies between the planned management of the ophthalmologist and the NP were minor and included whether or not to use an eyepad (1 case) and the frequency of topical lubricants (1 case).

Discussion

The effectiveness of ophthalmic triage and eye-dedicated NPs has not been investigated previously, although one study has commented favourably on the contribution of the ophthalmic NP.¹ We believe health services research such as this is essential in the planning of local services.

Triage, initially developed by military surgeons to deal with the large number of war casualties,⁴ is designed to ensure that patients with conditions requiring urgent treatment are seen first. In a busy casualty unit such as ours, those needing early medical or surgical intervention would be lost in the large number of waiting patients if a system of patient prioritisation were not in use. The results of this study indicate that the ophthalmic triage is providing an effective means of streamlining the urgent cases and that the categorisation of ocular conditions was appropriate. The success of patient prioritisation depends, however, on adequate training of ophthalmic nurses, and clear guidelines for each colour code being readily available.⁵ Furthermore, the triage system should be explained to casualty attendees to prevent the perception that some patients are 'jumping the queue'.

Although the more urgent cases were seen earlier than those with less serious conditions, our target waiting times were not met and remain unacceptable. The greatest source of delay in all triage categories was the interval between the nursing assessment and the doctor's evaluation. In view of the fact that an increase in medical staffing is unlikely, there appear to be only two ways of ensuring that casualty patients are seen more swiftly. The first is to reduce the number of people attending the department, and this could be achieved if GPs managed a greater proportion of cases themselves and redirected the more non-acute cases to the primary care clinic. The former would require regular, ophthalmologist-led training programmes in eye care to enhance the confidence of local GPs in the management of ocular disease, and the latter involves deploying more human resources in primary care clinics. Another method of reducing waiting times would be to further expand the role of the NP so as to regulate the inflow of

patients who have been seen by another professional (GP, OO, etc.) by offering an appointment-based emergency referral service.

At our hospital the ophthalmic nurses undergo a structured training programme before taking up responsibilities as a NP. They are usually 'E' grade nurses who have already worked in the ophthalmic department for at least 6 months. They spend another 6 months training with the doctors or NPs. At the end of this period they are assessed by the Registrars and, if found successful, they can work as a NP. The NPs in this study had been practising for an average of 1–2 years. Besides a slit lamp with television monitor they have access to other instruments necessary for managing minor ocular problems. The NPs at our hospital carry out procedures such as removal of corneal foreign body, epilation of eyelashes, donor eye retrieval and incision and curettage of cysts. They also manage patients with corneal abrasion, arc eye and conjunctivitis.

In our study there was 100% concordance between the ophthalmologist's and NP's diagnosis and the two types of health care professionals were in agreement in 96% of cases regarding proposed management. The two differences in management would not have resulted in adverse outcome. This finding indicates that the quality of care delivered by ophthalmic NPs for category white conditions is comparable to that provided by ophthalmologists. This is consistent with the results of a survey of NP schemes in England and Wales, and that study also noted that non-physician health care professionals were more frequently utilised in ophthalmic than other casualty departments.⁶ On the basis of this study and the cost-effectiveness of NPs, we believe that NP programmes will result in increased

accessibility and less expensive emergency ophthalmic services for the local community without compromising the quality of care.

In conclusion, we found the eye-dedicated NP and triage to be crucial in the effective management of a busy ophthalmic A&E unit. The system of patient categorisation in terms of urgency is accurate and the high standard of diagnostic and management skills of the ophthalmic NP is confirmed.

Waiting times in the A&E department remain unacceptable and ways of addressing this include improved ophthalmic training of GPs, diverting a greater proportion of non-acute cases to the primary care clinic and expanding the role of the NP.

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