

# Novel changes during COVID-19 – transforming a walk-in Eye Casualty to a telephone triage service

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With the current pandemic climate due to COVID-19, out of the norm approaches have been adopted in different hospitals across the UK to ensure patient safety. At our Eye Casualty (EC) department at Northampton General Hospital (NGH), we felt the need to implement further changes in order to reduce the patient-staff contact and manage a busy walk-in-service. We implemented general changes in our department according to the current guidelines by the Royal College of Ophthalmology [1] (i.e., two metre social distancing; appropriate personal protection equipment (PPE): fluid resistant surgical masks, scrubs, disposable gloves, breath guards for slit lamps and glass barrier for the reception desk; controlled entry in the EC department – staff and booked in patients only.)

Our major transformation was a complete shift from walk-in-clinic EC to telephone triage service with booked appointments only. This shift was not easy, however, it was made possible due to several measures we have described below (Figure 1).

## First steps

We established a countywide communication with all referral services (GP / optician / urgent care centre / 111). They were made aware that we were no longer a walk-in service and any referrals would need a telephone call prior to being accepted to be seen in the EC. To make this more feasible, physical resources were acquired, such as additional landlines and a mobile phone for emergency calls, as well as web cams on computers, to support our video consultations.

A new EC action pathway was created (Figure 2). Our aim was to facilitate effective triaging and equally comply with social distancing measures.

## New Eye Casualty action pathway:

- Registration:** Comprises of identifying appropriate patients to be accepted at our local hospital (depending on their postal address). If deemed appropriate, they are registered on to our electronic database 'Symphony' and are, either immediately directed, or booked for a telephone consultation.
- Consultation:** Once registered, the patient will receive a telephone triage consultation. This is performed by either a nurse or doctor. A thorough history is taken using our pre-set questions for telephone triage – this will aid in excluding or correctly identifying red flags that require immediate or urgent evaluation. When deemed appropriate or necessary, patients can be asked to send photographs or attend a video consultation.
- Outcomes:** Depending on our telephone assessment there are four possible outcomes.

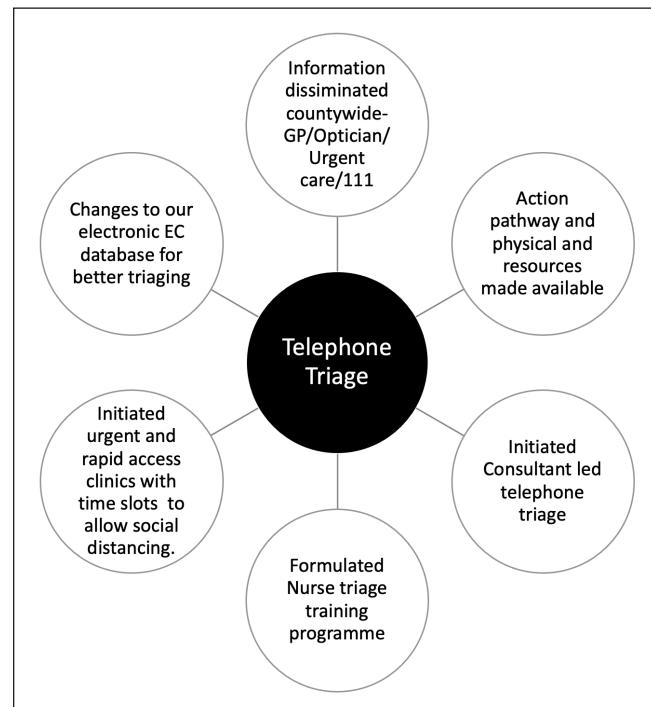


Figure 1: Changes contributing to our shift from walk-in to telephone triage Eye Casualty.

- Attend eye casualty:** Patients require attending Eye Casualty for assessment – the urgency of this will depend on their presenting complaint and the presence or not of any red flags. They will subsequently be booked into a specific timeslot to permit social distancing.
- Refer to subspecialty:** Patients need an ophthalmology assessment and are suitable to be directly referred to a subspecialty.
- Community management:** Patients do not present with any red flags and do not require attending the department.
- Community prescription:** Patients do not present any red flags and do not require attending the department but require a prescription – this can be arranged with our local pharmacy or the GP.
- Documentation:** At the end of each consultation, correct documentation should be completed using our electronic database under 'telephone triage'. This will generate a letter

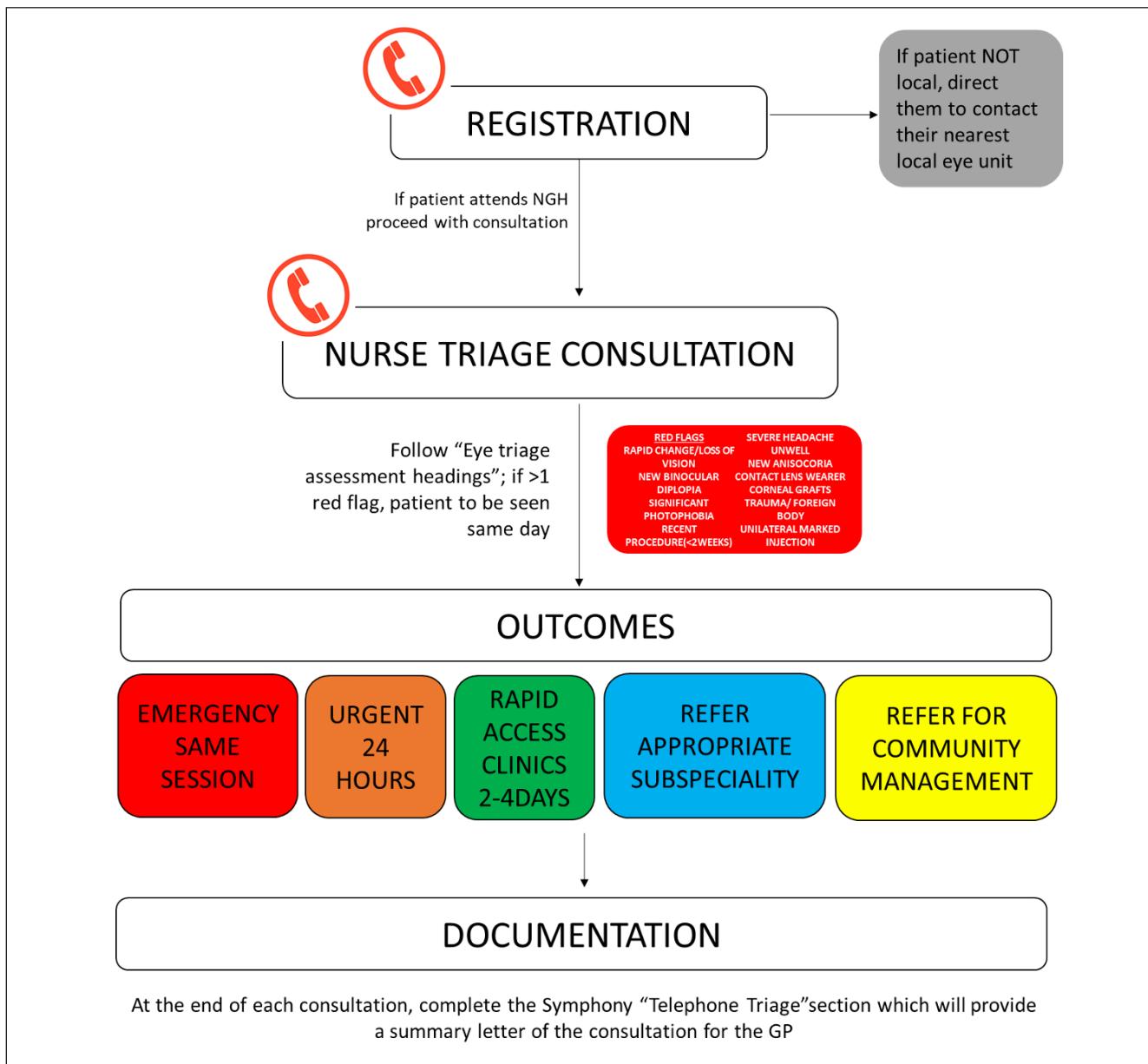


Figure 2: Flow chart demonstrating our new Eye Casualty pathway.

for the patient with summary of the consultation and the appropriate outcome.

### Telephone triage

Fundamental for this revolution in our department, and what we believe will be the backbone of our triaging service, was initiating the nurse-led triage. Our triage was initially led by consultants. Our goal was for this service to be fully led by our nursing staff. We wanted to ensure they were fully supported and appropriately trained to provide the best possible care to our patients. Therefore, we initiated a telephone triage-training programme. This enabled them to feel more comfortable and content with their new roles, which can, at times, be a daunting experience.

This programme consisted of:

- Creating a clear and accessible triage tool for ocular emergencies (Figure 3).

- Establishing a 'Telephone triage teaching day', based on the most common presenting symptoms to EC, ocular emergencies, red flags, as well as interactive sessions with case scenarios.
- 1:1 training telephone triage, where our nursing staff were encouraged to shadow consultants and junior doctors. This would, and has thus far, allowed a smooth transition from an observational to an independent triage role.
- We liaised with learning and development services in our trust to formalise the competencies for the nurses.

### Electronic database update

To aid for the smooth and easy flow of this new service we implemented a few changes to our database. We updated our patient booking

electronic database by inputting a new section under 'Eye Triage assessment'. With the help of our IT department, we formatted this section by adding various headings of common ocular emergencies (Table 1). We made leading questions to guide the nurses when triaging. More importantly, this serves as assistance in recognising red flags and the urgency to book in patients so that they are seen in appropriate clinics in a timely fashion.

### Booked eye casualty clinics

We created urgent clinics (to be seen within 24 hours) and rapid access clinics (to be seen in two to four days). We made sure that the time slots of both clinics were not overlapping to prevent overcrowding in the limited space in our waiting area. We also have clear guidance to refer patients to appropriate subspecialties. The subspecialty clinics are enabled to have urgent two-week wait slots. This arrangement

Presentation	Same Session	Same Day	Eye Casualty Within 24 Hours	Eye Casualty Within 3 days	Nurse Practitioner	Not appropriate – to see Optician/GP or referral to clinic
<b>Trauma</b>	Chemical injury (alkaline / Acid) Penetrating injury	Lid laceration Blunt trauma Hyphaema	Blunt trauma >1/52< 2/52		• Corneal abrasions • Corneal FBs	
<b>Vision</b>	Sudden complete loss of vision (LOV) <6hrs	• Sudden loss of vision or visual field <12hrs (resolved / unresolved) • Visual obscurations • Post-op <2/52 – loss of vision	• Sudden loss of vision >12hrs (resolved / unresolved) • Flashes & Floaters with prev. risk factors (myopia / tear / RD family history, post operative) • Increased floaters with LOV • Diplopia (new /sudden Worse) • Post-op < 2/52 blurred vision	• Sudden change in vision < 2/52 • Flashes & Floaters over 1 week if unable to see peripheral retina	• Mild blurring • Watery Eyes	• Gradual LOV > 2/52? PCO/cataract - GP, refer to OPA • Bilateral visual disturbance <2hrs +/- headache -? Migraine ~ GP to treat. • Visual distortion? AMD – refer to Nurse led clinic for OCT • Visual distortion? Macular hole- refer to Vitreoretinal clinic • Asymptomatic retinal pathology - GP, refer to OPA
<b>Eye Pain Scale 1- 5</b>	4 - 5 score No relief from oral analgesia With nausea and vomiting	3 - 4 score Keeping pt awake at night	• Relief with analgesia • Photophobia • Post-op < 2/52		• FB sensation, irritation/gritty < 2/52 • In-growing lashes	
<b>Headache</b>	4 - 5 score with eye symptoms	• Painful scalp, Brow pain, • Painful temples (all with eye symptoms)	• Tender temples with visual symptoms (? GCA)			Tender temples with <b>no</b> visual symptoms (? GCA) – urgent referral to rheumatologist (Discuss with Doctor)
<b>Lids / Facial</b>	• Ptosis with III nerve palsy with headaches	• New droopy lid/ptosis • Acute swollen lids (with pyrexia +/- diplopia and proptosis)	• HZO - Swollen lids • Acute dacryocystitis		• Puffy lids & red eye < 2 weeks, Normal vision • Watery < 2 weeks	• Chalazion - advise lid hygiene and see GP, refer to clinic • Blepharitis - follow guidelines – self treat or GP, refer to clinic • Allergic - anti histamine and see GP, refer to clinic*
<b>Cornea / Conjunctiva</b>	Cloudy, Red (with severe pain)	• Hazy, red moderate • Hypopyon	Clear cornea, red around limbus		• Redness • Discharge • Punctate keratitis	• Bacterial conjunctivitis ~ GP, refer if no improvement. • Sub conj hemorrhage - info leaflet, GP for BP check
<b>Pediatric</b>	Unwell, pyrexial, swollen lids - Dlw Casualty Dr, Liaise with Pediatric A&E	Papilledema			Swollen lids - not unwell, apyrexial	• Absent red reflex – GP to refer to OPD Urgently
<b>Post-op</b>	• Moderate pain, Loss of vision • Profuse bleeding	Post op wound dehiscence (inform Consultant)				• Asymptomatic – OPD • Post-op < 6/12 refer to Consultant secretary • > 6/12 GP to refer OPD • Issues with Patient's drop? – Consultant secretary
<b>Other</b>	Acutely unwell adult with ocular symptoms, swollen lids, pyrexia - see immediately	• IOP >40 mmHg	Abnormal pupil with visual Symptoms		Localized, redness	Any pt with symptoms longer than 2/52 should be referred to OPD unless agreed by Consultant or in the urgent/ same session category

Figure3: triage tool for ocular emergencies

results in reducing the number of hospital visits for patients.

## Overall impact

Transforming the walk-in EC to a telephone triage system with booked appointments has improved our efficiency in the department. Consequently, we have improved the system which enables us to see patients in an appropriate time and in the suitable clinic, based on the urgency of the eye condition. Our observations upon introducing these changes have shown us that:

- Patients are being seen in the relevant subspecialties sooner than when our EC was walk-in, whilst continuing to receive the best possible care.
- Waiting times in the booked clinics have significantly reduced.
- These changes have **not** led to any patient care being compromised nor caused any detrimental effects to their management and follow-up.
- An organised manner of reviewing patients in EC, whilst guaranteeing patient safety, has also reduced the workload for our staff members, increasing work satisfaction amongst them.

Overall, these changes have proven to be beneficial for both the medical and administrative aspects for our department. This will also substantiate to be a reliable method of reducing costs and resources associated with inappropriate referrals. More importantly, it has helped prevent the risk of transmission of infection, thus ensuring patient safety in the current pandemic.

Trauma to eye	Red eye	Reduced vision	Diplopia
<ul style="list-style-type: none"> <li>• Chemical injury</li> <li>• Penetrating injury</li> <li>• Rupture globe</li> <li>• Retrombular haemorrhage</li> <li>• Blunt trauma</li> <li>• Conjunctival laceration</li> <li>• Eye lid laceration</li> <li>• Intraocular foreign body</li> <li>• Corneal foreign body</li> <li>• Corneal abrasion</li> </ul>	<ul style="list-style-type: none"> <li>• Which eye</li> <li>• How long</li> <li>• Any discharge? Color?</li> <li>• Any itch?</li> <li>• Pain?</li> <li>• Photophobic?</li> <li>• Watery? Gritty?</li> <li>• Reduced vision?</li> <li>• Do you wear contact lenses?</li> <li>• Any headache or nausea?</li> </ul>	<ul style="list-style-type: none"> <li>• Which eye</li> <li>• How? When?</li> <li>• How severe is the vision loss?</li> <li>• Visual field loss?/ curtain?</li> <li>• Pain</li> <li>• Temple headache, jaw claudication, unwell</li> <li>• Visual disturbances</li> </ul>	<ul style="list-style-type: none"> <li>• With one or both eyes open</li> <li>• How do you see objects?</li> <li>• Temple headache, jaw claudication, unwell</li> <li>• Slurred speech</li> <li>• Arm or leg numbness</li> <li>• Any thyroid conditions</li> </ul>

Swelling around eyes	Floater with flashes	Headaches	Shingles
<ul style="list-style-type: none"> <li>• Variable or consistent</li> <li>• Sudden onset</li> <li>• Which eye</li> <li>• Location of swelling</li> <li>• Duration</li> <li>• Any lump</li> <li>• Pain or tender</li> <li>• Red or pus point</li> <li>• Red eye</li> <li>• Protrusion</li> <li>• Diplopia</li> <li>• Reduced vision</li> <li>• Able to move eyes</li> <li>• Fever</li> </ul>	<ul style="list-style-type: none"> <li>• Which eye</li> <li>• When</li> <li>• Describe floaters/flashes</li> <li>• Previous similar episodes</li> <li>• Short-sighted</li> <li>• headache or nausea</li> </ul>	<ul style="list-style-type: none"> <li>• Age</li> <li>• Reduced vision</li> <li>• Diplopia</li> <li>• Temple headache, jaw claudication, unwell</li> <li>• Pain with eye movement</li> <li>• Red eye</li> <li>• Nausea/vomiting</li> </ul>	<ul style="list-style-type: none"> <li>• Vesicles around eye</li> <li>• Duration</li> <li>• Red eye</li> <li>• Swollen eye lid</li> <li>• Vision affected</li> <li>• Tip of the nose involved</li> <li>• Has your GP started on antivirals</li> </ul>

Recent eye surgery	Retinal pathology (referral from optician)	Glaucoma (referral from optician)	Previous medical and ophthalmic history
<ul style="list-style-type: none"> <li>• Which eye</li> <li>• How long ago was the surgery</li> <li>• What surgery</li> <li>• Pain or reduced vision</li> <li>• Pain, redness, or eyelid swelling</li> </ul>	<ul style="list-style-type: none"> <li>• Central serous retinopathy</li> <li>• Diabetic macular oedema</li> <li>• Retinal vein occlusion</li> <li>• Retinal artery occlusion (&lt;4hours)</li> <li>• Dry age related macular degeneration</li> <li>• Wet age related macular degeneration</li> <li>• Macular bleeding</li> <li>• Choroidal naevus</li> <li>• Choroidal melanoma</li> <li>• Macular hole</li> <li>• Papilledema</li> </ul>	<ul style="list-style-type: none"> <li>• IOP 21-30mmHg</li> <li>• IOP 31mmHg or above</li> <li>• Headache, pain, redness, coloured halos</li> </ul>	<ul style="list-style-type: none"> <li>• Any relevant background i.e.:</li> <li>• Surgery</li> <li>• Trauma</li> <li>• Iritis</li> <li>• Known glaucoma</li> </ul>

Table 1: Changes to the 'Eye Triage Assessment' of our electronic databases – lead headings and subsequent questions to guide clinician to an outcome.

**Reference**

1. PPE requirements for ophthalmology. Royal College of Ophthalmologists, 2020: <https://www.rcophth.ac.uk/wp-content/uploads/2020/04/UPDATED-RCOphth-PPE-Principles-for-ophthalmic-staff-protection-090420.pdf>  
Last accessed February 2021.

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