Introduction

This document is intended as guidance for primary care professionals seeing ophthalmic patients in the Bristol area only.

The Bristol Eye Hospital runs an ophthalmic emergency department between the hours of 08:30 and 16:30 every day of the year. Out of Hours there is an ophthalmology on-call service available through switchboard which covers Bristol and the surrounding area.

Efforts are made to ensure the accuracy and agreement of these guidelines, but BEH cannot guarantee this. This guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, in accordance with the mental capacity act.

Practitioners are required to perform their duties in accordance with the law and their regulators and nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

Information provided is continually updated so please be aware any printed copies may quickly become out of date.

All photos are from patients who have kindly gave their permission to be used in this guide.

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The Red Eye Red Flags

Red Eye Warning Signs

- Moderate to Severe Pain
- Photophobia
- Contact Lens Wear
- Reduced Vision
- Headache

Unilateral Red Eye

No corneal staining with fluorescein

No pupil abnormality

Recent Surgery/septic patient

Round fluorescein stain with a fluffy white colouring

Branching fine lesion with reduced corneal sensation

Aggravated by blinking scratch appearance

Non reactive Mid dilated pupil

Angle Closure Glaucoma

Photophobia

No Photophobia

Endophthalmitis

Ulcer

Herpes Simplex Keratitis

Corneal Abrasion

Contact Lens Wearer

No Contact Lens Wear

Severe Pain

Mild Discomfort

Sectoral Redness

Watering/discharge

Episcleritis

Conjunctivitis

Ulcer

Iritis/Uveitis

Scleritis

Recent Surgery/septic patient

Corneal stains with fluorescein

Aggravated by blinking scratch appearance
Blepharitis

Background
This is an extremely common condition and can be seen in patients of any age. It is noted in 40% of routine eye examinations, found in 67% of over 60-year olds and is found in 74% of patients who complain of sore eye with screen use. It is linked to patients who have previous chalazia, acne rosacea, ulcerative colitis, IBS and gastritis. Interestingly there is new research showing it is more common in patients with hypercholesterolaemia and carotid stenosis, as well as anxiety and depression.

It is generally a chronic condition but can frequently ‘flare.’ It is primarily a disorder of the meibomian glands which are on the eyelids; on each eyelid there are approximately 20-30 glands. These glands release an oily wax which mixes with the tears, making them less prone to evaporation and more effective. In blepharitis, these glands block, causing two problems, — the gland secretions sit on the eyelids allowing bacteria to multiply causing a chronic inflammation and the oily wax no longer mixes with the tear film causing dry-eye symptoms.

Symptoms
These tend to be chronic and non-specific:

- Crusting of Lashes
- Ocular Redness
- Foreign Body Sensation
- Chalazion and Stye
- Blurred Vision (often clears with blinking)
- Watery eyes (Often waters excessively to reduce dry eye)
- Burning Sensation
- Acne Rosacea (This is related to blepharitis and coexist frequently)

This picture shows the classic thickened red eyelid margins seen in blepharitis. There is also biofilm foam on the margin of the lid (blue arrow). The upper lid also has a small blocked meibomian gland (yellow arrow).

This picture shows again the classic thickened red eyelid margins seen in blepharitis. There is some telangiectasia. There is a blocked meibomian gland which is pointing, this is the start of a stye.
Treatment

Lid Hygiene

This is the most important part of treatment; the main problem is meibomian gland dysfunction and lid hygiene is directed to restoring their normal function. Normally treatment will need to be performed for 4-6 weeks to get maximum benefit.

1) **Hot compress and massage.** Using a hot flannel or a microwaveable ‘wheat-bag’ heat the eyelids for around 5 minutes at 40°C. This melts the oily wax in the meibomian glands, then using a clean finger firmly massage on the eyelids near the eyelashes with the eyelids closed. The massage needs to be done immediately after the hot compress. This can be done once or twice a day when symptoms are bad and reduced in line of symptoms. This will likely need to be done long term.

2) **Lid Cleaning.** Lid cleaning helps remove blepharitis debris and reduces the bacterial burden on the eyelid. The use of baby shampoo has fallen out of favour and may contribute to some of the symptoms. Instead it is recommended to use either clean, cooled boiled water or an over the counter formulation. Once the boiled water has cooled use a clean cotton pad dipped in the water to clean deep down at the base of the eyelashes, attempting to remove any crusting or eyelash debris. Alternatively, proprietary alternatives such as Blephagel, Blephasol and Ocusoft (other brands available) are available and claim to have further advantages and are available from most pharmacists. There are OTC blepharitis wipes, however these tend to be more expensive than the OTC gels and foam. Lid hygiene products are non-formulary and should not be offered on prescription. Quality is more important than quantity for lid cleaning and I would suggest patients do lid cleaning daily and then reduce in line with symptoms after three weeks. Often too frequent cleaning can lead to increased irritation.

**Topical Antibiotics**

When symptoms flare a prolonged course of antibiotics can be used. Normally chloramphenicol 1% ointment is applied to the eyelid margins BD for 2 weeks (can be up to 6 weeks). This helps reduce the bacterial burden on the eyelids. This should not need to be done long term.
Lubrication
Blepharitis will often cause significant dry-eye symptoms and topical lubrication can be used to provide symptomatic relief.
This will usually be with:
- Hypromellose 0.3% eye drops, Carbomer 980 0.2% eye gel or Carmellose 0.5% eye drops
For severe dry eye (using lubricants over four times a day)
- Carmellose 0.5% or 1% preservative free eye drops
- Hyaluronate 0.1% or 0.2% preservative free eye drops.

These products are available over the counter and patients are advised to self-care with OTC eye lubricants. Over the counter items should not routinely be prescribed in primary care as per NHS England.

Oral Treatment
Similar to acne rosacea, tetracyclines can be used to help with moderate to severe blepharitis and BEH is happy for these to be prescribed to patients in the community if you are confident with the diagnosis. Tetracyclines act to decrease the viscosity of the oily wax from the meibomian glands and have some anti-inflammatory properties. This means while a patient remains on a tetracycline their ‘hot compress and massage’ will be made all the more effective.

Options include doxycycline 100mg OD for 4 weeks, then 50mg for another 1-2 months. Please be aware of contraindications to doxycycline use.

When to Refer
Outpatient referral for adult cases with ongoing symptoms (who have not responded to treatment outlined above). Have a lower threshold for referral of paediatric blepharitis, who do not respond simple lid hygiene methods and topical antibiotics.

Occasionally blepharitis can cause corneal infections (corneal ulcers) or be severe and sight threatening, if suspected the patient should be reviewed in the BEH Emergency Department, red flags include:
- Increasing Eye Pain
- Reduced Vision
- Significant Light Sensitivity
- Increasing Red Eye
- White spot noted on the cornea (see below)

This picture shows a corneal ulcer which can be associated with blepharitis. Note the white patch on the cornea at 5 o’clock. The eye tends to be much more red.

This would be increasingly painful and light sensitive for the patient. This is called a ‘Marginal Keratitis’
Conjunctivitis

Background
This is a very common condition to present General Practice. This section will cover bacterial, conjunctival, chlamydia and gonorrhoea conjunctivitis. Allergic eye disease will be covered elsewhere.

Symptoms
The classic presentation would be a sudden onset red eye, which causes a lot of watering, eye lid oedema and a sticky, gunky eye in the mornings. Within the first 48 hours it often transfers to the other eye and the second eye is always less affected as the patient's immune system would have started mounting a defence.

- Eyelid Oedema
- Watery Eye
- Gunky Mucus
- Red Eye
- Irritation
- Conjunctival Chemosis
- Subtarsal Erythema
- Preauricular Lymph Nodes
- Blurred Vision which clears with blinking

Viral Conjunctivitis tends to cause more watering, more eyelid oedema and less mucus. Preauricular lymph nodes are more commonly palpable. Bacterial Conjunctivitis is generally more associated with less watering and more mucus production than viral conjunctivitis. Chlamydia/gonorrhoeal conjunctivitis tend to be unilateral and cause persistent symptoms. They can present as an emergency with significant eyelid swelling, hyperpurulence and reduced vision.

This picture shows the classic redness of conjunctivitis. The eye lashes are clumped together on the upper lid. The eyelids are swollen.

This picture shows the classic redness of conjunctivitis. The eye is watering and the conjunctiva is swollen and raised (conjunctival chemosis) on the temporal side.
Investigations
Investigations are often not necessary, if deemed necessary the standard investigations would be:
- Bacterial Swab
- Viral Swab
- Aptima Swab for Chlamydia and Gonorrhoea

These swabs take between 5-7 days to be reported. **Most patients are able to clear a bacterial or viral conjunctivitis without treatment, so investigations will only confirm the diagnosis and symptoms will often improve prior to swab results.**

Treatment
Self Limiting
It is important to remember that for viral and bacterial conjunctivitis is entirely self limiting and will usually worsen for the first 5-7 days before gradually improving after that. After a significant conjunctivitis it is not unusual for mild redness and irritation to persist (gradually improving) for 4-5 weeks after.

Antibiotics
Antibiotics only make a modest improvement in symptoms; however, it is reasonable to consider a short course of chloramphenicol eye drops, options include: Chloramphenicol 0.5% eye drops 4 hourly (whilst awake) or Chloramphenical 1% ointment 3-4 times daily or just at night if using eye drops. Chloramphenicol is to be applied for 48 hours after resolution, typically for 5 days in total. Prolonged courses of antibiotics have limited benefit and will likely cause more irritation to the eye.

General Advice
Keep the eyes clean and a cool compress can provide symptomatic relief. Viral conjunctivitis is very contagious, and the patient should be advised to wash their hands plenty and avoid sharing towels and pillows. The patient should be advised not to wear contact lenses when symptomatic.

School/Nursery
Chlamydia/Gonorrhoea Conjunctivitis
Chlamydial and gonorrhoeal conjunctivitis require treatment to resolve. If confirmed the patient can be referred jointly to the GUM clinic and to BEH ED. The conjunctivitis does respond to systemic treatment. If there is a high suspicion of chlamydial or gonorrhoeal infection, we are happy to review these patients urgently in the BEH emergency department.

These pictures show a patient with chlamydial conjunctivitis. The signs are pretty minimal, however the patient’s history prompted investigation. The patient complained of a unilateral red eye with no watering and little mucus for 2 weeks with no change in symptoms. As this is unusual, most conjunctivitis improves over 7-10 days, a chlamydial APTIMA swab confirmed the diagnosis. The patient was asymptomatic from genital conjunctivitis and reported no new or high-risk sexual contacts.

When to Refer
Referral is not usually necessary as it is a self-limiting condition. Ongoing symptoms should prompt the diagnosis to be reconsidered.

 Conjunctivitis can occasionally trigger an inflammation of the cornea, consider referral to the Emergency Department for the following cases:
- Severe Symptoms
- Light Sensitivity (As this indicates corneal involvement)
- Reduced Vision (As this indicates corneal involvement)
- Persistent Symptoms
- Chlamydia/Gonorrhoea conjunctivitis confirmed or suspected
- Exercise caution in diagnosing conjunctivitis in contact lens wearers, — make sure you are not missing a corneal ulcer.
Dry Eye

Background
Dry Eye disease is very common amongst any age of patient. However, there are certain ‘at risk’ groups. The tear film is made of three layers, a thick mucin layer at the bottom coats the surface of the eye, on top of this sits the aqueous part of the tear film which is produced by the lacrimal gland and on top of this sits a lipid layer, which stops evaporation, produced by the meibomian glands on the eyelids.

Dry eye can develop due to a problem in any layer of the tear film or reduced function of the eyelids. Chemical burns, previous Stevens Johnson syndrome or other scarring disease can lead to mucin deficiency. The classic cause of reduced aqueous production is autoimmune disease (Sjogren’s; Rheumatoid arthritis; thyroid problems etc.) However, there are numerous other causes such as postmenopause, drug induced, corneal anaesthesia, irradiation and more. The lipid layer is classically deficient in blepharitis.

Poor blink function, can be due to lid malposition, lid laxity, surface abnormality (eg pingueculae, pterygium, reduced sensation (such as from previous herpes)) contact lens wear or reduced blink frequency in visually demanding tasks (driving, reading, watching TV).

Often however, there is often no single identifying cause in every patient, and often it is multifactorial.

Symptoms
Symptoms are variable and include:

- Dry eye feeling
- Reflex watering
- Burning sensation
- Blurred or fluctuating vision

(often improves with blinking)

- Redness
- Itching
- Discharge/mucus
- Eye Strain

Treatment
Treatment is multifactorial,

Conservative Treatments
Being aware of the environmental causes of dry eye can have a big effect on people’s dry eye symptoms. Avoiding excessive heating or air conditioning (especially in the car) can help, if the patient wears contact lenses consider a ‘contact lens holiday’ for several weeks to give their eyes a chance to recover. Awareness of worsening symptoms with visually demanding tasks such as VDU use, reading and driving.

Contributing factors
Consider switching any existing eye drops to preservative-free preparations. Review the patient’s medications for any drugs which can contribute to dry eye (such as diuretics, beta-blockers, antimuscarinics, antihistamines, nasal decongestants). There is some evidence that supplementation of omega-3 may help symptoms.
Blepharitis
With all patients suggest they undertake four to six weeks of good blepharitis hygiene (see Blepharitis Section). This will help eliminate blepharitis which is common contributing cause.

Tear Substitutes
Mild
g. Hypromellose (preserved) 3-4 times a day
Moderate
g. Hypromellose 0.3% eye drops, , Carbomer 980 0.2% gel or Carmellose 0.5% (both unpreserved) up to two-hourly
Severe
hyaluronate drops up to hourly (brands include VilZhyal, Hylotear, hyloforte, thealoz, haybak)

Consider a thick ointment at night, especially when there is thought to be some lid laxity or incomplete closure of eyelids. Thick ointments can be occ VitA-Pos or occ Xailin night.

When to Refer
Outpatient referral can be made for patients with ongoing symptoms despite treatment.

Occasionally dry eye can be particularly severe and cause sight-threatening disease. These patients should be referred to the BEH Emergency Department:

- Significant Light Sensitivity (As this indicates corneal involvement)
- Reduced Vision
- Increasing Pain
- Suspected infection
Allergic Eye Disease

Background
Allergic eye disease is a broad term for several distinct diseases. Allergic eye disease can be caused by:

- **Seasonal allergic conjunctivitis** (hay fever) This is the most common type which present to GPs.
- **Vernal keratoconjunctivitis** - this is a severe form of chronic allergy. Most common in males aged 5-15 years old especially Afro-Caribbean and Middle Eastern patients.
- **Atopic keratoconjunctivitis** - this is a severe allergy in patients with atopic eczema, can also occur in adults who used to suffer from vernal keratoconjunctivits.
- **Contact lens associated papillary conjunctivitis** - this allergy to contact lens wear
- **Contact hypersensitivity/toxic conjunctivitis** - this is an allergy to eye medication or to the prolonged use of preserved eye drops.

Vernal keratoconjunctivitis and atopic keratoconjunctivitis are potentially serious as these both frequently affect the cornea surface. In most cases the patients may also suffer from other signs of allergy such as asthma, eczema or hay fever.

Symptoms
- Itching is the most common symptoms
- Redness
- Mucus
- Watering
- Eyelid oedema
- Conjunctival Chemosis
- Can be seasonal

Often there are few clinical signs this photo shows inflammation on the inside of the upper eyelid with papillae (which is a bumpiness of the inside of the eyelid). There is also a small haemorrhage on the eyelid.
Treatment

Conservative Treatments
Cool compress will often help with acute allergic swelling of the eyelids and conjunctiva. Identification and avoidance of allergens should be attempted. If contact lenses are implicated, suggest booking in with their optician to consider switching contact lenses.

Oral antihistamines
During periods of exposure oral antihistamine can be used.

Topical medications
These should be started in all patients. The common medication to start would be sodium cromoglicate QDS. This is available over the counter. The problem with sodium cromoglicate is children will struggle to use four times a day and it can take several weeks to reach its full effectiveness.

In the eye hospital we tend to use a combination topical medication such as g. Olopata
tanol BD for 3-4 months or Ketotifen BD for 3-4 months. These combination medications are an antihistamine with a mast cell stabiliser so work more effectively than sodium cromoglicate and only need to be used twice a day, markedly improving compliance. These drops still take several weeks to build up to full effectiveness. If the patient has very predictable seasonal disease, these can be started in advance of the season.

When to Refer
Outpatient referral can be made for patients with ongoing symptoms despite treatment. Consider referral in:
- Persistent Symptoms despite treatment
- Suspected Vernal Keratoconjunctivitis or atopic keratoconjunctivitis
- Lower threshold for younger patients.
Occasionally allergic eye disease can be particularly severe and cause sight-threatening disease. These patients should be referred to the BEH Emergency Department; red flags include:

- Light Sensitivity (As this indicates corneal involvement)
- Reduced Vision
- Suspected infection
- Increasing Pain
Pingueculum & Pterygium

Pingueculum
This is a slight thickening of the conjunctiva usually at 3 and 6 o’clock on the conjunctiva. They are usually bilateral, and do not grow on to the cornea. Pingueculae are mostly asymptomatic and may only be noticed when the eye becomes red from another caused (e.g. conjunctivitis).

Very occasionally the pingueculum may become inflamed and cause mild discomfort and foreign body sensation. In these occasions a cool compress and tear substitutes may provide some relief. If symptoms persist, they may require a topical steroid being prescribed and the best way to enable this is through the BEH Emergency Department.

Mostly pingueculae do not require surgical removal, and do not require onward referral. Surgical excision may be of benefit if they become inflamed recurrently.

This is a classic pingueculum, a thickening of the conjunctiva with often some yellowish discolouration. They can be either nasal or temporal and are often bilateral.

Pterygium
This is a growth of the conjunctiva which grows, usually at 3 and 6 o’clock, on to the cornea. There is often a history of UV exposure. Patients can be asymptomatic or they can cause discomfort and FB sensation.

Treatment should be directed at avoiding further UV exposure, tear substitutes may help with foreign body sensation and discomfort. Very occasionally they can become inflamed and require topical steroids, if symptoms are significant please consider referral to the BEH Emergency Department. If symptoms are prolonged and the patient wishes to pursue surgery, please refer to the Corneal Outpatient Department.

Ocular Surface Neoplasm can mimic pterygia, if a lesion appears over a few weeks, grows rapidly, is pigmented or is not look typical, consider urgent corneal clinic referral.

The picture on the left shows a very classic pterygium, whereas the picture on the right shows an inflamed pterygium.
Ophthalmic Shingles
(Herpes Zoster Ophthalmicus)

Ophthalmic complications
Latent Herpes Zoster can reactivate from the ophthalmic division of the trigeminal nerve causing the classic rash around the scalp, forehead and eyelids. As the ophthalmic division also supplies the cornea with sensation it can cause inflammation within the eyeball.

Eye involvement in ophthalmic shingles is much more likely if the tip of the nose is involved (Hutchinson’s sign) as this indicates the nasociliary nerve is involved (which supplies the cornea and the tip of the nose).

Not all patients will develop inflammation in the eye following. Eye involvement can be varied including conjunctivitis, dry eye, corneal inflammation, iritis and retinal infection. The eye can be involved within a few days or weeks and months down the line. Once a patient has shingles, any eye complications in the following weeks should be thoroughly investigated.

Treatment
In the first 72 hours Aciclovir 800mg 5xday for 7 days should be commenced. There is some benefit to initiating treatment for up to seven days following the start of shingles and this can reduce disease progression and postherpetic neuralgia.

When to refer
NHS CKS recommends seeking specialist advice if there is herpes zoster ophthalmicus. Referral is particularly indicated for people with:

- Red eye
- Swollen Eyelids
- Photophobia
- Hutchinson’s positive (see above)
- Reduced vision
- Floaters
- Immunocompromised
- Pregnant

If any of the above signs are noted please refer the patient urgently to the BEH Emergency department.
Chalazion, Styes & Cellulitis

Chalazion

These are blocked glands on the eyelids which, once blocked, form a lipogranulomatous reaction and become swollen. They are typically painless and can be accompanied by others chalazia on the eyelids. Chalazia are caused by dysfunction of the glands similar to that seen in blepharitis so early treatment should be directed as in the blepharitis section of this advice. This includes:

- Warm compress and lid massage
- Topical antibiotic ointment BD for 2 weeks
- Oral tetracycline to treat any coexistent meibomian gland dysfunction.

Chalazion can become infected and require antibiotics both topically and orally.

If particularly problematic, the BNSSG CCG will allow referral to BEH for consideration of surgical removal only with ‘prior approval’ via ‘individual funding request.’ This is based on the following:

BNSSG CCG will fund excision of chalazia when the patient presents with two or more of the following:

- Present continuously for more than six months, verified in clinical notes
- Present on the upper eyelid, and interferes significantly with vision.
- Source of regular infection (2 times within six-month time frame) requiring medical treatment
- The site of the lesion or lashes renders the condition as requiring specialist intervention within the secondary care provider.

A chalazion that keeps coming back should be biopsied to rule out malignancy. Use the appropriate referral route for suspected malignancy in this case. Note: The chalazion does not need to be present continuously for more than six months. Please refer urgently to the Oculoplastic Clinic.

More advice can be found on BNSSG Website.

A classic stye, note there is no oedema or cellulitic change to the rest of the eyelid. This would be appropriate to give antibiotic ointment to. A chalazion looks similar but without the associated redness.
**Styes**

Styes, or hordeolum, are when blocked glands on the eyelids become secondarily infected and require antibiotics. There is often a pointed head on the cyst and it may fistulate and discharge through the skin. If it does start to discharge this should be encouraged with a hygienic massage.

These will often require some form of antibiotic. If the infection is limited to the cyst and there is no spreading cellulitis infection, this can be managed with topical antibiotic ointment (chloramphenicol ointment 2-3xday for 7-14 days) with hot compress and lid massage to encourage the gland to discharge.

If there is spreading cellulitis from the cyst which is affecting the rest of the eyelid, it is best to treat this as early cellulitis and treat with oral antibiotics. If you are concerned at the level of infection, please discuss with the on-call ophthalmologist for review.

Once the infection has been treated, the blocked cyst may remain for several months and hot compress and massage should be continued to speed resolution. It is advisable to treat coexistent blepharitis.

**Cellulitis**

Cellulitis around the eye comes in two forms: pre-septal (or periorbital) or post-septal (or orbital).

- **Pre-septal cellulitis** is when the infection is limited to the skin of the eyelids and is no infection behind the lids, infecting the orbit. The eye is usually white, there is no restriction to eye movement, the eye is no pushed out, the vision is not affected. The patient may, or may not have a temperature. The cellulitis may arise from a defect on the lid in the form of minor trauma, or a blocked cyst, but often in children can arise from no discernible cause.

- **Post-septal cellulitis** is when the infection is affecting the contents of the orbit. This means that along with cellulitis of the eyelids there is a combination of red eye, pushed out eye (proptosis), restricted eye movements, reduced vision and pupil abnormalities. The patient is more likely to be unwell and more likely to be septic. This most commonly occurs from coexistent sinus disease. This is an emergency.

The BEH Emergency Department is happy to urgently review all cases of suspected pre- or post-septal cellulitis. Only the very mildest pre-septal cellulitis should be managed in primary care, if both patient and clinician is comfortable with this decision. Often pre-septal cellulitis is incorrectly given PO Flucloxacillin in primary care, current microbiology advice is PO Coamoxiclav 625mg TDS for 7 days (if penicillin allergy then Cefalexin 500mg tds or if a type 1 allergy Levofloxacin od all for 5 days).

Out of hours please discuss with the on-call ophthalmologist for advice and guidance.

**Orbital Cellulitis is an emergency** and requires immediate review and should not be treated in the community.
Corneal Foreign Body
Corneal foreign bodies often occur in high-risk occupations and hobbies. Eye protection does not exclude a foreign body. Often foreign bodies are small (<1mm) and are not easily visible to the naked eye. The use of Fluorescein and blue light can help pick up small FBs in primary care.

A corneal foreign body can be removed with a cotton bud. It is not safe to use a needle without a slit-lamp. If completely removed, the patient requires chloramphenicol ointment three times a day for five days and safety-netted to attend the eye emergency department if symptoms do not settle. Unless you are confident only attempt to remove superficial corneal foreign bodies.

Sometimes foreign bodies can be difficult to remove or leave rust behind. It is expected primary care sends all corneal foreign bodies to the BEH Emergency Department for review and removal. If any doubt, give the patient chloramphenicol ointment and refer to BEH Emergency Department.

A central corneal foreign body. Often these are so small they are difficult to see without a slit lamp. With a good history it is reasonable to send a suspected foreign body to BEH Emergency Department.
Episcleritis
This is a sectoral redness of the conjunctiva which can cause mild irritation. Vision should be unaffected and there should be no photophobia or discharge.

If mild these cases can be advised to use a cool compress on a closed eye and if not contraindicated can be given a short course of oral NSAIDs.

This can be a recurrent problem.

Episcleritis does not usually require referral. It is self-limiting

Please refer to the BEH Emergency Department if any of the following:
- Worsening symptoms after 48 hours.
- Significant Pain
- Light Sensitivity
- Worse Vision
- Persistence over ten days despite treatment.

Diffuse temporal injection. The picture on the right highlights episcleritis tends to be segmental and can affect any segment of the eye.
Subconjunctival Haemorrhage

This is a bleed beneath the conjunctiva, often the conjunctiva will appear raised with blood. They can occur spontaneously or with episodes of straining or eye rubbing.

Typically, there is no pain, and vision is unaffected.

These should self-resolve without treatment. Check the patient’s BP, as very high BP may cause a subconjunctival haemorrhage. Advise it should resolve over the coming 1-2 weeks and if the eye is sore, they can try artificial lubricants. Tell them to present to the eye emergency department if pain increases or if their vision decreases.

Sometimes subconjunctival haemorrhages are so large they can affect the closure of the eyelid. If the lid is hard to close, then advise the patient to attend the BEH emergency department within 24 hours. This is for assessment of corneal exposure and not for drainage of haemorrhage.

Consider referral in cases of reduced vision or pain, as this shouldn’t occur with simple subconjunctival haemorrhages.
Vision Problems

Loss of Vision in One Eye
There are numerous causes of loss of vision, but there are not a lot of causes that can be easily diagnosed in primary care. Remember to always check for a relative afferent pupillary defect.

Warning Signs:
- Headache
- Severe eye pain
- Other neurology (always check other cranial nerves)
- Signs/symptoms of temporal arteritis/giant cell arteritis
- Onset within the last 4 hours.

If any of the above warning signs, then discuss with the on-call ophthalmologist to arrange immediate review. If no warning signs the patient should be reviewed the same day in the BEH Emergency Department.

Loss of Vision in Both Eyes
This is unlikely to be due to a primary eye problem and suggests a central lesion such as an occipital stroke. Suggest considering urgent neuroimaging and if further advice is required can be discussed with the ophthalmologist

Temporary Loss of Vision in One Eye / Amaurosis Fugax

Transient loss of vision is often a sign of amaurosis fugax or transient ischaemic attack. Typically:
- Rapid onset of episode of blindness, developing within 10 to 15 seconds
- Often described as a curtain being drawn over the eye
- Lasts for seconds or minutes
- Clears slowly
- May be an associated contralateral hemiparesis if the cause is carotid artery stenosis
- Occasionally only part of the vision may be lost.

Assessment and management of these patients should be directed as per the local TIA clinic guidance. Extra note should be paid to exclude a diagnosis of temporal arteritis.

If symptoms are only isolated to vision, the TIA clinic often asks the patient to be reviewed by an ophthalmologist. Please treat as per TIA clinic instruction and ask the patient to attend the eye emergency department for review the same day.
Floaters and Flashing Lights

These are very common symptoms and are largely due to an age-related change in the vitreous, however they can indicate a retinal detachment. It is difficult to discern from symptoms which patients have age-related change in their vitreous (typically a posterior vitreous detachment) and which have retinal damage. Therefore, all patients who develop these symptoms acutely should be referred.

- Floaters: these are black dots floating in the eye, often described as a cobweb or a swarm of flies in the vision.
- Flashing lights: these are typically very short-lived flashes of light in the side of the vision that last less than a second, often described as a flash of light over their shoulder. They tend to be worse with head movement and in the dark.
- Shadow in vision: this will be observed in the affected eye and be coming from the periphery of the vision, the patient will not be able to see around the shadow.

A patient who acutely develops any of the above symptoms within the past 4 weeks should be asked to attend the BEH Emergency Department within 24 hours (not out of hours).

If present over 4 weeks then a routine referral to the Vitreoretinal Service should suffice, but the patient should be warned of any deterioration of symptoms and attend the BEH Emergency department if they develop.
General Advice for Conditions which Require Referral

Acutely Angle Closure Glaucoma
This is typically a sudden onset of severe eye pain and reduced vision. Patients often complain of an entire headache centred around the eye. Certain signs in angle closure glaucoma can be:

- The patient is likely to be longsighted (a ‘plus’ prescription)
- The patient is unlikely to have had cataract surgery
- The eye may feel hard to palpation compared to the other side
- The cornea may appear cloudy
- The pupil may not react to light and appear non-reactive in a semi-dilated state
- There is significant pain/headache/nausea.

This case should be urgently referred to the on-call ophthalmologist, for immediate review.

This is an acute angle closure. Often the eye is not red. The pupil is mid-dilated and non-reactive to light. The pupil is also light grey and the detail of the iris is not as clear on account of the cloudy cornea (corneal oedema).

This is the picture of the above patient’s unaffected eye for comparison. Note the difference in the patient’s pupils, the clearer iris details and the clear pupil.
Anterior Uveitis / Iritis
This is an inflammation within the eye which occurs spontaneously. There may be a
history of other autoimmune inflammation but often there is none. Iritis presents as:
• Light sensitive red eye, this is the classic symptom
• Patients often say their eye feels bruised when they close their eyelid and press
  their eye
• Vision can be affected
• No pain on eye movements, no restricted eye movements
• Often the pupil can be small and may not dilate as fully, compared to the fellow
  eye
• There is no fluorescein staining of the cornea.
The patient should be reviewed in the BEH Emergency Department, the same day.
If the patient is out of hours, please discuss with the on-call ophthalmologist.

Iritis may cause a mild red eye and then symptoms (especially photophobia) are critical for
diagnosis.

Alternatively, the red eye can be pronounced. The key thing to
notice in this picture is a small line
at the bottom of the iris this is a
hypopyon and is a very significant
finding and prompts immediate
referral.

There is often an irregular
pupil because the iris sticks
to the lens beneath it. This
picture is taken with dilating
drops applies. However, in
Chemical Injury

This is an emergency. Check the pH of both eyes, a normal pH is around 7.2. It is appreciated that not all primary care facilities will be able to check the pH.

The most important first aid is adequate irrigation. Put topical anaesthetic drops into the eye and use copious amounts of Normal Saline (or tap water if not available). Lie the patient flat and (if possible) use an intravenous giving-set run saline while pulling the eye lids from the globe to adequately wash the conjunctival sacs. A cotton bud can be put into the conjunctival sacs between the eye lid and the globe to remove any retained solid debris.

Irrigate until the pH returns to normal. Then wait 20 minutes and recheck the pH - if it remains normal the chemical has been successfully washed out. If the pH changes after 20 minutes then repeat irrigation until pH is normal. If struggling to reduce pH please discuss with the on-call ophthalmologist.

Signs that the patient will require review following irrigation are:

- Pain
- Reduced vision
- Fluorescein uptake
- Hazy cornea

If you are in a facility which cannot check pH please refer that patient to the nearest unit which will be able to check pH; following copious irrigation. If in any doubt, please discuss with the on-call ophthalmologist.
Contact Lens Related Ulcer

A light sensitive and painful red eye in a contact lens wearer is typically an ulcer (an infection). These do not respond to chloramphenicol and require broader spectrum antibiotics (levofloxacin). On examination, you may see:

A small round area of white-ish cornea, often very small (less than 1mm). There may also be a small area of fluorescein stain too.

- The patient should be reviewed in the BEH Emergency Department, the same day.
- If the patient is out of hours, please discuss with the on-call ophthalmologist.

This patient has a contact lens related ulcer which is very difficult to spot just looking at

This is the same patient as above but on a slit lamp it is easier to highlight and spot the ulcer.

Alternatively, some ulcers are easier to spot with the naked eye.
Some ulcers are hard to miss causing significantly reduced vision and pain.
Corneal Abrasion

Corneal abrasions can occur after trivial trauma and occasionally spontaneously. They often cause significant discomfort when blinking, usually described as a sharp stabbing pain. They may also cause watering of the eye, light sensitivity and reduced vision. They are best visualised with fluorescein applied to the eye and the blue light filter. It is expected that most primary care doctors refer corneal abrasions as they often lack the equipment to fully diagnose them.

If there is no loose corneal epithelium flap: chloramphenicol ointment TDS for 3-5 days and advise to attend the eye emergency department if symptoms worsen.

If this is a recurrent abrasion, loose epithelium or uncertain of the diagnosis: chloramphenicol ointment TDS for 3-5 days and advise to attend the eye emergency department the next day.

All patients with corneal abrasions should be advised to use lubricants for at least three months following the injury (e.g. Vitapos nocte, hypromellose by day). This is to reduce the incidence of recurrent erosion syndrome.

Despite the significant pain there are often very few clinical signs until you apply fluorescein drops and look with a blue light which highlights the defect in the epithelium.
Hyphaema
This is a collection of blood between the cornea and the iris. It forms a fluid level behind the cornea. It is most often caused by trauma but can be spontaneous.

All hyphaema should be referred same day to the BEH Emergency Department, if out of hours, please discuss with the on-call ophthalmologist. Prior to review by the ophthalmologist they should be advised strict, upright rest,- this encourages the blood to settle at the bottom of the anterior chamber.

Endophthalmitis
Endophthalmitis is normally a post-operative infection which occurs within the first 2 weeks of surgery. It is an infection inside the eyeball which can rapidly cause blindness. Very seldom, this can occur from endogenous spread of infection in septic patients or ones with deep-tissue infections.

Typically:
- There is significant pain/headache
- The eye is red
- The vision is markedly reduced
- Recent surgery
- There is a hypopyon visible in the eye (a layer of pus collecting behind the cornea).

This requires urgent referral to the on-call ophthalmologist.

Endophthalmitis often causes an hyopyon which is the small level of yellowish fluid at the bottom of the iris. This is a significant finding and prompts immediate referral. Hypopyon can be seen in other conditions (e.g. iritis & infection) however it always indicates a serious problem which requires an immediate referral.
Open Eye Injury

If there has been an injury to the eye there may be an open injury into the eye ball. This can be suggested from:

- A high velocity injury/or projectile hitting the eye
- A soft looking eye
- The iris being pressed against the inside of the cornea
- Appearance of jelly leaking from the eye
- A sudden onset of floaters or blurred vision following trauma
- The iris being pulled up to touch the cornea in a certain point
- The eye not moving in certain directions
- Evidence of leak through the cornea when fluorescein is applied.

If there is any suspicion of an open globe injury then instruct the patient not to touch their eye, attempt to use an eye shield or ‘cartella’ to cover the eye without compressing the eyeball and immediately call the on-call ophthalmologist.

Orbital Trauma/Suspected Orbital Fracture

The bones around the eye often take the force of impact to the orbit. If there is a suspicion of a fracture to the bones of the orbit, facial X-rays can be taken, however these frequently miss fractures. A CT of the orbit is the definitive way to diagnose orbital fractures.

Factors to assess in these cases are:

- Heart rate and BP (an extraocular muscle caught in a fracture can cause significant bradycardia)
- Visual acuity
- Eye movements, ask about diplopia and look for restriction in eye movements
- Assess the eye for signs of an open eye injury (as above) and retrobulbar haemorrhage (as below)
- Skin sensation above and below the orbit.

If an orbital fracture is suspected please discuss the case with maxillofacial surgeons and the on-call ophthalmologist. Instruct the patient not to blow their nose.

Scleritis

This is a rare inflammation of the wall of the eye. It typically causes:

- A very severe deep boring pain around the eye
- Significant redness
- Worsening vision

This requires urgent referral to the on-call ophthalmologist.
Checking Vision

All patients presenting with an eye problem requires their vision to be checked. This is an important clinical point (and is vital from a medical negligence viewpoint). It is essential for any referrals to ophthalmology as it is an important part in triage.

The Snellen chart should be read at 6 metres. The patient should read the chart with their distance glasses on (not their reading glasses).

Each line has a small number accompanying it. This is to record the line the patient is able to read to.

- If the patient is able to read to the OX line this would be recorded as 6/36
- If the patient is able to read to HLAOT line this would be recorded as 6/12
- If the patient is unable to read one letter on a line you add ‘-1’ e.g. 6/12⁻¹
- If the patient is able to read an extra letter on the line below you can add a ‘+1’

If the patient forgets their glasses you can check the vision with a pinhole.

The eye focuses the vision on the retina. In certain pathology the eye does not focus as sharply (blurring the vision).

A pinhole only allows straight beams of light so doesn’t require the eye to focus it. Therefore, if a patient forgets their glasses, a pinhole would allow them to read a near-normal visual acuity.

It is recorded with the same nomenclature as above.
Checking Pupils and a Relative Afferent Pupillary Defect (RAPD)

This is a difficult skill to learn but is incredibly useful. A RAPD allows the observer to test a patient’s optic nerve and infer if it is working normally. It is vital if there is a suspected optic nerve problem such as: optic neuritis, trauma to the orbit or acute loss of vision.

1. Assess the pupils

The pupils are observed in a dim light, the pupils are checked for equal size.

2. Direct and consensual responses

A light is then shone into one of the eyes and the pupil constricts to the light. The other eye’s pupil also constricts.

3. The light is then shone into the other eye too. Checking both pupils constrict to the light
4. Relative Afferent Pupillary Defect

The light is shone in to one eye for a few seconds, then very quickly moved to the other eye. If the other nerve is working well, then the pupil will momentarily dilate as the light moves across the nasal bridge and then immediately constricts as soon as the light hits it. A positive relative afferent pupillary defect is when the light hits the eye but the pupil continues to dilate despite the light being on it, meaning this optic nerve is not working as quickly as expected, indicating optic nerve damage or compromise. It may still constrict as the light is still on the eye. This test is repeated for both eyes.