

A guide to utilising your time efficiently to develop clinical and procedural skills as an aspiring ophthalmologist

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Ophthalmology often receives limited coverage in the undergraduate medical curriculum, and the availability of foundation programme jobs in this field is also restricted, reducing exposure to this field for aspiring ophthalmologists. Even if you're not planning to specialise in ophthalmology, gaining a solid understanding of eye-related conditions can significantly improve your ability to manage these presentations in other areas such as in primary care or emergency medicine.

Given the competitive nature of ophthalmology training, many applicants tend to focus heavily on meeting portfolio requirements, sometimes at the expense of developing practical clinical skills, which are not as emphasised in the application process. However, the ST1 year is widely recognised for its steep learning curve. Those who dedicate time to developing their clinical expertise early on will be better equipped to face these challenges.

As with any speciality, participating in taster weeks [1] or electives [2-7] can provide valuable insights into the wide scope of ophthalmology and help you better understand its day-to-day demands, and in deciding if this is a potential career for you. For those dedicated to excelling in this field, this article provides practical steps to develop key skills that will set you up for success in ST1 training.

This guide focuses on four recommended areas: improving history-taking and clinical communication, refining clinical skills, understanding the patient pathway, and seeking the best opportunities to develop procedural and surgical experience. This is based on my experience as a foundation year 2 doctor with a rotation in ophthalmology at the Birmingham Midland Eye Centre, and also through speaking to current ophthalmology trainees. Whether you're a medical student, foundation doctor, or someone spending extended time in the department, these tips will help you optimise your experience in ophthalmology.

Important disclaimer before the rest of the article

There is often a feeling that if you decide on ophthalmology later in medical school or in foundation years, you have already missed the boat – but this is definitely not true. For example, the importance of the Duke Elder (which you can only do as a medical student) has always been overstated when in reality it only counts for 0.5 points, or 2 points if score top 10%, out of a possible 50 points in the portfolio section for the 24/25 cycle. So, if you decide ophthalmology is for you 'at a later stage', don't let this put you off.

History-taking and clinical communication in the emergency department

Exposure to undifferentiated patients in ophthalmology's emergency setting is a valuable opportunity to hone your history-

taking and communication skills. This environment allows you to practise explaining diagnoses, safety-netting, and discussing the next steps with patients, all essential components of effective patient care.

Most ophthalmology emergency departments operate on a referral-only basis through community optometrists, GPs, or secondary care, though larger departments may offer a walk-in service. Some divide emergency care into two sections:

- **Urgent care centre or minors:** Typically manages less complex cases like foreign bodies, simple acute anterior uveitis, dry eye, or mild contact lens-related ulcers.
- **Eye casualty:** Deals with more complex and urgent cases. Starting in the minors section can help you build confidence while familiarising yourself with ophthalmic presentations before progressing to more complex cases in eye casualty.

Sitting in with a mix of trainees, from ST1s to more senior registrars, can offer valuable learning experiences. ST1s are often closer to your level, making it easier to relate to their approach. However, since they are still getting to grips with their own skills, you may also benefit from spending time with more experienced trainees or senior ophthalmologists who can provide deeper insights and guidance. It's important to actively communicate your interest in trying history-taking or examining patients under supervision rather than just passively observing the clinic. However, keep in mind that this will depend on the pace of the emergency service and patient flow.

If you have a particularly positive learning experience with an ophthalmologist, try to join them for future sessions. Once they are familiar with your baseline knowledge and skills, it becomes easier for them to build on previous lessons and involve you more actively in patient care.

Understanding different diseases, investigations, and treatments is one thing, but being able to explain them to patients concisely without jargon is another. It's a good idea to read patient information leaflets on these topics since they effectively tackle the issue. Moorfields have a great collection to get you started [8].

Enhancing clinical knowledge and interpreting investigations

Ophthalmology clinics are typically led by a consultant, with subspecialties such as paediatrics, medical retina, glaucoma, cornea, uveitis, vitreoretinal, neuro-ophthalmology, and oculoplastics. Depending on staffing and consultant preference, the consultant may either review patients with trainees seeking advice for patients they see intermittently, or the consultant may float between rooms, supervising trainees directly and reviewing patients as needed. Attending clinics will enhance your clinical knowledge by deepening your understanding of

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ophthalmic pathologies, improving your ability to interpret investigations, and guiding you in formulating management plans for more specialised care beyond the emergency setting. Many ophthalmology clinics require patients to undergo investigations before being assessed by a doctor. For example:

- Medical retina: patients may require ultra-widefield imaging, optical coherence tomography (OCT), or fundus autofluorescence scans before consultation.
- Glaucoma: Patients often need a Humphrey visual field test performed by ophthalmic technicians before being seen.
- Cornea: Anterior segment tomography.

As a medical student or doctor, it is highly beneficial to accompany patients during these investigations or spend time with the technicians performing them. This experience helps you understand the technical aspects of obtaining quality images and the patient's perspective, which is invaluable when explaining results or addressing issues like poor image quality.

Additionally, practising interpreting clinical tests and images in real-time will prepare you for the FRCOphth part 1 exam, where this knowledge is tested.

Developing diagnostic clinical skills

Developing your clinical skills in ophthalmology requires mastering specific foundational techniques, which can significantly boost your confidence and prepare you to assess patients independently under supervision. Some of these skills are relatively straightforward but essential, such as administering the correct dosage of eye drops for dilation during slit-lamp examinations or applying fluorescein and anaesthetic drops for Goldmann applanation tonometry (GAT). Another valuable skill that can help streamline clinic flow and provide more time for ophthalmologists to focus on note-taking and administrative tasks is measuring intraocular pressure (IOP) using handheld devices like the iCare tonometer.

Slit-lamp biomicroscopy and Goldmann applanation tonometry

Although there are many advanced clinical skills in ophthalmology, such as using an indirect ophthalmoscope and performing gonioscopy, these techniques are usually more suited for experienced trainees. For beginners, the two most fundamental skills to focus on are slit-lamp biomicroscopy and GAT. Mastery of these two procedures will provide a solid foundation for examining patients and evaluating key ophthalmic conditions.

The learning curve for both can be quite steep and initially frustrating. It often takes several days of repetition, trial, and error before you become proficient and comfortable with these techniques. Many trainees share similar experiences, so don't be discouraged if it takes time to visualise what you need to see consistently. Everyone will have a different benchmark, but to contextualise it, one ST2 trainee told me it took them around 30 patients to start being able to visualise the optic disc each time on slit-lamp, but then interpreting and moving across the fundus is another challenge itself.

When practising slit-lamp examination, it's important to distinguish between anterior and posterior segment assessments. Anterior segment examinations can be practised in nearly any clinic, but uveitis and cornea clinics may offer more opportunities to observe interesting clinical signs. For posterior segment exams, which are particularly challenging for beginners, dilating the patient's pupils is crucial. Medical retina clinics are ideal for this, as patients often already have dilated pupils, so you have a bigger window to see through, providing a perfect opportunity to practise posterior segment examination under the slit-lamp.

To practise GAT, glaucoma clinics are the best environment. These patients are typically familiar with the procedure, as they routinely undergo IOP measurements. In contrast, patients in other subspecialty clinics may only have had their IOP measured using handheld devices, making them less ideal for practice. In glaucoma clinics, you'll have ample opportunities to refine your tonometry technique, get comfortable with the process and gain confidence in your skills.

YouTube

To accelerate your learning, *YouTube* tutorials can be an excellent resource. Videos explaining both the techniques and principles behind these skills can offer valuable insights. Several *YouTube* channels have helpful content – I found EYE Surgeon and Learn about Eyes particularly helpful ('Slit Lamp Exam Tutorial Part 1' and 'Part 2', 'Retina exam on slit lamp', 'Goldmann Applanation Tonometry' [9–12]) in providing demonstrations of slit-lamp biomicroscopy and GAT. Watching these videos multiple times, especially in combination with observing clinicians in person, will allow you to better understand each technique. Remember that each ophthalmologist may have their slight variations in technique, so observe different approaches and adapt what works best for you.

The importance of practice and feedback

As with any clinical skill, practice is crucial. Early on, it may be helpful to start practising after the ophthalmologist has already reviewed a patient. Initially, they might demonstrate what you should be seeing through the slit-lamp or tonometer, and then allow you to perform the procedure from start to finish, providing feedback on your technique.

One of the best pieces of advice I received was to request permission from the ophthalmologist to see patients in a separate clinic room after they had been reviewed. Most patients are happy to participate in trainee development after being consented, and this can offer invaluable hands-on experience. You can approach this in a few different ways:

1. Observe first, practise later: Watch the patient being reviewed by the ophthalmologist, then bring them to a separate clinic room to practise slit-lamp examination or GAT.
2. Start with history and scans: In some cases, you may take the patient into your clinic room to gather a basic history, review their notes and scans (if you have IT system access), and then perform the slit-lamp or tonometry procedures.
3. Focus solely on procedures: In the early stages of learning, you may choose to simply perform slit-lamp or GAT without the history-taking element.

The key to success is having a supportive consultant or trainee who is willing to guide you through this process. Most ophthalmologists are more than happy to help if you communicate your desire to learn and there is a spare clinic room available. Additionally, ask your department if you can borrow a slit-lamp lens for practice during clinic and downtime. At the start, it may also be helpful to practice on a colleague whilst you get familiar with the equipment without the pressure of judgement from the patient.

Understanding the patient pathway and multidisciplinary team in ophthalmology

A thorough understanding of the patient journey in ophthalmology, from referral to treatment, is crucial for appreciating the multidisciplinary coordination required in delivering care. This knowledge will help you recognise bottlenecks, identify areas for improvement, and understand where you can contribute as a future ophthalmologist.

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Take every opportunity to observe investigations, even the less common ones such as visual evoked potentials, electroretinograms, and ocular ultrasounds. Understanding the significance of these tests will allow you to integrate them into comprehensive management plans.

The role of allied healthcare professionals

The ophthalmic multidisciplinary team includes a range of professionals who play critical roles in patient care, including orthoptists, ophthalmic technicians, optometrists, nurses, and eye care liaison officers (ECLOs).

For instance, orthoptists are essential in paediatric ophthalmology, where they manage a large proportion of patients independently, without direct oversight from an ophthalmologist. Orthoptists are highly skilled in diagnosing and treating conditions such as strabismus and amblyopia, and their assessments are crucial for determining the next steps in a patient's care. As an ophthalmologist, you will frequently rely on the diagnostic evaluations made by orthoptists, so spending time shadowing them is invaluable. It will deepen your understanding of how their findings fit into the broader context of a patient's treatment plan and will improve your ability to interpret their assessments in your clinical decision-making. A lot of their tests can also come up in the FRCOphth Part 1 exam, so it can be helpful learning.

Similarly, ophthalmic technicians play a significant role in performing specialised tests like OCT, fundus photography, and visual field assessments, which are often completed before the patient even sees the ophthalmologist. Observing and understanding the technical aspects of these investigations can provide you with greater insight into the practical challenges involved, such as achieving high-quality images, and help you communicate more effectively with patients about the importance of these tests.

Community optometrists are essential in managing ophthalmic conditions within primary care, effectively reducing the burden on secondary care services while facilitating referrals to specialist ophthalmology when needed [13]. Their roles have expanded significantly within hospitals, particularly in speciality clinics, where they provide comprehensive eyecare that extends beyond traditional vision assessments [14]. Many optometrists now work in dedicated settings such as glaucoma, cataract, and diabetic clinics, offering specialised diagnostic assessments and tailored management plans. The advent of virtual services has further enhanced their capabilities, enabling remote consultations and follow-ups that improve patient access to care.

Optometrists are also increasingly involved in performing minor procedures, including laser treatments like YAG laser capsulotomy and selective laser trabeculectomy, along with other therapeutic interventions [15]. For instance, at Moorfields Eye Hospital, skilled optometrists play a vital role in these procedures, reflecting the growing recognition of their expertise within the eyecare team. This expanded scope of practice not only alleviates the demands on ophthalmologists but also allows them to concentrate on more complex cases and surgical interventions. By integrating optometrists into the care continuum, ophthalmology services can better address rising patient demand while navigating workforce shortages [16].

Finally, for patients facing the psychological challenges of vision loss or adapting to blindness, ECLOs are a vital resource. Eye care liaison officers offer emotional and practical support, helping patients navigate living with reduced vision. They assist with issues ranging from accessing government services and support groups to using adaptive technology that can improve independence.

Spending time with ECLOs will give you a broader understanding of the non-clinical support systems available to patients and highlight the crucial role ECLOs play in enhancing the patient journey. Often, doctors are limited by time constraints and cannot provide comprehensive guidance on the emotional and practical aspects of vision impairment. Being aware of the resources ECLOs offer allows you to direct patients to the appropriate services, ensuring they receive the holistic care they need. This knowledge improves patient outcomes and strengthens your role in offering well-rounded care that addresses both the medical and psychosocial aspects of eye health.

Developing surgical and procedural skills

Developing basic surgical skills early in your training is possible through tools like the Eyesi simulator, available in major ophthalmology teaching departments [17]. One of the most accessible simulations for beginners is the CAT 1 cataract course, which offers a fun and educational introduction to the dexterity and precision required for intraocular surgery, such as cataract extraction. Hands-on experience in intraocular surgery will be limited or next to none, given the high level of skill and precision required, unless, for example, you are in a year-long F3/F4 clinical fellow job in an ophthalmology department. However, exploring the Eyesi simulator can help you appreciate the complexity of cataract surgery and other delicate intraocular procedures. Many trainees find the surgical aspect of ophthalmology a significant pull towards the specialty, so familiarising yourself with these techniques early on, even if only in a simulated environment, can fuel your interest and motivation to persevere with the demanding application process.

Procedures you're likely to assist with

As a pre-ST1 trainee, you're more likely to assist with extraocular surgeries like squint surgeries and oculoplastics. There may also be an opportunity to learn how to administer intravitreal injections as well. Building rapport with consultants and senior registrars is crucial in gaining hands-on experience. Demonstrating enthusiasm in clinics and explicitly expressing your interest in assisting in surgery can increase your chances of involvement. However, these opportunities are not always guaranteed, so persistence and patience are important.

Gaining confidence in the operating room

One practical way to gain the trust of consultants is to become proficient in basic operating room protocols, such as scrubbing up correctly for surgery. Additionally, a common starting point for many ST1 trainees is learning how to safely prep and drape patients, creating a sterile field essential for safe surgery. Mastering this will demonstrate your readiness for more active involvement in surgical procedures. This fundamental skill helps streamline the surgical process and shows that you are taking the initiative to learn key aspects of the operating room environment.

Building opportunities through engagement

Initiative is vital in securing surgical experience. For example, I developed a strong mentoring relationship with a consultant during a paediatric ophthalmology placement by consistently participating in clinics and observing surgeries. This led to the opportunity to assist with squint surgeries and perform steps like separating the sub tenon's sheath, hooking and dissecting extraocular muscles, and placing conjunctival sutures. Similarly, in oculoplastics and medical retina clinics, I gained experience

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assisting with periocular procedures and administering intravitreal injections under supervision.

Conclusion

In conclusion, this article has provided guidance on how to effectively use your time to enhance learning in key areas such as history-taking and clinical communication, understanding and interpreting investigations, and developing clinical skills like slit-lamp biomicroscopy and Goldmann applanation tonometry. Additionally, it emphasises the importance of gaining a holistic understanding of the patient journey in ophthalmic care and the vital role played by the multidisciplinary team.

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