

The ROYAL COLLEGE of OPHTHALMOLOGISTS

OST Curriculum 2024

Level 1 Learning Outcomes and descriptors

All 7 Curriculum Domains (Patient Management and Other)

The Royal College of Ophthalmologists is a registered charity in England and Wales (299872) and in Scotland (SC045652)

Patient Management Domain

Special interest areas (SIAs) i-xi

Level 1	
Learning Outcome	Independently perform a patient assessment and investigations sufficient to identify, describe and interpret clinical findings to arrive at differential diagnoses.
An ophthalmologist	achieving this level will:
These descriptors apply to all special interest areas (i-xi)	 Demonstrate effective consultation skills, including active listening skills. Take ophthalmic and relevant systemic clinical histories appropriate to the clinical problem and patient's needs, eliciting the patient's ideas, concerns and expectations. Take a family history, and draw a pedigree chart as appropriate. Establish an effective, empathetic, compassionate and respectful doctor-patient relationship. Demonstrate cultural and social awareness. Understand the risks, professional responsibilities and safeguards of remote consultations, e.g. telephone, online consultations. Measure and record visual acuity for near and distance using an appropriate method and interpret the results. Understand the pros and cons of different methods of assessment for different patient groups. Be able to approximate equivalent levels of vision in Snellen, logMAR or EDTRS letter scores. Understand and interpret an optometric examination, including the assessment of vision and binocular vision. Interpret the refraction result. Assess other visual symptoms with appropriate tools e.g. Amsler chart for visual distortion, Ishihara or other appropriate test for colour vision. Assess and interpret normal and abnormal visual fields by confrontation, understand the reliability of this method and when to arrange more detailed visual field analysis. Assess the pupil for abnormalities of shape, size and reaction, including for Relative Afferent Pupillary Defect (RAPD). Examine the eyelids including eversion of lids. Perform slit lamp biomicroscopy of the eye and adjacent structures.

	 Examine the cornea, ocular surface, anterior chamber, iris and lens using appropriate techniques including assessment of the red reflex and slit lamp illumination techniques. Employ gonioscopy for examination of angle structures. Measure the intraocular pressure (IOP) accurately using a variety of applanation techniques and understand the limits of each. Examine the vitreous, the choroid and the retina, including the macula and optic nerve, using appropriate techniques including the direct ophthalmoscope, binocular indirect ophthalmoscope, and lenses for binocular fundus examination with the slit lamp. Understand how retinal examination techniques differ in magnification, orientation and field of view of the retinal image. Describe and record the ophthalmic findings according to usual convention. Perform a proficient medical examination relevant to ophthalmology, including examination of the neck, skin, nose, joints and neurological system. Understand the associations between clinical findings in different parts of the eye. Understand the associations between systemic and ophthalmic diseases. Select investigations appropriate to the likely diagnosis. Understand and apply knowledge of instrument technology relevant to ophthalmic practice. Create differential diagnoses including common conditions and those that are sight or life threatening, where appropriate.
Oculoplastics and Orbit (i)	 Examine the eyelids, lacrimal system and orbit using appropriate techniques, including the measurement of globe position with the exophthalmometer and use of slit-lamp in the examination of eyelid and lacrimal system disorders, and describe the findings. Perform a lacrimal sac wash-out (syringing) and be able to simply interpret the findings.
Cornea and Ocular Surface Disease (ii)	 Examine the cornea and ocular surface using appropriate techniques including diffuse examination, slit beam examination, retroillumination, sclerotic scatter, and specular endothelial examination. Use vital dyes to examine the cornea and describe patterns of staining and to test for corneal perforations or leaks. Recognise anatomical landmarks for normal eye, e.g. lid position, normal fornix depth and appearance, normal meibomian gland morphology. Use the slit lamp to assess the depth of a corneal opacity.
Cataract and Refractive Surgery (iii)	No additional descriptors for this area.

Glaucoma (iv)	 Understand optic disc imaging techniques and the typical glaucomatous changes. Understand patterns typical of glaucoma, and correlate with disc changes.
Uveitis (v)	 No additional descriptors for this area.
Medical Retina (vi)	 Be aware of risks associated with investigations (e.g. Fluorescein Angiography and Indocyanine Green Angiography tests). Understand the need to request and interpret retinal optical coherence tomography (OCT) scans. Understand retinal angiography techniques, including optical coherence tomography angiography (OCTA), and be able to identify abnormalities on retinal angiography. Demonstrate effective consultation skills, for suspected genetic eye disease.
Vitreoretinal Surgery (vii)	 No additional descriptors for this area.
Ocular Motility (viii)	 Assess ocular motility and strabismus using appropriate techniques including the cover/uncover test, prism cover test, and interpret and describe the findings. Perform appropriate tests of binocular vision. Draw and interpret appropriate ocular motility diagram. Request relevant orthoptic assessment. Understand the steps of an orthoptic assessment, what it is recording, and the notation used. Recognise normal and abnormal results, and the range of 'normal'.
Neuro- ophthalmology (ix)	 Understand the formal field options (static and kinetic) and know the indications, limitations and interpretation of these. Recognise and accurately describe nystagmus. Competently perform a relevant neurological assessment with particular emphasis on the cranial nerves. Assess ptosis and understand its relationship to neurological disorders.
Paediatric Ophthalmology (x)	 Take clinical histories from the patient and family/carers appropriate to the clinical problem and patient's needs, eliciting the patient's and the family's ideas, concerns and expectations. Measure and record visual acuity for near and distance using an age and literacy appropriate method and interpret the results. Understand the pros and cons of different methods of assessment for different age groups and ability. Examine the eye and ocular adnexa using appropriate techniques including the direct ophthalmoscope and slit lamp, and describe the findings. Assess ocular motility and binocular vision, including performing cover test at distance and near, and document using a diagram where appropriate. Understand and perform appropriate binocular vision tests.

	 Understand the steps of an orthoptic assessment, what it is recording, and the notation used. Recognise normal and abnormal results, the range of 'normal' and the significance of test/test variability in children. Understand when refraction is indicated, how it is performed and recorded. Become familiar with practice of retinoscopy and perform retinosopy to understand this. Perform a proficient paediatric medical examination relevant to paediatric ophthalmic conditions.
Urgent Eye Care (xi)	 No additional descriptors for this area.
Learning Outcome	Independently formulate and initiate a management plan for low complexity cases.
An ophthalmologis	t achieving this level will:
These descriptors apply to all special interest areas (i-xi)	 Initiate a management plan, including referring to more experienced clinicians when appropriate. Involve other health care professionals in patient management when appropriate. Make appropriate referrals in a timely and efficient manner and in accordance with local protocols and guidelines. Recognise when a patient's clinical presentation needs priority and make appropriate arrangements to expedite their care. Recognise where the patient's vision may not meet the visual standards for driving and provide appropriate counselling. Explain diagnoses to patients in simple language, using visual aids, online patient resources, leaflets, 3D models of eyes and posters available in clinic. Deliver information in an accessible way, including identifying and making arrangements for patients with hearing, speech or sight impairment, or those with English as a second language. Communicate effectively and sensitively when breaking bad news and be prepared to give clear and honest information. Utilise translators appropriately and in accordance with local policy. Understand and apply knowledge of general medicine and surgery relevant to ophthalmic practice. Understand the associations between drugs and ophthalmic disease including biologics. Recognise when a patient is seriously ill and make appropriate arrangements for the patient's care. Prescribe local and systemic medications, side-effects, and possible interactions of the drugs that are prescribed. Be aware of the indications, contra-indications, side-effects, and possible interactions of the drugs that are prescribed. Be aware of the services and support available to patients and signpost appropriately. Initiate appropriate referral to low vision and social services, and to eye clinic liaison officer where available.

	Make accurate, legible, signed and dated records and use Electronic Patient Records (EPR) if available. Contribute to the preparation of patients for surgery, including review of medical therapy prior to surgery (e.g. anticoagulants) to optimise the patient's outcome. Understand the process of informed consent, following the principles set in law and by GMC guidance. Be aware of ongoing research and offer research participation opportunities to patients as appropriate Contribute to the pre-operative assessment for local and general anaesthesia as part of a multidisciplinary team. Recognise patient conditions that render either local or general anaesthetic hazardous. Use appropriate aseptic technique when assisting with or performing surgery. Use the operating microscope competently, ensuring optimum operating position. Use suturing techniques appropriate for different ocular tissues, demonstrating understanding of different sutures and knots. Identify suture types, remove sutures from the eye and adnexa at the appropriate time and manage any retained material or wound problems.
Oculoplastics and Orbit (i)	Manage lash mis-direction. Manage minor lid lesions by incision and curettage or excision.
Cornea and Ocular Surface Disease (ii)	Understand the indications for and be able to perform microbial sampling of the cornea. Perform corneal scrapes, swabs and understand the need for further biopsy/referral for confocal microscopy. Insert and remove a bandage contact lens. Insert a punctal plug.
Cataract and Refractive Surgery (iii)	Explain the use of lid hygiene to patients with lid margin disease. Understand and perform the individual stages of cataract surgery before progressing to complete procedures. Practise in a supervised simulated environment. Complete a minimum of 50 complete cataract procedures. Perform a continuous ongoing audit of cataract surgery cases in which significant complications occur.
Glaucoma (iv)	No additional descriptors for this area.
Uveitis (v) •	Know how and when to request additional investigations in the light of planned medication use and how to act upon the results, e.g. bone scans to guide bone protection management in long-term steroid use.
Medical Retina (vi)	No additional descriptors for this area.

Vitreoretinal Surgery (vii)	 No additional descriptors for this area.
Ocular Motility (viii)	 Discuss management options with patient, in conjunction with orthoptists where appropriate, and have broad understanding of indications, success and risks of each.
Neuro- ophthalmology (ix)	 Request appropriate neuroimaging investigations with suitable urgency.
Paediatrics (x)	 Recognise when a child cannot be adequately examined and escalate as appropriate for Exam Under Anaesthesia (EUA). Be aware of possible safeguarding issues and patterns of history or signs that may suggest non-accidental injury, involving senior clinicians and safeguarding teams as appropriate. Understand the consent process as it pertains to children.
Urgent Eye Care (xi)	 Discharge appropriate patients without follow up, attending to appropriate safety-netting.
Learning Outcome	Justify the differential diagnoses and plan with reference to basic and clinical science.
An ophthalmologist	t achieving this level will:
These descriptors apply to all special interest areas (i-xi)	 Understand and apply knowledge of anatomy, of the eye, adnexa, visual pathways and associated aspects of head, neck, and neuroanatomy. Understand and apply knowledge of the physiology of the eye, adnexa and nervous system. Understand and apply knowledge of related general physiology. Understand and apply knowledge of biochemistry and cell biology, in particular those aspects relevant to common eye diseases. Understand and apply knowledge of pathology, particularly the eye, adnexa and visual system. This includes histopathology, microbiology and immunology and other branches of pathology. This includes macroscopic and microscopic appearances and laboratory techniques, including staining techniques, used. Understand and apply knowledge of growth, development and senescence, and the anatomical, physiological and developmental changes that occur during embryogenesis, childhood and ageing relevant to ophthalmic practice.

	 Understand and apply knowledge of optics and medical physics, regarding ultrasound, laser, electromagnetic wavelengths, and radiological investigations relevant to ophthalmic practice. Understand and apply the fundamental principles of Genomics and apply knowledge of clinical genetics relevant to ophthalmic practice. This will include demonstrating an understanding of the genetic basis of disease (including different single nucleotide variations and copy number variations) and the genetic contribution to common complex disease (eg AMD) Understand and apply knowledge of clinical therapeutics relevant to ophthalmic practice, including methods of action and pharmacokinetics of drugs used. Understand and apply knowledge of statistics relevant to ophthalmic practice, for example in the interpretation and publication of research.
Oculoplastics and Orbit (i)	 No additional descriptors for this area.
Cornea and Ocular Surface Disease (ii)	 No additional descriptors for this area.
Cataract and Refractive Surgery (iii)	 No additional descriptors for this area.
Glaucoma (iv)	 No additional descriptors for this area.
Uveitis (v)	 No additional descriptors for this area.
Medical Retina (vi)	 No additional descriptors for this area.
Vitreoretinal Surgery (vii)	 No additional descriptors for this area.
Ocular Motility (viii)	 No additional descriptors for this area.
Neuro- ophthalmology (ix)	 No additional descriptors for this area.

Paediatric Ophthalmology (x)	 No additional descriptors for this area.
Urgent Eye Care (ix)	 No additional descriptors for this area.
Learning Outcome	Work effectively with patients and the multi-professional team.
An ophthalmologist	achieving this level will:
These descriptors apply to all special interest areas (i-xi)	 Display the professional values and behaviours set out in the GMC's Good Medical Practice. Use professional judgement and expertise to apply the principles of the guidance to the various situations faced in practice. Recognise the limits of own knowledge and competence and work within them. Recognise the level of supervision commensurate with own training. Show respect, courtesy, honesty, compassion and empathy for others, including patients, their carers and colleagues. Recognise and respect diversity and ensure equality for patients, their carers, colleagues and all those involved in patient care. Reflect on personal behaviour and its impact on other people and the working environment. Include reflection in the professional portfolio. Respect patient dignity. Take responsibility for own health and well-being. Take appropriate steps to protect patients when own health is affected by illness or disability. Make appropriate reasonable adjustments for patients. Respect patient confidentiality and be aware of the implications of sharing information and the appropriate circumstances for disclosure of patient information in protecting the individual and society. Work within appropriate health and safety legislation. Understand and apply legislation for safeguarding. Apply the principles of clinical governance and ensure patient safety is paramount in all they do. Apply the professional duty of candour, demonstrating openness and honesty with patients and employers. Deliver an honest apology if necessary and offer a clear explanation. Use reporting tools for clinical incidents including serious incident and never events. Participate fully in the follow-up of any critical incidents in which they have been involved and learn from them. Demonstrate safe and effective handover.

- Communicate effectively with colleagues in the same and other specialties, and check that information has been understood and actioned.
- Understand the impact of human factors in communication, and how to mitigate them.
- Write clear letters with diagnosis, treatment and management to patients and other health professionals.
- Communicate in a timely manner with colleagues and managers in regard to leave and return to work plans, following local
 protocols, including immediate communication about sickness absences.
- Proactively arrange meeting with supervisors, and attend these meetings.
- Be aware of potential and actual conflicts of interest and declare them appropriately.
- Obtain feedback from colleagues, including multi-source feedback and use the information obtained to develop clinical practice.

Community Ophthalmology (xii)

Level 1	
Learning Outcome	Descriptors
An ophthalmologist achieving this level wil	l, in addition:
Understand the role of a Community Ophthalmology Service.	 Understand the purpose of the community ophthalmology services, as distinct from hospital or primary care services, within the local, regional or national eye health care context e.g. optimisation of resource utilisation, care closer to home, patient choice, carbon footprint, place-based services. Be aware of the structure and integration of different eye health care systems including: hospital and community ophthalmology, primary and secondary care, public and private sector, urban and remote/rural locations. Understand how different services contribute towards a comprehensive eye health care system and the role other agencies/services play such as social care, housing and home adaptations, voluntary sector equipment and service provision. Be aware of how the local Community Ophthalmology Service operates in terms of its functions and its composition, e.g. use of multidisciplinary teams, targeted case load, virtual clinics (community-based diagnostics). Understand community services available within region. Have a basic knowledge of community ophthalmology in other eye health care systems and areas and appreciate local differences in service scope and provision.

Communicate and deliver feedback to referrers and patients to support	 Understand the local systems in place for sharing information between the hospital eye service, primary care and community services.
integrated care.	 Apply Level 1 skills of the other special interest areas to patients referred into the Community
	Ophthalmology Service.
	 Provide efficient and timely input into patient care.
	 Understand the principles of shared care agreements.
	 Have knowledge of the different agencies providing support to people with vision loss and impaired
	vision e.g. Low Vision Aid and understand the role of social prescribing, and be aware of the conditions

which they can provide benefit.

Other Curriculum Domains

Health Promotion

Level 1	
Learning Outcome	Descriptors
An ophthalmologist achieving this level wi	II:
Provide appropriate lifestyle advice.	 Always take opportunities to educate patients to enable them to maintain health and reduce risks of ophthalmic and systemic diseases. Understand systemic risk factors associated with ophthalmic diseases. Give advice on risk reduction strategies pursued in general practice e.g. hypertension, cholesterol, weight control, exercise, etc. Assess mental health and wellbeing and provide appropriate support and signposting to psychological support services. Be aware of smoking cessation services in hospital and in community and how to access these programmes. Understand the risks of environmental factors such as chemical containment on ocular health (both community and individual) and how they can be mitigated. Help patients identify potential allergens and be aware of avoidance methods available to the patient.

Adopt local and national guidelines of prevention of infection.	 Be aware of local and national guidelines and protocols regarding infection control. Be aware of the common sources of clusters of infections in theatre. Understand principles of contagion and cross infection particularly in relation to general medicine as well as ophthalmic diseases. Apply principles of prevention of cross infection and contagion in eye clinic and operating theatre settings. Respond appropriately to an outbreak of infection in the department such as endophthalmitis, adenovirus or MRSA.
Advise appropriately about the systemic side-effects of drugs.	 Prescribe medication, especially steroids, appropriately and safely. Have a detailed knowledge of the risk of osteoporosis with steroids and how this can be minimised.
Know the principles of screening.	 Understand the logistics, pros, cons and pitfalls of the ways of delivering a screening service to the local population. Understand the risks, limitations and benefits of screening. Recognise the consequences of not screening for diabetic retinopathy. Comprehend the factors (including accessibility, personal mobility and education) that may put patients off being involved in screening and put in actions to minimise the effect of the same.
Use and promote means of eye injury protection.	 Be aware of what precautions should be advised for workers in chemical/glass manufacture. Recognise own responsibilities regarding safety in the workplace – for fellow staff and for patients – and what precautions should be taken in this regard (environment, condition of equipment etc.), e.g. with reference to laser procedures. Be aware of occupations, leisure activities and criminal activities associated with ophthalmic injuries. Understand what eye protection is available and how to use it. Always apply principles and practice of risk management and patient safety.

Leadership and Team Working

Level 1	
Learning Outcome	Descriptors
An ophthalmologist achieving this level will:	

Know about leadership competencies in the <u>nine behavioural dimensions as</u> <u>defined by the NHS Leadership Academy</u> .	 Demonstrate learning about leadership: for example, NHS Leadership Academy Edward Jenner programme. Understand the organisation of the healthcare system to appreciate the political, environmental and economic context of patient care.
Know what leadership means for you and identify areas for own development.	 Demonstrate an understanding of why leadership is important in own role as a clinician. Actively participate and contribute to the work and success of a team (demonstrate appropriate followership). Complete Trust Mandatory Training in relevant areas: Information Governance, Equality and Diversity. Identify areas for own development (e.g. utilising the NHS Leadership Academy self-assessment tool) and be able to reflect on lessons learnt.

Patient Safety and Quality Improvement

Level 1	
Learning Outcome	Descriptors
An ophthalmologist achieving this level wil	l:
Know the principles, recognise the contribution to improved practice, and take part in clinical governance, audit and quality improvement activities.	 Define clinical governance, quality improvement, audit, and service evaluation. Understand how to respond to situations where clinical governance procedures identify a quality below the expected standard. Engage with Incident Reporting systems at a local level, including procedures for Serious Untoward Incidents (SUIs) and Never Events. Assist with running audits, including presenting the findings and planning change. Recognise when "whistle-blowing" might be necessary, and the appropriate methods of escalating such concerns.
Identify appropriate information from a variety of data sources.	 Conduct literature searches and reviews Engage with stakeholders, including patients, doctors, and managers. Review the resources available for patients with common eye conditions and direct patients to reliable sources of information, on- and off-line. Understand the factors that can influence information, including (but not limited to) funding sources, political alignment, and author intent or interest.

Safeguarding and Holistic Patient Care

Level 1	
Learning Outcome	Descriptors
An ophthalmologist achieving this level wi	ll:
Understand and promote professional responsibility of safeguarding.	 Take responsibility for the safeguarding of children and other vulnerable patients. Ensure familiarity with local safeguarding procedures and contacts. Request chaperones where appropriate.
Demonstrate familiarity with local safeguarding procedures and contacts.	 Always ensure to be up to date with safeguarding training. Know the local referral pathways for patients who are at risk, both during working hours and out of hours.
Demonstrate awareness of possibility of non-accidental injury in vulnerable patients.	 Know the features, which would raise concern of non-accidental injury. Understand the different forms of abuse and how to recognise these in the clinical setting.
Document safeguarding concerns accurately and refers to senior staff.	 Document all findings, including relevant negatives, clearly and legibly in accordance with GMC guidelines. Demonstrate familiarity with the effects of decreased vision, including advice regarding driving standards. Know and be able to interpret the applicable standards for driving, including visual standards and TIA / Stroke guidelines. Advise patients on the visual standards for driving, being aware of the different classes of licence. Show empathy and consideration when advising patients regarding occupational or DVLA visual standards, and be aware of the effect that decreased vision can have on careers and lifestyle. Recognise when a patient might benefit from a low vision aid assessment or other rehabilitation services or support groups for visual impairment. Know when to refer patients to the Eye Clinic Liaison Officers and advise patients of the support that they can provide. Recognise problems with, and arrange appropriate modifications to, the clinical environment. Understand the effect that treatment, e.g. PRP, can have on a patient's vision and the consequences that this can have on their lifestyle, e.g. ability to drive or work.

Education and Training

Level 1			
Learning Outcome	Descriptors		
An ophthalmologist achieving this level wil	An ophthalmologist achieving this level will:		
Ensure patient safety is paramount in all training and learning events.	 Promote a safe learning environment. Understand the safety of patients must come first and the needs of education must be considered in this context. Use simulation or technology-enhanced learning appropriately in protecting patients from harm. Ensure patients' awareness of the need to participate in the education of learners and respect their wishes. 		
Actively participate in own induction and training.	 Identify opportunities for own learning and development. Learn from patients and colleagues. Participate in inter-professional learning. Implement personal development plans to progress professional practice using SMART objectives. Evaluate and reflect on the effectiveness of their educational activities. Solicit, reflect and respond to feedback. Participate in national surveys and other quality control, quality management and quality assurance processes as required by the regulator. 		
Deliver teaching activities under guidance.	 Understand the importance of teaching and be able to make a positive contribution to the undergraduate and postgraduate development of doctors, nurses and non-medical professionals. Understand the value of learning in teams and facilitate inter-professional learning. 		
Deliver patient education.	 Be able to explain to patients about their diagnosis and management of simple or common ophthalmic conditions. 		

Research and Scholarship

Level 1	
Learning Outcome	Descriptors

An ophthalmologist achieving this level will:		
Adopt an evidence-based approach to clinical practice.	 Understand GMC guidance on good practice in research. Understand the difference between audit and research. Understand some of the following areas: research ethics, research design, literature / database searching, evidence appraisal skills, statistical approaches, funding for research. Undertake one audit, which can take the form of leading a local departmental audit or demonstrating involvement in a national audit. 	
Critically appraise existing published research.	 Understand principles of qualitative, quantitative, bio-statistical and epidemiological research methods. Critically appraise one published clinical trial and present to clinical supervisor. 	
Distil research and deliver oral presentations.	 At least one presentation to local postgraduate teaching / Journal Club. At least one presentation at regional annual trainees' research symposium. 	