European Training Requirements for the Specialty of Ophthalmology

European Board of Ophthalmology

UEMS Section of Ophthalmology

European Training Requirements for the Specialty of Ophthalmology

The European Board of Ophthalmology (EBO)

and

The Union of European Medical Specialists (UEMS) Section of Ophthalmology

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European Training Requirements for the Specialty of Ophthalmology

Subspecialty Rotation Working Groups

Coordinators* and Representatives

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7	Glaucoma	***Barbara Cvenkel**	Denise Curtin	Alain Bron, Gordana Sunaric Megevand, Luis Abegao Pinto	Joao Breda Anthony Kawaja	Rémi Yaïci
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European Junior Doctors (EJD) Representatives for the EBO and UEMS: Ana Pueyo and Elske Bak

About this document

The EBO-UEMS European Training Requirements in Ophthalmology is composed of 4 distinct parts:

1. The European Training Requirements in Ophthalmology (Main Document)
2. The European Training Requirements Curriculum of Training for 11 Subspecialty Sections
3. The Entrustable Professional Activities
4. EBO and UEMS Section of Ophthalmology Surgery Logbook

These parts are provided in one PDF so they are easy to find and access (Click the titles above to jump to each part).

However, one can also print them out. Page numbering has been formatted on a per-part and section basis, making it easier to navigate.

Click the  link at the start of each section to return to this page.

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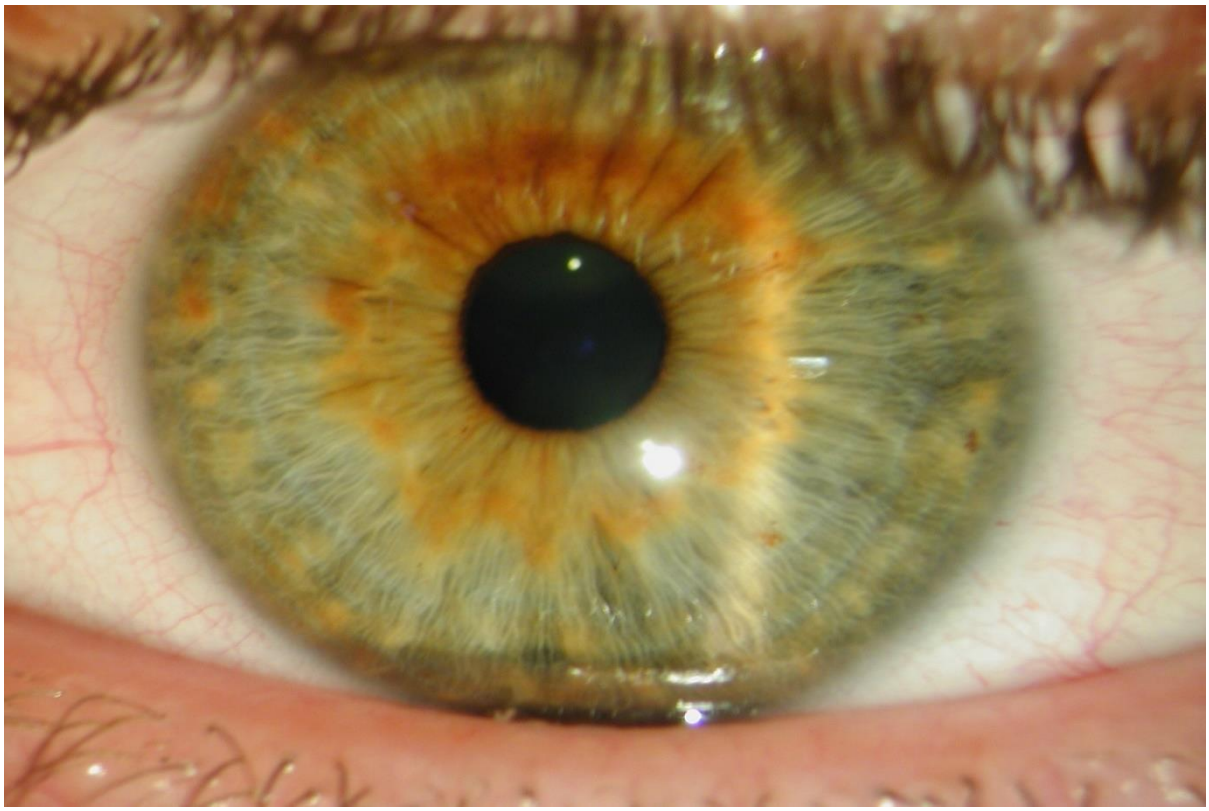

Photo courtesy of Prof Tristan Bourcier

1. Introduction

The "Union Européenne des Médecins Spécialistes or European Union of Medical Specialists" (UEMS)[i] is a non-governmental organisation representing national associations of medical specialists at the European level. With its current membership of 40 national associations and operating through 43 Specialist Sections and their European Boards, 17 Multidisciplinary Joint Committees, and 4 Thematic Federations the UEMS is committed to promoting the free movement of medical specialists across Europe while ensuring the professional consensus on the framework for the highest possible level of their training which will pave the way to the improvement of quality of care for the benefit of all European citizens and beyond[i].

The UEMS Council and its Specialist Sections, first created in 1962, have regularly provided advice and expert opinion to the European Commission. This helped create the framework that informed the drawing up of the Doctors Directives in 1975, which provided for the mutual recognition of medical diplomas and the free movement of doctors throughout the EU. The revised EU Directive on the Recognition of Professional Qualifications (2013/55/EU) allows member states to decide on a common set of minimum knowledge, skills, and competencies that are needed to pursue a given profession through a Common Training

Framework (CTF) which represents the third mechanism that could be used to ensure mobility within the EU. The UEMS supported CTFs since they encompass the key elements developed in modern educational and training models, i.e. knowledge, skills, and professionalism. In addition, the Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patient's rights in cross-border healthcare introduced a strong incentive for harmonisation of medical training and achieved competencies among EU/EEA Countries through the requirements to assure the good and comparable quality of care to increasingly mobile European citizens [i].

It is the UEMS' conviction that the quality of medical care and expertise is closely linked with the quality of training, achieved competencies, and continuous updates and development by the medical professionals. The UEMS ETRs aim at quality-of-care improvement and patient safety. While professional activity is regulated by national laws in EU Member States, UEMS stands to comply with international treaties and UN declarations on Human Rights and the WMA International Code of Medical Ethics[i].

The UEMS covers Post Graduate Medical Education (PGME), Continuing Medical Education (CME), Continuing Professional Development (CPD), and Quality Assurance (QA).

The UEMS works with Colleagues, NMAs, professional and scientific organisations across Europe and recognises the importance of meaningful collaboration with the other European medical representative bodies, the European Junior Doctors (EJD representing doctors in training, the European Union of General Practitioners (UEMO – Union Européenne des Médecins Omnipraticiens), the Standing Committee of European Doctors (CPME - Comité Permanent des Médecins Européens), the Federation of European Salaried Doctors (FEMS) and the European Association of Senior Hospital Doctors (AEMH - Association Européenne des Médecins des Hôpitaux) and the continuing development of closer links with the many European Specialist Societies[i].

While respecting the role of the National Medical Competent Authorities (NMCAs) in setting high standards of training and care and checking through robust quality control mechanisms the qualifications of medical specialists in their countries, the UEMS encourages the NMCAs to adopt a set of fundamental training requirements and believes that this is the most efficient way of implementation of good standards in PGME.

In 1994, the UEMS adopted its Charter on Postgraduate Training (PGME) aiming to provide recommendations at the European level for high-quality training. This Charter anchors the European approach to harmonise PGME with ongoing dissemination of its periodically updated Chapter 6s specific to each specialty[i].

After the recently updated EU Directive on the recognition of Professional Qualifications, introduced in 2011, the UEMS Specialist Sections and other UEMS Bodies have continued working on developing the documents on European Training Requirement(s) (ETRs) and in 2012 the UEMS Council adopted the document Template Structure for ETR.

Competency-based education is not oriented towards the period of clinical rotations but towards the trainee, and the trainee's progress in the acquisition of competencies. The UEMS considers that the appropriate use of different methods of assessment of knowledge

and acquired skills, emphasising the workplace-based assessment, is an essential component of quality PGME with impact on clinical care [i].

The present document derives from Chapter 6 of the UEMS Training Charter, describes the ophthalmology specialist's roles and competencies, and proposes how to document and assess them. Accordingly, the present document is named “European Training Requirements for the Specialty of Ophthalmology”.

The concept of training in general Ophthalmology conducive to certification, followed by

subspecialist training at a fellowship level in a specific field of preference establishes a European standard of ophthalmology competence.

The European Board of Ophthalmology (EBO) was created in 1992 following a motion of the UEMS. EBO is a permanent working group, an educational body of the UEMS Ophthalmology Section[ii]. EBO has gained great respect on a global scale, for its efforts in the harmonization of ophthalmology education and training in Europe, while respecting the autonomy and sovereignty of its member states and minimizing heterogeneity. This is particularly important in times of facilitating mobility and population migration that includes physicians [iii, iv].

Initiated in 1995, the comprehensive European Board of Ophthalmology Diploma (EBOD)[v] examination aims to ensure a high-quality standardization of competence in general ophthalmology[vi] . Only recognized specialists in ophthalmology were eligible to sit the EBOD examination until 2004 when it was opened to residents-in-training who are in their last year of training. More recently, trainees in a training program longer than 4 years were accepted when they had completed four years of training. Only candidates from EU countries and UEMS-affiliated[vii] countries are allowed to sit the comprehensive EBOD Examination. The EBO provides online information and guidance for the candidates, including the examination syllabus, which focuses on main areas of ophthalmic knowledge, such as Eyelids, Lacrimal System, Orbit; Ophthalmic Pathology and Oncology; Intraocular Inflammation, Uveitis, Vitreoretinal Diseases; External Diseases, Cornea, Cataract, Refractive Surgery; Paediatric Ophthalmology and Strabismus; Neuro-Ophthalmology; and Glaucoma. Recommended reading is also provided[viii].

The FEBO title is the hallmark of formal validation of an acquired level of knowledge in general ophthalmology. The assessment standards applied in the comprehensive EBOD Examination link with the procedures developed by the Council for European Specialist Medical Assessments (UEMS-CESMA), which was installed in 2007 by the Glasgow Declaration. EBO has been actively participating in the UEMS-CESMA initiative since November 2009.

The comprehensive EBOD Examination organized by the EBO education committee is one of several initiatives advanced by the EBO to harmonize education and training in ophthalmology in Europe. The EBO Residency Exchange Committee (REC) provides mobility grants to residents and teachers. The EBO residency review committee (RRC) provides accreditation to centres that fulfil the eligibility criteria of high standards of

education, training, and research. The CME/CPD committee works in close collaboration with EACCME (European Accreditation Council of CME) in evaluating and accrediting international meetings with European CME Credits (ECMECs).

This document aims to provide the foundational European Training Requirements (ETRs) in Ophthalmology and should be regularly updated by the European Board of Ophthalmology (EBO) with the UEMS Section of Ophthalmology and the European Boards to reflect the best scientific and medical progress in the discipline of ophthalmology as well as in the best practices in ophthalmic education[i].

a. Methodology

The present document is to be considered a "living document", ready to welcome constructive suggestions and updates and thus be revised and modified to suit national healthcare needs, and progress with growing knowledge, techniques, and technology, while consistently respecting the sovereignty of the EU member states.

The process of development included designing and implementing a self-administered online survey on ETRs in Ophthalmology. This survey was distributed to the national representatives of the EBO and UEMS Ophthalmology section, leaders of the European subspecialty societies, partners of the EBO, European University Professors of Ophthalmology, Young Ophthalmologists participating in the European Leadership Development Program organized by the European Society of Ophthalmology and Young Ophthalmologists, and former EBOD examiners. A first draft of this document was then produced by the Core Working Group with EBO and UEMS section of ophthalmology representation. The draft was further reviewed by the Executive Committee of the EBO and the UEMS section of the Ophthalmology Executive Committee. The survey showed a significant expression by the participants to be actively involved in the process of building the "ETRs in Ophthalmology". This led the Core Working Group to design and conduct a trifold series of online meetings. The first targeted all who answered affirmatively in the survey to be contacted, and an overview of competency-based education was provided as well as the project development plan designed by the core working group. The following two online meetings were held with the eleven subspecialty rotation working group coordinators. The latter comprised at least one element of each of the organizations mentioned above. They were invited to review the overall document, validate their subspecialty rotation curriculum of training outcomes, and draft 1-2 entrustable professional activities (EPAs) themed in accordance with them. To support these eleven focus groups, a microlearning package composed of a short video clip, a working book, and an EPA template was purposely created and shared. Two more meetings, an onsite and a hybrid one, were carried out to share progress within each working group. These two meetings were respectively held as pre-events of the UEMS section of the Ophthalmology Bureau meeting in Copenhagen and of the EBO General Assembly with the UEMS Section of the Ophthalmology Plenary Section. In addition to the team review rounds, thirteen expert individuals from the above-mentioned organizations reviewed the master document, and version 2 emerged from all review rounds. Twenty one EPAs were designed. The European Junior Doctors (EJD) Representatives for the EBO contributed with a general concluding

review, edits, and formatting. The EBO Advisory Committee contributed to developing the residency in ophthalmology logbook for surgical procedures.

b. The Discipline

Ophthalmology is a specialty focusing on the prevention, diagnosis, and management of disorders of the visual system, and can include surgical expertise of the eye, its adnexa, the orbit, and the visual system [ix].

The ETRs in the Specialty of Ophthalmology reflect the holistic qualification of the European specialist in ophthalmology.

c. The Specialist in Ophthalmology

Ophthalmologists are physicians who specialize in the comprehensive medical and surgical care of the eyes and vision and hence develop their professional identity. As medical doctors (MDs) they must undertake additional specialized training in the diagnosis and management of the disorders of the eye and visual system. They can prevent, diagnose, treat, and monitor diseases of the visual system, perform eye surgery if their residency program complies with the requirements for the training centres regarding surgery, and laser treatments, prescribe, and fit eyeglasses and contact lenses to correct vision problems.

Ophthalmologists may be involved in scientific research, on visual eye diseases and vision disorders, and can recognize systemic health problems with impact on the visual system and work collaboratively with other medical and surgical specialties.

Ophthalmologists may engage in a broad-based generalist practice, particularly in a community-based setting. Evolution of care has led to increasing specialization within the discipline and many ophthalmologists pursue advanced training to focus their practice in specific areas such as cornea and external disease, glaucoma, neuro-ophthalmology, ophthalmic pathology/oncology, ophthalmic plastic surgery, refractive surgery, paediatric ophthalmology, retina, uveitis, low vision, and emergency. This added training and knowledge prepares an ophthalmologist to take care of more complex or specific conditions in particular areas of the visual system or in certain groups of patients[ix,x, xi,xii].

d. The Scope of Practice

Ophthalmologists provide care for patients of all ages with emergent, acute, and chronic disorders of the visual system that have an impact on visual acuity and quality of life. This includes congenital disorders, primary acquired disorders, and the ophthalmic manifestations of systemic diseases such as metabolic disorders, hypertension, rheumatic diseases, neurological diseases, medication toxicities, or cancer.

Ophthalmic diseases and visual impairment are associated with an increased risk of social isolation, falls and injuries, depression, and other psychological problems.

Ophthalmologists engage in preventive care, assessment, diagnosis, and management of diseases of the visual system. They establish a diagnosis by using specialized examination

techniques and equipment to perform patient assessment and interpret examination findings along with other investigations. Treatment may include prescription of optical devices, medical management, surgical and other therapeutic procedures, such as intravitreal injections, laser-based therapies, and other ophthalmic surgeries with cataract surgery as the most prevalent surgical procedure in all medical specialties[xiii].

Furthermore, ophthalmologists provide follow-up, screening of rehabilitation needs of patients, and longitudinal care, as deemed necessary. They provide counseling for patients and the public regarding the potential impacts of vision loss. The impact of ophthalmology on quality of life is fundamental and many blinding diseases are preventable or curable.

Ophthalmologists receive referrals from primary care professionals, other specialists, and other eye care professionals. They may work in multidisciplinary teams to care for patients with systemic disorders affecting the eye and visual system, including endocrinologists, medical geneticists, neurologists, neurosurgeons, plastic surgeons, dermatologists, internalists, allergologists, paediatrics, cardiologists, rheumatologists, amongst others. They usually work in interprofessional teams that may include opticians, orthoptists, technicians, nurses, pharmacists, students, clinical research assistants, psychologists, secretaries, social workers, and in some countries, optometrists.

Ophthalmologists work in clinics, inpatient, and operating suite settings, and in practice settings ranging from community office-based practice to large tertiary academic centres. The practice of an individual ophthalmologist may include any combination of these settings. Ophthalmologists may utilize telemedicine to provide direct patient assessment and tele-expertise to support and advise other healthcare professionals [ix].

Photo courtesy of Prof Tristan Bourcier

2. Section I: Training Requirements for Trainees

a. Content of Training and Learning Outcome

Eligibility Criteria for Being a Resident of Ophthalmology

Candidates pursuing PGME should demonstrate core pre-professional competencies such as a) capacity for improvement, b) cultural competence, c) ethical responsibility to self and others, d) oral communication, e) reliability and dependability, f) resilience and adaptability, g) service orientation, h) social skills, i) teamwork, j) science competencies as human behaviour and living systems, l) thinking and reasoning competencies as critical thinking, m) quantitative reasoning, o) scientific inquiry, and p) written communication[xiv]. Professional behaviour, accountability, communication, and patient management were shown to be relevant for entrustment decisions in first-year residents [xv]

To qualify for specialty training in ophthalmology aspiring residents must meet the following eligibility requirements:

- Possession of a medical degree recognized by the European Union.

- Documented completion of at least one year of practical training, covering general surgery and general medicine as a medical student, a resident, a house officer, or as required by the country, leading to the full qualification as a physician.
- Specialized training in ophthalmology should occur at accredited ophthalmology training centres within the EU, supervised by an educator/tutor, with a recommended duration of a minimum of 4 years. Training can occur in various institutions or sites in a complementary system, provided they are nationally recognized training centres confirmed by the National Board of Ophthalmology and/or the EBO.
- Commitment to ethical and professional practice, engagement in delivering high-quality patient care, and experience in various aspects of the specialty, including care for disadvantaged, disabled, and syndromic patients, and those with rare diseases.
- Physical and mental fitness for practicing medicine and surgery are prerequisites, and a probationary period is recommended. Some countries may opt for an examination for program entry and or a semi-structured interview conducted by the Residency Program Director (RPD) and or the Residency Program Faculty to check on competence in teamwork, assessing emergency patients, conducting investigations, and establishing treatment.
- Proficiency in communication with patients and families in the country's language, as well as the ability to record and present patient medical information and clinical findings.
- Capability to obtain informed consent from patients by explaining operative procedures, benefits, risks in detail, and follow-up.
- Adherence to the rules and regulations of the training program. Some centres may require a signed training agreement between the Resident and the RPD, outlining the duties and obligations of both parties.

Competencies Required of the Trainee

Residents of ophthalmology are MDs who have completed their general professional training as medical practitioners and are training in an accredited training program to become recognized specialists in ophthalmology.

To build up sufficient experience, residents should be involved in the management of an appropriate number of in-patients, daycare patients, and out-patients. Residents should perform enough practical procedures of sufficient diversity to enhance their skills. EBO and the UEMS ophthalmology section recommend a minimum number of cases to gain experience in surgical and other ophthalmic procedures (see Section III Requirements for Training Institutions).

Residents should have sufficient linguistic ability to communicate with patients and with their faculty, be able to study international specialized literature; keep an updated personal portfolio according to the national rules, and EU directives; and comply with UEMS/EBO recommendations.

The ETRs for the Specialty of Ophthalmology are designed to guide a curriculum for residency training in ophthalmology and comprise an outline of the highest level of learning outcomes performance distributed by the ophthalmology subspecialties' rotations. From observation through decreasing levels of supervised training, residents will progress till an unsupervised practice entrustment.

Specialized training in ophthalmology should have a structured design that facilitates building knowledge and understanding, developing clinical skills, and forming a professional identity to a level appropriate for an independent ophthalmologist [xvi, xvii].

One of the main actions of UEMS is to advocate for Competency-Based Medical Education (CBME) and assessment.

The foundation of CBME rests on five essential components: 1) an outcomes competency framework, 2) a progressive sequence of competencies, 3) multifaceted learning experiences tailored to learners' needs, and 4) competency-focused teaching and programmatic assessment.

CBME relies on a robust plan of role modelling, coaching, and mentoring to provide constructive formative assessment and arrive at summative assessment moments based on well-defined professional tasks that characterize the profession of a general practicing ophthalmologist. Competence by design facilitates the customization of learning experiences and nurtures collaboration between trainees and educators as they jointly steer the learning process[xviii].

A competency aggregates three dimensions: a) the theoretical knowledge that concerns the main domains of the specialty of ophthalmology, b) the specialty-specific key skills including the estimated required optimal number of non-surgical and surgical procedures over a while as a guidance, and c) professional values, beliefs, behaviours, and attitudes that form the professional identity of an ophthalmologist[i].

Competencies derive from an analysis of societal and patient needs and have been playing an increasing role in residency programs. They underpin the description of the professional tasks to be entrusted to residents at different stages and levels of their training.

The Royal College of Physicians and Surgeons of Canada has developed the CanMEDS, which is a widely accepted framework of competencies categorized within seven roles[xix]. The Accreditation Council for Graduate Medical Education (ACGME) framework of competencies is equivalent, illuminates residency-training programs[xx], and supports the description of professional activities to be entrusted to the resident [xxi]. The "General Medical Council for Graduate Medical Education Tomorrows' Doctors. Outcomes for Graduates" is another example[xxii]. These frameworks describe the core competencies, roles, and milestones of clinical performance, can be adapted to local and regional education culture, and should seamlessly integrate CBME vertically across the continuum of education from undergraduate curricula to professional retirement[xxiii]. For a harmonization purpose, the UEMS recommends the CanMEDS competency framework and has an agreement to use an abbreviated version of the competencies within those roles[i].

b. Organization of Training

A curriculum is more than just a table of contents, and consists of a dynamic and nonlinear, stepwise planned learning journey, involving contextual learning needs assessment, establishment of goals and objectives, selection of appropriate educational strategies, implementation of those strategies, and performance improvement assessment and program evaluation.

Residency programs with a mandatory surgical curriculum should encompass pre-, peri, and post-operative knowledge and skills including professionalism, teamwork, leadership, and communication skills. Curricula should embed a structured simulation-based program to provide opportunities for the residents to practice in a supportive and trustful learning environment with tailored and constructive feedback and a personalized, deliberate practice plan to safeguard patient safety and maintain quality improvement. Training by simulation may be applied to surgical and non-surgical procedural skills in ophthalmology, as well as to develop communication and collaboration skills, professionalism, and eye health advocacy. Ideally, a residency program should have, if not its own, an established protocol with a simulation-based training centre offering a structured learning program, which is ideally accredited. Ophthalmic surgical skills training should include one to two years of basic education, depending on the country's program. This may be the 6th year of a medical degree together with one year of general training or 5 years of a medical degree with two years of general training. General training covers routine healthcare tasks, management of emergencies, and basics of peri-operative and post-traumatic care. It is recommended that surgical training should be performed in a simulation-based education learning environment, ideally with three complementary components: virtual reality simulation-based training, dry labs, and wet labs.

Schedule of Training

The curriculum should span the entire spectrum of ophthalmology, emphasizing knowledge, experience, clinical skills, and professional behaviour (attitude).

A fixed timescale and/ or number of procedures can be debated, and the focus is on quality over quantity. Training should embrace deliberate practice and constructive feedback. As a guide, the minimum duration for the residency program should be 4 years, and a structured schedule should be organized for mandatory and optional subspecialty rotations. Rotation periods covering all main areas of the specialty of ophthalmology should be established. Residency programs should offer sequential training with progressive complexity increase in knowledge, skills, and professional behaviour. Residents should have sufficient exposure to ocular pathology including outpatient management.

Curriculum of Training

Medical Expert

This competency refers to applying theoretical knowledge and skills in clinical biomedical sciences relevant to ophthalmology and professionalism.

The specialty of ophthalmology involves mastering theoretical knowledge in various domains such as prevention, diagnostics, treatments (pharmacological, non-surgical, and surgical), and screening rehabilitation needs of different pathologies. This includes congenital, acquired, and neoplastic disorders, as well as rare diseases. Residents must be knowledgeable in basic sciences and be proficient in evidence-based medicine. Level 4 or "meet the expectations" of the Dreyfus and Dreyfus scale of competence[xxiv] should be required from a competent specialist in ophthalmology to demonstrate fundamental knowledge and its application in clinical practice. Level 5 means "exceeds expectations" or demonstrating proficiency in the discipline and may be attained after successful completion of the residency general training. Sub-specialization through a fellowship process can be pursued in a recognized centre of excellence in a particular area of practice. The content and structure of such a program are beyond the scope of this document.

General Examination in Ophthalmology including Refraction

The resident should demonstrate their ability to:

- Conduct a constructive and empathetic clinical interview
- Take a clinical history
- Perform ophthalmic examination under diffuse light.
- Examine blink amplitude and frequency, pupillary reflex test, motility amplitude, and cover-uncover tests.
- Understand and perform clinical refraction and prescribe spectacles or contact lenses, if needed.
- Perform ophthalmic examination at the slit lamp.
- Observe and describe lids, lid-margins, conjunctiva: bulbar, *cul de sac*, upper tarsus, limbus, and cornea; select and apply vital stains when appropriate and interpret the results; observe anterior chamber transparency, iris surface and regularity, and lens transparency. Examine the posterior segment using a 78dpt or 90dpt lens to observe the optic disc, vascular arcades, macula, and medium periphery. Examine the extreme periphery under dilating drops if needed, using a direct three mirror contact lens.
- Recognize urgent and emergent conditions requiring immediate action.
- Be empathic, listening, interrogating, and collecting important information to reach a diagnosis.
- Establish differential diagnosis.
- Explain the diagnosis, establish a treatment plan, and gain patient compliance.

- Select, perform, and interpret ancillary tests as deemed appropriate.
- Establish a clinical follow-up plan.
- Share the follow-up plan with the patient.
- Re-assess and re-gauge the management plan if needed, while following up.

Enlightened by the CanMEDS[xix] framework of competencies, the EBOD [v] focused subspecialties, and the International Council of Ophthalmology (ICO) Residency Curriculum[xxv], this section aims to describe the highest level of performance outcomes for unsupervised practice entrustment in each rotation. The outcomes described were identified as those the resident must[xxvi] demonstrate to have achieved and require knowledge about basic sciences applied to ophthalmology, such as statistics, anatomy, physiology, pathology, microbiology, epidemiology, genetics, of the eye and the visual system (click here for the link to the Curriculum). Subspecialty rotations, such as ophthalmic oncology and pathology, community eye health, and low vision and screening rehabilitation needs of patients expand the EBOD curriculum, were not yet worked upon, and are referred elsewhere [xxv].

Additionally, residents should develop other competencies beyond medical expertise, as described below[xix].

Communicator

Ophthalmologists build relationships with patients, their families, and caregivers that facilitate collecting and sharing essential information for effective health care.

Collaborator

Ophthalmologists work constructively with other healthcare professionals to provide safe, high-quality, patient-centred care.

Leader

Ophthalmologists engage with others to contribute to a vision of a high-quality healthcare system and take responsibility for delivering excellent patient care through their activities as clinicians, investigators, administrators, scholars, and educators.

Health Advocate

Ophthalmologists contribute their expertise and influence as they work with communities or patient populations to improve eye health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources for meaningful change.

Scholar

Ophthalmologists demonstrate a lifelong commitment to excellence in practice through continuous learning, by imparting experience and knowledge to others, appraising evidence, and contributing to scholarship.

Professional

Ophthalmologists are committed to the health and well-being of individual patients and society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.

Entrustable Professional Activities by Subspecialty Rotation

Entrustable Professional Activities (EPAs) translate CBME into workplace practice. As units of professional practice that can be entrusted to a sufficiently competent resident, EPAs require simultaneous proficiency in several competencies and define professional identity. EPAs can be time-framed, should be observable, and suitable for focused entrustment decisions for unsupervised practice. Each level of supervision reflects different permissions to perform. Level 4 is the privilege to work unsupervised and should be documented and awarded with a Statement of Awarded Responsibility [STAR]. EPAs are the mainstay for workplace-based assessment (WPBA) and by defining performance expectations, they articulate residents, public stakeholders, and curricula training outcomes[xxi].

An EPA comprises a mini curriculum that includes a) a title, b) a description, c) the links to a competency framework, d) the required knowledge, skills, and professional attitude, e) the adequate information sources to assess progress and f) the conditions to attain the level 4 of supervision.

EPAs and the competencies needed to achieve them can be mapped, and 20 – 30 is a manageable number in a residency program.

Each resident's practice progresses throughout five levels of practice entrustment:

Level 1: the resident assists, observes, and progresses from being a novice to a competent assistant, showing appropriate knowledge of a task, related problem solving, and showing how to do it in a simulation-based learning environment. The resident does not enact the EPA in the clinical setting.

Level 2: the resident is allowed to perform the EPA with direct pro-active supervision present in the room. The resident can do parts or the whole task, but may need close assistance and knows when to call for assistance or advice.

Level 3: the resident is allowed to carry out the EPA, striving to achieve the highest level of performance including solving complications, but may need occasional help or advice. Indirect, reactive supervision without being in the room, should be quickly available if needed,

Level 4: the resident is trusted to independently master the expertise of conducting the EPA (carry out a non-surgical or surgical procedure or manage a disease) unsupervised anticipates complications and knows how to solve them.

Level 5: the resident has developed proficiency and a high level of professionalism in performing the EPA and is allowed to provide supervision to more junior residents. This level is closer to the "fellow degree" and will be elaborated on in a future document.

The UEMS General Surgery Specialty established Grades of Competence in the Specialty of General Surgery to apply as an assessment tool for the certifying authority and Eligibility Committee. These grades define what trainees are expected to demonstrate at each level of training. They are described as a sequence of increasing complexity levels closer to the rubric format for each competency component defined as Knowledge, Clinical and Technical skills, and Professional & Behavioural skills[xxvii].

Focusing on ophthalmology subspecialty rotations, this section suggests several EPAs that should be successfully attained, and their mapping throughout a four-year residency program duration (click here for a link to the EPAs).

Assessment and Evaluation

Assessment strategy including tools, and methods to measure performance improvement is part of the holistic evaluation of the residency program, which includes faculty assessment, patient outcomes, and institutional and community health impact.

Assessment Rationale

Assessment can be defined as a process by which information is obtained about some pre-defined objective or goal. This is a broad term that includes testing.

CBME enables an outcomes-based approach to the design, implementation, and evaluation of educational programs, de-emphasizes time-based training to enter unsupervised practice, requires a workplace environment, and promises greater accountability, flexibility, and learner-centeredness[xxviii]. Outcome-based curricula stem from CBME, which emphasizes ongoing longitudinal assessment that enables faculty to determine the developmental progress of the resident. Sequencing of competencies for continuing performance improvement with constructive guidance and oversight from the ophthalmologist educators (OE) with formative and summative assessment is fundamental.

Formative assessment in residency means ongoing OE supervision and monitoring of residents' learning, especially during patient care experiences. This helps the resident identify strengths and weaknesses, enables the RPD and faculty to timely address concerns, and works with the resident on a tailored constructive feedback plan. The resident should have a designated coach or a mentor, with whom will meet regularly and receive feedback on individual performance: praise successes, identify areas of improvement, and define a mutual agreement plan for professional growth. The head of each subspecialty rotation department should be held responsible or designated someone in the department to act as a coach. The residency program should be led by the RPD with whom the resident should meet at least annually to receive and give feedback. Formative assessment means assessment for learning and faculty should be competent in providing effective feedback.

Assessment results in summative entrustment decisions. Summative assessment leading to the resident being awarded to act under a specified level of supervision, should be

regularly conducted (at the end of each rotation, annually, and or by the completion of the residency), and ensure that the resident has demonstrated to have attained the outcomes and is ready to move forward. The summative assessment also holds a formative component of guiding improvement and enhancing future activities. Triangulation of multimethod and multiple information sources enables the construction of an overall decision[xxix] Meeting all requirements, or mastery, leads to certification, regardless of the time needed.

The concept of **evaluation** encapsulates "value" and encompasses the process designed to provide information that will help program directors and the whole community involved in the residency program make a judgment about it. Beyond each resident's performance assessment, evaluation involves assessing the entire program and its outcomes. This will deserve further detail in the governance section of this document.

Assessment Methods

The UEMS engaged in assessing medical specialists' competence at a European level through the evaluation of their knowledge, skills, and professionalism. Thanks to the competence-based European Curricula developed for each Specialist Section, the UEMS advocates for harmonized assessment of medical training [i] . Most European countries have National Boards that assess and certify specialists in ophthalmology. The European Board of Ophthalmology (EBO)[xxx] and the UEMS Section of Ophthalmology hold the EBOD, an international high standards examination. The aim of this examination is not to replace the National Boards assessment, but to provide a European standard of certification for ophthalmology specialists and may be taken by trainees from Europe in their last year of training or shortly after completion of training. All applicants must have graduated from a Medical Faculty of a University within the EU and must have satisfactorily completed an entire formal graduated residency training program in ophthalmology of at least 4 years duration. Graduates must be recognized in ophthalmology within one country of the EU and should have passed their national qualification or the national qualification in the country of their training. The EBO Diploma (EBOD) examination is in English and originally comprised two separate parts, a written and an oral examination with recent fully online iterations propelled by the pandemic COVID 19. Successful completion of the EBOD examination is not the sole determinant of clinical competence and must be associated with a national residency program rigorous appraisal system before a resident is certified as a specialist. EBOD represents the concluding step in a residency program where all other steps have been successfully fulfilled. Fellows of the EBO (FEBO) should be skilled clinicians who can make a therapeutic decision based on relevant clinical findings, and the investigation performed supported by experience, and best evidence.

Time-in-training to attain unsupervised practice, that corresponds to Dreyfus scale [xxiv] level 4, can be adapted upon monitoring each resident development progress, and levels of needed supervision may vary by EPA and by individuals.

Residency programs have diverse durations in Europe that may span from 3 to 6 years. Accepting that a certain quantity of experience is important, and in a CBME program, time should be considered as a resource that should be used wisely and effectively.

Electronic portfolios (e-portfolios) and logbooks, work through mobile technology available on smartphones and meet the need for frequent documentation and support workplace-based assessment (WBA). WBA should be centred on EPAs to guide feedback and sustain entrustment decision-making while merging learning and assessment with patient care with limited disruption[xxxi, xxxii]. E-portfolios should include EPAs as building blocks and contain entries such as a record of surgeries performed, details of training rotations with dates, duration, and responsible trainers, a record of emergencies, successes in relevant examinations, evidence of completed audits, the list of articles published and clinical presentations at local, national and international meetings, courses attended with the CME/CPD accredited points, copies of assessment forms for each training period completed and signed by trainers for that period, evidence of teaching of medical students and junior trainees which is encouraged as a means of learning for the resident. The e-portfolio should be reviewed by the resident and her/his coach for formative assessment and to develop a personal development plan. This enables the residents to demonstrate their involvement in the care of an appropriate number and range of patients and pathologies. The document may as well be reviewed in a summative manner, separately, by the RPD with faculty with whom the resident has worked.

The EBO and the UEMS Section of Ophthalmology are working to create a common European ePortfolio template counting with the affiliated countries' National Boards already experienced with the implementation of this tool.

Assessment Tools

Assessment tools should match the purpose of assessment and the following examples of tools can inform about the specific competency learning domains.

Knowledge

Knowledge improvement can be assessed with multiple choice questions and short answer questions based on accredited curated bibliography and clinical practice training. Procedural knowledge and knowledge application can be assessed with short answer questions, simulated clinical cases, and problem-solving.

Skills

CBME and WBA may be based on direct or video procedural skills observation (DOPS and VOPS), and a variety of information sources for fair assessment should be included in residency training programs. Performance assessment requires DOPS and VOPS at the workplace. The use of rubrics such as the MiniCex (mini clinical examination), OSCE (Objective Structured Clinical Examinations), GRS (Global Rating Scales), OSATS (Objective Structured Assessment of Technical Skills), OSCARs (Ophthalmology Surgical Competency Assessment Rubrics), the use of simulation cases and portfolio reflective writing can be utilized at the workplace to measure performance.

Professionalism

Professionalism may be assessed using a 360-degree multi-source feedback tool. Such assessment is advisable to occur at the end of each year of training and may occur more frequently in some countries. The RPD with the coach/mentor/tutor, by him/her designated is central to the reflective conversation undertaken after each assessment and provides guidance and support in response to comments provided. Other tools to assess

professional behaviour can be analysis of patients' surveys, VOPs and DOPs, simulation-based education, and standardized patients [xx,xxxiii, xxxiv].

To be eligible to apply for a post in a country other than the country in which one has trained or to be recognized as a 'European specialist in Ophthalmology', the above assessment approaches need to be completed satisfactorily.

Following a specified training period, residents usually become eligible to take nationally implemented board exams to assess the acquired theoretical knowledge. This can be at a supranational level through a written and oral examination, such as the EBOD, and acts as a further means of EU-wide standardization in specialty training. This examination samples the core clinical conditions and tests knowledge in the areas of relevant science and clinical practice (diagnosis, investigation, and treatment). The summative assessment should be possible to be retaken should the resident fail it initially.

Governance

The Residency Program Director (RPD) and the institution(s) in which the training program occurs are the responsible entities for the training program governance. A trainer should be responsible to the RPD for delivering the required training in their field (subspecialty) of practice. Governance of training competencies and contents for the time being have been under the direct responsibility of the respective national medical specialty boards. UEMS encourages the implementation at a national level of a culture of continuing quality improvement enacting continuous outcome evaluation including all involved in the residency program. In pursuit of comprehensiveness and systematization and enabling further quality improvement informed also by research, it will be advisable to apply a structured outcomes evaluation assessment framework such as Kirkpatrick's [xxxv] or Moore's[xxxvi].

Photo courtesy of Prof Tristan Bourcier

3. Section II: Requirements for Trainers

This section describes the roles and responsibilities of Ophthalmologist Educators (OE)

a. Process for Recognition as a Trainer

Requested Qualifications and Experience

A culture of ongoing learning and teaching is fundamental for developing, maintaining, and updating the needed competencies for optimal clinical practice [xxxvii]. Residency programs should comply with the teaching institution, national rules, EU directives, and recommendations of the UEMS/EBO. Recognition across the EU as regards competence to be a clinician educator despite coming from different countries and having different routes and extents of training, is covered by Directive 2005/36/ EC (Paragraph C2/20).

The Residency Program Director (RPD) should

a) Be practicing ophthalmology for at least 1 year after qualification as a specialist and ideally have a substantial working contract within the training institution.

b) Demonstrate a proven track record in teaching and training and provide evidence of continuing professional development (CPD) in the field of ophthalmology.

c) Be a member of the National Ophthalmology Society and must have full secretarial and administrative support together with sufficient protected time.

d) Establish a transparent and fair selection and appointment process for candidates to be residents.

e) Know and adapt a national curriculum, learning objectives, and levels of competence of the training program, providing a platform to discuss content, quality, and implementation of the residency program together with faculty and residents.

f) Supervise training within the department and facilitate faculty development.

g) Arrange a balanced residency program with established rotations ensuring that residents will have a comprehensive exposure to the aspects of ophthalmology.

h) Ensure that the residents' documentation and portfolios meet the established standards.

i) Oversee the types of surgical procedures and clinical activities performed in the department and participating units connected with the residency program.

j) Provide opportunities for research, audit, attending accredited courses, and other scientific meetings.

k) Provide an annual and final report on each resident.

l) Provide valid documentation at the satisfactory completion of training.

OEs should be practicing ophthalmologists in all aspects of ophthalmology, who should:

a) Be acquainted with the overall ophthalmology curriculum as it relates to practice within their country and meet the needs of the individual resident,

b) Be in sufficient numbers to ensure that all residents receive sufficient teaching and non-surgical and surgical training and close personal monitoring during residency,

c) Be recognized for training stages by the National Authority, if such a system is in place

d) Create a supportive learning environment in which residents can develop into specialists in ophthalmology,

e) Oversee the daily work of residents in the ward, clinic, operating theatre, emergency room, and during on-call commitments,

f) Ensure an adequate balance between service commitment and training,

g) Ensure that regular assessments and reports are completed and agreed upon by both OEs, residents, and the RPD.

h) Notify the RPD of any problems at an early stage if possible.

i) Identify the learning needs of the resident, provide constructive feedback, and create with the resident a tailored deliberate practice plan.

j) Provide evidence of academic activities, namely clinical and/or basic research, publications in peer-reviewed journals, and participation in ophthalmology scientific meetings.

Core Competencies for Trainers

When required, if not covered by the EU Directive on Professional Qualifications, OEs should develop special qualifications.

Aiming at a professional level of performance, the Academy of Medical Educators (AoME) defined five roles that clinician educators should demonstrate such as

1) teaching and facilitating learning,

2) assessment of learning and for learning (feedback),

3) educational scholarship and evidence-based practice,

4) educational management and leadership, and

5) designing and planning learning.

All clinical and non-clinician educators involved in training healthcare professionals should:

a) Promote quality and safety of care.

b) Demonstrate professional identity and integrity.

c) Commit to scholarship and reflection in medical education.

d) Demonstrate respect for others.

OEs should aim for faculty development rooted in developing meaningful participation in entrustment decisions for residents' unsupervised practice, which includes:

1) skills' observation in authentic settings and includes workplace-based assessment,

2) coaching and feedback skills,

3) self-assessment and reflection skills,

4) peer guidance skills developed through a community of practice[xxxviii]

OEs should guide the development of master adaptive learners as the more well-prepared physicians, those who keep a lifelong learning commitment to the profession and thus

demonstrate social accountability. Master adaptive learners learn in practice throughout four general phases described as follows.

1. Planning, that incorporates the a) identification of a learning gap; b) selection of a learning opportunity; and c) search of resources for learning, with prioritization as a crucial skill.

2. Learning is about internalizing new understandings that address the identified gap in knowledge, skill, or attitude, with critical appraisal of the learning sources gathered.

3. Assessing is trying out what has been learned until sufficient competence is reached with the newly learned skills and knowledge and includes informed self-assessment.

4. Adjusting that is to incorporate what was learned into daily practice and consider its impact.

Critical thinking is actively and skilfully conceptualizing, applying, analysing, synthesizing, and evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

Reflection is a metacognitive process that occurs before, during, and after situations to develop a greater understanding of both the self and the situation so that future encounters with the situation are informed by previous encounters. Both are essential in the process of learning and their combination allows a learner to be intentional about their learning and to understand whether the learning is effective[xxxix].

b. Quality Management for Trainers

While recognizing the fundamental role of OEs in nurturing a quality learning environment and being requested qualifications and experience, their educational work should be recognized and supported to continually develop competence in ophthalmology and education [i].

OEs must be in active clinical practice in a UEMS-affiliated country and engaged in training in the training centre or network. Their appointments would be for five years in the first instance. In some countries, their work would be reviewed within the training centre or network regularly at staff appraisals (or equivalent). Subject to mutual agreement, their position may be renewed for a further five years. Senior educators should be within 3 years of retirement from active practice. OEs should have secretarial and administrative support, be in sufficient numbers in an ideal ratio of OE: resident of 1:1 to 1:2, and provide mentoring, and exposure to different schools of thought. To promote harmonization of ETRs, it is strongly recommended that both OEs and residents demonstrate certification on a European level such as provided by examinations offered by the EBO.

Photo courtesy of Mr. Bernard Stoloff

4. Section III: Requirements for Training Institutions

Training institutions for ophthalmology must be recognized by the National Authority or the National Board of the Member State. The EBO/UEMS has defined recommendations for the recognition as EBO/UEMS certified training institutions.

a. Process for Recognition as a Training Centre

Requirement on Staff and Clinical Activities

Residency programs should be based on institutions able to present a minimal number of patients cared for as inpatients and as outpatients, the range of clinical specialties; the composition and availability of faculty, training program defined, guidelines, and trainee/trainer ratio.

Ophthalmology training can be conducted in either a single institution or a network of institutions collaborating to provide exposure to the complete range of clinical conditions and skills outlined in the curriculum. Training institutions should be based in a university department, a university-affiliated institution, or one with an equivalent educational and/or research program, with a comprehensive range of medical, surgical, and diagnostic services comparable to a university hospital. The volume and diversity of clinical ophthalmological issues encountered in adults and children must be sufficient to provide each resident with sufficient experience across the entire spectrum of ophthalmic

conditions. This will enable residents to develop diagnostic, therapeutic, and manual skills, as well as the ability to make judgments about their appropriate application.

To ensure high-quality patient care and foster expertise in managing rare or complex ophthalmic conditions, residents must be exposed to a substantial and diverse patient population. While regional variations exist, a training centre should ideally handle approximately 5,000 patients annually, encompassing inpatients, outpatients, and day-case patients. Beyond mere quantity, a comprehensive training program should ensure residents gain experience with a broad spectrum of ophthalmic pathologies and clinical scenarios.

Despite the overall tendency to migrate from a model based on quantity to one based on developed competencies[xl], published evidence suggests that after assisting a number [xli] of cataract surgeries, competency can be reached for most of the residents after 80 procedures and proficiency after 300 [xlii, xliii,xliv].

It is acknowledged that in some countries, cataract surgery training may not be a mandatory component of residency programs, and thus, minimum surgery numbers may not be strictly enforced[xlv, xlvi].

Nevertheless, it is recommended that programs including either an optional or mandatory surgical component aim to take evidence into account and follow best practices.

Evidence concerning the usual minimal number of other surgical procedures to attain competency as a surgeon has been published [xliii,xlvii]. To document surgical procedures, when considered within the residency programme, the EBO and the UEMS Section of Ophthalmology propose a logbook (click here for a link to the Logbook) and aim to develop an e-Portfolio for Residency in Ophthalmology.

Each participating institution in a network must be individually recognized at the national level as a provider of a specific section of the curriculum. To be recognized for training, the institution (or group of institutions) should be of sufficient size, with an appropriate number of patients seen, and an appropriate number of procedures undertaken to permit the trainees to receive the necessary experience. Training programs must have a sufficient number of qualified ophthalmologists to provide the required training and supervision. The EBO/UEMS monitors residency programs and, if necessary, advises how to introduce or improve them.

Although it is not a requirement that a training centre also be an academic centre for ophthalmology, a training centre should have academic ties and contribute to research.

Requirement on Equipment, Accommodation

Residency programs require medical-technical equipment, a library, and opportunities for research and development.

The training institution should possess an adequate infrastructure and offer qualitative and quantitative clinical exposure as defined in the scope of the curriculum. There should be available to the residents, enough facilities for both practical and theoretical study. A comprehensive library (digital and/or physical) with a collection of ophthalmological and

general medical texts and journals will be at their disposal to support their learning and research endeavours. Access to a digital lab, dry lab, wet lab, or surgical simulator is highly encouraged.

The institutions with residency programs must provide the infrastructure (including the financial and administrative elements) to allow the residents access to inpatient, outpatient, and theatre settings. They should comply with relevant quality assurance and surveillance mechanisms, designed to maintain the quality of training. Equipment and accommodations, including medical-technical equipment, library, access, and support for research and development. Quality management and continuing improvement within the training centre are also important criteria.

To ensure comprehensive and high-quality training, participating institutions must maintain well-equipped outpatient areas with adequate examination stations for all residents. Access to state-of-the-art diagnostic equipment, including ophthalmic photography, optical coherence tomography (OCT), OCT angiography, perimetry, ultrasonography, keratometry, refraction, binocular vision, and other relevant tools aligned with current practice standards, is essential. Additionally, seamless integration with Pathology, Microbiology, and Radiology services is mandatory to provide comprehensive diagnostic support[xlviii].

The surgical facilities should have access to sufficient space and beds for optimal patient care. Each training institution should have an easily accessible eye examination room with a slit lamp, located either within or near the inpatient area. Dedicated surgical operating rooms (available 24/7) must be equipped with a microscope [xlviii] and a variety of commonly used equipment [xlviii] such as phacoemulsification devices and vitreoretinal systems. Furthermore, laser facilities for the treatment of both the anterior and posterior segments of the eye are essential.

Inpatient facilities must provide adequate space and beds to ensure proper patient care. Each participating institution should have an eye examination room equipped with a slit lamp, conveniently located within or near the inpatient area. Trainees will have access to adequate workspaces equipped with the computing and information technology resources to facilitate their studies and research.

b. Quality Management within Training Institutions

This section mentions the guidelines to maintain the training centre and program accredited, including clinical governance and manpower planning, emphasizing the need to produce regular reports, conduct external auditing, lead transparency of training programs, build structured training coordination, and maintain a framework of approval.

The training institution should have an internal system of medical audit and morbidity meetings and critical incident reporting. A range of hospital surveys, such as infection control and pharmacological and therapeutic committees should be in place. Inspection of training institutions by the National Authority may be undertaken if a national training scheme exists. The EBO/UEMS education committee will assist if asked and will also

assess the training institution before the institution is accepted in the EBO/UEMS developing training exchange program.

The exchange of trainees between recognized EU training institutions is encouraged and could be sponsored for one month by the EBO. The EBO/UEMS is encouraging this to ensure a better harmonization and quality of training. A period of training abroad may be recognized.

Certain training centres /departments may not cover the entire curriculum due to organizational or geographical constraints. Each country is advised to establish a national oversight board of training, responsible for ensuring the competencies spanning all curriculum aspects are attained, residents participate in European educational programs, receive travel bursaries via European associations, and promote European exchanges, especially for advanced residents.

Teaching hospitals with the support of faculties of medicine, professional societies, and colleges along with national authorities should provide the best possible conditions to create and foster a learning environment regarding equipment, practice settings, human resources, and continuing professional development in ophthalmology and medical education for the clinicians' educators. Faculty development opportunities to introduce, support, create, validate, and implement EPAs, to support senior physicians in their function as clinical lecturers, and to influence medical directors and CEOs should be provided.

The RPD is responsible for managing the residency program of the institution(s) where the training is taking place. OEs in several areas of practice or subspecialties will be responsible before the RPD for delivering the required training in their area of practice. Currently, overseeing the competencies and content of residency programs is primarily handled by national medical specialty boards. Nevertheless, the UEMS actively promotes the establishment of national structures that facilitate ongoing evaluation of specialty training programs, with collaboration from all involved parties. The process for recognition of a training centre should comprehend requirements on staff and clinical activities, namely considering a minimal number of patients cared for as inpatients and as outpatients; a wide range of clinical subspecialties; the composition and availability of faculty, the established training program, recommendations as educator/resident ratio; minimal scientific and minimal surgical activities.

While pursuing continuing quality education, teaching programs should incentivize their leaders to seek accreditation; conduct clinical governance, promote manpower planning with regular reporting, submit for external auditing including feedback from trainees, exhibit transparency of their resident program, structure for coordination of training, and develop a framework of approval.

The residency program should regularly undergo comprehensive and systematic evaluation. Beyond the developmental progression plan for each resident, the training centre should maintain a plan for faculty support, assessment, and recognition, and keep an overall institutional quality improvement plan. National authorities and/or the National Board of each member state, together with the faculty and training institutions should

implement a policy of quality assurance and assessment of training. This is done by inspection of training institutions, monitoring, and assessment of training, and may include evaluation of the faculty curriculum vitae, clinical practice, surgical work, and scientific publications appraisal. A cycle of four to five years is suggested as appropriate. The educational work of OEs and the RPD should be supportive of residency faculty and appraised on an annual basis within their Department/Institution. The EBO/UEMS promotes residency review with onsite inspection of the training centres by international teams.

It is warranted that OEs and the RPD have their job description agreed with their employer to have sufficient weekly time to support residents and in the case of RPDs, enough time to work with faculty.

It is recommended that a single OE have no more than two residents (OE-residents ratio: 1:2). The number of residents would determine the amount of time each week that would be allocated for their support.

Training centres should maintain comprehensive records of their residents' progress, including a detailed portfolio/logbook with their surgical experiences (including laser procedures). The RPD bears specific responsibilities in this area.

The National Authority is responsible for setting up at the national level a program for quality assurance of training and of trainers and training institutions by national rules, EU legislation, and UEMS-ophthalmology recommendations.

Ophthalmology training centres are recognized within their respective countries as meeting the necessary criteria for providing high-quality training to future ophthalmologists. These centres undergo regular evaluations encompassing data on the residents' progress, including their acquisition of specialist accreditation, to ensure they maintain the highest standards of education and patient care.

Full accreditation is granted if the program has demonstrated full compliance, and the Department will receive a certificate indicating that the training program fulfils the standards and criteria. The accreditation should be reassessed regularly. Partial accreditation may be granted if the program has demonstrated training limitations and will be awarded a certificate indicating that the Department and training program fulfils the standards and criteria for a limited spectrum of accreditation or a limited period. Accreditation should be reassessed regularly. Missing criteria can be reassessed, and full accreditation granted if they are fulfilled. Accreditation may be withdrawn if the training institution does not substantially comply with the requirements. The administrative staff of the institution concerned should be fully informed and engaged in this process.

EBO places paramount importance on the accreditation of ophthalmology training centres in Europe. EBO may grant accreditation to an ophthalmology department after a rigorous peer-review process. A list of approved institutions is maintained by EBO. The initial step for a centre seeking accreditation is to apply to EBO's Residency Review Committee. Upon approval, the centre undergoes an on-site evaluation by a three-member committee comprising two EBO board members and a local EBO national delegate. The committee reviews the centre's performance in all aspects outlined in the initial application.

The site visit aims to conduct a comprehensive assessment of the training program, the educational and scientific environment, and the overall quality of the institution/network.

The site visit will be performed by the regulatory authority, medical society, or medical chamber according to the national regulations. The site visiting committee may be assisted by representatives from the UEMS-Ophthalmology. The site visit aims to explore the training program and the educational and scientific environment by holding conversations with the residency training program director, the faculty, the residents, and the administration of the institution. The site visitors should prepare a report as part of the final decision regarding the accreditation status of the program. All information obtained during the interviews with residents and faculty should remain confidential. The accreditation status as decided by the relevant National Authority will be reported to the RPD by a formal letter of notification together with the site visit report, additional advice, and recommendations.

Responsibility for the cost of the visit should be undertaken by the institution undergoing the assessment.

The National Authority is the responsible body for the recognition and certification of specialists in ophthalmology in each member state of the UEMS member states. The standards for recognition of national training institutions and education networks are matters for National Authorities, following national rules and EU legislation.

Employee structure and workload methods in training institutions should be geared towards competency training. Clinical governance, that is, accountability and setting standards for service provision, is a shared responsibility of RPD and the National Authority which at the national level should incorporate manpower planning. UEMS has a role to play in clinical governance due to the important participation of CESMA (examination quality control), EACCME (continued professional development and CME points), and NASCE (accredited skills centres).

Manpower planning should be reviewed periodically by the National Authorities of individual states according to their needs. The EBO will conduct regular surveys across the EU to gather comprehensive data on ophthalmologist manpower levels in each region and per capita annually. This information will help to establish the ophthalmology specialty's position relative to other medical and paramedical care providers in this domain. Healthcare planners will need to carefully consider demographic shifts in the population, evolving treatment modalities and their impact on workload, and the potential implications of legislation on working hours and the educational involvement of medical professionals in certain settings.

Comprehensive and readily accessible information about the training program offered by a training centre should include details of the clinical services it provides, the specialist and other staff expertise, and the training program structure. Candidates to the residency program should have access to a designated contact person to discuss the program and their suitability for it.

Given the medico-surgical characteristics of ophthalmology, which can place it within the surgical specialties and/or within the neurosciences' clinical disciplines, a potential two-

accreditation pathway in medical and/or surgical education could be considered. This distinction would strongly encourage the residency programs to training excellence and a) keep their high standards for medio-surgical training, b) aspirational improvement of their residency programs and include surgical education to reach residency program “medico-surgical accreditation”, c) keep high standards in a standalone residency surgical program. Surgical training opportunities provide prestige and international positioning, and reference and guarantee balanced surgical and medical skilful ophthalmologists with fundamental high standards of ophthalmic education to provide the best eye care. Thus, medical accreditation would be given to training centres complying with good practices herein described for the medical component of ophthalmology, medico-surgical accreditation to training centres meeting the EBO recommendations including a minimum surgical number, that would also work for training programs with a standalone surgical program complying with the standards required for surgery.

5. Next Steps

Ophthalmology encompasses a wide range of services, from basic care to advanced procedures that require sophisticated technology. It involves collaboration between different interprofessional and multidisciplinary healthcare professionals to prevent, diagnose, and treat diseases and improve the quality of life for the public and patients. It is fundamental that residents develop their professional identity encompassing a holistic perspective and the notion of social accountability.

A comprehensive ophthalmology residency program should include three important aspects.

1. Climate Change and Sustainable Eyecare: It is important to recognize the immediate need for sustainable practices to reduce our carbon footprint in both personal and professional settings. By promoting and adopting sustainable behaviours, we can minimize our impact on the environment.

2. Systemic Disease: Ophthalmology is an interdisciplinary field, and it is crucial to understand how systemic diseases can manifest through ophthalmic signs and symptoms. Ophthalmic diseases can be linked to systemic conditions, such as autoimmune diseases, which significantly impact the quality of life. Addressing ophthalmic diseases can also lead to improvements in areas like reducing isolation, enhancing environmental interaction, preventing falls, and alleviating depression through interventions like cataract surgery and management of conditions such as dry eye or ocular allergy.

3. Community/Global/International Ophthalmology: There is a significant disparity in eye care provision globally, leading to preventable and avoidable blindness. It is essential to provide sustainable ophthalmic care and make efficient use of resources and equipment that are suitable for any healthcare system. Epidemiology, statistics, evidence-based medicine, project management, sociology, anthropology, and digital technologies including telemedicine, virtual reality, machine learning, and artificial intelligence have been gaining an increasingly important role in effectively widening eyecare delivery.

As earlier mentioned, the present is a living document that given the current diverse European residency programmes in ophthalmology and the desire to acknowledge fundamental requirements to acquire the professional identity of a practicing ophthalmologist recognized in Europe as elsewhere, updates are considered and welcome.

For quality improvement purposes, implementing, piloting, and evaluating at the national level the guidelines here recommended as good practice will be fundamental to adjust and improve[xlix].

Creating focus groups to reflect and arrive at a consensus agreement for other subspecialties beyond the eleven as done will be beneficial to attain authentic programme harmonization.

Developing an ePortfolio to document the resident's personal development plan (medical and/or surgical) closely followed by his/her mentors is an important complement to achieving success with CBME implementation.

Creating EPAs as deemed needed for all subspecialty rotations and validating[l] them is fundamental for quality education.

6. Acknowledgments

Ophthalmology and Otorhinolaryngology are both medico-surgical specialties, and the present document has drawn inspiration from "The European Training Requirements in Otorhinolaryngology"[li] and acknowledges their Authors.

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7. Glossary

ACGME - Accreditation Council for Graduate Medical Education

AoME - Academy of Medical Educators

CBME - Competency-Based Medical Education

CESMA - Council for European Specialist Medical Assessments

CME - Continuing Medical Education

CPD - Continuing Professional Development

DOPS - Direct Observation of Procedural Skills

EACCME - European Accreditation Council of CME

EBOD - European Board of Ophthalmology Diploma

EBO - European Board of Ophthalmology

EBO-REC - European Board of Ophthalmology Residency Exchange Committee

EBO-RRC - European Board of Ophthalmology Residency Review Committee

ECMECs - European CME Credits

EGS - European Glaucoma Society

EPA - Entrustable Professional Activity

EJD - European Junior Doctors

ETR - European Training Requirement

FEBO - Fellow of the European Board of Ophthalmology

GRS - Global Rating Scales

ICO - International Council of Ophthalmology

MD - Medical Doctor

MiniCex - Mini Clinical Evaluation Exercise

NASCE - Network of Accredited Skills Centres in Europe

OE - Ophthalmologist Educator

OSATS - Objective Structured Assessment of Technical Skills

OSCARs - Ophthalmology Surgical Competency Assessment Rubrics

OSCE - Objective Structured Clinical Examination

PGME - Post Graduate Medical Education

QA - Quality Assurance

REC - Residency Exchange Committee

RPD - Residency Program Director

UEMS - Union of European Medical Specialists

VOPS - Video Observation of Procedural Skills

WPBA - Workplace-Based Assessment

YO - Young Ophthalmologists

YOLDPSOE - Young Ophthalmologists Leadership Development Program Section of Ophthalmology

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Note: The document is written in British English.

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European Board of Ophthalmology

UEMS Section of Ophthalmology

Photo courtesy of Prof Tristan Bourcier

EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

COMPILED CURRICULA

The highest performance learning outcomes to be entrusted unsupervised practice were the focus of each of the eleven Subspecialty Rotations Working Groups (SRWG) formed. Each SRWG arrived by consensus on the cognitive and technical learning outcomes to be demonstrated by the resident, by completion of the following subspecialty rotations:

Please note: Page numbers in each curriculum relate to the pages in the curriculum. Those listed in the contents page relate to the document as a whole.

This means you can click on a Training Curriulum above to jump to it on a computer, or print the whole document and organise curricula individually.

European Board of Ophthalmology

UEMS Section of Ophthalmology

EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

OPTICS, REFRACTION AND CONTACTOLOGY

VERSION HISTORY

VER	Date	DESCRIPTION	Authors
1.0	09-2024	Initial Published Version	Subspecialty Rotation Working Group 1 • Saskia Imhof • Renata Ivekovic • Carina Koppen • Aurore Muselier • Manon Grégoire

Optics, Refraction and Contactology

Reviewed by Subspecialty Rotation Working Group 1

Cognitive Skills

Optics and Refraction

1. Physical optics
    a. Describe the waveform and the particle nature of light.
    b. Explain the phenomenon of diffraction.
    c. Explain the concepts of interference and coherence.
    d. Define optical resolution.
    e. Explain polarization.
    f. Explain light scattering.
    g. Define and compare transmission and absorption.
    h. Explain photometry.
    i. Define illumination.
    j. Describe image quality.
    k. Differentiate brightness and radiance.
    l. Define refractive index
2. Physiological optics
    a. Basics of optical images
    b. law of reflection, law of refraction, prism, refractive index
    c. spherical surface optics
    d. convex, concave and cylindrical lenses
    e. lens distortion.
    f. Optical wavelength
        i. electromagnetic irradiation, interference, refraction, hologram, polarisation.
    g. Lighting technique
        i. basics of photometrics (Lumen, Candela, cd/m2, asb, Lux)

ii. light sources (daylight, bulb, neon lighting, laser), spectral composition

h. Reflection (Mirrors)

i. List the laws of reflection.

ii. Explain images and objects as light sources.

iii. Define refractive index.

i. Refraction

i. Explain the law of refraction (Snell law), including:

ii. Passage of light from one medium to another

iii. Absolute index of refraction

iv. Total internal reflection

v. Explain critical angle and total internal reflection.

j. Prisms

i. Define a prism.

ii. Explain the notation of prisms (eg, prism diopters).

iii. Describe the use of prisms in ophthalmology (ie, diagnostic and therapeutic).

iv. Explain Prentice rule.

v. Describe Fresnel and similar prisms.

vi. Explain the concept of thin prisms.

vii. Explain the prismatic effect of lenses.

k. Define spherical decentration and prism power

3. Measurement of spectacle lenses: objective, subjective

a. Spherical Lenses

i. Define a spherical lens.

ii. Describe the cardinal points.

iii. Describe the thin and thick lens formulas.

iv. Define vergence of light, including diopter, convergence, divergence, and vergence formula.

v. Define the terms concave and convex.

vi. Define the term magnification, including linear, angular, relative size, and electronic.

b. Astigmatic Lenses

i. Describe cylindrical lenses, including:

ii. Spherocylinder lenses and surfaces

iii. Cross cylinders (eg, Jackson cross cylinder)

iv. Describe toric lenses.

4. Spectacle optics

a. Emmetropic eye

b. Gullstrand schematic eye

c. Refraction problems (myopia, hypermetropia, astigmatism aphakia, pseudophakia)

d. Accommodation

e. Amplitude of accommodation and fusion, AC/A quotient, accommodation diagram, vergence

f. Visual acuity Presbyopia

i. (Snellen, Landolt's ring)

ii. Visual function (quality of vision, MFF, aberrometry, glare)

g. Visual field

h. Lens centring

i. Lens measurement (glasses)

j. Objective refraction

i. retinoscopy

ii. refractometer (including automatic)

iii. ophthalmometer

k. Subjective refraction

i. dependence of visual acuity on ametropia (spherical and astigmatic)

ii. spherical refraction (optimum spherical lens, fog method, Donders' method, red-green comparison, precision synchronisation)

iii. astigmatic refraction with cross-cylinder

iv. binocular synchronisation (test lens or phoropter)

v. exclusion or consideration of major heterophoria (see section 3.2.2)

vi. measurement of near-vision glasses (, progressive additional lens, astigmatism additional lens)

vii. transposition of refraction results to glasses data

viii. ergo-ophthalmology: type of glasses according to vision requirements (which glasses for which profession, for what type of job?).

l. Cycloplegic refraction

i. Describe medication concentrations according to age (eg, cyclopentolate, atropine).

m. Spectacle optics

i. Advantages and disadvantages of monofocal, bifocal and trifocal lenses

ii. Centration of spectacle lenses

iii. Special lenses including aspherical lenses, high refractive index lenses, filter, tinted and anti-reflective lenses.

5. Low vision optical devices

a. Refraction characteristics in the near-sighted and far-sighted

b. Non-magnifying aids

c. Ranges of magnifying aids

d. Advice to the visually impaired: knowledge of institutions and potential financial support.

6. Contact lenses

a. CL indications and contra-indications

b. Optical component of CL adjustment, on refraction, the tear film

c. Physiological change and adjustment of the eye to CL

d. Knowledge of materials, the advantages and disadvantages.

e. Care of CL

f. Theoretical cosmetic adjustment of CL and in a limited/practical context

g. CL check, assessment of adjustment, screening for complications and treatment thereof

h. Therapeutic CL: in-depth knowledge and correct, independent adjustment.

Contactology

Note: For contactology, authors marked 4 complexity increase levels of knowledge and performance as Level 1: (1); Level 2: (2); Level 3 (3); Level 4 (4)

1. Know and describe contact lens (CL) generalities, such as:
    a. Contact lens materials and their properties (1)
    b. Refraction in contactology (1)
    c. Complementary examinations associated with contactology (corneal topography, aberrometry, confocal microscopy, AS-OCT) (2)
    d. Optics applied to contactology (lens-eye distance, prismatic effect) (1)
2. Explain about CL maintenance, namely:
    a. The physicochemical characteristics of lens care solution (1)
    b. How to use a lens care solution (1)
3. Describe and explain about Soft CL
    a. Generalities (1)
    b. The spherical CL: refraction and lens-eye distance (1)
    c. The spherical CL: adaptation and examination with slit lamp (1)
4. Describe and explain about Soft CL, regarding
    a. Toric CL fitting: Lens trial and calculation (2)
    b. Toric CL fitting: Analysis of a toric lens, slit lamp examination (2)
    c. Multifocal CL fitting: Lens trial "lens spirit" and dominance (2)
    d. Multifocal CL fitting: Choice of a multifocal lens and optimization (2)
5. Describe and explain about Rigid CL
    a. Generalities (3)
    b. Indications (3)

   c. Basics of adaptation (3)
   d. Analysis of a rigid CL (3)

6. Summarize specialty CL fitting in special clinical contexts and the need of special contact lenses:
   a. CL for irregular corneas (keratoconus, PMD, PMD, corneal ectasia, post-keratoplasty, post-refractive surgery): design, concept, indication (4)
   b. Scleral lenses: concept, indications, handling (4)
7. Synthetize the rationale underneath myopia control with CL, specifically,
   a. Orthokeratology: concept, indications, handling (4)
   b. Soft and rigid myopia control lenses: concept, indications (4)
8. Summarize the application and benefits of CL in accordance with specific ocular conditions or clinical situations as follows:
   a. Therapeutic CL and bandage CL : concept, indications, adaptation (3)
   b. Contact Lens and medication intake: tolerance, contraindications (3)
   c. Contact Lens in children: indications (3)
9. Describe the examination of a contact lens wearer, including
   a. Visual acuity examination of a contact lens wearer (2)
   b. Over-refraction (2)
   c. Comfort evaluation (2)
   d. Recognizing lens intolerance (2)
   e. Follow-up of a contact lens wearer (2)
10. Recognize and manage complications related to CL wear, such as
   a. Infectious (bacterial, fungal, parasitic) (1)
   b. Non-infectious (hypoxic, mechanical, inflammatory, allergic, dryness) (1)
11. Enumerate aspects important for patients' education, concerning CL wear, such as:
   a. Handling: insertion and removal (1)
   b. Educating the patient on proper wearing rules (1)
   c. Education on lens care solutions (1)
   d. Instructions (1)

Technical/Surgical Skills

Optics and Refraction

Clinical Knowledge of Ancillary Testing

1. Clinical Refraction
    a. Objective Refraction: Retinoscopy
        i. List the principles and indications for retinoscopy.
    b. Subjective Refraction Techniques
        i. Describe the major types of refractive errors.
        ii. Describe the indications for and use of trial lenses for simple refractive error.
    c. Cycloplegic Refraction
        i. Describe medication concentrations according to age (eg, cyclopentolate, atropine).
2. Instruments and tests
    a. Direct ophthalmoscope
    b. Indirect ophthalmoscope.
    c. Retinoscope
    d. Glare and contrast sensitivity testing.
    e. Automated refractor.
    f. Higher-order aberrations.
    g. Stereoacuity testing.
    h. Corneal topography (eg, placido disc, keratometer, automated corneal topography).
    i. Hess screen.
    j. Synoptophore.
    k. Colour vision tests (eg, Ishihara color plates; Hardy-Rand-Rittler test, Farnsworth-Munsell test).
3. Abberometry
    a. Explain the principles underlying Hartmann-Shack aberrometers.
    b. Describe the concept of Zernicke polynomials

4. Diagnostic equipment
    a. List indications for and the use of intraocular lens (IOL) calculation algorithms.
    b. List indications for the use of corneal pachymetry
    c. List indications for the use of specular microscopy.
    d. List indications for the use of corneal tomography with anterior segment optical coherence tomography (OCT).
    e. List indications for the use of topographic/elevation corneal evaluation (ie, Pentacam, Orbscan II, Galilei).
    f. List indications for the use of accommodometer.
    g. List indications for the use of laser interferometry for macular testing.

Clinical Knowledge of Diagnosis and Pathology

1. Clinical Optics
    a. Define emmetropia.
    b. Define ametropia.
    c. Define myopia.
    d. Define hypermetropia (hyperopia).
    e. Define astigmatism.
    f. Define anisometropia.
    g. Define aniseikonia (including Knapp rule).
    h. Define aphakia.
    i. Explain optical parameters affecting retinal image size.
    j. Pupillary response and its effect on the resolution of the optical system (Stiles-Crawford effect).
    k. Define visual acuity, including:
    l. Distance and near acuity measurement
    m. Minimal acuity (ie, visible, perceptible, separable, legible)
    n. Visual acuity charts
    o. Describe higher-order aberrations of the eye.
    p. Explain how accommodation is affected by age.
    q. Explain how the pinhole effect impacts visual acuity.
    r. Explain accommodative problems.
    s. Describe convergence or accommodative insufficiency or excess.

t. Define accommodative convergence over accommodation (AC/A) ratio.

u. Describe the epidemiology of refractive errors, including:

i. Prevalence

ii. Inheritance

iii. Changes with age

Clinical Knowledge of Treatment

1. Spectacles
    a. Describe the index of the materials
    b. Describe the principles underlying progressive spectacle lens design.
    c. Describe progressive lenses measurements.
    d. Describe spectacles prescribing in children.
2. Lasers
    a. Describe the technology behind the excimer laser and the femtosecond laser.
    b. List different wavelengths used in ophthalmic lasers.
    c. Describe indications for refractive surgery
3. Surgical considerations
    a. Potential problems with aphakic spectacles.
    b. Effect of spectacles and contact lens correction on accommodation and convergence (ie, amplitude, near point, far point).
    c. Explain the principles of contrast sensitivity measurements.
    d. Describe the correction of ametropia, including:
        i. General principles
        ii. Spectacle lenses
        iii. Contact lenses
        iv. Intraocular lenses
        v. Principles of refractive surgery

Contactology

Note: for contactology, authors marked 4 complexity increase levels of knowledge and performance as Level 1: (1); Level 2: (2); Level 3 (3); Level 4 (4)

1. Perform an examination of a contact lens wearer, including
    a. Interview (2)
    b. Visual acuity examination (2)
    c. Over-refraction (2)
2. Fit a Soft CL, considering
    a. Spherical CL: Adaptation and examination at the slit lamp (1)
    b. Bandage CL for corneal diseases (1)
    c. Toric CL: Analysis of a toric CL at the slit lamp examination (2)
    d. Multifocal CL (2)
        i. Refraction “lens spirit”
        ii. Choice of a multifocal lens
        iii. Optimization
3. Fit a Rigid CL
    a. Knowing how to analyze a rigid CL and fluorescein image patterns (3)
4. Educate Patients and contact Lens wearers regarding
    a. Handling: insertion and removal of
        i. Soft CL (1)
        ii. Rigid CL (3)
        iii. Scleral CL (4)

European Board of Ophthalmology

UEMS Section of Ophthalmology

EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

PAEDIATRIC OPHTHALMOLOGY AND STRABISMUS

VERSION HISTORY

VER	Date	DESCRIPTION	Authors
1.0	09-2024	Initial Published Version	Subspecialty Rotation Working Group 2 • Anna Maino • Wagih Aclimandos • Augusto Magalhães • Helgi Davio Bjornsson • Lauriana Solecki

Paediatric Ophthalmology and Strabismus

Reviewed by Subspecialty Rotation Working Group 2

Cognitive Skills

Paediatric Ophthalmology

1. Understand the development of visual function in children.**
2. Describe different methods to measure visual acuity in children and patients who are not able to engage with standard methods. Explain the rationale for choosing one method over the other. **
3. Define common refractive problems and manage them in the paediatric population. Being aware of indications and pitfalls for prescribing glasses in children, including managing patients with reduced accommodation. **
4. Describe different types of amblyopia and manage them appropriately. **
5. Familiarise yourself with national screening/surveillance programs (e.g. amblyopia).
6. Understand common patterns of inheritance and genetic testing results, and refer to genetic clinics when appropriate. **
7. Describe physiopathology of lacrimal pathway development and manage appropriately cases of congenital naso-lacrimal duct obstruction.**
8. Understand the causes, evaluate, and manage common paediatric anterior segment conditions (blepharitis, conjunctivitis and keratitis). **
9. Recognise when specialist paediatric ophthalmology or ocular motility input is required and refer onwards if possible (e.g. cataracts, glaucoma, complex strabismus cases). **
10. Describe and recognise common ocular abnormalities and syndromes (e.g., Mobius syndrome, Goldenhar syndrome, anterior segment dysgenesis, persistent foetal vasculature, microphthalmia). **
11. Understand the causes, evaluate and manage common paediatric congenital infections (e.g., TORCHES sequence: Toxoplasmosis, Rubella, Cytomegalovirus, Herpes simplex, Syphilis; ophthalmia neonatorum).
12. Describe and recognise common types of paediatric uveitis, understand their natural history, order appropriate diagnostic tests and treatment.
13. Describe congenital optic nerve anomalies in children (e.g., optic nerve coloboma, morning glory syndrome, optic nerve hypoplasia, myelinated

fibres, optic nerve drusen), order appropriate diagnostic tests, including identification of associated systemic diseases. **

14. Describe different types of paediatric cataract and understand when and how soon to refer to specialist centres. ** (*cross reference with ETR Cataract group*)
15. Describe different types of paediatric glaucoma and understand when and how soon to refer to specialist centres. ** *(cross reference with ETR Glaucoma group)*
16. Understand causes of leukocoria, assess a child and their family members when appropriate, formulate a diagnosis and refer to specialist centres appropriately. **
17. Describe typical features of childhood tumours (e.g., haemangiomas, rhabdomyosarcoma) and phacomatoses (e.g. NF-1), order appropriate test and manage appropriately. **
18. Recognise common presentations of metabolic disorders (e.g. mucopolysaccharidosis) and refer to specialist centres appropriately.
19. Differentiate between common inherited retinal and macular dystrophies, order appropriate tests including electro-diagnostic and genetic tests.
20. Describe and recognize ROP (e.g., stages, treatment indications) and long term problems of low birth weight children affecting eyes and visual system (e.g. cerebral visual impairment). **
21. Communicate complex and uncertain diagnoses clearly and sympathetically with parents and older children. **

Strabismus

1. Describe basic anatomy and physiopathology of extraocular muscles (e.g. primary, secondary and tertiary actions of extraocular muscles) ** and more advanced aspects of anatomy and physiopathology of strabismus (e.g. torsion, consecutive deviations, nystagmus, cranial disinnervation syndromes).
2. Describe laws related to ocular movement (Hering, Sherrington) and how they apply to clinical practice (e.g., pseudo paresis of the contralateral antagonist, enhancement of ptosis in myasthenia gravis).
3. Evaluate clinically a patient presenting with ocular motility disorders and being able to formulate a diagnosis and manage appropriately. Identify patients with pseudo-strabismus. **

4. Describe normal anatomy and physiopathology underpinning binocular function (e.g. fusion, stereopsis). ** Identify common causes for loss of fusion, suppression, diplopia and compensatory mechanisms (e.g. compensatory head posture and anomalous retinal correspondence).
5. Describe the indications for use of the synoptophore/major amblyoscope and Lees/Hess chart.
6. Describe and recognise different types of esotropias and exotropias**
7. Describe and recognise different forms of paralytical strabismus and neuro-muscular junction disorders. **
8. Describe and recognise different forms of restrictive strabismus, including thyroid eye disease, Brown and Duane. **
9. Describe and recognize the different forms of childhood nystagmus (e.g., congenital idiopathic nystagmus or infantile nystagmus syndrome [INS], manifest-latent nystagmus or fixation maldevelopment nystagmus syndrome [FMNS], spasmus nutans syndrome [SNS]), and identify when to refer urgently for specialist management. **
10. Describe indications for botulinum toxin use in strabismus clinics.
11. Identify patients suitable for adjustable strabismus surgery and explain advantages and disadvantages clearly and concisely to the patient.
12. Describe complications of strabismus surgery (e.g., slipped muscle, anterior segment ischemia, overcorrection, under correction) and manage them appropriately, including knowing when to refer to specialist strabismus clinics.

Technical/Surgical Skills

Paediatric Ophthalmology

1. Measure visual acuity in pre-verbal, pre-schoolers, non verbal paediatric patients. **
2. Be able to carry out a cyclo-refraction independently and to prescribe from it accurately. Manage children presenting with accommodation disorders. **
3. Test pupil reflexes, colour vision and visual fields in children, using age-appropriate methods. **
4. Use independently and accurately instruments commonly found in paediatric ophthalmology clinics e.g. handheld slit lamp, non-contact tonometers, retinography with portable equipment, indirect ophthalmoscope with appropriate indentation technique. **

5. Perform an ocular examination to detect signs of non-accidental injury.
6. Understand the indications for B scan ultrasound in paediatric ophthalmology and being able to perform B scan ultrasound in children.
7. Interpret common ocular OCT findings in paediatric ophthalmology. **
8. Provide families with evidence-based advice in relation to learning difficulties and dyslexia and signpost to local educational support resources for parents.
9. Be able to perform simple probing and syringing in children.

Strabismus

1. Detect eye deviations using corneal reflection tests and cover test, record the findings appropriately. **
2. Assess ocular movements (versions, ductions, saccades, doll's head) based on knowledge of the anatomy and physiology of ocular motility. **
3. Measure ocular deviation using corneal reflection methods (Brüchner, Krimsky), and prism cover test. **
4. Use accurately instruments and tests available in orthoptic clinics (focimeter, prism bars, stereopsis tests). **
5. Perform a basic forced duction test with appropriate anaesthesia or intraoperatively. **
6. Perform botulinum toxin injection in rectus muscle under local or general anaesthesia.
7. Perform surgery on extraocular rectus muscles including muscle recession and resection procedures. **

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EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

CORNEA AND OCULAR SURFACE

VERSION HISTORY

VER	Date	DESCRIPTION	Authors
1.0	09-2024	Initial Published Version	Subspecialty Rotation Working Group 3 • Helena Prior Filipe • Tristan Bourcier • Hanne Olsen • Alejandre Alba Nicola • Mor Dickman • Vincent Borderie • Louis Arnould • Jorge Alió del Barrio

Cornea and Ocular Surface

Reviewed by Subspecialty Rotation Working Group 3

Cognitive Skills

1. Describe and explain the anatomy, embryology, physiology, histopathology, microbiology, immunology, genetics, of the cornea, conjunctiva, limbus, sclera, eyelids, lacrimal apparatus, tear film as well as epidemiology of ocular surface diseases.
2. Summarize the principles of ocular surface pharmacology, including tear substitutes, anti-microbial, anti-inflammatory, and immunosuppressive agents, with emphasis on bioavailability, mechanism of action, indications, contraindications, efficacy, safety, and potential side effects.
3. Describe and explain the fundamentals of contact lens physiology, design and materials, complications and their management. Reference to Refraction and Contact Lens section.
4. Describe corneal lasers fundamentals, indications and contra-indications.
5. Synthetise insights into the diagnosis and management of paediatric cornea and ocular surface diseases including congenital cornea and anterior segment anomalies and other anterior segment dysgenesis. Reference to Paediatrics and Strabismus section.
6. Explain the diagnosis and treatment of acute and chronic blepharitis, including both infectious and non-infectious aetiologies.
7. Explain the diagnosis and management of acute and chronic conjunctivitis, including both infectious and non-infectious aetiologies.
8. Explain the diagnosis and management of acute and chronic keratitis including both infectious and non-infectious aetiologies.
9. Explain the diagnosis and treatment of corneal dystrophies, deformations and degenerations.
10. Explain the diagnosis and management of common ocular surface dysplasia and neoplasms.
11. Diagnose and treat traumatic, toxic and iatrogenic injuries to the ocular surface.
12. Describe the indications, surgical techniques, postoperative care, recognize and manage uneventful follow-up and complications of keratoplasties, limbal stem cell surgeries, amniotic membrane transplantations, corneal

gluing, excision of conjunctival lesions, pterygium surgery, conjunctival grafts as well as corneal collagen crosslinking, amniotic membrane transplant, corneal and conjunctival foreign body removal, corneal/conjunctival suturing and suture removal, corneal refractive surgeries.

13. Describe and interpret the ancillary tests for best accurately diagnosing and managing dry eye disease, blepharitis, and ocular allergy.
14. Evaluate published developments in cornea and ocular surface knowledge and practice and modify own practice accordingly.

Technical/Surgical Skills

1. Perform, understand and interpret complementary exams of the cornea and ocular surface (e.g. specular microscopy, corneal topography and tomography, anterior segment ocular coherence tomography, aberrometry, corneal biomechanics, tear film osmolarity, and in vivo confocal microscopy).
2. Perform a conjunctival flap, corneal crosslinking, pinguecula / pterygium surgery, amniotic membrane transplantation, corneal scraping for microbiological examination, placement and removal of corneal sutures.
3. Manage a subconjunctival haemorrhage, a dellen, remove a corneal foreign body, manage a chemical or thermal burn of the ocular surface.
4. Perform sub-conjunctival, sub-Tenonian, intratarsal, peribulbar, intracamerular injections of pharmacologic agents.
5. Assist in more complex corneal surgery (eg, `keratoplasties, keratorefractive procedures, limbal surgeries, neurotisations, and phototherapeutic keratectomy), and participate to the postoperative management.
6. Follow the management and treatment of neoplasms and chronic ocular surface diseases.

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OCULOPLASTICS, LACRIMAL SYSTEM AND ORBIT

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1.0	09-2024	Initial Published Version	Subspecialty Rotation Working Group 4 • Renata Ivekovic • Rimvydas Asoklis • Michèle Beaconsfield • Frédéric Mouriaux • Marie Louise Rasmussen • Santiago Ortiz

Oculoplastics, Lacrimal System and Orbit

Reviewed by Subspecialty Rotation Working Group 4

Cognitive Skills

General

1. Perform preoperative and postoperative assessment and coordination of care of patients with more advanced or complex oculoplastic-related disorders (e.g., systemically ill patients, multidisciplinary procedures)

Eyelid

1. Describe the most advanced eyelid anatomy, embryology and physiology.
2. Describe the aetiology, pathophysiology, evaluation, differential diagnosis, complications, and medical and surgical management of the following eyelid diseases:
    a. Ectropion (e.g. congenital, involutional, cicatricial, paralytic, mechanical including floppy eyelid syndrome, allergic)
    b. Entropion (e.g. congenital, involutional, spastic, cicatricial)
    c. Ptosis (e.g. congenital, aponeurotic, myogenic, neurogenic, mechanical, pseudoptosis)
    d. Upper and lower eyelid retraction (e.g. congenital, cicatricial, autoimmune)
    e. Lid oedema/swelling
    f. Benign, pre-malignant, or malignant eyelid tumours (e.g. papilloma, seborrheic keratosis, epidermal inclusion cyst, milia, xanthelesma, molluscum contagiosum, verruca vulgaris, keratoacanthoma, actinic keratosis, basal cell carcinoma, squamous cell carcinoma, sebaceous cell carcinoma, melanoma)
    g. Single or recurrent inflammatory lesions (e.g. recurrent chalazion or its mimics)
    h. Facial nerve palsy with exposure keratopathy

i. Cranial dystonia affecting the periocular area (e.g. benign essential blepharospasm, hemifacial spasm)

j. Congenital eyelid diseases (e.g. Goldenhar, blepharophimosis, coloboma, Treacher–Collins, cryptophthalmos, foetal alcohol syndrome)

Lacrimal

1. Describe the most advanced lacrimal anatomy, embryology and physiology.
2. Describe the aetiology, pathophysiology, evaluation, differential diagnosis, complications, and medical and surgical management of the following lacrimal diseases:
    a. Punctal stenosis
    b. Canalicular stenosis
    c. Nasolacrimal duct stenosis (congenital and acquired)
    d. Inflammation / infection of canaliculi and lacrimal sac
    e. Tumours (benign and malignant) of lacrimal gland
    f. Tumours (benign and malignant) of lacrimal outflow pathway

Orbital

1. Describe the most advanced orbital anatomy , embryology and physiology.
2. Describe the aetiology, evaluation, differential diagnosis, complications, and medical and surgical management of the following orbital diseases:
    a. Orbital trauma
        i. All orbital fractures
        ii. Retrobulbar haemorrhage
        iii. Orbital foreign bodies
        iv. Traumatic optic neuropathy
    b. Orbital tumours
        i. All benign (e.g. congenital haemangioma, vascular malformations, dermoids, fibrous dysplasia, Paget's disease)

ii. All malignant (e.g. neural, sarcomas, lymphoproliferative , leukaemic, hystiocytic lesions, and metastases)

c. Orbital inflammation

i. Infectious – pre and post septal cellulitis

1. Bacterial
2. Fungal
3. Mycoplasma
4. Necrotising fasciitis

ii. Noninfectious/auto-immune/auto-inflammatory

1. Thyroid eye disease
2. Sarcoidosis
3. Vasculitis (granulomatosis with polyangiitis, granulomatosis with eosinophilia, other)
4. IgG4 disease, VEXAS syndrome
5. Nonspecific (idiopathic) orbital inflammation

d. Phthysical / painful eye

3. Describe indications for and complications of different orbital approaches and incisions (e.g. upper eyelid crease, lateral canthotomy, transconjunctival, endonasal)
4. Describe indications for and complications of basic orbital procedures, including
    a. Anterior orbitotomy for tumour biopsy/excision
    b. Orbital floor fracture repair
5. Describe indications for performing evisceration, enucleation, and orbital exenteration surgery
6. Demonstrate knowledge of basic principles of orbital repair and reconstruction, including custom made prostheses and implants

Technical/Surgical Skills

Eyelid

1. Describe indications for and perform independently:
    a. Biopsy of eyelid lesion
    b. Epilation of lashes
    c. Chalazion surgery
    d. Canthotomy and cantholysis
    e. Temporary central tarsorrhaphy (blepharoraphy)
    f. Repair of superficial eyelid laceration not involving lid margin
2. Assist at or perform supervised complicated lid procedures, including :
    a. Ectropion and entropion
    b. Trichiasis and dystichiasis
    c. Blepharoplasty
    d. Ptosis
    e. Eyelid retraction
    f. Eyelid reconstruction: anterior and posterior lamella

Lacrimal

1. Describe indications for and perform independently
    a. Dynamic exploration of nasolacrimal pathway: punctal examination and dilatation, horizontal probing only, and syringing
2. Assist at or perform supervised, if available, more advanced lacrimal assessment (e.g. intraoperative and postoperative testing, trauma to lacrimal system)
3. Assist at or perform supervised, if available, treatment of more complicated lacrimal system abnormalities, including surgeries (e.g. punctoplasty, canaliculotomy, vertical lacrimal probing, dacryocystectomy, dacryocystorhinostomy, conjunctivo-dacryocystorhinostomy).

Orbital

1. Describe indications for and interpret orbital ultrasound, computerized axial tomography (CT or CAT) scan, and magnetic resonance imaging (MRI) scan (eg, orbital trauma, orbital lesions, tumours), with and without contrast
2. Perform independently exophthalmometry
3. Perform independently lateral cantholysis
4. Assist at or perform supervised, if available: orbital ultrasound, periocular / orbital injections, anterior orbital biopsy, enucleation, evisceration, exenteration, orbital floor fracture repair

Cosmetic and Aesthetic

1. Blepharoplasty. Describe the indications, evaluation, differential diagnosis, complications, and surgical management of cosmetic upper and lower eyelid Blepharoplasty.
2. Describe the indications, and complications to the use of fillers and botulinum toxin in the periorbital area.

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EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

CATARACT SURGERY

VERSION HISTORY

VER	Date	DESCRIPTION	Authors
1.0	09-2024	Initial Published Version	Subspecialty Rotation Working Group 5 • Ewa Mrukwa-Kominec • Karsten Paust • Paul Ursell • Filomena Ribeiro • Ann Sofia Thomsen • Léonard Sidhoum

Cataract Surgery

Reviewed by Subspecialty Rotation Working Group 5

Cognitive Skills

1. Describe the anatomy of the lens and the zonular apparatus and the relationship to the anterior hyaloid face.
2. Describe the physiology, the function and aging of the lens including accommodation and presbyopia.
3. Identify the most common causes and types of cataract (e.g. anterior polar, cortical, nuclear sclerotic, posterior subcapsular, posterior polar, mature lenses such as the Morgagnian cataract).
4. Describe the classification systems such as Lens Opacities Classification System, Version III that assess nuclear, cortical and posterior subcapsular cataract separately.
5. Describe embryology of the lens and how lenticular development could result in various types of congenital cataracts.
6. Describe the less common causes of lens abnormalities (e.g. spherophakia, lenticonus, ectopia lentis, coloboma).
7. Describe the relationship between the lens and systemic diseases (e.g. diabetes, myotonic dystrophy, Wilson disease).
8. List ocular conditions that are associated with cataract (e.g. uveitis, ocular ischemia, retinitis pigmentosa, ocular tumours, high myopia, including treatment for tumours such as radiotherapy).
9. List systemic and topical medicine that can cause pathologic changes in the lens (e.g. oral and topical corticosteroid use).
10. List the basic history and examination steps for preoperative cataract and posterior capsular opacification evaluation.
11. Describe the following:
    a. Basic ophthalmic optics as related to cataract
    b. Types of refractive error in cataract
    c. Retinoscopy techniques for cataract
    d. Subjective refraction techniques for cataract patients
12. Define the elementary refraction techniques to obtain best-corrected vision prior to considering cataract extraction.

13. Identify and describe the principles and mechanisms of the following instruments in the evaluation of cataract:
    a. Lensometer
    b. Autorefractor
    c. Retinoscope
    d. Phoropter or loose lenses
    e. Keratometer
    f. Pachymeter
    g. Corneal topographer
    h. Slit-lamp biomicroscope
    i. Tonometers
    j. Glare and contrast testing devices
    k. Direct ophthalmoscope
    l. Binocular indirect ophthalmoscope
    m. Prisms
    n. A-scan and B-scan ultrasound
    o. Angiograms of anterior and posterior segment
    p. Perimeter: Perimeter: manual / automated, static / kinetic
    q. Ocular coherence tomography (OCT)
    r. Operating microscope
    s. Telescopes, including surgical loupes
    t. Surgical lasers
14. Describe the methods to estimate axial eye length, including (contact) ultrasound (A-scan) and (non-contact) optical biometry (e.g. IOL-Master)
15. Describe the basics of IOL power estimation, including keratometry, anterior chamber depth, axial length and A-constant of the IOL
16. Describe the aetiology and management of unexpected postoperative refractive errors, including hyperopic and myopic shifts (e.g. capsular phimosis, capsular block, upside down IOL).
17. Describe instruments and techniques of cataract surgery: Intracapsular Cataract Surgery, Extracapsular Cataract Surgery, Manual Small incision Cataract Surgery, Phacoemulsification, Femto-Phacoemulsification.
18. Describe the types, indications, and techniques of anaesthesia for cataract surgery (e.g. topical, local, general).

19. Describe the advantages and disadvantages of the materials used for IOL fabrication (e.g., poly-methylmethacrylate [PMMA], silicone, hydrophobic acrylic, hydrophilic acrylic).
20. Describe lens/IOL surgery solutions for myopia and hyperopia (e.g. refractive lens exchange, phakic IOLs).
21. Describe the indication and option for astigmatism management during cataract surgery (e.g. on-axis incision, limbal relaxing incisions [LRI], opposite clear corneal incision [OCCI], toric IOL).
22. Describe the different types of IOL and the advantages and disadvantages of the materials used for IOL fabrication (e.g. poly-methylmethacrylate [PMMA], silicone, hydrophobic acrylic, hydrophilic acrylic).
23. Describe the different types of IOL and the mechanisms of actions, indications, contraindications, advantages, and disadvantages of different IOLs (e.g. multifocal, accommodative, toric, aspheric, blue blocker, intraocular miniature telescope).
24. Describe the indications for, techniques of, and complications of cataract extraction in the context of the subspecialty disciplines of the following:
    a. Glaucoma (e.g. combined cataract and glaucoma procedures, glaucoma in cataractous eyes, cataract surgery in patients with prior glaucoma surgery)
    b. Retina (e.g. cataract surgery in patients with scleral buckles or prior vitrectomy)
    c. Cornea (e.g. cataract extraction in patients with corneal opacities)
    d. Ophthalmic plastic surgery (e.g. ptosis following cataract surgery)
    e. Refractive surgery (e.g. cataract surgery in eyes that have undergone refractive surgery)
25. Describe the performance of and describe the complications of more advanced anterior segment surgery (e.g. pseudo exfoliation, small pupils, short eye, history of uveitis, intraoperative floppy iris syndrome (IFIS), mature cataract, hard nucleus, posttraumatic, zonular dehiscence, cataract surgery after pars plana vitrectomy, short eye, corneal endothelial diseases).
26. Describe the use of special devices for cataract surgery in complex situations such as specialized IOLs, capsular tension rings, and segments, iris hooks, Malyugin ring, use of trypan blue staining of the anterior capsule.
27. Describe IOL fixation options in the lack of capsular support for in-the-bag fixation (anterior chamber [AC] IOL, sulcus fixation +/- optic capture, iris fixation, scleral fixation).

28. Independently evaluate and establish a management plan for complications of cataract and IOL implant surgery (e.g. corneal oedema, elevated pressure, hypopyon, residual cortex, posterior capsular tears, vitreous prolapse, intravitreal dislocation of cataractous fragments, corneal wound burn, expulsive haemorrhage, choroidal effusions, damage to the iris tissue).
29. Describe measures to prevent and treat postoperative endophthalmitis, the evaluation and management of common and uncommon causes of postoperative endophthalmitis and TASS, including presurgical preparation, intraoperative management, and postoperative care.
30. Describe postoperative medications used for cataract surgery, including antibiotics, nonsteroidal anti-inflammatory drugs, and corticosteroid therapy.
31. Describe the causes and indications for performing repositioning, removal, or exchange of IOLs.
32. Describe the management strategies to reposition of decentred, tilted, subluxated, and dislocated IOLs.
33. Describe the issues of paediatric cataract surgery. including the indications for surgery (posterior capsulotomy +/- anterior vitrectomy), IOL implantation, unilateral and bilateral congenital cataract, and IOL calculation in young children.
34. List the indications for triple procedures or combined surgeries (e.g. phaco plus trabeculectomy, keratoplasty, silicone-oil removal).
35. Describe the indications for, principles of, and techniques of yttrium aluminium garnet (YAG) laser capsulotomy, and understand the proper timing of YAG laser capsulotomy.

Technical/Surgical Skills

Clinical Examination

1. Accurately perform, record and interpret basic slit-lamp biomicroscopy, gonioscopy, and ophthalmoscopy.
2. Accurately perform:
    a. Lensometer
    b. Autorefractor
    c. Retinoscope
    d. Phoropter or loose lenses

e. Keratometer
f. Pachymeter
g. Corneal topographer
h. Slit-lamp biomicroscope
i. Tonometers
j. Glare and contrast testing devices
k. Direct ophthalmoscope
l. Binocular indirect ophthalmoscope
m. Prisms
n. A-scan and B-scan ultrasound
o. Angiograms of posterior and anterior segments
p. Perimeter: manual / automated, static / kinetic
q. Ocular coherence tomography (OCT)
r. Operating microscope
s. Telescopes, including surgical loupes
t. Surgical lasers

3. Accurately perform, record and interpret the following assessments of visual acuity
    a. subjective refraction and pin hole acuity
    b. refraction of the fellow eye
    c. assessment of the likely outcome for visual acuity following cataract surgery
4. Accurately perform, record and interpret the complete preoperative ophthalmologic examination of cataract patients, including the consent for the procedure.
5. Accurately perform, record and interpret the complete postoperative examinations following cataract surgery, including refraction

Communication

1. Develop and exercise clinical and ethical decision making in cataract patients.
2. Develop good patient communication techniques regarding cataract surgery.

3. Ensure and document informed consent in which all relevant management options are discussed with the patient, including the option of no active management.
4. Work effectively as a member of the medical care team.

Surgery

1. Perform and document laser capsulotomy on routine cases of posterior capsule opacification.
2. Implement the basic preparatory procedures for cataract surgery (eg, obtaining informed consent, identification of instruments, sterile technique, gloving and gowning, prep and drape, and other preoperative preparation).
3. Train how to use an operating microscope.
4. Assist with cataract surgery and perform patient preparation, sterile draping, and anaesthesia.
5. Perform the basic steps of cataract surgery (e.g. incision, wound closure) in the practice lab, if available.
6. Perform phacoemulsification in a practice setting (e.g. practice lab) or simulation-based cataract surgical training, if available.
7. Perform some of the steps of cataract surgery under direct supervision, including any or all of the following. We recommend according to the level of training performing the following actions under supervision:
    a. Early apprenticeship (E)
    b. Mid apprenticeship (M)
    c. Late apprenticeship (L)
        i. paracentesis of the anterior chamber (E)
        ii. Wound construction - incisions, sclero-corneal tunnel, side ports (E)
        iii. Anterior capsulotomy/capsulorhexis (M)
        iv. Instillation and removal of viscoelastics (E)
        v. Hydrodissection and hydrodelineation (E)
        vi. extracapsular techniques, Phacoemulsification techniques (e.g. sculpting, divide and conquer, stop and chop, phaco chop) (M)
        vii. converting to extracapsular cataract extraction if needed (M)
        viii. Instrumentation and techniques of irrigation and aspiration (M)

ix. Cortical cleaning (E)

x. IOL implantation (e.g. anterior and posterior, foldable, and non-foldable) (M)

xi. Wound hydration (E)

xii. Suturing of the wound (E)

xiii. autonomous surgery (L)

8. Audit surgical outcomes
9. Independently evaluate and establish a management plan for complications of cataract and IOL implant surgery (e.g. posterior capsular tears, vitreous prolapse, intravitreal dislocation of cataractous fragments, corneal wound burn, expulsive haemorrhage, choroidal effusions, damage to the iris tissue).
10. Learn limitations of your surgical competence and define situations where further referral is appropriate.

Remarks

1. The structure of this curriculum is according to the ICO-Curriculum, reflecting 2 domains:
    a. cognitive skills
    b. technical/surgical skills (clinical examination, communication, surgery)
2. In some European countries (UK, France, Turkey, Spain, The Netherlands, Ireland, Portugal) surgical training is mandatory. In most countries surgical training (cataract training) is a postgraduate procedure. So we would like to have “a step into surgical training” during residency as mentioned above. Rules and conditions for complete surgical training should be mentioned in an annex and should be designed by ESCRS.

References

International Council of Ophthalmology Residency Curriculum

https://www.ophed.com/sites/default/files/2014/04/updated-ico-residency-curriculum.pdf

Cataract Curriculum Standard by the Royal Australian and New Zealand College of Ophthalmologists (RANZCO)

https://ranzco.edu/wp-content/uploads/2022/09/Cataract-Curriculum-Standard.pdf

The Royal College of Physicians and Surgeons of Canada; CanMED Objectives of Training in the Specialty of Ophthalmology

https://www.royalcollege.ca/en/canmeds/canmeds-framework.html

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EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

REFRACTIVE SURGERY

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Refractive Surgery

Reviewed by Subspecialty Rotation Working Group 6

It is essential for every comprehensive ophthalmologist to understand the definition of refractive surgeries and their impact on the cornea, as well as the various concepts of intraocular implants for refractive purposes.

Ophthalmologists will frequently encounter patients who have undergone surgery and must remain dedicated to providing them with the highest quality of care, especially in lens surgery, which has evolved into refractive surgery.

It is important to note that this subspecialty rotation has been included in the training programs of many countries worldwide. We are, however, aware of the disparities of training opportunities in this area and focus on the knowledge and skills we consider fundamental.

For the comprehensive curriculum, knowledge of refractive surgery procedures is required but the performance of these surgeries is not essential and may be considered as fellowship level.

Cognitive Skills

1. Describe and diagnose various types of refractive problems, including irregular astigmatism, and identify the best solution for each. **
2. Describe the most complex types of refractive errors, including postoperative refractive errors, post keratoplasty, and refractive surgery. **
3. Describe the most advanced optics and optical principles of refraction and retinoscopy, including higher-order aberrations.
4. List the indications for and interpret preoperative and postoperative diagnostic testing, including.
    a. Corneal topography and tomography
    b. Wavefront analysis
    c. Pachymetry and epithelial mapping
    d. Anterior Segment OCT
    e. Corneal biomechanics
5. Formulate informed diagnostic and therapeutic decisions based on patient information, current scientific evidence, clinical judgment, and patient expectations.

6. Describe the indications and contra-indications for keratorefractive surgery and phakic IOL implantation:
    a. Excimer laser and Femtosecond laser physics
    b. Corneal ablation profiles and Keratorefractive Lenticule Extraction
    c. Indications for surface or lamellar corneal refractive surgery
    d. Planning of phakic IOLs with AS OCT and sizing
7. Describe accommodative and nonaccommodative treatments of presbyopia, including.
    a. Monovision
    b. Excimer laser correction
    c. Conductive keratoplasty
    d. Corneal inlays
    e. Accommodating IOLs
    f. Multifocal IOLs
8. Describe the advanced formulas for IOL calculation in extreme myopia, hyperopia, and after corneal refractive surgery.
9. Develop patient care management plans for more complex cases (eg, mixed and irregular astigmatism, irregular corneas, combined refractive surgery procedures).
10. Identification and diagnosis of complications after corneal refractive surgery, phakic IOL and keratorefractive lenticule extraction.

Technical/Surgical Skills

1. Perform the most advanced objective and subjective refraction techniques using trial lenses or the phoropter, including:
    2. Contact lens refraction for more complex refractive errors, including modification and refinement of subjective manifest refractive error.
    3. Cycloplegic retinoscopy and refraction
    4. Postcycloplegic refraction
    5. Irregular astigmatism
    6. Postkeratoplasty
    7. Refractive surgery cases

2. Utilize the most advanced optics and optical principles for refraction, including higher order aberrations.
3. Use and interpret results from more advanced instruments and techniques (e.g., corneal topography, pupillometry, aberrometry, Scheimpflug imaging, OCT and epithelial mapping) to plan surgery and interpret the postoperative outcomes
4. Assist in planning advanced refractive surgeries, including topography-guided ablation and wavefront-guided ablation.
5. Assist and observe the resolution of complications after corneal refractive surgery, keratorefractive lenticule extraction and phakic IOLs.

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EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

GLAUCOMA

VERSION HISTORY

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1.0	09-2024	Initial Published Version	Subspecialty Rotation Working Group 7 • Barbara Cvenkel • Denise Curtin • Alain Bron • Gordana Sunaric Megevand • Luis Abegao Pinto • Joao Breda • Anthony Kawaja • Remi Yaïci

Glaucoma

Reviewed by Subspecialty Rotation Working Group 7

Cognitive Skills

For each type of glaucoma, the resident should acquire adequate understanding of the following aspects to describe the epidemiology and natural history of the disease, pathophysiology, diagnosis, treatments (medical, surgical, laser), side effects and complications of treatment, follow-up, critical evaluation of literature (evidence-based medicine), consideration of health-awareness.

The resident should build knowledge on "Childhood glaucoma" to recognise:

1. Primary childhood glaucoma
    a. Primary congenital glaucoma (PCG) from birth to the first years of life
    b. Late onset childhood OAG with onset from more than two years of age to puberty
2. Secondary childhood glaucoma, namely
    a. Glaucoma associated with non-acquired anomalies (aniridia, Axenfeld-Rieger anomaly, congenital ectropion uveae, congenital iris hypoplasia, ectopia lentis, microcornea, microphthalmos, oculodermal melanocytosis, persistent foetal vasculature, Peters anomaly, posterior polymorphous dystrophy
    b. Glaucoma associated with non-acquired systemic disease or syndrome (chromosomal disorders (e.g., Down syndrome), connective tissue disorders (Marfan, Weill-Marchesani, Stickler syndromes), metabolic disorders (homocystinuria, Lowe syndrome, mucopolysaccharidoses), phacomatoses (neurofibromatosis, Sturge-Weber syndrome)
    c. Glaucoma associated with acquired condition: uveitis, traumatism (hyphaema, angle recession, ectopia lentis), steroid-induced, tumours (benign/malignant, ocular /orbital), retinopathy of prematurity.
    d. Glaucoma following cataract surgery

The resident should develop knowledge on "Adult glaucoma" to recognise and manage:

1. Open angle disease, namely
    a. Ocular hypertension

   b. Primary open angle glaucoma (POAG): risk factors for the onset of POAG, primary open angle glaucoma suspect, risk factors for progression of POAG
   c. Primary late-onset juvenile open-angle glaucoma (myocilin mutations)
2. Angle-closure disease, regarding
   a. Block mechanisms (pupillary, ciliary, lens, vitreous and choroid)
   b. Clinical presentations (primary angle closure suspect (PACS), primary angle closure (PAC), primary angle closure glaucoma (PACG)
3. Secondary glaucomas, concerning
   a. Secondary open angle glaucomas (pigmentary, exfoliative, lens-induced, corticoid-induced, haemorrhage-induced, uveitic, associated with increased episcleral venous pressure, intraocular tumours, trauma, iatrogenic /surgery/ laser induced)
   b. Secondary angle closure glaucomas (neovascular, lens/IOL-induced, uveitic, traumatic, aqueous misdirection, ICE syndrome, post-trauma or ocular surgery.

Technical/Surgical Skills

Glaucoma Clinical Evaluation

Goal: the resident is expected to be able to perform or to order and analyse results of all the mandatory examinations, decide on follow-up visits (according to disease stage, life expectancy, type of glaucoma, systemic diseases, etc.), evaluate the patients' rate of progression and adjust the clinical management by making appropriate decisions based on evidence-based practice and patients' perspectives and expectations. The resident is expected to explain the rationale, perform and interpret.

1. Intraocular pressure (IOP) measurement techniques to apply in clinical practice: Goldmann applanation tonometry, air-puff and rebound tonometry (i-Care)
2. Pachymetry
3. Gonioscopy: indirect (Goldmann 3-2-1 mirror lenses) and dynamic (indentation) gonioscopy
4. Fundoscopy to assess and evaluate optic disc, retinal nerve fibre layer (RNFL) and relevant changes.

5. Tests of visual function to describe and interpret standard automated perimetry (SAP), Goldmann static perimetry.
6. Imaging to describe and interpret:
    a. anterior segment: anterior segment OCT, UBM
    b. posterior segment: retinography (assessment of optic disc and RNFL), OCT
7. Other tests relevant to patient pathology and presentation (blood tests, central nervous system imaging).

Glaucoma Management

Goal: the resident is expected to be able to manage medically or with laser therapy different conditions according to the type and stage of glaucoma, patient's life expectancy and possible systemic diseases. She/he should be familiar with side effects and limitations of medical and laser therapy and able to adjust management. Indications for surgery should be recognized accordingly and the most appropriate surgical management suggested for the given condition and patient. The resident is expected to be able to manage:

1. Medical treatment – apply in clinical practice:
    a. Drug categories: prostaglandin analogues, beta-receptor antagonists, alpha-agonists, carbonic anhydrase inhibitors (topical and systemic), parasympathomimetics, osmotic agents, new molecules.
    b. For each drug category understanding of the following is expected: mechanism of action, indications, posology, limitations, side effects, financial impact, potential impact on quality of life (QoL).
2. Surgical management- apply in clinical practice
    a. Laser procedures: describe indications and complications and be able to perform trabeculoplasty (ALT and/or SLT), Nd:YAG iridotomy, laser suture lysis, Nd: YAG capsulotomy.
    b. Surgical procedures: describe the surgical treatment - trabeculectomy, aqueous shunts, non-penetrating procedures, minimally invasive glaucoma surgery (MIGS), cyclo-destruction/modulation procedures, combined cataract-glaucoma procedures.
    c. For children examination under general anaesthesia, trabeculotomy, goniotomy.

3. Anti-scarring agents: describe and evaluate specific medical treatments in advanced glaucoma, acquire knowledge on indications based on available evidence, practical use and potential complications and side effects of anti-scarring agent usage.
4. Complications of glaucoma surgery: knowledge (pathophysiology) of commonest complications (hypotony, bleb leak, tube exposure, aqueous misdirection, suprachoroidal haemorrhage, blebitis, endophthalmitis, hyphaema)
5. Describe management of commonest complications
6. Recognise and diagnose bleb failure

Quality of Life

Goal: the resident should be able to adapt glaucoma management to personalised care, considering the patients' perspective.

Suggested Reading

EGS Guidelines 5th Edition 2020

Relevant national evidence-based guidelines when available

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EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

NEURO OPHTHALMOLOGY

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Neuro Ophthalmology

Reviewed by Subspecialty Rotation Working Group 8

Cognitive Skills

1. Describe the typical and atypical features, evaluation, and management of papilledema and raised intracranial pressure due to a variety of causes (e.g. sinus thrombosis, idiopathic, meningitis). **
2. Describe the typical features, evaluation, and management of urgent neuro-ophthalmic pathologies (e.g. giant cell arteritis, cavernous sinus thrombosis, orbital apex syndrome, pituitary apoplexy). **
3. Describe typical features of the most advanced and least common optic neuropathies (e.g. chronic recurrent inflammatory optic neuritis, posterior ischemic optic neuropathy, neuromyelitis optica, autoimmune optic neuropathy, toxic/nutritional).**
4. Describe typical and atypical features, evaluation, and management of the most complex and least common ocular motor neuropathies and their mimics (eg, patterns of aberrant regeneration).
5. Describe typical and atypical features, evaluation, and management of the most complex and least common forms of nystagmus (e.g. spasmus nutans, see-saw nystagmus, periodic alternating nystagmus).
6. Describe typical and atypical features, evaluation, and management of the most advanced and least common pupillary abnormalities (e.g. pupil findings in coma, transient pupillary phenomenon).
7. Describe features, evaluation, and management of the most complex and least common visual field defects and recognize pattern mimics (e.g. combination of disc-related scotoma plus hemianopia, binasal hemianopia, sectoranopia, bilateral inferior altitudinal loss due to superior occipital lobe lesions and not bilateral anterior ischemic optic neuropathy). **
8. Describe, evaluate, and treat the neuro-ophthalmic aspects of systemic diseases (eg, malignant hypertension, diabetic papillopathy, toxicity of systemic medications, paraneoplastic syndromes, HIV/AIDS). **
9. Describe, evaluate, and treat the neuro-ophthalmic manifestations of trauma (eg, corticosteroid or surgical therapy in traumatic optic neuropathy).
10. Describe, evaluate, and provide appropriate genetic counselling for inherited neuro-ophthalmic diseases (e.g. hereditary optic neuropathies, chronic progressive external ophthalmoplegia). Refer patients and family members for genetic counselling, multi-disciplinary surveillance and management

(multi-organ diseases/genetic syndromes, e.g. neurofibromatosis, ataxia syndromes

11. Recognize, evaluate, and treat transient monocular visual loss. **
12. Describe indications and interpret blood test results for various systemic disorders with neuro-ophthalmic manifestations (e.g. thyroid disorders, pituitary disorders, myasthenia graves).
13. Describe syndromes of cortical visual dysfunction.
14. Detect early neuro-ophthalmic signs and symptoms of drug toxicity for commonly used medications.
15. Describe the neuro-ophthalmic complications related to pregnancy.

Technical/Surgical Skills

1. Interpret results of edrophonium and prostigmin tests for myasthenia gravis; recognize and treat the complications of the procedures.
2. Perform and interpret the complete cranial nerve evaluation in the context of neuro-ophthalmic localization and diseases. **
3. Request neuro-radiologic images in neuro-ophthalmology (e.g. interpretation of orbital imaging for orbital pseudotumor and tumours, thyroid eye disease, intracranial imaging modalities and strategies for tumours, aneurysms, infection, inflammation, ischemia), and appropriately discuss, in advance of testing, the localizing clinicopathological features with the neuroradiologist to obtain the best study and interpretation of the results. **
4. Identify patients with “functional” visual loss (i.e. nonorganic visual loss) and provide appropriate counselling and follow-up. **
5. Quantify RAPD with a neutral density filter and detect small RAPD in patients with only one working pupil. **
6. Perform optic nerve sheath decompression, if trained, for papilledema. **
7. Perform neuro-ophthalmic evaluations for people with special needs (e.g. comatose patients, children, and children with developmental and visual maturation evaluations).
8. Describe indications, dose, and administration of Botox for neuro-ophthalmic disorders (e.g. hemifacial spasm, blepharospasm, paralytic strabismus).

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EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

UVEITIS AND OCULAR INFLAMMATION

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1.0	09-2024	Initial Published Version	Subspecialty Rotation Working Group 9 • Marcin Stopa • Sofia N Androudi • Bahram Bodaghi • Oliver Klefner

Uveitis and Intraocular Inflammation

Reviewed by Subspecialty Rotation Working Group 9

Cognitive Skills

1. Describe the anatomy of the uveal tract in detail, understand the pathophysiology of ocular inflammation
2. Describe the SUN classification and grading of ocular inflammation
3. demonstrate knowledge of various automated and semi-automated techniques of grading ocular inflammation
4. Describe and reflect upon findings on clinical examination including but not limited to:
    a. Anterior segment: iris nodules, pupillary membrane, posterior synechiae, peripheral anterior synechiae, iris bombe, patterns of keratic precipitates, iris defects and their distribution, anterior chamber cells, hypopyon, anterior chamber flare, complicated cataract, scleral inflammation, among others
    b. Posterior segment (vitreal findings): vitreous cells, vitreous haze, vitreous snowballs, snowbank, vitreous precipitates, vitreous strands
    c. Posterior segment (retinal findings): superficial retinal infiltrates, retinochoroidal lesions, necrotizing retinitis, types of retinal vasculitis, macular oedema and its patterns, types of retinal detachment, retinoschisis, preretinal neovascularization. Differentiate active from inactive disease and arterial from venous side disease.
    d. Posterior segment (choroidal findings): recognize the different patterns of presentation including choroidal granuloma, multifocal choroiditis, punctate inner choroiditis, serpiginous and serpiginous-like choroiditis, and APMPPE. Recognize complications such as choroidal neovascular membranes and recognize metastatic lesions.
    e. Optic nerve findings: oedema, swelling, haemorrhage, peripapillary neovascularization, optic disc granuloma
5. Differentiate serious infective from noninfective causes of uveitis (e.g., recognize an endogenous endophthalmitis and differentiate this from an immune-mediated uveitis, such as Behçet's disease).
6. Differentiate active from inactive uveitis

7. Demonstrate knowledge of local and national guidelines for referral to a highly specialized uveitis clinic.

Anterior Uveitis

1. Describe aetiologies, manifestations, and diagnostic testing of anterior uveitis
2. Differentiate between infectious and non-infectious aetiologies, diagnosing idiopathic uveitis, distinguishing the pattern (viral, HLA-B-27, among others) and other associated signs
3. Describe features of chronic anterior uveitis (synechiae, iris bombe, and other complications)
4. Understand ciliary body complications such as cyclitic membranes, ciliary body detachment and hypotony
5. Develop a treatment plan for the patient with anterior uveitis

Intermediate Uveitis

1. Diagnose and evaluate parsplanitis and intermediate uveitis due to known causes
2. Demonstrate knowledge how to execute work-up for systemic conditions including sarcoidosis, multiple sclerosis, Lyme's disease, tuberculosis, and syphilis, among others
3. Identify of features such as snowballs/snow-banking, peri-arteritis/periphlebitis, macular oedema, retinoschisis, vasoproliferative tumour
4. Understand the role of targeted investigations (cerebrospinal fluid analysis, serologies, cultures/PCR)
5. Describe medical/surgical therapies for intermediate uveitis
6. Diagnose and describe management of complications including macular oedema, secondary cataract/glaucoma, hypotony, retinal detachment, and epiretinal membranes

Posterior Uveitis

1. Diagnose and evaluate white dot syndromes (evanescent white dot syndrome, acute posterior multifocal placoid pigment epitheliopathy, multifocal choroiditis, punctate inner choroidopathy, birdshot retinochoroiditis, serpiginous choroiditis)

2. Describe and identify rare causes of choriocapillaritis including presumed ocular histoplasmosis syndrome
3. Identify unifocal/multifocal retinitis/retinochoroiditis
4. List the differential diagnosis
    a. occlusive and nonocclusive retinal vasculitis
    b. necrotizing retinitis
    c. choroidal granulomas
5. Describe choroiditis due to aetiologies such as tuberculosis or sarcoidosis
6. Develop a comprehensive treatment plan for posterior uveitis, incorporating:
    a. local therapies (periocular steroids, local intravitreal implants/injections, anti-VEGF therapies)
    b. systemic immunosuppressive therapies
    c. biological therapies
    d. systemic antibiotic therapies (e.g., anti-tubercular therapy)
7. Identify and initiate appropriate investigations in infectious retinitis (acute retinal necrosis, cytomegalovirus retinitis, and other forms of infectious/necrotizing retinitis)
8. Diagnose and execute laboratory work-up of toxoplasma retinochoroiditis

Panuveitis

1. Describe stromal choroidal conditions such as Vogt-Koyanagi-Harada's syndrome and sympathetic ophthalmia
2. Diagnose sarcoid/tubercular panuveitis
3. Describe Behcet's disease including systemic manifestations
4. Identify Infectious panuveitis (bacterial endophthalmitis, syphilitic uveitis, leptospirosis, cat-scratch disease, brucellosis, and forms of fungal endophthalmitis)
5. List clinical features and differential diagnoses for less common forms of panuveitis
6. Identify and demonstrate treatment plan of rare forms of uveitis including:
    a. Masquerade syndromes
    b. HIV and related opportunistic ocular inflammations

Drug-Induced Uveitis

1. Demonstrate knowledge of the drugs associated with uveitis, as well as patterns of ocular presentation associated with various drugs

Scleritis

1. Demonstrate knowledge of infectious and non-infectious scleritis
2. classify scleritis based on anatomical locations (anterior/posterior), and nodular versus diffuse versus necrotizing

Technical/Surgical Skills

1. Perform a more advanced examination of the anterior and posterior segment, for example: **
    a. Anterior segment (e.g., conjunctival ulcer, iris transillumination defects, granuloma) flare, keratic precipitates, Tyndall (including SUN grading and uveitis classification)
    b. Posterior segment (eg, pars plana signs of inflammation [snowbanks and snowballs], retinal detachment [exudative, tractional, rhegmatogenous], retinal vasculitis [periphlebitis or arteritis, occlusive or nonocclusive], optic nerve [optic disc granuloma, optic neuritis, disc neovascularization], macula [macular edema], choroidal neovascularization)
2. Recognize and evaluate the typical demographic features, clinical features, and differential diagnosis of uveitis common in the region via the process of history-taking clinical examination, and the use of investigative tools (such as FA, ICG, B-scan, OCT
3. Understand and recognize the patterns on FA and ICGA (active retina/choroidal lesions, choroidal granulomas, retinal vasculitis and its pattern, presence of occlusive retinal vasculitis, optic nerve head inflammation, choroidal neovascularization, macular oedema, vascular occlusion, retinal angiomatous proliferation, vasoproliferative tumour, and angiomas
4. Understand the anatomy and clinical features and perform B-scan ultrasound

5. Demonstrate understanding of indications and contraindications of laboratory testing in uveitis including targeted testing (based on phenotype, endemicity, epidemiology, age, travel history, pets, physical examination)
6. Evaluate the need for Invasive testing including anterior chamber paracentesis, vitreous biopsy, retinal/choroidal biopsy
7. Understand indications and complications of diagnostic vitrectomy (vitreous, retinal, and choroidal biopsy)
8. Administer periocular corticosteroid injections in addition to topical corticosteroids in the treatment of uveitis
9. Perform an anterior chamber and vitreous tap for diagnostic purposes and administer intravitreal injections of antibiotics in cases of bacterial endophthalmitis
10. Provide the patient with relevant information about possible side-effects of medications and proper monitoring of medications
11. Liaison with colleagues in other specialties (e.g. rheumatology, infectious diseases) for co-management of patients with uveitis and systemic co-morbidities.

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EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

RETINA AND VITREORETINAL DISEASES

VERSION HISTORY

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Retina and Vitreoretinal Diseases

Reviewed by Subspecialty Rotation Working Group 10

Cognitive Skills

1. Apply into clinical practice the most advanced knowledge of retinal anatomy and physiology (e.g., surgical anatomy).
2. Apply into clinical practice the most advanced ancillary testing concepts of colour fundus photography, infra-red imaging, ultra-wide field, fluorescein/ICG angiography in complex retinal vascular disease and other vascular diseases. Describe and apply OCT-Angiography findings into clinical practice. Describe and apply ultrasound (A and B scan) findings into clinical practice
3. Describe and apply retinal electrophysiology. Describe retinal cells activity corresponding to electroretinography layout in normally functioning retina
4. Evaluate, treat, or refer to the most complex forms of retinal vascular diseases:
    a. Combined arterial and venous obstructions.
    b. Advanced diabetic retinopathy
    c. hypertensive retinopathy
    d. Peripheral retinal vascular occlusive disease
    e. Arterial macroaneurysm
    f. Sickle cell retinopathy
    g. Coats disease
    h. Macular telangiectasia
    i. phakomatoses
    j. Radiation retinopathy
    k. Valsalva retinopathy
    l. Purtscher retinopathy
    m. Terson syndrome
5. Describe pathophysiology, classification, epidemiology, management of age-related macular degeneration. Diagnose and manage (or refer) macular haemorrhages (related to age-related macular degeneration or other affections like vascular macroaneurysm)

6. Describe findings of major studies in age-related macular degeneration including but not limited to:
    a. Treatment of Age-Related Macular Degeneration with Photodynamic Therapy
    b. Study (TAP)
    c. Verteporfin in Photodynamic Therapy Study (VIP)
    d. Minimally Classic/Occult Trial of the Anti-Vascular Endothelial Growth Factor (VEGF) Antibody Ranibizumab in the Treatment of Neovascular AMD
    e. (MARINA)
    f. Anti-VEGF Antibody for the Treatment of Predominantly Classic Choroidal
    g. Neovascularisation in AMD (ANCHOR)
    h. The Comparisons of Age-Related Macular Degeneration Treatments Trials
    i. (CATT)
    j. A Study to Evaluate the Efficacy and Safety of Faricimab in Participants With Neovascular Age-Related Macular Degeneration (TENAYA and LUCERNE)
    k. A Study Comparing the efficacy and safety of Brolucizumab versus Aflibercept in patients with Neovascular Age-Related Macular Degeneration (HAWK and HARRIER)
7. Diagnose and describe pathophysiological concepts, differential diagnosis and treatment options of central serous chorioretinopathy
8. Describe pathophysiology, classification, epidemiology, management diabetic retinopathy
9. Describe findings of major studies in diabetic macular oedema treatment including but not limited to:
    a. Ranibizumab Injection in Subjects with Clinically Significant Macular Edema with Center Involvement Secondary to Diabetes Mellitus (RISE and RIDE)
    b. Intravitreal Aflibercept Injection in Vision Impairment due to DME/IAI in Patients with DME (VIVD and VISTA)
    c. Efficacy and Safety of Brolucizumab for Edema of the Macula in Diabetes (KESTREL and KITE)
    d. Macular Edema Assessment of Implantable Dexamethasone in Diabetes (MEAD)

e. Fluocinolone Acetonide for Diabetic Macular Edema (FAME)

f. A Study to Evaluate the Efficacy and Safety of Faricimab in Participants with DME (YOSEMTIE and RHINE)

g. Five-Year Outcomes after Initial Aflibercept, Bevacizumab, or Ranibizumab Treatment for Diabetic Macular Edema (Protocol T Extension Study)

10. Identify, describe, understand the underlying pathogenesis, and formulate evidence-based management options for the following:
    a. posterior vitreous detachment
    b. retinal holes
    c. peripheral retinal degeneration
    d. retinoschisis
    e. rhegmatogenous retinal detachment
11. Evaluate and diagnose complex cases of retinal detachment (eg, proliferative vitreoretinopathy, acute retinal necrosis,).
12. Identify, describe, understand the underlying pathogenesis, and formulate management options for tractional retinal detachment and exudative retinal detachment.
13. Describe pathogenesis and discuss management options and discuss surgical outcomes for:
    a. full thickness macular hole
    b. non full thickness macular holes
    c. vitreomacular traction
    d. epiretinal membrane
14. Describe vitreous opacities (floaters, syneresis, asteroid hyalosis) and discuss risks related to interventional management options
15. list and describe differential diagnosis of vitreous haemorrhage and propose how to manage
16. Diagnose and classify retinopathy of prematurity.
17. Diagnose and manage (or refer) complex trauma cases (e.g. chorioretinitis sclopetaria, intraocular foreign body, shaken baby syndrome).
18. Diagnose inherited retinal disorders
19. Diagnose and manage (or refer) choroidal tumours:
    a. Identify and refer suspicious choroidal nevus (i.e., highly probable choroidal melanoma) to dedicated facility

b. Manage the follow up and monitoring of non-suspicious choroidal nevus
c. Diagnose with adapted complementary exams choroidal haemangioma
d. Diagnose and refer other, less common, retinal and choroidal tumours (osteoma, astrocytoma, hamartoma, melanocytoma, pigment epithelial hypertrophy, sclerochoroidal calcifications)

20. Diagnose hereditary vitreoretinal degenerations (e.g. Stickler syndrome, Wagner syndrome, Goldmann-Favre degeneration).
21. Demonstrate knowledge of the clinical features, typical timeline, microbiological profile and acute practical management of presumed post-operative endophthalmitis. Understand the potential role of pars plana vitrectomy (early and late) in post-operative endophthalmitis
22. Describe the treatment algorithm for each specific retinal condition, with special emphasis on pros and cons.

Technical/Surgical Skills

1. Perform direct (contact lens) and indirect ophthalmoscopy with scleral indentation in complex retinal cases (e.g. multiple holes, documented with detailed retinal drawing)
2. Perform ophthalmoscopic examination with panfunduscopic or other lenses in complex retinal conditions (e.g., giant retinal tears, proliferative vitreoretinopathy).
3. Interpret and apply in clinical practice the results of fluorescein and ICG angiography and OCT in complex retinal or choroidal pathology.
4. Perform posterior segment photocoagulation in more complicated retinal cases:
5. Diabetic focal/grid macular treatment (e.g., monocular patient, repeat treatment)
6. Repeat peripheral scatter photocoagulation (panretinal)
7. Laser retinopexy (demarcation) of large or multiple breaks; cryotherapy Interpret and apply in clinical practice electrophysiology (e.g., ERG, EOG, VEP, dark adaptation) in more complicated retinal pathology, or refer to subspecialist (but be able to detect an alteration and to formulate preliminary diagnosis)

8. Interpret and apply in clinical practice ocular imaging techniques (e.g. B-scan echography) in more complex cases (e.g., choroidal osteoma).
9. Perform detailed fundus drawings of the retina with vitreoretinal relationships in the most complex retinal cases (e.g. recurrent retinal detachment, retinoschisis with and without retinal detachment).
10. Perform laser therapy or cryotherapy of retinal holes and other more complex retinal pathologies.
11. Participate during scleral buckling and pars plana vitrectomy surgeries.
12. Perform intravitreal injections of anti VEGF or corticoids for the treatment of macular oedema or macular neovascularization when indicated, as well as intravitreal antibiotics injections for the treatment of endophthalmitis.

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EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

EMERGENCY

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Emergency

Reviewed by Subspecialty Rotation Working Group 11

Cognitive Skills

The resident must know how to identify and deal with the ocular emergencies of the eyeball and appendages, select, and interpret complementary examinations, including diagnostic imaging. Emergency surgery requires both theoretical and practical knowledge of the basic sciences applicable to emergency, medical and surgical ophthalmic pathology

Technical/Surgical Skills

The resident should demonstrate the ability to take a history from the patient where possible, namely to:

1. Conduct the clinical assessment and the initial management of patients with **sudden painless loss of vision** and/or visual field by recognising:
    a. Retinal arterial occlusion
    b. Retinal vein occlusion
    c. Retinal detachment
    d. Wet AMD
    e. Idiopathic polypoidal choroidal vasculopathy
    f. Retinal arterial microaneurysm
    g. Valsalva retinopathy
    h. Vitreous haemorrhage
    i. Cystoid macular oedema: (vascular, inflammatory, mechanical, iatrogenic) (advise on systemic or local treatment)
    j. “Acute” Central serous chorioretinopathy
    k. Pathologic/Degenerative (High) Myopia associated complications: (neovascularization, atrophy, glaucoma, schisis, macular hole, retinal detachment)
    l. Solar retinopathy

m. Acute neoplastic lesions should be referred urgently to the **Orbital Services** in conjunction with the **Oncology Department**

n. White Dot Syndromes

o. Retinitis

p. Non arteritic anterior ischaemic optic neuropathy

q. Posterior ischemic optic neuropathy

r. Transient Visual loss: Amaurosis Fugax, Vertebrobasilar artery insufficiency, Ocular ischemic syndrome

s. Cerebrovascular accident presenting with field defect

2. Conduct the clinical assessment and the initial management of patients with **painful <u>sudden</u> loss of vision** by differentiating:

   a. Severe intraocular infection from endophthalmitis or keratitis

   b. Acute angle closure glaucoma attack

   c. Neovascular glaucoma

   d. Malignant glaucoma

   e. Giant cell arteritis / Arteritic anterior ischaemic optic neuropathy

   f. Optic neuritis

   g. Migraine

   h. Hypotony syndrome

3. Clinical assessment and initial management of sudden onset **painful ptosis**

4. Conduct the clinical assessment and the initial management of **ocular trauma** by recognizing:

   a. Chemical and Thermal burns of conjunctiva and cornea

   b. Penetrating and perforating injuries to the globe.

   c. Lids and adnexa lesions / lacerations /injuries

   d. Blunt trauma: hyphaema, lens dislocation, corneal abrasion, angle recession / iridocorneal damage / iridodialysis, commotio retina, choroidal rupture, global rupture (anterior and posterior), chorioretinitis sclopetaria, Purstcher retinopathy,

   e. Intraocular and /or intra orbital (intra or extra conal) foreign body,

   f. Intraocular infection from endophthalmitis or keratitis.

   g. Shaken baby syndrome

   h. Orbital injuries, including traumatic retrobulbar haemorrhage and blow out fractures and the need to seek at an early stage the

opinion/involvement of the **Orbital service (ophthalmic trained) and/or ENT/OMFS services**. This is particularly relevant in the management of 'white eye blow-out fracture' in children and young adults

5. Conduct the clinical assessment and the initial management of patients presenting with **double vision ocular motility** cases include:

    a. painful/painless third nerve palsy CN3 – any intracranial cause requires urgent referral to the **Neurosurgical service**.

    a. fourth nerve palsy CN4

    b. sixth nerve palsy CN6

    c. dysthyroid eye disease

    d. myasthenia gravis

6. Conduct the clinical assessment and the initial management of patients presenting with **preseptal and orbital cellulitis**, idiopathic orbital inflammatory syndrome, dacryoadenitis, orbital tumours. In cases of post-septal orbital cellulitis where there is no easy access to an Orbital service, **the ENT** service should be sought

7. Conduct the clinical assessment and the initial management of patients presenting with **red eye** by recognising:

    a. Conjunctivitis (all subtypes),

    b. Differential diagnoses of amelanotic lesions of conjunctival tumours (Conjunctival intraepithelial neoplasia; Squamous cell carcinoma / Lymphoid tumours),

    c. Keratitis (all subtypes),

    d. Peripheral Corneal Thinning / Ulceration,

    e. Contact lens-related problems,

    f. Corneal graft rejection,

    g. Corneal refractive surgery complications,

    h. Acute uveitis,

    i. Scleritis

    j. Episcleritis,

    k. Carotid-cavernous fistula,

    l. Acute angle closure glaucoma attack,

    m. Lid and adnexa pathologies, malposition / canaculitis / dacryocystitis),

    n. Sympathetic Ophthalmia,

o. Stevens-Johnson syndrome,

p. Post ocular trauma (see 3. Section),

q. Iatrogenic: Topical medication

8. Conduct clinical assessment and initial management of patients presenting with **Neuro-ophthalmic** signs and symptoms by recognising:
    a. Pupil abnormalities – anisocoria: Physiologic, pre/post ganglionic Horner's syndrome, traumatic iris damage, adies pupil, third nerve palsy pharmacologic pupil dilation.
    b. optic neuritis
    c. papilledema
    d. disc swelling
    e. new onset nystagmus
9. Conduct the clinical assessment and the initial management of **paediatric patients** presenting with
    a. Congenital / infantile glaucoma
    b. Leukocoria
10. **Consult** with the Radiology department, Microbiology department, Ear Nose and Throat (ENT) and Oral Maxillary Facial surgeons (OMFS), Neurology, Neurosurgery and Emergency Medicine where indicated, demonstrating communication skills in the diagnosis and management plan and the need to consult other specialists' opinion in a **multidisciplinary environment**.
11. Acquire **informed consent** where required to appropriately explain:
    a. the risks and benefits of the treatment
    b. informed decision making to a patient/caregiver
    c. the planned follow-up
    d. possible complications
12. **Pain Management:** the cause of the pain must be identified. Excluding Ocular or Periocular causes according to the diagnosis, referral to a **Neurological service** / **pain clinic** as indicated for follow-up

European Board of Ophthalmology

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Photo courtesy of Mr. Bernard Stoloff

EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

Entrustable Professional Activities in Ophthalmology (EPAs)

EPAs by Subspecialty Rotation

(Click to jump to EPAs listed below)

Please note: Each EPA is page numbered according to the number of pages in the EPA. You can jump directly to an EPA from here, or print out the sections.

Optics, Refraction and Contactology

Paediatrics and Strabismus

Cornea and Ocular Surface

Oculoplastics, Lacrimal System, Orbit

Evaluating and Managing a Patient with Lacrimal Stenosis

Renata Ivekovic, Rimvydas Asoklis, Michèle Beaconsfield, Marie- Louise Rasmunsen, Santiago Ortiz, and Frédéric Mouriaux

Cataract Surgery

Conducting a Complete Pre-Operative Examination of a Patient with Cataract

Conducting a Complete Cataract Surgery

Conducting a Complete Post-Operative Cataract Patient's Examination

Ewa Mrukwa-Kominek, Karsten Paust, Filomena Ribeiro, Léonard Sidhoum, Ann Sofia Thomsen, Paul Ursell

Refractive Surgery

Planning Refractive Surgery

Tiago Monteiro, Miguel Leitão, Beatrice Cochener, Dick Burkhard, Luis Fernandez Veja, and Sorcha Ni Dhubghaill

Glaucoma

Gonioscopy- Assessing the Anterior Chamber Angle

Fundoscopy - Assessing and Evaluating the Optic Disc and Retinal Nerve Fibre Layer (RNFL)

Barbara Cvenkel, Gordana Mejevand, Denise Curtin, Joao Breda, Alan Bron, Luis Abegão Pinto, Rémi Yaïci

Neuro Ophthalmology

Managing a Patient with Anisocoria

Managing a Patient with Diplopia

Managing a Patient with Sudden Vision Loss

Huban Atila, Giorgio Porro, Neri Jurkute, Michael Stormly, Kanav Khanna, Dan Milea

Uveitis, and Intraocular Inflammation

Managing a Patient with Posterior Uveitis

Marcin Stopa, Sofia Androudi, Bahram Bodaghi, Oliver Klefner

Retina

Managing a Patient with Peripheral Retinal Pathology

Marcin Stopa, Siegfried Priglinger, Rafael Martinez Costa, Nicole Eter, Jelena Potic, Léa Dormegny

Emergencies

Performing Lateral Canthotomy for Orbital Decompression

Marta Correia, Thibauld Garcin, Michèle Beaconsfield, Denise Curtin

Managing a Patient with Corneal/Eye/Orbit Foreign Body

Thibauld Garcin, Michèle Beaconsfield, Marta Correia, Denise Curtin

EPAs' Levels of Entrustment Mapping across a 4-year Residency Program

The following table summarizes the levels of several competence assessment frameworks: the Dreyfus[1]Model of Skill Acquisition, Miller's[2] pyramid of clinical competence and the entrustable professional activities (EPAs) scale of entrustment[3, 4].

Each framework has 5 levels. However, the 5th levels on the frameworks, correspondingly "Expert"[1], "Is"[2] and "Supervises others"[3] are not a postgraduate medical education requirement, fitting instead the fellowship level. Therefore, they are not applicable to a residency training programme.

Table 1. The Dreyfus Model of Skill Acquisition, the Miller's pyramid of Clinical Competence and the Entrustable Professional Activities (EPAs) scale of entrustment

Score	Dreyfus model[1]	Miller's Pyramid[2]	EPA Scale of entrustment [2]
1	Novice	Knows	Observes
2	Advanced Beginner	Knows how	Acts under direct supervision present in the room
3	Competent	Shows how	Acts under supervision available within minutes
4	Proficient	Does	Acts unsupervised (Full competency, autonomy

[1] Dreyfus, H L and Dreyfus, S E (1986) Mind over Machine: the power of human intuition and expertise in the age of the computer, Oxford, Basil Blackwell

[2] Miller GE. 1990. The assessment of clinical skills/competence/performance. Acad Med. 65(S9): S63–S67

[3] Pangaro L, ten Cate O. Frameworks for learner assessment in medicine: AMEE guide no. 78. *Med Teach*. 2013;35(6):e1197–e1210

[4] Ten Cate O. Nuts and bolts of entrustable professional activities. J Grad Med Educ. 2013 Mar;5(1):157-8. doi: 10.4300/JGME-D-12-00380.1. PMID: 24404246; PMCID: PMC3613304.

Knowing that Competency-Based Medical Education is outcome-based rather than time-based, some guidance about the expected time for outcomes-achievement is usually acknowledged and considered in an EPA's design. The progression of levels of entrustment for each EPA, from "Observation" to "Unsupervised Practice" can be mapped across the residency program. This is outlined in the table below.

Table 2. EPAs levels of entrustment across a 4-year residency program

Subspecialty rotation	EPAs	Year 1	Year 2	Year 3	Year 4
Optics, Refraction and Contactology	Fitting and Follow-up Contact Lenses in a simple Situation	1	2	3	4
	Managing Contact Lens Wear Complications	1,2	3,4	3,4	3,4
Paediatrics and Strabismus	Diagnosing and Treating Amblyopia	1,2	2,3	3,4	4
	Prescribing Glasses to Children	1,2	2,3	3,4	4
Cornea and Ocular Surface	Conducting a Complete Ocular Surface Examination and Managing Simple Cases/Conditions	1,2	2,3	3,4	4
	Performing Non-Complex Cornea and Ocular Surface Surgery	1,2	2	2,3	3,4
	Managing a Patient with Ocular Surface and Cornea Chemical Injury	1,2	2	2,3	3,4
Oculoplastics, Lacrimal system and Orbit	Evaluating and Managing a Patient with Lacrimal Stenosis	1,2	1,2,3	1,2,3, 4	1,2,3, 4
Cataract Surgery	Conducting a Complete Pre-Operative Examination	1,2	2, 3	3,4	4
	Conducting a Complete Cataract Surgery	1,2	2,3	3,4	4

Cataract Surgery (Continued)	Conducting a Complete Cataract Post-Operative Examination	1,2	2,3	3,4	4
Refractive Surgery	Planning Refractive Surgery	1	2,3	2,3	3,4
Glaucoma	Gonioscopy- Assessing the Anterior Chamber Angle	1,2	2,3	3,4	4
	Fundoscopy - Assessing and Evaluating the Optic Disc and Retinal Nerve Fibre Layer (RNFL)	1,2	2	3	4
Neuro Ophthalmology	Managing a patient with Anisocoria	1	2	3	4
	Managing a patient with Diplopia	1	2	3	4
	Managing a patient with sudden vision loss	1	2	3	3, 4
Uveitis, and Intraocular Inflammation	Managing a patient with posterior uveitis	1	1, 2	3	3, 4
Retina	Managing a patient with peripheral retinal pathology	1	2	3	4
Emergencies	Performing lateral canthotomy for orbital decompression	1	2, 3	3, 4	4
	Managing a cornea, eye/orbit foreign body	1, 2	2, 3	3, 4	4

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Optics, Refraction and Contactology

FITTING AND FOLLOW-UP CONTACT LENSES IN A SIMPLE SITUATION

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the

European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Aurore Muselier, Manon Grégoire, Carina Koppen

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Contactology

Title: Fitting and Follow-up Contact Lenses in a simple Situation

Description: A summative entrustment decision for this EPA is only applicable if the resident is entrusted to independently perform an ocular surface examination and a clinical refraction complemented by the ancillary tests interpretation for appropriate diagnosis, to guide an effective management and follow up plan.

Most relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
The resident should show ability to advise, prescribe and adapt CL for optical indications and follow the wearers.	Explain the examination process to the patient and/or caregiver Convey findings sustaining the diagnosis and prognosis -Establish contact with the patient and/or caregiver to comply with a management and follow up plan.	Describe the case effectively to healthcare team.	Make informed decisions about further evaluations or referrals.	Advise for the need to regular eye examination.	Stay updated with advances in ocular surface examination techniques, diagnostic tools, contact lens biomaterials and innovations. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents. Practice clinical research.	Ensure patient comfort, and respecting confidentiality.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

Know anatomy and physiology of ocular surface.

Proficiency in examining the ocular surface.

Contact lenses material and their properties.

Physicochemical characteristics of lens care solution.

Optics applied to contact lens fitting (lens-eye distance, prismatic effect).

Indications, contra-indications and adverse effects of different contact lenses including bandage CL.

Skills:

Refraction aimed at contact lens fitting.

Slit lamp examination of the ocular surface.

Keratometry measures and topography interpretation.

Handling of contact lenses.

Attitudes:

Educational approach towards patient (handling of lens, insertion, removal, proper wearing rules, proper use of lens care solution).

Experience:

Practical and regular experience of contact lenses fitting and patient follow up (logbook).

Assessment Tools and Strategies (Information to assess progress)

Tools

Multiple-choice questions, short answer questions.

Objective Structured Clinical Examinations (OSCEs).

Multisource Feedback.

Direct/Video Observation.

Simulation case-based learning.

Short answer questions, portfolio.

Strategies

Multiple-choice and short answer questions enable knowledge demonstration.

Objective Structured Clinical Examinations (OSCEs) stations allow the resident to show competency in contact lens fitting and management, patient education, and interprofessional collaboration.

Reflective writing in a portfolio the resident shows knowledge understanding.

Direct/Video Observation of Clinical Performance of the resident's clinical interaction with patients to fit CL and look for ocular surface disease enable the resident to show knowledge understanding and the capability to perform in practice.

Case-based discussions can be suported on simulated clinical scenarios or ocurr at the workplace.

Multisource (360º) Feedback from self, peers, patients, staff, and supervisors on the resident's communication, teamwork, and professional behavior in ocular surface examination and disease management informs about professional performance.

Highest level of performance (Level 4 supervision conditions)

- Contact Lenses for irregular corneas.
- Specific contact lenses: Orthokeratology, myopia control.

Levels of supervision likely to be expected across the residency program duration

Entrustment/Supervision level expected at which stage of training	Year 1	Year 2	Year 3	Year 4
1 Novice **Observes only**."KNOWS"	**X**			
2 Adv **Beginner Acts under direct supervision present in the room.** "KNOWS HOW"		**X**		
3 Competent **Acts under supervision available within minutes.** "SHOWS HOW"			**X**	
4 Proficient **Acts unsupervised (Full competency, autonomy).** "DOES"				**X**
5 Expert Supervises residents/junior doctors. "IS"	**NA**	**NA**	**NA**	**NA**

Date of entrustment decision consensus	**Entrustment Decision Consensus**: The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee.
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Optics, Refraction and Contactology

MANAGING CONTACT LENS WEAR COMPLICATIONS

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Aurore Muselier, Manon Grégoire, Carina Koppen

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Contactology

Title: Managing contact lens wear complications

Description: Diagnose and manage acute and chronic complications associated with CLW. A summative entrustment decision for this EPA is only applicable if the resident is entrusted to independently perform an ocular surface examination complemented by the ancillary tests interpretation for appropriate diagnosis, to guide an effective management and follow up plan.

Most relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
The resident should show to examine an ocular surface and find out the appropriate diagnosis and management of CLW complications.	Explain the examination process to the patient and/or caregiver Convey findings sustaining the diagnosis and prognosis -Establish contact with the patient and/or caregiver to comply with a management and follow up plan.	Describe the case effectively to healthcare team.	Make informed decisions about further evaluations or referrals.	Advise for the need to regular eye examination.	Stay updated with advances in ocular surface examination techniques, diagnostic tools. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents	Ensure patient comfort, and respecting confidentiality.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

Know the epidemiology, physiopathology, risk factors, pathogens, clinical presentation, work-up, medical and surgical treatments, follow-up and prognosis of CL-related microbial keratitis (bacterial, fungal, parasitic).

Non-infectious CL related complications (hypoxic, mechanical, inflammatory, allergic, dry eye), their clinical presentation and management.

Skills:

Slit lamp examination and photography of the ocular surface.

Corneal scraping for microbiological examination.

Corneal imaging (OCT, IVCM).

Attitudes:

Explain diagnosis and therapeutic plan to the patient and the caregivers.

Experience:

Number of complications cases handled (logbook).

Assessment Tools and Strategies (Information to assess progress)

Tools

- Multiple-choice questions, short answer questions.
- Objective Structured Clinical Examinations (OSCEs).
- Multisource Feedback.
- Direct/Video Observation.
- Simulation case-based learning.
- Short answer questions, portfolio.

Strategies

- Multiple-choice and short answer questions enable knowledge demonstration.
- Objective Structured Clinical Examinations (OSCEs) stations allow the resident to show competency in contact lens fitting and management, patient education, and interprofessional collaboration.
- Reflective writing in a portfolio the resident shows knowledge understanding.
- Direct/Video Observation of Clinical Performance of the resident's clinical interaction with patients to fit CL and look for ocular surface disease enable the resident to show knowledge understanding and the capability to perform in practice.
- Case-based discussions can be suported on simulated clinical scenarios or ocurr at the workplace.
- Multisource (360º) Feedback from self, peers, patients, staff, and supervisors on the resident's communication, teamwork, and professional behavior in ocular surface examination and disease management informs about professional performance.

Highest level of performance (Level 4 supervision conditions)

Management of complex cases,

Levels of supervision likely to be expected across the residency program duration

Entrustment/Supervision level expected at which stage of training	Year 1	Year 2	Year 3	Year 4
1 Novice **Observes only.** "KNOWS"	X			
2 Adv Beginner **Acts under direct supervision present in the room.** "KNOWS HOW"	X			
3 Competent **Acts under supervision available within minutes.** "SHOWS HOW"		X		
4 Proficient **Acts unsupervised (Full competency, autonomy).** "DOES"		X		
5 Expert **Supervises residents/junior doctors.** "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	Entrustment Decision Consensus: The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee.
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Paediatric Ophthalmology and Strabismus

DIAGNOSING AND TREATING AMBLYOPIA

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Augusto Magalhães, Helgi Davio Bjornsson, with Anna Maino

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Paediatric Ophthalmology and Strabismus

Title: Diagnosing and Treating Amblyopia

Description:

Definition: amblyopia is classically defined as reduced visual acuity that cannot be immediately corrected with glasses or surgery, in the absence of a structural abnormality of the eye, accompanied by one or more known amblyogenic factors.[1]

Concept: Amblyopia is a neurodevelopmental disorder that occurs when there is discordant binocular visual experience during the first years of life[2]. It leads to monocular and binocular visual afferent function deficits besides reduced visual acuity, such as reduced contrast sensitivity, depth perception, interocular suppression, and efferent function abnormalities such as unstable and inaccurate fixation.[3]

Causes: strabismus, anisometropia, high refractive error, and cataract.[2] or other cause of visual deprivation.

A summative entrustment decision for this EPA applies if the resident is entrusted to independently diagnose and treat amblyopia, including measuring visual acuity with age-appropriate methods, performing refraction, a systematic and comprehensive clinical examination of the anterior and posterior segment of the eye and ancillary tests interpretation to aid diagnosis.

Limitation may include variations in clinical practice and availability of ancillary tests (e.g. electro diagnostics).

1. Birch, E.E., Amblyopia and binocular vision. Prog Retin Eye Res, 2013. 33: p. 67-84.
2. Birch, E.E. and K.R. Kelly, Amblyopia and the whole child. Progress in Retinal and Eye Research, 2023. 93: p. 101168.
3. Ghasia, F. and J. Wang, Amblyopia and fixation eye movements. J Neurol Sci, 2022. 441: p. 120373.

Most relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
Ability to examine children's eyes and manage appropriately. Having completed EPA ** Paediatric refraction	Explain medical terms in a clear and simple way to engage patients and parents/ carers. Communicate in an age-appropriate manner with patients to examine them effectively. Explain the importance of regular appointments.	Communicate effectively with other health professionals (e.g. orthoptists, optometrists, play specialists and paediatric nurses, paediatricians, family physicians). Communicate effectively with other figures involved in the care of the patient (e.g. teachers, school nurses, sensory support teachers, health visitors, social workers).	Organise further evaluations or referrals to other centres if no improvement in visual acuity despite correct management. Communicate effectively with other health professionals (e.g. orthoptists, optometrists, play specialists and paediatric nurses).	Inform patient and parents/caregivers, of the importance of complying with treatment and attending follow-up appointments. Liase with relevant figures in health- and social care (orthoptists, opticians, paediatricians, family physicians, health visitor, school nurses, social workers, teachers) in order to identify barriers to compliance and support the patient and their family.	Stay updated with advances in paediatric ophthalmology. Understand the latest evidence-based practice recommendations. Teach and supervise less experienced residents.	Respect patient and parents/caregivers' autonomy in making choices, including going against medical advice Communicate effectively and empathetically

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

Understand the difference between the classical definition and the neurophysiological concept of amblyopia.
Knowledge of the concepts of critical period and cortical plasticity for different amblyogenic factors.
Knowledge of amblyogenic factors and the importance of each of them in their relationship with age (e.g. Strabismus, anisometropia, high refractive errors, cataracts, other causes of visual deprivation).
Knowledge of pharmacology of different types of mydriatics drops and their side effects.
Knowledge and ability to apply PEDIG (and/or MOTAS) recommendations for amblyopia treatment.

Skills:

Proficiency in measuring visual acuity and paediatric refraction (EPA***)
Proficiency in examining anterior and posterior segments in children.
Ability to diagnose amblyopia or amblyogenic factors.
Introduce appropriately penalisation treatment according to severity, age, and social environment.

Attitudes:

Raise awareness and motivate parents and caregivers about the importance of treatment.
Explain to parents and caregivers the expected results of treatment options and their risks/side effects.
Work in a multiprofessional team.
Ability to ask for advice/refer further if needed.
Show empathy towards the patient and their parents/caregivers.

Experience:

Being entrusted with EPA ***
Being able to perform a complete eye examination in children without supervision

Assessment Tools and Strategies (Information to assess progress)

1. Practical test of accuracy of visual acuity measurement and retinoscopy (see EPA**)
2. Test of individual decisions about prescription in practical clinical cases
3. Multiple choice or short answer questions about PEDIG (MOTAS) recommendations.
4. Direct supervision

Highest level of performance (Level 4 supervision conditions)

Being able to diagnose and manage amblyopia in children without supervision and according to the patient's individual needs.

Levels of supervision likely to be expected across the residency program duration

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	X			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	X	X		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		X	X	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			X	x
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Paediatric Ophthalmology and Strabismus

PRESCRIBING GLASSES TO CHILDREN

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Augusto Magalhães, Helgi Davio Bjornsson, with Anna Maino

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Paediatric Ophthalmology and Strabismus

Title: Prescribing Glasses to Children

Description: Assessing refraction in children is an important skill to learn. In younger children the main aim is to prevent amblyopia and optimize the visual acuity so that it may not interfere with its general development using objective refraction methods. In older children the aim shifts to finding more precise refraction to aid with academic performance and quality of everyday life which is achieved with the addition of subjective refraction. It is also important to know if the glasses will be of benefit or not.

Limitations may include variations in clinical practice and availability of instruments (e.g. autorefractometer).

Most relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
Explain the examination process to the patient and parents/ caregivers. Ability to obtain accurate refractions and prescribe appropriately.	Communicate in an age-appropriate manner with patients to examine them effectively.	Communicate effectively with other health professionals (e.g. orthoptists, optometrists, play specialists and paediatric nurses, paediatricians, family physicians).	Organise further evaluations or referrals to other centres if no improvement in visual acuity despite correct glasses prescription.	Inform patient and parents/caregivers of the importance of complying with treatment and attending follow-up appointments.	Stay updated with advances in treatment options for refractive errors. Understand the latest evidence-based practice recommendations	Communicate effectively and empathetically.

(Continued on next page)

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Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
	Explain the progressive nature of myopia and the need to review periodically the prescription.	Communicate effectively with other figures involved in the care of the patient (e.g. teachers, school nurses, sensory support teachers, health visitors, social workers).	Communicate effectively with other health professionals (e.g. orthoptists, optometrists, play specialists and paediatric nurses).	Liaise with relevant figures in health- and social care (orthoptists, opticians, paediatricians, family physicians, health visitor, school nurses, social workers, teachers) in order to identify barriers to compliance and support the patient and their family. Participate in local and national screening programs.	Teach and supervise less experienced residents.	Communicate effectively and empathetically.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

- Understanding which refractive errors can cause amblyopia in young children.
- Knowledge of the concepts of critical period and cortical plasticity for refractive errors.
- Knowing how to adjust the prescription depending on age, symptoms and potential strabismus.
- Knowledge of pharmacology of different types of mydriatics drops (including cycloplegic properties) and their side effects.
- Knowledge and ability to apply evidence-based recommendations for glasses prescription.

Skills:

- Competency in using instruments (autorefractor, focimeter, corneal topography).
- Competency in performing retinoscopy, potentially with the addition of a handheld autorefractor.
- Being able to fine tune prescriptions after subjective refraction using appropriate tools (e.g. trial frame, phoropter, cross-cylinder, +1.00 lens, duochrome).

Attitudes:

- Raise awareness and motivate educators about the importance of treatment.
- Explain to patients and parents/caregivers the expected results with treatment.
- Show empathy towards the patient and their parents/caregivers.
- Awareness of the financial burden on parents/caregivers.

Experience:

- Being able to measure refractive errors accurately (following cross-check with supervisor).

Assessment Tools and Strategies (Information to assess progress)

- Retinoscopy accuracy can be tested with loose lenses and a model eye (retinoscope trainer or similar).
- Simulation software.
- Multiple choice or short answer questions.
- Direct observation.
- Supervisor checking final refraction.

Highest level of performance (Level 4 supervision conditions)

Being able to refract children objectively and subjectively without supervision and prescribe according to the patient's individual needs.

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	X			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	X	X		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		X	X	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			X	X
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Cornea and Ocular Surface

CONDUCTING A COMPLETE OCULAR SURFACE EXAMINATION AND MANAGING SIMPLE CASES/ CONDITIONS

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Helena Prior Filipe, Jorge Alió del Barrio, Nicolas Alejandre Alba, Hanne Olsen Nicolás, Vincent Borderie, Mor Dickman, Louis Arnould with Tristan Bourcier

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Cornea and Ocular Surface

Title: Conducting a Complete Ocular Surface Examination and Managing Simple Cases/ Conditions

Description: A summative entrustment decision for this EPA is only applicable if the resident is entrusted to independently perform an ocular surface examination with a systematic and comprehensive clinical assessment of the ocular surface, complemented by the ancillary tests interpretation for appropriate diagnosis, to guide an effective management and follow up plan.

Limitations may include variations in patient presentation and availability of ancillary tests

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
* See next page	Explain the examination process to the patient and/or caregiver Convey findings sustaining the diagnosis and prognosis -Establish contact with the patient and/or caregiver to comply with a management and follow up plan	Describe the case effectively to healthcare team	Make informed decisions about further evaluations or referrals	Advise for the need to regular eye examination, especially if contact lens wearers, recurrent viral keratitis, patient who underwent keratoplasties, patients suffering keratoconus, chronic allergy and dry eye disease, advise for eye protection during work, screen work advice, lid hygiene, genetic counseling in particular cases	Stay updated with advances in ocular surface examination techniques, diagnostic tools. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents. Practice clinical research.	Ensure patient comfort, and respecting confidentiality.

*[Medical Expert] Upon appropriate clinical exposure including observation and supervision, the resident should demonstrate knowledge, skills and behavior to independently:

- Conduct a clinical interview focused on ocular surface symptoms and conditions.
- List and describe the medical devices* commonly used to examine the cornea in terms of structure, morphology and mechanical properties, such as:
    - Identify and describe the purpose, functions, benefits and limitations of using OCT to investigate and measure the cornea and anterior segment
    - Describe the operation of corneal topography by Placido disc and elevation, with reference to their applications, benefits and limitations
    - Identify and describe the purpose of pachymetry measurement
    - Describe the operation of specular microscopy, as well as its functions, benefits and limitations
    - Describe the operation of confocal microscopy, as well as its functions, benefits and limitations
    - Identify and describe the purpose, principles and method of aberrometry
    - Identify the key characteristics of the viscoelasticity of the cornea, and how this can be measured
    - Identify and describe the purpose, principles and method of infrared meibography
- Administer topical anesthesia, select, and interpret patterns obtained by the application of topical stains (Fluorescein, Lissamine green) on the ocular surface.
- Examine the face, skin and gaze.
- Slit lamp biomicroscopy, including drawing of anterior segment findings, slit lamp photography.

- Perform Schirmer tests, tear film breakup time, and dye pooling / staining patterns on the cornea and conjunctiva.
- Perform punctal occlusion (temporary or permanent) or insert plugs.
- Probe and irrigate the lacrimal system.
- Examine the Meibomium glands.
- Measure proptosis.
- Test corneal sensation (e.g., cotton-tipped swab, Cochet-Bonnet esthesiometer).
- Perform scraping and conjunctival swab for microbiological examinations (i.e.viral, bacterial, fungal, and protozoal ocular infections).
- Perform a systemic work up for immune keratitis.
- Remove a conjunctival, corneal or fornix foreign body or rust ring.
- Remove corneal stitches.
- Perform pterygium excision (e.g., with autologous conjunctival or amniotic membrane transplantation).
- Perform benign conjunctival tumor excision (e.g. pinguecula, nevus).
- Perform amniotic membrane transplantation (inlay, overlay, filling).
- Repair simple and urgent cases of corneal laceration with no visual axial involvement repair in adult patients (eg, linear laceration not extending to limbus, not involving uveal or intraocular structures.
- Stitch leaking phaco incisions and isolated sutures on a PK/DALK graft and repair conjunctival lacerations
- Repair simple case of conjunctival laceration.

- Do eyelash epilation.
- Irrigate chemical burn to the eye.
- Perform the Seidel test to detect of wound leak.
- Administrate sunconjunctival, subtenon and peribulbar injections of steroids, anesthesics or other drug.
- Understand the application and describe the procedure of corneal crosslinking.
- Fit bandage contact lens.
- Apply patching.

* the residency program should offer the resident the opportunity for the clinical exposure described. The possibility to complement with another center as so equipped in terms of human and equipment resources is also considered and advised.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:
Know anatomy and physiology of ocular surface. Proficiency in examining the ocular surface, integrating clinical findings in face skin, tear film, lashes, lids static, kinetic and Meibomian glands lacrimal system, orbit, sclera, anterior chamber, conjunctiva in its bulbar and tarsal aspects, limbus and cornea. Identifying keratitis, corneal ulcer, edema, infiltrate, neovascularization, scar, fibrosis, dystrophy, degeneration, thinning, irregularity, deposit, loss of sensation, conjunctival inflammation and/or fibrosis, dysplasia, neoplasia, degeneration.
Know pharmacology of the tear substitutes, anti-inflammatory and anti-infective eyedrops. Know the iatrogenic effects of systemic or topical drug on the ocular surface.
Know to interpret imaging systems and other complementary exams dedicated to ocular surface.

Skills:
Proficiency in using specialized equipment and tasks for examination and treatment. Accurate interpretation of findings, and recognition of normal versus abnormal ocular surface characteristics. Practicing the work-up and follow-up of chronic ocular surface conditions.
Attitudes:
Work in multiprofessional and interprofessional teams. Ask for advice if needed. Show empathy with the patient and caregiver.
Experience:
Practical experience in performing ocular surface examinations, identify and manage various ocular surface conditions, and familiarity with diagnostic tools.. It is challenging to determine a precise number of patients necessary to attain this EPA. It would be advisable a rotation period of 6 months, eventually 9 months on the anterior segment department across a 4 year residence, as necessary and fair in order to achieve the necessary competence on this EPA.

Assessment Tools and Strategies (Information to assess progress)

Tools

- Multiple-choice questions, short answer questions
- Objective Structured Clinical Examinations (OSCEs)
- Multisource Feedback
- Direct/Video Observation
- Simulation case-based learning
- Short answer questions, portfolio

Strategies

- Multiple-choice and short answer questions enable knowledge demonstration.

- Objective Structured Clinical Examinations (OSCEs) stations allow the resident to show competency in ocular surface disease and management, patient education, and interprofessional collaboration.
- Reflective writing in a portfolio the resident shows knowledge understanding.
- Direct/Video Observation of Clinical Performance of the resident's clinical interaction with patients to examine ocular surface and look for ocular surface disease enable the resident to show knowledge understanding and the capability to perform in practice.
- Case-based discussions can be supported on simulated clinical scenarios or occur at the workplace. They enact the resident to demonstrate performance through structured observation, clinical reasoning, asking for or performing the appropriate ancillary tests, interpreting results and decide the best clinical management.
- Multisource (360º) Feedback from self, peers, patients, staff, and supervisors on the resident's communication, teamwork, and professional behaviour in ocular surface examination and disease management informs about professional performance

Highest level of performance (Level 4 supervision conditions)

Direct Supervision (level 2): The resident should be closely supervised when performing their initial evaluations while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently conduct an ocular surface examination and should demonstrate:

- thorough and accurate examination techniques, assessing all relevant aspects of the ocular surface to arrive at an accurate diagnosis of ocular surface disease.
- clear and empathetic communication communication with the patient throughout the process, ensuring comfort and understanding.
- collaborative team approach with other healthcare professionals for optimal patient care and further evaluation or management if necessary.
- application of up-to-date knowledge and skills to accurately interpret findings and suggest appropriate interventions or referrals.
- commitment to ongoing learning to enhance examination proficiency.

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"		**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		**X**	**X**	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			**X**	**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	Entrustment Decision Consensus: The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Cornea and Ocular Surface

MANAGING A PATIENT WITH OCULAR SURFACE AND CORNEA CHEMICAL INJURY

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Louis Arnould, Helena Prior Filipe, Jorge Alió del Barrio, Nicolas Alejandre Alba, Hanne Olsen, Vincent Borderie, Mor Dickman, with Tristan Bourcier

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Cornea and Ocular Surface

Title: Managing a Patient with Ocular Surface and Cornea Chemical Injury

Description: Understanding that corneal chemical burns represent a frequent potentially blinding ocular injuries and constitute a true ocular emergency requiring immediate assessment and initiation of treatment. Emergency exam and management should fall withing the field of fellowship or post-residency training level, this EPA aims to establish those basic corneal and ocular surface procedures that are reasonable at the junior level and any resident ideally should be exposed to along the years of ophthalmology training.

Most Relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
The resident should show ability to fully examine the corneal and ocular surface, and master diagnostic devices such as basic topography and AS-OCT	-Explain the surgical procedure as well as benefits and risks to the patient and relatives. -Convey findings sustaining the prognosis -Establish rapport with the patient and/or caregiver to comply with a management and follow up plan	Describe the case effectively to healthcare team	Make decisions about the adequate surgical intervention need and appropiate indication of surgery	Advise for postoperative care regarding needed medical tretament and follow-up visits.	Stay updated with advances in ocular surface surgical techniques and prognostic factors. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents.	Ensure patients' comfort, and respect confidentiality.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

To know and understand the anatomy and physiology of healthy cornea, limbal structures and ocular surface. To know epidemiology and pathogenesis of corneal chemical burns (ability to explain difference between acid and alkali burns). To know classification (Roper Hall and Dua). Fellowship or post-residency training level should be exposed to each chronological stage of chemical burns presentations: emergency, acute, late phases and early and late reparative phases. Visual prognosis should be known and presented to patients (uni or bilateral burns).

Residents should master the knowledge of emergency managements such as irrigation, preservative free tear substitute, bandage contact lens, ascorbate supplementation, corticosteroid, symblepharon rings, amniotic membrane. Issues regarding limbal stem cells induced deficiency should be known. Late evolution of corneal chemical burns needs to be mastered and treatment option should be proposed to patients (ciclosporin drop, autologous serum, scleral lens, limbal stem cell graft, corneal transplantation, palpebral surgery).

Skills:

Ability to master and individually perform: punctual plug, symblepharon rings, bandage lens contact lens, amniotic membrane surgery.

Attitudes:

Work in multiprofessional and interprofessional teams. Ask for advice if needed. Show empathy with the patient and caregiver. Being able to manage professional chemical burns in term of legal point of view.

Experience:

Practical experience in performing simple ocular surface surgeries as mentioned above.

Assessment Tools and Strategies (Information to assess progress)

- Direct/Video Observation of surgical procedures
- Training by simulation (virtual reality, dry and wet lab)
- Hands on surgery with and without supervision
- Emergency and Surgical portfolio (record of completed surgeries as first/main surgeon)

Highest level of performance (Level 4 supervision conditions)

Direct Supervision (level 2): The resident should be closely supervised when managing chemical burns patients while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently manage from the beginning to the late follow up patient with chemical burns and should demonstrate:

- thorough and accurate examination techniques, assessing all relevant aspects of the ocular surface to arrive at an accurate therapeutic strategy
- clear and empathetic communication with the patient throughout the procedure, ensuring comfort and understanding and collaboration.
- collaborative team approach with other healthcare professionals for optimal patient management.
- application of up-to-date knowledge and skills to accurately interpret findings and suggest appropriate interventions or referrals.
- commitment to ongoing learning to enhance chemical burns management knowledge and skills.

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	**X**	**X**	**X**	
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Cornea and Ocular Surface

PERFORMING NON-COMPLEX CORNEA AND OCULAR SURFACE SURGERY

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Jorge Alió del Barrio, Helena Prior Filipe, Louis Arnould, Nicolas Alejandre Alba, Hanne Olsen, Vincent Borderie, Mor Dickman, with Tristan Bourcier

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Cornea and Ocular Surface

Title: Performing Non-Complex Cornea and Ocular Surface Surgery

Description: Understanding that complex corneal and ocular surface surgical procedures fall withing the field of fellowship or post-residency training level, this EPA aims to establish those basic corneal and ocular surface procedures that are reasonable at the junior level and any resident ideally should be exposed to along the years of ophthalmology training. Limitations may include variations in incidence and prevalence of some specific conditions (i.e. pterygium).

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
The resident should show ability to fully examine the corneal and ocular surface, and master diagnostic devices such as basic topography and AS-OCT	Explain the surgical procedure as well as benefits and risks to the patient and relatives. Convey findings sustaining the prognosis Establish rapport with the patient and/or caregiver to comply with a management and follow up plan	Describe the case effectively to healthcare team	Make decisions about the adequate surgical intervention need and appropiate indication of surgery	Advise for postoperative care regarding needed medical tretament and follow-up visits.	Stay updated with advances in ocular surface surgical techniques and prognostic factors. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents.	Ensure patients' comfort, and respect confidentiality.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

To know, understand and being exposed to basic corneal transplantation techniques (PK, DALK and EK), corneal perforation management (tectonic graft, amniotic membrane transplant and corneal gluing), basic ocular surface surgeries (simple excision of conjunctival lesions, pterygium surgery, conjunctival grafts) as well as corneal collagen crosslinking, amniotic membrane transplant, corneal and conjunctival foreign body management, eye patch, and corneal/conjunctival suturing and suture removal. Residents should master the knowledge of such techniques, their indications, the most prevalent complications and their management. Basic theoretical knowledge in corneal laser-assisted therapeutic / refractive surgery and therapeutic contact lenses is also advised.

Skills:

Ability to master and individually perform: corneal gluing for corneal perforation management, basic ocular surface surgeries, such as simple excision of conjunctival lesions, pterygium surgery, conjunctival grafts, corneal collagen crosslinking, amniotic membrane transplant, corneal and conjunctival foreign body management, eye patch, bandage contact lens, corneal/conjunctival suturing and removal, subconjunctival / intratarsal / periocular injections of pharmacologic agents.

Attitudes:

Work in multiprofessional and interprofessional teams. Ask for advice if needed. Show empathy with the patient and caregiver.

Experience:

Practical experience in performing simple ocular surface surgeries as mentioned above.

Assessment Tools and Strategies (Information to assess progress)

- Direct/Video Observation of surgical procedures
- Training by simulation (virtual reality, dry and wet lab)
- Hands on surgery with and without supervision
- Surgical portfolio (record of completed surgeries as first/main surgeon)

Highest level of performance (Level 4 supervision conditions)

Direct Supervision (level 2): The resident should be closely supervised when performing their initial surgeries while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently perform the most basic surgical techniques (corneal/conjunctival suturing and suture removal, crosslinking, corneal gluing, foreign body management) and should demonstrate:

- thorough and accurate examination techniques, assessing all relevant aspects of the ocular surface to arrive at an accurate indication of ocular surface surgeries.
- clear and empathetic communication with the patient throughout the procedure, ensuring comfort and understanding and collaboration.
- collaborative team approach with other healthcare professionals for optimal patient postoperative management.
- application of up-to-date knowledge and skills to accurately interpret findings and suggest appropriate interventions or referrals.
- commitment to ongoing learning to enhance surgical knowledge and skills.

Levels of supervision likely to be expected across the residency program duration

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	**X**	**X**	**X**	
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Oculoplastics Lacrimal System, and Orbit

EVALUATING AND MANAGING A PATIENT WITH LACRIMAL STENOSIS

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

Renata Ivekovic, Rimvydas Asoklis, Michèle Beaconsfield, Frédéric Mouriaux, Marie Louise Rasmussen, Santiago Ortiz

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Oculoplastics Lacrimal System, and Orbit

Title: Evaluating and Managing a Patient with Lacrimal Stenosis

Description: The trainee is entrusted to independently evaluate and manage a patient with lacrimal stenosis, a common condition in oculoplastic surgery, ensuring accurate diagnosis, appropriate treatment, and comprehensive post-operative care.

Link with the Competency Framework:

This EPA aligns with the core competencies of oculoplastic surgery, including clinical assessment, surgical skill, patient communication, professionalism, and post-operative management.

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
X	X					X

Required **Knowledge, Skills, Attitudes and Experience** (qualitative and quantitative)

Knowledge:

Understanding lacrimal system anatomy, aetiology of lacrimal stenosis, diagnostic methods (such as lacrimal syringing, dye appearance test, imaging techniques), and surgical and non-surgical management options. Understanding and differentiating from other causes of epiphora.

Skills:

Proficiency in clinical assessment of lacrimal stenosis, diagnosis and post-operative care, including punctal dilatation, horizontal probing, lacrimal irrigation, horizontal probing, stent removal, and management of complications. Intra operative and postoperative testing including tests in more complex traumas to the lacrimal system.

Proficiency in obtaining informed consent for surgery.

Surgical procedures are not included in this EPA. However, the trainee should be able to describe the the surgical procedures such as lacrimal probing, dacryocystectomy, dacryocystorhrinostomy or conjunctivo-dacryocystorhinostomy, their success rates and their complications.

Follow-up Care: the trainee should provide post-operative care plans, including appropriate follow-up appointments, monitoring for complications, and addressing patient concerns or complications that may arise after surgery.

Attitudes:

Commitment to patient-centred care, effective communication with patients and colleagues, ethical conduct, ongoing learning, and improvement.

Experience:

Qualitative: Exposure to a variety of lacrimal stenosis cases, including congenital and acquired forms, as well as cases with associated comorbidities.

Quantitative: Completion of a minimum number of lacrimal evaluations and post-operative follow-ups under supervision, with increasing independence as competence is demonstrated.

This EPA for lacrimal stenosis emphasizes the development of knowledge, skills, attitudes, and experience necessary for independently evaluating, managing, and treating patients with lacrimal stenosis. The qualitative and quantitative components ensure that trainees have both a comprehensive understanding of the condition and sufficient hands-on experience to provide optimal care.

Assessment Tools and Strategies (Information to assess progress)

- Direct observation and feedback from experienced oculoplastic/ lacrimal surgeons.
- Patient feedback and treatment outcomes.
- Case-based discussions, presentations, and reviews.
- Self-reported reflections on patient cases and decision-making

Highest level of performance (Level 4 supervision conditions)

Level 4 supervision demands full entrustment in evaluation and creating management plan for lacrimal problems when demonstrating competence.

Levels of supervision likely to be expected across the residency program duration

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**	**X**	**X**	**X**
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	**X**	**X**	**X**	**X**
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		**X**	**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			**X**	**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Cataract Surgery

CONDUCTING A COMPLETE CATARACT SURGERY

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Ewa Mrukwa-Kominek, Karsten Paust, Filomena Ribeiro, Léonard Sidhoum, Ann Sofia Thomsen, Paul Ursell

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Cataract Surgery

Title: Conducting a Complete Cataract Surgery

Description: A summative entrustment decision for this EPA is only applicable if the resident is entrusted to independently perform a complete cataract surgery.

Most Relevant Competency /Roles

Please grade the following areas using the scale below (use tick or cross)

1 = Poor, 2= Fair, 3= Good, 4= V Good, N = Not applicable

* Where the marked points have not been personally carried out by the trainee, a discussion should take place about how these areas should be managed and the trainee's responses graded.

Criterion	**1**	**2**	**3**	**4**	**n**
Implement the basic preparatory procedures for cataract surgery including sterile technique, gloving and gowning, prep and drape, and other preoperative preparation. **V good trainees** will be able to prepare the patient with good sterile technique, respect for the patients comfort in an efficient and timely fashion **Poor trainees** will require repeated attempts to prepare the patient and not ensure their comfort with appropriate positioning to perform the surgery					

Criterion	1	2	3	4	n
Perform phacoemulsification in a practice setting (eg, practice lab) or simulation-based cataract surgical training, if available. **V good trainees** will demonstrate dexterous and sympathetic surgical technique. They will be able to perform each step appropriately with elegant instrument handling, efficiency of maneuvers and respect for the tissues. Each step of the procedure will ensure that following surgical steps can be performed safely and efficiently. **Poor trainees** will struggle to perform each maneuver competently and require assistance. They will take excessive time and require the supervisor to complete each step safely.					
Perform the steps of cataract surgery under direct supervision, including any or all of the following. • paracentesis of the anterior chamber • Wound construction - incisions, sclero-corneal tunnel, side ports • Anterior capsulotomy/capsulorhexis • Instillation and removal of viscoelastics • Hydrodissection and hydrodelineation • Phacoemulsification techniques (eg, sculpting, divide and conquer, stop and chop, phaco chop) • Instrumentation and techniques of irrigation and aspiration • Cortical cleaning • IOL implantation (eg, anterior and posterior, foldable, and non-foldable) (M) • Wound hydration					

Criterion	1	2	3	4	n
(Continued from "Perform the steps of cataract surgery under direct supervision") **V good trainees** will demonstrate dexterous and sympathetic surgical technique. They will be able to perform each step appropriately with elegant instrument handling, efficiency of maneuvers and respect for the tissues. Each step of the procedure will ensure that following surgical steps can be performed safely and efficiently. **Poor trainees** will struggle to perform each maneuver competently and require assistance. They will take excessive time and require the supervisor to complete each step safely.					
Independently evaluate and establish a management plan for surgical complications including: • posterior capsular tears • vitreous prolapse • intravitreal dislocation of cataractous fragments • corneal wound burn • expulsive hemorrhage • choroidal effusions • damage to the iris tissue • converting to extracapsular cataract extraction if needed **V good trainees** will be able to recognize factors leading to complications, be able to prevent complications where possible, be able to manage complications appropriately and be aware when further referral is appropriate. **Poor trainees** will be unaware of factors leading to complications, will not be able to prevent complications occurring unnecessarily and will not have the skills to manage appropriately. They will be unaware of their limitations and will not refer onward appropriately.					

Criterion	1	2	3	4	n
Successful surgical management **V good trainees** will undertake all surgery, have insight into their own limitations; access help if required or supervision, to ensure good outcomes of any problems/complications encountered; demonstrate forward planning and good time and motion throughout list **Poor trainees** are unable to complete all surgery in time; fail to recognize their own limitations or access help if required; fail to plan and manage list in timely manner					

Criterion	1	2	3	4	n
Creating operating list **V good trainees** will have ensured appropriate patients on list for their ability (where possible); adequate time for all cases to be completed but also ensuring good use of surgical time **Poor trainees** will not have identified appropriate patients and may find they cannot safely manage all the cases on the list; will over-run or under-use surgical time					
Review of case notes **V good trainees** will have reviewed case notes ahead and be aware of which patients require additional equipment/medications/devices; will have confirmed biometry appropriate and chosen the appropriate IOL for each patient **Poor trainees** will not have reviewed notes ahead; will have to choose IOL when patient already prepared for surgery and will not have considered if biometry appropriate/accurate					

Criterion	1	2	3	4	n
Consent and marking surgical site **V good trainees** will confirm informed consent with patients on day ensuring they understand the planned surgery; complete surgical site form and mark eye clearly **Poor trainees** will not review consent or will obtain consent without checking patient's understanding; will need prompting to ensure surgical site form and marking completed					
Review of patients **V good trainees** will examine the patients before surgery and identify any additional requirements not documented in notes such as to manage a small pupil **Poor trainees** will not take the opportunity to review patients themselves and so will only identify additional patients factors/requirements at commencement of surgery					
Complete WHO checklist **V good trainees** will ensure accurate completion of WHO preop checklist including different surgical times for each procedure and detailing any important patient factors to the team, they will involve and empower all team members to ensure patient safety, they will confirm the order of the list according to patients' needs such as diabetic/hospital transport **Poor trainees** do not make WHO meaningful; fail to provide relevant details to team in advance causing tension and delays; and ignore importance team dynamics					

Criterion	1	2	3	4	n
Medical record completion **V good trainees** will ensure accurate completion of surgical record and all local requirements such as the discharge letter, medication to be dispensed, time to post-operative review, adhering to local protocols but considering individual patient needs; will be aware of coding of episode correctly to assist audit and reimbursement e.g. for complex cases with co-morbidity **Poor trainees** do not complete surgical record accurately, require reminding to complete discharge letter and medication and do not understand the importance of accurate coding					

Criterion	1	2	3	4	n
Post-operative review **V good trainees** will check if any patients require further explanations/management before discharge home and check discharge team have adequate information to effectively complete patient episode **Poor trainees** will depart without checking with discharge team; leaving further explanations to other staff					
Debrief at completion list **V good trainees** will hold team debrief reviewing the flow of the list, different members roles and patient outcomes as required and assess time management of the list and communication with the team as per WHO completion form **Poor trainees** leave theatre without further communication with team					

Criterion	1	2	3	4	n
Communication with patient **V good trainees** have excellent and appropriate communication with patient throughout the procedure, avoiding jargon. They confirm the patient's identity at the start of the procedure and ensure the patient's comfort and privacy, making sure they are relaxed throughout. **Poor trainees** often make no attempt at communication with the patient, or they use inappropriate words during procedure. They do not warn the patient about noises or fluids. They pay little or no attention to confirmation of the patient's identity, comfort or privacy					
Communication with nursing and other medical staff (Teamwork) **V good trainees** show excellent verbal and non-verbal communication with theatre staff. They promote a coordinated team approach in an unhurried and calm environment. **Poor trainees** often have poor communication skills leading to misunderstandings during procedure. They create a rushed or tense atmosphere and work in isolation					

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**	**X**	**X**	**X**
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	**X**	**X**	**X**	**X**
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		**X**	**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			**X**	**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	**Entrustment Decision Consensus**: The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee
Additional Notes	

Please use the boxes below/overleaf for free-text comments and recommendations for further training.

Anything especially good?	Agreed action:

Source:

The Royal College of ophthalmology RCOphth Entrustable Professional Activity - Managing a Cataract Operating List

https://curriculum.rcophth.ac.uk/curriculum/ost/assessments/workplace-based-assessments/entrustable-professional-activity-epa/

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Cataract Surgery

CONDUCTING A COMPLETE POST-OPERATIVE CATARACT PATIENT'S EXAMINATION

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Ewa Mrukwa-Kominek, Karsten Paust, Filomena Ribeiro, Léonard Sidhoum, Ann Sofia Thomsen, Paul Ursell

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Cataract Surgery

Title: Conducting a Complete Post-Operative Cataract Patient's Examination

Description: A summative entrustment decision for this EPA is only applicable if the resident is entrusted to independently perform an examination of the anterior and posterior segment with a systematic and comprehensive clinical assessment, complemented by the ancillary tests interpretation for appropriate diagnosis, to guide an effective management and follow up plan.

Limitations may include variations in patient presentation and availability of ancillary tests

Most Relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
The resident should show ability to*	Ensure the patient's comfort and privacy, making sure they are relaxed throughout Find an appropriate communication with the patient and/or caregiver throughout the procedure, avoiding jargon. Explain the examination process to the patient.	Describe the case effectively to medical care team Find a good verbal and non-verbal communication with the medical care team. promote a coordinated team approach in an unhurried and calm environment.	Make informed decisions about further evaluations or referrals	Explain the surgical procedure and post-operative evolution. Advise for the need to regular eye examination, Inform the patient of potential complications associated with cataract surgery.	Stay updated with advances in anterior and posterior examination techniques, diagnostic tools and therapeutic procedures. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents.	Ensure patient comfort, and respecting confidentiality.

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Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
The resident should show ability to*	Establish contact with the patient and/or caregiver to comply with a management plan Explain to the patient and/or caregiver all relevant treatment options, including the option of no active management.	(No further items from list on previous page)	(No further items from list on previous page)	Inform the patient about possible complications Explain to the patient that if they experience pain, redness and/or visual impairment, he/she directly should contact an ophthalmologist. Provide the patient with contact details that they can address to in case of any complaints.	(No further items from list on previous page)	(No further items from list on previous page)

Required **Knowledge, Skills, Attitudes and Experience** (qualitative and quantitative)

Knowledge:
Know anatomy, physiology and pathology of the postoperative status of the eye. Proficiency in examining the anterior (and posterior) segment, integrating clinical findings in face skin, lashes, tear film, conjunctiva, cornea, sclera, anterior chamber, vitreous body and retina.
Understanding the pharmacology of drug treatments related to the post-operative management of patients
Know the iatrogenic effects of systemic or topical drug on the eye.
Know to interpret imaging systems and other complementary exams dedicated to anatomy and refraction.
Knowledge of the postoperative course, including possible complications and adverse events
Skills:
Proficiency in using specialized equipment and tasks for clinical examination.
Accurate interpretation of findings, and recognition of normal versus abnormal findings.
Complete post-operative ophthalmologic examination of postcataract patients, Confirmation of postoperative refractometry appropriate and choosing the appropriate ocular correction for each patient
Identification of any additional requirements not documented in notes such as to diagnose and manage postoperative dry eye syndrome
Attitudes:
Show empathy with the patient and caregiver. Review case notes ahead and be aware of which patients require additional equipment/medications/devices.
Confirm that they understand the postoperative course, treatment options, and postoperative patient management.
Work in multiprofessional and interprofessional teams. Ask for advice if needed.
Detail any important patient factors to the team, empower all team members to ensure patient safety, according to patients' needs such as diabetic/hospital transport
Follow ethical rules in clinical decision making.

Experience:
Practical experience in performing anterior segment and posterior segment examinations, identify and manage postoperative complications (ie. endophthalmitis), identify various ocular surface conditions, and familiarity with diagnostic tools. It is challenging to determine a precise number of patients necessary to attain this EPA.
It would be advisable a rotation period of 12 months, across a 4 year residence, as necessary and fair in order to achieve the necessary competence on this EPA.

Assessment Tools and Strategies (Information to assess progress)

Tools
Multiple-choice questions, single best answer, short answer questions
Objective Structured Clinical Examinations (OSCEs)
Multisource Feedback
Direct/Video Observation
Simulation case-based learning
Short answer questions, portfolio
Strategies
Multiple-choice and short answer questions enable knowledge demonstration.
Objective Structured Clinical Examinations (OSCEs) stations allow the resident to show competency in a pre-operative examination of a cataract, patient education, and interprofessional collaboration.
Reflective writing in a portfolio the resident shows knowledge understanding.
Direct/Video Observation of Clinical Performance of the resident's clinical interaction with patients to examine ocular surface and look for ocular surface disease enable the resident to show knowledge understanding and the capability to perform in practice.

Case-based discussions can be supported on simulated clinical scenarios or occur at the workplace. They enact the resident to demonstrate performance through structured observation, clinical reasoning, asking for or performing the appropriate ancillary tests, interpreting results and decide the best clinical management.
Multisource (360º) Feedback from self, peers, patients, staff, and supervisors on the resident's communication, teamwork, and professional behavior in ocular surface examination and disease management informs about professional performance

Level of Performance

Observation (level 1): The resident acquires knowledge and observes only.

Direct Supervision (level 2): The resident should be closely supervised when performing their initial evaluations while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently conduct an ocular surface examination and should demonstrate:

- thorough and accurate examination techniques, assessing all relevant aspects of the anterior (and posterior) segment to arrive at an accurate diagnosis of lens diseases.
- clear and empathetic communication with the patient throughout the process, ensuring comfort and understanding.
- collaborative team approach with other healthcare professionals for optimal patient care and further evaluation or management if necessary.
- application of up-to-date knowledge and skills to accurately interpret findings and suggest appropriate interventions or referrals.
- commitment to ongoing learning to enhance examination proficiency.

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	**X**	**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		**X**	**X**	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			**X**	**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	**Entrustment Decision Consensus**: The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee
Additional Notes	

*Upon appropriate clinical exposure including observation and supervision, the resident should demonstrate knowledge, skills and behavior to independently:

- taking patients history
- taking visual acuity, refraction
- Slit lamp biomicroscopy, including drawing of anterior segment findings, slit lamp photography.
- List and describe the medical devices commonly used to examine the anterior segment in terms of structure, morphology and mechanical properties, such as purpose, functions, benefits and limitations of using OCT, corneal topography, autorefractor, keratometer, B-scan ultrasound
- establish a management plan for complications of cataract surgery (eg, corneal edema, elevated pressure, hypopyon, residual cortex, posterior capsular tears, vitreous prolapse, intravitreal dislocation of cataractous fragments, corneal wound burn, expulsive hemorrhage, choroidal effusions, damage to the iris tissue).
- establish a management plan for postoperative medications used for cataract surgery, including antibiotics, nonsteroidal anti-inflammatory drugs, and corticosteroid therapy.
- establish a management plan to prevent and treat postoperative endophthalmitis, the evaluation and management of common and uncommon causes of postoperative endophthalmitis and TASS,
- establish management strategies to reposition of decentered, tilted, subluxated, and dislocated IOLs.

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Cataract Surgery

CONDUCTING A COMPLETE PRE-OPERATIVE EXAMINATION OF A PATIENT WITH CATARACT

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Ewa Mrukwa-Kominek, Karsten Paust, Filomena Ribeiro, Léonard Sidhoum, Ann Sofia Thomsen, Paul Ursell

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Cataract Surgery

Title: Conducting a Complete Pre-Operative Examination of a Patient with Cataract

Description: A summative entrustment decision for this EPA is only applicable if the resident is entrusted to independently perform an examination of the anterior and posterior segment with a systematic and comprehensive clinical assessment, complemented by the ancillary tests interpretation for appropriate diagnosis, to guide an effective management and follow up plan.

Limitations may include variations in patient presentation and availability of ancillary tests

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
The resident should show ability to*	Confirm the patient's identity at the start of the procedure and ensure the patient's comfort and privacy, making sure they are relaxed throughout Find an appropriate communication with the patient and/or caregiver throughout the procedure, avoiding jargon.	Describe the case effectively to medical care team Find a good verbal and non-verbal communication with the medical care team. promote a coordinated team approach in an unhurried and calm environment.	Make informed decisions about further evaluations or referrals	Advise for the need to regular eye examination, Explain the impact of cataracts on activities of daily living and their natural evolution. Explain the surgical procedure and post-operative evolution.	Stay updated with advances in anterior and posterior examination techniques, diagnostic tools and therapeutic procedures. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents.	Ensure patient comfort, and respecting confidentiality.

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Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
The resident should show ability to*	Explain the examination process to the patient. Convey findings sustaining the diagnosis and prognosis. Develop clinical and ethical decision making in cataract patients. Establish contact with the patient and/or caregiver to comply with a management plan Explain to the patient and/or caregiver all relevant treatment options, including the option of no active management.	(No further items from list on previous page)	(No further items from list on previous page)	Inform the patient of potential complications associated with cataract surgery.	(No further items from list on previous page)	(No further items from list on previous page)

Required **Knowledge, Skills, Attitudes and Experience** (qualitative and quantitative)

Knowledge:

Know anatomy, physiology and pathology of the lens and the zonular apparatus. Proficiency in examining the anterior (and posterior) segment, integrating clinical findings in face skin, lashes, tear film, conjunctiva, cornea, sclera, anterior chamber, vitreous body and retina.

Understanding the pharmacology of drug treatments related to the pre-operative management of cataracts

Know the iatrogenic effects of systemic or topical drug on the lens.

Know to interpret imaging systems and other complementary exams dedicated to anatomy and refraction.

Skills:

Proficiency in using specialized equipment and tasks for clinical examination.

Accurate interpretation of findings, and recognition of normal versus abnormal findings.

Complete preoperative ophthalmologic examination of cataract patients, including the consent for the procedure and Confirmation of biometry appropriate and choosing the appropriate IOL for each patient

Identification of any additional requirements not documented in notes such as to manage a small pupil

Attitudes:

Show empathy with the patient and caregiver. Review case notes ahead and be aware of which patients require additional equipment/medications/devices.

Confirm informed consent with patients ensuring they understand the planned surgery.

Work in multiprofessional and interprofessional teams. Ask for advice if needed.

Detail any important patient factors to the team, empower all team members to ensure patient safety, according to patients' needs such as diabetic/hospital transport

Follow ethical rules in clinical decision making.

Experience:

Practical experience in performing anterior segment and posterior segment examinations, identify and manage various ocular surface conditions, and familiarity with diagnostic tools. It is challenging to determine a precise number of patients necessary to attain this EPA.

It would be advisable a rotation period of 12 months, across a 4 year residence, as necessary and fair in order to achieve the necessary competence on this EPA

Assessment Tools and Strategies (Information to assess progress)

Tools

- Multiple-choice questions, single best answer, short answer questions
- Objective Structured Clinical Examinations (OSCEs)
- Multisource Feedback
- Direct/Video Observation
- Simulation case-based learning
- Short answer questions, portfolio

Strategies

- Multiple-choice and short answer questions enable knowledge demonstration.
- Objective Structured Clinical Examinations (OSCEs) stations allow the resident to show competency in a pre-operative examination of a cataract, patient education, and interprofessional collaboration.
- Reflective writing in a portfolio the resident shows knowledge understanding.

- Direct/Video Observation of Clinical Performance of the resident's clinical interaction with patients to examine ocular surface and look for ocular surface disease enable the resident to show knowledge understanding and the capability to perform in practice.
- Case-based discussions can be supported on simulated clinical scenarios or occur at the workplace. They enact the resident to demonstrate performance through structured observation, clinical reasoning, asking for or performing the appropriate ancillary tests, interpreting results and decide the best clinical management.
- Multisource (360º) Feedback from self, peers, patients, staff, and supervisors on the resident's communication, teamwork, and professional behavior in ocular surface examination and disease management informs about professional performance

Level of Performance

Observation (level 1): The resident acquires knowledge and observes only.

Direct Supervision (level 2): The resident should be closely supervised when performing their initial evaluations while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently conduct an ocular surface examination and should demonstrate:

- thorough and accurate examination techniques, assessing all relevant aspects of the anterior (and posterior) segment to arrive at an accurate diagnosis of lens diseases.
- clear and empathetic communication with the patient throughout the process, ensuring comfort and understanding.
- collaborative team approach with other healthcare professionals for optimal patient care and further evaluation or management if necessary.

- application of up-to-date knowledge and skills to accurately interpret findings and suggest appropriate interventions or referrals.
- commitment to ongoing learning to enhance examination proficiency.

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	**X**	**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		**X**	**X**	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			**X**	**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	**Entrustment Decision Consensus**: The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee
Additional Notes	

*Upon appropriate clinical exposure including observation and supervision, the resident should demonstrate knowledge, skills and behavior to independently:

- taking patients history
- complete examination for per-operative risk factors (pseudo capsular exfoliation, fuchs dystrophy, corneal scarring, zonular laxity, cristaline ectopia, ocular surface assessment, poor dilation, posterior polar cataract, post-traumatic cataract, general antecedents (diabetes, rheumatoid arthritis, etc.))
- taking visual acuity, refraction
- Slit lamp biomicroscopy, including drawing of anterior segment findings, slit lamp photography.
- List and describe the medical devices commonly used to examine the anterior segment in terms of structure, morphology and mechanical properties, such as purpose, functions, benefits and limitations of using OCT, corneal topography, autorefractor, keratometer, A-scan and B-scan ultrasound
- Biometry, calculating the power of the intraocular lens (IOL)

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Refractive Surgery

PLANNING REFRACTIVE SURGERY

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Tiago Monteiro, Miguel Lacerda Leitão, Luis Fernandez Veja, Burkhard Dick, Sorcha Ní Dhubghaill, Béatrice Cochener

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Refractive Surgery

Title: Planning Refractive Surgery

Description:

- Understand the preoperative planning of refractive surgery. We do not expect candidates to be proficient in the practical aspects of Refractive Surgery.
- The resident is however expected to be able to combine the information about patient refraction and age with the results of the ophthalmic examinations to select and inform the patient regarding refractive range, suitability and appropriateness of the surgical procedures to perform.
- Receive theoretic and practical wet-lab formation on refractive surgical techniques.

Most Relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
	Explain the preoperative examination process prior to surgery Explain findings sustaining the treatment plan adopted		Explain the prognosis of surgery and the risks and benefits associated	Instruct the patient when no surgery is advised or in the case certain procedures incorporate a substantial number of possible complications	Integrate in a medical department and learn to convey information and justification of the decision to junior doctors in formation	Be responsible for the surgeries performed and take care of unsatisfied patients. Treat and monitor postoperative complications.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

- Measure visual acuity in multiple distances, uncorrected and corrected with subjective and cycloplegic refraction.
- Slit-lamp examination of the anterior segment and ocular surface.
- Diagnostic examinations in refractive surgery planning: Biometry, corneal topography, AS-OCT, Specular microscopy and confocal microscopy.
- Fundamentals of excimer and femtosecond laser and corneal effects of keratorefractive surgery
- Abnormal, ectatic corneas and other contraindications to refractive surgery.
- Types of corneal ablation profiles
- Planning phakic IOL calculation, sizing, long-term risks and explantation.
- Pseudophakic IOL calculation formulas and toric IOL calculations
- Optical concepts of pseudophakic IOLs (refractive, diffractive, extended depth of focus principles, advanced monofocal, toric)
- Understanding of how to calculate IOLs in post-refractive patients.
- Basis on posterior segment OCT for assessment of macula and optical nerve

Skills:

- Perform epithelial removal with or without alcohol or abrasive brushes (e.g. Amolis brush) for surface ablation.
- Perform a corneal flap with Microkeratome and/or Femtosecond laser for LASIK procedure.
- Loading and implanting an iris-fixated phakic IOL and a posterior chamber phakic IOL
- Performing a lenticular intrastromal refractive surgery from docking to lenticule extraction
- Diagnosis and surgical treatment of surface and lamellar corneal refractive surgery complications
- Perform toric and multifocal IOL surgical implantations.

Attitudes:

- Inform patients about the expectation after refractive surgery procedures.
- Informed consent on the advantages and disadvantages of each refractive surgery procedure
- Collect key information from patient to help in the surgical decision.

Experience:

- Evaluate and understand the indications and limitations of the refractive surgical techniques available.
- Clinical monitoring and decision on phakic IOL explanation and exchange
- Presbyopia management – IOL classification and patient profile

Assessment Tools and Strategies (Information to assess progress)

- Multiple choice questions
- Virtual / Online clinical cases
- Wet-Lab surgical examination – flaps, phakic IOL loading, lenticule extraction

Highest Level of Performance (Level 4 supervision conditions)

Level 4

- Perform corneal refractive surgery (surface and lamellar surgery) with expert supervision.
- Implant a phakic IOL with expert supervision.
- Identify complications after corneal refractive surgery or phakic IOL implantation.
- Management of intraoperative and postoperative complications

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"		**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Glaucoma

GONIOSCOPY. ASSESSING THE ANTERIOR CHAMBER ANGLE

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Barbara Cvenkel, Alain Bron, Gordana Sunaric Megevand, Denise Curtin, Luis Abegao Pinto, Joao Breda, Rémi Yaïci

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Glaucoma

Title: Gonioscopy: Assessing the Anterior Chamber Angle

Description: The entrusted decision for this EPA is only applicable if the resident is entrusted to independently perform assessment of the anterior chamber angle using indirect gonioscopy without and with indentation (dynamic gonioscopy) to identify angle openness, reference landmarks of the angle, other normal anatomical features (e.g. blood vessels, iris processes, pigmentation) and pathologic findings (eg. anterior synechia) that support appropriate diagnosis and treatment.

Most Relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
The resident should be able to	Explain the examination to the patient and/or caregiver Convey the findings to the patient/caregiver Explain the management plan (e.g. laser iridotomy for primary angle closure disease)	Describe the case effectively to healthcare team	Make informed decisions about treatment	Advice for the need of regular eye examination to prevent loss of visual function	Teach and demonstrate to younger residents Clinical practice	Ensure patient comfort

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge: the anatomy of the anterior chamber angle, its openness without and with indentation (dynamic) gonioscopy, reference landmarks, differentiate normal from abnormal findings such as normal vessels from neovascularisation, iris processes from goniosynechiae, variable pigmentation of the angle including the Sampaolesi line, insertion level of the iris root before and during dynamic gonioscopy. Know how to interpret findings at the slit lamp and fundus examination. Knowledge about different gonio-lenses.

Skills: Proficiency in using the indirect gonioscopy lens to perform gonioscopy and identify angle structures; to perform dynamic gonioscopy to differentiate between synechiae and appositional angle closure. Accurate interpretation of findings and recognition of normal versus abnormal angle characteristics.

Attitudes: Ask for advice if needed. Show empathy with the patient and/or caregiver.

Experience: Practical experience in performing gonioscopy starting from visible and easily identifiable reference landmarks and being able to differentiate narrow from open angles in the first year of residency. Along the 4 years of training the resident should acquire the necessary skill to be proficient in gonioscopy, its interpretation and treatment decision in an individual patient.

Assessment Tools and Strategies (Information to assess progress)

Tools

- Multiple-choice questions, SBA questions
- Direct observation of clinical performance of the resident's interaction with patients, resident's technique and interpretation of the findings

Highest Level of Performance (Level 4 supervision conditions)

Direct supervision (level 2): the resident should be supervised by the mentor when performing gonioscopy

Indirect supervision (level 3): With experience, the resident will require less direct supervision, only occasionally he/she will seek advice from the experienced ophthalmologist.

Full entrustment (level 4): The resident is entrusted to independently perform gonioscopy and should demonstrate:

- Accurate examination technique and interpretation of the findings
- Clear and empathetic communication with the patient when explaining the procedure, its aim and importance for treatment

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	**X**	**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		**X**	**X**	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			**X**	**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Glaucoma

FUNDOSCOPY: ASSESSING AND EVALUATING THE OPTIC DISC AND RETINAL NERVE FIBRE LAYER (RNFL)

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Barbara Cvenkel, Alain Bron, Gordana Sunaric Megevand, Denise Curtin, Luis Abegao Pinto, Joao Breda, Rémi Yaïci

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Glaucoma

Title: Fundoscopy: Assessing and Evaluating the Optic Disc and Retinal Nerve Fibre Layer (RNFL)

Description: A summative entrustment decision of this EPA is only applicable if the resident is entrusted to independently perform assessment and evaluation of the optic disc and RNFL, complemented, when needed, with functional tests of visual function (standard automated perimetry) and imaging (OCT). In some cases retinal fundus photography may aid detection of RNFL defects.

Limitations include absence of clearly defined criteria for early glaucoma due to variations of the optic disc morphology (size, shape) among the normal population.

Most Relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
The resident should be able to	Explain the examination to the patient and/or caregiver Convey the findings and the diagnosis in a clear and understandable way Establish contact with the patient and/or caregiver to adhere to management and follow-up	Describe the finding effectively to the healthcare team	Make informed decisions about treatment and regular follow-up	Advice for the need of regular follow up and treatment to assess the rate of progression and the need to adapt/modify treatment if necessary to preserve visual function		Respect patient confidentiality and his preferences, establish trustworthy relationship

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge: assessment and evaluation of the optic disc and RNFL, careful assessment of the neuroretinal rim and its changes (eg. notching), disc morphology and anomalies (e.g. tilted and rotated disc), size of the disc, presence of optic disc haemorrhages, changes in the relative position of vessels at the optic disc. Knowledge of the changes that may be related to progression of disease. Knowledge of congenital disc anatomical variations.

Skills: slit-lamp examination using indirect lens and being able to evaluate the optic disc, diagnose normal, suspicious and abnormal optic disc/RNFL

Attitudes: professional clinical assessment with communication of diagnosis and prognosis taking into account the patient's expectations, preferences and anxiety

Experience: Practical experience to evaluate these features and detect changes with follow-up. In the first year of residency be able to differentiate between normal findings and definite glaucomatous changes at optic disc (clear notching with corresponding localized RNFL loss); along the 4 years the resident should be able to assess, evaluate and detect changes from previous examinations (baseline).

Assessment Tools and Strategies (Information to assess progress)

Tools

- Multiple-choice and SBA questions (enable knowledge demonstration)
- Objective structured clinical examinations
- Direct observation
- Case presentation and case-based discussion

Highest Level of Performance (Level 4 supervision conditions)

Direct supervision (level 2): the resident should be supervised by the mentor when assessing and evaluating the optic disc and RNFL

Indirect supervision (level 3): With experience, the resident will require less direct supervision, only occasionally seeking the help of an experienced ophthalmologist.

Full entrustment (level 4): The resident is entrusted to independently assess and evaluate the optic disc and RNFL, interpret findings and make decisions about treatment and follow-up schedule

Resident shows clear and empathetic communication with the patient when explaining the findings, diagnosis and management plan considering patient's preferences and expectations

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"	**X**	**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Neuro Ophthalmology

DIAGNOSING AND MANAGING A PATIENT WITH SUDDEN VISUAL LOSS

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Huban Atilla, Giorgio Porro, Dan Milea, Neri Jurkute, Michael Stormly, Kanav Khanna

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Neuro-Ophthalmology

Title: Fundoscopy: Diagnosing and Managing a Patient with Sudden Visual Loss

Description: Trainees are expected to combine neuro-ophthalmic knowledge with clinical skills in an empathetic manner in order to perform a thorough and comprehensive assessment of sudden vision loss including:

- Taking history
- Performing clinical examination
- Providing cost-effective care by ordering relevant diagnostic tests
- Scheduling follow-up
- Treating or referring patient.

Trainees should demonstrate evidence-based skills with the highest standards of professionalism, ultimately contributing to increase the body of knowledge by staying updated, teaching and engaging in research.

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
To diagnose and manage sudden vision loss by conducting patient evaluations, ordering and interpreting relevant diagnostic tests. To confirm aetiology for sudden vision loss, distinguishing between organic and nonorganic causes, and to organize treatment plans and schedule follow-up.	To communicate effectively with patients, patients' relatives and healthcare providers about the diagnosis, prognosis and management of visual loss, in an understandable and empathetic manner.	To collaborate with a multidisciplinary team including ophthalmologists, neurologists, emergency physicians, radiologists to ensure an holistic approach to the diagnosis and treatment of sudden visual loss in a timely manner.	To make informed decisions about diagnostic procedures, treatment plans or referrals. This includes mentoring junior doctors, leading case discussion, and contributing to the development of guidelines	To advocate for access to necessary diagnostics tools and treatments, supporting public health initiatives for neuro-ophthalmologic disorders.	To contribute evidence-based knowledge by engaging in research, staying updated, disseminating findings through scientific events and publications, and teaching juniors doctors.	To ensure patient and/or caregivers with the highest standards of professionalism by maintaining confidentiality, demonstrating ethical-decision making and improving practice through self-assessment and feedback.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge: Aetiologies of visual loss related to retinal and optic nerve pathologies

- Anatomy and physiology of vision
- Pathologies that can cause sudden vision loss
- Aetiologies of sudden vision loss and examination findings according to each cause
- Tests employed to distinguish between organic and nonorganic vision loss
- Functional and imaging tests to explore visual pathways
- Medical management and surgical procedures according to each cause

Skills: Visual acuity measurement for far and near and with stenopeic hole

- Evaluation of pupillary light reflexes, relative afferent pupillary defect
- Examination of anterior and posterior segments
- Interpretation of the visual field test
- Interpretation of the retinal and optic nerve optical coherence tomography
- Interpretation of the visual evoked potential
- Interpretation of the electroretinogram

Attitudes: Work in multiprofessional and interprofessional teams. Ask for advice if needed. Show empathy with the patient and caregiver.

Experience: Practical experience in patient examination and fundus examination, 50 patients

Assessment Tools and Strategies (Information to assess progress)

Knowledge assessment by written modalities:

- Multiple choice questions
- Short answer questions
- Script concordance tests

Skills and attitudes evaluated by oral modalities:

- Direct observation
- Case-based discussion and presentation
- Objective structured clinical examinations with simulated patients and healthcare providers

Highest Level of Performance (Level 4 supervision conditions)

Direct Supervision (level 2): The resident should be closely supervised when performing their initial evaluations while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently conduct fundus examination and should demonstrate:

- Thorough and accurate examination techniques, assessing anterior segment, pupillary reflexes and fundus examination
- Clear and empathetic communication with the patient throughout the process, ensuring comfort and understanding.
- Collaborative team approach with other healthcare professionals for optimal patient care and further evaluation or management if needed, such as hospitalization

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"		**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	The trainee is expected to have entrustment at 2nd to 3rd year of residency
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Neuro Ophthalmology

DIAGNOSING AND MANAGING A PATIENT WITH ANISOCORIA

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Huban Atilla, Giorgio Porro, Dan Milea, Neri Jurkute, Michael Stormly, Kanav Khanna

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Neuro-Ophthalmology

Title: Fundoscopy: Diagnosing and Managing a Patient with Anisocoria

Description: Trainees are expected to combine neuro-ophthalmic knowledge with clinical skills in an empathetic manner in order to perform a comprehensive assessment of anisocoria including:

- Taking history
- Performing examination
- Scheduling follow-up
- Treating or referring patient

Trainees should demonstrate evidence-based skills with the highest standards of professionalism, ultimately contributing to increase the body of knowledge by staying updated, teaching and engaging in research

Most Relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
To accurately diagnose and manage anisocoria by integrating neuro-ophthalmic knowledge with clinical skills. To identify the underlying causes by differentiating physiologic from pathologic anisocoria as well as planning appropriate treatment plans.	To explain the examination process to the patient and/ or caregiver. Explain the findings and possible diagnostic care plan in an understandable and empathetic manner.	To work collaboratively with a multidisciplinary team including neurologists, neuroradiologists and primary care physicians to ensure a holistic approach to the diagnosis and treatment of anisocoria.	To make informed decisions about diagnostic procedures, treatment plans or referrals. This includes mentoring junior doctors, leading case discussion, and contributing to the development of guidelines.	To advocate for access to necessary diagnostics tools and treatments, supporting public health initiatives for neuro-ophthalmologic disorders.	To contribute evidencce-based knowledge by engaging in research, staying updated, disseminating findings through scientific events and publications, and teaching juniors doctors.	To ensure patient and/or caregivers with the highest standards of professionalism by maintining confidentiality, demonstrating ethical-decision making and improving practice through self-assessment and feedback.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

- Anatomy and physiology of pupillary reactions
- Sympathetic and parasympathetic pathways for pupil reactions
- Afferent and efferent pathways for pupillary reaction
- Etiology of anisocoria related to intracranial, cervical and other pathologies
- Differential diagnosis of anisocoria
- Pharmacological evaluation, and purpose of pharmacological testing, search for alternative drops

Skills: Evaluation of pupillary light reflex under mesopic and photobic conditions

- Evaluation of near reflex
- Measurement of anisocoria clinically (and with infrared imaging devices if available)
- Evaluation of afferent pupillary reflex

Attitudes: Work in multiprofessional and interprofessional teams. Ask for advice if needed.

Experience: Practical experience in pupillary evaluation and pharmacological tests

Assessment Tools and Strategies (Information to assess progress)

Knowledge assessment by written modalities:

- Multiple choice questions
- Short answer questions
- Script concordance tests

Skills and attitudes evaluated by oral modalities:

- Direct observation
- Case-based discussion
- Objective structured clinical examinations with simulated patients and healthcare providers

Highest Level of Performance (Level 4 supervision conditions)

- Pharmacological pupil testing
- Imaging
- Referral

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"		**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Neuro Ophthalmology

DIAGNOSING AND MANAGING A PATIENT WITH DIPLOPIA

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Huban Atilla, Giorgio Porro, Dan Milea, Neri Jurkute, Michael Stormly, Kanav Khanna

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Neuro-Ophthalmology

Title: Fundoscopy: Diagnosing and Managing a Patient with Diplopia

Description: Trainees are expected to combine neuro-ophthalmic knowledge with clinical skills in an empathetic manner in order to perform a thorough and comprehensive assessment of diplopia including:

- Taking history
- Performing clinical examination including diplopia characteristics (especially monocular or binocular), pinhole test, Maddox rod test, double Maddox rod test, red filter test, red reflex test, cover-uncover test, ocular motility, saccades and pupil assessment
- Providing cost-effective care by ordering relevant diagnostic tests
- Scheduling follow-up
- Treating or referring patient

Trainees should demonstrate evidence-based skills with the highest standards of professionalism, ultimately contributing to increase the body of knowledge by staying updated, teaching and engaging in research

Limitations may include variations in patient presentation and availability of ancillary tests

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
To differentiate between monocular and binocular diplopia. To demonstrate a clinical and paraclinical strategy to tailor personalized medicine for both monocular and binocular diplopia cases.	To communicate effectively with patients, patients' relatives and healthcare providers about the diagnosis, prognosis and management of diplopia, in an understandable and empathetic manner.	To collaborate with a multidisciplinary team including ophthalmologists, neurologists, emergency physicians, radiologists to ensure an holistic approach to the diagnosis and treatment of sudden visual loss in a timely manner.	To make informed decisions about diagnostic procedures, treatment plans or referrals. This includes mentoring junior doctors, leading case discussion, and contributing to the development of guidelines.	To advocate for access to necessary diagnostics tools and treatments, supporting public health initiatives for neuro-ophthalmologic disorders. To advise for the need to regular eye examination, control of systemic diseases like diabetes and hypertension.	To contribute evidence-based knowledge by engaging in research, staying updated, disseminating findings through scientific events and publications, and teaching juniors doctors.	To ensure patient and/or caregivers with the highest standards of professionalism by maintaining confidentiality, demonstrating ethical-decision making and improving practice through self-assessment and feedback.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

- Anatomy and physiology of the visuomotor system
- Anatomy and innervation of the extraocular and intraocular muscles
- Anatomy of the orbit and cavernous sinus
- Cranial nerves anatomy
- Internuclear and supranuclear pathways involved in ocular motility
- Saccades testing
- Aetiologies of diplopia and emergency conditions that may manifest with diplopia
- Localisation of lesions in function of aetiologies, from the muscle to the brain

Skills:

- Visual acuity measurement
- Differentiation between monocular and binocular diplopia
- Visual acuity measurement with pinhole
- Biomicroscopic evaluation of anterior segment for diplopia causes
- Ocular motility evaluation (*)
- Measurement of heterophorias
- Red reflex test (Brückner) test
- Retinoscopy

- Examination of fundus
- Examination of cranial nerves (II, III, IV, V, VI, VII)
- Interpreting objective ocular torsion on fundus photography
- Ordering neuro-imaging and laboratory investigations
- Prescribing: occlusion, prism, extraocular muscle botulinum toxin injection, strabismus surgery

Attitudes: Work in multiprofessional and interprofessional teams. Ask for advice if needed. Show empathy with the patient and caregiver.

Experience: Identify and manage diplopia and knows diagnostic tests, need 25 patients

Assessment Tools and Strategies (Information to assess progress)

Knowledge assessment by written modalities:

- Multiple choice questions
- Short answer questions
- Script concordance tests

Skills and attitudes evaluated by oral modalities:

- Direct observation
- Case-based discussion and presentation
- Objective structured clinical examinations with simulated patients and healthcare providers

Reflective writing in a portfolio the trainee shows knowledge understanding.

Highest Level of Performance (Level 4 supervision conditions)

Direct Supervision (level 2): The resident should be closely supervised when performing their initial evaluations while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently examine, diagnose and differential diagnosis of diplopia should demonstrate:

- Thorough and accurate examination techniques, assessing all relevant aspects of the ocular motility and binocular vision to arrive at an accurate diagnosis of diplopia
- Clear and empathetic communication communication with the patient throughout the process, ensuring comfort and understanding.

Asks orthoptic assessment, biological tests and imaging.

Treat patient or refer according to the underlying aetiology.

(*) together with an orthoptist

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"		**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee.
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Uveitis

MANAGING A PATIENT WITH POSTERIOR UVEITIS

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Marcin Stopa, Bahram Bodaghi, Sofia Androudi, Oliver Niels Klefter

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Europe, 2023-2024

Subspecialty Rotation: Uveitis

Title: Managing a Patient with Posterior Uveitis

Description: A summative entrustment decision for this EPA is only applicable if the resident is entrusted to independently perform diagnostic approach to the posterior uveitis patient. The resident should be able to order and interpret anciliary tests for appropriate diagnosis and to guide an effective management and follow up plan.

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
The resident should show ability to *	Explain the examination process to the patient and/or caregiver Convey findings sustaining the diagnosis and prognosis -Establish contact with the patient and/or caregiver to comply with a management and follow up plan	Describe the case effectively to healthcare team. Convey ophthalmological status and treatment recommendations effectively to colleagues in other specialties.	Make informed decisions about further evaluations or referrals	Advise for the need to regular eye examination, especially if sudden onset aggravation of symptoms	Stay updated with advances in diagnostic approach and laboratory tests, and therapy options. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents. Practice clinical research.	Ensure patient comfort, and respecting confidentiality.

*[Medical Expert] The resident should show ability to:

- Conduct a clinical interview focused on uveitis symptoms and conditions as well as elicit a previous medical history and symptoms of underlying systemic disease.
- Demonstrate competency in diagnosis, investigation and management of uveitis in a wide range of patients with infectious and non-infectious uveitis, with a special focus on posterior uveitis, white-dot syndromes, uveitis with systemic disease, uveitis with optic-nerve disease
- Demonstrate competency in diagnosis, investigation and management of other inflammatory orbital and ocular disease including: systemic vasculitis, scleritis and inflammatory corneal disease, lacrimal and orbital inflammation, neurological inflammatory disease, HIV and the immunosuppressed patient
- Demonstrate competency in interpretation of investigations, including: OCT and OCTA, FA, ICGA, electrodiagnostic tests, B scan ultrasound
- Recognise and acutely manage patients presenting with sight threatening uveitis
- Identify uveitis patients who have an underlying systemic disease or infection or are immunocompromised
- Monitor and manage the side-effects of systemic treatment

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

Know anatomy and physiology of anterior segment, retina, choroid and vitreous. Know classification of uveitis, recognizing course and onset of inflammation, clinicopathologic characteristics of the Inflammation Understand the goal of treatment and different therapy modalities.

Know to interpret imaging systems and other complementary exams dedicated to retina and choroid (OCT, OCTA, FA, ICG, widefield imaging, electrophysiology).

Skills:

Proficiency in taking the history, performing ocular examination, extraocular examination, proficiency in synthetizing a list of most likely diagnoses, and selecting laboratory studies. Proficiency in using specialized equipment and tasks for examination and treatment. Accurate interpretation of findings, and recognition of normal versus abnormal findings. Practicing the follow-up of these conditions.

Attitudes:

Work in multiprofessional and interprofessional teams. Ask for advice if needed. Show empathy with the patient and caregiver.

Experience:

Practical experience in performing ocular examinations, identify and manage various postorior segment inflammatory conditions, and familiarity with relevant diagnostic tools. The candidate needs to analyze the status of 50 posterior uveitis patients (or complete a 6-month period in a department or unit subspecialized in uveitis).

Assessment Tools and Strategies (Information to assess progress)

Tools

- Multiple-choice questions, short answer questions
- Objective Structured Clinical Examinations (OSCEs)
- Multisource Feedback
- Direct/Video Observation
- Simulation case-based learning
- Short answer questions, portfolio
- Case review with supervisor

Strategies

- Multiple-choice and short answer questions enable knowledge demonstration.
- Objective Structured Clinical Examinations (OSCEs) stations allow the resident to show competency in retinal disease and management, patient education, and interprofessional collaboration.
- Reflective writing in a portfolio the resident shows knowledge understanding.
- Direct/Video Observation of Clinical Performance of the resident's clinical interaction with patients to examine retina and look for peripheral retinal changes enable the resident to show knowledge understanding and the capability to perform in practice.
- Case-based discussions can be supported on simulated clinical scenarios or ocurr at the workplace. They enact the resident to demonstrate performance through structured observation, clinical reasoning, asking for or performing the appropriate ancillary tests, interpreting results and decide the best clinical management.
- Multisource (360º) Feedback from self, peers, patients, staff, and supervisors on the resident's communication, teamwork, and professional behaviour in retinal examination and disease management informs about professional performance

Highest Level of Performance (Level 4 supervision conditions)

Direct Supervision (level 2): The resident should be closely supervised when performing their initial evaluations while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently conduct retinal examination and should demonstrate:

- thorough and accurate examination techniques, including assessing all relevant aspects of the retinal periphery to arrive at an accurate diagnosis of peripheral retinal pathologies.
- clear and empathetic communication communication with the patient throughout the process, ensuring comfort and understanding.
- collaborative team approach with other healthcare professionals for optimal patient care and further evaluation or management if necessary.
- application of up-to-date knowledge and skills to accurately interpret findings and suggest appropriate interventions or referrals.
- commitment to ongoing learning to enhance examination proficiency.

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**	**X**		
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"		**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	**X**
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	**Entrustment Decision Consensus:** The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Retina

MANAGING A PATIENT WITH PERIPHERAL RETINAL PATHOLOGY

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Marcin Stopa, Rafael Martinez Costa, Hank Bonnemaijer, Jelena Potic, Léa Dormegny

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Retina

Title: Managing a Patient with Peripheral Retinal Pathology

Description: A summative entrustment decision for this EPA is only applicable if the resident is entrusted to independently perform ophthalmoscopic examination with direct and indirect lenses (20D, 28D, 2.2 Panretinal lenses, three mirror contact glass, among others) in complex retinal conditions (eg, retinal holes, peripheral degenerations, retinoschisis, giant retinal tears, proliferative vitreoretinopathy). The resident should be able to interpret anciliary tests for appropriate diagnosis and to guide an effective management and follow up plan.

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
* See next page	Explain the examination process to the patient and/or caregiver Convey findings sustaining the diagnosis and prognosis Establish contact with the patient and/or caregiver to comply with a management and follow up plan	Describe the case effectively to healthcare team	Make informed decisions about further evaluations or referrals	Advise for the need to regular eye examination, especially if sudden onset of floaters, photopsia, presence of retinal degenerations, myopia, previous retinal surgery	Stay updated with advances in retinal examination techniques, diagnostic tools. Understand the latest evidence-based practice pattern. Teach and demonstrate to younger residents. Practice clinical research.	Ensure patient comfort, and respecting confidentiality.

*[Medical Expert] The resident should demonstrate ability to:

- Conduct a clinical interview focused on retinal symptoms and conditions.
- 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 (drawing)
- List and describe the medical devices used to examine retina in terms of structure, morphology and mechanical properties, such as:
    - Identify and describe the purpose, functions, benefits and limitations of using OCT to investigate posterior segment pathologies.
    - Understand purpose and limitations of B scan ultrasound.
- Understand and apply knowledge of lasers. Apply this knowledge when recommending laser treatment.
- Select and apply appropriate laser for the management of retinal disorders
- achieve safe and appropriate local anesthetic for ophthalmic procedures.
- Perform effective laser retinopexy
- Know common and uncommon long-term side effects of laser treatment

Employ safe practice, including complying with local laser safety procedures.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

Know anatomy and physiology of retina. Proficiency in examining ocular fundus indirect and direct ophthalmoscopy, be able to combine scleral indentation with indirect ophthalmoscopy for a wider field of view and better visualization of the peripheral retina, proficiency in using different type of lenses (contact three mirror contact glass and non-contact), integrating retinal findings with other ocular findings as well as systemic symptoms. Knowledge about location (equatorial, peripheral, or combined), Pathomorphology (trophic, tractional, atrophic, or combined), depth of retinal changes- (intraretinal, retinal, vitreoretinal, or chorioretinal), Risk for retinal detachment, Prognosis – progressive or stationary. Pathophysiology of retinal detachment and PVR.

Knowledge about laser-tissue Interaction

Know the iatrogenic effects of tissue photocoagulation. Know to interpret imaging systems and other complementary exams dedicated to retina (OCT, OCTA, FA, ICG, widefield imaging + B-scan).

Skills:

Proficiency in using specialized equipment and tasks for examination and treatment. Accurate interpretation of findings, and recognition of normal versus abnormal peripheral retinal characteristics. Practicing the follow-up these conditions.

Attitudes:

Work in multiprofessional and interprofessional teams. Ask for advice if needed. Show empathy with the patient and caregiver.

Experience:

Practical experience in performing ophthalmoscopic examinations, identify and manage various peripheral retinal degenerations, and familiarity with relevant diagnostic tools. The candidate needs to analyze retinal status of 200 patients (or 6-month period in a department or unit subspecialized in retinal conditions).

Assessment Tools and Strategies (Information to assess progress)

Tools

- Multiple-choice questions, short answer questions
- Objective Structured Clinical Examinations (OSCEs)
- Multisource Feedback
- Direct/Video Observation
- Simulation case-based learning
- Short answer questions, portfolio

Strategies

- Multiple-choice and short answer questions enable knowledge demonstration.
- Objective Structured Clinical Examinations (OSCEs) stations allow the resident to show competency in retinal disease and management, patient education, and interprofessional collaboration.
- Reflective writing in a portfolio the resident: shows knowledge understanding.
- Direct/Video Observation of Clinical Performance of the resident's clinical interaction with patients to examine retina and look for peripheral retinal changes enable the resident to show knowledge understanding and the capability to perform in practice.
- Case-based discussions can be suported on simulated clinical scenarios or ocurr at the workplace. They enact the resident to demonstrate performance through structured observation, clinical reasoning, asking for or performing the appropriate ancillary tests, interpreting results and decide the best clinical management.
- Multisource (360º) Feedback from self, peers, patients, staff, and supervisors on the resident's communication, teamwork, and professional behavior in retinal examination and disease management informs about professional performance

Highest Level of Performance (Level 4 supervision conditions)

Direct Supervision (level 2): The resident should be closely supervised when performing their initial evaluations while gaining experience.

Indirect Supervision (level 3): While gaining experience, the resident will require less direct supervision and receive guidance and oversight from experienced ophthalmologists.

Full Entrustment (level 4): The resident is entrusted to independently conduct retinal examination and should demonstrate:

- thorough and accurate examination techniques, assessing all relevant aspects of the retinal periphery to arrive at an accurate diagnosis of peripheral retinal pathologies.
- clear and empathetic communication with the patient throughout the process, ensuring comfort and understanding.
- collaborative team approach with other healthcare professionals for optimal patient care and further evaluation or management if necessary.
- application of up-to-date knowledge and skills to accurately interpret findings and suggest appropriate interventions or referrals.
- commitment to ongoing learning to enhance examination proficiency.

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"		**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"			**X**	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"				**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	**Entrustment Decision Consensus:** The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee.
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Emergency

PERFORMING LATERAL CANTHOTOMY FOR ORBITAL DECOMPRESSION

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Marta Correia, Thibaud Garcin, Michèle Beaconsfield, Denise Curtin

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Emergency

Title: Performing Lateral Canthomy for Orbital Decompression

Description: Understand the management of orbital compartment syndrome: care chain from questioning the patient (when possible) and making a rapid and precise clinical diagnosis, in order to expeditiously perform a surgical procedure. Understand that rational request for ancilliary tests can be done but should not preempt treatment.

Guide an effective management and follow up plan.

Reserve time to inform patients and/or caregivers.

Setting: Variations in healthcare institution location and grade of differentiation induce special logistics for referral and surgical treatment.

Limitations may include variations in patient presentation and availability of surgical rooms.

Most Relevant Competency /Roles

Medical Expert	**Communication**	**Collaboration**	**Leadership**	**Health Advocate**	**Scholarship**	**Professionalism**
The resident should show ability to incorporate different points: • Knowledge • Skills • Attitudes • Experience	Explain the sequential process (diagnosis/extension/ surgical intervention) to the patient and/or caregiver. Convey findings sustaining the diagnosis and prognosis, highlighting the importance of a thorough personal history. Establish contact with the patient and/or relative to comply with a management and follow up plan.	Describe the case effectively to healthcare team ; Be able to interact with colleagues when imaging or management in surgical theatre is necessary (other medical and surgical specialists; nurses; technicians...).	Make informed decisions about further evaluations or referrals.	Primary and Secondary prevention (protection / behaviors personal or at work). Promote early recognition of alarming symptoms and signs of orbital compression syndrome;	Stay updated with general protocols, diagnostic tools and best management options. Understand the published evidence-based practice pattern; Teach and demonstrate to younger residents;	Ensure and promote a healthy doctor-patient relationship, ensuring patient understanding of clinical diagnosis.

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

Orbital semiology, anatomy (content and bone frame), Exophthalmia/Proptosis definition and quantification (Hertel/Luedde); Local and General risks factors of Orbital Compartment Syndrome (trauma (including iatrogenic intra-surgical trauma), coagulopathies, anticoagulation medications, local injections (retrobulbar or peribulbar), orbital infection or emphysema, foreign bodies, orbital malformations, spontaneous haemorrhage), thyroid eye disease.

Skills:

Palpation of bone frame/ manual-bidigital intra ocular pressure/ visual acuity (light perception, hand movements, counting fingers or better)/colour vision evaluation/ pupil examination (presence of relative afferent pupillary defect)/ quantification of proptosis/ eye motility

Prompt (without delay) lateral canthotomy (and inferior cantholysis) preferably in the first two hours after presentation in the presence of intraocular pressure usually superior to 40 mmhg.

Attitudes:

Being able to quickly examine and promptly decide treatment and follow-up, do fast work-up (risk factors, blood sample, in cases of serious doubt imaging), explain risks, treatment and prognosis with the patient and/or caregivers.

Experience:

Practical experience in performing initial questioning and examination; identify the various ethiologies of orbital compartment syndrome; familiarity with work-up tools;

Being able to use and interpret not only ophthalmic imaging but also Computed Tomography or Magnetic Ressonance images;

Being able to perform lateral canthotomy and inferior cantholysis, progressively increasing technical gestures with acquired experience

A precise number of patients necessary to attain this EPA, is not advisable. It would be advisable a rotation period of 6 to 9 months on the emergency department across a 4 year residence, as necessary and fair in order to achieve the necessary competence on this EPA. Complemented regular on-call duties (equivalent 2-4 per month) in emergency ophthalmology department all along the residency. Rather than high aboslute numbers of on-call duties, the consistency across 4 year residence is important.

Assessment Tools and Strategies (Information to assess progress)

Tools

Multiple-choice questions, short answer questions

Objective Structured Clinical Examinations (OSCEs)

Simulation case-based learning either online or with supervisor in the department

Webinars

CME credits

“LogBook” during residency : library “personal cases” and shared with resident promotion(s)

Strategies

Multiple-choice and short answer questions enable knowledge demonstration.

Objective Structured Clinical Examinations (OSCEs) stations allow the resident to show competency in guidance of the management (logical suite or not), patient information (and caregivers if present), and interprofessional collaboration.

Case-based discussions can be supported on simulated clinical scenarios or occur at the workplace. They enact the resident to demonstrate performance through the global process of the management (structured observation, clinical reasoning, asking or performing the appropriate ancillary tests, interpreting results and decide the best clinical management). They allow to distribute

variety of situations from simple to complex, with numerous entrances (caregivers or not, behiavors, medical presentation with only ophthalmic involvement or not.)

Webinars help have global culture and trends from other places/countries from Key Opinion Leaders or experienced practitioners.

CME credits ensure continuing medical formation during congresses (national or international) and show knowledge understanding.

“LogBook” during residency : the resident shows knowledge understanding, memorable cases either standards or complex. The resident may learn faster by sharing personal experience with his/her colleagues from same promotion and older : tips and tricks should be shared to know what to do / what not to do and avoid most of errors. It could help reach consensual practices / protocols and concentrate only on “vairations” of the presentation and human being for each further case treated.

Highest Level of Performance (Level 4 supervision conditions)

Full Entrustment (level 4): A resident entrusted to independently conduct surgical management of orbital compartment syndrome should demonstrate:

- Logical strategy from simple to complex cases thorough an accurate examination techniques, assessing all relevant aspects and outline a treatment plan
- Clear-empathetic communication and information (sufficient and necessary, especially for the medicolegal dimension) with the patient and/or caregiver throughout the process
- Collaborative team approach - if needed according to context with other healthcare professionals for optimal patient care and further evaluation or management if necessary
- Apply appropriate follow-up plan; Be able to accurately reevaluate findings and suggest appropriate interventions or referrals if needed
- Commitment to ongoing learning to enhance management proficiency

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
1 Novice. | **Observes only.** | "KNOWS"	**X**			
2 Adv Beginner. | **Acts under direct supervision present in the room.** | "KNOWS HOW"		**X**		
3 Competent. | **Acts under supervision available within minutes.** | "SHOWS HOW"		**X**	**X**	
4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			**X**	**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, the residency program director and committee.
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

Entrustable Professional Activities (EPAs)

Emergency

MANAGING A CORNEA, EYE/ ORBIT FOREIGN BODY

European Board of Ophthalmology and the UEMS Section of Ophthalmology Working Group for the European Training Requirements (ETRs) in Ophthalmology

This EPA was created by Thibaud Garcin, Marta Correia, Michèle Beaconsfield, Denise Curtin

Helena Prior Filipe, Renata Ivekovic Denise Curtin, Wagih Aclimandos, and Tristan Bourcier

Europe, 2023-2024

Subspecialty Rotation: Emergency

Title: Managing a Cornea, Eye / Orbit Foreign Body

Description:

Understand the management of eye/orbit foreign body : care chain from questioning, then examination and different tools / paraclinic exams if needed to realize precise diagnosis and involvement of different ocular/orbit structures, and the practical aspect of medical/surgical management (removal foreign body).

Guide an effective management and follow up plan.

Keep time (sufficient and necessary) for information (patient and caregivers)

Setting: Variations in location induce different logistics strategies since diagnosis is done/suspected especially for high-speed projection / orbital or zone 2-3 (OTS classification) foreign body (in peripheral “small” hospital or in tertiary centre ; training course in private practice centre)

Limitations may include variations in patient presentation and availability of ancillary tests

Most Relevant Competency /Roles

Medical Expert	Communication	Collaboration	Leadership	Health Advocate	Scholarship	Professionalism
The resident should show ability to incorporate different points: • Knowledge • Skills • Attitudes • Experience	Explain the sequential process (diagnosis/extension/ medical or surgical intervention) to the patient and/or caregiver Convey findings sustaining the diagnosis and prognosis (the specific frame of "personal singualr story" when foreign body is involved) Establish contact with the patient and/or relative to comply with a management and follow up plan	Describe the case effectively to healthcare team ; Be able to interact with colleagues if imaging is necessary (Computed Tomography Scanner) ; or if surgery/ exploration in theatre is necessary (anaesthetist/ infirmary)	Make informed decisions about further evaluations or referrals	Primary prevention (protection / behaviours personal or at work) Secondary prevention (protection / behaviours personal or at work) Particularly for young and male people (most common concerned population) ; and people with comorbidities (keratoconus, corneal dystrophies, high myopia, diabetes...)	Stay updated with general protocols, literature. Understand the published evidence-based practice pattern. Teach and demonstrate to younger residents.	Ensure patient understanding, +- caregivers (especially parents for paediatric case) ; Close monitoring and if necessary interact with colleagues to share confidence among patient and the team

Required Knowledge, Skills, Attitudes and Experience (qualitative and quantitative)

Knowledge:

Know Epidemiology of traumatisms; Nature of different corneal-intraocular-intraorbital foreign body; short- and long-term complications; prevention measures; Traumatology OTS score / BETT system (Eye injury terminology)

Skills:

Being able to do “eye and orbit work-up” (especially imaging slit lamp/ AS-OCT/ posterior segment imaging) and general examination (antitetanic status for example); precise diagnosis (penetrating/perforating/laceration…); decide prompt treatment and do it +- surgery; write descriptive initial medical certificate.

Attitudes:

Being able to explain issues (balanced information not too much not enough), prognosis, follow-up with the patient and the caregivers.

Experience:

Practical experience in performing initial questioning and examination; identify and manage various foreign body projection (nature/shape/speed/mechanism of projection/protection ; associated potential lesions), and familiarity with extension work-up tools (photography/SS-OCT/topography/specular/confocal microscopy/echography…);

Being able to use and interpret ophthalmic imaging; but also Computed Tomography Scanner (Hounsfield unit);

Being able to perform simple removal of superficial foreign bodies and increase progressively technical gestures with acquired experience;

A precise number of patients necessary to attain this EPA, is not really advisable. It will depend on the orientation of the department: general or subspecialty. A rotation period of 6 to 9 months on the emergency department across a 4 year residency would be advisable as necessary and fair in order to achieve the necessary competence on this EPA. Another way -which is maybe more complementary than as a substitute – is to ensure regular on-call duties (equivalent 2-4 per month) in the emergency ophthalmology department during the whole residency. Rather than high absolute numbers of on-call duties, the consistency across 4 year residence is important.

Assessment Tools and Strategies (Information to assess progress)

Tools

Multiple-choice questions, short answer questions

Objective Structured Clinical Examinations (OSCEs)

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Webinars help have global culture and trends from other places/countries from Key Opinion Leaders or experienced practitionners.

CME credits ensure continuing medical formation during congresses (national or international) and show knowledge understanding.

“LogBook” during residency : the resident shows knowledge understanding, memorable cases either standards or complex. The resident may learn faster by sharing personal experience with his/her colleagues from same promotion and also older : tips and tricks should be shared to know what to do / what not to do and avoid most of errors. It could help reach consensual practices / protocols and concentrate only on “vairations” of the presentation and human being for each further case treated.

Highest Level of Performance (Level 4 supervision conditions)

Full Entrustment (level 4): The resident is entrusted to independently conduct Management of (corneal) eye/orbit foreign body and should demonstrate:

- Logical strategy from simple to complex cases thorough and accurate examination techniques, assessing all relevant aspects (especially questioning of the patient or caregivers : critical sometimes to suspect nature of foreign body, size, location.)
- Clear-empathetic communication and information (sufficient and necessary, especially for the medicolegal dimension) with the patient throughout the process
- Collaborative team approach - if needed according to context (from small corneal metal foreign body to piece of wood extra or intra conical without apparent globe injury and only palpebral wound) - with other healthcare professionals for optimal patient care and further evaluation or management if necessary
- Apply appropriate follow-up plan, Be able to accurately reevaluate findings and suggest appropriate interventions or referrals if needed
- Commitment to ongoing learning to enhance management proficiency

Levels of supervision likely to be expected **across the residency program duration**

Entrustment/Supervision level expected at which stage of training	**Year 1**	**Year 2**	**Year 3**	**Year 4**
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4 Proficient. | **Acts unsupervised (Full competency, autonomy).** | "DOES"			**X**	**X**
5 Expert. | **Supervises residents/junior doctors.** | "IS"	NA	NA	NA	NA

Date of entrustment decision consensus	**Entrustment Decision Consensus:** The decision for awarding unsupervised practice entrustment based on the resident performance, should involve a consensus among the mentor, the resident, and the residency program director and committee
Additional Notes	

European Board of Ophthalmology

UEMS Section of Ophthalmology

EBO-UEMS

EUROPEAN TRAINING REQUIREMENTS FOR THE SPECIALTY OF OPHTHALMOLOGY

SURGICAL LOGBOOK

NAME:

INSTITUTION:

YEAR OF TRAINING:

Rotations	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
Optics, Refraction and Contactology	NA	NA	NA	NA		
Paediatrics and Strabismus	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
	General anaesthesia examination					
	Congenital cataract					
	Congenital glaucoma					
	Paediatric keratoplasty					
	Lacrimal testing / probing					
	Paediatric vitreoretinal surgery					
	Paediatric intravitreal treatment					
	Strabismus (horizontal muscles)					
	Strabismus (oblique muscle)					
	Paediatric oculoplastic surgery					
Cornea and Ocular Surface	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
	Corneal scraping					
	Corneal biopsy					
	Surgical lamellar keratectomy					
	PTK					
	Sub conjunctival injection					
	Corneal suturing (laceration, leak, hydrops…)					

Rotations	Surgical or interventional procedure	See and Assist	Do partially with supervision	Do totally with supervision	Do totally without supervision	Competent to handle complications
Cornea and Ocular Surface (Continued)	Stitch removal					
	Pterygium surgery (simple case)					
	Pterygium surgery (recurrent or complex case)					
	Conjunctival tumour (without reconstruction)					
	Conjunctival tumour (with reconstruction)					
	Conjunctivoplasty					
	Amniotic membrane transplantation (inlay, onlay, filling)					
	Corneal crosslinking					
	Intracorneal ring segments implantation					
	Penetrating keratoplasty					
	Anterior lamellar keratoplasty (DALK)					
	Posterior lamellar keratoplasty (DSAEK, DMEK)					
	AC rebubbling or evacuation					
	Keratoprosthesis					
	Neurotisation					
	Limbal stem cell transplantation					
	Conjunctival flap					
	Chalazion surgery					
	Ectropion surgery					

Rotations	Surgical or interventional procedure	See and Assist	Do partially with supervision	Do totally with supervision	Do totally without supervision	Competent to handle complications
Oculoplastics Lacrimal System, Orbit	Entropion surgery or botulinum toxin injection					
	Ptosis surgery					
	Eyelid tumour removal (simple case)					
	Eyelid tumour removal (complex case)					
	Lid biopsy					
	Orbital biopsy					
	Punctal plug insertion					
	Lacrimal probing testing					
	Dacryocystorhinostomy					
	Evisceration					
	Enucleation					
	Exenteration					
	Tarsorrhaphy (surgical or botulinium toxin injection)					
	Blepharoplasty (adult)					
	Temporal artery biopsy					
Cataract Surgery	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
	Phaco (simple cases)					
	Phaco (challenging cases)					
	Phaco (complicated cases)					
	MSICS					
	ECCE					

Rotations	Surgical or interventional procedure	See and Assist	Do partially with supervision	Do totally with supervision	Do totally without supervision	Competent to handle complications
(Cataract Surgery continued)	Phaco conversion to ECCE					
	Anterior vitrectomy					
	Secondary implantation					
	YAG capsulotomy					
	Peribulbar anaesthesia					
Refractive surgery	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
	PTK					
	PRK					
	LASIK					
	Arcuate keratotomy					
	Intraocular (ICL, CLE)					
Glaucoma	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
	SLT					
	PLI					
	Iridoplasty					
	Trabecular stents					
	MIGS (trabecular)					
	MIGS (other)					
	Trabeculectomy					
	Deep sclerectomy					
	Glaucoma valve					
	Needling					
	Cyclodestructive procedure					

Rotations	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
Neuro Ophthalmology	Optic nerve decompression					
	Botulinium toxin injection for blepharospasm					
Uveitis, Intraocular Inflammation	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
	AC tap					
	Vitreous biopsy					
	Intracameral injection					
Retina and Vitreoretinal Diseases	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
	Laser retinopexy					
	PRP					
	Intravitreal injection					
	Scleral buckling					
	Cryotherapy					
	PPV (RD simple)					
	PPV (RD complicated)					
	PPV (PDR)					
	PPV (epiretinal membrane)					
	PPV (macular hole)					
	PPV other (IOFB, lens luxation, endophthalmitis, haemorrhage)					
	Retinectomy					
	Chorioretinal biopsy					

Rotations	Surgical or interventional procedure	See and Assist	Do partially with supervision	Do totally with supervision	Do totally without supervision	Competent to handle complications
Retina and Vitreoretinal Diseases (Continued)	Brachytherapy					
	Tumour endo- or exoresection					
	Transpupillary thermotherapy					
	Silicone oil removal					
	Suprachoroidal haematoma removal					
	Subretinal injections					
Emergencies	**Surgical or interventional procedure**	**See and Assist**	**Do partially with supervision**	**Do totally with supervision**	**Do totally without supervision**	**Competent to handle complications**
	Corneal and conjunctival FB removal					
	Conjunctival resection or peritomy					
	Conjunctival laceration (simple case)					
	Conjunctival laceration (complex case)					
	Corneal laceration (simple case)					
	Corneal laceration (complex case or children)					
	Penetrating injury with scleral involvement					
	Lid laceration (simple case)					
	Lid laceration (complex case)					
	Lacrimal laceration					
	Dacryocystitis drainage					
	Lateral canthotomy					
	Orbital floor fracture repair					

The scale of entrustment followed is the one proposed by The UEMS General Surgery Specialty[1].

1 UEMS-ETR-General-Surgery.pdf. (Internet) pp 112-116. Available from https://uemssurg.org/whatwedo/etr/ . Last accessed June 2024