



**WCO
Competency
Framework for
Optometry**



WORLD COUNCIL
OF OPTOMETRY

Mission

The mission of the World Council of Optometry is to facilitate the development of optometry around the world and support optometrists in promoting eye health and vision care as a human right through advocacy, education, policy development and humanitarian outreach.



Advocacy



Education



Policy



Outreach

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Executive Summary

Vision impairment due to uncorrected refractive error and the growing worldwide prevalence of potentially blinding diseases such as diabetic retinopathy, glaucoma, and age-related macular degeneration call for adequately trained and qualified eye care providers. Optometrists are well suited to addressing the burden of eye diseases and conditions. There is a need to highlight to governments, health policymakers and other key stakeholders that optometrists have the educational foundation and the relevant knowledge, skills, and competencies to enable them to participate at their fullest scope in healthcare delivery systems at national and international levels.

The World Health Organization's (WHO) Eye Care Competency Framework (ECCF) defined the skills required by eye care professionals, including optometrists, to practice at the primary, secondary,

and tertiary levels of healthcare. The competencies and their related activities are grouped into six domains: practice, professionalism, learning and development, management and leadership, community and advocacy, and evidence. The World Council of Optometry (WCO) also considers the following when describing optometry as a profession and its education:

- Optometry should be positioned to participate widely in the future of eye care.
- Optometrists work in teams with ophthalmologists, allied ophthalmic personnel, nurses, and other healthcare workers.
- Current and future diseases, technology, and treatments will impact eye care delivery and human resource needs.
- Optometrists should consider their education as a lifelong process.

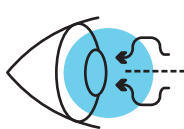
Thus, WCO has grouped its competencies into five broad curriculum domains:



1. Refractive Error



2. Visual Function Assessment



3. Ocular Health and Ocular Disease



4. Public Health



5. Professional Practice

Background

The World Report on Vision, published by the World Health Organization in 2019, highlighted the impact of changing demographics worldwide on eye health and vision needs. Population growth and aging are expected to result in an increased need for eye care services in the areas of refractive error and presbyopia correction, and, equally important, the detection and management of chronic ocular diseases such as dry eye, cataracts, glaucoma, age-related maculopathy, and diabetic retinopathy, which may lead to permanent visual impairment and ocular morbidity. Other eye care and vision-related needs such as rehabilitative vision care, occupational vision care, and other conditions such as binocular vision disorders and amblyopia, will all require the provision of increased eye care services.

The World Report on Vision (WHO, 2019) also emphasized the need for an increase in eye care personnel to address the large and growing burden of vision and eye health problems. This report estimated that at least 2.2 billion people globally have a vision impairment, with approximately 1 billion people having vision impairment that is preventable or is yet to be addressed, primarily because they do not have access to vision care. More than 90% of those affected live in low to middle-income countries, nearly 75% are over 50 years of age, and 55% are women. Unaddressed poor vision

is estimated to have a global productivity loss of US\$411 billion annually. These are sobering figures, even more so when it is known that 90% of vision loss is preventable through early detection and treatment. Additionally, for many people significant inequities exist in their ability to access vision care. The burden of preventable vision loss is greater in areas of social and economic disadvantage, in rural areas, for older people, ethnic minorities, indigenous peoples, and women. These inequities are not solely issues of the developing world. They exist in countries where health systems and eye care systems are established and relatively well developed.

Related to this pressing need, the 75th Session of the United Nations General Assembly in July 2021, at agenda item A/75/L.108, called on member states “to ensure access to eye care services for their population and to mobilize the necessary resources and support ... to contribute to global efforts to reach, by 2030, at least 1.1 billion people who have a vision impairment and currently do not have access to the eye care services they need” (UN, 2021).

“The burden of preventable vision loss is greater in areas of social and economic disadvantage, in rural areas, for older people, ethnic minorities, indigenous peoples, and women.”



Background

The UN General Assembly further recognized eye care as essential to achieving the Sustainable Development Goals of no poverty (#1), zero hunger (#2), good health and well-being (#3), quality education (#4), decent work and economic growth (#8) and sustainable cities and communities (#11) as outlined in Figure 1 (UN, 2015). Both the World Report on Vision and the UN General Assembly have indicated the need to include eye care as part of universal health coverage, and to implement integrated people-centered eye care (IPEC) in health systems across promotive, preventative, curative, and rehabilitative services. Improved eye care not only leads to improved healthcare outcomes for society, but also to improved social, financial, and educational outcomes as well. (WCO, 2022)

In many regions, eye care is delivered predominantly in secondary and tertiary healthcare settings, which can restrict access. The WHO proposal for integrated people-centered eye care is an approach to health care services that are managed and delivered so that people receive a continuum of health interventions covering promotion, prevention, treatment, and rehabilitation; which address a full spectrum of eye conditions according to individuals' needs; which are coordinated across different levels and sites of care within and beyond the health sector; and which recognize people as participants and beneficiaries of these services, throughout their life course.

Figure 1. The 17 sustainable development goals as adopted by the United Nations Member States in 2015.

Source: UN Department of Economic and Social Affairs. sdgs.un.org/goals



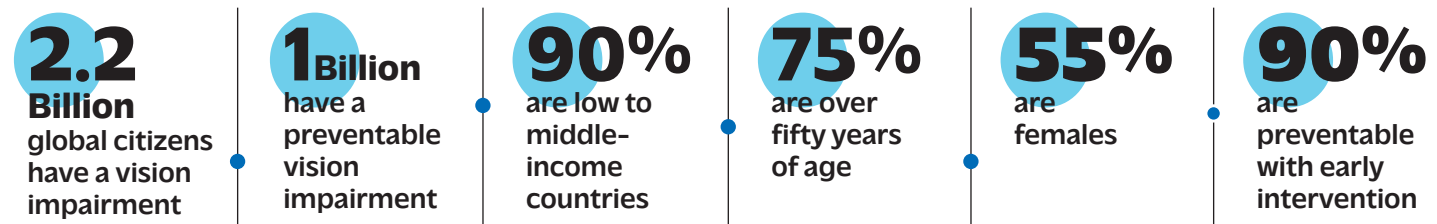
This emphasis on health service delivery within communities is the strength of optometry across the world. In many countries, optometry-led services are more available in rural areas and low-income communities, whereas ophthalmology-led services are often more concentrated in urban settings at the secondary and tertiary levels. The position of optometry within communities allows the delivery of accessible quality eye care that reduces the cost burden on the health service systems (Okasheh-Otoom et al., 2022).

These recent vitally important global reports and resolutions together have outlined the challenges facing eye care, the impact of vision impairment on the achievement of the United Nations Sustainable Development Goals, and the inclusion of addressing refractive error correction within universal health coverage (UHC). In addition, limited numbers of eye care professionals are considered an obstacle to equitable, accessible, and quality eye care (Resnikoff et al., 2020). Furthermore, the increase in uncorrected refractive error and potentially blinding diseases such as diabetic retinopathy, glaucoma, and age-related macular degeneration call for the

need for adequately trained and qualified eye care workers (Holden et al., 2016; Fricke et al., 2018).

The Universal Eye Health: A Global Action Plan 2014–2019 (WHO, 2013) showcased the necessity for optometry to be included as part of the eye care personnel team to address the need for eye health services. Hence, there is a continued and urgent need to emphasize to governments and health policymakers that optometry has the educational foundation and the relevant knowledge, skills, and competencies to enable optometrists to participate at their fullest scope in healthcare delivery systems at national and international levels. Optometry needs to demonstrate that the members of its profession in all countries have the relevant competencies not only in the detection and management of refractive errors, presbyopia, and binocular vision disorders but also in the detection and management of ocular diseases. A unified global framework for optometric education is thus needed, which ensures a minimum standard for those who use the title of optometrist and makes clear to policymakers the competencies of optometrists that support optometry's role in eye care teams.

The growing global burden of vision and eye health problems





Rationale for a Global Competency Model for Entry-Level Optometry

The WCO's Concept of Optometry states that "Optometry is a healthcare profession that is autonomous, educated, and regulated (licensed/registered), and optometrists are the primary healthcare practitioners of the eye and visual system who provide comprehensive eye and vision care, which include refraction and dispensing, detection/diagnosis and management of disease in the eye, and the rehabilitation of conditions of the visual system. An optometrist has successfully undertaken an advanced level of relevant higher education, with the award of a bachelor's degree or higher from a tertiary-level educational institution." (WCO, 2023).

Optometry's scope of activity is further described in the international standard classification of eye health professionals by the International Labor Organization (ILO). In this document, the role description for optometrists includes "providing diagnosis, management and treatment services for disorders of the eye and visual system," in addition to the traditional roles of providing eye examinations and vision tests, prescribing lenses, other optical aids, and therapy (International Standard Classification of Occupations, ILO, 2012). The ILO document also describes tasks undertaken by optometrists and notes that optometrists, together with several other clinical tasks, "assess ocular health and visual function by measuring visual acuity and refractive error, and test the function of visual pathways, visual fields, eye movements, intraocular pressure, perform other tests using special eye test equipment; and detect, diagnose and manage eye disease, and prescribe

medications for the treatment of eye disease." This ILO definition is consistent with the WCO's Concept of Optometry, stressing the need to ensure that optometry curricula around the globe provide the competencies required to meet these definitions to enable wider roles for optometry in health care provision.

The recently developed Eye Care Competency Framework (WHO ECCF, 2022) describes education levels and the duration of training for all eye care professions. Within this framework, optometry is categorized at the "advanced" or "expert" level, where an optometrist has, at a minimum, completed an advanced level of relevant higher education, such as a bachelor's degree or equivalent education from a tertiary-level educational institution. The WHO framework recognizes optometry as an autonomous profession that encompasses the provision of eye and vision care, including the detection/diagnosis and management of vision disorders and selected eye conditions, as well as the rehabilitation of the visual system. Again, this is consistent with the WCO's concept of optometry. The WHO Framework also indicates that formal or informal groups of eye care workers that fall below these 'advanced' or "expert" levels (e.g., optometric technicians, optometric assistants, opticians, refractionists) are grouped as Allied Ophthalmic Personnel. Table 1 details the duration of the training, education level, and general abilities of the eye care workforce as defined by the WHO ECCF document.

Table 1. Duration of training, education level, and eye care workforce's general abilities. Adapted from Eye Care Competency Framework, WHO, 2022.

Eye care specific training duration (estimations)	Less than 3 months	3–12 months	1–4 years	4–7 years	7+ years
Education level	Has an introductory level of relevant education e.g. High school graduate with additional training.	Has a working level of relevant education e.g. High school graduate with additional training (3–12 months).	Has an intermediate level of relevant tertiary education e.g. Certification course/ Diploma / University degree (Bachelor).	Has an advanced level of relevant higher education e.g. University degree (Bachelor/ Master/Professional doctorate). May further specialize and/or have an academic/teaching/ research role.	Has an expert level of relevant higher education e.g. University degree (Master/Professional doctorate/PhD) with an area of specialization e.g. a medical specialization in Ophthalmology/PhD. May further specialize and/or have an academic/ teaching/ research role.
General abilities	Works under the supervision and direction of an eye care worker trained for up to 12 months and higher. Often works within other health groups with eye care being an add-on responsibility.	Works under the supervision and direction of an eye care worker trained for 2 or more years.	Works under the supervision of an ophthalmologist or optometrist. Assists in the diagnostic evaluation, treatment, management, and care of patients with deficiencies and abnormalities that affect their vision and the visual system.	Works autonomously in most settings, at primary/ secondary/ tertiary health-care level. Provides eye and vision care, which includes detection/ diagnosis and management of vision disorders and selected eye conditions, and the rehabilitation of the visual system.	Works autonomously, at secondary/tertiary health-care level. Evaluates, diagnoses, treats, and provides consultations; orders diagnostic studies and procedures, and performs non-surgical and/or therapeutic and/ or surgical procedures on people with vision disorders and eye conditions; and rehabilitative care of people with permanent visual impairment.
Occupation titles (depending on local context)	Community health worker Eye health coordinator Outreach worker Teacher/school nurse Village health worker/ Volunteer	Ophthalmic administrator Ophthalmic technologist/ photographer/ imager Optical assistant Refractionist Spectacle dispenser Vision technician	Ocularist Ophthalmic Assistant Ophthalmic clinical officer Ophthalmic clinician Ophthalmic nurse Optical dispenser Optician Orthoptist Specialist nurse Vision therapist "Allied Ophthalmic Personnel" is an umbrella term often used to describe eye care workers in this column	Basic eye doctor Optometrist	Eye doctor Ophthalmologist Optometrist Specialist

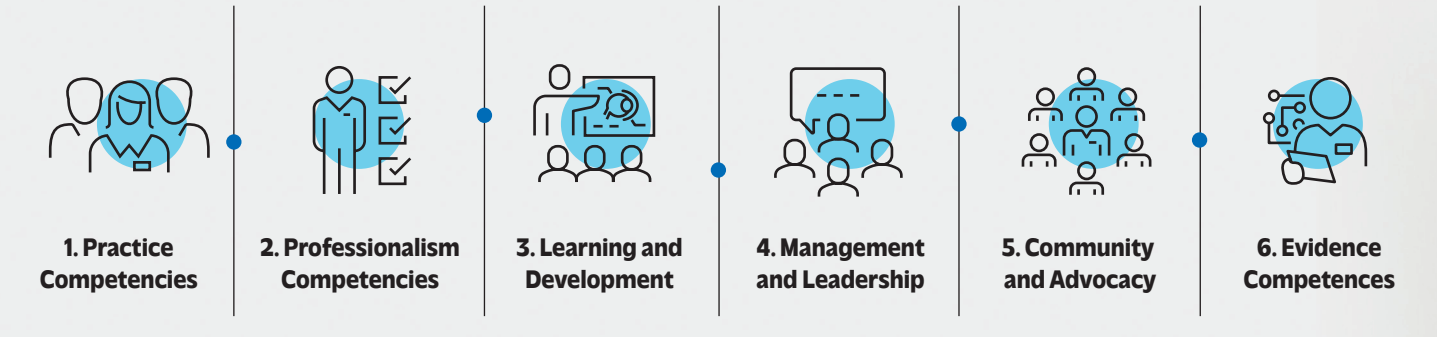
Table 1. Duration of training, education level, and eye care workforce’s general abilities. Adapted from Eye Care Competency Framework, WHO, 2022.

The WHO ECCF resource also describes the required knowledge, skills, and competencies for eye care workers, including optometrists, to practice at the primary, secondary, and tertiary levels of healthcare (WHO ECCF, 2022). These skills, competencies, and their related activities have been grouped into six domains: practice, professionalism, learning and development, management and leadership, community and advocacy, and evidence as detailed below:

- Practice (P) competencies relate to the interaction of the eye care worker with people, where care is delivered through a people-centered practice. The Practice domain includes competencies necessary for establishing a therapeutic relationship, assessment, planning, delivering interventions, communication, and clinical decision-making.
- Professionalism (PM) competencies relate to best practice care that is ethical, safe, efficient, effective, and high quality. Competencies within the Professionalism domain include values such as integrity, inclusivity, respect for diversity, social and environmental awareness, and transparency when dealing with potential conflicts of interest.

- Learning and Development (LD) competencies relate to the professional development of eye care workers. Competencies within this domain are concerned with teaching, learning, and reflective practice.
- Management and Leadership (ML) competencies relate to service development, resource management, organizational skills, and team leadership. Relationships are critical to the success of the eye care team, where shared trust, respect, and decision-making are required for services to be delivered efficiently and within the available resources.
- Community and Advocacy (CA) competencies relate to advocating the needs of the community, supporting members to be empowered to access available resources, and contributing to long-term beneficial change.
- Evidence (E) competencies relate to the use, generation of, contribution to, and dissemination of evidence for eye care interventions, services, and systems.

The skills, competencies, and their related activities grouped into six domains



Despite the well-established Concept of Optometry by the WCO and the detailed competencies highlighted in both the ILO and WHO ECCF documents, discrepancies remain in the scope of practice in many parts of the world. Previous research in other countries such as the United States, New Zealand, South Africa, India, and Jordan shows that the scope of optometric practice differs significantly internationally. In addition to optometry's traditional role of refraction and comprehensive eye examination, the scope of practice can also include the prescription of controlled substances for the treatment of ocular conditions as an autonomous prescriber, and the performance of a specific number of surgical procedures in some countries (Okasheh-Otoom et al., 2022).

Policymakers need to be aware that an eye care professional cannot be categorized as an optometrist unless they receive at least a bachelor's degree or equivalent education from a tertiary-level educational institution with minimum competencies consistent with the WCO concept of optometry, the ILO role description of optometry and the WHO competencies for optometrists at the advanced and expert levels. It has been shown that an optometry curriculum designed to encompass the minimum competencies expected from optometrists to practice as per the WCO concept of optometry, will allow for an increased scope of practice (Okasheh-Otoom et al., 2022).

“Professionalism competencies relate to best practice care that is ethical, safe, efficient, effective, and high quality”

The Future Roles of Optometry in Global Health Care

It is imperative to consider the role of optometrists in the delivery of health care around the world. Optometry needs to align and participate in the expanding international agenda for eye care and prepare itself to be able to participate maximally in building and growing healthcare systems that can deliver enhanced health outcomes. The issues that are central to this agenda, such as inequitable access to eye care services and the limited number of eye care professionals, are well documented in the WHO's World Report on Vision and the subsequent Lancet Global Health Commission on Global Eye Health: vision beyond 2020 Report (Burton et al., 2021). Optometry's role in contributing to eye health care is well described in the WHO Eye Care Competency Framework.

The current global initiatives to provide increased coverage of corrections for refractive error are the first step in developing improved access to eye care that is called for by the World Report on Vision and the subsequent UN resolutions. The real need is to leverage these efforts to create care pathways that allow for the delivery of broader eye care in a fuller way. This is a path where optometry can take a leadership role; this requires optometry to be well-equipped for such leadership.

As a pivotal step, optometry needs to ensure that graduates entering the profession, through robust and quality education, have the knowledge and skills that underpin the competencies required to equip them for multiple roles in eye care delivery. This includes competencies that encompass the detection and management of refractive errors, ocular disease, binocular vision problems, color vision deficiency, pediatric conditions, working with special populations, and occupational health and safety hazards. The competencies expected of a health professional in terms of ethics, evidence-based practice, and lifelong learning are also important outcomes of optometric education, as are teamwork, leadership, and advocacy that prepare professionals for their future practice. In many countries, optometric education already builds the necessary competencies, while in some countries optometric programs need to make changes to their curricula so that these are developed.



The World Report on Vision addresses the need to increase the number of eye care practitioners to meet the current and future demands for eye care services. Achieving this goal is time and cost-intensive and thus can only be part of a longer-term solution. The current eye care workforce can be enabled to work at the full scope of their training to meet immediate eye care demands. This will require the development of alternative models of eye care provision by optometrists, aimed at improving equity, access, affordability, efficiency, and outcomes. As a profession, optometry needs to consider the inclusion of eye care delivery by other qualified practitioners, how they can work together with optometrists, and how optometrists can take a leading role in partnerships to develop sustainable models of delivery, training, leadership, and management of eye care teams. In addition, the profession needs to consider the use of current and future technologies and their impact on the equitable, accessible, affordable, and efficient delivery of eye care.

The skills and competencies of optometry can be more widely utilized within healthcare systems. There is ample evidence supporting an increased primary care role for optometry, demonstrating improved outcomes for patients through earlier detection of conditions with ocular morbidity, and a reduction in unnecessary referrals to ophthalmology at the secondary care level. Optometry participating in collaborative care and shared care schemes is a cost-effective way to increase the provision of eye care, thus making eye care integral to Universal Health Care, and the achievement of the Sustainable Development Goals (Ford et al., 2023).

The World Council of Optometry is aware of the need to demonstrate to healthcare policymakers that optometrists have the necessary education, competencies, and scope to provide a broad range of vision care and eye health services in primary, secondary, and tertiary individual as well as team settings. In addition, WCO seeks to ensure that optometry is positioned to participate extensively in the future of eye care and that optometrists can work in teams with allied ophthalmic personnel, nurses, and other healthcare workers.

Optometry in the global healthcare environment



**Expanding Optometry
Internationally**



**Ensuring Quality
Education**



**Partnering in
Optometric Care**



**Utilizing Healthcare
Systems**



**Ensuring Eye Care
Competencies**



World Council of Optometry's Guide for Optometric Education

To support the Concept of Optometry, WCO has developed five competency domains for a tertiary-level education program, with corresponding learning outcomes for entry-level optometric practitioners that are grouped into competencies. The competencies outlined in this document will enable optometrists to participate more extensively in meeting future demands for eye care. It is recognized that in some countries, optometric education provides competencies beyond those outlined in the domains, particularly in the management of ocular disease. This document, however, establishes the expected minimum competencies of optometric education to align with current international definitions of optometry. Additionally, the World Council of Optometry recognizes the need to further develop the competencies of current optometrists, so that they too can make a greater contribution. This document will also support countries and educational institutions to develop programs to target specific knowledge and competency gaps.

The five broad competency domains are described below with the indicative content of each domain:

Domain 1 | Refractive error: assessment and management: subjective and objective refraction, near point and presbyopia, spectacles, contact lenses, myopia management, cycloplegia.

Domain 2 | Visual function assessment and management: binocular vision, vision impairment assessment, vision rehabilitation, vision development, vision and learning, color vision, occupational visual assessments, populations with special needs.

Domain 3 | Ocular health: assessment and management: anterior and posterior segment assessment utilizing biomicroscopy, topography, direct and indirect ophthalmoscopy, optical coherence tomography, ultrasonography, visual field testing including perimetry, neurologic evaluation including pupillary testing, color vision, signs and symptoms of ocular disease, ocular signs of systemic disease, pharmacology, management, referral, diagnostic pharmaceutical agents (DPA), therapeutic pharmaceutical agents (TPA) (non-prescription/over the counter and prescription).

Domain 4 | Public health: the demographics, social determinants of health and epidemiology of the community and the patient population, information on visual and general health and welfare, current trends, and topical issues regarding eyes, vision, health care, and health literacy.

Domain 5 | Professional practice: ethics, communication, case history, examination plans, management plans, record-keeping, referral documents, and reports to other members of the patient's health care team.

"The competencies outlined in this document enable optometrists to participate more extensively in meeting future demands for eyecare."

Part 1: World Council of Optometry Competencies Framework

The competency model used by the WCO includes five curricular domains of major professional practice tasks or activities that encompass the practice of optometry. The domains represent the main categories under which competency elements in the model are described. Performance criteria accompany the competency elements. The WCO model further includes examples of knowledge, skills, and attributes that an optometrist should demonstrate upon entering the profession.

The following tables demonstrate the linking of competencies to the knowledge and skill content necessary to develop a particular outcome and its accompanying performance criteria. These curriculum elements are listed as content areas instead of specific subjects or course titles.

Due to the nature of competencies, curricular elements supporting individual outcomes can be unique but are more likely linked to several competencies. The curriculum linkages shown can be subsequently used to group curricular elements into organizational units to construct a sequential grouping of subjects or modules to form an overall curriculum.

The WCO competencies and their related performance criteria have also been linked to the WHO ECCF domains' behaviors at the advanced level (i.e., the level at which optometrists are expected to perform at a minimum). Certain

competency elements were found to meet the WHO ECCF domains' behaviors at the expert level and were thus included accordingly. An optometrist may identify with a different level of proficiency (advanced or expert) for each domain depending on their education and training, role requirements, scope of practice, and personal strengths and interests. An optometrist will likely move across levels throughout their career as their experience and training increase or as the requirements of their role shift.

In this fast-paced world of health care, there are new methods and techniques that are emerging to assist optometrists in providing the best care possible for their patients. This includes the use of artificial intelligence (AI) in analyzing data and images used in eye care. The use of AI has also facilitated the development and expansion of telehealth program implementation (Martinez-Perez et al., 2022). AI-based systems are regarded as a promising tool in the future to assist in the diagnosis of certain diseases, especially retinal diseases (Ho et al., 2022). While the competencies outlined are comprehensive, periodic updates will be necessary to include technological advances in eye care together with the changing attitudes and practice patterns of optometrists. WCO feels that it is important to ensure the curriculum content stays current so that graduating optometrists are best prepared to provide care for their patients.

Competency-curriculum domain 1: Refractive error: assessment and management

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF *
1.1: Assesses refractive status	<p>1.1.1 The spherical, astigmatic and presbyopic components of the correction are measured.</p> <p>1.1.2 Changes in the refractive status of the eye are monitored over the life span.</p>	<ul style="list-style-type: none"> • communication skills • visual science • objective refraction (e.g., static vs dynamic retinoscopy, autorefraction, wave front-based measurement systems) • subjective refraction methods of spherical and astigmatic refraction • near point refraction and near additions, working distance • binocular balancing • pharmacology 	<p>PA3.6: Visual function Examination</p> <p>Conducting a comprehensive test of the visual function including complex refraction with cycloplegia as required, binocular vision and low vision assessment.</p>
1.2: Prescribes spectacles and dispenses spectacle prescriptions accurately	<p>1.2.1 The suitability of spectacles as a form of correction or myopia progression management tool for the patient is assessed.</p> <p>1.2.2 The patient's refraction, visual requirements and other findings are applied to determine the spectacle prescription and lens form.</p> <p>1.2.3 A spectacle prescription is issued in a manner that facilitates correct fabrication of the appliance.</p> <p>1.2.4 The spectacle prescription is interpreted and responsibility for dispensing is accepted.</p> <p>1.2.5 Patients are assisted in selecting appliances that are suitable for their needs.</p> <p>1.2.6 Relevant measurements pertaining to the spectacle frame are made, lenses are ordered and finished spectacle frames are verified according to relevant national or other standards.</p> <p>1.2.7 The appliance is verified against the prescription prior to delivery.</p> <p>1.2.8 The appliance is adjusted and delivered. The patient is instructed in the proper use and maintenance of the appliance and of any adaptation effects that may be expected.</p>	<ul style="list-style-type: none"> • communication and interpersonal skills • informed consent • health law, ethics, and codes of professional conduct • confidentiality and privacy regulations • ophthalmic optics • optical dispensing • ophthalmic lens designs, advantages, disadvantages, suitability to prescription • lens and frame measurements (pupillary distance, centration, vertex distance etc.) • occupational and ergonomic factors • lifestyle factors • myopia management through optical and non-optical factors • other clinical factors (ocular disease, binocular vision factors) • tints and other lens treatments • prisms and magnification • anisometropia/aniseikonia • protective eyewear and occupational legislation • frame selection and frame measurements • frame fitting/adjustments • troubleshooting, managing adaptation and non-adaptation • lens manufacturing and dispensing standards applicable in jurisdiction • patient instruction • legal requirements: wearing schedules, care, maintenance etc. • requirements for issuing prescriptions in jurisdiction 	<p>PA8.2 Refractive error care</p> <p>Providing refractive error care, including prescribing and/or dispensing spectacles and contact lenses; myopia management; seeking support for complex cases, and simple binocular vision management.</p>

*Eye care competency framework. Geneva: World Health Organization; 2022. License: CC BY- NC-SA 3.0 IGO.

WHO abbreviations: PA=Practice Activities, CAC=Community and Advocacy Competencies, PMC=Professionalism Competencies,

Competency-curriculum domain 1: Refractive error: assessment and management

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF*
1.3: Prescribes contact lenses	<p>1.3.1 The suitability of contact lenses as a form of correction, therapy or myopia management tool for the patient is assessed and discussed.</p> <p>1.3.2 The patient's refraction, visual requirements and other findings are applied to determine the contact lens prescription and lens type.</p> <p>1.3.3 Contact lenses are correctly ordered and checked before being supplied to the patient.</p> <p>1.3.4 Contact lenses with new fitting parameters are assessed on the eye prior to supply to the patient.</p> <p>1.3.5 The patient is instructed in matters relating to ocular health, vision, contact lens care and maintenance and after- care visits.</p> <p>1.3.6 To teach a patient to safely apply/insert, remove and care for contact lenses.</p> <p>1.3.7 A contact lens prescription is written in a manner that can be interpreted for correct fabrication of the appliance.</p> <p>1.3.8 Contact lens performance, ocular health and patient adherence to wearing and maintenance regimens is monitored.</p>	<ul style="list-style-type: none"> • psychology of behavior, behavior modification, counselling • communication and interpersonal skills • informed consent • health law, ethics and codes of professional conduct • ocular anatomy and physiology • visual science • refractive error/ ametropia • anisometropia/aniseikonia • myopia progression management • ocular disease, ocular signs of systemic disease • general and systemic disease, other patient factors (age, motivation etc.) • use of instruments to measure the axial length of the eye • corneal topographic mapping • binocular vision • occupational and ergonomic factors • lifestyle factors • contact lens practice • contraindications • contact lens designs, materials, fitting parameters • cosmetic and therapeutic lenses • contact lens standards and requirements • wearing schedules, care, maintenance • safety, emergency care, adverse reactions • aftercare and review • contact lens solutions • pharmacology, systemic drugs, drug interactions • requirements for the issuing prescriptions in jurisdiction 	<p>PA8.2 Refractive error care</p> <p>Providing refractive error care, including prescribing and/or dispensing spectacles and contact lenses; myopia management; seeking support for complex cases, and simple binocular vision management.</p>

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WHO abbreviations: PA=Practice Activities, CAC=Community and Advocacy Competencies, PMC=Professionalism Competencies,

“At least 2.2 billion people globally have a vision impairment, with approximately 1 billion people having a vision impairment that is preventable”

2. Competency-curriculum domain 2: Visual function assessment and management

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF*
2.1: Assesses oculomotor and binocular function	<p>2.1.1 Eye alignment and the state of fixation are assessed.</p> <p>2.1.2 The quality and range of the patient's eye movements are determined.</p> <p>2.1.3 The status of binocularity is determined.</p> <p>2.1.4 The adaptability of the vergence system is determined.</p> <p>2.1.5 Placement and adaptability of accommodation are assessed.</p>	<ul style="list-style-type: none"> • communication skills • ocular anatomy and physiology • visual science • ocular disease • clinical tests • angle Kappa, Hirschberg and Krimsky tests, Bruckner tests, unilateral and alternate cover tests, prism cover test • objective and subjective tests for strabismus (detection, magnitude, direction, laterality, constancy, comitancy) • objective and subjective tests for heterophoria • fixation disparity and associated phoria • assessment of fixation patterns • motor and sensory fusion • retinal correspondence • suppression • versions, vergence and convergence • pursuit, saccadic eye movements, ocular motility • diplopia • stereopsis • vergence ranges and flexibility (facility), convergence • accommodation: amplitude, range, posture and flexibility • clinical skills development 	<p>PA3.6 Visual function Examination (Advanced level) Conducting a comprehensive test of the visual function including complex refraction with cycloplegia as required, binocular vision and low vision assessment.</p> <p>PA3.6 Visual function Examination (Expert level) Conducting a comprehensive series of tests of the visual function in complex clinical cases including visual information, processing and cognition.</p>
2.2: Assesses visual information processing	<p>2.2.1 Visual information processing abilities are investigated and compared to normal values for age.</p>	<ul style="list-style-type: none"> • child development • educational development • cognition, language disorders • visual spatial skills (laterality, directionality) • visual analysis skills • visual motor integration • visual attention • visual memory • visual processing speed • visual motor integration • communication skills • clinical skills development • inter-professional learning and practice • visual perceptual therapies 	<p>PA3.6 Visual function Examination (Expert level) Conducting a comprehensive series of tests of the visual function in complex clinical cases including visual information processing and cognition.</p>

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2. Competency-curriculum domain 2: Visual function assessment and management

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF*
2.3: Prescribes low vision devices	<p>2.3.1 The suitability of low vision devices as a form of correction for the patient is assessed and discussed.</p> <p>2.3.2 Low vision devices suited to the patient's visual requirements and functional needs are prescribed and the patient is instructed in their use.</p> <p>2.3.3 The success of the low vision device is evaluated and monitored and additional or alternative devices or management strategies are prescribed or recommended.</p>	<ul style="list-style-type: none"> • psychology of behavior, behavior modification, counseling • communication and interpersonal skills • informed consent • health law, ethics and codes of professional conduct • ocular anatomy and physiology • visual science • refractive error/ ametropia • anisometropia/aniseikonia • ocular disease, ocular signs of systemic disease • general and systemic disease, other patient factors (age, motivation etc.) • binocular vision • occupational and ergonomic factors • lifestyle factors • functional vision assessment • establishing goals • low vision device factors: magnification, field of view, working distance etc. • assistive technologies • patient instruction 	<p>PA8.6 Low vision and rehabilitative care</p> <p>Providing low vision and rehabilitative care, including comprehensive vision therapy, and prescribing and/or dispensing of assistive devices as part of a multidisciplinary team, seeking support for complex cases.</p>
2.4: Manages patients requiring vision therapy	<p>2.4.1 A vision therapy program for patients with amblyopia, strabismus and binocular vision disorders is recommended on the basis of the best available evidence.</p>	<ul style="list-style-type: none"> • psychology of behavior, behavior modification, counselling • communication and interpersonal skills • informed consent • health law, ethics and codes of professional conduct • patient factors (age, motivation, other conditions, occupational, lifestyle, education factors) • refraction/ametropia and associated factors • binocular vision status, vergence, accommodation, ocular motility • treatment plans: methods, goals, duration, review intervals, costs 	<p>PA8.1 Preventive and promotive care</p> <p>Providing preventative and promotive care, including early childhood intervention such as amblyopia management, seeking support for complex cases.</p>
2.5: Provides advice on vision, eye health and safety in the workplace and recreational settings	<p>2.5.1 Visual screenings for occupational or other purposes are provided.</p> <p>2.5.2 Advice is provided on eye protection, visual standards and visual ergonomics in the workplace and recreational settings.</p> <p>2.5.3 Individuals are counselled on the suitability of their vision for certain occupations.</p> <p>2.5.4 Certification of an individual's visual suitability for designated occupations or tasks is provided.</p>	<ul style="list-style-type: none"> • health law, ethics and codes of professional conduct (including and recognizing scope of practice and professional limitations) • occupational standards and requirements, ergonomics, lighting • vision standards for occupations • eye protection and other protection, tints • eye safety, identification of hazards, workplace assessment • lifestyle and recreational issues, sun and ultraviolet (UV) protection 	<p>PA8.1 Preventive and promotive care (Introductory level)</p> <p>Providing basic preventative and promotive care, including vision screenings, health education on regular eye checks, visual hygiene with digital devices, eye protection and workplace health and safety.</p>

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• Competency-curriculum domain 3: Ocular health and ocular disease assessment and management

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF*
3.1: Assesses the ocular adnexa and the eye	<p>3.1.1 The components of the ocular adnexa are assessed for their structure, health and functional ability.</p> <p>3.1.2 The components of the anterior segment are assessed for their structure, health and functional ability.</p> <p>3.1.3 The components of the posterior segment are assessed for their structure, health and functional ability.</p>	<ul style="list-style-type: none"> • ocular anatomy and physiology • ocular disease, ocular signs of systemic disease • slit-lamp biomicroscopy • gonioscopy • keratometry • corneal topography • corneal sensitivity • pachymetry • ophthalmoscopy • binocular indirect ophthalmoscopy • fundus biomicroscopy • imaging techniques: fundus photography, autofluorescence, wide-field imaging, optical coherence tomography (as available at time of initial publication) • lacrimal function and ocular surface tests • pharmacology: vital stains, diagnostic pharmaceuticals 	<p>PA3.3 External eye examination Conducting a comprehensive examination of the structure and function of the ocular adnexa, face, and general observations of the body.</p> <p>PA3.4 Anterior segment examination Conducting a comprehensive examination of the structure and function of the anterior segment of the eye, together with a basic systemic review.</p> <p>PA3.5 Posterior segment examination Conducting a comprehensive examination of the structure and function of the posterior segment of the eye, together with a basic systemic review, such as for diabetes and hypertension.</p>
3.2: Assesses central and peripheral sensory visual function and the integrity of the visual pathways	<p>3.2.1 Vision, visual acuity and other measures of visual function are measured.</p> <p>3.2.2 Visual fields are measured.</p> <p>3.2.3 Color vision is assessed.</p> <p>3.2.4 Pupil function is assessed.</p>	<ul style="list-style-type: none"> • ocular anatomy and physiology (e.g., retina, visual pathway, cortex, afferent and efferent pupil pathways) • visual science • communication • objective and subjective methods of assessing visual acuity • amblyopia • static and kinetic perimetry, automated perimetry, microperimetry, Amsler, confrontation • screening and diagnostic color vision tests • pupil reflex testing, cycle time, evaluation of anisocoria • diagnostic pharmaceuticals in pupillary testing 	<p>PA3.7 Examination using specialized equipment Conducting comprehensive tests to examine, including use of contact tonometry, fundus and peripheral retinal examination under mydriasis, tear film analysis, pachymetry, Optical Coherence Tomography (OCT), axial length biometry, gonioscopy, contact lens assessment; and basic psychophysical and systemic testing where relevant.</p>
3.3: Assesses signs and symptoms found during the ocular examination that have significance for the patient's systemic health	<p>3.3.1 Signs and symptoms relating to systemic diseases, such as but not limited to hypertension or diabetes, are referred for further investigation.</p>	<ul style="list-style-type: none"> • communication and interpersonal skills • health law, ethics and codes of professional conduct • confidentiality and privacy regulations • intra- and inter-professional communication • case history and symptomatology • pharmacology, systemic drugs, drug interactions • ocular anatomy and physiology • ocular disease, ocular signs of systemic disease • systemic diseases with ocular involvement/side effects 	<p>PA3.5 Posterior segment examination Conducting a comprehensive examination of the structure and function of the posterior segment of the eye, together with a basic systemic review such as for diabetes and hypertension.</p>

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• Competency-curriculum domain 3: Ocular health and ocular disease assessment and management

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF*
Element 3.4: Demonstrates knowledge of appropriate prescription of therapeutic pharmaceutical agents for different conditions	<p>3.4.1 Identifying the appropriate pharmacological intervention and alternatives required to address the eye condition, including expected timelines and identifying other care providers who may be involved.</p> <p>3.4.2 Designing and coordinating an eye care management plan through interprofessional practice, and reviewing progress towards the desired outcome.</p> <p>3.4.3 Recognizing adverse side effects relating to therapeutic use.</p> <p>3.4.4 Screening for inappropriate prescribing or misuse of therapeutic agents.</p>	<ul style="list-style-type: none"> • ocular anatomy and physiology • ocular disease and trauma • clinical assessment of ocular health • neuro-ophthalmology • pharmacology: pharmacodynamics, pharmacokinetics • therapeutic pharmaceutical agents 	<p>PA7.1 Identifying the intervention Identifying the appropriate intervention and alternatives required to address the goals of a person, their family, and carers, including expected timelines and identifying other care providers who may be involved.</p>
Element 3.5: Prescribes pharmacological and other regimens to treat ocular disease and injury	<p>3.5.1 Pharmacological agents are selected and recommended.</p> <p>3.5.2 The effect of ocular non-prescription therapeutic treatment is monitored and appropriate changes in management recommended.</p> <p>3.5.3 Patients are instructed on the correct use, administration, storage and disposal of pharmaceutical agents.</p> <p>3.5.4 Patients are instructed about precautionary procedures and non- pharmacological and palliative non- prescription therapeutic management.</p> <p>3.5.5 Patients are instructed in the avoidance of cross-infection.</p> <p>3.5.6 Non-pharmacological treatment or intervention procedures, therapeutic device fitting and emergency ocular first aid are performed to manage eye conditions and injuries.</p> <p>3.5.7 The patient's risk factors for poor adherence to instructions regarding the use of non-prescription therapeutic medications is assessed and addressed.</p> <p>3.5.8 Non-prescription therapeutic medications are supplied.</p>	<ul style="list-style-type: none"> • ocular anatomy and physiology • ocular disease and trauma • clinical assessment of ocular health • neuro-ophthalmology • pharmacology: pharmacodynamics, pharmacokinetics, therapeutic drugs 	<p>PA8.4 Pharmacological care Providing pharmacological care, including prescribing ocular therapeutics and myopia control agents, and recognizing adverse side effects relating to therapeutic use, seeking support for complex cases.</p>

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• Competency-curriculum domain 3: Ocular health and ocular disease assessment and management

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF*
3.6: Provides or directs patients to emergency care	3.6.1 Situations requiring emergency optometric care and general first aid are identified. 3.6.2 Emergency ocular treatment and general first aid can be provided.	<ul style="list-style-type: none"> • ocular anatomy and physiology • ocular disease and trauma • clinical assessment of ocular health • neuro-ophthalmology • pharmacology: pharmacodynamics, pharmacokinetics, therapeutic drugs • case history • clinical placements (hospitals, acute centers) • practice management 	PA8.3 Clinical care Providing nonsurgical care, seeking support for complex cases.
3.7: Cooperates with ophthalmologist/s in the provision of pre- and post- operative management of patients	3.7.1 Pre-operative assessment and advice are provided. 3.7.2 Post-surgical follow-up assessment and monitoring of signs according to the surgeon's requirements and the procedure are undertaken. 3.7.3 Emergency management for observed post-surgical complication is provided. 3.7.4 Appropriate referral for further post- operative treatment or assessment of complications is arranged.	<ul style="list-style-type: none"> • communication and interpersonal skills • informed consent • health law, ethics and codes of professional conduct (including and recognizing scope of practice and professional limitations) • case review and analysis • clinical placements • relative urgency • intra- and inter-professional care and referral • ocular disease • pharmacology • knowledge of surgical procedures, complications and adverse outcomes 	PA8.5 Surgery Providing minor and non-complex surgery, including managing pre- and post-surgical care, and seeking support for complex cases.

4. Competency-curriculum domain 4: Public health

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF
4.1: Understands factors affecting the community's need for optometric services	4.1.1 The demographics, social determinants of health and epidemiology of the community and the patient population are understood. 4.1.2 Current trends and topical issues regarding eyes, vision and health care are evaluated. 4.1.3 The health care system, effect of health care policies on the system, financing in health care systems, vision care plans. 4.1.4 Cultural dimensions of health, health literacy, cultural and linguistic competence.	<ul style="list-style-type: none"> • epidemiology and biostatistics • public health: community health, social determinants of health • health care systems • health law • health finance 	CAA1.2 Situational analysis Identifying gaps, managing, and presenting findings of the situational analysis. CAA1.3 Resourcing Identifying and collating required resources for community eye care projects including funding, workforce, and infrastructure.

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4. Competency-curriculum domain 4: Public health

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF*
4.2: Promotes issues of eye and vision care and general health to the community	<p>4.2.1 Information on matters of visual and general health and welfare (including the need for regular eye examinations), and product and treatment developments is provided.</p> <p>4.2.2 Visual screenings for occupational or other purposes are provided.</p> <p>4.2.3 Advice is provided on eye protection for occupational and home-based activities and for recreational pursuits.</p>	<ul style="list-style-type: none"> • psychology of behavior, behavior modification, counselling • communication and interpersonal skills • inter-professional patient care • public health optometry • occupational standards and requirements • visual ergonomics • ophthalmic optics and dispensing 	<p>CAC3.1 Promotes eye health education and eye care service for access and acceptability Identifies gaps and develops resources to assist in the promotion of eye health education and eye care services within the community.</p>

5. Competency-curriculum domain 5: Professional practice

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF
5.1: Communicates with the patient	<p>5.1.1 Modes and methods of communication are employed, which take into account the physical, emotional, intellectual, and cultural context of the patient.</p> <p>5.1.2 A structured, efficient, rational, and comfortable exchange of information between the optometrist and the patient occurs.</p> <p>5.1.3 Privacy and confidentiality of patient communications and consultations are ensured.</p> <p>5.1.4 Sufficient information is provided to the patient to allow them to make informed decisions about their care and the privacy of their health information.</p>	<ul style="list-style-type: none"> • communication and interpersonal skills including intra- and inter-professional communication • psychology of behavior, behavior modification, counselling • health law, ethics and codes of professional conduct • confidentiality and privacy regulations • cultural safety education • ocular anatomy and physiology • vision science • refractive error/ ametropia • ocular disease • binocular vision • sports vision • environmental vision • vision rehabilitation • contact lens practice • populations with special needs • pharmacology, ophthalmic and systemic medications, medication interactions 	<p>PA1.1 Informing people Providing clear explanation and creating a dialogue to discuss care options and alternatives that may be involved for the person, including potential benefits, risks and limitations for complex cases.</p> <p>PA1.2 Confirming consent and assent Adhering to the legal and/or organizational policies to confirm and obtain consent and assent, including in complex cases.</p>

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5. Competency-curriculum domain 5: Professional practice

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF *
5.2: Obtains the case history	<p>5.2.1 The reasons for the patient's visit are elicited in a structured way.</p> <p>5.2.2 Information required for diagnosis and management is elicited from the patient.</p> <p>5.2.3 Subject to the patient's consent, pertinent information from previous assessments by other professionals or information from other people is sought and interpreted for relevance to the patient's management.</p>	<ul style="list-style-type: none"> • health law, ethics and codes of professional conduct • informed consent • legal issues in health care, negligence, tort • confidentiality and privacy regulations • legal and practical aspects of task delegation • staff training and review 	<p>PA3.1 Case History Evaluating information and tailoring questions to further investigate potential differential diagnoses in the eye.</p> <p>PA1.2 Confirming consent and assent Adhering to the legal and/or organizational policies to confirm and obtain consent and assent, including in complex cases.</p>
5.3: Makes general observations of patient	<p>5.3.1 Physical and behavioral characteristics of the patient are noted and taken into account.</p> <p>5.3.2 Obtains the case history and makes general observations of the patient</p>	<ul style="list-style-type: none"> • systemic disease • ocular disease • psychology of behavior • psychology of behavior, behavior modification, counselling • communication and interpersonal skills 	
5.4: Refers patients and receives patient referrals	<p>5.4.1 The need for referral to other professionals or rehabilitative services for assessment and/or treatment is recognized, discussed with the patient and a suitable professional or service is recommended.</p> <p>5.4.2 Timely referral, with supporting documentation, is made to other professionals.</p> <p>5.4.3 Patients can be jointly managed with other health-care practitioners.</p>	<ul style="list-style-type: none"> • psychology of behavior, behavior modification, counselling • communication and interpersonal skills • informed consent • health law, ethics and codes of professional conduct • intra- and inter-professional care and referral • intra-and inter-professional communication 	<p>PA6.1 Referrals Initiating referral connections and exploring options for additional services required; identifying those best prepared to address the needs of a person, their family and carers.</p> <p>PA6.2 Managing referral information Managing referral information for incoming referrals and providing all necessary information to the provider when referring a person.</p> <p>PMC6.3 Managing relationships Manages relationships with a person and other practitioners to work respectfully and collaboratively, addressing any conflicts that may occur.</p>

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5. Competency-curriculum domain 5: Professional practice

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF*
5.5: Provides for the care of patients with a diverse range of requirements and needs	<p>5.5.1 Subsidized eye care schemes are understood and explained, recommended or made available to patients who are entitled to them.</p> <p>5.5.2 Patients can be provided with or directed to where they can access domiciliary care.</p> <p>5.5.3 Culturally sensitive optometric services are delivered.</p> <p>5.5.4 Local support services for vision impairment and blindness are understood and explained to eligible patients and relevant reports on the patient's visual status are made.</p>	<ul style="list-style-type: none"> • cultural safety training • health law, ethics and codes of professional conduct • clinical and community placements • inter- and intra-professional communication and referral 	<p>PMC4.2 Ethnic and cultural diversity Identifies gaps; implements and manages racial, ethnic, and cultural responsiveness practices and policies.</p> <p>PMC4.3 Disability inclusiveness Identifies gaps, implements and manages disability inclusive practices and policies.</p> <p>PMC4.4 Gender equity Identifies gaps; implements and manages gender equity practices and policies.</p> <p>PM4.5 Personal bias and discrimination Recognizes and mitigates any personal bias and observed discrimination towards others based on age, gender, race, nationality, religion, ethnicity, social or economic status, sexual orientation, health condition, or disability.</p>
5.6: Records patient information and data in a legible, secure, accessible, permanent and unambiguous manner	<p>5.6.1 All relevant information pertaining to the patient is recorded promptly in a format which is understandable and useable by any optometrist and their colleagues.</p> <p>5.6.2 Patient records are kept in a readily retrievable format and are physically secure as per legislative requirements.</p> <p>5.6.3 Corrections to records are made in accordance with local legislation.</p>	<ul style="list-style-type: none"> • health law, ethics and codes of professional conduct • legislative requirements (storage, access, security, archiving, retention, back-up etc.) • informed consent • patient consent to access • confidentiality and privacy regulations • record keeping systems (hard copy, electronic) 	<p>PA2.1 Record-keeping Adhering to the legal and/or organizational policies to share information, and evaluating policies to improve maintenance of documentation on all platforms.</p>
5.7: Maintains confidentiality of patient records	<p>5.7.1 Access to records is limited to authorized personnel.</p> <p>5.7.2 Information from health records and/or obtained from patients is released only with the consent of the patient.</p> <p>5.7.3 The rights of a patient to access his or her patient record are understood and observed.</p> <p>5.7.4 Patient privacy is addressed when patient information is transferred.</p>	<ul style="list-style-type: none"> • relevant legislative standards in place in jurisdiction of intended practice (this may be multiple, dependent on region) 	<p>PA2.1 Record-keeping Adhering to the legal and/or organizational policies to share information and evaluating policies to improve maintenance of documentation on all platforms.</p>

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5. Competency-curriculum domain 5: Professional practice

Competency (element)	Performance criteria	Curriculum elements	Related competencies as per WHO ECCF *
5.8: Meets legislative requirements regarding retention and destruction of patient records and other practice documentation	<p>5.8.1 The requirements regarding the retention of records for adults, children under the age of 18 years, and deceased patients are understood and observed.</p> <p>5.8.2 The requirements regarding archiving or destruction of records to ensure patient privacy and confidentiality are understood and observed.</p> <p>5.8.3 The requirement for the retention of practice documentation other than patient records is understood and observed.</p>	<ul style="list-style-type: none"> • business, financial, taxation, compliance in business management • occupational health and safety • Human resources issues, staffing 	<p>PMC2.1 Legal and professional standard Develops, promotes, and adheres to professional standards, legal regulations and organizational procedures and guidelines.</p> <p>PMC2.2 Privacy Promotes respect to privacy, and adheres to legal regulations to maintain confidentiality, including information which is handwritten, or in digital, visual, or audio format, or retained in memory</p>
5.8: Meets legislative requirements regarding retention and destruction of patient records and other practice documentation	<p>5.9.1 Relevant legislation, common law obligations relevant to practice and local standards are understood and implemented.</p> <p>5.9.2 The need to provide quality care and to manage risks is acknowledged and addressed.</p>	<ul style="list-style-type: none"> • health law, ethics and codes of professional conduct • informed consent • legal issues in health care, negligence, tort • confidentiality and privacy regulations • legal and practical aspects of task delegation • staff training and review 	<p>PMC1.1 Confidence Mentors others and demonstrates appropriate confidence in own work, particularly in complex or stressful situations.</p> <p>PMC1.2 Empathy Mentors others and demonstrates empathy towards a person and community.</p> <p>PMC1.3 Personal conduct and presentation Maintains personal hygiene, professional appearance, presentation and conduct, appropriate to the context of the environment.</p> <p>PMC1.4 Conflicts of interest Recognizes and takes steps to address actual, potential, or perceived conflicts of interest.</p> <p>PMC1.5 Professional boundaries Maintains personal and professional boundaries where no advantage is taken – in a physical, emotional or any other way – of the relationship with a person, other health workers or the public.</p> <p>PMC1.6 Ethical behavior and accountability Recognizes ethical problems and works with others to identify solutions; adheres to, and promotes, accountability in both physical and online environments.</p>

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Part 2: A Core Curricular Structure for a Tertiary-Level Optometric Program

Curriculum mapping allows optometric programs to demonstrate at what point within the program's structure student learning outcomes are taught and assessed. The learning outcomes are defined by the individual optometric programs and align with the entry-level knowledge and skills requirements as defined by the profession's local accreditation bodies and licensing entities. The WCO supports a curriculum that includes learning outcomes in the following areas, promoting the development of the competencies outlined in the WCO framework:

General science and biosciences

Courses providing foundational knowledge in cell biology, human anatomy and physiology, histology, microbiology, immunology, genetics, biochemistry, and psychology, that support subsequent studies of the vision sciences and clinical subjects, including pharmacology and pathology. These areas within the curriculum can be incorporated into the early years of an optometry program. Alternatively, this foundational knowledge can be developed through completing university-level pre-requisite courses in a program that is separate from the optometry program.

Vision and medical sciences

Courses that pertain to the understanding of the eye and visual function such as geometrical, physical, physiological, and ophthalmic optics, ocular anatomy and physiology, neuroscience, pathology, and pharmacology.

Pre-clinical studies

Courses that incorporate clinical methods in optometry to examine vision and eye health and assess for the presence of refractive errors, binocular vision disorders, and ocular diseases. In addition, these courses should address knowledge and skills necessary in the areas of ophthalmic dispensing, contact lens fitting, color vision

deficiencies, occupational eye health, low vision, and vision rehabilitation, as well as special populations (pediatric, geriatric, athletes, special needs patients) to support the development and demonstration of clinical knowledge and skills and the development of critical thinking, clinical reasoning, and clinical judgment before entering clinical practice.

Research in vision science and optometry

Courses to support evidence-based practice through participation in the development and execution of research projects.

Clinical studies and clinical practice

Clinical courses that provide an opportunity for exercising the application of the gained knowledge and skills to the clinical practice of optometry and further development of clinical reasoning and judgment under the supervision of qualified clinicians.

Public health, cultural competence, and practice management

Courses that include studies of epidemiology and public health, social determinants of health, professional ethics, cultural competence including diversity and inclusion, communication, and the business aspects of optometric practice.

“Learning outcomes are defined by individual optometric programs aligning with entry-level knowledge and skill requirements as defined by the profession’s local accreditation bodies and licensing entities”

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